Report

of the

Select Committee

upon

Lead Pollution

Volume 2

December 1994

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Volume 1

Volume 2

Section 6

The Collated Recommendations of the Nine Interdepartmental Working Group Reports

INTERDEPARTMENTAL LEAD TASKFORCE

LEAD IN AIR WORKING GROUP

WORKING GROUP REPORT

DECEMBER 1993

PART C ACTIONS PROPOSED

6. WORKING GROUP RECOMMENDATIONS.

6.1. Numerous recommendations flowed from the work of the sub-groups. These have been consolidated in this chapter and accorded a priority listing and an implementation proposal, suggesting a timetable where appropriate. The Working Group has not adopted the sub-group recommendations in toto. As a result of discussions in the Working Group, a number of sub-group recommendations have been altered, combined or repositioned in the Working Group report.

6.2. The Working Group is of the view that, in addition to its specific recommendations below, the following points should be made:

6.2.1. A number of the following recommendations refer to community consultation and education. The Working Group is of the view that, particularly in relation to point source locations, comprehensive community consultation programs are crucial if that part of the community which is most at risk from point sources is to be represented adequately. Such programs should provide at a minimum:

- public access to monitoring data
- Quick information to the public in case of an emergency; and
- Information on the whole consultation process.

While providing for comprehensive consultation, the programs should not prevent industry from undertaking its legitimate tasks.

6.2 2. The Working Group is conscious that many of its recommendations on emission control and management from point sources relate to regulatory procedures. The Working Group commends to the Taskforce comprehensive programs based on industry initiative, incorporating "Community Right to Know" principles, in preference to regulation alone. Possible examples include the long-running community consultation program at Port Pirie and the Responsible Care Program initiated by the Australian Chemical Industry Council. A summary of the Responsible Care Program is provided at Appendix 5. (This is provided as an example of this type of program. It is not necessarily supported in all its details by the Working Group. Community comments on this program are also provided at Appendix 5.)

6.2.3. A number of the following recommendations refer to monitoring or management strategies. As a general recommendation, the Working Group is of the view that a total package of monitoring and management strategies needs to be applied to airborne lead. Those strategies should not, for example, be restricted to ambient monitoring. Various more specific recommendations that follow should be viewed in that light.

6.2.4. In relation to areas likely to have higher airborne lead levels but which have not been examined to the same extent as particular point sources (for example, major roads), the education strategy being examined by the Taskforce should include provisions to ensure that local councils, developers and residents are aware of the potential risks involved and are provided with appropriate advice to enable informed decision making.

6.2.5. Recommendations concerning measurement are made to control and manage emissions and to gain a better understanding of how lead contamination occurs. In this regard, the Working Group is concerned that unconnected sets of data with limited scientific or public health value could be collected, and recommends that integrated multimedia studies should be undertaken, incorporating, for example, measurements of lead in air, dust, soil, garden produce, mothers' milk and blood.

6.3. Recommendations - Point Source Emissions - Control and Management Strategies.

Most of the following recommendations are accorded a high priority. This results from the view of the Working Group that strategies to control and manage point source emissions need to be introduced with similar urgency to other lead reduction strategies (particularly lead in petrol) on the grounds of equitable treatment of people potentially affected by lead contamination from point sources. Recommendation 1 refers generally to the management strategy. Recommendations 2 to 11 refer to detailed parts of that strategy.

Recommendations 1 - 11 should be read in conjunction with Figures 1 and 2.

Recommendation 1

The management strategy as outlined in Figures 1 and 2 should be adopted in relation to point sources.

Priority: High.

Implementation: As per the detailed recommendations below.

Recommendation 2

Point source sites that pose a potential public health risk should be determined by the EPA on the basis of a review of its lead emissions inventory (as proposed in recommendation 13).

Priority: High.

Implementation: Within one year of adoption of the Taskforce report; then annually (or biannually in conjunction with State of the Environment reporting).

Recommendation 3

The EPA should carry out survey ambient monitoring at identified sites and, in consultation with industry and the community, assess the likely public health risk. If the health risk is acceptable, the EPA should maintain a watching brief. If the health risk is unacceptable, the EPA should add to the licence conditions of the company the requirement that the company undertake, within an established time period, ambient air monitoring using a laboratory with NATA or similar accreditation.

Priority: High.

Implementation: By July 1995.

Recommendation 4

Information from survey monitoring should be made publicly available.

Priority: High

Implementation: As soon as information is available.

Recommendation 5

Survey ambient monitoring should be able to be initiated by community request.

Priority: Medium.

Implementation: Following initial review of lead sources inventory by EPA.

Recommendation 6

The EPA should initiate an education program which aims to ensure that local communities are aware of the action in relation to possible problem sites and the opportunities for incident reporting and initiation of survey ambient monitoring.

Priority: High.

Implementation: In conjunction with other education initiatives being pursued.

Recommendation 7

If ambient air monitoring undertaken by the company establishes that the ambient NHMRC air quality goal is not exceeded, no further action should be undertaken other than continuation of monitoring in relation to the goal. NB As noted in recommendation 22, the current ambient NHMRC goal may not be appropriate to point sources. This recommendation and those following are based on the NHMRC goal as the current benchmark, but do so in recognition that the goal itself may change.

Priority: High.

Implementation: (In cases where this is not already occurring), by December 1995.

Recommendation 8

If ambient air monitoring undertaken by the company establishes that the NHMRC goal is exceeded, and if the company is able to propose and implement an identifiable remedy after consultation with the EPA and the community, no further action should be taken other than the continuation of monitoring in relation to the goal; and reporting back to the EPA and, through the EPA, to the community on the results of the remedy. The latter requirement should be incorporated in licence conditions. The EPA should publicise the changes to the licence conditions.

Priority: High.

Implementation: (In cases where this is not already occurring), by December 1995.

Recommendation 9

If ambient air monitoring undertaken by the company establishes that the NHMRC goal is exceeded, and if an identifiable remedy is not available, daily monitoring should be required as an addition to EPA licensing conditions, to provide adequate data for an emissions control and management program to be devised. There should be a provision under the conditions of the licence for action against the company if it refuses to introduce daily monitoring. Licence conditions should also require the company, within an established time period, to analyse its daily activities in relation to the results of the monitoring, and, in consultation with the EPA and the community, to determine and implement an appropriate remedy. There should be a further licence provision for action against the company if there is a refusal by the company to implement the agreed remedy.

Priority: High.

Implementation: (In cases where this is not already occurring), by December 1995, with licence conditions specifying a period for determination and implementation of the appropriate remedy.

Recommendation 10

All ambient monitoring regimes, including the location of monitoring stations, should be introduced as a result of consultation among industry, the EPA and the community.

Priority: High

Implementation: As part of development of ambient monitoring regimes.

Recommendation 11

Detailed emission control and management strategies should include an emission inventory and a site emission control program; and, as required, buffer zones; landscaping and greening; and a community education and support program. The strategy will need to be examined for cost effectiveness at each particular site.

Priority: High.

Implementation: As part of development of remedies, in conjunction with other remediation measures relating to, for example, lead in soil and re-entrained dust in houses.

Recommendation 12

All companies which operate point sources identified by the EPA as possible problem sites should be encouraged to participate in self-regulation programs incorporating the principles of "community right to know". Appendix 5 includes an example of a self regulation program (the Responsible Care Program developed by the Australian Chemical Industry - ACIC), and community comments on this program. It is emphasised that the Working Group supports this concept but that the ACIC document is provided as an example only. It is not necessarily supported in its detail by the Working Group. In addition, the Department of Planning has produced a draft discussion paper titled "Issues and Options for the Development of an Integrated Community Right to Know for Hazardous and Offensive Industry in NSW".

The initiation and development of a self-regulation program would need to be undertaken by peak industry groups and major producers, but it should be applicable to all producers of lead emissions. If such a program can be developed and successfully implemented, the extent of regulation suggested above should be reviewed and reduced as appropriate for those companies, to encourage continuing best practice and responsible management by the industry itself.

Priority: High.

Implementation: As programs are developed, in consultation with the EPA and the community.

6.4. Recommendations: Identification of Sources

Recommendation 13

The lead emissions inventory should be developed, refined and updated annually. It should include all sources.

Priority: High.

Implementation: Immediate.

Recommendation 14

The lead emissions inventory should be available for public information, such as in the EPA State of the Environment Report and the National Pollutant Inventory.

Priority: High.

Implementation: Following development of the inventory.

Recommendation 15

As part of the inventory, projected emissions for the year 2000 should be estimated.

Priority: Medium.

Implementation: In conjunction with development of the inventory.

Recommendation 16

The trace lead concentration and emission factors of Australian timbers should be determined, to identify how much lead is emitted during wood burning.

Priority: High.

Implementation: Immediate.

Recommendation 17

A small point source may have a greater impact on local blood lead levels than a large diffuse source. A protocol for local government in controlling lead emissions from non-scheduled premises is required and should be devised by the EPA in consultation with interested parties.

Priority: Medium.

Implementation: By December 1994.

Recommendation 18

Demolition and remediation of contaminated sites or structures containing lead may result in re-entrainment of contaminated dust. Such works may need to be licensed, and guidelines for good work practices should be developed and followed.

Priority: Low.

Implementation: In conjunction with the recommendations of the Lead in Soil and Dust Working Group.

Recommendation 19

Community education programs should be undertaken dealing with a number of potential lead hazards. These include:

- burning lead painted timber;
- sump oil disposal and recycling;
- renovation of lead painted buildings; and
- location of facilities for children in close proximity to busy roads.

Priority: High.

Implementation: In conjunction with other education initiatives being prepared.

Recommendation 20

As part of educational programs, research should be undertaken to enable accurate advice to be provided to people about issues such as:

- vacuuming (including the availability of suitable vacuum cleaners);
- removal and disposal of carpet;
- household renovations;
- the role of vegetation in mitigating potential lead exposure;
- ways of minimising lead ingress to houses and cars; and
- possible risks to children inside cars and in and around garages.

This research could include personal monitoring as per recommendation 38.

Priority: High.

Implementation: As soon as possible, in conjunction with other education initiatives being prepared.

Recommendation 21

As part of educational programs, it should be highlighted that:

- Public transport is a suitable alternative to private motor vehicles if lead and other transport related noxious emissions are to be minimised; and
- Ensuring the energy efficiency of vehicles using leaded petrol will help to minimise lead emissions. Ways to achieve this include ensuring that vehicles are suitably tuned, and operating vehicles in such a way that excessive acceleration and deceleration is avoided.

Initiatives should be supported that help to make public transport more attractive to potential users. Such initiatives might include fixed track transit systems, bus priority programs and car pool schemes. Pricing mechanisms that reflect the advantages of public transport over private cars should be investigated.

Priority: High.

Implementation: Education proposals: in conjunction with other education initiatives being prepared. Public transport initiatives: by the Department of Transport as part of ongoing transport strategies.

6.5 Recommendations: Assessment and Measurement

Recommendation 22

The current national health-based lead in air goal requires urgent revision to take into account the recently revised NHMRC blood lead goals / levels of concern. The NHMRC should be urged to undertake a review as quickly as practicable. The review of the goal should be based on a full health risk assessment. The current NHMRC goal relates to general ambient airborne lead levels. The review of the goal should also consider the appropriate sampling frequency for linear and point sources.

Priority: High.

Implementation: EPA to approach NHMRC immediately.

Recommendation 23

The new health-related ambient air quality goals for lead should be evaluated to ensure that they adequately protect environmental values, particularly the functioning of sensitive ecosystems. ANZECC (or NEPA) should be asked to Undertake such an evaluation, in cooperation with NHMRC, and issue additional secondary environmental lead in air goals, should a need for them be indicated.

Priority: Low.

Implementation: EPA to approach appropriate authorities by July 1994.

Recommendation 24

The most appropriate sampling frequency in relation to compliance with the NHMRC ambient lead in air goal around point sources with significant stack and/or fugitive emissions should be established by the EPA, in consultation with industry and the community, and incorporated into monitoring regimes at those locations.

Priority: High.

Implementation: By December 1994.

Recommendation 25

EPA licences should require lead emissions to be reported as either measurements; or estimates based on worst case assumptions if measurements are not practicable; indicating the method and basis of the emission calculations.

Priority: High.

Implementation: As licences are issued or renewed.

Around point sources the EPA should establish a background level, either measured by the EPA or to EPA specifications, against which incremental point source contributions to lead in air can be assessed for mitigation and enforcement purposes.

Priority: Medium.

Implementation: By July 1995.

Recommendation 27

Modelling methods should be used to determine where monitors are located.

Priority: High.

Implementation: As monitoring is introduced.

Recommendation 28

For point sources, monitors should be located generally where modelling predicts the highest total suspended particulates (TSP) levels will occur.

Priority: Medium.

Implementation: As monitoring is introduced.

Recommendation 29

Ambient monitoring stations for assessing the impact of lead from point sources should measure TSP.

Priority: High.

Implementation: Continuous.

Recommendation 30

The test procedure for ambient TSP lead levels should be AS 2800.

Priority: Medium.

Implementation: As results from monitoring become available.

For sites with estimated lead emissions greater than 5 tonnes per annum (tpa), stack emissions should be monitored on a regular basis in a way which allows an adequate assessment of lead emissions with at least a fortnightly frequency; or, as agreed between the EPA and the company, optimisation of a combination of optical, isokinetic / chemical and other appropriate measurement techniques should be explored to achieve a cost effective outcome. This should be undertaken in the context of a community monitoring committee.

Priority: High.

Implementation: By July 1995.

Recommendation 32

For sites with estimated lead emissions of 1 tpa up to 5 tpa, stack emissions should be assessed every six months, according to EPA limits and methods.

Priority: Medium.

Implementation: By July 1995.

Recommendation 33

The question of cumulative impacts from a number of small but geographically close emission sources should be assessed by the EPA as part of its review of a lead sources inventory and survey ambient monitoring.

Priority: High.

Implementation: By July 1994.

Recommendation 34

A study should be conducted to collect data on lead in air levels near linear sources.

Priority: Medium.

Implementation: By July 1995.

Recommendation 35

$PM_{2.5}$ monitoring should be carried out as part of special studies for additional information about emissions from extended and linear sources; and inside cars and houses.

Priority: Low.

Implementation: By July 1995.

Recommendation 36

A particle size distribution study should be done to compare TSP, PM_{10} and $PM_{2.5}$ for all sources.

Priority: Low.

Implementation: As agreed and required at particular sites.

Recommendation 37

TSP collections from other monitoring studies such as MAQS should be analysed for lead to prepare a better lead emissions data base.

Priority: Low.

Implementation: As MAQS data become available.

Recommendation 38

Personal monitoring should be used to assess the lead in air levels for children with elevated blood lead levels.

Priority: High.

Implementation: In conjunction with recommendations from Lead in Children's Blood Working Group.

Recommendation 39

A watching brief should be maintained for improvements in monitoring equipment technology, e.g. for an instrument that will continuously monitor particulate emissions in stacks with wet emissions.

Priority: Low.

Implementation: As part of EPA management practices.

Recommendation 40

Companies or laboratories conducting the sampling and analysis of lead in air should have NATA or similar accreditation ensuring technical competence in these tasks and should participate in an externally-run proficiency program.

Priority: High.

Implementation: By EPA, in conjunction with the industry, with program initiated by July 1995.

6.6. Recommendations: Risk Assessment

Recommendation 41

The US EPA IUBK model (with Australian data) should be used to estimate the impact of various exposure pathways on the total lead in blood level, until a demonstrably better model becomes available.

Priority: Medium.

Implementation: Continuing.

Recommendation 42

Ambient lead in air levels should be used to identify those areas where lead in blood surveys should be carried out. Investigations should then be undertaken to determine how reduced blood lead levels and lead in the environment could be achieved. Costs and benefits of the various options should be assessed.

Priority: High.

Implementation: In conjunction with recommendations from Lead in Children's Blood Working Group.

Recommendation 43

Measurement of lead in air levels should continue, so that the progress of lead reduction programs can be monitored.

Priority: High.

Implementation: Continuing.

NSW INTERDEPARTMENTAL LEAD TASKFORCE

REPORT OF THE

LEAD IN BROKEN HILL WORKING GROUP

JANUARY 1994

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6. RECOMMENDATIONS

6.1 Co-ordination of Health and Environment Programs in Broken Hill

Recommendation 1 That a short term remediation action program be implemented in Broken Hill which is aimed at reducing the blood lead levels of Broken Hill children. This program should be both comprehensive and broad ranging. Further, the program should be developed with clear objectives and undertake to co-ordinate all relevant government and local authorities.

Recommendation 2 That a work team be established to implement the above program. This team should consist of relevant managerial, nursing, scientific, educational and support staff.

Recommendation 3 That, in order to provide a focal point for the community to obtain information, blood testing or advice, and to centralise program activities as well as providing accommodation for the work team, a Broken Hill Environmental Lead Centre should be established.

6.2 Health Based Interventions

Recommendation 4 That the blood lead monitoring program be continued. This program is aimed at identifying all Broken Hill children with elevated blood lead levels. In particular, children under 5 years of age should be targeted for incorporation into the monitoring program.

Recommendation 5 That routine blood lead testing be offered to all newborn babies and preschool children.

Recommendation 6 That intervention programs for children with elevated blood lead levels be developed and implemented as soon as possible.

Recommendation 7 That education programs aimed at providing as much information as possible to families of children with high blood lead levels be developed and distributed to relevant sectors of the community. Effective education strategies and distribution methods should be investigated.

Recommendation 8 That at least temporary relocation to "lead free houses" should be provided for children with high blood lead levels and their families. The children should remain in these houses until either their blood lead levels have stabilised and/or their home environments have been successfully "de-leaded".

6.3 Remediation Programs

Recommendation 9 That a short term remediation action plan aimed at controlling the major sources of lead in Broken Hill be developed.

Recommendation 10 That actions be implemented aimed at intercepting lead exposure pathways in the home environments of children with high blood lead levels. Pathway interception actions should be implemented on a priority basis.

Recommendation 11 In order to implement the above; that funds be provided to remediate approximately 100 houses in each year from the implementation of the short term action plan.

Recommendation 12 That all children with blood lead levels greater than 40 µg/dL will have the contamination status of their home environments assessed and, where observations/testing indicate necessary, abatement or remediation should be undertaken.

Recommendation 13 That a staged action plan be developed correlating blood lead levels with the corresponding management action(s).

Recommendation 14 That the short term action plan pursue the stabilisation of sources of lead within the city or along the line of lode as a matter of urgency.

Recommendation 15 That a greening program be implemented aimed at reducing fugitive dust levels within Broken Hill. The effectiveness of various greening techniques should be evaluated.

6.4 Environmental Monitoring

Recommendation 16 That the current dust monitoring program be reviewed in order to determine its effectiveness and to identify any gaps in the data set. Consideration should be given to the application of high volume samplers to provide air lead data consistent with international standards.

6.5 Long Term Strategy

Recommendation 17 That results obtained from the implementation of the short term management program be evaluated with the objective of determining a long term strategy for the management of lead contamination in Broken Hill.

Recommendation 18 That the submission of the Long Term Strategy be deferred for a further twelve months from the initiation of the Short Term Management Strategy. This will enable the results of the Short Term Strategy to be incorporated into the development of the Long Term Strategy.

6.6 General

Recommendation 19 That at all stages, the effectiveness of interventions used to lower blood lead levels should be evaluated.

New South Wales Interdepartmental Lead Taskforce

Interim Report of the Lead in Children's Blood Working Group

December, 1993

5 RECOMMENDATIONS TO THE NSW LEAD TASKFORCE

5.1 General

5.1.1. That the NSW Government recognise environmental lead exposure as a preventable cause of lead toxicity in young children.

5.1.2. That elimination of childhood lead toxicity can be achieved by removing sources of environmental lead. Public health interventions most likely to have the greatest impact on blood lead levels in NSW are:

- the removal of lead from petrol;
- reducing lead emissions and lead contamination around primary lead processing sites;
- conducting public education campaigns about the hazards of lead and ways of minimising exposure to lead.

5.1.3. That the Taskforce make representations to the National Health and Medical Research Council to revise the current Air Quality Standard for Lead in Air to a lower level. The current air quality standard for lead of 1.5 $\mu g/m^3$ is inconsistent with the stated goal of reducing blood lead levels to below 10µg/dL (0.48 µmol/L) for all Australians. Most NHMRC guidelines are formulated in response to public health concerns. Although not legally binding, NHMRC guidelines are adopted by Government Agencies (such as the Environmental Protection Authority and the NSW Health Department) which have legislative powers to enforce environmental and health standards. Therefore, a lowering of the lead in air guideline would provide impetus for lead emitting industries to comply with the new guideline.

