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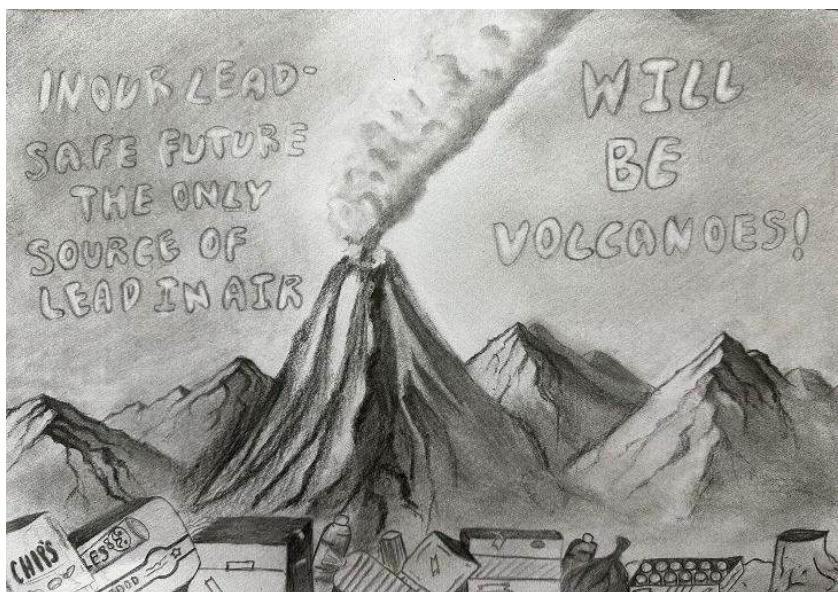
The newsletter of The LEAD (Lead Education and Abatement Design) Group Inc.

PO Box 161 Summer Hill NSW 2130 Australia Ph: (04) 3118 4933,

Web: www.lead.org.au; www.leadsworld.com; www.volcanoartprize.com

Editor-in-Chief: Elizabeth O'Brien. Web Administration: Jimmy Jingtao Yang.

Lead Action Week Retrospective



This newsletter is to honour many promises made to contributors over several years. Finally, we are publishing your contributions - with much gratitude - many of which relate to the WHO/UN International Lead Poisoning Prevention Week of Action (ILPPWA) held at the end of October each year since 2013!

Volcano Art Prize 2024 Entry:

Artist's Name: Haoze (Allen) Li, Age: 11, School: Highgate Primary School

Title of Image: Volcano. Lead-Safety Message: **In our lead-safe future, the only source of lead in air will be volcanoes!** Description of Work: Pencil drawing. <https://volcanoartprize.com/portfolio-item/volcano/>

Enter Volcano Art Prize 2024 by 8th November!

To be in the running for this **annual lead-awareness-raising global art/photo/film competition open to all ages**, just go through your smart phone photos/videos and pick a landscape-orientation one, create a short Title and Lead-Safety Message and enter as many times as you like, at <https://volcanoartprize.com/submitentry/> by midnight at the end of the day, your timezone, on Friday 8th November 2024.

Once the entry deadline has passed, the Volcano Art Prize (VAP) 2024 Judge will choose the First Prize winner of \$400 and 30 prize winners of a mug from Pictureproducts and right now and until Monday 11th November 2024, you can help pick the 2024 People's Choice prizewinner. Just go to <https://volcanoartprize.com/peoples-choice/> and following pages, to vote (by clicking the ThumbsUp and waiting a few seconds for it to register your vote) for all the VAP 2024 entries you like, so that The LEAD Group can count up the Votes to see who wins the People's Choice Cash Prize of \$200.





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Prize Winning & Highly Commended Entries in Volcano Art Prize 2021

Many thanks to our sponsor , all our entrants and the VAP 2021 Judge, James Wood!

Note: this list shows the Volcano Art Prize (VAP) 2021, in the order that they appeared on the website (see the number preceding each image below) when the **VAP 2021 Judge, James Wood**, judged them. James' comments, high commendations and decisions on the First Prize winner of the \$400 cash prize, and the winners of the 30 Pictureproducts mugs from our sponsor , as well as the winner of the People's Choice cash prize of \$200 have been marked as appropriate on this list.

1.



Artist: Claire Leight

Title: Lead free playground

Lead-Safety Message: Take your kids to the ocean – there is no lead in sand.

Description of work: iPhone photo

URL: <https://volcanoartprize.com/portfolio-item/lead-free-playground/>

2.  mug winner!



Artist: Leanne Norwood

Title: Fight to keep your community safe from lead

Lead-Safety Message: Fight to keep your community safe from lead

Description of Work: photo

URL: <https://volcanoartprize.com/portfolio-item/fight-to-keep-your-community-safe-from-lead/>

3.  mug winner!



Artist: Leanne Norwood

Title: Fight for a lead sustainable future

Lead-Safety Message: Fight for a lead sustainable future

Description of Work: photo with label

URL: <https://volcanoartprize.com/portfolio-item/fight-for-a-lead-sustainable-future/>



4. **Highly commended - mug winner!**



Artist: Ananda Card

Title: Not what you'd think

Lead-Safety Message: There's no way to know if soil is safe without testing it.

Description of Work: Image created with iPhone and apps

URL: <https://volcanoartprize.com/portfolio-item/not-what-youd-think/>

5. ** mug winner!**



Artist: Maddison Taylor, Age: 12 years

Title: Spider Monkey

Lead-Safety Message: Look out for lead – its all around us.

Description of work: Creative PL Artist Collection graphite drawing pencils on paper.

URL: <https://volcanoartprize.com/portfolio-item/spider-monkey/>

6.



Artist: Elizabeth O'Brien

Title: Keep kids lead safe rule

Lead-Safety Message: Just as "don't eat mushrooms unless an expert tells you're they're not poisonous" is a good rule, so "Keep kids lead safe" is a good rule for life.

Description of Work: iPhone photos collaged in Word and saved and resized in Paint

URL: <https://volcanoartprize.com/portfolio-item/keep-kids-lead-safe-rule/>

7.



Artist: Claire Leight

Title: Noela Whitton and Elizabeth O'Brien

Lead-Safety Message: Two generations campaigning to remove lead from the world.

Description of Work: Timer iPhone photo with photo of Glebe Tram Sheds wall art collaged in Word and Paint

URL: <https://volcanoartprize.com/portfolio-item/noela-whitton-and-elizabeth-obrien/>



8. Highly commended - **mug winner!**



Artist: Dennis Leight

Title: Two planes

Lead-Safety Message: Aviation Fuel - The Last Lead Frontier

Description of Work: Photo Montage

URL: <https://volcanoartprize.com/portfolio-item/two-planes/>

9. **mug winner!**



Artist: Shristi Lohani

Title: Give her wings to fly in a lead safe world !

Lead-Safety Message: Stones, paving and grass all make excellent barriers to protect young children from any lead that might be in the soil. Description of Work: Digital photo, flipped and mirrored in Paint.

URL: <https://volcanoartprize.com/portfolio-item/give-her-wings-to-fly-in-a-lead-safe-world/>

10. **mug winner!**



Artist: Shristi Lohani

Title: Beware of the lead paint in kids toys

Lead-Safety Message: Let's be careful we are not handing lead painted toys to our kids

Description of Work: Digital photo.

URL: <https://volcanoartprize.com/portfolio-item/beware-of-the-lead-paint-in-kids-toys/>

11. **mug winner!**



Artists: Francis, Berkeley and Rosemary Card. Ages: 5, 3, 1

Title: Superheroes in a Leaded World

Lead-Safety Message: Teaching our kids to overcome their exposures and be ambassadors of a safer world to come

Description of Work: Iphone photos + PicsArt app

URL: <https://volcanoartprize.com/portfolio-item/superheroes-in-a-leaded-world/>



12.



Artist: Elizabeth O'Brien

Title: Vale Noela Whitton

Lead-Safety Message: My mother raised me to love art which inspired me to create Volcano Art Prize (VAP). I hope my mother's VAP entries inspire other people to create art and lead awareness into their 90s too. Description of Work: Noela Whitton's VAP entries collaged using Word and Paint

URL: <https://volcanoartprize.com/portfolio-item/vale-noela-whitton/>

13.



Artist: Elizabeth O'Brien.

Title: Burned car.

Lead-Safety Message: Burning a car beside the road or anywhere should be illegal. Even if the leaded steel fuel tank doesn't explode, the air pollution is highly toxic and molten lead and ash from the lead acid battery, radiator, vibration dampening, waste oil, paint, foam seats, interior plastics, etc, will remain on the soil until collected and taken to a hazardous waste dump. Description of Work: iPhone 8 photos collaged using Word and Paint.

URL: <https://volcanoartprize.com/portfolio-item/burned-car/>

14.  mug winner!

Judge's comment: Wakaflex was introduced to Oz circa 2004.



Artist: Jason Fargie

Title: Beware Lead Flashing on Your Roof

Lead-Safety Message: Replace lead flashing with non-lead flashing like [Wakaflex](#), in order to reduce lead in rainwater and stormwater.

Description of work: Mobile phone photos collaged together in Paint. URL: <https://volcanoartprize.com/portfolio-item/beware-lead-flashing-on-your-roof/>

15.



Artist: Claire Leight

Title of Image: Lead is Scary

Lead-Safety Message: Lead is SCARY and it contaminates many of these "Fun Things"

Description of Work: Iphone Photo

URL: <https://volcanoartprize.com/portfolio-item/lead-is-scary/>



16. **mug winner!**



Artist: Lyndal Davies

Title: Lightning strikes

Lead-Safety Message: When lead contamination affects your family, it's like being struck by Lightning.

Description of work: Photo taken with an Olympus OMD-EM1 Camera.

URL: <https://volcanoartprize.com/portfolio-item/lightning-strikes/>

17.



Artist: Elizabeth O'Brien

Title: Why is lead mandatory in Oz Propolis?

Lead-Safety Message: You can advocate to stop the Australian Poisons Standard permitting lead in "Propolis products" (which states lead is "mandatory") at

<https://www.tga.gov.au/form/application-amend-poisons-standard> or at least ensure lead is required to be listed as an

ingredient. Description of Work: iPhone 8 photos collaged using

Why is lead mandatory in Oz Propolis?
[item/why-is-lead-mandatory-in-oz-propolis/](https://volcanoartprize.com/portfolio-item/why-is-lead-mandatory-in-oz-propolis/)

Powerpoint. URL: <https://volcanoartprize.com/portfolio-item/why-is-lead-mandatory-in-oz-propolis/>

18.



Artist: Elizabeth O'Brien

Title: Better to go grey than be leaded

Lead-Safety Message: You can advocate to stop the Australian Poisons Standard permitting lead in "hair cosmetics" (hair-colour-restorers which turn grey hair/beards black) at

<https://www.tga.gov.au/form/application-amend-poisons-standard>

Description of Work: iPhone 8 photo. URL:

[https://volcanoartprize.com/portfolio-item/better-to-go-grey-](https://volcanoartprize.com/portfolio-item/better-to-go-grey-than-be-leaded/)

[than-be-leaded/](https://volcanoartprize.com/portfolio-item/better-to-go-grey-than-be-leaded/)



19. **mug winner!**



Artist: Jo Lia. Title: DIY Bathtub Disaster. Lead-Safety Message:

Lead - Often found where you least expect it. The LEAD Group recommends children not touch dusty surfaces with more than 12 ug/m2 lead but this bath had a dust wipe result of 3200 ug/m2 lead when I collected the sample using a LEAD Group Kit. URL of short film: <https://youtu.be/kvaF8ExB79s>

Description of Work: Video - short film uploaded on YouTube.

URL: [https://volcanoartprize.com/portfolio-item/diy-bathtub-](https://volcanoartprize.com/portfolio-item/diy-bathtub-disaster/)

[disaster/](https://volcanoartprize.com/portfolio-item/diy-bathtub-disaster/)



20. **mug winner!**



Artist: Alex Jewson

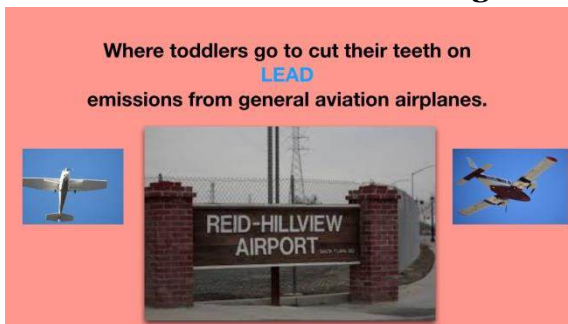
Title: We're growing beans, carrots and basil

Lead-Safety Message: I already know that I have to wash the garden soil off my hands before I help mummy make my favourite chilli basil chicken!

Description of work: iPhone photo

URL: <https://volcanoartprize.com/portfolio-item/were-growing-beans-carrots-and-basil/>

21. **mug winner!**



Artist: Gary Keller

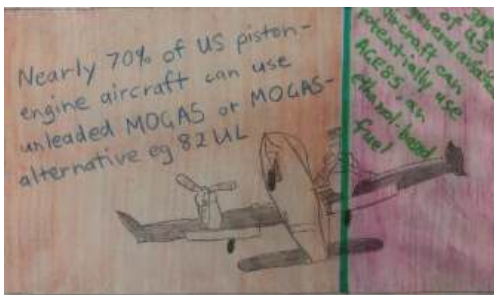
Title: Where toddlers go to cut their teeth on lead

Lead-Safety Message: Lead emissions from general aviation planes at Reid-Hillview Airport have raised the blood lead levels of children living close-by, and prompted local authorities to propose closing down the airport - which will be the world's first airport closure due to lead.

Description of Work: Photos made in to a poster.

URL: <https://volcanoartprize.com/portfolio-item/where-toddlers-go-to-cut-their-teeth-on-lead/>

22.



Artist: Elizabeth O'Brien

Title: Most piston-engine planes can use non-lead fuel.

Lead-safety Message: Nearly 70% of US piston-engine aircraft can use unleaded MOGAS or MOGAS-alternative eg 82UL while 30% of US general aviation aircraft can potentially use AGE85, an ethanol-based fuel. Description of work: China wax pencil, recycled highlighter, lead pencil on a 70/30% background made with Derwent Aquarelle

pencils. URL: <https://volcanoartprize.com/portfolio-item/most-piston-engine-planes-can-use-non-lead-fuel/>

23. Highly commended - **mug winner!**



Artist: Joseph Lee. Title: There's no leaded pigments in

computer art! Lead-Safety Message: As of 1st October 2021 paint with more than 90 ppm lead can no longer be sold in Australia. Exceptions: anti-fouling & anti-corrosion paints can contain 1000 ppm lead until 1st October 2023; adult's artists paints can contain any amount of lead with no phase-out date planned.

Description of Work: Selfies taken on OnePlus Nord android mobile phone camera, modified and



panelled in Picas (art photo/picture filter Android app), flipped and collaged using Paint.

URL: <https://volcanoartprize.com/portfolio-item/theres-no-leaded-pigments-in-computer-art/>

24. **mug winner!**



Artist: Leo Manttan. Age: 2 years

Title: Toddlers and toxics don't mix

Lead-safety message: In Australia, the Mandatory Toy Standard ensures that all art and craft supplies intended for use by children under 12 years of age are non-toxic. All countries need similar standards or legislation. Description of Work: Drawing with non-toxic texta on paper. URL: <https://volcanoartprize.com/portfolio-item/toddlers-and-toxics-dont-mix/>

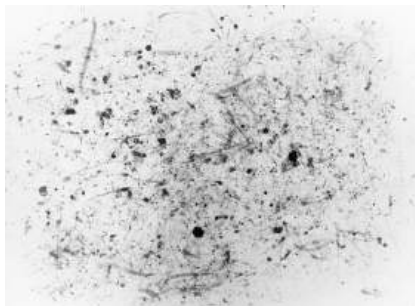
25. **mug winner!**



Artist: Lucinda Curran. Title: Supporting Detoxification. Lead-Safety Message: Our bodies are designed to remove toxicants, such as lead. However, in the presence of stress, our ability to detoxify reduces. A bit like a seesaw, as stress increases, detoxification decreases. And as stress decreases, detoxification increases. Sound Healing triggers the relaxation response, which therefore supports our natural healing abilities by reducing stress. This can also help our bodies reduce toxic load and may be useful in reducing lead levels. Description of

Work: Digital Art. URL: <https://volcanoartprize.com/portfolio-item/supporting-detoxification/>

26. **mug winner!**



Artist: Tim Pye

Title: It's Everywhere

Lead-Safety Message: It can seem lead is everywhere, but let's fix the worst first.

Description of Work: Shoe polish on a cupboard door post-processed with Adobe Lightroom.

URL: <https://volcanoartprize.com/portfolio-item/its-everywhere/>

27. **mug winner!**



Artist: Helen Hao. Age: 8

Title: Blue Mountains

LEAD-Safety Message: Because trees take up lead from the soil, bushfire smoke from the Black Summer bushfires in the Blue Mountains added lead to Sydney soil, dust and sediments.

School: Creative Einstein

Description of work: Coloured pencil drawing

URL: <https://volcanoartprize.com/portfolio-item/blue-mountains/>



28. Highly commended - mug winner!



Artist: Helen Hao. Age: 8
 Title: A fish called Pumpkin
 LEAD-Safety Message: Pumpkin is thinking: I wish my owner filled my tank from a stainless steel tap, not a brass tap, so my water was pure and lead-free like where I was born.
 School: Creative Einstein
 Description of work: Coloured pencil drawing
 URL: <https://volcanoartprize.com/portfolio-item/a-fish-called-pumpkin/>

29. mug winner!



Artist: Helen Hao, Age: 8
 Title: Bunny
 LEAD-Safety Message: We can protect all our pets from lead-contaminated soil by testing soil for lead with a LEAD Group Kit then replacing the soil if needed.
 School: Creative Einstein
 Description of work: Coloured pencil drawing
 URL: <https://volcanoartprize.com/portfolio-item/bunny/>

30. mug winner!



Artist: Christopher Nguyen. Age: 10
 Title: Beware lead in volcano ash
 LEAD-Safety Message: The ash and smoke from volcanoes can contain as much lead as the lava. When leaded AvGas is banned and lead industry emissions are reduced, volcanoes will again become the major source of lead in the earth's atmosphere.
 School: Creative Einstein. Description of work: Computer art.
 URL: <https://volcanoartprize.com/portfolio-item/beware-lead-in-volcano-ash/>

31. Highly commended - mug winner!



Artist: Aurelia Jeffrey. Age: 11
 Title: Tawny Frogmouth
 LEAD-Safety Message: A wise tawny frogmouth doesn't eat any lead-contaminated soil when they eat worms, slugs, snails, bugs, beetles, wasps, ants, centipedes, millipedes, and scorpions found on the ground.
 School: Creative Einstein. Description of work: Charcoal drawing
 URL: <https://volcanoartprize.com/portfolio-item/tawny-frogmouth/>

32. Highly commended - mug winner!



Artist: Liza Tripathi. Age: 10
 Title: I choose to live on a healthy planet
 LEAD-Safety Message: The survival of the human race depends on everyone choosing a bank and superannuation fund that does not invest in polluting industries, lead mining, fossil fuels, overfishing or deforestation.
 School: Creative Einstein
 Description of work: Non-toxic water colour on acid-free paper
 URL: <https://volcanoartprize.com/portfolio-item/i-choose-to-live-on-a-healthy-planet/>

33. First Prize Winner!! And mug winner! Judge's comment: provides a powerful message and simple but powerful drawing.



Artist: Liza Tripathi. Age: 10
 Title: Earth is our only home
 LEAD-Safety Message: Planet earth needs our protection. I'm dreaming of planting billions of trees, having a sunset clause on all leaded products to phase them out, and the end of burning fossil fuels.
 School: Creative Einstein
 Description of work: Non-toxic water colour on acid-free paper
 URL: <https://volcanoartprize.com/portfolio-item/earth-is-our-only-home/>

34. mug winner!



Artist: Liza Tripathi. Age: 10
 Title: A treehouse on my mind
 LEAD-Safety Message: Whether you're dreaming of re-painting your treehouse or your home, always test for lead first and don't ever dry-sand lead paint!
 School: Creative Einstein
 Description of work: Non-toxic water colour and lead pencil on acid-free paper
 URL: <https://volcanoartprize.com/portfolio-item/a-treehouse-on-my-mind/>

35. mug winner!



Artist: Kiara Nguyen. Age: 9
 Title: Through my eyes
 LEAD-Safety Message: Only eat cooked wild mushrooms if an adult expert identifies them as edible. Don't eat any mushrooms found growing in city soil which could be lead-contaminated.
 School: Creative Einstein
 Description of work: Non-toxic water colour on acid-free paper
 URL: <https://volcanoartprize.com/portfolio-item/through-my-eyes/>



36. **Pictureproducts** mug winner!



Artist: Liza Tripathi. Age: 10

Title: Help me! Please! Healthy! Clean!

LEAD-Safety Message: Our planet needs us to stop burning fossil fuels, to have all the leaded dust, soil and sediments cleaned up to increase biodiversity and help us be smart enough to reverse climate change.

School: Creative Einstein.

Description of work: Non-toxic water colour on acid-free paper. URL: <https://volcanoartprize.com/portfolio-item/help-me-please-healthy-clean/>

37. **Highly commended!**



Artist: Elizabeth O'Brien

Title of Image: Celebration of the end of the 100 year reign of Leaded Petrol globally

Lead-Safety Message: After 35 Years, Global Leaded Petrol Phaseout which began

in Japan in 1986 has finally ended in Algeria in July 2021. Next phaseout required: Leaded Aviation Fuel!

Description of Work: Collage (made in Paint) of progressive highlighter drawing dedicated to Noela Whitton.