5.2 Evaluating Risk: Blood Lead Surveillance

5.2.1. That repeated community blood lead surveys using standardised methods are the best means of establishing current levels of exposure, of monitoring trends and of estimating the risks. Furthermore the Working Group endorses:

- the current initiative of the NSW Health Department to conduct a survey of children's blood lead levels in NSW in 1994. The study will involve approximately 2,000 children, and will be repeated in 2-4 years.

- the plan to conduct serial opportunistic surveys of blood lead levels in hospitalised children.

5.2.2 That blood lead testing of all children in NSW (i.e. mass screening) is ill advised for the following reasons:

- A majority of children in NSW (50-90%) are likely to have blood lead levels below the current NH&MRC goal of 10 µg/dL, and 95% of children are likely to have blood lead levels below 15µg/dL. Thus only a small proportion of the entire population are likely to benefit from such a program.

- It is anticipated that the costs and technical difficulties associated with mass blood lead screening will far outweigh the benefits.

- Furthermore, mass screening would consume substantial resources which would otherwise be available for lead education and abatement programs.

5.2.3. That in place of mass screening campaigns and in addition to children enrolled in the NSW survey, the Working Group recommends blood testing for children at risk of elevated blood lead levels. This includes:

- Children aged 9-48 months who live in or are frequent visitors to older housing with peeling paint. (Older housing is defined for this purpose as pre-1960 housing. Pre-1960's housing is likely to contain leaded paint).

- Children aged 9 -48 months who have been present during "unsafe" renovations of older housing.

- Children with pica living in older housing with peeling paint.

- Children aged 9-48 months living near lead smelters, battery breaking yards or lead ore bodies.

- Children exposed to the less common exposure pathways e.g. lead hobbies and folk medicines containing lead.

- Children living on or near main roads (**if** this is shown to be a risk factor in the blood lead survey).

5.3. Quality control of blood lead sampling and analysis

5.3.1. That persons involved in the collection, analysis and reporting of blood lead comply with the following criteria:

- Venous sampling is the preferred method of blood lead collection. Skin cleansing prior to blood collection should be in accordance with Australian Standard (AS) 2636: *Sampling of Venous and Capillary Blood for the Determination of Lead or Cadmium Concentration.*

- Analysis of blood lead should be in accordance with AS 4090: *Whole Blood Determination of Lead Content-Graphite Furnace Atomic Absorption Spectrometric Method* or AS 4090.1: *Venous Whole Blood-determination of Lead Content (0.1 μmol/L-2.0 μmol/L)-Graphite Furnace Atomic Absorption Spectrometric Method.*

- Only those laboratories "accredited" for performing medical testing or occupational health testing should be used for the measurement of lead in blood. Such laboratories need to demonstrate that their external and internal quality control data satisfy predefined precision and accuracy requirements.

- Laboratories need to demonstrate their adequate participation in external quality control programs.

- Furthermore if laboratories are used in community surveys of blood lead, consideration should be given to appropriate inter-laboratory quality control procedures.

- The use of blood lead reference materials is recommended for survey work.

It is further recommended that:

- A standardised format (e.g. an extract from the NHMRC Guidelines for Lead in Australians 1993) for the interpretation of blood lead levels be included in pathology reports. Such a format could be specified by Standards Australia as part of AS 4090.1: *Venous Whole Blood-determination of Lead Content (0.1 µmol/L-2.0 µmol/L)-Graphite Furnace Atomic Absorption Spectrometric Method.*

5.4. Risk Management

5.4.1. *Response Protocols*

That the management of children with elevated blood lead levels be guided by the response protocols outlined in Appendix A. Furthermore it is recommended that these protocols be distributed widely to health professionals and parents as part of a lead education campaign.

5.4.2. *Education*

5.4.2.1 That the NSW Lead Taskforce support the development and introduction of an interdepartmental lead education policy. It is recommended that a program be developed for public education regarding hazards of lead and minimising exposure to lead.

5.4.2.2 That the following groups be considered for targeted education messages:

- general public
- parents/potential parents
- low income earners
- non-English speakers
- health professionals
- users of pre-1986 motor vehicles
- renovators, hobbyists, lead workers, builders, service station operators
- early childhood workers
- point-source communities

5.4.2.3. That the following contact possibilities be considered for targeting the specific groups:

- mass media including local language media for non-English speakers and inclusion of messages in domestic bill notices
- training and registration authorities (universities, professional boards, licensing boards)
- product point of sale (paints, hobby equipment, power tools);
- Motor Registries
- schools
- shopping centre promotions and meetings in special communities
- Local Councils
- petrol stations

5.4.2.4 That the following types of messages be considered for targeting specific groups:

- health warnings
- action advice

5.4.2.5 When planning and activating a program the following barriers to implementation should be considered:

- comprehension of language
- consideration of non-English speakers
- conflicting information regarding the lead hazard, the risk and actions required
- denial or perceived irrelevance of lead as a health issue
- cost of effective remediation which can be expensive
- need for cooperation between agencies.

5.4.2.6 That the following approaches be considered when barriers to implementation are encountered:

- communicate clear messages without jargon, and dispel myths with correct and authoritative information
- promote inter-agency cooperation by designating responsible officers in Government and other agencies to carry out tasks;
- develop intervention strategies such that large financial commitments are not required for individual households. Emphasise simple and effective actions which can be taken to minimise exposure to lead.

5.5 Lead Abatement

5.5.1 Lead abatement programs whether conducted on a structural or individual basis should be evaluated.

- This can include evaluation of the lead in petrol reduction program, by comparing differences in mean blood lead between the 1994 survey as compared with a repeat survey in a few years time.

- Intervention measures conducted in Broken Hill such as greening backyards, vacuuming ceiling dust and installing sand pits, etc will be evaluated in a study.

5.5.2 That determination of risk factors for lead poisoning in both urban environments and point source environments be conducted. The 1994 NSW survey will involve a questionnaire to collect information on potential risk factors in each child's environment.

5.5.3 That the Taskforce endorses and supports the international *Lead Abatement and Remediation Conference '94* which is to be held in Newcastle, NSW in June 1994.

5.6 Resource Implications

5.6.1 That personnel be suitably trained to investigate lead contamination in the domestic environment. It has been suggested that Environmental Health Officer's (EHO's) in Local Government may be trained for this role.

5.6.2 That resources be allocated to counselling services for parents of children with elevated blood lead levels.

NEW SOUTH WALES

INTERDEPARTMENTAL LEAD TASKFORCE

REPORT OF LEAD EDUCATION WORKING GROUP

RECOMMENDATIONS

1. That the NSW Government establish a Lead Reference Centre to co-ordinate, develop and conduct education strategies recommended in this report. This Centre could be operated out of an existing authority such as the EPA or NSW Health.

2. That the NSW Government, through the proposed Lead Reference Centre, conduct an education program aimed at educating the NSW community about minimising exposure to lead. Where the National Lead Education Campaign was focused largely on a single issue and source, the NSW program should be broadly based and targeted. The proposed NSW program should be limited in its mass media approaches and primarily concentrate on promoting face to face, accessible education.

3. That the proposed NSW Lead Education Program provides projects and material relevant to those in point source communities as well as to the general community.

4. That negotiation occurs with the TAFE system concerning the introduction of lead content into relevant curricula and the need for additional courses. Appropriate material should be developed as required with assistance from the proposed Lead Reference Centre. Those TAFE courses of particular relevance are for Child-Care and Pre-School workers, Painters, and Automotive Mechanics. A new TAFE Course for those working in lead abatement and assessment is recommended.

5. That negotiation occurs with the Board of Studies regarding the inclusion of material about lead into the syllabus' for relevant Key Learning Areas. Appropriate content material should be developed as required with assistance from the proposed Lead Reference Centre.

6. That the Lead Reference Centre, develop Teaching/Learning Units on lead issues for relevant Key Learning Areas, for distribution in NSW schools. Input into these units from government, community and industry should be encouraged.

7. That material for people who are affected by lead, or whose children are affected, is developed and distributed through General Practitioners, Public Health Units, and non government organisations.

8. That material in a range of community languages is developed by the Lead Reference Centre to educate Non English Speaking Background People [NESB] about lead. In order to use existing material, it is proposed that the National "Lead Alert" brochure be translated for this purpose. Additional education efforts should be developed.

9. That training modules are developed by the Lead Reference Centre (with input from relevant government, community and industry sectors) for use by those in the

pre-school and child care sectors to provide education about lead to childcare workers and with parents of young children.

10. That a Lead Management Plan needs to be developed urgently for North Lake Macquarie. This should contain education initiatives as a crucial component.

11. That an assessment of the lead risk in the Port Kembla area should be undertaken as soon as possible as a prelude to the development of a Lead Management Plan for the area which contains education initiatives.

12. That the community education component of the Broken Hill Lead Management Plan be implemented as soon as possible, with support from NSW Health and the EPA and the proposed Lead Reference Centre.

13. That print material about lead be developed for the general community/householder by the Lead Reference Centre and be distributed by direct mail [eg with the bill sent by the Water Board and other Water Authorities].

14. That NSW Health ensures that training about lead is provided to health personnel in the public health and community health sectors.

15. That the Lead Reference Centre ensures that liaison occur with the relevant faculties of Universities providing pre-service training education for Doctors, Nurses, Pre-School [early childhood] Teachers regarding the provision of lead education in their curricula.

16. That the WorkCover Authority in consultation with industry reviews their operations, regarding the education needs of those who work in the lead industry, and develops appropriate lead education programs.

17. That the Institute of Environmental Health in consultation with the proposed Lead Reference Centre, reviews the provision of education about lead by local government as part of the planning and building approval processes and recommends appropriate education initiatives.

18. That Local Government, includes in all Building Applications, information on lead paint and plumbing issues. This information should be developed by the Institute of Environmental Health with input from the proposed Lead Reference Centre, Councils, Community, Industry and the EPA.

19. That the proposed NSW Lead Education Program is evaluated. The evaluation process should be developed and implemented by the proposed Lead Reference Centre.

20. That adequate funding is provided to the proposed Lead Reference Centre to complete the NSW Lead Education Program [as outlined in Section 5 of this Report].

NSW ENVIRONMENT PROTECTION AUTHORITY

REPORT OF "LEAD IN FOOD WORKING GROUP"

1993

Prepared by:

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Chairman, Lead in Food Working Group

9.0 Recommended Actions for Improving the Protection of the Population against Lead Contamination of Foods

9.1 *Legislation on Maximum Permitted Concentrations (MPC's) of Lead in Food*

New South Wales should continue to recognise the National Food Authority (NFA) and the National Health and Medical Research Council (NH & MRC) as the most appropriate organisations to make recommendations on MPC's for lead in food. There should be no change to compliance with the Australian Food Standards Code 1987. New South Wales should also adopt any amendments to the Standard A12 regulations for lead in food made by the NFA.

9.2 *National Residue Surveys*

As many food producing industries as possible should be encouraged to participate in the forthcoming National Residue Survey. This would enhance the promotion of "Clean Agriculture and Clean Processed Foods" thereby improving the reputation of the industries including the retail sector.

9.3 *Surveillance of Imported Foods*

Increased testing of imported foods for lead levels is recommended, especially for foods known to be sealed in lead soldered cans. The Health Department should liaise closely with the Australian Quarantine and Inspection Service (AQIS) in their surveillance of imported canned foods.

9.4 *Dust Contamination of Foods*

Surveys of lead contamination of uncovered food at roadside stalls and market places located on high traffic density highways should be undertaken. Sampling methods should involve on-site acid extraction for any lead present in the dust contamination. Breads and vegetables are high risk candidates which are the most frequently exposed to airborne dust particles and automobile emissions. If lead levels are high, regulations on the stringent covering of foods displayed in these circumstances may be required.

Similarly, dust contamination in the ceilings and air conditioning ducts of school buildings, especially in the vicinity of industrial sites, should be checked for lead and other heavy metals. The highest risk buildings would be those accommodating pre-school children and infants. It is very likely that maintenance funds would be required for dust removal.

9.5 *Monitoring of Fertilisers for Lead Levels*

When New South Wales legislation on heavy metal concentrations in fertilisers has been finalised through amendments to the Fertiliser Act 1985, all fertiliser products, including those imported, should be checked routinely for lead content. Sewage fertilisers and sewage composts will also fall into these categories for monitoring.

9.6 *Testing Programs for Soil and Ceramic Ware*

It is strongly recommended that a service be offered on a chargeable basis for testing soil samples for lead levels in backyard gardens in inner city urban areas. This service could be provided by NSW Agriculture at the Biological and Chemical Research Institute, Rydalmere, at a cost of $25 per sample. Similarly, testing could be offered for checking the lead levels of food stored for prolonged periods in ceramic utensils.

9.7 *Promotion of Educational Programs*

9.7.1 Food Preparation

Education on hygiene for food preparation should be promoted to the general population. Higher risk categories are residents of inner city urbanised areas where backyard gardens are often used for growing vegetables and people purchasing vegetables from roadside stalls located on busy highways.

The recommended hygiene measures are:

(a) Thorough washing of leafy vegetables e.g. lettuce, silver beet which may be contaminated by soil particles and atmospheric dust.

(b) Peeling the outer skin of root crops, e.g. carrots, parsnips, potatoes is recommended before cooking because any uptake of soil lead may be concentrated in outer layers of the vegetable.

9.7.2 Cautionary Use of Ceramics and Crystal Vessels for Storage of Foods and Beverages

It is recommended not to store foods of an acidic type in ceramic utensils which have a highly coloured pigment on the food contact surface. Utensils of this type used for the storage of high acid foods may leach lead into the food content over time.

Secondly, avoid the storage of alcoholic beverages and spirits in crystal decanters for extended periods because studies have shown that large amounts of lead will leach from lead crystal glassware. This danger should be conveyed to high risk populations e.g. pregnant women and those of child-bearing age.

9.7.3 Balanced Diets for Infant Children

Diets of highly nutritious foods and containing trace elements e.g. iron, calcium and zinc should be promoted in order to decrease the rate of absorption of lead from the gut. Pectin-containing foods should also be promoted as these foods may also have an effect on reducing lead absorption.

9.7.4 School Education Courses on Human Nutrition

Until 1993, the Home Science curriculum of the Department of Education and Board of Studies encompassed infant and childhood nutrition in Higher School Certificate courses. These courses were the ideal opportunity to promote such issues as the risks of lead intakes from food sources. With a change in curriculum, this topic area is not as prominent. It would be desirable to incorporate these issues in the new courses, Food Technology and Life Management as well as the Science curriculum years 7 to 12.

It is strongly recommended that liaison take place with the Department of Education to ensure that students will be taught the basic principles of the nutritive values of balanced diets including the importance of trace elements and vitamins and the risks of food contaminants such as heavy metals, like lead and pesticide chemical residues. Food Technology is an option for this study.

INTERDEPARTMENTAL LEAD TASK FORCE

LEAD IN PAINT

WORKING GROUP REPORT

1. EXECUTIVE SUMMARY AND RECOMMENDATIONS

The Working Group on Lead in Paint has studied the extent of the hazard posed by paint containing lead in N.S.W. and has found that :-

~ while there is adequate legislative control over the allowable levels of lead in paint for many applications, there is scope to further restrict the use of paint containing more than a prescribed small percentage of lead.

~ there is no specific education, training or control of most contractors, tradesmen or handymen who carry out removal of paint containing lead.

~ there is a stock of older housing in N.S.W. that is likely to have been painted, either internally or externally or both, with paint containing significant quantities of white lead. Flaking and chalking, through age, and unsafe removal of this old paint, poses a considerable health hazard to individuals, especially young children.

~ there is no readily available means in N.S.W. for generators of paint waste containing lead to dispose of the waste even though the proportion of hazardous material in the waste has been reduced to the lowest level technically and economically possible.

~ there is no comprehensive information or point of access readily available to the general public on the dangers of paint containing lead.

To overcome these deficiencies, the Working Group on Lead in Paint recommends that the N.S.W. Government initiates action to :-

A. Legislative/Regulatory

Recommendation 1

Request the Chairman of the Poisons Advisory Committee of the N.S.W. Health Department to recommend to the National Health and Medical Research Council that it's Drugs and Poisons Scheduling Standing Committee :-

(i) consult with paint manufacturers to reduce the allowable level for lead and lead compounds under the First Schedule of the Uniform Paint Standard (Appendix P of the N.H. & M.R.C.'s Standard for the Uniform Scheduling of Drugs and Poisons) from 0.25% to 0.10% of the non-volatile content of the paint for all paints except zinc based paints, as defined under Australian Standards A.S. 2105 and A.S. 2204, for which the allowable level for lead is to be 0.20%.

(ii) extend the existing prohibitions under the Uniform Paint Standard to prohibit the use of First Schedule paints for industrial buildings and structures, for mines and oil terminals, for food and drink preparation equipment and utensils and for small scale automotive repair work, by amending Clause 2.2 of the Uniform Paint Standard to read :-

2.2 A person shall not manufacture, sell or use a First Schedule Paint :

2.2.1 for a roof or for any surface to be used for the collection or storage of potable water ;

2.2.2 for furniture

2.2.3 for any fence, wall, post or gate or the interior or exterior surface of any residential, commercial or industrial building or on any bridge, pylon, pipeline, storage tank or any similar structure.

2.2.4 for any premises, equipment or utensils used for the manufacture, processing, preparation, packing or serving of products intended for human consumption.

with the amendments to take effect from 1 January 1995.

The requirements for labelling under Clause 3.5 of the Uniform Paint Standard would have to be similarly amended.

The industry could be encouraged to implement these changes more rapidly if the Commonwealth Government extended the 150% tax concession for research and development to to cover work on lead free paint products. The N.S.W. Government could assist the industry by putting the case for this concession to the Commonwealth Government.

The Commonwealth Government should also be requested to ensure that imports of paints and painted goods comply with the Uniform Paint Standard.

Recommendation 2

Request the Workcover Authority to prepare a Regulation under the Occupational Health and Safety Act (1983) to license contractors engaged in the removal of paint containing lead as defined under the First Schedule of the Uniform Paint Standard.

The proposed regulation would provide for two categories of contractors ; those engaged in industrial paint removal (typically steel structures such as bridges) and those engaged in lead based paint removal in large buildings (such as office blocks, warehouses or factories).

The proposed Regulation would apply to :-

A. Contractors working on industrial applications and would :-

(i) require those contractors to be registered under the Government Paint Committee's Paint Contractor Certification Programme for lead paint removal

(ii) require those contractors to comply with the (proposed) Australian Standard Code of Practice for removal of paint containing lead in industrial applications.

B. Contractors working on building applications and would :-

(iii) require those contractors to comply with the (proposed) Australian Standard Code of Practice for removal of paint containing lead in building applications.

The Regulation would not apply to contractors engaged solely in removing paint containing lead from residential buildings as defined as Class 1, 2 and 3 buildings by the Building Code of Australia.

The Regulation would come into effect on 1 January 1995.

Recommendation 3

Request the Environment Protection Authority of N.S.W. to review the Waste Management Act and prepare any amendments required to :-

(i) establish and operate regional hazardous waste collection and storage centres throughout N.S.W., to operate on a user pays basis, so that the disposal of hazardous waste, such as paint or other waste containing lead or lead compounds, can be properly controlled.

(ii) prevent hazardous waste being disposed of in existing licensed landfill sites.

(iii) ensure that the registration and licensing requirements for all hazardous waste generation and disposal activities extend throughout N.S.W., with control exercised by an appropriate authority.

Recommendation 4

Direct that, by 1 January, 1995, all Government Departments and agencies :-

(i) use the Government Paint Committee's Specifications for all painting work,

(ii) use G.P.C. approved contractors for work that could involve removal of First Schedule paint,

(iii) call up the (proposed) Australian Standard Codes of Practice for removal of paint containing lead in all painting specifications,

(iv) adopt Recommendation 1 above for all Government work.

Recommendation 5

Request the Department of Consumer Affairs to :-

(i) recommend to the Commonwealth/State Consumer Products Advisory Committee that Australian Standard 1647, Part 3, 1982 (Toxicological Requirements for Toys) be adopted under the Commonwealth Trade Practices Act to control the levels of heavy metals in imported toys.

(ii) ban, under the N.S.W. Fair Trading Act, the supply of toys that do not comply with A.S. 1647, Part 3, 1982.

(iii) review the monitoring and surveillance practices for imported toys to ensure compliance with (i) and (ii) above.

B. Standards and Guidelines

Recommendation 6

Request Standards Australia to prepare a Code of Practice, with input from industry and Government, for the removal and disposal of paint containing lead in industrial applications, using the Code outline developed by the Lead in Paint Working Group.

Recommendation 7

Request Standards Australia to prepare a Code of Practice for the removal and disposal of paint containing lead in commercial, industrial and residential buildings, based on the Code outline for industrial applications and the United States H.U.D. Lead Based Paint Guideline.

Recommendation 8

Request Standards Australia to amend A.S. 2312 (Protection of Steelwork from Atmospheric Exposure) to include guidelines for maintenance to prevent deterioration of the asset and to call up the (proposed) Code of Practice for industrial applications.

Recommendation 9

Request Standards Australia to amend A.S. 2311 (Painting of Buildings) to call up the (proposed) Code of Practice for commercial/residential/institutional applications.

Recommendation 10

Request the Government Paint Committee, through the Manager, Scientific Services Group, Roads and Traffic Authority, to review its specifications to make lead free paint the preferred option in any specification where a paint component containing lead is still permitted, unless specific technical requirements make it impossible to use lead free paint.

Where necessary, colour specifications should be changed to eliminate any need for pigments containing lead.

Recommendation 11

Request the Commonwealth Department of Health, Housing and Community Services to provide funding for a revision of the United States H.U.D. Lead Based Paint Guideline for use in public housing in Australia. The document should be reviewed in relation to the proposed Code of Practice to be developed by Standards Australia and the review should identify other uses (such as education) for the revised document.

C. Industry

Recommendation 12

Request the Master Painters, Decorators and Signwriters Association of New South Wales Inc. to set up and maintain a register of tradesmen who have completed an appropriate course in the correct methods and equipment needed for the safe removal of paint containing lead from residential buildings and who agree to follow the (proposed) Code of Practice for the removal and disposal of paint containing lead from buildings.

Recommendation 13

Request the Roads and Traffic Authority to initiate and co-ordinate a joint Government/industry study of the costs and benefits of recycling lead from waste, including the waste generated by removal of paint containing lead.

D. Education and Public Awareness

Recommendation 14

Request T.A.F.E. Commission to :-

(i) introduce topics on the identification, hazards, removal techniques and safety when working with paint containing lead and other toxic metals, into the trade course for painters. The topics should be based on the proposed Codes of Practice to be developed by Standards Australia.

(ii) Develop a short course for qualified tradesmen painters on the identification, hazards, removal and disposal methods and proper equipment and worker protection when working with paint containing lead and other toxic metals. The course should be based on the proposed Codes of Practice to be developed by Standards Australia.

Recommendation 15

Request the Department of Housing to produce a booklet of advice to tenants of rented accommodation, both public and private, that includes technical and other advice on the dangers of paint containing lead.

Recommendation 16

Request the Environment Protection Authority, Workcover Authority or another Department with appropriate expertise, to set up an advisory unit to assemble all available data and provide, to the public of N.S.W., a central, easily accessible and readily recognisable source of information on all aspects of paint containing lead, including identification, encapsulation, removal and disposal.

The advisory unit should be required to keep :-

(i) a register of appropriately qualified and equipped consultants and laboratories who can identify, sample and test paint suspected of containing lead

(ii) a list of suppliers of do-it-yourself lead test kits

In addition, the Working Group on Lead in Paint makes the following recommendation in relation to the general lead abatement education program :-

Recommendation 17

A. That the information on paint containing lead should be targeted at and tailored for the two main audiences, namely

a) do-it-yourself painters, renovators and their families

b) the building industry professionals, architects, renovation contractors and builders and their families, as well as painters and their families

B. That the education campaign clearly set out that the lead risk in renovation of older homes is not limited to paint containing lead but could include :-

(i) fittings and fixtures such as roofing, valley and box gutters, down pipes, step and soaker flashings, damp courses, bathroom floors (lead sheet), plumbing and sanitary fixtures (including solder), gas meter connections, storm water tanking and drainage, lining of laundry tubs and encasing of electric wires and cables

(ii) undisturbed dust in old houses, which could have a high lead content and be harmful to occupants, in such spaces as in ceilings, under floor boards, in window sash wells and in the cavities between double brick walls.

C. That the removal of paint containing lead in houses is best carried out by trained professionals registered with the Master Painters, Decorators and Signwriters Association of New South Wales Inc.

LEAD IN PETROL WORKING GROUP REPORT

7 STRUCTURE OF PROPOSALS

In September 1993, the Petrol Working Group finalised a series of short term proposals. These came about as a direct result of the Group's discussions and the Canberra Roundtable decisions. A second series of proposals were also formulated for longer term implementation.

7.1 SHORT TERM PROPOSALS

The NSW Lead in Petrol Working Group has proposed the following as a means of reducing, in the short term, the impact of lead in petrol in NSW:

7.1.1 Leaded petrol supplied by refineries or terminals within NSW should have lead levels reduced to 0.3 g/L at 96 Research Octane Number (RON) by the end of December 1993 as an interim measure.

7.1.2 In accordance with the position agreed by all parties at the Lead Round Table in Canberra, NSW refineries supply leaded petrol with a maximum lead content of 0.2 g/L by the end of 1994 provided that octane demand can be significantly reduced.

7.1.3 Data for NSW sales of leaded and unleaded fuel, figures of total tonnage of lead added to petrol, and ambient air data should be assessed by the relevant authorities on a quarterly basis to ascertain the short term impact of the lead in petrol reduction strategy.

7.1.4 The NSW Government should undertake a concerted community awareness campaign (eg. readily visible signs at service stations, stickers identifying cars capable of using ULP to be applied during re-registration checks, pamphlets sent to NRMA members with "Open Road", membership renewal, and insurance renewal) aimed at industry, individuals and special interest groups, to encourage motorists where possible to switch to ULP or vehicles using unleaded fuels including public transport vehicles, and other transport modes. Such a campaign should have a number of components all consistent with a single campaign identity controlled by the EPA.

7.1.5 The grade of automotive fuel currently referred to as "Super" should be called "Leaded" at all petrol outlets and in advertising, and bowsers dispensing leaded fuel should display approved environmental/health warning signs.

7.1.6 The NSW Government should make all possible efforts to have the Federal Government fund, in whole or part, required education and abatement programs in NSW from the increase in the Federal leaded petrol excise on the basis of litres sold.

7.1.7 Experimental programs to investigate the possible engine damage effects of fuels of less than 97 RON on pre-1986 vehicles should be conducted immediately.

7.1.8 Research to investigate lead substitutes and alternative fuel additives should be conducted immediately.

7.2 DISCUSSION OF SHORT TERM PROPOSALS

The following points were considered in developing the short term proposals above.

7.2.1 The reduction/removal of lead from petrol in NSW is a relatively simple physical step to take but it does have more complex implications, e.g. the possible non-uniformity of fuel octane across Australia. The two Sydney refiners have stated their ability to lower lead (and RON) levels immediately: from 0.4 g/L lead to 0.3 g/L and from 97 RON to 96 RON. The oil refining

industry association (Australian Institute of Petroleum, AIP), in order to coordinate changes to the industry on a national basis, requested the timing of the NSW reduction in lead levels take place at the beginning of 1994. It is the industry goal to standardise the lead levels in fuel across Australia by the end of 1995 following changes to existing and different refinery configurations in each state.

7.2.2 The proposed move to 0.2 g/L lead in petrol at the end of 1994 (provided that octane demand can be significantly reduced) identifies the concerns of the automotive manufacturers in allowing the octane rating of fuel to drop below the already disputed level of 96 RON to approximately 95 RON. (There is an approximate relationship of lead level to octane rating as follows: 0.4 g/L = 97 RON; 0.3 g/L = 96 RON; 0.2 g/L = 95 RON. This is not, however, an entirely linear relationship as octane boost to fuel decreases as more lead is added.) If octane demand in the vehicle fleet is required to be met, alternative octane boosters must be used. To date, all possible alternative octane boosters have either economic, environmental or health trade-offs to be considered. The current lead additive is agreed by all parties to be the cheapest and most efficient means of boosting octane.

7.2.3 The NSW Department of Health intends to undertake a blood lead survey in NSW to ascertain the mean blood lead level of the NSW population in keeping with the new National Health and Medical Research Council's decision to set a blood lead goal for all Australians of 10 µg/dL. However, the blood lead data from this survey will not be available until the end of 1994 and will in fact be baseline data **only** and will not show any trends from the lead in petrol reduction program. Such comparative analysis between this baseline data and subsequent data will be available in a number of years when the blood lead survey is repeated.

The EPA will continue to monitor ambient lead in air levels as part of the Metropolitan Air Quality Study (MAQS). The sales figures of leaded and unleaded petrol supplied from industry will also give an indication of the trend of petrol sales. Such information will be used to assess the degree to which the reduction of lead in petrol impacts on the population and environment.

7.2.4 With the agreement of the refining industry and service stations, it is proposed to make service stations a major point of information dissemination regarding leaded petrol usage, the environmental benefits of using unleaded petrol and identification of those older cars which could switch to unleaded petrol without engine modification. At its October meeting, ANZECC endorsed the development of a national lead education campaign to inform Australians about the need to reduce the amount of lead entering the environment. The EPA has commenced work with the Commonwealth EPA on the national awareness campaign to encourage the switch to unleaded petrol which will be a key message of the campaign.

In NSW, older vehicles must undergo a yearly vehicle inspection for road worthiness by authorised inspectors. It is proposed that information regarding those pre-1986 vehicles which can use unleaded petrol without modification be circulated to vehicle inspectors to enable them to bring this fact to the attention of the owner during such inspections.

The NRMA has indicated support of the "switch" program to its members through articles in its' "Open Road" magazine and is considering reminders at the time of membership renewal. A similar approach is being considered by the Roads and Traffic Authority (RTA) at re-registration time.The proposed education campaign will also be encouraging owners of leaded vehicles to properly maintain their vehicles to reduce lead emissions and consider the need to use these cars to further reduce their impact. Public transport and "zero-emitters" (such as pedestrians and cyclists) will be encouraged as alternatives and a means to decrease lead emissions.

7.2.5 The move to rename "Super" petrol "Leaded" at bowsers also has the support of the oil refiners and the service station operators and they have agreed to implement a voluntary program to relabel such fuel over the next few months. This has already begun at significant cost to fuel retailers. Changes regarding fuel nomenclature could also be recommended for inclusion in the Australian Standard for fuel (AS1876) and this will be further investigated if fuel outlets do not adequately take on the responsibility of a relabelling program.

7.2.6 It was felt to be important to approach the Commonwealth for return of some or all of the funds collected in NSW with the new fuel levy for use in abating the lead problem in this state. In collecting the new tax on leaded petrol, the Commonwealth will acquire in excess of $25 million per year in NSW per one cent increase. These funds will presumably go to the Federal Government's consolidated revenue. It is assumed that a proportion of this tax will be utilised for the proposed Commonwealth education program.

However, states such as NSW are facing significant expenses with regard to the proposed lead health survey of the community, abatement of lead contaminated areas such as Broken Hill and Boolaroo, and provision of abatement advice and assistance to those metropolitan residents concerned with soil contaminated by lead from vehicle emission fallout. The need for such advice and services will increase with the proposed Commonwealth education campaign. It is considered that those car owners who may suffer from the increase in leaded fuel price most, and are least able to buy a newer unleaded car, would see improved public transportation as addressing any perceived equity questions.

7.2.7 The AIP is currently undertaking engine testing for octane requirements of pre-1986 in its capacity as a member of the Australian Cooperative Octane Requirement Committee (ACORC). The results of this work have been made available to the NSW EPA and all State and Territory Environment

Ministers along with the Federal Environment Minister. This work indicates that pre-1986 vehicles, designed to operate on 97 RON fuel, do not need this level of octane as a result of engine wear over years and can operate on 96 RON fuel without adverse effects.

7.2.8 Alternative octane enhancers will be required if it is found that, as a result of the proposed octane requirement investigations, octane must, however, be enhanced. The recent Federal Government budget has also made provision for research into alternative fuel additives. The experience of other industrialised nations is already in hand and more information is being sought. Analysis of each alternative octane enhancer (should such be found to be necessary following research into engine octane requirement) must involve economic considerations (in terms of balance of trade), environmental effects (for instance, an increase in green house gas emissions from the refinery process) or health problems (such as cancer).

7.3 LONG TERM PROPOSALS

In addition to the short term strategy, the NSW Lead in Petrol Working Group has also proposed the following long term strategy to reduce the impact of lead arising from vehicles and vehicle emissions in NSW:

7.3.1 The Lead in Petrol Working Group recommends that concerted efforts should be made to achieve further reductions in the lead content of petrol, consistent with satisfactory operation of the "leaded" vehicle fleet (ie. those pre-1986 vehicles unable to operate satisfactorily on currently specified 91 RON unleaded petrol). The following targets are suggested:

7.3.1.1 Average lead content of leaded petrol of 0.15 g/L (the prevailing standard in the EEC and many OECD countries) and a maximum of 0.2 g/L by the end of 1994;

7.3.1.2 0.05 g/L (or such other level considered to be the minimum required to protect valves of "leaded" engines) by the end of 1995;

7.3.1.3 zero lead by the end of 1996.

These targets should be legislated as soon as possible.

The following associated matters should be vigorously explored to determine the extent to which they might assist in achieving these targets:

(a) the capacity of the petroleum refining industry to reduce the lead levels while maintaining satisfactory octane and environmental performance;

(b) the capacity of the "leaded" fleet to operate satisfactorily on reduced octane fuel;

(c) the feasibility, costs, and benefits of using alternative fuel additives to protect the valves of "leaded" engines.

7.3.2 The Lead in Petrol Working Group strongly supports initiatives that aim to:

7.3.2.1 increase the modal share of public transport and non-polluting transport forms and;

7.3.2.2 limit and reduce overall noxious transport emissions (including lead).

Such initiatives might include fixed track transit systems, bus priority programs, car pool schemes, and broad based public education campaigns.

Transport and land use planning at the state, regional and local levels should be integrated and acknowledge the need to limit and reduce noxious emissions from transport related sources. Planning based measures to limit and reduce noxious emissions include urban design, which addresses social equity, favours accessibility over mobility, and the concentration of development at nodes well served by public and non-polluting transport modes. Pricing mechanisms that reflect the advantages of public transport over private cars should be investigated.

7.3.3 The Lead in Petrol Working Group recommends comprehensive standards for petrol be developed that will promote protection of human health, safety and the environment as well as optimum technical performance. These standards should provide a basis for decision making in such matters as petrol composition, alternative fuels, engine design, and refinery development.

7.3.4 The Lead in Petrol Working Group believes that there is considerable merit in the use of economic instruments, such as price differential between leaded and unleaded petrols or tradeable rights, in reducing the amount of lead entering the environment from petrol. These economic instruments should target all stakeholders ie. refiners, distributors, and consumers.

7.3.5 The Lead in Petrol Working Group recommends that at the review time agreed at the Canberra Roundtable (July 1994), consideration should be given to the need to review the tonnage of lead used in petrol, and at that time, set targets for continued reduction of total lead used in petrol.

7.3.6 The Lead in Petrol Working Group recommends that the NSW Government assist, wherever possible, the Federal Government in testing and implementing alternative octane enhancers and fuel additives to protect valves of "leaded" vehicles.

REPORT OF THE

LEAD IN SOIL AND DUST

WORKING GROUP

Prepared for the

NSW GOVERNMENT LEAD TASKFORCE

January 1994

RECOMMENDATIONS

The Lead in Soil and Dust Working Group recommend to the NSW LEAD TASKFORCE that:

1. the Taskforce ensure that a watching brief for worlds best practice be maintained for the environmental management of lead.

2. a preliminary self assessment questionnaire be developed as part of the community education material.

3. health risk assessment be coordinated between the different Working Groups and that an appropriate questionnaire be developed for use when undertaking blood lead tests.

4. comprehensive education campaigns be developed for important target groups such as local council officers, health-care providers, parents, property owners, day-care providers, and early childhood educators, in consultation and coordination with National, State and Local Governments, and the community.

5a. the uppermost 20 mm soil sample be taken for health risk assessment purposes, and the uppermost 50 mm soil sample for site assessment purposes.

b. during sample preparation sub-samples representing the less than 2 millimetre and less than 150 micrometre particles should be prepared for lead determination.

c. the above recommendations 5a and 5b be forwarded to Standards Australia for consideration by the Committee CH/28 Analysis of Soils and Biota.

d. the sampling program design, sampling techniques, sample preparation and sample analysis procedures once drafted by Standards Australia CH/28 be assessed by the Lead Taskforce, and if appropriate, be adopted as part of the lead strategy.

6a. research should be directed to provide a standardised method of house dust collection, sample preparation and sample analysis.

b. research should be directed to test domestic and industrial filters on vacuum cleaners and other appliances for their ability to filter fine dust particles of less than 5 micrometres in size.

c. techniques for cleaning lead containing dust from all exterior and interior household surfaces and objects should be evaluated, consistent with ecologically best practices.

7. research should be directed to provide a standardised method of assessment of bioavailability of lead from soil and dust.

8a. a program be directed to collect all available data to identify areas of risk and lead contaminated sites.

b. the information gained from 8a be coupled with results of available blood lead testing and related surveys to create the most accurate picture of community lead hazards including sources, exposure patterns and high risk populations.

c. the information gained from 8b form the basis of a primary prevention plan which should include education, infrastructure development and hazard abatement.

9. the Government provide regulations and/or guidelines on the abatement and safe removal of lead, and the training, certifying and monitoring of lead abatement contractors and assessors.

10. further research be conducted into disposal options for highly contaminated soils, dusts and sludges.

11. a review be conducted to assess the use, effectiveness and need for revision of the Department of Planning's Circular C-20, the stages in the planning process at which lead contamination issues should be considered, and Council s.149 certificates - notices of encumbrances.

12. the roles of Federal, State and Local Government in the lead strategy be clearly identified and appropriately resourced to undertake those roles.

13. the NSW Environment Protection Authority (EPA), possibly through the Taskforce, needs to address prevention strategies in a comprehensive manner consistent with ecologically sustainable development.

14. funding be provided to establish a dedicated lead program which incorporates all aspects of lead health problems and lead in the environment including responsibility for coordination of issues related to health, education, monitoring, research and abatement. The program should report annually to Parliament and be reviewed after 5 years.

15. financial and other liabilities in respect of contaminated site remediation need to be addressed and that the Lead Taskforce refer the matter for resolution to the Australian and New Zealand Environment and Conservation Council (ANZECC).

16. the Taskforce's final report contain a glossary of terms and/or definitions to ensure a common understanding of the issues, for example, the meanings of remediation and abatement.

REPORT ON LEAD IN WATER AND WASTEWATER

PREPARED FOR THE INTERDEPARTMENTAL LEAD TASK FORCE

BY THE WORKING GROUP ON LEAD IN WATER AND WASTEWATER

DECEMBER 1993

SECTION 2; RECOMMENDATIONS

Listed below are the recommendations arising from the report. They are grouped into categories related to the areas where the working group felt strategies could be developed to minimise lead risk from the water and wastewater system. These are discussed in Section 7 of the report under the headings of Data Collection, Education, Materials and Standards and Water Sources and Water Treatment.