URL: <https://volcanoartprize.com/portfolio-item/celebration-of-the-end-of-the-100-year-reign-of-leaded-petrol-globally/>

38. **Pictureproducts** mug winner!



Graphic by Rose Lennon, aged 7.

Artist: Rose Lennon. Age: 7

Title: Women protesting against polluting vehicle fuels

Lead-Safety Message: In the mid-1990s I drew this when The LEAD Group was campaigning to ban leaded petrol so that every mother could spend less time cleaning up lead dust and more time playing with their children.

Description of Work: Pen drawing.

URL: <https://volcanoartprize.com/portfolio-item/3388/>



39. mug winner!

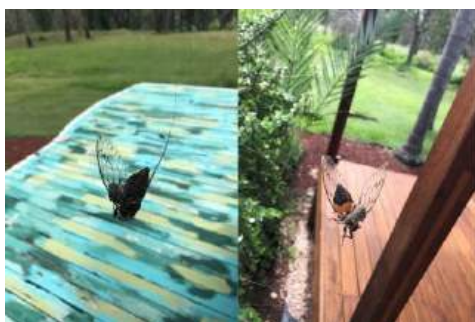


Artist: Monika Mangal. Title: Switch your Lead Lipstick to Lead free. Lead-Safety Message: I've Switched my "Maybelline" Lipstick to natural "Urban color London" Lipstick and other Lead cosmetics to Lead free cosmetics at right time. Lead and other trace metals may be found in many lipsticks, these occur naturally and can accidentally contaminate other ingredients during production. As contaminants are not added intentionally they will not be listed as ingredients. But it's good to change it over the period of time. The lead levels ranged from 0.09 to 3.06 ppm, with the highest levels found in lipsticks made by Cover Girl, L'Oreal, and Revlon, Maybelline. Description of Work:

clicked by iphone xr.

URL: <https://volcanoartprize.com/portfolio-item/switch-your-lead-contained-lipstick-to-lead-free/>

40. Highly commended!



Artist: Elizabeth O'Brien.

Title: Lead and Webs are Silent Invisible Killers

Lead-Safety Message: When a cicada is caught in an invisible web, it struggles loudly until the spider kills it. But when lead kills, mostly, neither the patient nor the doctors know the cause of death. Lead poisoning is a silent invisible killer.

Description of Work: iPhone9 Photos collaged in Powerpoint & Paint. URL: <https://volcanoartprize.com/portfolio-item/lead-and-webs-are-silent-invisible-killers/>

41. People's Choice Winner! Congratulations Faridah for getting the most Facebook Likes thus raising more lead-awareness than any other entry in VAP 2021!



mug winner!

Artist: Faridah Hussein Were

Title: Lead Exposure during Informal Automobile Painting Activities

Lead-Safety Message: Ban use of lead in automobile paint to protect human health and environment

School Name: Chemistry Department, University of Nairobi

Description of Work: This is one of the power point presentations in the virtual East African Community workshop during the International Lead Poisoning Prevention Week of Action on 29th October 2020. The photo depicts preparation of lead painted automobile metal

surfaces through sanding in open garages in residential areas. These activities result in substantial exposure to the environment, workers and communities in the vicinities. Research was also carried out and found that the automobile paints sold in the nearby retail shops had markedly high levels of lead that exceeded the 90 ppm limit set by the East African Paint and Allied Product Standards. The photo justifies why export, import, use or sale of lead in automobile paints should be banned across the region by enforcing the East African Paint Standards of 90 ppm maximum total lead in paint.

URL: <https://volcanoartprize.com/portfolio-item/lead-exposure-during-informal-automobile-painting-activities/>



Hidden injustices of leaded petrol production at New Zealand Refining Co in the leaded petrol era: 1964 to 1996

By Brian Arndt, BEng, Shift Operator from early 1965 to late 1975, New Zealand Refining Co, , with references added by Elizabeth O'Brien, BSc, The LEAD Group Inc. NB: LID refers to the Library ID number in The LEAD Group's Library database.



2019 Volcano Art Prize Entry. Title: Brian Arndt and his stack of Lead Research. Lead Safety Message: My Research, My Gift to future generations to stop this happening again, a world free from leaded Petrol. Artists: Brian Arndt (lead-safety message) and NZME (photo). Description of Work: Photograph by New Zealand Media &

Entertainment (NZME) – reprinted with kind permission, from http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11959704&ref=rss
URL: <https://volcanoartprize.com/portfolio-item/brian-arndt-and-his-stack-of-lead-research/>

In a phonecall from Brian Arndt to Elizabeth O'Brien on Friday January 7, 2022, Elizabeth made the following contemporaneous notes of what Brian said but was unable to keep pace with noting his conversation so requested that he email the full story:

I've had a death threat. My dr told me I'd better pull my head in. My forthcoming review has been postponed - ACC's lawyer Buddle Findlay was going to attend the court which is unheard of. I'll send you the email. The email said they [my Buddle Findlay legal team] had not filed further evidence by the original deadline. Now it will be filed in mid-February. A US document noted that NZ had more lead in petrol than most other countries.

Buddle Findlay charge like wounded bulls so I'll be sunk if I get their costs. I'm living continuously with a standard pain level of 3-4 out of 10 in my stomach from the tri-ethyl lead poisoning which Gil Newburn said 4 mths ago was causing ruptures in my stomach. I get spikes of pain to 6-7. My Dr Bruce Pitchford gave me some tablets for the pain but when I showed them to the local pharmacist she said they're to treat syphilis and would kill me. Octel had a man out to NZ in the 1970s to promote TEL to our government. Innospec got fined \$50m in US and 12.5 pounds in UK for bribery and corruption. Octel was banned from



manufacturing TEL in the 1970's. NZ Customs and Oz Customs are based on UK Customs Law and they are supposed to keep records since 1984 but in 2000 NZ Customs were going to trial a 7-yr record keeping trial so all records of TEL imports have been destroyed. NZ soil lead levels are twice Roman soil lead levels and Ananda Hills Laboratory which says that petrol lead was high near her back fence supports that.

When you walked in the refinery you could smell lead, benzene, toluene etc. I can't say how many days I did on the white oils or any other area, like marine oils - I did 21 shifts over every 28 days.

The amount of lead in air was 4 times the standard when it was monitored at the Jetty when the leaded petrol was being loaded for shipping around New Zealand (not at the Lead Plant where I mostly worked where 100% TEL or TML was constantly in the air) after I finished working at the Refinery.

I'm very scared of Buddle Findlay. NZ has always had the highest car ownership in the world per head of population.

[Reference: A screening-level risk assessment of petrol exposures in New Zealand - A report to the Institute of Environmental Science and Research, Ltd. By J. Fowles and E. Silver, Laurelton Research, Tox-Logic Consulting, LLC. May 2015
<https://www.esr.cri.nz/assets/HEALTH-CONTENT/MoH-reports/FW15029-Petrol-Risk-assessment-FINAL.pdf> states:

“New Zealand consumed, per capita, 508 kg of petrol, measured in oil equivalents in 2011 (World Bank 2014). In terms of country rankings, this figure places New Zealand at 10th out of 136 countries for which data were reported for that year...”

NZ has the highest rates of cardiomyopathy and neurological issues like Alzheimers, Parkinsons, etc and this is now known to be as a result of us having higher lead in petrol and higher car ownership than other countries.

In an email sent: Saturday, January 8, 2022 1:12 PM, Brian Arndt wrote to The LEAD Group:

It seems that there has been Files removed that relate to the early formation of the EPA and its directives to "Clean up the Pollution of the Environment". However I have found this page amongst some of my past Research, as above.

In 1972 the EPA stated that the ongoing lead levels were going to be 0.2 gms/US Gallon and reducing to 0.1 gms/Gallon by 1975. There was an outcry from the Oil Industry which resulted in delaying Litigation which dragged on for years.

During this period Production was banned in the USA and manufacturing was "sold" to a "Paper Company" which established a new plant at Ellesmere Port, England. (I believe this was also a Licensed Customs Bonded Plant). To avoid similar scrutiny here in NZ a similar License system was used and I think you will find the same happened in Australia, hence the



limited amount of records. Of note I spoke to a Chap a few years ago who had come to NZ from this Ellesmere Port area of the United Kingdom and when asking him about Octel/Innospec his comment was "No bloody way did you go anywhere near that Place - it was called the Poison Area".

I hope this will help in reviewing my position and there is no argument to oppose that the Lead Levels used here in NZ were from 1964 to 1986 at 0.84 gms/liter - one of the highest in the Western World. It is now believed that when poor Octane Ratings were tested in the Naphtha Feedstock this would account for the extra emergency shifts to transfer extra TEL/TML.

Jessie Stolark of EESI - Environmental and Energy Study Institute. Washington DC, USA, wrote (March 30, 2016) in *EESI Fact Sheet - A Brief History of Octane in Gasoline: from Lead to Ethanol - White Papers* [LID 25442]:

Leaded Gasoline & Health Concerns

Early in its use as a fuel additive, health concerns were raised regarding the use of lead in gasoline. In 1924, 15 refinery workers in New Jersey and Ohio died of suspected lead poisoning...

It was not until the 1960s, following extensive health research, that the devastating impacts of low-level lead exposure were established...

Leaded Gasoline Phase-Out in the United States

Congress passed the Clean Air Act in 1970, setting in motion the formation of the EPA and, ultimately, the removal of lead from gasoline....

Timeline of Lead Phase-Out

1970: Congress passes the *Clean Air Act*. The EPA is formed and given the authority to regulate compounds that endanger human health.

1973: EPA mandates a phased-in reduction of lead content in all grades of gasoline.

1974: EPA requires availability of at least one grade of unleaded gasoline, in order to be compatible with 1975 make and model year vehicles.

Licensed Customs Bonded Areas

The following Harbour Regulations in relation to petroleum oil tanks does not seem to have been applied at New Zealand Refinery in the years 1965-1975. Is this because the refinery was a Licensed Customs Bonded Area?



According to New Zealand: The General Harbour Regulations 1954

[http://www.nzlii.org/nz/legis/num_reg/nztghr1954386/nztghr1954386.html] = LID 25459]:

2. In these regulations, unless the context otherwise requires,-

"Fuel oil" means any petroleum which has a true flashpoint of over 150 degrees Fahrenheit and which is used or intended for use as fuel:

112. (1) Before any oil tank is tested-

(a) All residual oil and any sludge or deposit therein shall be removed from any such tank which has contained petrol or petroleum, and where any person is employed in the cleaning of the tank which has contained oil with a flashpoint below 73 degrees Fahrenheit (close test) he shall be provided with suitable breathing apparatus consisting of a helmet or face piece with necessary connections by means of which he can breathe outside air:

(b) It shall be thoroughly steamed by means of steam jets for such period as will ensure the vaporization of all volatile oil:

(c) After it has been steamed-

(i) All covers of manholes and other openings therein shall be removed, and it shall be thoroughly ventilated, by mechanical or other efficient means, so as to ensure the removal of all oil vapour; and

(ii) The interior surfaces shall, if any deposit remains thereon, be washed or scraped down.

(2) If the oil tank is on a ship, the duty of complying with paragraphs (a), (b), and (c) of sub clause (1) of this regulation shall rest on the master of the ship, and, in the case of an oil tank not on the ship, the obligation of complying with those paragraphs shall rest on the owner of the oil tank.

Associated Octel / Innospec are liars and cheats and nothing they've ever written can be trusted

Astoundingly, when Octel falsely claimed in a New Zealand Herald newspaper advertisement "Unleaded petrol and Cancer: Asbestos, Cigarettes, now Benzene" in 1995 that more benzene would be emitted from vehicles if unleaded petrol was used, compared to leaded petrol, the only reason Octel agreed to stop running the advertisement was because the New Zealand Sugar Company complained as follows:

Complaint: An advertisement for Octel unleaded Petrol was published in the New Zealand Herald. It contained statements relating to cancer causing properties of unleaded petrol. It contained the statement, "In contrast, lead is a naturally occurring toxin, as are alcohol, sugar and salt."

The Complainant objected to the statement that sugar was a naturally occurring toxin as being factually incorrect.

The relevant provision was Rule 2 of Advertising Code of Ethics.

[Reference: Octel - Unleaded Petrol Chairman's Ruling [1995] NZASA 47 (1 May 1995) (re: Octel's advertisement: "Unleaded petrol and Cancer: Asbestos, Cigarettes, now Benzene"), by New Zealand Advertising Standards Authority (NZASA), <http://www.nzlii.org/cgi-bin/sinodisp/nz/cases/NZASA/1995/47.html?query=benzene>] = LID 25460]



Brian Arndt related *LEAD Action News (LAN)* & Other Article Links, in Author Alphabetical Order

Collated by Elizabeth O'Brien, The LEAD Group environmental health charity, Australia, 10th October 2021.

Note: LibrID is the Library ID (LID) or catalogue no. from The LEAD Group's Library Database – the world's largest lead library database. All these Library items are available as e-copies – please request them using the LibrID number.

Each reference paragraph consists of the following 6 items: LibrID; Author/s; Title; Source or Publisher/s; URL [a missing URL means it is not web-published]; Date of (first) publication.

19420

Accident Compensation Corporation (ACC), New Zealand

ACC Prevention, Care, Recovery - For providers - Clinical Best Practice - ACC Review: Lead Poisoning - Issue 16 (March 2005) [excerpts on adult lead poisoning reprinted in LANv20n1]

Accident Compensation Corporation (ACC) extracts reprinted by The LEAD Group, pages 78-81, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1).

<https://lead.org.au/lanv20n1/LANv20n1-24.pdf>

01-Mar-2005

19506

Advocate (newspaper), New Zealand

19790507 Lead in petrol 'small factor' IN Lead scavengers & other carcinogens in gasoline, New Zealand 1965-1975

The Advocate, New Zealand, web-published by The LEAD Group on page 63, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-22.pdf>

07-May-1979

19514

Advocate (newspaper), New Zealand

19790503 Advocate newspaper article: Lower lead content praised [re: New Zealand petrol] [includes: "The Minister of Energy, Mr Birch, said yesterday Marsden Pt Refinery intended to drop the lead content in petrol from 0.84 grams to 0.45 grams per litre."]

The Advocate, New Zealand, web-published by The LEAD Group on page 88, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-29.pdf>

03-May-1979



19496

Advocate (newspaper), New Zealand (with *LEAD Action News* Editor's note by Elizabeth O'Brien)

Procedures not archaic - doctor [image of newspaper article reprinted with heading: 19770111 Advocate newspaper article re: New Zealand lead industry "procedures not archaic" - Dr Wilson]

The Advocate, New Zealand 11th January 1977, reprinted by The LEAD Group at page 31, *LEAD Action News* vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-11.pdf>

11-Jan-1977

19425

Anis, Tarek H MD; Karaksy, Ahmed El MD; Mostafa, Taymour MD; Gadalla, Amr MD; Imam, Hager PhD; Hamdy, Lamya PhD; Abu el-Alla, Omayma PhD

Chronic lead exposure may be associated with erectile dysfunction (Abstract, Errata, and full text pdf)

J Sex Med. 2007 Sep;4(5):1428-34; discussion 1434-6.

<https://www.ncbi.nlm.nih.gov/pubmed/17727353>

01-Sep-2007

19495

Arndt, Brian Clinton

NZ TEL-exposed refinery shift operator compensation claim - letters to The LEAD Group edited together by Elizabeth O'Brien

pages 22-30, *LEAD Action News* vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-10.pdf>

02-Oct-2019

19519

Arndt, Brian Clinton

20190729 Brian Arndt's requests for restricted document release & Medical review prior to Appeal Court Hearing in the MATTER BETWEEN Brian Arndt AND Accident Compensation Corporation AND New Zealand Refinery Limited

Brian Clinton Arndt: web-published by The LEAD Group on pages 101-102, *LEAD Action News* vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-32.pdf>

29-Jul-2019



19503

Associated Octel Company Limited London

196405 Octel Bulletin No 12 The safe handling of Octel Antiknock compound

Associated Octel, United Kingdom: web-published by The LEAD Group at pages 41-47, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-18.pdf>

01-May-1964

19416

Associated Octel Company Limited London

World-wide Survey of Motor Gasoline Quality [WWSMGQ] May 1968 [extracts: page 58 shows Lead Content of New Zealand Petrol in January-February 1968 - up to 3.17 g Pb per US Gallon or 0.84 g Pb per Litre; page 94 shows Table 6]

The Associated Octel Company Limited London: web-published by The LEAD Group on page 99, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-29.pdf>

01-May-1968

19376

ATSDR - Agency for Toxic Substances and Disease Registry, USA

Toxic Substances Portal :1,2-Dibromoethane - CAS ID #: 106-93-4; Affected Organ Systems; Cancer Classification; Chemical Classification; Summary [1,2-Dibromoethane is a lead scavenger added to TEL/TML/TAL gasoline lead additive]

Page last updated: March 3, 2011. Content source: Agency for Toxic Substances and Disease Registry (ATSDR)

<https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=131>

03-Mar-2011

19377

ATSDR - Agency for Toxic Substances and Disease Registry, USA

Toxic Substances Portal :1,2-Dichloroethane - CAS ID #: 107-06-2; Affected Organ Systems; Cancer Classification; Chemical Classification; Summary [1,2-Dichloroethane is a lead scavenger added to TEL/TML/TAL gasoline lead additive]

Page last updated: March 3, 2011. Content source: Agency for Toxic Substances and Disease Registry (ATSDR)

<https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=110>

03-Mar-2011



18732

Bayer, Kurt

Ex-Marsden Point Oil Refinery worker with cancer wants compensation, claiming lead poisoning - New Zealand [re: Brian Arndt]

New Zealand Herald

http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11959704&ref=rss;https://lead.org.au/lanv20n2/LANv20n2-38.pdf

15-Dec-2017

19385

Beckley, Amber L. PhD; Caspi, Avshalom PhD; Broadbent, Jonathan PhD; Harrington, Honalee BA; Houts, Renate M. PhD; Poulton, Richie PhD; Ramrakha, Sandhya PhD; Reuben, Aaron MEM; Moffitt, Terrie E. PhD
Association of Childhood Blood Lead Levels With Criminal Offending [Dunedin cohort]

JAMA Pediatr. 2018;172(2):166-173. doi:10.1001/jamapediatrics.2017.4005 - Published online December 26, 2017

<http://dx.doi.org/10.1001/jamapediatrics.2017.4005>

26-Dec-2017

19431

Borke, Jesse (updated by) MD, FACEP, FAAEM, Attending Physician at FDR Medical Services/Millard Fillmore Suburban Hospital Buffalo, NY. Also reviewed by Zieve, David MD, MHA, Medical Director; Conaway, Brenda, Editorial Director, and the A.D.A.M. Editorial Team

Gasoline poisoning: This article discusses the harmful effects from swallowing gasoline or breathing in its fumes.

Medline Plus, US National Library of Medicine

<https://medlineplus.gov/ency/article/002806.htm>

16-Oct-2017

19501

Brownlie, JM, Medical Officer of Health

19651223 Dept of Health letter emphasising leadsafety & PPE for handling leaded sludge

Medical Officer of Health, New Zealand: web-published by The LEAD Group at page 39, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-16.pdf>

23-Dec-1965



19502

Brownlie, JM, Medical Officer of Health, New Zealand

19660128 Dept of Health letter re Octel SS Limerick spill & brochure on hazards of TEL & TML

Medical Officer of Health, New Zealand: web-published by The LEAD Group at page 40, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-17.pdf>

28-Jan-1966

19436

Caplun, Elisabeth; Petit, Daniel; and Picciotto, Edgard

Lead in Petrol (1984) [INCLUDES: Schematic representation of fate of lead in the human body]

Endeavour. New Series, Volume 8, No.3, 1984. 018&9327/84 80.00 + SO. 0 1884. Pergamon Press. Printed in Great Britain.

<https://www.sciencedirect.com/science/article/pii/0160932784900073>

01-Jan-1984

19520

Cook, KP, PHN [Public Health Nurse], Department of Health, New Zealand

19780202 Jetty Operators at Refinery to have blood and urine lead tests after lead ship sails IN Brian Arndt's Answers to Elizabeth O'Brien's Questions

Department of Health, New Zealand: web-published at page 107, LEAD Action News vol 20 no 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-33.pdf>

02-Feb-1978

19521

Cook, KP, PHN [Public Health Nurse], Department of Health, New Zealand

19790302 Jetty Operators at Refinery to have blood and urine lead tests before and after loading ship IN Brian Arndt's Answers to Elizabeth O'Brien's Questions

Department of Health, New Zealand: web-published at page 107-108, LEAD Action News vol 20 no 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-33.pdf>

02-Mar-1979



19522

Cook, KP, PHN [Public Health Nurse], Department of Health, New Zealand

19790302 Jetty Operators at Refinery working hours & job description and Bulk lead shipments every 2-3 months IN Brian Arndt's Answers to Elizabeth O'Brien's Questions

Department of Health, New Zealand: web-published at page 107-108, LEAD Action News vol 20 no 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-33.pdf>

02-Mar-1979

19500

Copplestone, JF, for Director, Division of Public Health, Department of Health, New Zealand

19651208 Dept of Health letter re considerable risk of lead poisoning from handling leaded sludge: DISPOSAL OF LEADED SLUDGE

Division of Public Health, New Zealand: web-published by The LEAD Group at page 38, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-15.pdf>

08-Dec-1965

19417

Department of Health, New Zealand

Report of the Motor Vehicle Committee on Proposed Motor Vehicle Emission Standards, 1974 page 8 (Summary of recommendations) and page 15 (oil industry proposal to save costs)

Wellington, New Zealand

01-Jan-1974

19429

Friberg, Lars (Editor); Nordberg, Gunnar F and Vouk, Velimir B

Handbook on the Toxicology of Metals

Elsevier/North-Holland Biomedical Press, Amsterdam, New York, Oxford 1979

01-Jan-1979

19422

Golub, Mari S (Editor/Author)

Metals, Fertility, and Reproductive Toxicity [book]

CRC/Taylor and Francis, Boca Raton, 2006

<https://epdf.pub/metals-fertility-and-reproductive-toxicity.html>

01-Mar-2006



19404

Health Protection Programme, Department of Health, Wellington, New Zealand

Waste Management Guide: 03. Treatment and disposal of leaded petrol sludges (September 1988)

Health Protection Programme, Department of Health, Wellington, New Zealand

[http://www.moh.govt.nz/notebook/nbbooks.nsf/0/4F9340F0FA162AC54C2565D7000E18F7/\\$file/treatment-disposal-leaded-petrol-sludges.pdf](http://www.moh.govt.nz/notebook/nbbooks.nsf/0/4F9340F0FA162AC54C2565D7000E18F7/$file/treatment-disposal-leaded-petrol-sludges.pdf)

01-Sep-1988

7052

Hu, Howard; Aro, Antonio; Payton, Marinelle; Korrick, Susan; Sparrow, David; Weiss, S & Rotnitzky A

The Relationship Of Bone And Blood Lead To Hypertension - The Normative Aging Study

JAMA Vol 275 No 15, 1st April 1996

<http://jama.ama-assn.org/cgi/content/abstract/275/15/1171>

01-Apr-1996

19421

Hunter, Donald, Consulting Physician, The London Hospital; with Editor's note by Elizabeth O'Brien

Hunter's The Diseases of Occupations - Lead Poisoning 1955-1975 (1st edition 1955, this edition 1975)

[EXTRACTS - 7 pp of typed extracts (corrected without access to the original, and with Editor's note, by Elizabeth O'Brien)]

The English Universities Press Ltd, 5th Edition 1975, an extract of this extract [LID 8313] appears in LANv9n4.