2.1 Data collection

7.2.1 RECOMMENDATION *It is recommended that agencies responsible for water and wastewater systems and ambient environmental monitoring undertake a regular sampling program of sufficient frequency and cover to adequately typify the level of lead within their systems.*

7.2.2 RECOMMENDATION *It is recommended that the data on lead within the water and wastewater system be included in the EPA State of the Environment report, to enable the effectiveness of reduction initiatives to be monitored.*

7.2.3 RECOMMENDATION *It is recommended that in areas of high lead exposure means of minimising the cost to the individual for lead analysis of drinking water be investigated.*

7.2.4 RECOMMENDATION *It is recommended that specific information on sectors such as schools, multilevel buildings, lead in bottled water and rainwater tanks and the potential for water filters to remove lead be collected to determine the level and exposure to lead of these sectors.*

2.2 Education

7.3.1 RECOMMENDATION *It is recommended that an education campaign should be directed at the whole community with specific emphasis on special groups such as carers of very young children, lead industry workers and do it yourself plumbing.*

7.3.2 RECOMMENDATION *It is recommended that the education campaign should clearly describe the relative risks associated with all components of the lead issue.*

7.3.3 RECOMMENDATION *It is recommended that the education campaign concerning water and wastewater should emphasise the individuals ability to minimise their exposure by simple behavioural changes.*

7.3.4 RECOMMENDATION *It is recommended that the education campaign should clearly explain the relative importance of different lead sources to human exposure levels and the interaction between the components.*

*7.3.5 **RECOMMENDATION** It is recommended that education initiatives be developed on a needs basis for specific areas within the water and wastewater system such as schools and multi level buildings or areas with known high lead levels.*

2.3 Materials and standards

*7.4.1 **RECOMMENDATION** It is recommended that the allowable level of lead in plumbing products should be reduced to the minimum practical level necessary for efficient manufacture of fittings.*

*7.4.2 **RECOMMENDATION** It is recommended that environmentally benign alternatives to lead be investigated for plumbing products.*

*7.4.3 **RECOMMENDATION** It is recommended that all solders be marked as either suitable or unsuitable for use in plumbing systems and that education initiatives be undertaken available at point of sale.*

*7.4.4 **RECOMMENDATION** It is recommended that an agreed standard method for the extraction of metals from products in contact with drinking water [AS4020(int)] should be developed as a matter of priority by the appropriate bodies.*

*7.4.5 **RECOMMENDATION** It is recommended that the draft NH&MRC (1993) guideline value of 10µg/L in water clearly state at what point in the system and what type of water (first draw or flushed) the guideline applies to.*

*7.4.6 **RECOMMENDATION** It is recommended that water supply authorities and individuals take action to reduce the lead present in systems under their control whenever the opportunity arises.*

2.4 Water sources and water treatment

*7.5.1 **RECOMMENDATION** It is recommended that, as a result of better data collection, water supplies with high levels of lead should be reported and exposure reduction strategies developed and applied. Special consideration should be given to domestic situations with high lead levels.*

*7.5.2 **RECOMMENDATION** It is recommended that where the potential exists within water treatment systems, treatment be introduced to reduce the level of lead leaching from supply systems into drinking water.*

*7.5.3 **RECOMMENDATION** It is recommended that guidelines for the application of biosolids and sewage effluent to land within water supply catchments be strictly regulated to minimise entry of lead to water supply waters.*

Section 7

The Collated Recommendations of the *Report of the New South Wales Interdepartmental Lead Taskforce Lead Management Action Plan 1994*

3.1 INTRODUCTION TO THE LEAD MANAGEMENT ACTION PLAN

3.1.1 Overview
3.1.2 Discussion

3.1.1 OVERVIEW OF THE ISSUES

- Many strategies have already been implemented in NSW to reduce lead loading on the population and on children in particular. The outcomes of these strategies are already benefiting the NSW community.

- There are some instances however, where additional controls need to be implemented in order to provide comprehensive management of exposure pathways.

- This enhancement of lead management strategies has in part been made necessary by recent, and in some cases significant, reductions in national goals and standards for various lead parameters.

- Achievement of the new goals may in many cases be reached by expediting existing programs. In other cases it may require the development of new strategies and protocols, the modification of regulations or a revision of monitoring and data collection procedures to ensure that lead levels in air, blood, water etc, comply with the new, lower goals.

- Although many strategies have been recommended, the nine Working Groups identified the development of comprehensive education programs and the development and provision of clear, accurate and easily accessible information as a major component of the Lead Management Action Plan.

- Approximately ten Commonwealth, State and local government agencies have been identified as having responsibilities under the Lead Management Action Plan. In particular, the development of education material on lead issues has been identified as the responsibility of a number of government departments even though the material will often incorporate similar key messages.

- It is difficult to differentiate between -the management responsibilities of relevant authorities on lead issues which impact on both environmental and/or public health issues.

- Without central co-ordination, undertaking many of the tasks identified in the Lead Management Action Plan will eventuate in significant duplication of expertise and resources. Nor will it be possible to ensure that work undertaken by one Organisation is utilised to provide solutions satisfying the objectives of other agencies whenever possible.

- Achievement of the NSW Government's goal of effectively resolving the range of lead issues will therefore depend on effective central co-ordination. To facilitate this, one agency should be responsible for overall implementation of the strategy. It is therefore proposed that a Lead Reference Centre be established to carry out these functions.

- Where tasks have been allocated to non government organisations, the Lead Reference Centre should also be responsible for liaising with these organisations to encourage the undertaking of designated tasks.

3.1.2 DISCUSSION

1. The Lead Reference Centre

The Lead Management Action Plan proposes the establishment of a Lead Reference Centre with the following responsibilities:

- coordinating the completion of the various lead management strategies set out in the Lead Management Action Plan and ensuring that allocated tasks are undertaken by agreed dates

- implementing and further developing the proposed education strategies contained in the Lead Management Action Plan

- developing education materials and programs as identified in the above strategies

- developing an implementation strategy to distribute education material to target audiences

- responding to community inquiries on lead education, primarily on a 008 line to be established by the Centre

- maintaining best practice in lead management strategies particularly in the area of education assisting community Environmental Lead Centres, if established, with the development of education material, information sheets and programs as required (the Lead Reference Centre will function in effect as a lead education material resource base)

- assisting with the development of material and education programs on lead issues for incorporation into courses for TAFE, the Board of Studies, and other learning institutions identified by the Lead Education Working Group

- providing advice and other assistance to the Master Painters, Decorators and Signwriters Association on development of the painter accreditation system, a proposed register of tradespeople and contractors trained in the removal of lead paint

- ensuring that all education material is developed in a consistent manner and conveys the most current understanding on effective management strategies and abatement techniques

- maintaining close liaison with other national and international centres undertaking lead education and intervention programs

- collecting reports and data for inclusion in the State of the Environment Report

- maintaining information on consultants, laboratories, accredited painters etc, services provided by other Government authorities on lead issues and keeping an inventory of other lead risk reduction services provided by private industries (for example, air monitoring, carpet cleaning, waste disposal and paint testing)

- developing annual reports to government on the outcomes, objectives and future targets of the Lead Reference Centre

- developing strategies for the provision of ongoing services on lead issues for the community beyond the life of the Centre.

The lifespan of the Lead Reference Centre will be limited. A review of the continuing function of the Lead Reference Centre should occur after 2 years. Within this period the Lead Reference Centre should have developed adequate education information and technical advice to allow the continuing responsibilities of the Centre to be transferred to appropriate authorities such as NSW Health, the EPA, the Water Board, the Department of Education and NSW Public Works.

In addition, the Lead Reference Centre will need to substantiate some of the advice incorporated into the information sheets. Although much of this validation can be obtained from international literature, there will be a need to undertake trials and testing to validate some information. Some of these issues can be resolved through the initiation of trial programs undertaken in point-source communities such as Broken Hill. Provision should be made in the budget for the Centre for the undertaking of research into some specific issues which can not be resolved through other means.

Such issues should be identified by the Lead Reference Centre or the Environmental Lead Centres within six months of establishment.

2. Environmental Lead Centres

The Lead Management Action Plan also proposes, if warranted, the establishment of Environmental Lead Centres in those point-source communities where significant risk has been established. These Environmental Lead Centres will focus directly on resolution of the lead contamination issues faced by point-source communities, such as Broken Hill, Port Kembla and North Lake Macquarie. The Environmental Lead Centres would be required to:

- co-ordinate and implement strategies set out in the Lead Management Action Plan to reduce lead hazards
- in conjunction with the Lead Reference Centre, develop lead education material reflecting the specific needs of the community
- attempt to identify all children within the community with elevated blood lead levels
- actively seek to involve the community in blood lead testing programs, education programs and other exposure pathway intervention programs such as greening
- resolve specific community needs and problems
- provide a comprehensive strategy to control all exposure pathways
- provide trained personnel to implement the proposed management strategies
- provide, in association with NSW Health, clinics to test blood lead levels of local children
- provide an effective interface with the community
- assist with inquiries on other lead issues (eg vehicle emissions and lead based paint removal)
- operate in close liaison with other Environmental Lead Centres, if established, and the Lead Reference Centre.

If established, the following staff should be employed at each Centre as a minimum:

- a health trained person to undertake blood lead testing, provide advice on health issues, and to provide counselling to parents
- an environmental science trained person to undertake sampling of home environments
- an education officer to develop key education strategies.

Consideration should be given to the development of a strategy that would ensure industry funding of these Centres jointly with government.

3. Strategies for Specific Issues

The Lead Management Action Plan also sets out objectives and strategies to resolve the specific lead issues discussed in section 2.

3.2 CORE STRATEGIES OF THE LEAD MANAGEMENT ACTION PLAN

GOAL

Through the establishment of a well structured coordination framework, maximise the effectiveness of lead management strategies, minimise unnecessary duplication of activities and optimise resources.

This section sets out core objectives and strategies of the Lead Management Action Plan:

- the establishment of a Lead Reference Centre
- the establishment of Environmental Lead Centres in point-source communities, if found to be warranted by investigation.

1. Establishment of a Lead Reference Centre

Objectives:

To ensure that the Government's lead management strategies are implemented in a coordinated and objective manner.

To undertake the production of education materials and programs which ensure that the Government's lead education strategies are developed with consistent messages and in a way which optimises Government resources.

To liaise with non government organisations which have been nominated tasks in the Lead Management Action Plan to encourage the undertaking of the designated recommendations.

To collaborate with key Government agencies to promote the implementation of lead education strategies by these agencies.

Strategy:

Establishing and resourcing a Lead Reference Centre. The Lead Reference Centre should operate out of an existing Government agency such as the EPA, and comprise a small group of dedicated professionals who facilitate the implementation of the Government's lead management strategies and develop comprehensive and coordinated education material and education programs on a variety of lead issues.

(Strategy implementation: NSW Government, co-ordination by the EPA)

2. Establish Environmental Lead Centres In Point-source Communities

Objectives:

To co-ordinate the implementation of strategies designed to reduce the lead hazard in point-source communities and to provide an interface between the community, the government and industry.

Strategy:

The establishment of community Environmental Lead Centres in point-source communities where a significant lead contamination problem has been found to exist and where the management strategy has identified that abatement actions should be implemented. The functions of the Environmental Lead Centres would be:

- to develop and implement problem-specific lead management strategies
- to develop protocols and action plans to resolve local issues
- to develop, in conjunction with the proposed Lead Reference Centre, targeted education material
- to provide an interface with the local community.

These Centres would be established where environmental and health investigations have identified a specific need to manage exposure to community lead.

(Strategy implementation: NSW Government, co-ordination by NSW Health and the EPA; NSW Government to seek joint funding from industry)

3.3 LEAD IN AIR

GOAL

To outline management structures which, when implemented, will ensure that the impact of lead in air on the elevation of blood lead levels is minimised.

The Lead in Air component of the Lead Management Action Plan sets out objectives and strategies on the following issues:

- identification of problems
- control of fugitive and point-source emissions
- education
- review of standards.

1. Identification of Problem Areas

Objective:

To determine high exposure risk sites and populations and to assess ambient lead loadings for areas where more than one exposure source may be present in a particular area.

Strategies:

(1) Undertaking source emission inventories. Estimates of emission rates from sites which produce or incorporate lead products should be undertaken and updated regularly. The information should be included in the State of the Environment Report.

(Strategy implementation: Industry, with emission inventory design, with the co-ordination and collation of results for incorporation into the State of the Environment Report being undertaken by the EPA)

(2) Undertaking blood lead sampling of high risk populations to determine if the lead exposure pathways are impacting on community health.

(Strategy implementation: NSW Health in association with the Commonwealth EPA and the NHMRC. Co-ordination and strategy development to be undertaken by NSW Health)

2. Control of Fugitive and Point-source Emissions

Objectives:

To minimise and control the incidence of lead emissions to air from both point and linear (eg. roads) sources.

To reduce the rate of accumulation of lead in soils and dust as a consequence of air emissions.

Strategies:

(1) Develop management strategies to address point sources with high emission rates. Issues to be incorporated into the management strategy includes:

- fugitive emissions
- regular stack emissions testing for factories (testing rates should vary depending on emission rates).
- public access to monitoring data and information contained in licence conditions

(Strategy implementation: Industry; coordinated by the EPA)

(2) Develop management strategies to control non-point source emissions such as-.

- the removal of lead based paints from public structures
- demolition of buildings

(Strategy implementation: Australian Institute of Environmental Health, local councils; EPA to produce guidelines)

3. Education

Objectives:

To achieve a reduction in lead in air emissions through education initiatives.

Where significant exposure risk exists from lead in air emissions, to provide detailed information on risk minimisation strategies which can be implemented by a wide range of organisations or by individual members of the public.

Strategies:

(1) Develop specific education material for high risk communities which can be incorporated into a broad lead education campaign.

(Strategy implementation: Lead Reference Centre with input from existing Environmental Lead Centres and appropriate organisations)

(2) Develop information sheets to distribute to exposed communities on practical risk reduction techniques for intercepting exposure pathways within the home environment.

(Strategy implementation: EPA, Health; coordinated by the Lead Reference Centre)

(3) Provide ready access to information and strategies to the community. This should be undertaken as part of the broad strategy to be developed by the Lead Reference Centre

(Strategy implementation.- Lead Reference Centre, Environmental Lead Centres)

4. Review of Standards

Objective:

To review standards and monitoring protocols to determine the adequacy of these standards to protect the community at the new NHMRC goal for population blood lead levels.

Strategies:

(1) Request that the NHMRC review the national goal for ambient air lead levels and determine, through risk assessment, if it enables the achievement of the new blood lead goals for populations where exposure to lead is high.

(Strategy implementation: NHMRC with assistance from state health and environment agencies; coordinated by the EPA and the Lead Reference Centre)

(2) Request that the NHMRC, in conjunction with ANZECC, establish a monitoring protocol for taking samples to determine compliance with the NHMRC goals and objectives.

(Strategy implementation: NHMRC with assistance from state health and environment agencies; coordinated by the EPA and the Lead Reference Centre)

3.4 LEAD IN BROKEN HILL - incorporates strategies for North Lake Macquarie and Port Kembla

GOAL

To implement a comprehensive strategy to address the lead specific problems in Broken Hill which are aimed at reducing the high incidence of elevated blood lead levels amongst Broken Hill children.

The Government required that the Lead in Broken Hill Working Group report back as a matter of priority with a strategy to manage the high degree of environmental lead contamination in Broken Hill. Consequently, the activities of the Working Group focused primarily on the development of an action plan for the short term management of lead contamination in Broken Hill.

Earlier work by the NSW Health Department, the Broken Hill Environmental Health Steering Committee and a report by the consulting group, Woodward-Clyde Pty Ltd commissioned by the EPA, on the Evaluation of Environmental Lead at Broken Hill were extensively used in the development of the strategy.

The Working Group's short term strategy for Broken Hill was submitted to Government in late 1993. In February 1994, the NSW Government committed $3.37 million to implement this short term strategy.

1. Strategy Management

Objective:

To co-ordinate an integrated strategy to reduce the incidence of high blood lead levels in Broken Hill children.

Strategies:

(1) Establish the Broken Hill Environmental Lead Centre to co-ordinate the implementation of the short term strategy and to provide a prominent interface with the Broken Hill community.

(Strategy implementation: NSW Government through NSW Health to establish the Broken Hill Environmental Lead Centre)

(2) Employ appropriate professional and support staff, including an office manager, scientific officers, clerk of works and technicians to implement the strategy.

(Strategy implementation: Relevant authorities such as NSW Health, the EPA and the local council to establish the terms of reference for the Broken Hill Environmental Lead Centre and to employ appropriate staff)

2. Blood Lead Surveillance

Objective:

To identify and monitor Broken Hill children with elevated blood lead levels.

Strategies:

(1) Provide trained community nursing staff to undertake blood lead monitoring.

(2) Establish clinic facilities within the Environmental Lead Centre.

(3) Offer routine testing for all pre-school children and newborn babies.

(4) Target all children under five years of age in Broken Hill for inclusion in the blood lead screening program

(5) Monitor all children with high blood lead levels

(6) Evaluate the effectiveness of interventions used to lower blood lead levels.

(Strategy implementation.- All strategies will be implemented by the Broken Hill Environmental Lead Centre)

3. Management Response

Objective:

To provide rapid and effective response actions when children are found to have elevated blood lead levels.

Strategies:

(1) Remediation and/or abatement of lead contamination in the home environment of children identified as having high blood lead levels. The necessary equipment required to undertake the investigation and remediation or abatement work will be provided to undertake this strategy.

(2) Provide emergency housing for families of children with very high blood lead levels. This housing should be provided until their home environments have been remediated or their blood lead levels have stabilised.

(Strategy implementation: All strategies will be implemented by the Broken Hill Environmental Lead Centre)

4. Community Liaison and Education

Objectives:

To design and implement an effective education program aimed at achieving a better understanding of the problems associated with lead within the community.

To provide comprehensive information on management options available to the people of Broken Hill.

Strategies:

(1) Provide a full time community education officer to develop specific education programs to service the needs of the local community. Effective programs will need to evolve with the implementation and findings of the short term strategy.

(2) Liaise closely with the Lead Reference Centre to ensure the wide distribution of education material developed in Broken Hill and which is of relevance to other state-wide lead issues.

(Strategy implementation: All strategies will be implemented by the Broken Hill Environmental Lead Centre)

5. Evaluation

Objective:

To design and implement a program to evaluate the effectiveness of remediation and other intervention actions.

Strategies:

Evaluate the remediation or intervention programs undertaken at the homes of children with high blood lead levels. Assess the effectiveness of the interim intervention remediation protocols.

(Strategy implementation: Broken Hill Environmental Lead Centre)

LEAD IN POINT-SOURCE COMMUNITIES

A. NORTH LAKE MACQUARIE INTERIM ACTION PLAN

The interim action plan has two components:

- development of comprehensive risk reduction strategies
- to further reduce point-source and fugitive emissions.

The interim action plan may need to be augmented depending on the outcomes of these preliminary measures.

A.1 Development of Comprehensive Risk Reduction Strategies

North Lake Macquarie

Objective:

To determine the magnitude and effects of lead contamination on public health and the environment in the North Lake Macquarie area and to develop appropriate risk reduction strategies based on this information.

Strategies:

(1) Employment of a person to assess and co-ordinate all projects undertaken in the area and to assess all available data on the extent of the lead contamination.

(Strategy implementation: Co-ordinated by the EPA)

As indicated necessary by the implementation of strategy (1) undertake the following:

(2) Review the function of the existing Environmental Health Centre and augment these functions if necessary.

(Strategy implementation: Undertaken by a consultative committee incorporating government, community representatives and industry representatives)

(3) Develop information for the community giving clear and effective advice on how to intercept exposure pathways and minimise the impact of lead.

(Strategy implementation: Undertaken by the Environmental Lead Centre with assistance from the Lead Reference Centre and relevant authorities)

(4) Develop and implement a comprehensive education strategy

(Strategy implementation: Undertaken by the Environmental Lead Centre with assistance from the Lead Reference Centre and relevant authorities such as Dept of School Education)

A.2 Further Reduce Point-Source and Fugitive Emissions - North Lake Macquarie

Objective:

To reduce the impact of the smelter on the local environment and eliminate where possible the recontamination of the remediated environments.

Strategies:

(1) Continue and enhance the co-operative effort between industry and the regulating authorities to investigate point source and fugitive emissions and to reduce these emission rates where ever possible.

(2) To implement a staged and targeted reduction program based on the findings of the above investigations.

(Strategy implementation: to be undertaken by the company implementing a program developed in consultation with the EPA and the community)

B. PORT KEMBLA INTERIM ACTION PLAN

The Port Kembla Interim Action Plan has two components:

- quantification of the lead problem in Port Kembla
- determination of lead emission rates from the smelter.

The Interim Action Plan may need to be augmented depending on the outcomes of these preliminary measures.

B.1 Quantification of the Lead Issue - Port Kembla

Objective:

To determine the magnitude and effects of lead contamination on public health and the environment in the vicinity of Port Kembla and to develop a comprehensive management strategy where appropriate.

Strategies:

(1) Development and implementation of an investigation program to determine the status of environmental contamination and the consequent effect on public health in the vicinity of the Port Kembla smelter.

(Strategy implementation: a multidisciplinary team incorporating NSW Health, the EPA, industry and local government. Strategy development and co-ordination to be undertaken by NSW Health)

(2) Develop an Action Plan for the management of lead contamination issues which is based on the findings of the investigation program. The Action Plan could incorporate the establishment of an Environmental Lead Centre if appropriate and the development of an education strategy.

(Strategy implementation: a multidisciplinary team incorporating NSW Health, the EPA, industry and local government. Strategy development and co-ordination to be undertaken by NSW Health)

B.2 Determination of the Lead Emission Rates from the Smelter - Port Kembla

Objective:

Determine the impact of the smelter on surrounding areas by accurately determining the rate of emissions from the plant.

Strategy:

Establish emission rates for fugitive and point source emissions from the smelter by undertaking a comprehensive audit of the plant.

(Strategy implementation: Fugitive and point-source emission rates from the smelter should be established by the company. The EPA should be responsible for ensuring that this action is undertaken)

3.5 LEAD IN CHILDREN'S BLOOD

GOAL

To determine the extent of childhood lead exposure in New South Wales and to evaluate public health and clinical interventions aimed at reducing blood lead levels.

The Lead in Children's Blood component of the Lead Management Action Plan sets out objectives and strategies on the following issues:

- surveillance
- quality control
- education
- evaluation.

The establishment of the Lead Reference Centre underpins the successful implementation of these objectives and strategies.

1. Surveillance

Objectives:

To describe the distribution of blood lead levels in NSW children and characterise risk factors associated with elevated blood lead levels.

To evaluate opportunistic hospital based blood lead surveillance as an alternative means for estimating population trends in blood lead levels.

Strategies:

(1) Conduct a random sample blood lead survey of children living in NSW.

(Strategy implementation: developed and funded by CEPA, initiated and undertaken by NSW Health)

(2) As part of the blood lead survey include a questionnaire on potential risk factors for elevated blood lead levels.

(Strategy implementation: NSW Health)

(3) Compare the costs and the results of blood lead levels obtained through hospital based surveillance with the levels obtained by a community based survey (the "gold" standard).

(Strategy implementation: NSW Health)

2. Quality Control

Objective:

To develop and disseminate guidelines for health care workers and laboratory staff which detail minimum standards for blood lead sampling, analysis and reporting.

Strategies:

(1) Develop blood sampling guidelines based on Australian Standard 2636 for distribution to general practitioners, paediatricians and other health care workers who are likely to carry out blood lead testing.

(Strategy implementation: NSW Health)

(2) Develop national reporting guidelines for pathology laboratories undertaking blood lead testing. The guidelines could be included as part of the Australian Standard for blood lead analysis (AS 4090.1).

(Strategy implementation: Developed by NSW Health and Standards Australia)

3. Education

Objectives:

To educate health care workers about the clinical management of children with elevated blood lead levels and provide information for at risk children and advice on which children should be tested.

To develop community education materials which provide practical information about ways to reduce the lead hazard.

Strategies:

(1) Develop and disseminate guidelines for health care workers.

(Strategy implementation: Liaison between the NSW Government and the Commonwealth to be undertaken by the Lead Reference Centre in conjunction with NSW Health)

(2) Develop lead education materials for targeted groups within the community.

(Strategy implementation: Lead Reference Centre)

4. Evaluation

Objective:

To evaluate the effectiveness of lead management strategies (including education) implemented in New South Wales.

Strategy:

Establish a blood lead surveillance system based on either:

- repeated community surveys or
- hospital based opportunistic surveys.

(Strategy implementation: NSW Health with co-operation from the Lead Reference Centre)

3.6 LEAD EDUCATION

GOAL

To assist the community to achieve a reduction in the impact of lead from petrol, from paint, in soil and dust, in the air and in water through an increase in understanding of a range of lead issues.

The lead education component of the Lead Management Action Plan sets out objectives and strategies on the following issues:

- knowledge
- development of community education material
- development of training and education programs
- development of targeted community education material.

The establishment of the Lead Reference Centre and, if required, the Environmental Lead Centres underpins the successful implementation of the proposed lead education strategies.

Education strategies should be evaluated on an ongoing basis to determine the effectiveness of implemented programs and to direct future actions.

1. Knowledge

Objective:

To raise the general level of awareness within the community of the potential risk of environmental lead contamination.

Strategies:

(1) Develop broad education strategies using a low level media campaign which provides information on the sources of lead contamination and ways of minimising exposure to these sources.

(2) Develop strategies for the wide distribution of general information to specific target groups (eg pre-1986 car users and parents of young children).

(3) Develop distribution strategies for general information to broad target groups (eg information on lead paint issues).

(4) Print lead education material in a range of community languages.

(Strategy implementation: All of these strategies will be developed by the Lead Reference Centre with input from relevant agencies. In specific instances (such as the development of education material on detailed health issues), it will be more appropriate for individual agencies to develop the education material In these cases the Lead Reference Centre will be responsible for identifying the agency and the education message.)

2. Development of Broadly Targeted Community Education Material

Objective:

To reduce the population mean blood lead level through implementation of education strategies aimed at both preventing lead exposure and reducing the impact of current or historic lead emissions.

Strategies:

(1) Promote the use of unleaded petrol among those people who drive cars manufactured before 1986.

(2) Distribute pertinent lead information to pregnant women through the Blue Book System.

(3) Distribute lead in paint information kits through paint retail outlets and local councils.

(4) Distribute a general lead information kit for parents of children less than five years old through childcare and pre-school centres.

(5) Distribute information to child education centres on pertinent lead issues including the identification and management of lead exposure pathways.

(Strategy implementation: All strategies will be implemented by the Lead Reference Centre or by a more appropriate agency identified by the Lead Reference Centre)

3. Development of Training and Education Programs

Objective:

Through structured education courses, increase the understanding and expertise of medical, education and trade professionals who interact with either at-risk communities or lead containing products or processes.

Strategies:

(1) Develop in service training modules for childcare providers.

(2) Develop relevant curriculum material for incorporation into TAFE training courses.

(3) Incorporate information on lead into the appropriate syllabuses of the relevant key learning areas of the NSW K-12 curriculum.

(4) Develop teaching/learning units for NSW schools where lead content is appropriate to the syllabuses.

(5) Incorporate relevant lead education material into courses for medical practitioners and childcarers.

(Strategy implementation.- Lead Reference Centre in co-operation with the Board of Studies, Department of School Education, non-government systems and schools, the TAFE Commission and appropriate child care organisations)

(6) Training of public and community health professionals about lead issues

(Strategy implementation: NSW Health with the assistance of the Lead Reference Centre)

4. Development of Specifically Targeted Community Education Material

Objective:

To provide comprehensive, practical and easily implemented advice to at-risk populations on lead exposure issues and corresponding management strategies.

Strategies:

(1) Develop an information booklet for parents of children affected by high blood lead levels.

(Strategy implementation: Lead Reference Centre with the assistance of relevant authorities; coordinated *by* the Lead *Reference Centre)*

(2) Develop and augment education strategies for point-source communities including Broken Hill, North Lake Macquarie and Port Kembla (in some instances this will necessitate prior work to be undertaken to identify the extent and characteristics of the problem and to develop and evaluate site specific management strategies).

(Strategy implementation: Lead Reference Centre and the *Environmental Lead Centres if required, coordinated* by *the Lead Reference Centre and the* EPA)

(3) Develop information kits outlining exposure routes and exposure management strategies for people whose homes are affected by lead paints or lead from vehicle emissions.

(Strategy implementation: Environmental Lead Centres where these exist in conjunction with relevant agencies. Lead Reference Centre to incorporate information into the education strategy)

(4) Assess the impact and suitability of the DEST Medical Practitioners Kit and identify follow-up actions if necessary.

(Strategy implementation: NSW Health)

(5) Review the lead education program in the context of the needs of the Aboriginal community

(Strategy implementation: the Lead Reference Centre with the assistance of an appropriate liaison committee)

5. Development, Co-ordination and Dissemination of Education Material

Objectives:

To develop, co-ordinate and conduct lead education strategies as well as to assist in the development of education strategies by other government and non government bodies.

To ensure that information messages are developed consistently and, through a comprehensive distribution strategy, to ensure that the development messages reach target audiences.

Strategies:

(1) Development of relevant educational material by the Lead Reference Centre and responsible agencies

(Strategy implementation: Lead Reference Centre with the assistance of relevant agencies)

(2) Review education and training procedures for primary lead industry workers

(Strategy implementation: the WorkCover Authority)

(3) Review and assist the development of lead education material produced for local council implementation.

(Strategy implementation.- the Australian Institute of Environmental Health)

3.7 LEAD IN FOOD

GOAL

To reduce the population lead intake from food sources.

The lead in food component of the Lead Management Action Plan sets out objectives and strategies on the following issues:

- regulation
- surveillance
- education.

The establishment of the Lead Reference Centre underpins the successful implementation of these objectives and strategies.

1. Regulation

Objective:

To maintain appropriate regulations and monitoring procedures for lead in food.

Strategy:

Incorporate any amendments to the Australian Food Standards Code made by the National Food Authority into NSW legislation.

(Strategy implementation: NSW Health)

2. Surveillance

Objectives:

To increase surveillance of lead levels in imported foods.

To undertake surveys of lead levels in uncovered food located near high traffic density areas and take appropriate action.

Strategies:

(1) Review current testing procedures for imported foods as undertaken by the Australian Quarantine and Inspection Service (AQIS)

(Strategy implementation: AQIS, NSW Health to liaise with the Commonwealth Department of Human Services and Health)

(2) Survey lead levels of uncovered food at roadside stalls and market places located on high traffic density roads.

(Strategy implementation:. Public Health Units, NSW Health to write protocol)

3. Education

Objective:

To provide educational material about ways to minimise lead exposure from food sources.

Strategies:

(1) Develop and disseminate information about lead and food preparation and nutrition.

(Strategy implementation: Lead Reference Centre with the assistance of NSW Health)

(2) Provide information on ways to minimise lead exposure from food sources as well as cooking, storage and serving utensils.

(Strategy implementation: Lead Reference Centre with the assistance of NSW Health)

3.8 LEAD IN PAINT

GOAL

To reduce the incidence of acute lead toxicity and to lower the population mean blood lead levels through reduced exposure to leaded paints.

The lead in paint component of the Lead Management Action Plan sets out objectives and strategies on the following issues:

- information and education
- augmentation of administrative and regulatory controls
- development of standards
- development of programs.

The establishment of the Lead Reference Centre underpins the successful implementation of these strategies.

The Lead in Paint Working Group Report (in volume 2) discusses in more detail the proposed amendments to standards.

1. Information and education material

Objectives:

To raise levels of awareness on the impact of leaded paints on young children.

To assist the community to reduce the impact of current and past lead paint removal practices through the provision of advice, guidelines and protocols.

Strategies:

(1) Establishment of a Lead Reference Centre

(Strategy implementation: NSW Government, EPA)

(2) Develop appropriate materials and guidelines on paint containing lead which is targeted at do-it-yourself renovators, building industry professionals, architects, painters and renovation contractors.

(Strategy implementation: Lead Reference Centre with assistance from relevant authorities)

(3) Provide information and advice for tenants of rented accommodation (public and private) on the dangers of leaded paint.

*(Strategy implementation: Department of Housing with the co*operation *of the Lead Reference Centre)*

2. Augmentation of administrative and regulatory control

Objective:

To reduce the extent of problems arising from the use of lead in paint.

Strategies:

(1) Review the Standard for the Uniform Scheduling of Drugs and Poisons to reduce the permissible lead concentration of all paints except zinc based paints as defined by Australian Standards AS 2105 and AS 2204.

(Strategy implementation: NHMRC and NSW Health, coordinated by the Lead Reference Centre and the Government Paint Committee)

(2) Extend the existing prohibitions for the use of First Schedule paints under the Uniform Paint Standard to include industrial buildings and structures, mines and oil terminals, food and drink preparation equipment and utensils and small scale automotive repair work.

(Strategy implementation: NHMRC (NSW Health to adopt into state legislation) in consultation with the Government Paint Committee and with reference to the recommendations of the Lead in Paint Working Group Report)

(3) Develop regulations for contractors removing lead based paints from industrial structures to be registered and develop a code of practice for such contractors.

(Strategy implementation.- WorkCover Authority, coordinated by the Lead Reference Centre and the Government Paint Committee)

(4) Develop regulations for contractors removing lead based paints from large buildings such as factories, office blocks and warehouses, to comply with a code of practice.

(Strategy implementation: WorkCover Authority, coordinated by the Lead Reference Centre and the Government Paint Committee)

(5) Establish and maintain a register of tradespeople who work on residential buildings and who have completed relevant training courses on lead paint issues.

(Strategy implementation: Master Painters, Decorators and Signwriters Association)

(6) Adopt under the Commonwealth Trade Practices Act Australian Standard 1647 to control the levels of heavy metals in imported toys.

(Strategy implementation: Department of Consumer Affairs, Commonwealth/State Consumer Products Advisory Committee)

(7) Review monitoring surveillance for imported toys to ensure compliance with AS1647.

(Strategy implementation: Department of Consumer Affairs, Commonwealth/State Consumer Products Advisory Committee)

(8) Direct all Government departments and agencies to use Government Paint Committee (GPC) Specifications for all painting work, to use GPC approved contractors for the removal of First Schedule paints and to comply with the proposed Australian Standard code of practice for the removal of paint containing lead.

(Strategy implementation: all Government departments)

(9) Review the Waste Management Act to determine:

- the applicability of extending throughout NSW the current metropolitan requirements for the registration and licensing of hazardous waste generation and disposal
- the feasibility of establishing and operating regional hazardous waste collection and storage centres for the disposal of lead containing waste.

(Strategy implementation: EPA, Waste Service and local authorities)

3. Development of standards

Objective:

To reduce the emissions generated from the removal of lead based paints by commercial contractors.

Strategies

(1) Develop a code of practice for the removal and disposal of lead based paints from industrial applications.

(Strategy implementation: Standards Australia, coordinated by the Lead Reference Centre)

(2) Develop a code of practice for the removal and disposal of lead based paints from industrial, commercial and residential buildings.

(Strategy implementation: Standards Australia, coordinated by the Lead Reference Centre)

(3) Amend Australian Standard AS 2311 (Painting of Buildings) to call up the proposed code of practice for commercial/residential/institutional applications.

(Strategy implementation: Standards Australia, coordinated by the Lead Reference Centre)

4. Development of training programs

Objective:

To ensure that tradespeople working in areas where there is a potential to increase the risk of lead exposure to children (eg in houses and schools) undergo training in using safe lead removal techniques which minimise the generation of lead bearing dusts.

Strategies:

(1) Incorporate topics into trade courses on lead related issues which are based on the proposed Australian Standard codes of practice discussed earlier to control lead in paint.

(Strategy implementation: TAFE in co-operation with the Lead Reference Centre)

(2) Develop short courses for already qualified tradespeople on lead related issues which are based on these codes of practice. These trained tradespeople will be incorporated into the register to be maintained by the Master Painters, Decorators and Signwriters Association.

(Strategy implementation.- TAFE in co-operation with the Lead Reference Centre)

3.9 LEAD IN PETROL

GOAL

To reduce the impact of leaded petrol on the population of New South Wales.

The lead in petrol component of the Lead Management Action Plan sets out objectives and strategies on the following issues:

- information and education
- augmentation of administrative and regulatory controls.

The establishment of the Lead Reference Centre underpins the successful implementation of these strategies.

1. Information and education

Objectives:

To make as many motorists as possible aware of the possibility of using unleaded petrol in pre-1986 vehicles.

To make as many motorists as possible aware of the dangers of lead in leaded petrol to children's health.

Strategies:

(1) Continue to support of the Federal Government's "Take the Step" campaign.

(Strategy implementation: CEPA and state environment departments)

(2) Widely distribute the list of pre-1986 vehicles which can use unleaded petrol without engine modification.

(Strategy implementation: distribution strategies to be investigated by the Lead Reference Centre)

(3) Include information on lead in vehicle maintenance programs and on awareness programs on vehicle emissions.

(Strategy implementation: Lead Reference Centre)

(4) Obtain agreement between the EPA, NSW Health and petrol retailers on wording for a sticker to be displayed on leaded petrol bowsers.

(Strategy implementation: EPA, NSW Health, petrol retailers, co-ordinated by the Lead Reference Centre)

2. Augmentation of Administrative and Regulatory Control

Objectives:

To ensure standardisation across the petrol retail market of product and market conditions.

To ensure adequate controls exist to realize the Government's desire to see market conditions standardised.

Strategies:

(1) Gain industry agreement to relabel "super" petrol as "leaded" as soon as possible.

(Strategy implementation: Australian Institute of Petroleum and other appropriate organisations, coordinated by the EPA)

(2) Amend of the Clean Air Regulations to take account of the use of other possible fuel additives if this becomes necessary.

(Strategy implementation: ANZECC, coordinated by the EPA)

(3) Develop national fuel standards which include efficiency and emissions standards.

(Strategy implementation: coordination by ANZECC)

3.10 LEAD IN SOIL AND DUST

GOAL

To minimise the rate of lead accumulation in soils and dust and to provide management strategies for lead contaminated soils and dusts.

The Lead in Soil and Dust component of the Lead Management Action Plan sets out objectives and strategies on the following issues:

- establish the level of risk exposure to lead in soil and dust in NSW
- education measures
- the development of standards and protocols
- the review of planning controls and mechanisms.

The establishment of the Lead Reference Centre underpins the successful implementation of these strategies.

1. Establishment of Lead Risk Status in NSW

Objective:

To determine the extent to which lead is currently being emitted from NSW industries and major transport corridors.

Strategies:

(1) Develop and undertake a lead emissions inventory on a state-wide basis. The inventory should be updated on a regular basis (frequency determined by the emission rate). This information should be included in the State of the Environment Report.

(Strategy implementation: Undertaken by the EPA with the assistance of appropriate authorities, industry and the Lead Reference Centre.)

(2) Develop and assess techniques for removal of lead containing dust from exterior and interior surfaces

(Strategy implementation: Environmental Lead Centres, where these exist, with the Lead Reference Centre developing and modifying education material for wider usage)

(3) Collation of all available data to identify areas of risk from lead exposure

(Strategy implementation: EPA, through an emission inventory and roadside and urban lead studies)

(4) Correlate blood lead data with the above environmental data to determine an accurate picture of community lead hazard

(Strategy implementation: NSW Health with assistance from the Environmental Lead Centres where these exist. To be coordinated with the information obtained from undertaking blood lead investigations (see section 3.5)

2. Education

Objectives:

To assist the public to recognise potential lead contamination issues which may impact on their child's health.

To minimise further lead loading of urban soils and dusts.

To provide advice on lead exposure risk reduction strategies.

To ensure that education and risk reduction information is readily accessible to the community.

Strategies:

(1) Establishment of a Lead Reference Centre to develop and disseminate education materials on reducing the lead hazard and to provide a lead advisory service for the community.

(Strategy implementation: NSW Government)

(2) Development of self assessment-style exposure risk identification guides.

(Strategy implementation: EPA, NSW Health and the Environmental Lead Centres where these exist, coordinated by NSW Health and the Lead Reference Centre)

(3) Develop information guidelines which clearly outline risk reduction actions that can be implemented by home owners, schools, play centres and other target groups where the exposure to lead may be high.

(Strategy implementation.- Lead Reference Centre with input from relevant agencies and Environmental Lead Centres where these exist)

(4) Assessing and modifying where necessary, information developed **by** community Environmental Lead Centres as well as from other national and international studies on risk reduction and abatement strategies.

(Strategy implementation: Lead Reference Centre with assistance from relevant agencies)

(5) Testing of domestic and industrial vacuum cleaners to determine their ability to filter fine dust particles

(Strategy implementation: Environmental Lead Centres where these exist, with the Lead Reference Centre to modify and develop associated education material for wider usage)

3. Standards and Protocols

Objective:

To standardise methodologies used in the assessment and management of contaminated sites so that error is minimised and cross comparisons of results can be made.

Strategies:

(1) The continued development of soil sampling and analytical standards for lead.

(Strategy implementation: Standards Australia, coordinated by the Lead Reference Centre)

(2) The development of standardised dust sampling methodologies.