The full 7 page typed extracts appears in LANv20n1

<https://lead.org.au/lanv20n1/LANv20n1-20.pdf>

01-Jan-1975

19401

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC)

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, 1989, VOLUME 45 Occupational Exposures in Petroleum Refining; Crude Oil and Major Petroleum Fuels: Gasoline

WORLD HEALTH ORGANIZATION (WHO)

<http://publications.iarc.fr/63>

01-Jan-1989

19402

International Agency for Research on Cancer (IARC)

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 120: Benzene

WHO 2018

<http://publications.iarc.fr/576>

01-Jan-2018



9667

International Agency for Research on Cancer (IARC) Working Group of 20 experts from 11 countries
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Volume 87 Inorganic and organic lead compounds.

Volume 87 (2006). Supersedes LID 7420. [Incl 9p "Summary of Data Reported and Evaluation"; reviewed and updated in IARC technical paper 42 2010 LID=13228]. PREVIOUSLY AT <https://monographs.iarc.fr/wp-content/uploads/2018/06/mono87.pdf>; <http://monographs.iarc.fr/ENG/Monographs/vol87/index.php>; including "Summary of Data Reported and Evaluation" at <http://monographs.iarc.fr/ENG/Monographs/vol87/index.php> Volume 87 (2006).
Supersedes LID 742

<http://publications.iarc.fr/105>

01-Jan-2006

19350

International Agency for Research on Cancer (IARC) Working Group of 20 experts from 11 countries; extracts selected by Elizabeth O'Brien, The LEAD Group

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Inorganic and organic lead compounds. EXTRACTS: pp 209-11 2.1.7 Exposure to organic lead. Pp 254-7 Dermal exposure; etc Volume 87 (2006)

International Agency for Research on Cancer (IARC) extracts reprinted at pages 48-52, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1). PREVIOUSLY AT

<http://monographs.iarc.fr/ENG/Monographs/vol87/index.php>; including "Summary of Data Reported and Evaluation" at <http://monographs.iarc.fr/ENG/Monographs/vol87/index.php>

<https://lead.org.au/lanv20n1/LANv20n1-19.pdf>

01-Jan-2006

19430

Kell, George W. Esq, Affidavits by (pages 58-60) and others. Press release by Safe Water Assn Inc.)

AFFIDAVITS Safe Water Association Incorporated (Plaintiff) vs Fond du Lac County (Defendant) PRESS RELEASE June 30 1993: Judge Grimm found fluoridation harmful but did not have the power to "enjoin" (forbid) the practice.

State of Wisconsin Circuit Court, Fond Du Lac County

https://firewaterfilm.files.wordpress.com/2013/04/affidavits-safe-water-assn_plaintiff-vs-fond-du-lac_defendant.pdf

30-Jun-1993

7051

Kim, Rokho; Rotnitzky, Andrea; Sparrow, David; Weiss, Scott; Wager, Carrie & Hu, Howard

A Longitudinal Study Of Low-Level Lead Exposure And Impairment Of Renal Function - The Normative Aging Study [ABSTRACT]

JAMA Vol 275 No. 15, April 17, 1996

www.ncbi.nlm.nih.gov/htbin-post/Entrez/query?uid=8609685&form=6&db=m&Dopt=b

17-Apr-1996



3753

Kitman, Jamie Lincoln

The Secret History Of Lead

The Nation, 20th March 2000 ORIGINALLY www.thenation.com/doc.mhtml?i=20000320&c=1&s=kitman;
www.thenation.com/article/secret-history-lead?page=full; LATER www.thenation.com/doc/20000320/kitman;
PREV www.globalleadnet.org & www.mindfully.org

<https://www.thenation.com/article/secret-history-lead/>

20-Mar-2000

6915

Kotulak, Ronald

Study links early adult deaths to lead - 30 million in U.S. could be at risk

Chicago Tribune, 20021227 - PREVIOUSLY AT: Users need to register first but it is free, from:

www.chicagotribune.com/features/health/chi-0212270325dec27,1,3244427.story

http://articles.chicagotribune.com/2002-12-27/news/0212270325_1_occupational-health-services-institute-ellen-silbergeld-dr-howard-hu

27-Dec-2002

9264

Kovarik, William PhD, Professor of Media Studies, Radford University

Ethyl-leaded Gasoline: How a Classic Occupational Disease Became an International Public Health Disaster

INT J OCCUP ENVIRON HEALTH 2005;11:384-397, PREVIOUSLY AT

<http://www.radford.edu/~wkovarik/ethylwar/IJOEH.pdf>

<https://www.tandfonline.com/doi/abs/10.1179/oeh.2005.11.4.384>

01-Jan-2005

19349

Kristensen, Louise

Quantification of atmospheric lead emissions from 70 years of leaded petrol consumption in Australia +
Supplementary Information

Atmospheric Environment 111 (2015) 195-201, Available online 8 April 2015

<https://www.sciencedirect.com/science/article/pii/S1352231015300157?via%3Dihub>

08-Apr-2015



19400

Kristensen, Louise Jane; Taylor, Mark Patrick and Flegal, Arthur Russell

An odyssey of environmental pollution: The rise, fall and remobilisation of industrial lead in Australia [The use of lead in petrol resulted in more than 240,000 tonnes of lead being emitted to the Australian environment over a 70-year period 1932-2002]

Applied Geochemistry Volume 83, August 2017, Pages 3-13 <https://doi.org/10.1016/j.apgeochem.2017.02.007>
<https://www.sciencedirect.com/science/article/pii/S0883292717301300>

01-Aug-2017

9496

MacAulay McDonnell, Ewan (revision of original factsheet by Alycia Bailey)

Lead, Ageing and Death

The LEAD Group Inc

<https://lead.org.au/fs/fst24.html>

20-Apr-2008

19458

MarketScreener

MarketScreener NEW ZEALAND REFINING COMPANY LTD Equities as at 1st November 2019 [showing that Accident Compensation Corp. owns 16,088,748 shares / 5.15% of equities.]

MarketScreener

<https://www.marketscreener.com/NEW-ZEALAND-REFINING-COMP-6492074/company/>

01-Nov-2019

19504

McLeod, WD, Supervising Inspector for Medical Officer of Health

19651115 Dept of Health requests hygiene info re leaded sludge cleaning from petrol storage tanks: DISPOSAL OF LEADED SLUDGE

Medical Officer of Health, New Zealand: web-published by The LEAD Group at page 60, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-21.pdf>

15-Nov-1965

19499

Medical Officer of Health

19650512 NZ Refining Co on List of Factories to be visited by Public Health Nurses

Medical Officer of Health, New Zealand: web-published by The LEAD Group at page 37, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-14.pdf>

12-May-1965



19518

MinterEllisonRuddWatts

MEMORANDUM OF COUNSEL FOR THE NEW ZEALAND REFINING COMPANY LIMITED SEEKING TO BE REMOVED FROM PROCEEDING IN THE MATTER BETWEEN Brian Arndt AND Accident Compensation Corporation

MinterEllisonRuddWatts, Wellington, New Zealand: web-published by The LEAD Group on pages 101-102, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-31.pdf>

19-Jun-2019

19434

Molyneux, M; Bonte, D; De Wilde, P; Illyni, J; Kaitale, T; Tiltne, A; Simpson, B; Urbanus J (Technical Coordinator)

Management of Occupational Health Risks during Refinery Turnarounds [including Appendix 5: Examples of Hazardous Agents]

CONCAWE (established 1963), Brussels October 2000

<https://www.concawe.eu/wp-content/uploads/2017/01/2002-00233-01-e.pdf>

01-Oct-2000

19527

Monigatti, Dr John, Toxicology Panel Convenor, Accident Compensation Corporation (ACC), New Zealand
ACC TOXICOLOGY PANEL letter to Mr Sebastian Bisley, Partner, Buddle Finlay re: answers by Ms O'Brien, an Australian scientist, to Mr Arndt's questions about his exposure to the lead scavengers; Arndt v ACC (BUD-LIVE.FID855866)

Accident Compensation Corporation (ACC), New Zealand, reprinted in LEAD Action News vol 20 no 4, June 2020

<https://lead.org.au/lanv20n4/LANv20n4-16.pdf>

16-Jan-2020

15888

National Toxicology Program (NTP)

NTP Monograph on Health Effects of Low-Level Lead: Appendix C: Human Studies of Cardiovascular Effects of Lead Considered in Developing Conclusions

US Department of Health and Human Services (DHHS)

http://ntp.niehs.nih.gov/NTP/ohat/Lead/Final/AppendixC-CardioEffects-prepublication_508.pdf

13-Jun-2012



19372

National Toxicology Program (NTP)

Bioassay of 1,2-dibromoethane for possible carcinogenicity [ABSTRACT] [1,2-Dibromoethane is a lead scavenger added to TEL/TML/TAL gasoline lead additive]

Natl Cancer Inst Carcinog Tech Rep Ser. 1978;86:1-129.

<https://www.ncbi.nlm.nih.gov/pubmed/12830212>

01-Jan-1978

19459

New Zealand Doctor webpage Blogpost 17 July 2013 & reposted on ACC Forum webpage, 19 August 2013

ACC offers workplace poisoning denial service: John Monigatti and the ACC Toxicology Panel

CORRECTED TITLE: ACC offers workplace poisoning denial service - John Monigatti and the ACC Toxicology Panel

ORIGINALLY WEBPUBLISHED BY New Zealand Doctor AT webpage: <https://www.nzdoctor.co.nz/in-print/2013/july-2013/17-july-2013/workplace-poisoning-queries-acc%E2%80%99s-business.aspx>; reprinted in LEAD Action News vol 20 no 2, January 2020

<https://accforum.org/forums/index.php?/topic/15257-acc-offers-workplace-poisoning-denial-service/>;

<https://lead.org.au/lanv20n2/LANv20n2-40.pdf>

17-Jul-2013

19412

New Zealand Gazette

The New Zealand Gazette No. 24 (1969) p. 792-794 includes notice that British Standard 4040-1:1967 Petrol for motor vehicles. Specification and nomenclature for grades of petrol (9/3/1967) is under consideration for adoption in New Zealand

New Zealand Gazette, WELLINGTON: WEDNESDAY, 23 APRIL 1969

http://www.nzlii.org/nz/other/nz_gazette/1969/24.pdf

23-Apr-1969

19515

New Zealand government archives

198004 [New Zealand Refining Co] Air Polluting Chemicals in Present & Expanded Refinery [includes: 0.45 g/L as the lead "level specified by Ministry of Energy in 1979" but gives 0.84 g/L as the "current" [1984] concentration of lead in NZ petrol]

New Zealand government archives: web-published by The LEAD Group on page 89, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-29.pdf>

01-Apr-1980



19406

New Zealand Ministry of Commerce

New Zealand Regulations As Made - Ministry of Commerce (Petroleum Products Specifications) Regulations 1995

New Zealand Ministry of Commerce

http://www.nzlii.org/nz/legis/num_reg/ppsr1995488/

20-Nov-1995

19405

New Zealand Ministry of Energy

New Zealand Regulations As Made - Ministry Of Energy (Petroleum Products Specifications) Regulations 1988

New Zealand Ministry of Energy

http://www.nzlii.org/nz/legis/num_reg/moepsr1988694/

05-Dec-1988

19368

New Zealand Parliament. House of Representatives, Parliamentary Debates: Volume 432, January 1, 1981

Oral Question from Mr Caygill (St Albans): NSW will introduce Lead-free Petrol on 1 July 1984? What about NZ? Written Answer by Mr Birch (Minister of Energy [New Zealand]) The present lead level of 0.84g/L [provides] energy conservation. 22 August 1981

New Zealand Parliament: reprinted by The LEAD Group on page 93, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://play.google.com/store/books/details?id=9nUrAQAAIAAJ&rdid=book-9nUrAQAAIAAJ&rdot=1>

31-Dec-1981

19517

New Zealand Refining Company

19800401 NZ Refining Co Simplified Flow Scheme of Expanded Refinery - Whangarei Refinery Expansion flow chart (circa April 1980)

The New Zealand Refining Company: web-published by The LEAD Group on page 100, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-30.pdf>

01-Apr-1980



19509

New Zealand Refining Company Limited [reprinted with a note by Brian Arndt]

19820112 New Zealand Refining Co Renewal of Licence application - Application for Renewal of Licence to Carry on Scheduled Process. Section 28.1. CLEAN AIR ACT 1972. [Brian Arndt: of note no mention of Lead Transfer and Blending Plant]

The New Zealand Refining Company Limited, PO Box 44, Whangarei, New Zealand: web-published by The LEAD Group at page 82, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-25.pdf>

12-Jan-1982

19510

New Zealand Refining Company Limited [reprinted with a note by Brian Arndt]

19661224-197702 New Zealand Refining Co Ltd Overall Plot Plan - This 24th December 1966 plan updated in February 1977 clearly shows the TEL (Tetra Ethyl Lead) Plant at the centre lower half (between the Black Components and the White Components)

The New Zealand Refining Company Limited, PO Box 44, Whangarei, New Zealand: web-published by The LEAD Group at page 83, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-26.pdf>

01-Feb-1977

19511

New Zealand Refining Company Limited [reprinted with a note by Brian Arndt]

1978 or 1979 NZ Refining Co Proposed Extensions showing Gasoline Comps (TEL plant) - Proposed Plan of New Zealand Refining Company Limited Plant Extensions, believed drawn late 1970's. Tetra Ethyl Lead Plant shown centre right by Gasoline Compound

The New Zealand Refining Company Limited, PO Box 44, Whangarei, New Zealand: web-published by The LEAD Group at page 84, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-27.pdf>

01-Jan-1979

19512

Northern Advocate

19790125 Northern Advocate article: Doctors back campaign for safer petrol in New Zealand [Includes: "Marsden Pt refined petrol is boosted by twice the amount of lead as that of most European countries"]

Northern Advocate, New Zealand, web-published by The LEAD Group on page 85, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-28.pdf>

25-Jan-1979



19423

O'Brien, Elizabeth (collator)

Associations between Brian Arndt's non-cancer health issues and his occupational exposures: Erectile dysfunction and lead exposure; Balance problems and lead & gasoline fumes exposure; Psychotic dreaming and exposure to TEL or TML; etc

The LEAD Group, pages 71-77, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-23.pdf>

02-Oct-2019

24483

O'Brien, Elizabeth (collator)

The Physician's Pledge from The Geneva Declaration (modern Hippocratic Oath) Information collated to show what Dr Monigatti of the New Zealand Accident Compensation Corporation (ACC) likely pledged when he graduated as a medical doctor

<https://lead.org.au/lanv20n2/LANv20n2-39.pdf>

21-Jan-2020

19411

O'Brien, Elizabeth (writer of questions and collator of answers)

The Lead Content of Petrol/Gasoline in New Zealand 1965-1975

pages 85-99, LEAD Action News vol 20 no 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-29.pdf>

02-Oct-2019

19493

O'Brien, Elizabeth

Who can mend old leaded men? [first page article in LEAD Action News vol 20 no 1 - LANv20n1]

page 1, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-01.pdf>

02-Oct-2019

19494

O'Brien, Elizabeth

Editorial in LEAD Action News vol 20 no 1 - LANv20n1 - Who can mend old leaded men?

pages 4-6, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-03.pdf>

02-Oct-2019



19505

O'Brien, Elizabeth

Lead scavengers & other carcinogens in gasoline, New Zealand 1965-1975 - Questions posed and answers collated by Elizabeth O'Brien, Lead Scientist, The LEAD Group Inc, Australia

pages 61-70, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-22.pdf>

02-Oct-2019

19433

O'Brien, Elizabeth and Arndt, Brian

Brian Arndt's Answers to Elizabeth O'Brien's Questions

pages 107-115, LEAD Action News vol 20 no 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-33.pdf>

02-Oct-2019

19441

O'Brien, Elizabeth, BSc (Sydney), Graduate Diploma of Health Education, Lead Scientist and Advisor, The LEAD Group Inc (Australia), Editor-in-Chief

LEAD Action News vol 20 no 1 - LANv20n1 Who can mend old leaded men?

LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1) ALSO AT <https://lead.org.au/lanv20n1/LANv20n1-Who-can-mend-old-leaded-men.pdf>

<https://lead.org.au/lanv20n1/LANv20n1-Who-can-mend-old-leaded-men.pdf>

02-Oct-2019

24484

O'Brien, Elizabeth, BSc (Sydney), Graduate Diploma of Health Education, Lead Scientist and Advisor, The LEAD Group Inc (Australia), Editor-in-Chief

Workers Compensation Claim Template for a Leaded Petrol Era Oil Refinery Worker Eg Brian Arndt who worked at New Zealand Refining Company 1

LEAD Action News vol. 20 no. 2, December 2020 (LANv20n2) ALSO AT <https://lead.org.au/lanv20n1/LANv20n1-Who-can-mend-old-leaded-men.pdf>

<https://lead.org.au/lanv20n2/LANv20n2-41.pdf>

31-Jan-2020



11919

PAREKH, PRAVIN P; KHWAJA, HAIDER A; KHAN, ADIL R; NAQVI, RONAQ R; MALIK, ABDUL; KHAN, KHALID and HUSSAIN, GHAZANFAR

Lead Content of Petrol and Diesel and its Assessment in an Urban Environment [ABSTRACT: Pb petrol WHO guideline 0.15 g/L; Pakistan 1991 Pb content of petrol: 1.5-2.0 g/L (highest in Asia) but 1999 0.335-0.390 g/L] Environmental Monitoring and Assessment, March 2002, Volume 74, Issue 3, pp 255-262, Springer Link, Netherlands

<https://link.springer.com/article/10.1023/A:1014296713553>

01-Mar-2002

19513

Powell, RJ, General Manager

19790305 NZ Refining Co supplies Associated Octel lead info to Medical Officer of Health, New Zealand. Includes FOLDER CONTENTS: "The folder was prepared for a Press Conference in Australia by Associated Octel Limited."

The New Zealand Refining Company: web-published by The LEAD Group on page 87, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<http://www.leadsafeworld.com/LANv20n1-29.pdf>

05-Mar-1979

19399

PubChem (USA)

PubChem compound Summary Tetraethyllead [includes: Reported fatal dose: 15 mL tetraethyl lead, ie 0.35 g/kg body weight. Molecular formula: $\text{Pb}(\text{C}_2\text{H}_5)_4$

PubChem (USA) - PubChem® is a registered trademark of the U.S. National Library of Medicine

<https://pubchem.ncbi.nlm.nih.gov/compound/Tetraethyllead#section=Drug-and-Medication-Information>
20-Sep-2019

19497

Reid, Dr Malcolm

20170811 Otago University lead analysis of Brian Arndt's teeth - August 2017

Otago University - Chemistry Department: web-published by The LEAD Group at pages 32-35, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-12.pdf>

11-Aug-2017



19409

Reuben, Aaron MEM; Caspi, Avshalom PhD; Belsky, Daniel W. PhD; Broadbent, PhD; Harrington, Honalee BA; Sugden, Karen PhD; Houts, Renate M PhD; Ramrakha, Sandhya PhD; Poulton, Richie PhD; Moffitt, Terrie E PhD
Association of Childhood Blood Lead Levels With Cognitive Function and Socioeconomic Status at Age 38 Years and With IQ Change and Socioeconomic Mobility Between Childhood and Adulthood [Dunedin cohort]
JAMA. 2017;317(12):1244-1251. doi:10.1001/jama.2017.1712; JAMA March 28, 2017 Volume 317, Number 12.
See Editorial = LID 19408 re: this article.

https://jamanetwork.com/journals/jama/fullarticle/2613157?utm_campaign=articlePDF&utm_medium=articlePDFlink&utm_source=articlePDF&utm_content=jama.2017.1560

28-Mar-2017

19407

Reuben, Aaron, Department of Psychology and Neuroscience, Duke University, Durham, NC, USA
Childhood Lead Exposure and Adult Neurodegenerative Disease [Alzheimers Disease, Parkinsons Disease, dementia - Child BLLs from Port Pirie, Boston, Massachusetts, Cincinnati & Dunedin cohorts]
Journal of Alzheimer's Disease 64 (2018) 17-42, DOI 10.3233/JAD-180267, IOS Press, Published: 8 June 2018

<https://content.iospress.com/articles/journal-of-alzheimers-disease/jad180267>

08-Jun-2018

19525

Roberts, Pippa

19790627 Advocate newspaper article: Lead poisoning problems persist after centuries, by Pippa Roberts
The Advocate, New Zealand, web-published by The LEAD Group on page 116, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-34.pdf>

27-Jun-1979

19435

Safe Work Australia

Safe Work Australia - Deemed Diseases in Australia, August 2015 [cites: 276. Henderson J, Baker H, Hanna P. Occupation-related male infertility: a review. Clinical Reproduction and Fertility 1986; 4(2):87-106.]