(Strategy implementation: Environmental Lead Centres where these exist, coordinated by the Lead Reference Centre)

(3) Investigate and develop where necessary, techniques which effectively reduce exposure to lead. Validate existing techniques to ensure that they are not causing secondary lead contamination.

(Strategy implementation: Environmental Lead Centres, coordinated by the Lead Reference Centre)

4. Review of Planning Controls and Mechanisms

Objectives:

To streamline administrative controls on contamination issues, with particular reference to lead.

To reduce the lead loading on children wherever possible through planning controls.

Strategies:

(1) Review current planning instruments and guidelines available (such as s.149 certificates, Circular C20, Unhealthy Building Land Notices) to manage contamination issues from both point and diffuse sources. The impact of these instruments on the management of sites should be assessed in terms of equity, community impacts and effectiveness.

(Strategy implementation: Interagency forum, coordinated by the Department of Planning)

(2) Review planning policies to enable greater control of the development of sensitive landuses in high risk lead contamination areas.

(Strategy implementation: Interagency forum, coordinated by the Department of Planning)

(3) Developing codes of practice and guidelines for the removal of lead based paints from non-scheduled premises. These guidelines should be distributed by local governments in conjunction with issuing development approvals, building approvals and demolition approvals.

(Strategy implementation: Standards Australia, coordinated by the Lead Reference Centre)

(4) Investigate waste management strategies for the disposal or re-use of urban soils and dusts contaminated with high levels of lead to prevent inappropriate use or disposal of these materials.

(Strategy implementation: EPA, Waste Service)

(5) Resolution of financial and liability issues associated with contaminated sites.

(Strategy implementation: ANZECC (work in progress))

3.11 LEAD IN WATER AND WASTEWATER

GOAL

To determine the extent to which lead concentrations in drinking water comply with the draft NHMRC goals and to propose strategies for achieving lead water and wastewater concentrations within goals.

The Lead in Water and Wastewater component of the Lead Management Action Plan sets out objectives and strategies relating to the following key issues:

- data collection
- materials and standards
- education
- water supply and treatment.

Note: Where the Action Plan has identified that strategy implementation should be undertaken by relevant water authorities, consideration should be given to establishing a multi-authority forum to develop and implement the proposed strategies. The benefits of establishing a multi-authority forum to consider common issues includes:

- more consistent development of strategies
- the capacity to pool expertise from a range of authorities
- information is centralised and can be applied to a broader range of situations

1. Data collection

Objective:

Develop and implement a comprehensive sampling and data collection program to determine the status of lead contamination in drinking water in addition to sampling mains, domestic systems and storages.

Strategies:

(1) Conduct a water sampling program which includes the following areas:

- high rise (complex plumbing systems)
- schools (long run systems)
- old urban areas

(Strategy implementation: Water Board and other local water authorities through the provision of research grants funded by appropriate Commonwealth and State authorities. NSW Public Works to develop a program for rural water authorities)

(2) Information obtained through implementation of the above should be incorporated into the education strategy where appropriate.

(Strategy implementation: Lead Reference Centre)

(3) Data collected on lead within the water and wastewater section to be included in the EPA State of the Environment report, to enable the effectiveness of reduction initiatives to be monitored.

(Strategy implementation: Data collection undertaken by water authorities and NSW Public Works. EPA to incorporate data into the State of the Environment Report)

2. Materials and Standards

Objective:

To reduce potential lead in water exposure pathways and to clarify standard sampling and testing procedures.

Strategies:

(1) Reduce the allowable level of lead in plumbing products to the minimum practical level.

(Strategy implementation: industry, water authorities and Standards Australia, coordinated by the Department of Consumer Affairs)

(2) Investigate the application of environmentally benign alternatives to lead plumbing products.

(Strategy implementation: industry)

(3) Mark solders as either suitable or unsuitable for use in plumbing systems

(Strategy implementation: industry; coordinated by the Department of Consumer Affairs)

(4) Develop standard methods for testing the extraction of metals from products in contact with drinking water [Australian Standard AS 4020 (interim Standard)]

(Strategy implementation: Standards Australia)

(5) Amend the draft NHMRC goal of 10 pg/L of lead in drinking water to include prescribed sampling methodologies.

(Strategy implementation: NHMRC; coordinated by ANZECC)

(6) Continue the campaign to reduce industrial discharges containing lead into the wastewater system.

(Strategy implementation: Water Board and local water authorities)

3. Education

Objective:

Through a comprehensive education and public awareness campaign, reduce the impact and incidence of lead in drinking water and Wastewater.

Strategies:

Develop comprehensive general and targeted education campaigns which:

- focus on key target groups (eg carers of young children, lead industry workers and do it yourself plumbers)
- focus on ways to minimise individual exposure
- focus on problems associated with first draw water and the use of hot water systems used specifically for consumption purposes.

Investigate the feasibility of distributing this material with water bills and at plumbing hardware centres.

(Strategy implementation: water authorities in consultation with the Lead Reference Centre)

4. Water Supply and Water Treatment

Objective:

Where the lead level in the drinking water system is high, implement strategies to minimise the impact of this lead on the community.

Strategies:

(1) Develop exposure reduction strategies, especially for domestic situations, where indicated necessary by the outcome of the recommended data collection program.

(Strategy implementation: Undertaken by the relevant water authorities or Public Works in rural regions. Prevention strategies which focus on education should be developed by the Lead Reference Centre with input from relevant authorities)

(2) Where practical, introduce water treatment to reduce lead leaching rates from supply systems in high risk areas.

(Strategy implementation: Water Board/local water authorities/local government)

(3) Strictly apply the guidelines for the application of biosolids and sewage effluent to land within water supply catchments.

Strategy implementation: Water Board/local water authorities)

(4) Investigate the efficiency of water filters to remove lead especially for schools and multileveled buildings.

(Strategy implementation: Manufacturers. Information coordinated and reported by the Lead Reference Centre)

(5) Investigate ways of reducing the cost to the consumer of lead analysis of drinking water in areas of high lead exposure.

(Strategy implementation: Water Board/local water authorities)

(6) Develop effective and economic mitigation techniques.

(Strategy implementation: Water Board/local water authorities)

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Appendix 1

Minutes of Meetings

SELECT COMMITTEE ON LEAD POLLUTION

Minutes of the Meeting held on Thursday 22 September

in the Clerk's Meeting Room at 11.30 am

Present:

Mr Beckroge	**Mr Hunter**
Mr Kinross	**Ms Moore**
Ms Nori	**Mr Rixon**
Mr Zammit	

In attendance: **Ms Catherine Watson (Project Officer)**

The Clerk-Assistant (Committees) read the entry in the Votes and Proceedings of the Legislative Assembly of 15 September and 20 September 1994, appointing the members of the Committee.

Nominations for the office of Chairman were sought. Mr Rixon nominated Mr Zammit, seconded by Mr Hunter.
Resolved that Mr Zammit be elected Chairman of the Select Committee on Lead Pollution.

Nominations for Vice Chairman were sought. Mr Beckroge nominated Mr Hunter, seconded by Ms Nori.
Resolved that Mr Hunter be Vice-Chairman.

Mr Zammit took the Chair and made acknowledgments.

The Committee adopted the Procedural Motions, as circulated.

The Chairman addressed the Committee and referred to the Proposals and Priorities Work Plan for the Lead Select Committee, as circulated by Mr Hunter.
Resolved, on the motion of Mr Hunter, seconded Ms Nori, that the Committee adopt the Proposals.

The Committee further agreed to the suggested site inspections to Boolaroo, Illawarra, Broken Hill, Port Pirie and to meet with Dr Fett regarding Balmain/Mort Bay.

The Committee agreed to set aside the following dates:

Monday 17 October	Hearing
Monday 24 October	Hearing
Wednesday 2 – Friday 4 November or Saturday 5 November	Site visits to Broken Hill and Port Pirie, SA
Tuesday 8 November	AM Leichhardt Town Hall, Strathfield Council PM Illawarra
Wednesday 9 November	Site visit to Boolaroo, Lake Macquarie City Council

Members requested advice as to travel destinations and the cost contribution of any accompanying partners or children.

The Committee confirmed the closing date of 10 October for submissions and the placing of the advertisement in the Sydney metropolitan newspapers, the *Illawarra Mercury*, the *Newcastle Herald* and the *Broken Hill Truth*.

The Clerk-Assistant (Committees) advised that temporary staff would need to be employed, and the Committee agreed that the Clerk be requested to arrange for suitable staff.

The Committee adjourned at 12.07 pm.

SELECT COMMITTEE UPON LEAD POLLUTION

Minutes of the meeting held on Monday 17 October, 1994

in the Jubilee Room Parliament House, Sydney at 10 a.m.

Present: **Mr Zammit (Chairman)**

Mr Beckroge	**Ms Nori**
Mr Hunter	**Mr Kinross**

Apologies were received from Ms Moore and Mr Rixon.

In attendance: Ms Watson (Project Officer), Mr Grundy and Ms Szekely.

Mr Sheather advised the Committee that he had been appointed Clerk to the Committee,and the Committee was introduced to the two recently appointed officers to the Committee Mr Grundy and Ms Szekely.

Minutes of the previous meeting were deferred.

The Committee was made aware of Legislative Assembly Standing Order No. 362 relating to the Examination of Witnesses.

Dr Neil Craig Shepherd, Director General, Environment Protection Authority;

Ms Catherine Sally Dyer, Executive Officer, Interdepartmental Lead Task Force;

Both called and affirmed as witnesses.

The witnesses severally acknowledged having received summonses under the Parliamentary Evidence Act, 1901.

The witnesses agreed that submission numbered 6 be included as part of their evidence.

The witnesses were examined.

Evidence concluded the witnesses withdrew.

Mr Peter David Houghton, Director, Land Assessment and Protection, Department of Conservation and Land Management;

Called and sworn as a witness.

The witness acknowledged receipt of a summons under the Parliamentary Evidence Act, 1901.

The witness was examined.

Evidence concluded the witness withdrew.

Dr Brian Lindsay Gulson, Chief Research Scientist, C.S.I.R.O., Division of Exploration and Mining;

Called and affirmed as a witness.

The witness acknowledged having received a summons under the Parliamentary Evidence Act, 1901.

The witness agreed that the submission numbered 1 be included as part of his evidence.

The witness was examined.

The Chairman with the agreement of the Committee advised the witness that he would be called again at a future meeting.

The evidence concluded the witness withdrew.

Dr Stephen Corbett, Manager Environmental Health;

Called and sworn as a witness.

The witness acknowledged having received a summons under the Parliamentary Evidence Act, 1901.

The Chairman with the agreement of the Committee advised the witness that he would be recalled on the 24 October, 1994.

Evidence concluded the witness withdrew.

Mr David Bowes Sinclair, (Manager - Occupational Health, Pasminco), New South Wales Chamber of Mines;

Mr Barry Newton Black, Industry Executive - Chamber of Mines and Extractive Industries (N.S.W.);

Mr Maxwell Cleave Wrench, New South Wales Chamber of Mines;

Called and sworn as witnesses.

The witnesses severally acknowledged having received a summons under the Parliamentary Evidence Act, 1901.

The witnesses agreed that submission numbered 11, be included as part of their evidence.

The Chairman interrupted proceedings to ask the Committee to indicate an estimated time to examine these witnesses. It being indicated that the time required would be lengthy, it was suggested that it would be fairer to call Mr Colin Heath, Principal Environmental Scientist, Water Board present as the next witness for the next meeting, set down for the 24 October, 1994. Mr Heath withdrew.

The witnesses were then examined.

The Chairman with the agreement of the Committee indicated to the witnesses that they maybe recalled at a future meeting.

Evidence concluded the witnesses withdrew.

The press and public withdrew.

The Committee deliberated.

The Committee adjourned at 5.08 p.m., until Monday 24 October, 1994 at 9.30 p.m.

Select Committee upon Lead Pollution

Minutes of the Meeting held on Monday 24 October, 1994

in Rooms 814/15 at Parliament House, Sydney at 9.40 a.m.

Present: **Mr Zammit (Chairman)**

Mr W. Beckroge	**Mr J. Hunter**
Mr J.S.P. Kinross	**Ms S. Nori**

Apologies were received from Ms C. Moore and Mr B.W. Rixon.

In attendance: Ms N. Szekely and Mr W. Grundy.

The Committee was made aware of Standing Order No. 362 relating to the Examination of

Witnesses.

Mr Jason Bawden-Smith, called and sworn as a witness.

The witness acknowledged having received a summons under the Parliamentary Evidence Act, 1901.

The witness tabled further information for the Committee titled "History of Lead".

The witness was examined.

Evidence concluded the witness withdrew.

Professor Geoffrey Duggin, Head of Toxicology, Royal Prince Alfred Hospital/Royal Alexandra Hospital for Children, called and sworn as a witness.

The witness acknowledged having received a summons under the Parliamentary Evidence Act, 1901.

The Chairman interrupted proceedings for the Committee to deliberate.

Moved by Mr Hunter seconded by Ms Nori, "That the Committee secretariat arrange to have advertisements concerning the future public meetings be placed in advance of those meetings in the Barrier Daily Truth, Newcastle Herald, Lake Macquarie Press [Cumberland Press], The Glebe and Western Suburbs Courier".

Motion carried in favour of the Ayes on the voices.

The witness was then examined.

Evidence concluded the witness withdrew.

The Committee deliberated.

Mr Colin Wyemes Heath, Principal Environment Scientist, Sydney Water Board; called and affirmed as a witness.

The witness acknowledged having received a summons under the Parliament Evidence Act, 1901.

The witness was examined.

Evidence concluded the witness withdrew.

Dr Stephen Corbett, Manager Environment Health; re-called as a witness.

The Chairman reminded the witness of his obligations as a witness.

The witness tabled Appendix 3.3.10 Lead in Children's Blood Working Group Report, Page 14, Chapter 1-Overview, Western N.S.W. Public Health Unit, Bar graph-Blood Lead levels in 1-4 year old children attending day care centre in Eastern Suburbs, information that had been requested by the Committee during previous evidence.

The Chairman advised the witness that the evidence was not concluded and that he would be required on a future day.

Mr Michael Hambrook, Executive Director, Australian Paint Manufacturers' Federation Inc.; and

Mr Ivan Baxter, I.C.I. Dulux;

Both called and sworn as witnesses.

The witnesses acknowledged having received a summons under the Parliamentary Evidence Act, 1901.

The witnesses were examined.

Mr Hambrook tabled information brochure "Lead in Paint - What you need to know"- Australian Paint Manufacturers' Federation Inc.

Evidence concluded the witnesses withdrew.

Ms Elizabeth Lucy O'Brien; LEAD Group, called and affirmed as a witness;

Ms Theresa Marie Gordon; No-LEAD Group, called and sworn as a witness;

Mr Herbert Beauchamp, Total Environment Centre; called and affirmed as a witness;

The witnesses severally acknowledged having received a summons under the Parliamentary Evidence Act, 1901.

The witnesses tabled a submission to the Committee prepared by Elizabeth O'Brien, B.Sc., Dip. Ed., Grad Dip. Ed'al Studies (Health);
Herbert Beauchamp, B.Sc.,
Anne Roberts, B.Arch.,

The witnesses were examined.

Evidence concluded the witness withdrew.

Moved by Mr Hunter seconded by Ms Nori; "That all documents that have been received by the Committee be acknowledged as having been Tabled".

The Committee deliberated.

The Committee adjourned at 4.45 p.m. until Wednesday 2 November, 1994.

SELECT COMMITTEE UPON LEAD POLLUTION

Wednesday, 2 November, 1994

At Sydney Kingsford-Smith Airport at 6.30 a.m.

Present: **Mr Zammit (Chairman)**

Mr Hunter **Mr Rixon**
Ms Nori

In Attendance: Mr W. Grundy

To attend meeting in Port Pirie [via Adelaide and Port Augusta].

The Committee met with **Mrs Cathy Phipps**, Director, and staff of the Environmental Health Centre, Port Pirie for a briefing and tour of the areas of the town effected by lead pollution.

The Committee then travelled to the Port Pirie Tourism and Arts Centre for discussions with members of the community.

The Committee then travelled to Broken Hill Associated Smelters complex at Port Pirie for a briefing and discussion with;

Mr Bob Jones - General Manager.
Mr Les Barnett - Manager, Technical Environment.
Mr Wayne Reichelt - Manager, Personnel Services.

Followed by a tour of the smelter and production complex.

The Committee adjourned at 3.40 p.m.

SELECT COMMITTEE UPON LEAD POLLUTION

Thursday, 3 November, 1994

At Adelaide Airport, at 6.30 a.m.

Present: **Mr Zammit (Chairman)**

Mr Hunter **Mr Rixon**
Ms Nori

Mr Beckroge met the Committee at Broken Hill Airport.

In Attendance: Mr W. Grundy

To attend a meeting at 9.15 a.m. at the Broken Hill Environmental Lead Centre.

At Broken Hill Environmental Lead Centre, 160 Beryl Street.

The Committee met with;

Mr George Kolsky - Project Manager
Mr Bill Balding - Senior Scientist
Mr Vic Zanetti - Project Supervisor
Ms Kim Browne - Director Community Health; for an inspection, discussion.

This was followed by an inspection of houses, where children with high blood lead levels lived.

The Committee then travelled to Pasminco Mines, Zinc Office Block.

At Pasminco Mines, Zinc Office Block, Eyre Street.

The Committee met with;

Mr John Dini - General Manager, Broken Hill, Pasminco Mines
Mr Paul Edwards - Manager,
Human Resources and Safety and Environment
Mr Paul Hendry - Safety Officer
Mr Robert McNamara - Senior Environmental Scientist
Ms Chris Burnup - General Manager, Environment and Public Affairs; for a presentation, followed by a tour of surface operations Freeman's shaft plantation, salvage area 8, and skimp dumps C & active D.

This was followed by an inspection of the mine with Mr Paul Hendry and Robert Mc Namara down the decline to the 1380 metre level was made.

The Committee adjourned at 6.56 p.m., until Friday, 4 November, 1994.

SELECT COMMITTEE UPON LEAD POLLUTION

Friday, 4 November, 1994

At Broken Hill, Council Chamber at 9.10 a.m.

Present: **Mr Zammit (Chairman)**

Mr Beckroge **Ms Nori**
Mr Hunter **Mr Rixon**

In Attendance: Mr W. Grundy.

The Press and Public were admitted.

By direction of the Chairman, the Clerk made the Committee aware of Legislative Assembly Standing Order No. 362, relating to the Examination of Witnesses.

Mr William Stanley O'Niel, President Barrier Industrial Council, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was then examined by the Committee.

Evidence concluded the witness withdrew.

Mr Phillip James Bottrell, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mr Michael Stuart McGuiness, Former President, Resident Action Group, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

Evidence concluded the witness withdrew.

Mrs Joanne Freda Maria Boog, President, Back to Basics, called and sworn as a witness.

The witness acknowledged having received a Summons issued under the Parliamentary Evidence Act, 1901.

The witness was then examined by the Committee.

Evidence concluded the witness withdrew.

Mrs Shareen Dawn Johnstone, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence

Act, 1901.

Evidence concluded the witness withdrew.

Mr Dianne Elizabeth Locke, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was then examined by the Committee.

Evidence concluded the witness withdrew.

The Committee deliberated.

Mr George Frank Kolsky, Project Manager, Broken Hill Environmental Lead Centre, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

Evidence concluded the witness withdrew.

Mr John Robert Dini, General Manager, Pasminco Mining, Broken Hill, called and sworn as a witness.

Mr Robert Lawrence McNamara, Senior Environmental Scientist, called and affirmed as a witness.

The witnesses severally acknowledged having received Summonses under the Parliamentary Evidence Act, 1901.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

The Committee deliberated.

The Committee adjourned at 12.16 p.m.

SELECT COMMITTEE UPON LEAD POLLUTION

Tuesday, 8 November, 1994

At Parliament House at 8.30 a.m.

Present: **Mr Zammit (Chairman)**

Mr Hunter	**Ms Nori**
Mr Kinross	**Mr Rixon**

In Attendance: Ms C. Watson - Project Officer, Ms H. Parker - Committee Officer, Ms N. Szekely - Assistant Committee Officer.

The Committee travelled to **the Balmain Police Citizens Youth Club, 372 Darling Street, Balmain** to hold hearings.

Minutes of the previous meetings were deferred.

By direction of the Chairman, the Committee was made aware of Legislative Assembly Standing Order No. 362, relating to the Examination of Witnesses.

Mr Gregory Vickas, called and affirmed as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Ms Elizabeth Lucy O'Brien and Mr Herbert Beauchamp, both recalled as witnesses.

The Chairman reminded both witnesses of their obligations as witnesses, having previously been sworn as witnesses.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

Mr John Arthur Watkins, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness agreed that the submission made be included as part of the sworn evidence.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Ms Birgit Martina Seidlich, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness agreed that the submission made be included as part of the sworn evidence.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mr Henry Bartnik, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness agreed that the submission made be included as part of the sworn evidence.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

At 10.40 a.m. the Committee concluded hearings at Balmain and travelled to Strathfield Town Hall.

At Strathfield Town Hall at 11.25 a.m. the Committee continued hearings.

Dr Christopher Winder, Senior Lecturer in Chemical Safety, called and affirmed as a witness.

The witness acknowledged having received a Summons under the parliamentary Evidence Act, 1901.

The witness agreed that the submission made be included as part of the sworn evidence.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Dr Malcolm David Buck, Lecturer, University of N.S.W., Department of Applied Geology, affirmed as a witness.

Dr David Ronald Cohen, Lecturer, University of N.S.W., Department of Applied Geology, sworn as a witness.

The witnesses severally acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witnesses requested that a submission from Dr D. R. Cohen, Mr M. D. Buck,

E. Barcelona, P. Ford and Dr N. F. Rutherford be included as part of their sworn evidence.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

Councillor Michelle Ann Calvert, Ashfield Council, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

The Committee deliberated.

The Committee adjourned at 1.35 p.m., and travelled to Southern Copper Smelter, Military Road, Port Kembla.

At Southern Copper Smelter at 4.00 p.m. the Committee met for an informal meeting with;

Mr Paul Ward -Managing Director
Mr Ian West - Manager, Environmental Upgrade
Mr Steve Slater - Manager, Environmental Services

The Committee then travelled to the Court House, Darcy Road, Port Kembla for hearings.

At Court House, Darcy Road, Port Kembla at 5.20 p.m.

The meeting was attended by **Mr Gerald James Sullivan, M.P.,** Member for Wollongong.

The Press and Public were admitted.

By direction of the Chairman, the Committee was made aware of Legislative Assembly Standing Order No. 362 relating to the Examination of Witnesses.

Mr Alfred Ronald Hales, Assistant Manager - Environment Wollongong City Council, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Dr Victoria Westley-Wise, Acting Director, Illawarra Public Health Unit, called and affirmed as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mr David Gilmour, Resident, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Mr Guilmore agreed that a document titled "Metals Content of Dust in Roofs of Houses around Port Kembla Industrial Area, dated 24 March, 1993" be included as part of his sworn evidence.

Evidence concluded the witness withdrew.

Mr Michael Organ, Secretary, Illawarra Historical Society, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mrs Olive Lorraine Rodwell, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

Evidence concluded the witness withdrew.

The Chairman and Committee then addressed the gallery and took questions from the residents.

The Committee deliberated.

The Committee adjourned at 6.15 p.m, until Wednesday 9 November, 1994 at 8.00 a.m. at Parliament House.

SELECT COMMITTEE UPON LEAD POLLUTION

Wednesday, 9 November, 1994

At Parliament House, Sydney at 8.00 a.m.

Present: **Mr Zammit (Chairman)**

Mr Hunter **Ms Nori**
Mr Kinross

In Attendance: Ms H. Parker, Committee Officer, Ms N. Szekely, Assistant Committee Officer.

Minutes of the previous meetings were deferred.

The Committee travelled to Pasminco Metals-Sulphide, Boolaroo.

At Pasminco Metals-Sulphide, Boolaroo Smelter

The Committee met for a presentation, discussion and tour of the Smelter, with;

Mr David Sinclair - Manager - Occupational Health
Mr Geoffery Orrock - General Manager
Mrs Sharon Howes - Manager - Site Services
Mr Richard Mallaby - Manager - Engineering
Mr Leigh Neilson - Manager Smelting
Mrs Karen Phillip - Resident
Mr Ron Foley - Chamber of Commerce
Dr Rosemary Aldrich, Mr Stephen Gorton, Mr John Wlodarczyk, Mr John Stephenson, Mr Ian Hanlon, Mr John Griffiths.

The Committee then travelled to **Argenton Public School** and met with **Mr J.C. Mills, M.P., Member for Wallsend, Mr John Mc Niell,** Headmaster, **Mr Mark Quenan,** Manager,Hunter Property Services together with the School Captains for an inspection and discussion.

The Committee then travelled to **Boolaroo Public School** together with **Mr J.C. Mills, M.P.** and met with **Mrs Robyn Metcalfe**, Headmistress, **Mr Mark Quenan,** Manager,Hunter Property Services, **Dr John Stephenson,** Director Health Unit, **Dr Rosemary Aldrich,** Public Health Medicine Registrar, **Dr John Wlodarczyk,** Medical Statistician, together with the School Captains for an inspection and discussion.

The Committee then travelled to the **Lake Macquarie Environmental Health Centre, Boolaroo**, together with **Mr J.C. Mills, M.P.** and met with **Miss Fran Timbs,** Co-ordinator, **Dr John Stephenson, Dr Rosemary Aldrich, Dr John Stephenson, Dr John Wlodarczyk** for an inspection and discussion.

The Committee then travelled to **Lake Macquarie Council Chambers** for hearings.

At Lake Macquarie Council Chambers

Mr J.C. Mills, M.P., in attendance.

The Press and Public were admitted.

By direction of the Chairman, the Committee was made aware of Legislative Assembly Standing Order No. 362 relating to the Examination of Witnesses.

Mr Jeffrey William Jansson - Manager Environment, Lake Macquarie City Council, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was then examined by the Committee.

Mr David Foulis Sinclair, Manager - Occupational Health, Pasminco Ltd, re-called as a witness.

The Chairman reminded the witness of his previously sworn obligation as a witness.

Mr Geoffrey Ian Orrock, General Manager-Pasminco Metals-Sulphide Ltd, called and sworn as a witness.

Mrs Sharon Claire Howes, Manager - Site Services, Pasminco Metals-Sulphide, called and sworn as a witness.

The witnesses severally acknowledged having received as Summons under the Parliamentary Evidence Act, 1901.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

Mr Stephen William Gorton, President NO LEAD, called and sworn as a witness.

Mrs Theresa Marie Gordon, spokesperson NO LEAD, re-called as a witness.

The Chairman reminded the witness of her previously sworn obligation as a witness.

Mrs Patricia Smith, Committee Member, NO LEAD and Residents, called and affirmed as a witness.

Mrs Kathleen Mary McPhillips, Secretary/Public Office, NO LEAD, called and affirmed

as a witness.

The witnesses severally acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

Mr Hasemer Jack Shield, President, United Residents for the Environment of Lake Macquarie, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mr George Edward Dodds, Regional Manager, E.P.A., called and affirmed as a witness.

The witness acknowledged having received a Summons issued under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mr Mark Anthony Stoker, Industrial Officer, Australian Worker's Union/FIME, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Dr John Stuart Stephenson, Director - Public Health Unit, Newcastle, called and sworn as a witness.

Dr Rosemary Aldrich, Public Health Medicine Registrar, Newcastle Environment Toxicology Research Unit, called and sworn as a witness.

Dr John Henry Wlodarczyk, Medical Statistician, Newcastle Environment Toxicology

Research Unit, called and sworn as a witness.

Miss Frances Anne Timbs, Co-ordinator, Lake Macquarie Environmental Health Centre, sworn as a witness.

The witnesses severally acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

Mr Donald Rupert Whiteman, Resident, called and sworn as a witness.

The witness acknowledge having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mrs Karen Elizabeth Phillip, Resident, called and sworn as a witness.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Mr Geoffery Ian Orrock, General Manager, Pasiminco Metals-Suphide, re-called as a witness.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

The Committee deliberated.

The Chairman and the Committee the addressed the gallery.

The Committee adjourned at 5.58 p.m., until 15 November, 1994.

Select Committee upon Lead Pollution

Tuesday, 15 November, 1994

At Parliament House, Waratah Room at 5.50 p.m.

Present: Mr Zammit (Chairman)

Mr Beckroge **Ms Nori**
Mr Hunter **Mr Rixon**
Mr Kinross

In Attendance: Ms C. Watson - Project Officer and Mr W. Grundy - Committee Officer.

Minutes of the previous meetings were deferred.

The Press and Public were admitted.

Dr Alexander Broadfoot McBratney, Associate Professor, called and affirmed as a witness;

Ms Julie Ann Markus, Research Student, called and affirmed as a witness;

Dr Robert Arthur Caldwell, Senior Lecturer, called and sworn as a witness;

All of the above witnesses from Department of Agriculture Chemistry and Soil Science, University of Sydney.

The witnesses severally acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The Chairman requested that the submission "Glebe Heavy Metal Survey - A Survey of Heavy metals in the Topsoil of Glebe" - Julie Markus and Alex McBratney - Department of Agriculture Chemistry & Soil Science, The University of Sydney, November 1993, be included as part of the sworn evidence.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

The Committee deliberated.

The Committee adjourned at 6.58 p.m., until Wednesday 16 November, 1994 at 5.55 p.m.

Select Committee upon Lead Pollution

Wednesday, 16 November, 1994

At Parliament House,Sydney in Room 1136 at 5.55 p.m.

Present: Mr Zammit (Chairman)

Mr Hunter **Mr Rixon**

Mr Kinross **Ms Nori**

In Attendance: Ms C. Watson - Project Officer and Mr W. Grundy - Committee Officer.

Minutes of the previous meetings were deferred.

The Press and Public were admitted.

Dr Steven Gregory Burger - Chief Technologist, Shell Refining (Australia) Pty Limited, called and sworn as a witness.

Mr Michael Richard Cass - Manager, Health Safety and Environment, Shell Refining (Australia) Pty Limited, called and sworn as a witness.

The witnesses severally acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The Chairman requested that the document "1994 Air Toxics Conference, Sydney, 10-11 August, 1994 - Health Effects of Non-Occupational Exposure to Benzene"- Nicholas Burke, Shell Australia be included as part of the sworn evidence.

The witnesses were examined by the Committee.

Evidence concluded the witnesses withdrew.

Dr Colin James Grant - Executive Director, Environment Protection Authority, called and affirmed as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Evidence concluded the witness withdrew.

Dr Stephen Corbett, re-called as a witness. The Deputy Chairman reminded the witness of his previously sworn obligations as a witness.

The witness was then examined by the Committee.

The Committee deliberated.

The Committee adjourned at 8.47 p.m., until Friday 18 November, 1994 at 2.00 p.m.

Select Committee upon Lead Pollution

Record of Inspection

Friday 18 November, 1994

At Parliament House at 2.00 p.m.

Present: **Mr Hunter** **Ms Nori**

In Attendance: Ms N. Szekely - Assistant Committee Officer.

The Committee travelled to **Apollo Batteries Limited, 4 Harvey Street, Marayong.**

At 3.30 p.m. the Members of the Committee met with;

Mr John Joseph Aquilina, M.P., Member for St Marys, in attendance.

Mr Robert Schussler - Marayong Resident.
Ms Jenny Cummins - Marayong Resident.

Mr Ken Charteris, Chief Executive Officer, Apollo Batteries Limited;
Mr Tony Kelaher, Plastics Division Manager;
Mr Fred Bennett, Technical Manager;
Mr Tom Walsh, Manufacturing Director;
Mr Tom O'Reilly, Plant Engineer;
Dr Robin Chase, Medical Superintendent;
Mr Bob Mc Gibbon, Kinhill Group [Installation Engineers]
Mr Bill Ash, Kinhill Group [Installation Engineers]
Mr Phil Caparotta, Maintenance Engineer

An inspection of the plant and further discussions followed.

Meeting concluded at 6.25 p.m.

SELECT COMMITTEE UPON LEAD POLLUTION

Wednesday, 23 November, 1994

At Parliament House, in Room 1136 at 6.00 p.m.

Present: **Mr Zammit (Chairman)**

Mr Beckroge **Ms Nori**
Mr Hunter **Mr Rixon**
Mr Kinross

In Attendance: Ms C. Watson - Project Officer, Mr W. Grundy - Committee Officer.

Minutes of the previous meetings as circulated be agreed to, Moved by Mr Hunter, seconded by Ms Nori.

The Chairman brought up a Draft Report that has previously been circulated.

The Committee considered the Draft Report.

Executive Summary, page 1, as amended, agreed to.
page 2, as amended, agreed to.

1.3 Preamble, page 1 as amended, agreed to.
2.1 Lead Pollution in New South Wales, agreed to.
Lead Pollution, as amended, agreed to.
3.1 Pasminco Smelter, as amended, agreed to.

The Committee deliberated.

The Committee adjourned at 7.08 p.m., until Thursday, 24 November, 1994 until 9.00 a.m.

SELECT COMMITTEE UPON LEAD POLLUTION

Thursday, 24 November, 1994

At Parliament House, in Room 1136 at 9.40 a.m.

Present: **Mr Zammit (Chairman)**

Mr Beckroge	**Ms Moore**
Mr Hunter	**Ms Nori**
Mr Kinross	**Mr Rixon**

In Attendance: Ms C. Watson - Project Officer, Mr W. Grundy - Committee Officer, Ms N. Szekely - Assistant Committee Officer.

Minutes of previous meetings as circulated were confirmed.

The Chairman brought up a Draft Report that had previously been circulated.

The Committee considered the Draft report.
Contents, as read, agreed to.
Introduction, as read, agreed to.
Executive Summary, as read, agreed to.
3.1.3 Matters for Judgement, as amended, agreed to.

The Committee adjourned at 10.15 a.m., to reconvene in the Library Conference Room at 11.30 a.m.

At Parliament House, Library Conference Room at 11.30 a.m.

The Committee reconvened in the Library Conference Room at 11.30 a.m. to further consider the Draft Report.

3.1.4 Recommendations, as amended agreed to.

At 12.00 p.m. the Committee adjourned, until 5.30 p.m.

At 5.30 p.m., the Committee reconvened in the Library Conference Room.

The Committee was made aware of Legislative Assembly Standing Order No. 362 relating to the examination of witnesses.

Mr Kenneth Robin Lane - Manager, Australian Refined Alloys, called and sworn as a witness.

The witness acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witness was examined by the Committee.

Mr Lane agreed that the overhead projection presentation sheets be included as part of the sworn evidence.

Evidence concluded the witness withdrew.

Mrs Elizabeth Lucy O'Brien, re-called as a witness.

The Chairman reminded the witness of her obligations as a witness.

The witness was then examined by the Committee.

Evidence concluded the witness withdrew.

Ms Jennifer Gay Cummins - Member, Marayong Action Group, called and sworn as a witness.

Mr Robert James Schussler, Co-ordinator, Marayong Action Group, called and sworn as a witness.

The witnesses severally acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witnesses were examined by the Committee.

The Chairman suggested that the written submission made at this hearing form part of the sworn evidence. Ms Cummins and Mr Schussler agreed.

Evidence concluded the witness withdrew.

Mr Ken Charteris - Chief Executive Officer, Apollo Batteries Limited, called and sworn,as a witness.

Mr Tom Walsh, Manufacturing Director, Apollo Batteries, called and sworn as a witness.

The witnesses severally acknowledged having received a Summons under the Parliamentary Evidence Act, 1901.

The witnesses were examined by the Committee.

The Chairman suggested that the page titled "Air Emission results" be included as part of the sworn evidence. Mr Charteris and Mr Walsh, agreed.

Evidence concluded the witnesses withdrew.

The Committee deliberated.

The Committee adjourned at 7.14 p.m, until Tuesday 29 November, 1994 at 4.00 p.m. in the Library Conference Room.

SELECT COMMITTEE UPON LEAD POLLUTION

Tuesday, 29 November, 1994

At Parliament House, in Library Conference room at 4.00 p.m.

Present: **Mr Zammit (Chairman)**

Mr Beckroge
Mr Hunter
Mr Kinross
Ms Nori
Mr Rixon

In Attendance: Mr W. Grundy-Committee Officer and Ms N. Szekely-Assistant Committee Officer.

Minutes as previously circulated were confirmed.

The Committee further considered the Draft Report.

The Committee deliberated.

The Committee adjourned at 4.20 p.m., until 8.00 p.m. in the Library Conference room.

Library Conference room at 8.00 p.m.

At 8.15 p.m., a quarter hour after the appointed time circulated to all Members of the Committee, the meeting lapsed for the want of a Quorum.

In accordance with the Legislative Assembly Standing Order No 355 a meeting time was arranged at the direction of the Chairman, and circulated for Wednesday, 30 November, 1994 at 9.00 a.m.

SELECT COMMITTEE UPON LEAD POLLUTION

Tuesday, 30 November,1994

At Parliament House, Library Conference room at 9 a.m.

Present: **Mr Zammit (Chairman)**

Mr Beckroge	**Ms Nori**
Mr Hunter	**Mr Rixon**
Mr Kinross	**Ms Moore**

In Attendance: Mr W. Grundy-Committee Officer and Ms N. Szekely-Assistant Committee Officer.

At 9.15 a.m. fifteen minutes after the appointed and circulated time for the meeting, the meeting lapsed for the want of a Quorum.

In accordance with Legislative Assembly Standing Order No 355 a meeting was arranged at the direction of the Chairman, and circulated to all Members of the Committee for 11.43 a.m., this day.

At 11.43 a.m. the Committee convened in the Library Conference Room.

The Draft report was further considered.

3.1 Pasminco Smelter at Boolaroo
3.1.1 Submissions, Evidence and Pathways, as read, agreed to.
3.1.2 Lead Sources and Pathways, as read, agreed to.
Recommendations 3.1.4 deferred.
Executive Summary, as read, agreed to.
Preamble, as read, agreed to.

The Committee deliberated.

The Committee adjourned at 12.22 p.m., until 4.00 p.m., this day, at the direction of the

Chairman.

Library Conference room at 4.00 p.m.

At 4.16 p.m. fifteen minutes after the appointed and circulated time for the meeting, the meeting lapsed for the want of a Quorum.

In accordance with Legislative Assembly Standing Order No 355 a meeting was arranged at the direction of the Chairman, and circulated for Thursday, 1 December, 1994 at 9.00 a.m.

SELECT COMMITTEE UPON LEAD POLLUTION

Thursday 1 December, 1994

At Parliament House, Library Conference room, at 9.00 a.m.

Present: **Mr Zammit (Chairman)**

Mr Beckroge	**Mr Kinross**
Mr Kinross	**Mr Rixon**

In Attendance: Mr W. Grundy-Committee Officer.

The Committee further considered the Draft Report.

Recommendations 3.1.4
recommendation 1, as read, agreed to.
recommendation 2, deferred.
recommendation 3, as read, agreed to.

The Committee deliberated.

The Committee adjourned at 10.00 a.m., until 11.30 a.m., this day.

Library Conference room at 11.30 a.m.

At 11.45 a.m. fifteen minutes after the appointed and circulated time for the meeting, the meeting lapsed for the want of a Quorum.

In accordance with Legislative Assembly Standing Order No. 355 a meeting was arranged at the direction of the Chairman, and circulated for this day, at 4.00 p.m.

Library Conference room at 4.00 p.m.

At 4.14 p.m., the Committee further considered the Draft Report.

Recommendations 3.1.4

recommendation 2, previously deferred, further considered.

The meeting lapsed at 4.23 p.m., due to the want of a Quorum.

In accordance with Legislative Assembly Standing Order No. 355
a meeting was arranged at the direction of the Chairman, and circulated for this day, at 6.00 p.m.

Library Conference room at 6.00 p.m.

At 6.10 p.m. the Committee further considered the Draft Report.

Recommendations 3.1.4.
recommendation 2, further considered, as amended, agreed to.
recommendation 4, as read, agreed to.
recommendation 5, as read, agreed to.
recommendation 6, as read, agreed to.
recommendation 7, as read, agreed to.
recommendation 8, as read, agreed to.
recommendation 9, as read, agreed to.
recommendation 10, as read, agreed to.
recommendation 11, deferred.
recommendation 12, as amended, agreed to.
recommendation 13, deferred.
recommendation 14, deferred.

The Committee adjourned at 7.12 p.m, until Friday 2 December, 1994 at 9.30 a.m.