Safe Work Australia

<https://www.safeworkaustralia.gov.au/system/files/documents/1702/deemed-diseases.pdf>

01-Aug-2015



19432

Shell

Table 7a (i) Refinery: Chemical Agent Inventory: Examples of chemical agents and the principal areas in which they may occur, from Shell Occupational Health Hazard Inventory

Web-published by Petroleum Development Oman on 6th May 2012

https://www.pdo.co.om/hseforcontractors/Health/Documents/Forms/AllItems.aspx?Paged=TRUE&p_SortBehavior=0&p_FileLeafRef=PDO%20HEALTH%20HAZARD%20REGISTER%20122016%20exlsx&p_ID=370&RootFolder=%2fhseforcontractors%2fHealth%2fDocuments%2fHRAs&PageFirstRow=31&&View={CA6B6393-9515-41E4-8223-61BADE2DAB33}

06-May-2012

19498

Simpson, E, Medical Officer of Health

19640313 Medical officer proposal to deal with extremely toxic TEL & TML at NZ Refinery

Medical Officer of Health, New Zealand: web-published by The LEAD Group at page 36, LEAD Action News vol. 20 no. 1, October 2019 (LANv20n1)

<https://lead.org.au/lanv20n1/LANv20n1-13.pdf>

13-Mar-1964

19370

Toxnet - Toxicology Data Network

Toxnet - Hazardous Substances Data Bank (HSDB), Toxicology Data Network, US National Library of Medicine, US National Institutes of Health: TETRAETHYL LEAD - CASRN: 78-00-2

US National Library of Medicine, US National Institutes of Health, Reviewed by SRP 5/8/2008

<https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+841>

08-May-2008

17409

Vella, Vance; O'Brien, Elizabeth; Idris, Elisa; Wibowo, Erik; Zhu, Hugh Xin Xi; & Choong, Emily

Health Impacts of Lead Poisoning - A preliminary listing of the health effects & symptoms of lead poisoning - updated January 2014 and April 2018

LEAD Group, The, REFERENCE URLS UPDATED ON 4/4/11 by David Ratcliffe; First published 24/6/05, updated by Dr Hugh Xin Xi Zhu in January 2014, PREVIOUSLY AT

http://www.lead.org.au/fs/Health_Impacts_of_Lead_Poisoning.pdf;

https://www.lead.org.au/fs/Health_Effects_by_Vance_Vella_updated_by_Emily_Choong_201804.pdf

01-Apr-2018



19403

Walsh, Michael (Drafted & revised) with funding from International Lead Management Centre (ILMC) for United Nations Environment Programme (UNEP) & Organisation for Economic Co-operation and Development (OECD)

Phasing Lead out of Gasoline: An Examination of Policy Approaches in Different Countries

United Nations Environment Programme (UNEP) & Organisation for Economic Co-operation and Development (OECD) 1999

<https://www.un.org/esa/gite/iandm/unep-lead.pdf>

01-Jan-1999

11668

Wilson, Nick and Horrocks, John

Lessons from the removal of lead from gasoline for controlling other environmental pollutants: A case study from New Zealand

Environ Health. 2008; 7: 1. Published: 7 January 2008, PREVIOUSLY AT

<http://ukpmc.ac.uk/backend/ptpmcrender.cgi?accid=PMC2263033&blobtype=pdf>;

<http://ukpmc.ac.uk/picrender.cgi?artid=1270003&blobtype=pdf>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2263033/>

07-Jan-2008

19424

Winder, Assoc Prof Chris, School of Safety Science, University of NSW

Book Review: Metals, Fertility and Reproductive Toxicity, 27th March 2006

possibly unpublished until The LEAD Group quoted an extract of it in LANv20n1 (LID 19423) - hard copy only inside the book it is reviewing = LID 19422

27-Mar-2006

19378

WORLD HEALTH ORGANIZATION (WHO) INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC)

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, 1999, VOLUME 71 Re-evaluation of Some Organic Chemicals, etc [includes lead scavengers 1,2-DICHLOROETHANE and 1,2-DIBROMOETHANE used in leaded MoGas and AvGas]

IARC

<https://publications.iarc.fr/89>

01-Jan-1999



US EPA Integrated Science Assessment for Lead (June 2013) Statements about Cancer

Collated by Elizabeth O'Brien, Lead Scientist and Lead Advisor, The LEAD Group Inc, Australia, Nov 2021

From the Reference:

United States Environment Protection Agency (US EPA)
Integrated Science Assessment for Lead - [published June 26,
2013, with Errata Sheet Created May 12, 2014],
<https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=255721>

PREAMBLE - EPA Framework for Causal Determination: Evaluating Evidence for Inferring Causation page lii [page 54/1886 in whole pdf]

Many of the health and environmental outcomes reported in
these studies have complex etiologies. **Diseases such as
asthma, coronary heart disease (CHD) or cancer are
typically initiated by multiple agents.**

PREAMBLE – Quantitative Relationships: Effects on Human Populations page lxiii-lxiv [pages 65-66/1886]

...the available human data at ambient concentrations for some
environmental pollutants [cont'd next page] (e.g., particulate
matter [PM], O₃, lead [Pb], environmental tobacco smoke
[ETS], radiation) do not exhibit thresholds for cancer or
noncancer health effects, even though likely mechanisms
include nonlinear processes for some key events.

EXECUTIVE SUMMARY – Health Effects of Pb page lxxxvii [page 89/1886]

**Table ES-1 (Continued): Summary
of causal determinations for the
relationship between exposure to
Pb and health effects. lxxxvii Health
Outcome**

Causality Determination*
(Table with Key Evidence)

Cancer (Section 1.6.7)

Cancer

Likely Causal Relationship ([Table 4-50](#))

The animal toxicological literature provides the strong evidence for long-term exposure (i.e., 18 months or 2
years) to high concentrations of Pb (> 2,600 ppm) inducing tumor development; findings from
epidemiologic studies inconsistent. Plausible MOAs are demonstrated.





CHAPTER 1 - INTEGRATIVE SUMMARY – 1.6 Health Effects page 1-19 [page 117/1886]

Table 1-2 (Continued): Summary of causal determinations for the relationship between exposure to Pb and health effects.

Cancer (Section 4.10.5)

Cancer

Likely Causal Relationship (Table 4-50)

The animal toxicological literature provides the strong evidence for long-term exposure (i.e., 18 months or 2 years) to high concentrations of Pb (> 2,600 ppm) inducing tumor development; findings from epidemiologic studies inconsistent. Plausible MOAs are demonstrated.

CHAPTER 1 - INTEGRATIVE SUMMARY – 1.6 Health Effects: 1.6.7 Cancer
pages 1-37 – 1-38 [page 135-136/1886]

The toxicological literature provides the strong evidence for the effect of long-term exposure (i.e., 18 months or 2 years) to high concentrations of Pb (> 2,600 ppm) on cancer. The consistent evidence indicating Pb-induced carcinogenicity in animal models is substantiated by the mode of action findings from multiple high-quality toxicological [cont'd next page] studies in animal and in vitro models from different laboratories. Based on such evidence, IARC has classified inorganic Pb compounds as a probable human carcinogen and the National Toxicology Program has listed Pb and Pb compounds as “reasonably anticipated to be human carcinogens.” Strong evidence from animal toxicological studies demonstrates an association between Pb and cancer, genotoxicity or epigenetic modification. Carcinogenicity in animal toxicology studies with relevant routes of Pb exposure has been reported in the kidneys, testes, brain, adrenals, prostate, pituitary, and mammary gland, albeit at high doses of Pb. Epidemiologic studies of cancer incidence and mortality reported inconsistent results; one strong epidemiologic study demonstrated an association between blood Pb and increased cancer mortality, but the other studies reported weak or no associations. In the 2006 Pb AQCD, various indicators of Pb exposure were found to be associated with stomach cancer, and a recent study on stomach cancer and occupational Pb exposure reported mixed findings depending on the type of Pb exposure (organic Pb, inorganic Pb, or Pb from gasoline emissions). Similarly, some studies in the 2006 Pb AQCD reported associations between Pb exposure indicators and lung cancer. Recent epidemiologic studies of lung cancer focused on occupational exposures and reported inconsistent associations. The majority of epidemiologic studies of brain cancer had null results overall, but positive associations between Pb exposure indicators and brain cancer were observed among individuals with certain genotypes. Overall, the consistent and strong body of evidence from toxicological studies on carcinogenicity and potential modes of action but inconsistent epidemiologic evidence is sufficient to conclude that a causal relationship is likely to exist between Pb exposure and cancer.



CHAPTER 1 - INTEGRATIVE SUMMARY – 1.8 Integration of Health and Ecological Effects page 1-61 [page 159/1886]

Table 1-4 Summary of causal determinations for health and ecological effects.

Outcome/Effect	Human Health	Ecological Receptors
	Causal Determinationa	Causal Determinationa
...		
Cancer	Likely to be a causal relationship	N/A

CHAPTER 1 - INTEGRATIVE SUMMARY – 1.8.1 Modes of Action Relevant to Downstream Health and Ecological Effects page 1-64 [page 162/1886]

Table 1-5 Modes of action, their related health effects, and information on concentrations eliciting the MOAs.

Mode of Action [Related Health Effects (ISA Section)]	Concentrations or Doses (Conditions)*	
...	Blood Pb	Dose
Cell Death/Genotoxicity	3.3 µg/dL	0.03 µM Pb acetate
[Cancer (4.10), Reproductive and Developmental Effects (4.8), Bone and Teeth (4.9.4)]	(Concurrent median in adult women; increased rate of hypoxanthine guanine phospho ribosyltransferase reporter gene [HPRT] mutation frequency)	(In vitro; 18 hours; increased formation of micronuclei)
	Van et al. (2004)	Bonacker et al. (2005)

*This table provides examples of studies that report effects with low doses or concentration; they are not the full body of evidence used to characterize the weight of the evidence. In addition, the levels cited are reflective of the data and methods available and do not imply that these modes of action are not acting at lower Pb exposure or blood Pb levels or that these doses represent the threshold of the effect. Additionally, the blood concentrations and doses (indicating Pb exposure concentrations from in vitro systems) refer to the concentrations and doses at which these modes of action were observed. While the individual modes of action are related back to specific health effects sections (e.g., Nervous System, Cardiovascular), the concentrations and doses given should not be interpreted as levels at which those specific health effects occur.



CHAPTER 1 - INTEGRATIVE SUMMARY – 1.10 Summary page 1-90 [page 188/1886]

Table 1-8 (Continued): Summary of evidence from epidemiologic, animal toxicological and ecological studies on the effects associated with exposure to Pb.

Endpoint	Evidence in the 2006 Pb AQCD	Evidence in the 2013 Pb ISA
Cancer		
Cancer	Epidemiologic studies of highly exposed occupational populations suggest a relationship between Pb and cancers of the lung and the stomach; however the evidence is limited by the presence of various potential confounders, including metal co-exposures (e.g., to As, Cd), smoking, and dietary habits. The 2003 NTP and 2004 IARC reviews concluded that Pb and Pb compounds were probable carcinogens, based on limited evidence in humans and sufficient evidence in animals. Based on animal data and inadequate human data Pb and Pb compounds would be classified as likely carcinogens according to the EPA Cancer Assessment Guidelines for Carcinogen Risk Assessment.	The toxicological literature continues to provide the strongest evidence for Pb exposure and cancer with supporting evidence provided by the epidemiologic literature. Epidemiologic studies of cancer incidence and mortality reported inconsistent results.

CHAPTER 1 - INTEGRATIVE SUMMARY – References for Chapter 1 page 1-101 [page 199/1886]

[Weisskopf, MG; Jain, N; Nie, HL; Sparrow, D; Vokonas, P; Schwartz, J; Hu, H.](#) (2009). A prospective study of bone lead concentration and death from all causes, cardiovascular diseases, and cancer in the department of veterans affairs normative aging study. *Circulation* 120: 1056-1064.
<http://dx.doi.org/10.1161/circulationaha.108.827121>

CHAPTER 3 - EXPOSURE, TOXICOKINETICS, AND BIOMARKERS – 3.3 Pb Biomarkers page 3-55 [page 518/1886]

Numerous mechanistic models of Pb biokinetics in humans have been proposed, and these are described in the 2006 Pb AQCD ([U.S. EPA, 2006b](#)) and in the supporting literature cited in that report. In this section, for simplicity and for internal consistency, discussion is limited to predictions from a single model, the ICRP Pb biokinetics model ([Pounds and Leggett, 1998](#); [ICRP, 1994](#); [Leggett, 1993](#)). The ICRP model consists of a systemic biokinetics model ([Leggett, 1993](#)) and a human respiratory tract model ([ICRP, 1994](#)). The Leggett model simulates age-dependent kinetics of tissue distribution and excretion of Pb ingestion and inhalation intakes. This model was originally developed for the purpose of supporting radiation dosimetry predictions and it has been used to develop cancer risk coefficients for internal radiation exposures to Pb and other alkaline earth elements that have biokinetics similar to those of calcium ([ICRP, 1993](#)).



CHAPTER 3 - EXPOSURE, TOXICOKINETICS, AND BIOMARKERS – References for Chapter 3 page 3-179 [page 642/1886]

[Weisskopf, MG; Jain, N; Nie, HL; Sparrow, D; Vokonas, P; Schwartz, J; Hu, H.](#) (2009). A prospective study of bone lead concentration and death from all causes, cardiovascular diseases, and cancer in the department of veterans affairs normative aging study. *Circulation* 120: 1056-1064.
<http://dx.doi.org/10.1161/circulationaha.108.827121>

CHAPTER 4 - INTEGRATED HEALTH EFFECTS OF LEAD EXPOSURE – 4.1

Introduction page 4-1 [page 645/1886]

Chapter 4 concludes with a discussion of the evidence for the cancer effects of Pb ([Section 4.10](#)).

CHAPTER 4 - INTEGRATED HEALTH EFFECTS OF LEAD EXPOSURE – 4.2.8

Summary page 4-52 [page 696/1886]

Table 4-2 MOAs, their related health effects, and information on concentrations eliciting the MOAs.

Mode of Action [Related Health Effects (ISA Section)]	Concentrations or Doses (Conditions) ^a	
...	Blood Pb	Dose
Cell Death/Genotoxicity [Cancer (4.10), Reproductive and Developmental Effects (4.8), Bone and Teeth (4.9.4)]	3.3 µg/dL (Concurrent median in adult women; increased rate of HPRT mutation frequency) Van Larebeke et al. (2004)	0.03 µM Pb acetate (In vitro; 18 hours; increased formation of micronuclei) Bonacker et al. (2005)

^aThis table provides examples of studies that report effects with low Pb dosages or concentrations; they are not the full body of evidence used to characterize the weight of the evidence. In addition, the levels cited are reflective of the data and methods available and do not imply that these modes of action are not acting at lower Pb exposure or blood Pb levels or that these doses represent the threshold of the effect. Additionally, the blood concentrations and doses (indicating Pb concentrations from in vitro systems) refer to the concentrations and doses at which these modes of action were observed. While the individual modes of action are related back to specific health effects sections (e.g., Nervous System, Cardiovascular), the concentrations and doses given should not be interpreted as levels at which those specific health effects occur. Also, the data presented in this table do not inform the exposure frequency and duration required to elicit a particular MOA.

CHAPTER 4 - INTEGRATED HEALTH EFFECTS OF LEAD EXPOSURE – 4.4.5

Mortality page 4-389 [page 1033/1886]

Using NHANES II (1976-1980) data, Lustberg and Silbergeld ([2002](#)) found significant increases in all-cause mortality, circulatory mortality, and cancer mortality, comparing adults with blood Pb levels of 20-29 µg/dL to those with blood Pb levels less than 10 µg/dL (measured 12-16 years before ascertainment of vital status). Using NHANES III data, Schober et al. ([2006](#)) found significant increased all-cause, cardiovascular, and cancer mortality comparing adults with blood Pb levels from 5-9 µg/dL and above 10 µg/dL to those with blood Pb levels less than 5 µg/dL (measured a median of 8.8 years before ascertainment of vital status).



TEL-related extracts from Innospec Quarterly & Annual Reports 2020

These Tetra-Ethyl Lead (TEL) related extracts were collated by Elizabeth O'Brien, The LEAD Group Inc. TEL is the octane enhancer that is added to fuel (motor fuel, aviation fuel) to turn it into leaded fuel.

Annual Report [URL: SEARCH BY FILING DATE AT: <https://innospec.com/investors/sec-filings/> ; AT: https://innospec.ir.edgar-online.com/efxapi/EFX_dll/EDGARpro.dll?FetchFilingCONVPDF1?SessionID=PoCwkLyvC1opYHU&ID=14718040]

PART I

Item 1 Business

When we use the terms “Innospec,” “the Corporation,” “the Company,” “Registrant,” “we,” “us” and “our,” we are referring to Innospec Inc. and its consolidated subsidiaries unless otherwise indicated or the context otherwise requires.

General...

Our Octane Additives business previously manufactured a fuel additive for use in automotive gasoline until it ceased trading on June 30, 2020....

Segment Information

The Company reports its financial performance based on the four reportable segments described as follows:

- Fuel Specialties
- Performance Chemicals
- Oilfield Services
- Octane Additives (ceased trading June 30, 2020)

The Fuel Specialties, Performance Chemicals and Oilfield Services segments operate in markets where we actively seek growth opportunities although their ultimate customers are different. The Octane Additives segment has ceased trading and is no longer a reporting segment from July 1, 2020, as reported in our Quarterly Report on Form10-Q for the quarter ended June 30, 2020. [URL: SEARCH BY FILING DATE AT: <https://innospec.com/investors/sec-filings/> ; AT: https://innospec.ir.edgar-online.com/efxapi/EFX_dll/EDGARpro.dll?FetchFilingCONVPDF1?SessionID=NoCwkdgvtwRCo6U&ID=14311304]

...

Fuel Specialties

Our Fuel Specialties segment develops, manufactures, blends, markets and supplies a range of specialty chemical products used as additives to a wide range of fuels. These fuel additive products help improve fuel efficiency, boost engine performance and reduce harmful emissions; and are used in the efficient operation of automotive, marine and aviation engines, power station generators, and heating oil.



The segment has grown organically through our development of new products to address what we believe are the key drivers in demand for fuel additives. These drivers include increased demand for fuel, focus on fuel economy, changing engine technology and legislative developments. We have also devoted substantial resources towards the development of new and improved products that may be used to improve combustion efficiency.

Our customers in this segment include national oil companies, multinational oil companies and fuel retailers....

Octane Additives

The Octane Additives segment has ceased trading and is no longer a reporting segment from July 1, 2020. Previously our Octane Additives segment produced tetra ethyl lead (“TEL”) for use in automotive gasoline and provided services in respect of environmental remediation to manage the cleanup of redundant TEL facilities as refineries completed the transition to unleaded gasoline. The expected activities to clean up redundant TEL facilities have been provided for in the second quarter of 2020.

Legacy costs related to these operations are now being recorded as operating expenses within corporate costs....

Competition...

Fuel Specialties: Fuel Specialties is generally characterized by a small number of competitors, none of which hold a dominant position. We consider our competitive edge to be our proven technical development capacity, independence from major oil companies and strong long-term customer relationships. We believe we remain the world’s only producer of TEL for use in aviation gasoline, which we market as our AvTel product line....

Octane Additives: Production and sales of TEL for use in automotive gasoline have ceased and therefore Octane Additives is no longer a reporting segment from July 1, 2020.

...

Item 1A Risk Factors

The factors described below represent the principal risks associated with our business....

Decline in our TEL business

The Octane Additives business has ceased trading and is no longer a reporting segment from July 1, 2020 as the production of TEL for use in motor gasoline has finished. Legacy costs related to these operations are now being recorded as operating expenses within corporate costs.

The continued sales of TEL for use in aviation fuel (“AvTel”) are recorded within our Fuel Specialties business. The piston aviation industry has been, and is currently, researching a safe replacement fuel to replace leaded fuel. The Federal Aviation Administration program (Piston Aviation Fuels Initiative) has been established to identify a replacement and candidate fuels are at an early pre-screening stage. This process is currently suspended and anticipated to restart in 2021. The timescale beyond this stage is unclear, but the full testing program will, of necessity, be long and comprehensive.

While we expect that at some point in the future a replacement fuel will be identified, trialed and supplied to the industry, there is no currently available alternative. In addition, there is no clear timescale on the legislation of a replacement product. If a suitable product is identified and the use of leaded fuel is prohibited in piston aviation the Company’s future operating income and cash flows from operating activities would be adversely impacted....



Item 2 Properties

A summary of the Company's principal properties is shown in the following table extract. Each of these properties is owned by the Company except where otherwise noted:

Location: Ellesmere Port, United Kingdom

Reporting Segment: Fuel Specialties, Performance Chemicals and Octane Additives

Operations: European Headquarters

Business Teams

Sales/Manufacturing/Administration

Research & Development

Fuel Technology Center...

Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations

This discussion should be read in conjunction with our consolidated financial statements and the notes thereto....

Environmental Liabilities

We are subject to environmental laws in the countries in which we conduct business. Ellesmere Port in the United Kingdom is our principal site giving rise to environmental remediation liabilities associated with the production of TEL. There are also environmental remediation liabilities on a much smaller scale in respect of our other manufacturing sites in the U.S. and Europe. At Ellesmere Port there is a continuing asset retirement program related to certain manufacturing units that have been closed.

Remediation provisions at December 31, 2020 amounted to \$58.5 million and relate principally to our Ellesmere Port site in the United Kingdom. We recognize environmental liabilities when they are probable and costs can be reasonably estimated, and asset retirement [end p.28] obligations when there is a legal obligation and costs can be reasonably estimated. The Company has to anticipate the program of work required and the associated future expected costs, and comply with environmental legislation in the countries in which it operates or has operated in. We develop these assumptions utilizing the latest information available together with recent costs. While we believe our assumptions for environmental liabilities are reasonable, they are subjective judgements and it is possible that variations in any of the assumptions will result in materially different calculations to the liabilities we have reported....

RESULTS OF OPERATIONS

The following table provides operating income by reporting segment:

	<u>(in millions)</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>
Net sales:				
Fuel Specialties	\$	512.7	\$ 583.7	\$ 574.5
Performance Chemicals		425.4	428.7	468.1
Oilfield Services		255.0	479.9	400.6
Octane Additives		0.0	21.0	33.7



	\$ 1,193.1	\$ 1,513.3	\$ 1,476.9
Gross profit:			
Fuel Specialties	\$ 160.3	\$ 204.5	\$ 195.0
Performance Chemicals	103.8	100.1	97.5
Oilfield Services	80.8	159.9	130.4
Octane Additives	(2.2)	1.7	12.1
	\$ 342.7	\$ 466.2	\$ 435.0
Operating income:			
Fuel Specialties	\$ 84.5	\$ 116.6	\$ 116.3
Performance Chemicals	54.8	48.7	44.7
Oilfield Services	(9.5)	39.7	22.1
Octane Additives	(2.8)	(0.7)	9.9
Corporate costs	(52.2)	(54.4)	(52.4)
Restructuring charge	(21.3)	0.0	(7.1)
Impairment of intangible assets	(19.8)	0.0	0.0
	\$ 33.7	\$ 149.9	\$ 133.5
Other income, net	\$ 7.8	\$ 5.3	\$ 5.0
Interest expense, net	(1.8)	(4.8)	(6.9)
Income before income taxes	39.7	150.4	131.6
Income taxes	(11.0)	(38.2)	(46.6)
	\$ 28.7	\$ 112.2	\$ 85.0



Results of Operations – Fiscal 2020 compared to Fiscal 2019:

	(in million s, except ratios)	2020	2019	Change	
Net sales:					
Fuel Specialties	\$	512.7	\$ 583.7	\$ (71.0)	-12%
Performance Chemicals		425.4	428.7	(3.3)	-1%
Oilfield Services		255.0	479.9	(224.9)	-47%
Octane Additives		0.0	21.0	(21.0)	-100%
		<u>1,193.1</u>	<u>1,513.3</u>	<u>(320.2)</u>	-21%
Gross profit:					
Fuel Specialties	\$	160.3	\$ 204.5	(44.2)	-22%
Performance Chemicals		103.8	100.1	3.7	+4%
Oilfield Services		80.8	159.9	(79.1)	-49%
Octane Additives		(2.2)	1.7	(3.9)	-229%
		<u>342.7</u>	<u>466.2</u>	<u>(123.5)</u>	-26%
Gross margin (%):					
Fuel Specialties		31.3	35.0	-3.7	
Performance Chemicals		24.4	23.3	1.1	
Oilfield Services		31.7	33.3	-1.6	
Octane Additives		0.0	8.1	-8.1	
Aggregate		28.7	30.8	-2.1	
Operating expenses:					
Fuel Specialties	\$	(75.8)	\$ (87.9)	\$ 12.1	-14%
Performance Chemicals		(49.0)	(51.4)	2.4	-5%
Oilfield Services		(90.3)	(120.2)	29.9	-25%
Octane Additives		(0.6)	(2.4)	1.8	-75%
Corporate costs		(52.2)	(54.4)	2.2	-4%
Restructuring charge		(21.3)	0.0	(21.3)	n/a
Impairment of intangible assets		(19.8)	0.0	(19.8)	n/a
		<u>(309.0)</u>	<u>(316.3)</u>	<u>7.3</u>	-2%



NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS...

Note 5. Restructuring

During 2020, the Company recorded a charge of \$21.3 million for the restructuring of its Octane Additives segment in line with the end of the manufacturing and sale of TEL for use in motor gasoline. As a result, the Octane Additives segment ceased trading and is no longer a reporting segment from July 1, 2020. Production of TEL will continue for sales to the aviation market ("AvTel"), as reported within our Fuel Specialties segment.

The restructuring charge comprises the future committed costs of environmental monitoring of \$2.0 million, remediation of facilities of \$7.5 million, contract termination costs of \$7.2 million, impairment of tangible assets of \$2.0 million and costs of redundancy due to the down-sizing of the TEL

operations of \$2.6 million. During the year ended December 31, 2020 the utilization and the unwinding of the discounting was not material.



2020 Volcano Art Prize Entry. Title: **The world is cursed until TEL is banned**. Lead-Safety Message: **When Tetra Ethyl Lead (TEL) is banned in Aviation Fuel as well as Motor Fuel, Earthlings will have a fighting chance of fulfilling our potential**. Artist: Elizabeth O'Brien. Description of Work: Text created in Powerpoint, on Photo of Roman curse tablet (made of lead) © Marie-Lan Nguyen / Wikimedia Commons, from https://upload.wikimedia.org/wikipedia/commons/a/a0/Curse_tablet_BM_1934.11-5.1.jpg URL: <https://volcanoartprize.com/portfolio-item/the-world-is-cursed-until-tel-is-banned/>



FAA Blocks Efforts to Stop Lead Poisoning

By Oregon Aviation Watch, PO Box 838, Banks, OR 97106-0838, January 19, 2022

URL: <https://mailchi.mp/2857c8ca3789/faa-blocks-efforts-to-stop-lead-poisoning?e=0e273a55ef>

Oregon Aviation Watch



FAA Blocks Efforts to Stop Lead Poisoning:

Agency Argues that Grant Assurances Require Local Communities to Expose Children to Harmful Levels of Lead

Should the Federal Government and U.S. Congress via the Federal Aviation Administration (FAA) have the right to willfully and intentionally subject children and the communities within which they reside to a neurotoxin and probable carcinogen, knowing full well that the adverse effects may be life-long and irreversible?

FAA Letter Challenging Ban on Leaded Fuel

Following the release of an 8/3/2021 peer-reviewed [lead study](#) that revealed elevated blood lead levels in children living near the Reid-Hillview Airport (RHV), the Santa Clara County Board of Supervisors unanimously voted to ban leaded aviation fuel as of January 1, 2022, at Reid-Hillview and San Martin Airports. Both are County owned and operated general aviation facilities. In response, the FAA sent a 10 page Notice of Informal Investigation [letter](#) dated 12/22/2021 to the County Airports Administration.

“This letter is to inform you that the Federal Aviation Administration (FAA) has received multiple complaints from airport tenants and users, along with a group



representing industry stakeholders who allege violations of grant assurances at the Reid-Hillview Airport (RHV) and the San Martin Airport...

“FAA records indicate that the planning and development of the Reid-Hillview airport and the San Martin airport have been financed, in part, with funds provided by the FAA under the Airport Improvement Program (AIP)...Upon acceptance of an AIP grant, the assurances become a binding contractual obligation between the airport sponsor and the Federal Government.”

The FAA, in collusion with the aviation industry and airport owners and operators, has a lengthy history of using grant assurance agreements to disempower local communities by minimizing, marginalizing and dismissing serious public health and environmental concerns.

FAA AIP Funds Subsidized with Public Money

AIP funds originate from the [Airport and Airway Trust Fund](#). The grants the FAA generously lavishes on general aviation airports derive primarily from fees affixed to the tickets of commercial airline passengers each time they fly. Additional money comes from cargo and fuel taxes.

Per the FAA, “AIP also received an additional \$1.9 billion dollars in discretionary funding for airport grants from the General Fund of the U.S. Treasury, including an additional \$400 million from the General Fund in FY 2020.”

Though U.S. airports are subsidized with public money, the FAA demonstrates little if any concern whatsoever for the destructive impacts of the glut of airports on local communities. Instead it caters to a privileged few aviation businesses and flight training schools as well as individuals who can afford to own private jets, aircraft and helicopters.

Only 500 of the approximately 20,000 airports in the U.S., two and one-half percent, are commercial passenger facilities, some of which also accommodate piston-engine aircraft. The remaining 97.5% are General Aviation (GA) airports that predominantly serve for-profit flight schools, private pilots, and air taxi services as well as corporate and private jet owners. The vast majority of GA flights occur in piston-engine aircraft that still rely on leaded fuel (avgas).



The [Centers for Disease Control \(CDC\)](#) has identified airports that service piston-engine aircraft as potential sources of lead exposure. According to Environmental Protection Agency, these aircraft are responsible for 70% of all airborne lead pollution nationwide.

As pointed out by [Santa Clara County Supervisor Cindy Chavez](#), **“Children living near these smaller airports, all over the nation, are unconscionably being harmed by leaded fuel.”**

Aviation Interests’ Complaints to FAA

The list of the airport tenants, users and stakeholders who filed complaints about the Santa Clara County leaded fuel ban reflects the institutionalized white-privilege, patriarchal values this captive agency represents. Two are RHV based flight training schools - Tradewinds Aviation and AeroDynamic - both of which have a history of generating lead emissions, producing noise disruptions and releasing a host of other pollutants into the atmosphere while training pilots over the homes and neighborhoods of local residents.

Other stakeholders included:

South County Airport Pilots Association

Aircraft Owners and Pilots Association

Experimental Aircraft Association

General Aviation Manufacturers Association

Helicopter Association International

National Air Transportation Association

National Business Aviation Association

The FAA is aligning with the above aviation associations and businesses despite [RHV lead study findings](#) revealing “that leaded aviation fuel contributed to significantly increased blood lead levels for those within a half-mile of the facility. For context, the lead levels during peak hours were double the levels seen during the height of the Flint Water Crisis in Michigan.”

Given the history of the aviation industry’s pervasive indifference to public health and the environment, this is gearing up to become yet another all too familiar showdown:

The FAA, Federal Government, aircraft manufacturers, aviation



professional associations, flight training schools, aircraft owners and affluent pilots

vs.

Infants, toddlers, babies, preschoolers, kindergarteners, school age children, adolescents, teenagers, unborn fetuses, pregnant mothers, minorities, people of color, economically disadvantaged populations, vulnerable adults, seniors, public health, wildlife, flora, clean air and water, the environment and future generations

This commonplace match-up is emblematic of the erosion of democratic values resulting from authoritarian, top-down policies. The FAA, in particular, has become all too adept at funneling public money onto the hands of wealthy aviation corporations while leaving vulnerable populations underserved and at risk.

Who Benefits from GA Airports

[Federal Aviation Administration \(FAA\) statistics](#) reveal that in 2020 there were 691,691 certified pilots nationwide, which translates into less than one quarter of one percent of the population. Fewer than 9% were women. Private pilots numbered 160,860. Nearly one-third, 222,629, were student pilots, many recruited from overseas, with an additional 117,558 listed as flight instructors. Thus nearly half of the total pilot population is associated with the flight training industry.

It is this privileged, self-entitled minority, this minuscule sliver of the population, that is responsible for pumping 456 or more tons of lead, a pernicious neurotoxin which disproportionately impacts children, minorities, and lower socioeconomic groups, into the environment every year.

Concluding Remarks

Given the historically divisive, oppressive, and heavy-handed policies promulgated by the FAA, it is refreshing to witness the actions taken by the Santa Clara Board of Supervisors in banning leaded aviation fuel at Reid-Hillview and San Martin Airports. [In the words of County Executive Jeffrey V. Smith, M.D., J.D.](#) "We are committed to the health of Santa Clara County residents and that



includes taking the necessary steps to protect the communities around County airports from continued aviation lead exposure.”

In so doing, they demonstrated they have the courage and fortitude to not only represent the greater good of their constituents but also to address the racial injustices and inequities long exhibited by the aviation sector towards impacted communities including children, minorities and economically marginalized populations. The steps taken by the County Supervisors are an admirable example of the enactment of democratic principles in response to the authoritarian overreach of the FAA, a federal, tax-payer subsidized agency that all too often uses its clout to degrade the livability of local residents in an effort to further the interests of aggressive and environmentally irresponsible aviation business interests.

Clearly the FAA is in need of a thorough investigation and overhaul. Any government agency that aligns with one-quarter of one percent of the population in knowingly poisoning children and other community members has lost its moral and ethical standing, and as such should be declared unfit to serve in a decision-making capacity.

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Dr Lembit Salasoo Obituary - 10 March 1956 to 17 August 2024

Compiled by Elizabeth O'Brien, The LEAD Group Inc. Photo (at left) from https://www.dailygazette.com/obituaries/lembit-salasoo/article_b817c332-4d17-5282-8f28-00ed8ba9ee8e.html



It is with great sadness that I report to our readers, the death of a wonderful electrical engineer, musician, dancer, family-man and mentor to many Estonian people making their way in Estonian diasporas in Australia and the United States.

Fifty-two years ago, I became friends (at Chatswood High School, Sydney, Australia) with Lembit Salasoo, and I made everyone laugh, when, around the final exams, Lembit's mother asked me what career I had chosen and I answered, "I'd like to work in pollution". It was the first time I had ever expressed my aim of "working in pollution" and so it has been for half my life now. Lembit and I then attended Sydney University together too (and his mother was one of my tutors in Biology), and after having three children I then became a Lead Poisoning Prevention Expert and corresponded with Lembit throughout his further

studies, early career and move to General Electric in the US.

When we found that we both worked in the environmental arena (see his 2001 email to my global lead information and referral service below as an example), we kept in contact in a professional capacity too. It is for all these reasons that I'm publishing an Obituary about Lembit's contribution to electrical engineering while at General Electric, to reducing lead-use and to averting climate change.

Below I also include: "Lembit Salasoo: Official GE Retirement Announcement" regarding Lembit's awards and many patents and how he contributed to electrification of vehicles and other climate change mitigation measures.

From: Lembit Salasoo

Sent: Monday, 5 February 2001 11:41 AM

To: Elizabeth O'Brien

Subject: Pb

To the lead queen:

P.S. one of my current projects involves replacing lead shielding in parts of medical xray equipment



with equally effective but more benign materials.
Any links/leads on suitable stuff? Is bismuth bad...
yours in the environment,

Lembit

Sent: Wednesday, July 3, 2024 at 09:21:32 AM EDT
Subject: Lembit Salasoo: Retirement Announcement

Dear Colleagues,

It is with mixed emotions that I announce the retirement of Lembit Salasoo, Senior Research Scientist, effective July 1st, 2024.

Lembit has been a significant member of and strong research contributor to the GE Global Research Center for over 36 years. Throughout his tenure, Lembit has led numerous groundbreaking projects, leaving a lasting mark on our team and the research community at large. Evolution of Lembit's remarkable career reflects the research center's fast adaptation to GE's technology needs in its legacy businesses.

Lembit joined GE Research in 1987 as part of the Superconducting Magnet group after acquiring his Ph.D. from RPI [Rensselaer Polytechnic Institute] in Electric and Power Engineering. His initial focus was to perform quench analysis of conduction cooled MRI magnets. Turning to anomalous heat transfer performance observed in the Gemini CT tube, Lembit developed a widely used engineering analysis tool for CT Tube secondary electron emission heat transfer. Through this work, Lembit and the Gemini CT tube team won the prestigious Dushman Award in 1998.



In the early 2000's Lembit's research focus was extended to the electric transportation lab to analyze hybrid electric transit buses, hybrid locomotives and mine trucks. Lembit was part of the joint Research GE Transportation team that conducted a proof-of-principle hybrid locomotive demonstration at Union Station in Los Angeles (part of GE's Ecomagination initiative). During these years Lembit also led a 'CEO program' which included concept development for underground-mine-truck-as-a-sensor including proof of principle demonstrations of key subsystems.

Between 2015-2020 Lembit contributed to metal additive manufacturing programs to develop in-situ models for defect detection.

Lembit's most recent contribution was in the field of Aerospace Climate Research and Sustainability. Starting in this program in 2021 he quickly established partnerships with



world class external expertise and positioned the Aerospace Climate Research team to be a respected voice among the rapidly evolving aviation climate industry's external stakeholders. As a proposal PI, Lembit has led the climate research team to win ARP Ae EPICTrails program in 2023.

In his 36+ year GE career, Lembit has been awarded 68 patents, 2 Dushman Awards, and numerous team recognitions. It has been an honor to work with Lembit shoulder to shoulder as we strive to bring external recognition to our newly established Aerospace Climate Impact modeling capabilities to our lab. Please join me in extending my deepest thanks to Lembit Salasoo for his exceptional service and contributions. His legacy will continue to inspire us all.

Best Regards,

Banu

Banu Gemici-Ozkan, Ph.D.

Technology Manager, Optimization

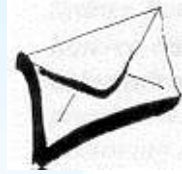
GE Aerospace Research

1 Research Circle K1 5A46A

Niskayuna, NY 12309.



Letter to the Editor from Dr Polly Wilkie



Re: *Eulogy for Noela Whitton, by her son Hugh O'Brien* (where the photo is from) - <https://leadsafeworld.com/wp-content/uploads/2021/09/09-Eulogy-for-Noela-Whitton-by-her-son-Hugh-O%E2%80%99Brien.pdf>

and *Eulogy for my mother Noela Mary Whitton 19121929 – 09042021, by Elizabeth O'Brien* - <https://leadsafeworld.com/wp-content/uploads/2021/09/10-Eulogy-for-my-mother-Noela-Mary-Whitton-19121929-%E2%80%93-09042021-by-Elizabeth-O%E2%80%99Brien.pdf>

in *LEAD Action News* v21n3 "Celebrating the End of the Leaded Petrol Era" -

<https://www.lead.org.au/lanv21n3/LANv21n3-Celebrating-the-End-of-the-Leaded-Petrol-Era.pdf>;

<https://leadsafeworld.com/wp-content/uploads/2021/08/LANv21n3-Celebrating-the-End-of-the-Leaded-Petrol-Era.pdf>;

ACCESSIBLE VIA <https://nla.gov.au/nla.obj-2991535924/view>;

<https://leadsafeworld.com/media-page/lanv21n3-content/>

Hi Elizabeth,

Your Mum was an extraordinary woman, thanks for sharing your family tributes and memories. Your Mum sounds like a beautiful soul, and a wonderful support and advocate.

Great news on no more lead in petrol, momentous!

Hope you are well.

Kind Regards, Polly



Dr. Polly Wilkie

Chiropractor, Osteopath, Nutritionist, Care Clinic

a: Suite 204/332-342 Oxford St, Bondi Junction NSW 2022

p: 02 9386 4335

w: <https://www.careclinic.info/>

Reply from the Editor re: Letter to the Editor from Dr Polly Wilkie:

Dear Polly,

Thankyou for your kind words.

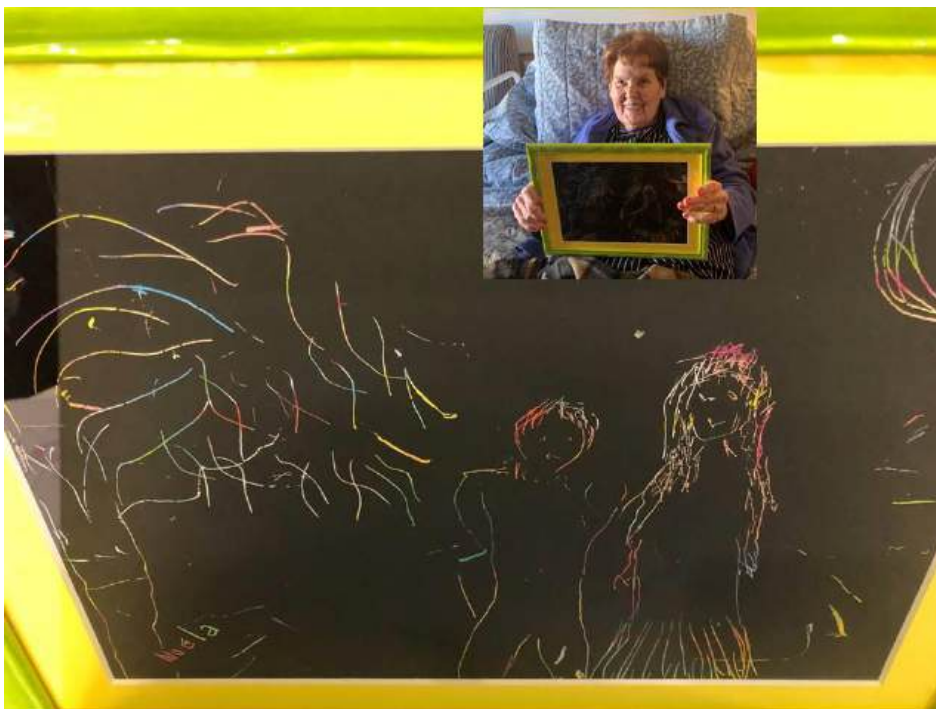
I didn't even have time to mention that my mum was incredibly supportive of my lead work and the first person I told about the end of leaded petrol globally was my mum – via my bereavement journal.

She used to be my media monitoring service and advisor on all manner of issues from grant-writing to how to write press releases.