SELECT COMMITTEE UPON LEAD POLLUTION

Friday, 2 December, 1994

At Parliament House, Library Conference room, at 9.30 a.m.

Present: **Mr Zammit (Chairman)**
Mr Beckroge **Mr Rixon**
Mr Kinross **Ms Nori**

In Attendance: Mr W.Grundy-Committee Officer.

At 9.46 a.m., fifteen minutes after the appointed and circulated time for the meeting,the meeting elapsed for want of a Quorum.

In accordance with Legislative Assembly Standing Order No. 355 a meeting was arranged at the direction of the Chairman, and circulated for this day at 11.30 a.m.

At 11.30 a.m. in the Library Conference room

The Committee further considered the Draft Report.

The Committee deliberated.

(1) Moved by Mr Hunter, "That documents to be Tabled today under Standing Order No. 54, the Secretariat and other Committee Staff that might be available, prepare a list of the documents to be Appended to the Report for Tabling", seconded by Mr Rixon.

Agreed to.

(2) Moved by Mr Hunter, "That the Secretariat be authorised to update the appended list before the 9th December, 1994 with a more detailed list for inclusion in the final published edition of the Report", seconded by Mr Rixon.

Agreed to.

Further consideration of the Draft Report.

Recommendations;
recommendation 11, as read, agreed to.
recommendation 13, as amended, agreed to.
recommendation 14, as amended, agreed to.

3.2.4 Southern Copper Smelter, Port Kembla
recommendation 1, as read, agreed to.
recommendation 2, as amended, agreed to.
recommendation 3, as amended, agreed to.
recommendation 4, as amended, agreed to.
recommendation 5, as amended, agreed to.
recommendation 6, as amended, agreed to.
recommendation 7, as amended, agreed to.
recommendation 8, as amended, agreed to.
recommendation 10, as amended, agreed to.
recommendation 11, as amended, agreed to.
recommendation 12, as amended, agreed to.
recommendation 13(a), as amended, agreed to.
recommendation 13(b), as amended, agreed to.
recommendation 14, as amended, agreed to.

3.3.4 Mining Processing and Smelting at Broken Hill, deferred.

3.4.4 Other mining operations in New South Wales.
recommendation 1, as read, agreed to.
recommendation 2(a), as read, agreed to.
recommendation 2(b), as read, agreed to.
recommendation 3, as amended, agreed to.

3.5.4 Other Lead based Industries in New South Wales.
recommendation 1, as read, agreed to.
recommendation 2 ,as read, agreed to.
recommendation 3(a), as read, agreed to.
recommendation 3(b), as read, agreed to.
recommendation 4, as read, agreed to.
recommendation 5(a), as read, agreed to.
recommendation 5(b), as read, agreed to.
recommendation 6, as read, deferred.

The Committee adjourned at 1.05 p.m. until 3.30 p.m., this day.

At 3.30 p.m. Library Conference room.

The Committee further considered the Draft Report.

3.3.4 Mining Processing and Smelting at Broken Hill.
recommendation 1, as amended, agreed to.
recommendation 2, as amended, agreed to.
recommendation 3, as amended, agreed to.
recommendation 4, as amended, agreed to.
recommendation 5, as amended, agreed to.
recommendation 6, as amended, agreed to.
recommendation 7, as read, agreed to.
recommendation 8, as read, agreed to.
recommendation 9(a), as amended, agreed to.
recommendation 9(b), as amended, agreed to.

3.6.4 Lead Emissions from Motor Vehicles.

The Chairman moved, "That the recommendations from the Select Committee upon Motor Vehicle Emissions be appended to the Draft Report," seconded by Mr Hunter.

Agreed to.

recommendation 1, as read, deleted.
Insert instead, points 5 & 6 of recommendation 1, agreed to.
recommendation 2, as read, agreed to.
recommendation 3, as amended, agreed to.
recommendation 4, as amended, agreed to.
recommendation 5, as read, agreed to.
recommendation 6, as read, deleted.
recommendation 7, as read, deleted.
recommendation 8, as read, deleted.
recommendation 9, as read, agreed to.
recommendation 10, as read, deleted.
recommendation 11, as read, agreed to.
recommendation 12, as read, agreed to.
recommendation 13, as read, agreed to.

3.5.4 Other Lead Based Industries.
recommendation 6, as read, agreed to.

4.1.3 Strategies and Priorities for Site Remediation.

recommendation 1, as amended, agreed to.
recommendation 2 ,as amended, agreed to.
recommendation 12, as amended, agreed to.
recommendation 13, as amended, agreed to.
recommendation 4, as amended, agreed to.
recommendation 3, as amended, agreed to.
recommendation 5, as amended, agreed to.
recommendation 6, as amended, agreed to.
recommendation 7, as amended, agreed to.
recommendation 8, as read, deleted.
recommendation 9, as read,agreed to.
recommendation 10, as amended, agreed to.

recommendation 11, as amended, agreed to.
recommendation 14 ,as amended, agreed to.
recommendation 15, as amended,agreed to.
recommendation 16, as amended,agreed to.

4.2.3 Strategies and Priorities for Monitoring "At Risk" persons.
recommendation 1, deleted.
recommendation 2, as amended, agreed to.
recommendation 3, as amended, agreed to.
recommendation 4, as amended, agreed to.
recommendation 5, as amended, agreed to.

4.3.3 Timetable for Enforcement of Lower Standards
recommendation 1, as amended, agreed to.
recommendation 2, as read, agreed to.

3.6.4. Lead in petrol.
recommendations 1, 2, 3 & 4, as read, agreed to.

4.6.3 Other Actions to Address Lead
agreed to incorporate other recommendations into this section-
recommendation 1, deleted.

Lead Regulations
recommendation 2, as read, agreed to.

Lead in paint
recommendation 3, as read, agreed to.
recommendation 4, as amended, agreed to.

Lead in ceramic and crystal ware

recommendation 5, deleted.

Lead in food cans
recommendation 6, as amended, agreed to.

Lead in Children's toys, paint & crayons.
recommendation 7, as amended, agreed to.

Lead in ammunition
recommendation 8, as amended, agreed to.

Lead in Plumbing products
recommendations 9 & 10, as amended, agreed to.

Lead in curtain weights
recommendation 11, deleted.

Lead in hobbies
recommendation 12, as amended, agreed to.

Recycling Lead
recommendation 13, as read, agreed to.
recommendations 14(a), 14(b) & 14(c), as read, agreed to.

Lead in fertilisers
recommendation 14, as amended, agreed to.

Lead in other species
recommendation 15, as amended, agreed to.
recommendation 16, deleted.

Nutrition programs
recommendation 17, as amended, agreed to.

Lead in sewerage sludge
recommendation 18, agreed to.

Lead in wastewater
recommendation 19, as read, agreed to.

Additional recommendations arising from comparison of the Recommendations of the New South Wales Lead Management Action Plan with the Recommendations of the Interdepartmental Lead TaskForce Working Groups.

Section 4.6.3 Lead Centre, as amended, agreed to.

3.3.2 Amended, Insert Past Pollution problems.

3.3.3 Matters of concern, as amended, agreed to.

3.4 as read, agreed to;
3.4.1 as read, agreed to;
3.4.2 as read, agreed to;
3.4.3 as read, agreed to;
3.4.4 as read, agreed to;
3.5 as read, agreed to;
3.5.1 as read, agreed to;
3.5.2 as read, agreed to;
3.5.3 as amended, agreed to;
3.6 as read, agreed to;
3.6.1 as amended,agreed to;
3.6.2 as read,agreed to;
3.6.3 as read, agreed to;
4.1 as read,agreed to;
4.1.1 as read,agreed to;
4.1.2 as read, agreed to;
4.1.3 as read, agreed to;
4.2 as read,agreed to;
4.2.1 as read,agreed to;
4.2.2 as read, agreed to;
4.2.3 as read, agreed to;
4.3 as read,agreed to;
4.3.1 as read, agreed to;
4.3.2 as read, agreed to;
4.3.3 as read, agreed to;
4.4 as read, agreed to;
4.4.1 as read, agreed to;
4.4.2 as read ,agreed to;
4.4.3 as read, agreed to;
4.5 as read, agreed to;
4.5.1 as read, agreed to;
4.5.2 as read, agreed to;
4.5.3 as read, agreed to;
4.5.4 as read, agreed to;
4.6 as read, agreed to;
4.6.1 as read, agreed to;
4.6.2 as read, agreed to.
Appendices-as read, agreed to.

Moved by Mr Hunter seconded by Mr Beckroge, that all necessary consequential amendments be made to the Draft report.

The Committee deliberated on the Draft report.

Resolved on the Motion of Mr Hunter seconded by Ms Nori, that the Draft report be the Report of the Committee.

Whereupon the Chairman signed the Report.

Minutes of the previous meeting, as circulated, were confirmed.

The Chairman then expressed his thanks to all Members and staff of the Committee with their assistance with the Report.

The Committee adjourned at 8.37 p.m., sine die.

Appendix 2

List of Submissions

List of Submissions

1. **Dr Brian L Gulson**
   Chief Research Scientist
   CSIRO Division of Exploration and Mining
   PO Box 136
   NORTH RYDE NSW 2113

2. **Mr Roger Alsop**
   Roger Alsop Consulting
   PO Box 255
   GORDON NSW 2072

3. **Australian Car-Pooling Agency**
   Mr Jens Olscher, Manager
   PO Box 1801
   CHATSWOOD NSW 2067

4. **Mr Michael Organ**
   26 Popes Road
   WOONONA NSW 2517

5. **Environment Protection Agency (Victoria)**
   Mr Phil Morgan, Manager, Atmospheric and Energy Policy
   GPO Box 4395QQ
   MELBOURNE Vic 3001

6. **Environment Protection Authority (New South Wales)**
   Mr Neil Shepherd, Director-General
   PO Box 1156
   CHATSWOOD NSW 2057

7. **Pacific Power**
   (The Electricity Commission of NSW)
   Mr P T Graham
   Acting Chief Executive
   GPO Box 5257
   SYDNEY NSW 2001

8. **Hunter Area Health Service**
Public Health Unit
Dr John Stephenson, Director
Irene Hall, Pacific St
NEWCASTLE NSW 2300

9. **Mr Eddie Ford, editor**
Restored Cars Australia
Eddie Ford Publications Pty Ltd
29 Lyons St
NEWSTEAD Vic 3462

10. **Mr Stephen Brown**
CSIRO Division of Building, Construction and Engineering
PO Box 56
HIGHETT Vic 3190

11. **Chamber of Mines, Metals and Extractive Industries**
Maxwell C Wrench
Principal Consultant
Suite 1102, Level 11
Hambros House
167 Macquarie St
SYDNEY NSW 2000

12. **University of Western Sydney-Nepean**
Faculty of Science and Technology
Mr C M Owens
Lecturer in Chemistry
PO Box 10
KINGSWOOD NSW 2747

13. **Pasminco Metals-Sulphide Pty Ltd**
Mr Warren Atkinson
National Environmental Consulting Services
PO Box 97
WATSON ACT 2602

14. **Southern Copper Ltd**
Mr Warren Atkinson
National Environmental Consulting Services
PO Box 97
WATSON ACT 2602

15. **Canned Food Information Service Inc**
Mr Eric Nicholson, Chairman, Technical Panel
Suite 5, 8-12 Sandilands St
SOUTH MELBOURNE Vic 3205

End Folder 1

Start Folder 2

16. **Mr Mike van Alphen**
Manager, Environmental Monitoring
South Australian Health Commission
PO Box 468
PORT PIRIE SA 5001

17. **Council of theThe City of Wollongong**
Mr D A Campbell
Lord Mayor
41 Burelli St
WOLLONGONG NSW 2500

18. **Pollution Research Pty Ltd**
Dr Ian Irvine
Director
Darley & Bains Rd
NORTH DORRIGO NSW 2453

19. **The Shell Company of Australia Ltd**
Dr M G Brown
Manager, Health, Safety and Environment
GPO Box 872K
MELBOURNE Vic 3001

20. **Mr Noel Child, Mr Brent Young, Mr Michael Dawson**
University of Technology, Sydney
22 Britannia Rd
CASTLE HILL NSW 2154

21. **Dr R J Steele**
Principal Research Scientist
CSIRO Food Research Laboratory
PO Box 52
NORTH RYDE NSW 2113

22. **Bus and Coach Association (NSW)**
Mr Geoff Ferris
Deputy Director
27 Villiers St
NORTH PARRAMATTA NSW 2151

23. **Sydney Electricity**
John S Newton
Corporate Secretary
570 George St
SYDNEY NSW 2000

24. **National Health and Medical Research Council**
Dr Peter Gray
GPO Box 9848
CANBERRA ACT 2601

25. **Mr Shane West**
School of Architecture
Faculty of Design Architecture and Building
University of Technology, Sydney
PO Box 123
BROADWAY NSW 2007

26. **Strathfield Council**
Mrs Helen Colbey
General Manager
65 Homebush Rd
STRATHFIELD NSW 2135

27. **Australian Institute of Petroleum Ltd**
Mr J C Starkey
Executive Director
500 Collins St
MELBOURNE Vic 3000

28. **Lake Macquarie City Council**
Mr A C Farrell
Acting General Manager
PO Box 21
BOOLAROO NSW 2284

29. **Associated Octel**
Mr William T Perreau
Area Manager Australasia
711 High St
EAST KEW Vic 3102

30. **Caltex Refining Co Pty Ltd**
Mr Peter N Nash
Manager, Planning and Logistics
167-187 Kent Street
SYDNEY NSW 2000

31. **Ms Elizabeth O'Brien**
Mr Herbert Beauchamp
Ms Anne Roberts
c/- LEAD Group
PO Box 63
DULWICH HILL NSW 2203

32. **Senator John Faulkner**
Minister for the Environment, Sport and Territories
Parliament House
CANBERRA ACT 2600

33. **Dr Chris Winder**
Senior Lecturer in Chemical Safety
Department of Safety Sciences
The University of New South Wales
Chemical Safety and Applied Toxicology Laboratories
SYDNEY NSW 2052

34. **The LEAD Group Inc.**
Elizabeth O Brien
PO Box 63
Dulwich Hill NSW 2203

35. **The NO-LEAD Group**
Theresa Gordon
PO Box 228
Cardiff NSW 2285

36. **Australian Paint Manufacturers' Federation Inc.**
Michael Hambrook
Private Bag 938
NORTH SYDNEY NSW 2059

37. **Cr Michelle Calvert**
19 Stanton Rd
HABERFIELD NSW 2045

38. **Local Government and Shires Association**
Murray Kidnie
Secretary
GPO Box 7003
SYDNEY NSW 2000

39. **Glebe Heavy Metal Survey**
Julie A. Markus
Assoc. Prof. Alex McBratney
University of Sydney
SYDNEY NSW 2001

40. **Shareen Johnstone**
PO Box 9 NORTH
BROKEN HILL NSW 2880

41. **J Robertson**
Correspondence and News clippings
42 Morish St
BROKEN HILL NSW 2880

42. **Kym Isaac**
White Rock Farm
Stephens Creek Rd
BROKEN HILL NSW 2880

43. **Leichhardt Municipal Council**
Mayor Larry Hand
Cnr Norton and Marion Sts
LEICHHARDT NSW 2040

44. **Keith Buxton**
234 Eyre Street
BROKEN HILL NSW 2880

45. **Ms Jenny Cummins**
Marayong Action Group
20 Railway Road
MARAYONG NSW 2148

Appendix 3

Select Committee Field Trips
and Site Inspections

The Select Committee inspected the following sites to assist in its inquiry:

2 November 1994

Port Pirie, South Australia
BHAS Smelter
Port Pirie Environmental Health Centre

3-4 November 1994

Broken Hill
Pasminco Mining, Broken Hill, South Mine,
Broken Hill Environmental Lead Centre

9 November 1994

North Lake Macquarie
Pasminco Metals - Sulphide Pty Ltd Smelter
Lake Macquarie Health Centre
Boolaroo and Argenton Public Schools

8 November 1994

Port Kembla
Southern Copper Ltd Smelter

18 November 1994

Marayong
Apollo Batteries Ltd

Appendix 4

Catalogue of EPA Documents
Tabled in Response to Standing Order #54

This Appendix bound separately in Volume 2.

Appendix 5

List of lead sources and pathways

abrasive blasting sites
air rifle pellets
ammunition factories
back-yard sinker manufacture and lead recycling
battery breakers and recyclers
beverage hygrometers, lead shot weighted
boat restoration
brass manufacture and polishing
brickyards and cement works (sump oil burning)
building restoration
burning lead stabilised plastics off copper wires
car batteries on charge in the laundry
car painters (bright lead pigments)
ceramic, pottery, tile manufacture and other glazing
collapsible lead tube extrusion (old process)
contaminated crucibles on bookshelves
conveyor belting/matting from mine and smelter sites
cosmetics containing lead
crimped and stamped lead security seals
curtain weights of lead metal
degreasing engine parts and hands in leaded petrol
DIY diving weight-belt manufacture
DIY fishing sinker manufacture
DIY rifle projectile lead pouring
DIY shotgun shell and rifle cartridge reloading
door stops
dumping of sump oil
eating from lead glazed pottery
eggs from poultry housed on contaminated soil
engineering and welding works
ferrous and non-ferrous foundries
fishing sinker manufacture
flexible drawing and drafting curves (with lead core)
food contamination in ship holds and silos
food contamination in transport
galena specimens for tourists (Broken Hill)
glass manufacture, tableware, optical, electrical glass
glazing putty, old white lead & linseed oil based putty
home grown garden produce
incinerators, municipal, industrial and hospital waste
jug used for lemon and orange juice storage
kitchen table electrical soldering or leadlight work
lamp stands and ash-trays
lead burners and old plumbers yards
lead flashings on brick and stone foundations
lead foil, sheet, pipe, cable-sheath and caulking manuf.
lead plugs for wall screws
lead plumbing washers
leadlight came and leadlight window manufacture
leadlight on food cupboard doors and bed headboards
leadlines for trout fishing
lightbulb solder contacts
marijuana or tobacco grown on contaminated soil
marijuana or tobacco plants having lead dust fallout
metal heat treating works
metallurgical works and pilot plants
mineral specimen art mosaics (Broken Hill)
mineral specimen collectors and collections
mirror backings
motor mechanics vehicle lead sources, carburettors...
motor tradespersons; vehicles from industrial sites
motor tradespersons; vehicles from mines and smelters
motor vehicles used for industrial and family purposes
non-tip weighted children's cups
old car batteries accessible to children
old monumental masons yards and coffin factories
old orchard sites
old rubber and plastics formulations
paint stripping, furniture stripping
painters yards
panel beaters (auto body solder burning and grinding)
paper weights
petrol jerry cans and around car petrol caps
pewter drinking mugs
pigment grinding and paint manufacture sites
pipe joining lead collars for water and sewer mains
plastics pigment and lead stabiliser users
printers
radiator repair workshops
railway and bearing metal workshops
railway lines handling lead concentrates
recycled furnace bricks
research and analytical facilities
rifle & shotgun bore cleaning brushes & pull-throughs
roadside market gardens and orchards
roasted lead pellets (plus duck or rabbit)
roof collected water tanks
roof lead flashing and lead-head roof nails
scrap yards and shipbreaking
SCUBA divers weight belts
seafood from polluted estuaries
shooting ranges
silver-lead bullion melting (Broken Hill)
smelters pots reused as plant pots or incinerators
soldered copper water pipes
sound proof buildings, broadcast studios, hotels...
sporting ammunition factories and shot towers
spray painting and powder coating
steel structures eg lead painted bridges
sticks and rolls of solder
street line-painting contractors
sump oil contaminated saw dust
sump oil used for chainsaw lubrication
terne plate manufacture (lead plated metal)
tin can soldering sites
toy soldiers and cast lead toys
transport workers, road, rail, shipping
tyre balancing lead weights
under-sink waste water pipes
underground cable joiners
urban stormwater ponding areas
vehicles accessing industrial and contaminated sites
vitreous enamel works, bath resurfacers
waste disposal sites
waste sump oil (dumped) and oil filters
water header tanks in the ceiling space
weighted crayfish traps and fishing nets
wine bottle lead foil wrapper manufacture
woodstove burning lead pigmented wood and paper
X-ray proof photographic film bags
X-ray proof rooms
yacht and shipbuilding yards

An excerpt from the submission of Mr Mike van Alphen.