In my rush, I wrote to LEAD Group Members that the oldest entrant in Volcano Art Prize was 89 but actually my mum entered when she was 90!! Her last entry was

<https://volcanoartprize.com/portfolio-item/lost-in-the-woods/> (see below).

Regards, Elizabeth O'Brien, The LEAD Group Inc.



2020 Volcano Art Prize Entry. Title: Lost in the Woods. Lead-Safety Message: I'm in the dark no longer. I see a lead safe world in the light. Artists: Noela Whitton and Claire Leight. Description of Work: Photo collage and oil on canvas.

URL: <https://volcanoartprize.com/portfolio-item/lost-in-the-woods/>



Letter to the Editor from Prof Peter Newman

Editor's note: Professor Peter Newman is a Member of The LEAD Group's Technical Advisory Board; Coordinating Lead Author for the UN's Intergovernmental Panel on Climate Change (IPCC) on Transport; Professor Of Sustainability, Faculty of Media, Society & Culture, Curtin University & retired from Institute for Science and Technology Policy (ISTP)

Re: LANv21n3 "Celebrating the End of the Leaded Petrol Era" - is online

Wow! Well done Elizabeth. This is momentous and so hard over so many years. It will last forever like a diamond. See my attached slides showing how cities are made out of diamonds! This is your beautiful gift to the world along with a lot of people who helped find it, clean it and shape it into a legacy jewel for everyone. Sorry to be so carried away. I started with this in the late 70's and wrote a paper in 1980 in the UK where it was being discussed in great detail, which radicalised me from there on. You were the great leader that we needed though. Now we can say that it has gone just before petrol disappears altogether. What a crazy world that enables such bitter sweetness.

Peter Newman

August 31, 2021

Cities of the Future
Babylon or Zion
- Despair or Hope
Revelation 18 and 21

'The great city, your doom has struck.... The merchants of the earth will weep as no-one buys their cargoes...every sort of thing made of costly woods, spices, wine, horses, chariots and the lives of men...'

'The holy city ...the old order has passed away...a city of diamonds...with a tree of life and the river of life'

Zion is not paradise, a remade perfect nature, it is a city that is built by human science and craftsmanship; it is pictured as a city of jewels or diamonds – which appear to be human-made achievements. Diamonds are scientifically discovered, crafted with great skill and valued for generations as a symbol of hope.



"City of Diamonds"
slide from: Theology of Sustainability Practice: How Cities Create Hope [SLIDES], by Professor Peter Newman AO, Professor of Sustainability, Curtin University, St Pauls Anglican Church.

Theology of Sustainability Practice: How Cities Create Hope
Peter Newman AO
Professor of Sustainability, Curtin University
St Pauls Anglican Church



Letter to the Editor from Maggie Jones

Seeking suggestions for campaign around lead standard in Victoria re: Used Lead Acid Battery (ULAB) recycling plant proposal)

Sent: Thursday, October 1, 2020 1:34 PM



Good afternoon Elizabeth,

Leanne Norwood gave me your details and has explained that you have provided invaluable advice to the action group regarding the Chunxing proposal for a ULAB.

You are most likely aware- on the 17/9/2020 the Latrobe Valley Council voted against the proposal and declined the planning permit. This was a significant win for the community and now we need to wait and see what Chunxing's response will be.



The campaign against the ULAB has raised community awareness around the risks associated with lead and the inadequacy of Australian Standards around lead emissions, lead in soil etc.

I was hoping to get your thoughts on how the community can best campaign for this to change?

Right now there is interest in lead and greater awareness of its impacts- I feel that it would be useful to start campaigning to change the lead standards in Victoria (and Australia).

As I am not familiar with environmental campaigning- I was hoping you could please give me some pointers on:

- **existing campaigns to change the lead standard**
- **channels that have been used to good effect**
- **any useful connections**
- **any ideas you may have on where to start and what can be implemented on the ground**

One aspect that I have become aware of since the ULAB campaign is the Power Stations annual emissions of lead in the Latrobe Valley (see below table I created from NPI data- annual emissions in kg).



Year	Loy Yang A	Loy Yang B	Yallourn	Engie Hazelwood Mine/Power Station	Sum total for each year
2018-2019	130	65	150	62	407
2017-2018	130	73	150	77	430
2016-2017	110	110	160	160	540
2015-2016	220	83	150	200	653
2014-2015	250	110	150	280	790
2013-2014	10000	78	230	140	10448
2012-2013	5200	69	340	150	5759
2011-2012	180	140	160	150	630
2010-2011	180	80	160	140	560
2009-2010	79	79	170	140	468
2008-2009	81	81	160	140	462
2007-2008	81	81	140	140	442
2006-2007	77	77	160	140	454
2005-2006	80	80	170	140	470

I have considered it could be used as leverage to encourage the EPA to set up independent lead air monitoring?

Or at least get lead to be on the power stations licenses?

The Victorian EPA has also given approval for the local Paper Mill to start a waste- energy program. I believe that there may be risk of lead emissions relating to this industry as well?

I have read about the VegeSafe program run by Macquarie University- this is a program I am looking at. But I also feel that a broader campaign is needed as well.

There are 2 policy windows that have recently closed- but I feel that they could be still used for leverage????:



- coal power station reviews (Latrobe Valley stations) in Victoria. Submissions were made available to a select amount of environmental groups and the public was able to do a survey- now closed

- Victoria's Clean Air strategy. Submissions have also now closed.

Any advice is appreciated on how to campaign for better outcomes for lead monitoring and standards.

I have been in shock since learning of the absolute failure of the Australian Standards to be reflective of international best practice and want to do more.

Thank you in advance for considering this and for any feedback going forward.

Kind regards

Maggie Jones

Hazelwood South



Letters to the Editor from Gary Keller

Campaign against Innospec's continued sale of TEL for AvGas



2021 Volcano Art Prize Entry. Artist: Gary Keller
Title: Where toddlers go to cut their teeth on lead
Lead-Safety Message: **Lead emissions from general aviation planes at Reid-Hillview Airport have raised the blood lead levels of children living close-by, and prompted local authorities to propose**

closing down the airport - which will be the world's first airport closure due to lead.

Description of Work: Photos made in to a poster.

URL: <https://volcanoartprize.com/portfolio-item/where-toddlers-go-to-cut-their-teeth-on-lead/>

From: Gary Keller

Sent: Tuesday, March 10, 2020 3:04 AM

Subject: airplane lead emissions

Hello Elizabeth,

I received your name and email from Mr. Daniel Sorrell. He and I have crossed paths over the last two years in regards to leaded aviation fuel.

I live in the United States and have been studying the negative impacts of general aviation on our communities for about 11 years. Recently I stumbled across something that was written in regards to the company named Innospec. They have quite a checkered past but and are still at it when it comes to polluting the environment. As far as I know, they are the only source of the additive TEL in the United States.

Perhaps we can talk about this issue in the future if you would like. It has been too long since the work that Dr. Lynn Miranda did at airports in North Carolina. I still hold her findings as the truth with the avgas problem as it has never been refuted.

Thanks and I hope to hear from you,

Gary Keller



From: Gary Keller
Sent: Wednesday, September 1, 2021 6:51 PM
Subject: Petition for “Endangerment Finding” on AvGas>

<https://docs.google.com/forms/d/e/1FAIpQLSdrhhj3zeqnaC6SPJNkv5ke-uOqwFSYD9Wku8hFlzqD4YHUCw/viewform?fbclid=IwAR3q--r3Z2kYqtJwxyoIOD5rz2N70Qrv483LVB6nVXbgARmoby7b2WkrKIc>

From: Gary Keller
Sent: Monday, September 6, 2021 9:28 PM
Subject: Petition to our Environmental Protection Agency

Good day Elizabeth,

Please check out the petition to have our EPA go to an “endangerment finding” on AvGas – see https://earthjustice.org/sites/default/files/files/2021.08.23_-_leaded_avgas_petition_final_with_exhibits.pdf. It was tried before, but the aviation lobby stopped it - they won. Millions more children have been subjected to these lead emissions since then.

Thank you so much for all your efforts,

Gary



Santa Monica Airport (SMO), Leaded Avgas, and Childhood Blood Lead Levels: Profound Pediatric Health Consequences

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[Editor's note: originally published on 4th September 2021 (without references) in the Santa Monica Daily Press (SMDP) newspaper at <https://www.smdp.com/santa-monica-airport-smo-leaded-avgas-and-childhood-blood-lead-levels-profound-pediatric-health-consequences/208212> – the fully referenced article below was kindly provided, with permission to reprint it, by Dr Charles Blum]

Santa Monica Airport (SMO) has continued to sell leaded aviation gasoline (avgas) at its facilities and allow airplanes to fly into SMO that utilize leaded avgas. A recent study focused on the Reid-Hillview Airport, Commissioned by County of Santa Clara noted that “Comprehensive and controlled study reviewed 10 years of data; findings include that blood lead level increases in children downwind from the site are similar to those seen in the Flint, Michigan, Water Crisis.”¹ This was particularly impactful due to other studies by the County of Santa Clara: Office of Communications and Public Affairs found essentially that the leaded avgas created significant risk and that even a little lead is still too much.^{2,3}

A 2010 study by the United States National Emissions Inventory found that leaded aviation fuel emitted “from aircraft using leaded aviation gasoline (avgas) is currently the largest source of lead in air in the United States, constituting about 50% of lead emissions in the 2005 National Emissions.”⁴ A more recent 2021 study is suggesting that the avgas emissions contributions to air lead levels is currently closer 70%.⁵

While the situation with Reid-Hillview Airport seems like new news, the reality is that this information has been known by SMO and the City of Santa Monica for at least 10 years.⁶ Miranda et al note that, “A study at the Santa Monica airport in California found that the highest lead levels occur close to airport runways and decrease exponentially with distance from an airport, dropping to background levels at about 1 km.”^{4,6} Miranda et al’s 2011 study utilized, “... geographic information systems to approximate areas surrounding airports in which lead from avgas may be present in elevated concentrations in air and may also be deposited to soil.”⁷ They concluded that a significant association was found between potential exposure to lead emissions from avgas and blood lead levels in children, especially within 1 km.⁷

A major concern is how might the leaded avgas exposure impact the children living near, playing in adjacent parks, and going to school, to these lead levels emissions. Apparently there is a large body of research that demonstrates negative health effects, including learning disabilities and behavioral disorders, associated with lead exposure levels well below the CDC action level.⁸⁻¹¹ Studies by Miranda et al.¹²⁻¹⁴ suggest that early childhood blood lead levels as low as 2 µg/dL can have significant impacts on academic performance as measured by end-of-grade test scores. Brink et al that found the proportion of children with blood lead levels ≥ 10 µg/dL was 1.24% in the highest air lead counties, and the proportion with blood lead levels ≥ 10 µg/dL was 0.36% in the lowest air lead counties.¹⁵

In response to this body of research, the CDC has stated that there is no safe level for blood lead in children.¹⁶



Internationally the trend in leaded gasoline elimination and improvement in childhood blood lead levels has been found. For instance a study from Bombay India looked for pediatric blood lead levels (BLLs) by comparing BLLs collected in 2002 (after use of leaded gasoline was phased out in Bombay) to those collected in a study conducted by the George Foundation in 1997 (when leaded gasoline was still used in Bombay). Their study demonstrated a significant success of the public health system in Bombay, India, which was achieved by the removal of lead from gasoline.¹⁷

In Korea a study was performed to verify a change in the longitudinal trend of blood lead levels for the Korean population, before and after the regulation of leaded gasoline, which occurred between 1987 and 1993 in Korea. That study concluded, that regulation of leaded gasoline significantly contributed to the rapid change in blood lead concentrations.¹⁸ In Madrid Spain a study evaluated intelligence quotient (IQ) of local children exposed to leaded gas and determined that a decrease in blood lead levels in these children prevented a loss of between 135,391 and 144,153 IQ points. Their study assessed the current economic valuation of these points in terms of the productivity gained throughout the working life of this cohort of children and ultimately concluded that the economic benefits derived from the decision to ban leaded gasoline are very high.¹⁹

Our Local Schools

Elementary schools closest to Santa Monica Airport are Mar Vista, Richland and Grant. While these elementary schools east of SMO schools may be over the toxic lead emission 1000-meter distance we must factor in that most incoming flights are over the region covering these schools and the west to east ocean breeze, most common in these areas, would expectantly move greater amounts of airborne lead emissions eastward towards these children.

Pre-schools closest to SMO are Stepping Stone Child Care and Preschool, Bright Horizons at Ocean Park, and Hill and Dale Family Learning Center. Of note both Bright Horizons at Ocean Park and Hill and Dale Family Learning Center are well within the toxic lead emission 1000-meter distance and are therefore these young children are under constant exposure.

At this point what is irrefutable:

- 1. Avgas is the largest source of lead in air in the United States.**
- 2. SMO sells leaded avgas and allows aircraft using leaded avgas into its airport.**
- 3. Blood lead levels in our children near the airport has profound and drastic short and long-term health consequences.**

Since these three issues are clearly evident the City of Santa Monica and SMO must assume responsibility for the sale of leaded avgas and allowing (leaded avgas) aircrafts to utilize the facilities at SMO. Continuing to allow the sale of avgas and piston aircraft using leaded avgas fuel at SMO puts the onus of responsibly for any subsequent health related consequences for the adjacent pediatric population, squarely on the shoulders of the City of Santa Monica and SMO.



The City of Santa Monica is not alone in this challenging situation since the “Santa Clara County Board of Supervisors voted unanimously last week to ban the sale of leaded avgas at Reid-Hillview Airport and to press the Federal Aviation Administration, or FAA, to close the facility earlier than 2031, when conditions connected to FAA grant funding are set to expire.”²⁰ The Santa Clara County Board of Supervisors understands that the FAA will likely oppose both efforts, but they plan to continue to press them to take action. They determined that “We can’t, ... as a local community, sit by and leave children exposed with permanent damage and permanent harm while the federal government takes however long it may take.”²⁰

There is now a clear consensus that “significantly reducing lead emissions from gasoline-powered aircraft will require the leadership and strategic guidance of the Federal Aviation Administration (FAA) and a broad-based and sustained commitment by other government agencies and the nation’s pilots, airport managers, aviation fuel and service suppliers, and aircraft manufacturers...”²¹

The City of Santa Monica and SMO can no longer pretend that they are not aware of the serious health consequences associated with the sale of leaded avgas and instead stand along with Santa Clara County Board of Supervisors to ban the sale of leaded avgas at SMO.

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Rome's Ruin by Lead Poison [Extracts]

By S. Colum Gilfillan, PhD (1889–1987)

Book published 1st Nov 1990 by Wenzel Press, PO Box 14789, Long Beach, California USA 90803.
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CHAPTER 2, PAGE 8

Some History of Lead and Its Ancient Uses

Isotopes of LEAD

Lead's heaviness is eleven times that of water, and its atomic weight 207 times that of hydrogen. Its chemical symbol is Pb, from the Latin plumbum. It has eleven isotopes, numbered 203 to 214, of which four are radioactive, Numbers 210, 211, 212, and 214. Pb 210 changes to Polonium 210, which is radioactive and apparently helps produce the lung cancer of cigarette smokers.

Saturn

Lead came to be associated with Saturn because there were seven "planets" known and seven metals, and because molten lead has the capacity to absorb other metals, including its own product silver, which reminded the Greeks of their myth about the Time god Cronos (Saturn to the Romans) devouring his offspring.

First Uses of LEAD

Lead was perhaps the second of all metals to be discovered and used. Like most metals it was used first for jewelry. (Gold was probably the earliest discovered because of its attractive shine and because it used to be fairly abundant in certain streams.) Metallic lead is not found in nature, so it was the first metal to be extracted from an ore.

Reference: studies by Dr. Geo. Wetherill et al. At Univ. of Calif. At Los Angeles in 1974. Also Science, Sept. 9, 1966, pp. 1259, 60.

CHAPTER 3, PAGE 17

Greco-Roman Medical Views of LEAD

The Diagnosis of Lead Poisoning

The ancient physicians seem to have had no idea of Encephalopathia saturnina, insanity from lead. Yet the common folk seem to have had some notion of it, because Tu plumbarie, "you crazy lead-worker," was a term of contempt, doubtless from a perception that the very numerous workers in hot lead were inclined to be crazy. Similarly when Gilfillan was a boy there was a proverbial expression, "crazy as a painter."

CHAPTER 5, PAGE 52

Other Ways to Get LEAD

Pigments

The emperors Nero, Trajan, Hadrian, Marcus Aurelius, Elagabalus, Valentinian, and Alexander Severus were all painters. With lead paints this is a dangerous occupation, if, as likely, they ground their paints in mortars and mixed them on their pallets, as did Francisco Goya. That great Spanish painter (1746–1828), who had been thought to be syphilitic, who suffered a great mental crisis, and who lost children in rapid succession, has been diagnosed by the modern physician Niederland as suffering from lead poisoning. He mixed his own paints, largely lead-based, and worked tremendously. Fetal deaths are



one symptom of paternal plumbism.

Ramazzini in his 1713 book on the diseases of workers commented on the ill health of painters, including “those of great fame.” Even at that date he concluded the ninety to one hundred percent of all plumbism from handling white paints went undetected. In Roman times perhaps superior Greek slaves and upper class artists were especially affected and afflicted.

Cosmetics

Cosmetics were especially harmful when leaden, because they affected women, the child-bearers and the sucklers and holders of infants. And of course cosmetics were used only by the upper and middle classes, not by the poor; so they were aristocidal.

Ceruse, the previously mentioned combination of the carbonate and hydroxide of lead, was the favorite white cosmetic in ancient times. It was used as a face powder, and sometimes for the hair, or to cover blemishes. In Europe ceruse continued in occasional use into the eighteenth century; in Oman it continues to modern times. Its somewhat variable composition has been discussed by Stevenson and others; but in any case it was leaden, and the ancients seem to have had no idea of harm from using it externally on sores and wounds and to cover blemishes, even tho they knew it was poison if taken internally.

But there can be no question that the use of these cosmetics would lead to some of them getting into the eyes or mouth, or worse, being inhaled by the woman or her nursing baby. Among Japanese in Manchuria in 1925 ceruse was the fourth greatest cause of infant mortality, and it was still common in Japan in 1933. Ovid recommended this ceruse in his pleasant poetry, and Martial and Athenaeus speak of it.

The fine ladies of Greece were so fond of ceruse (tho sunlight turned it yellow) that they were sometimes entombed with a covered container (a Pyxis) of it beside them.

Minium rouge on the lips would be sure to be swallowed. On the forehead it is still used in India. But sometimes the ancients substituted harmless red ocher, an iron ore. The dark lead ore galena (PbS), or poisonous antimony, are both still used in Egypt and Pakistan, to darken the eyelids and eyebrows.

CHAPTER 7, PAGE 83

The Nature of Lead Poisoning

Brain Atrophy

The symptoms of plumbism, such as violence, crime, and short attention span, would seem to spell a weakening of the person’s character, will, and self-control. These virtues are functions of the frontal and lateral lobes of the brain, where all our life’s purposes are brot together and worked out in suitable actions. It would seem worthwhile therefore to assay the frontal and other lobes of the brains of deceased individuals who had been violent or erratic, to see if those lobes were not especially poisoned by lead. So the study of lead encephalopathy by Okazali et al found highest lead in the frontal and the hippokampal (lateral) cortices, while another study by Hamilton et al on healthy brains, found the frontal lobe about average in leading. Also might be cited the work of Kato. A study by Niklowitz found a bulging of the soft parts of the frontal lobe of leaded infants.

Niklowitz points out that lead poisoning creates symptoms in the brain similar, if not identical, to those of Alzheimer’s disease, a form of premature mental senility. But we so not seem to be dealing merely with mental deterioration and grand mal seizures. For example: the son of a painting contractor, who had chewed lead paint and suffered convulsions, had to be hospitalized at the age of three. Irritability and tantrums, combined with mental defect, brot about his institutionalization at age



26. An autopsy his death 19 years later revealed that the brain was shrunken, there was a marked loss of neurones and neural sheathing, and neurofibrillary tangles were massively present. The diffuse brain atrophy found was most conspicuous in the temporal (lateral) lobes.

On the basis of his analysis of the destruction of higher control levels of the brain by lead poisoning, Dr. Niklowitz calls plumbism “the silent epidemic.” Other work now in progress is searching for a link between the rising epidemic of crimes of irrational violence, and lead poisoning. Niklowitz believes that the basic processes of brain damage and destruction caused by TEL injections into rabbits can be applied to the massive lead poisoning which especially the Roman intellectual and political elite suffered. If so, this would provide a clue to several phenomena. One would be the apparent madness of emperors such as Caligula, Nero, Commodus, and Elagabalus, some of whom seemed in their youth to be admirably fitted to rule. Another would be the sadism of the Romans, with their addiction to spectacles in which, for example, men and women were on occasion offered to famished wild beasts. A third piece of evidence would be the apparent disastrous decline of Roman intellect, mainly in the second and third centuries A.D.

Genetic poison

Lead as a possible gene poison has been claimed by many. They argue that lead can alter the genes, the packets of heredity, and thus perhaps permanently alter future descendants, naturally changing them for the worse. Koinuma found that husbands exposed to lead in a storage battery factory had 24.7 percent sterile marriages versus 14.8 percent for non-lead-workers. Stillbirths were 8.2 percent versus 2.7 percent, and infant mortality 24 percent versus 19. But in most lead trades and likely this one too, the father can bring home lead on his clothes that will reach his family; and so can a breeze from a lead works.

Arthralgia

Tanquerel des Planches observed that leads arthralgic pain attacked any of the joints, but more frequently those in the lower limbs. He described it as a sharp, burning, boring or simply numbing pain, that could radiate out and encompass the overlying tissue. He made an important differential diagnostic point when he explained that unlike rheumatoid arthritis (with which this might be mistaken) lead arthralgia causes no swelling nor redness. In addition, the leaded patient is constantly moving around, trying to find a comfortable position, something never seen in arthritics, who prefer to remain still.

Another of the most characteristic signs among lead workers today is the “wrist drop” a motor paralysis observed among lead workers. But it is hardly ever seen in children

Atmospheric LEAD

With Waldron, the same author shows connections of lead poisoning with violence, hooliganism, and crime.

The Metabolism of Lead

Another article tells of the deaths of four women in one modern family from using a lead-carbonate-based face powder (“Flaky White”), the ancients’ ceruse, while their husbands and relatives who lived with them showed no signs of lead intoxication.

When lead enters the lungs and is implanted on the walls of the alveoli, cells move out from the tissue and phagocytize (ingest) the lead. It is then transferred directly to the general circulation, thus avoiding passage thru the purifying liver. All nutrients absorbed thru the gastrointestinal tract drain via the portal system to the liver, where the lead is taken up and largely excreted in the bile. Hence



lead breathed is far more harmful, gram for gram, than the same amount eaten.

Lead eaten or drunk follows closely the physiology of calcium absorption. In fact, because of competition between these two elements, it has been noted that lead taken with large amounts of calcium will not be so well absorbed, but more fully excreted. As calcium metabolism, an increased level of vitamin D, which enhances the absorption of calcium, also heightens that of lead. Hence comes its far greater severity for children enjoying summer sunshine.

Once absorbed into the bloodstream, the lead is transported, like calcium, by complexing with the blood albumin or with the red blood cells. From the blood, lead may be excreted in the urine, sweat, or bile, or deposited in the bone as a lead fosfate. However, the chemical properties must be very precise for bone deposition; the blood pH must be between 7.4 and 7.8. A pH of 7.4 is normal for the blood, so under normal conditions lead goes into the bones. If the blood pH falls below 7.4, a condition known as acidosis is present, and under these circumstances the lead may be mobilized from the bone and back into the bloodstream.

Such a condition as acidosis can occur under many different disease states (especially infections), after prolonged, severe exercise or work, or by alcoholism. So if a person chronically exposed to increase amounts of lead goes on an alcoholic binge, as the Roman wealthy men often did, an acute attack of lead poisoning becomes likely.

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CHAPTER 8, PAGE 103

Their Bones: the Proofs by Clinical Necromancy

So in 1959 the German necromancers W. Specht and K. Fischer called up Pope Clement II, who had died in Rome in 1047, after only a ten-month reign, and was buried, in a stone coffin. They found so much lead, 500 ppm (parts per million of dried bone) in his one surviving bone, a rib, that he must have died of lead poisoning. This tends to confirm old contemporary suspicions that he was poisoned “by a person or persons unknown” because the emperor Henry II had forced him on the college cardinals.

When two Russian necromancers Prozorovsky and Kolosva called up Tsar Ivan IV, the Terrible, who died in 1584, as well as his two sons and a concerned nobleman. They found enough lead in Ivan to explain the crazy cruelty of his later reign. His sons were even more heavily leaded, which could explain the insanity of his successor Fyodor, and the prior death of Ivan’s elder son. His father who loved him had killed him on impulse, by repeated blows with his iron-tipped staff, when the son asked to lead an army. Earlier that day the Tsar had beaten this son’s pregnant wife for a most trivial error. There were also considerable mercury and arsenic in the elder son.



Other cases include finds of entombed skeletons of fine ladies of ancient Athens and Corinth, with lead in their bones, still guarding their beauty secret, ceruse face powder, in lumps of the lead salt in a graceful pottery pyxis.

The Problem of the Which –Bone Factor

For it tends to settle first in the porous bones (including ribs, vertebra, sternum, cranium, and ends of long bones), which all have a circulation of blood, and later to migrate into the dense, tubular, shaft bones, and accumulates thruout life.

CHAPTER 9, PAGE 114

Temporary Sterility Thru Heat

The Role of Hot Bathing

The pool's bottom there was paved with lead, but that was probably unimportant.

Once again lead apparently enters the picture. One symptom of lead poisoning is itching, which may be painful. One's sweat contains the same proportion of lead as one's urine. And bathing would alleviate the itch, I am assured by Detlev Stofen.

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CHAPTER 12, PAGE 147

Decline of Genius and Culture

Roman Attitudes toward Science and Invention

The story of the unfortunate inventor of "an unbreakable type of glass," who demonstrated his discovery to the emperor Tiberius in the hope of a munificent reward. After receiving assurances that nobody else knew of this invention, Tiberius ordered the man's head cut off, on the theory that his improved glass, if put on the market, would cause a catastrophic fall in the price of metals and thus precipitate an economic crises. The story is told by Petronius, repeated by Pliny, and garbled by Dio Cassius.

Mathematics and the Physical Sciences

The greatest achievements of Roman engineering date from the earlier centuries, before much lead poisoning had sapped intelligence.

Frontinus (A.D. 49-103) was superintendent of Rome's water supply, and wrote a definitive work on the system, as well as a basic volume of Roman engineering. One of his discoveries was that impurities in drinking water can be filtered out thru sand.

APPENDIX A, PAGE 182

Explanation of Bone Analyses

Effects of Lead from the Soil on Roman Bones by Clair C. Patterson

In terms of significant poisonous effects on the main segment of human populations thruout time, lead is probably the world's most ancient environmental poison, extending back in time for thousands of years.

New Interpretations of History



The cold fronts which entail thunderstorms and sudden drops of barometric pressure, bring our air from underground that has been negatively ionized, a newly discovered factor, especially stimulating to children.

APPENDIX B, PAGE 189

Bones Assayed

Group A: Bones from the Roman Empire, 150 B.C. to 476 A.D., and Identifiable by Social Class

Totals and Averages for Group A

46 people were analyzed for Group A, beside 6 additional bones analyzed from 3 of these people, for a total of 52 bones. These exclude Emporion's poor lead workers.

Our social class averages, computed from their class medians (for the reason explained in Chapter 8 which is to avoid undue weighting by a few individuals who have an overkill dose of lead, especially young people computed according to their age factor), show rationalized, median average leading of 80 ppm of lead in our 15 rich people, 27 ppm as the median average for our 7 middle-class folk, and 43.5 ppm as the median average for our 24 poor, excluding the Emporion group.

Those 10 Emporion bones from 9 people in the lead-working town, all poor but not very, had a median average of 205. If it be proper (as the writer inclines to think) to include in our Empire's poor median average 1 or possibly 2 Emporion average (median) cases, to represent the unquestionably numerous lead workers among the ancient poor, this would take the Empire's poor median average to 36 with the addition of one Emporion median case, or to 42.6 with the addition of 2 Emporions.



HWA (Hazardous Waste Act) Australian Waste Export/Import Permits Granted for Lead Waste 20200619-20211219

Information collated by Elizabeth O'Brien on 19th December 2021 from a search for *lead – decision permit granted* (for the past 18 months) at [Hazardous waste application and permit notices - DAWE](https://www.awe.gov.au/environment/protection/hazardous-waste/application-and-permit-notice) - <https://www.awe.gov.au/environment/protection/hazardous-waste/application-and-permit-notice>

Notice number	Notice Type	Title	Commencement DateSort ascending	Download
AUH21-021. DGL Group Limited (ABN 71 002 802 646), 201 Five Islands Road, Unanderra, NSW 2526 Telephone: +61 2 4247 2100	Decision permit granted. The type of waste is lead waste and scrap (paste) (Basel Code A1020).	Notice of Decision to grant a permit to DGL Group Limited to export lead waste and scrap (paste) to the Republic of the Philippines	28 October 2021. The permit period is from the date below [27 October 2021] until the last departure date of 18 August 2022.	The waste may only transit the following ports and countries: Port of Brisbane, Port Adelaide and Fremantle, Australia; Jakarta Port, Indonesia; Port of Tanjung Pelepas and Port Klang, Malaysia; Port of Busan, the Republic of Korea; and Port of Singapore, the Republic of Singapore.
AUH21-023. DGL Group Limited (ABN 71 002 802 646), 201 Five Islands Road, Unanderra, NSW 2526 Telephone: +61 2 4247 2100).	Decision permit granted. The type of waste is lead waste and scrap (paste) (Basel Code A1160).	Notice of Decision to grant a permit to DGL Group Limited to export lead waste and scrap (paste) to the Republic of Korea	8 October 2021. The permit period is from the date [above] until the last departure date of 30 September 2022.	The waste may only transit the following ports and countries: Port of Brisbane, Australia; Port of Yokohama and Port of Osaka, Japan.
AUH20-016. DGL Environmental Pty Ltd, (ABN 71 002 802 646), 201 Five Islands Road, Unanderra, NSW 2526 Telephone: +61 2 4247 2100	Decision permit granted. The type of waste is lead waste and scrap (paste) (Basel Code A1020)	Notice of Decision to grant a permit to DGL Environmental Pty Ltd to export lead waste and scrap (paste) to Spain	4 June 2021. The permit period is from the date below [3 June 2021] until the last departure date of 31 January 2022.	The waste may only transit the following ports and countries: Port of Brisbane, Port of Adelaide and Port of Fremantle, Australia; Port of Singapore, Singapore; Port of Tanjung Pelepas and Port Klang, Malaysia; Port of Piraeus, Greece; Port Said East, Egypt; Port of Gioia Tauro, Port of La Spezia and Port of Genoa, Italy; and Port of Fos, France.
AUH21-010. DGL Environmental Pty Ltd (ABN 71 002 802 646), 201 Five Islands Road,	Decision permit granted. The type of waste is lead waste and scrap (paste)	Notice of Decision to grant a permit to DGL Environmental	28 May 2021. The permit period is from the date [above] until the last departure date of 19	The waste may only transit the following ports and countries: Port of Tanjung Pelepas and Port Klang (West), Malaysia; Port of Singapore, Republic of



Notice number	Notice Type	Title	Commencement DateSort ascending	Download
Unanderra, NSW 2526 Telephone: +61 2 1112 4907	(Basel Code A1020).	Pty Ltd to export lead waste and scrap (paste) to Bulgaria	May 2022	Singapore; Port of King Abdullah, Saudi Arabia, Port of Suez Canal and Port Said, Egypt; Port of Bosphorus, Port of Izmit Korfezi, Port of Ambrali and Port of Marport, Turkey
AUH21-011. DGL Environmental Pty Ltd (ABN 71 002 802 646), 201 Five Islands Road, Unanderra, NSW 2526. Telephone: +61 2 4247 2100).	Decision permit granted. The type of waste is lead waste and scrap (paste) derived from used lead acid batteries (Basel Code A1160).	Notice of Decision to grant a permit to DGL Environmental Pty Ltd to export lead waste and scrap (paste) derived from used lead batteries to the Republic of Korea	20 May 2021. The permit period is from 1 June 2021 until the last departure date of 31 May 2022.	The waste may only transit the following ports and countries: Port of Brisbane, Australia; Port of Yokohama and Port of Osaka, Japan.
AUH21-004. Outotec Pty Ltd (ABN 74 003 491 165), 12 Kitchen Road, Dandenong South, Vic 3175 Telephone: +61 3 9904 1693	Decision permit granted. The type of waste is a mixture of zinc and lead residues produced in existing zinc and lead smelting and refining operations, including lead smelter slag; zinc refinery residues; lead sulphate; lead dust; and haematite (Basel Codes: A1020; A1030 and A1070).	Notice of Decision to grant a permit to Outotec Pty Ltd to import waste lead and zinc residues from Japan	11 May 2021. The permit period is from the date [above] until the last departure date of 30 September 2021.	The slag by-product not meeting landfilling requirements, as well as any excess of the imported waste, are to be transported by road to the Nyrstar Port Pirie facility, 1 Ellen Street, Port Pirie, South Australia 5540
AUH20-022. DGL Environmental Pty Ltd [as above]	Decision permit granted. The type of waste is lead waste and scrap (paste) (Basel Code	Notice of Decision to grant a permit to DGL Environmental Pty Ltd to	28 April 2021. The permit period is from the date below [27 April 2021] until the last departure date of 9 February	The waste may only transit the following ports and countries: Brisbane, Adelaide and Fremantle, Australia; Jakarta, Indonesia; Singapore, Singapore; Tanjung Pelepas



Notice number	Notice Type	Title	Commencement DateSort ascending	Download
	A1020).	export lead waste and scrap (paste) to Poland	2022.	and Port Klang, Malaysia; Port Suez, Egypt; Algeciras, Spain; Felixstowe, United Kingdom; Bremerhaven, Germany; and Zeebrugge, Belgium
AUH21-008. Environmental Pty Ltd [as above]	Decision permit granted. The type of waste is lead waste and scrap derived from used lead acid batteries (Basel Code A1160).	Notice of Decision to grant a permit to DGL Environmental Pty Ltd to export lead waste and scrap to the Republic of Korea	19 April 2021. The permit period is from 1 June 2021 until the last departure date of 30 March 2022.	The waste is to be exported from Port Botany in Sydney or Port Melbourne, Australia. The waste may only transit the following ports and countries: Port of Brisbane, Australia; Port of Yokohama and Port of Osaka, Japan.
AUH21-007. Environmental Pty Ltd [as above]	Decision permit granted. The type of waste is lead waste and scrap derived from used lead acid batteries (Basel Code A1160).	Notice of Decision to grant a permit to DGL Environmental Pty Ltd to export lead waste and scrap to the Republic of Korea	19 April 2021. The permit period is from 21 May 2021 until the last departure date of 30 March 2022.	The waste may only transit the following ports and countries: Port of Brisbane, Australia; Port of Yokohama and Port of Osaka, Japan.
AUH21-009. Environmental Pty Ltd [as above]	Decision permit granted. The type of waste is lead waste and scrap derived from used lead acid batteries (Basel Code A1160).	Notice of Decision to grant a permit to DGL Environmental Pty Ltd to export lead waste and scrap to the Republic of Korea	19 April 2021. The permit period is from 1 June 2021 until the last departure date of 30 March 2022.	The waste may only transit the following ports and countries: Port of Brisbane, Australia; Port of Yokohama and Port of Osaka, Japan.
AUH20-005. Environmental Pty Ltd [as above]	Decision permit granted. The type of waste is lead waste and scrap (paste) (Basel Code A1020).	Notice of Decision to grant a permit to DGL Environmental Pty Ltd to export lead waste and scrap (paste) to Bulgaria	15 December 2020. The permit period is from date [above] until the last departure date of 9 June 2021	The waste may only transit the following ports and countries: Tanjung Pelepas, Malaysia; Singapore, Republic of Singapore; Suez Canal and Port Said East, Egypt; Canakkale, Izmit Korfezi, Ambrali (Istanbul) and Bosphorus, Turkey
AUH20-013	Decision permit	Notice of	3 December 2020	The waste may only transit the

Notice number	Notice Type	Title	Commencement DateSort ascending	Download
DGL Environmental Pty Ltd (ABN 71 002 802 646), 201 Five Islands Road, Unanderra, NSW 2526 Telephone: +61 2 1112 4907	granted: waste to be exported is waste lead and scrap (paste) (Basel Code A1020)	Decision to grant a permit to DGL Environmental to export waste lead and scrap (paste) to the Philippines	until the last departure date of 14 November 2021	following ports and countries: Ports of Brisbane, Fremantle and Adelaide, Australia; Port of Singapore, the Republic of Singapore; Port of Jakarta, Indonesia; and Port Klang, Malaysia
AUH20-003. Hydromet Corporation Pty Limited (ABN 71 002 802 646), 201 Five Islands Road, Unanderra, NSW 2526 Telephone: +61 2 4271 1822.	Decision permit granted: type of waste is lead waste and scrap derived from used lead acid batteries (Basel Code A1160)	Notice of Decision to grant a permit to Hydromet Corporation Pty Limited to export lead waste and scrap to the Republic of Korea	22 June 2020. The permit period is from 15 June 2020 until the permit expiry date of 14 June 2021.	The waste may only transit the following ports and countries: Port of Brisbane, Australia; Port of Yokohama and Port of Osaka, Japan.



2024 Volcano Art Prize Entry: Artist: Siobhan Hannigan. Title of Image: Ocean Dumping
Lead-Safety Message: Watch out! What is dumped in the sea will pollute seawater and whales and seafood forever! In September 1997 the Pasminco lead zinc smelter in Hobart stopped dumping jarosite (a waste product containing lead, cadmium, mercury and arsenic) at sea, after making 9,089 dumpings (a total of 2.4million tonnes) since 6th March 1984.

Description of Work: Materials: watercolours and tea bag on paper. References for Lead-Safety Message: *Pasminco Ends Ocean*

Dumping: Protests led to a ban on ocean dumping at <https://lead.org.au/lanv6n3/lan6n3-16.html>;
Annual Report Of The LEAD Group Inc 2002 - Ten Year Review of Objectives at <https://lead.org.au/tlgar2002.pdf> ; *Sea Dumping in Australia: Historical and Contemporary Aspects* at <https://uxo.defence.gov.au/sites/default/files/2023-02/sea-dumping-in-australia-historical-and-contemporary-aspects.pdf>

URL: <https://volcanoartprize.com/portfolio-item/ocean-dumping/>



Richard Turnbull's updated blood lead graph with & without NRF & Turmeric Lattes

Richard Turnbull is a health professional who has used LEAD Group Kits to eradicate a couple of sources of lead in his life, then experimented with various dietary and sauna interventions in order to bring down his blood lead level. This article is an update on the excellent *Case Study: Deleading with healthy lifestyle interventions Lead detox with saunas, lemon, garlic, greens, etc after eradicating potential current lead exposure* Richard wrote for LEAD Action News vol 19 no 4 at <https://lead.org.au/lanv19n4/LANv19n4-28.pdf>

In this update on his progress towards a lower blood lead level, Richard Turnbull has noted that his blood lead level went up markedly (from 3.8 micrograms per decilitre to 8.7 ug/dL) when he commenced taking extra Turmeric lattes and NRF, but had fallen to 5.6 ug/dL again within 5 weeks of him stopping the Turmeric lattes and NRF.

The Turmeric used in the lattes was not from a known source or was not known to be certified lead-free. Apparently, according to the company who manufacture NRF 1 & NRF 2 – these are NSF Certified and BSCG Tested. Each NRF 2 batch of active raw material is triple-tested for identity, potency, microbial contamination, pesticides, and heavy metals.

Three other subjects taking NRF 2 at the time of Richard's testing were also lead tested during the time of study. Their lead readings were found to be non-detectable.

Subject 1 – Blood Lead: <0.10 umol/L (reference range <0.24) / Blood Lead: <2.1 ug/dL (reference range <5)

Subject 2 – Blood Lead: <0.10 umol/L (<0.24) / Blood Lead: <2.1 ug/dL (<5)

Subject 3 – Blood Lead: (<0.24) / Blood Lead: 2.7 ug/dL (<5)

As may be seen by the non-detectable results of the subjects above who had been taking NRF supplementation for 6 months, this allows the possibility that NRF is free from lead or at worst contains a small concentration of lead.

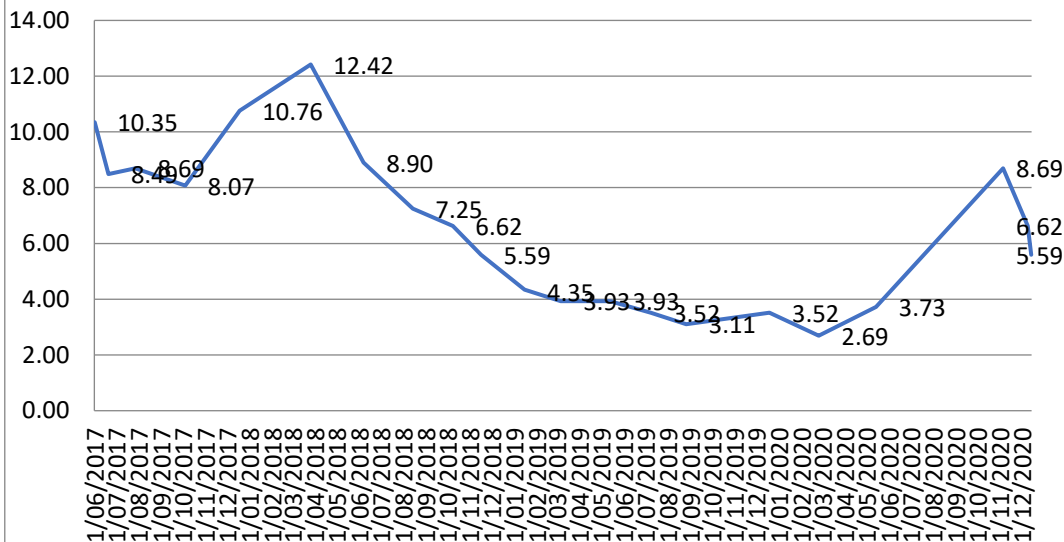
According to Wikipedia:

Nuclear respiratory factor 1, also known as Nrf1, Nrf-1, NRF1 and NRF-1, encodes a protein that homodimerizes and functions as a transcription factor which activates the expression of some key metabolic genes regulating cellular growth and nuclear genes required for respiration, heme biosynthesis, and mitochondrial DNA transcription and replication. [URL: <https://en.wikipedia.org/wiki/NRF1>] and

NRF2 appears to participate in a complex regulatory network and performs a pleiotropic role in the regulation of metabolism, inflammation, autophagy, proteostasis, mitochondrial physiology, and immune responses. [URL: <https://en.wikipedia.org/wiki/NFE2L2>]



Blood Lead Level (ug/dL) of Richard Turnbull
Jun 2017 (age 65.3 yrs) - Dec 2020 (age 68.8 yrs)



See the detailed data in the table overleaf.

BLOOD DRAW DATE	LABORATORY	RESULT	“NO ACTION” RANGE	Time of Collection
01/06/2017	Laverty	0.50 umol/L 10.4 ug/dl	<0.24 umol/L <5.0 ug/dL	8:49
20/06/2017	Melbourne Pathology	0.41 umol/L 8.5 ug/dl	<0.24 umol/L <5.0 ug/dL	10:29
27/07/2017	Laverty	0.42 umol/L 8.7 ug/dl	<0.24 umol/L <5.0 ug/dL	9:44
04/10/2017	Laverty	0.39 umol/L 8.2 ug/dL	<0.24 umol/L <5.0 ug/dL	11:38
18/12/2017	Douglass Hanly Moir	0.52 umol/L 10.8 ug/dL	<0.24 umol/L <5.0 ug/dL	07:05
26/03/2018	Laverty	0.60 umol/L 12.5 ug/dl	<0.24 umol/L <5.0 ug/dL	10:50
03/05/2018	URINE CHALLENGE T	4X250mg DMSA	Once off.	
07/06/2018	Laverty	0.43 umol/L 8.9 ug/dl	<0.24 umol/L <5.0 ug/dL	12:30
14/08/2018	Laverty	0.35 umol/L 7.3 ug/dl	<0.24 umol/L <5.0 ug/dL	12:30
08/10/2018	Douglass Hanly Moir	0.32 umol/L 6.7 ug/dL	<0.24 umol/L <5.0 ug/dL	08:09
16/11/2018	4Cyte Pathology	0.27 umol/L 5.6 ug/dL	<0.24 umol/L <5.0 ug/dL	10:00



15/01/2019	Laverty	0.21 umol/L 4.3 ug/dl	<0.24 umol/L <5.0 ug/dL	09:23
06/03/2019	Laverty	0.19 umol/L 4.1 ug/dl	<0.24 umol/L <5.0 ug/dL	10:13
13/05/2019	Laverty	0.19 umol/L 3.9 ug/dl	<0.24 umol/L <5.0 ug/dL	07:15
8/07/2019	Laverty	0.17 umol/L 3.6 ug/dl	<0.24 umol/L <5.0 ug/dL	07:15
26/08/2019	Douglass Hanly Moir	0.15 umol/L 3.1 ug/dL	<0.24 umol/L <5.0 ug/dL	10:34
19/12/2019	Laverty	0.17 umol/L 3.5 ug/dl	<0.24 umol/L <5.0 ug/dL	15:00
25/02/2020	Douglass Hanly Moir	0.13 umol/L 2.7 ug/dL	<0.24 umol/L <5.0 ug/dL	07:26
14/05/2020	Laverty	0.18 umol/L 3.8 ug/dl	<0.24 umol/L <5.0 ug/dL	09:00
Commenced taking more Turmeric Lattes, NRF2 and NRF1 for 3 months and this is the result				
05/11/2020	Laverty	0.42 umol/L 8.7 ug/dl	<0.24 umol/L <5.0 ug/dL	09:25
Stopped taking NRF and Turmeric Lattes since 5/11/2020 The results are reflected below				
09/12/2020	Laverty	0.32 umol/L 6.7 ug/dl	<0.24 umol/L <5.0 ug/dL	12:02
14/12/2020	Laverty	0.27 umol/L 5.6 ug/dl	<0.24 umol/L <5.0 ug/dL	09:25

And in case you're wondering why I asked Richard to report the time of day his blood was collected, please read *Elizabeth O'Brien's Blood Lead Level Over One Day's Pathology Clinic Opening Times* overleaf.

One hypothesis Richard has is that either the Turmeric Lattes may have had traces of lead in due to being grown in countries that continue to have lead in soils or that Richard, when young and working in leaded areas accumulated lead which was stored in his bones and now leaching into the blood due to the Turmeric and NRF supplementation. Taking these supplements may prove to be beneficial in that they assist in drawing the lead out of the bones and into the blood so that they may be excreted out of the body. He will continue with his experimentation.

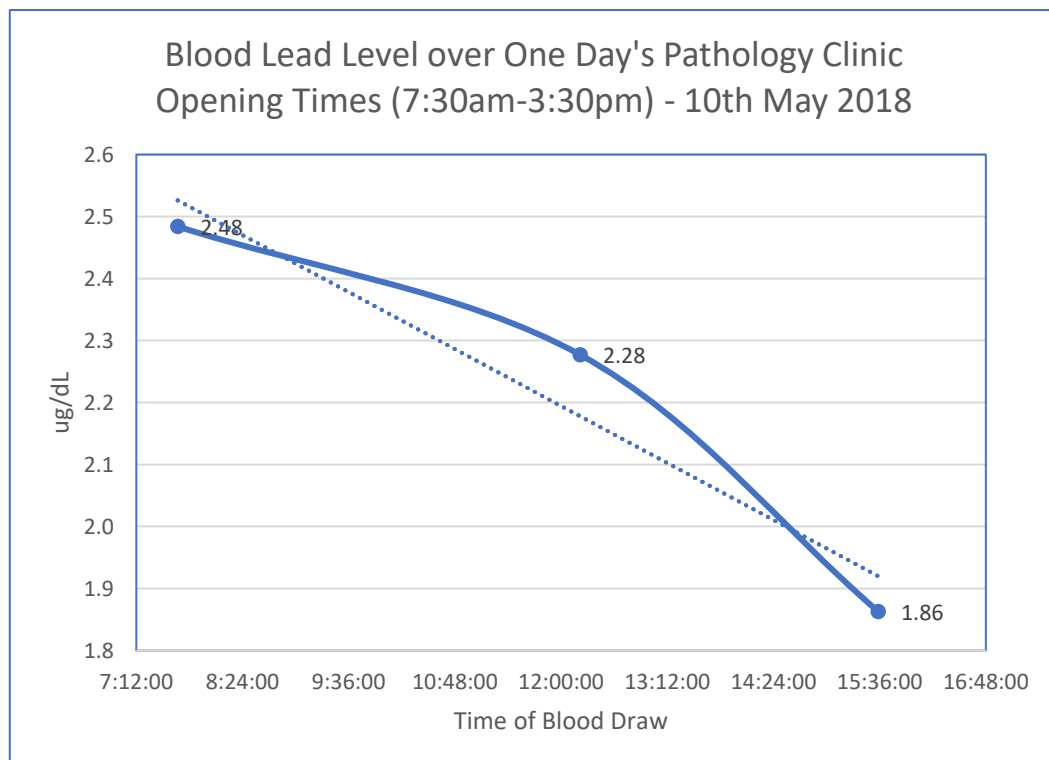
Elizabeth O'Brien's Blood Lead Level Over One Day



Photo by Peter Kozaitis (b. 11/12/1947 - d. 16/5/2023) of Elizabeth O'Brien during ILPPWA 2020.

Graph courtesy of Ian Smith. Question posed by Elizabeth O'Brien:

If anyone can explain why my blood lead level fell 25% from 2.48 micrograms per decilitre (ug/dL) to 1.86 ug/dL over the course of just 8 hours (the pathology clinic's operating hours) on 10th May 2018 – I'd be very keen to hear your theories. All three samples were collected at the same clinic and analysed at the same lab. If you know of other wild variations in blood lead in one day – which appear to be dependent on the time of day of the sampling - please let me know! And if anyone has ever had two or three blood lead tests on one day, no matter what the results show, I'd be very interested to see them.





“Lead Poisoning - the Silent Epidemic”- [Selected] quotes from video by Joan LUCKHARDT

Quotes selected and transcribed by Michelle Calvert-Kilburn, Education Officer and President, The LEAD Group Inc, from the early 1990s video produced for the New Jersey Lead Poisoning Prevention Program. The full transcript and video have been web-published by The LEAD Group Inc at: <https://lead.org.au/bbtp/silent-epidemic.html>; ACCESSIBLE VIA <https://www.youtube.com/watch?v=hcenQajyG9g>

Dr. Steven MARCUS, MD, Director New Jersey Poison Control Centre.

“All lead is too much lead. There is not a single body system, there is not a single enzyme within the human body or for that matter any animal that I know of that requires lead.

Lead is always considered a contaminant.”

There is just about no level of lead that any individual can have that we cannot demonstrate that it is causing some problem.

Dr. Michael WEITZMAN MD, Boston City Hospital:

“I think that it is important that people recognise that as we’ve become more sophisticated over the past two to three decades that people have realised that there are a wide range of effects of lead poisoning and that probably no level of lead is safe for children.”

Dr. John ROSEN, MD, Albert Einstein College of Medicine:

“I think it is very important to understand that lead, per se, at the concentrations that we’re seeing, even at very low concentrations which are even barely measurable, has the capability of irrevocably impairing that child for life.”

Dr. Joseph GRAZIANO, Ph.D., Columbia University

“The firing cap of a bullet has a lead compound in it. That little puff of smoke that you see when a gun is fired contains lead and so men who work at the firing range, who are around this kind of smoke all day, do get exposed to quite high levels of lead in an indoor firing range.”

Robert K. TUCKER, Ph.D., New Jersey Department of Environmental Protection.

Marine applications and painting bridges - it will only be when the realisation comes that these are additional unacceptable sources of lead and when it can be shown that these are also exposure sources to children that are causing health effects, unacceptable health effects, I think then the pressure will be put on to phase out lead in these other uses.

Dr. John GRAEF MD, Boston Children’s Hospital

“If you bring lead along when a child is 12 months, 13 or 14 months is learning to acquire speech - it’s



like putting glue into the gas tank of an engine - it will slow down in rather selected ways different parts of that process. Now if you continue that slowing down over a period of several months - then by the time you come out the other end you've already gummed up the learning process for that child and as far as we know this is an irreversible gumming - it's not something that you can turn the clock back on."

Dr. Steven MARCUS, MD, Director New Jersey Poison Control Centre.

"Lead interfering with brain function during that period of time interferes therefore with the acquisition of language and the closest link to future intelligence is the acquisition of language.

So you have a double whammy, you have a child that is undergoing a tremendous amount of development during that period of time and he is also at the stage where he explores his environment with his mouth and so therefore is more likely to put something in his mouth and if there is lead around he is more likely to put lead into his mouth and then get damaged at the time where he is undergoing this incredible amount of development.

So that the child is at a tremendous risk for future defects because of that little window of vulnerability between about a year and three years of age."



ILPPWA Report 2020 from Department of Chemistry, University of Nairobi, Kenya

A REPORT ABOUT THE 8TH INTERNATIONAL LEAD POISONING PREVENTION WEEK OF ACTION IN KENYA, 26TH TO 31ST OCTOBER 2020

Organized by Dr. Faridah Hussein Were

Kenya joined the Global Community in marking the 8th International Lead Poisoning Prevention Week of Action between 26th and 31st October 2020. Series of activities were organized for the week including an outdoor event that was to be hosted and sponsored by the industry (Basco Paint Products Ltd) in co-ordination with the Department of Chemistry of the University of Nairobi. Nevertheless, due to the increasing positivity rate of Covid 19, the outdoor event was changed to virtual one.

The theme of the event was “Intensified Campaigns to Ban the Import, Export, Manufacture, Sale and Use of Lead Paint across the East African Region”. The events were aimed at advancing the understanding, commitment, and actions towards the implementation and enforcement of the East African Paint and Allied Product Standards for the total lead content of 90 ppm maximum. The specific objective was to increase awareness of the health and environmental risks posed by lead paint exposure in order to prompt action to implement the East African Paint and Allied Product Standards to phase out lead in paint.

i) Article

The article by Dr. Faridah Were was published in the Nation Media Group titled “Enforce rules to remove toxic paints from the Country” on 28th October 2020. The article and other related messages were also shared through social media handle @unicsa2020 twitter, <https://m.me/unicsa.chiromo.9> Facebook and WhatsApp.



A worker paints at Bomas of Kenya on Sunday by the Nation Media Group

<https://nation.africa/kenya/blogs-opinion/blogs/enforce-rules-to-remove-toxic-paints-from-country-2723750>

ii) Virtual Workshop

The workshop was sponsored by Basco Paint Products Ltd and hosted by the Department of Chemistry



of the University of Nairobi on 29th October 2020 (Fig. 1). The forum served as a platform to advocate for lead free paint in respect to the established East Africa Paint Standards. It also provided opportunity for the participants to demonstrate their commitments toward phasing out of lead in paint.



Fig. 1: The Banner for the Event

Participants

The participants were drawn from the Kenya Bureau of Standards, Kenya Industrial Research and Development Institute, Kenya, Chemical Society, Ministry of Environment and Forestry, Ministry of Industrialization, Trade and Enterprise Development, Basco Paint Products Ltd and Dura Coat Paint, University of Nairobi, Architectural Association of Kenya, East Africa Bureau of Standards, National Environment Management Authority, Government Chemists, NGO in Tanzania: AGENDA for Environment and Responsible Development, NGO in Kenya: Centre for Environmental Justice and Development, Kenyatta National Hospital, Ministry of Health and Lead Paint Alliance Partners.

Presentations:

The workshop began with playing of the video, the East African Community Anthem and then the Kenyan Anthem. This was then followed by opening remarks by the statement of Dr. Maria Neira.



Video statement of Dr. Maria Neira, Director of Environment, Climate Change and Health, WHO:
<https://www.who.int/campaigns/international-lead-poisoning-prevention-week/20>

The Chairman of the Department of Chemistry of the University of Nairobi, John Prof. Onyari gave welcoming and introductory remarks. In his speech he stated that the Department is a contributor to lead paint alliance through Industry-University partnership, Research and Development, and outreach



programmes. He highlighted some of the related activities that are ongoing within the Department and concluded by saying that Covid-19 pandemic has posed many challenges, but has also provided opportunities that allowed the Department to host this annual event beyond its borders.

The Chairman speech was followed by Video Documentary that detailed the National Lead Poisoning Prevention Week of Action (NLPPWA) activities that were sponsored from 2013 up to date by Basco Paint Products Ltd. This was a way of welcoming Mr. Kamlesh Shah, the Managing Director of Basco Paint Company as a major sponsor and supporter of NLPPWA. He stated that he had been at forefront in participating and sponsoring the annual weekly events that were spearheaded by Dr. Faridah Hussein Were a member of the global alliance to eliminate lead in paint under the leadership of UN Environment (UNEP) and World Health Organization (WHO). He also emphasized that Kenya is a key supplier of paints in the East African Region and therefore the country plays a critical role in guiding the region towards the implementation of regulatory standards to phase out lead in paint, and this will go a long way in protecting human health and the environment and also removing technical barriers to trade. He reiterated by saying that collaboration is necessary to achieve this goal.

The Director of the Centre for Environmental Justice and Development, Me. Griffin Ochieng carried through the Kenyan NGO Perspective in Phasing Out of Lead in Paint. He outlined some of the activities that have been carried to eliminate lead in paint. This was thereafter followed by a presentation from the Senior Program Officer Ms. Dorah Swai, the AGENDA for Environment and Responsible Development, Tanzania about the NGO Perspective in Elimination of Lead of lead paint. However, election was going on in her country she was not able to present but her Power Point presentation was shared.

Dr. Faridah Hussein Were who is also an Advisory Council Member of Lead Paint Alliance and lecturer in the Department of Chemistry of the University of Nairobi presented an Overview of Banning of Lead Paint Across the East Africa Region. She presented on various informal painting activities (welding, demolitions, renovations spray painting of metal works that are common within the residential areas across the region contributed significantly to contamination of the environment and human exposure to lead as shown in Fig. 2.



Fig. 2: Automotive painting activities within residential areas.

She then highlighted on a study conducted by her student under supervision that evaluated levels of lead and chromium in automotive paints sold for spray painting of vehicles, and found alarmingly high levels of lead that exceeded the 90 ppm limit set by the East Africa Paints and Allied product standards.

Principal Standards Officer, Mr. Peter Namutala, of the Paints and Allied Product Standards at the Kenya Bureau of Standards presented a Synopsis on the Role of the East Africa Bureau of Standards (KEBS) in Elimination of Lead in Paint. He started by outlining the role of KEBS, and the global campaign that set a target of establishing legal limit to eliminate lead in paint by the year 2020, under the leadership of UNEP and WHO. He reiterated by saying that this has been achieved through establishment of the East African paint and allied product standards and what is left is the implementation. He further explained the steps involved in testing, quality assurance, market surveillance and enforcement.

The Head of Research and Development Basco Paint Products Ltd carried through the Overview of Basco Paint Products Ltd in Phasing Out Lead Paint and Associated Challenges. He said as a company they have been striving to get rid of the toxic metal from the paints to protect human health and environment. He pointed out that they stopped using leaded paints in all their decorative paints in the year 2013. He detailed some of the steps that are ongoing to ensure that they produce quality paint with no added lead. This was then followed by video about four things about lead.



Four things you should know about lead:

<https://www.who.int/campaigns/international-lead-poisoning-prevention-week/2020#>

The question and answer session followed the presentations. The participants from various organization gave commitment remarks through the online “chat” that was read out by the moderator of the session. This was followed by votes of thanks from the Department of Chemistry.

Dr. Faridah Hussein Were

The event coordinator

Lecturer in the Department of Chemistry of the University of Nairobi

Advisory Council Member of Lead Paint Alliance



ILPPWA Report 2020 from Centre for Environmental Justice, Sri Lanka

Lead Safe Week

Centre for Environmental Justice (CEJ) is a national level environmental organization working for the promotion of Environmental Good Governance and Environmental Justice. We engage in our activities through environmental litigation, scientific research and policy advocacy. CEJ is a member of IPEN and performed a great role in limiting the lead levels in paints through a court case affective from January 1, 2013. Since then we have been promoting lead safe paints and lead free products.

Centre for environmental justice launched a social media campaign to commemorate lead poisoning prevention week of action 2020. Due to Covid 19 and social distancing practices, other planned activities were cancelled. Last year, CEJ host an Art competition for school children under the theme of "Lead Poisoning prevention is a choice". Those paintings were used for this year's social media campaign.





More social media posts were shared during the week

**Centre For Environmental Justice**
October 26 · 🌐



25-31 October 2020
International Lead Poisoning Prevention Week 2020
www.who.int/lead_campaign/en/ #IIPW2020 #BanLeadPaint

ලෝක රිසි විෂවිෂි වැළැක්වීමේ සතිය - 2020 ඔක්තෝබර් 25-31 දක්වා

"ලෝක ප්‍රජාවේ සෞඛ්‍ය සංවිධානය විසින් ප්‍රකාශයට පත්කොට ලබා දුන් ප්‍රජා සමාජයේ සෑම අයෙක් අරමුණ වන්නේ මිනිසාට ඉතාම හානිකර රසායනිකයක් වන ඊසම් වළිඹිබුව නිවැරදි තත්ත්වයේ තුළදී ඊසම් අපවිත්‍රතාව නිවැරදිව හැසිරීම ප්‍රතිවිප්ලවීය වෙනස්කොට දැනුවත් කිරීම, ඊසම් විෂවිෂි වැළැක්වීමට රජයේ පොළවලින් හා ඊසම් සෞඛ්‍ය අංශයේ නිවැරදිව නිවැරදි කිරීමට කටයුතුකරුවන්ට බල කිරීමයි."

ප්‍රවේශම් වෙමු! ඊසම් විෂ ගර්භගත විෂයක් ඔබේ දරුවාගේ ඔද්දේ වර්ධනය අඩාල වේ!

විෂය නිවැරදි, ඉහළමටුවනින ආලෝකය නිවැරදි ඊසම් අවශ්‍ය කොටුවේ සැකසීම හා ඊසම් ජීවිතයේ වටහාගැනීම විෂි දුර්වල වීම දිගු කලක් පැවති නිසා ආදිය ආලෝකය සැකසීම ඊසම් ගර්භගත විෂ සැකසීම



පරිසර සුරැකි සංවිධානය
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no lead in your future



Hemantha Withanage
October 26 · 🌐

 18

8 Shares



Centre For Environmental Justice

October 31 at 1:59 AM · 🌐



රියම්වල හානිකර බලපෑම් පිළිබඳව පුළුල් පිළිකැනීමක් සිංහල අතර, විශේෂයෙන්ම ප්‍රමාද වියදම් රියම්වලට නිරාවරණයවීම හේතුවෙන් හමුවන දැඩි සෞඛ්‍යමය අවදානම්කාරී ලක්ෂණ මෙම පර්යේෂණාත්මකව පහසුකම් වී ඇත. මේ සම්බන්ධයෙන් විද්‍යාත්මක අධ්‍යයනය සිදුකළ අතර එහි ප්‍රතිඵල මත පදනම්ව රියම් වලින් දුරුවන්නේ සෞඛ්‍යය ආරක්ෂා කිරීම සඳහා සිත්ත නිෂ්පාදනය සඳහා අනිවාර්ය ප්‍රමිතියක් ඉල්ලා පරිසර යුක්ති කේන්ද්‍රය විසින් ශ්‍රේෂ්ඨාධිකාරණයේ නඩුවක් පවරන ලදී (නඩු අංක 64/2011).

එම සටුසේ ප්‍රතිඵලයක් ලෙස, 2013 ජනවාරි 01 වනදා සිට අනිවාර්යයෙන් වළාක්මන වන ලෙස කිසියම් සිත්ත නිෂ්පාදනයක සිටින හැකි උපරිම රියම් ප්‍රමාණය සඳහා නව සීමාවක් පනවමින් පාරිභෝගික කටයුතු අධිකාරිය විසින් 2011 සැප්තැම්බර් 30 දින හැසිරීම් නිර්දේශයක් නිකුත් කරන ලදී (1/25/30).



5

1 Share



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Centre For Environmental Justice

October 26 at 6:08 PM -



**BAN
LEAD
PAINT**

15-31 October 2020
International
Lead
Poisoning
Prevention
Week
2020



LEARN
the Risks

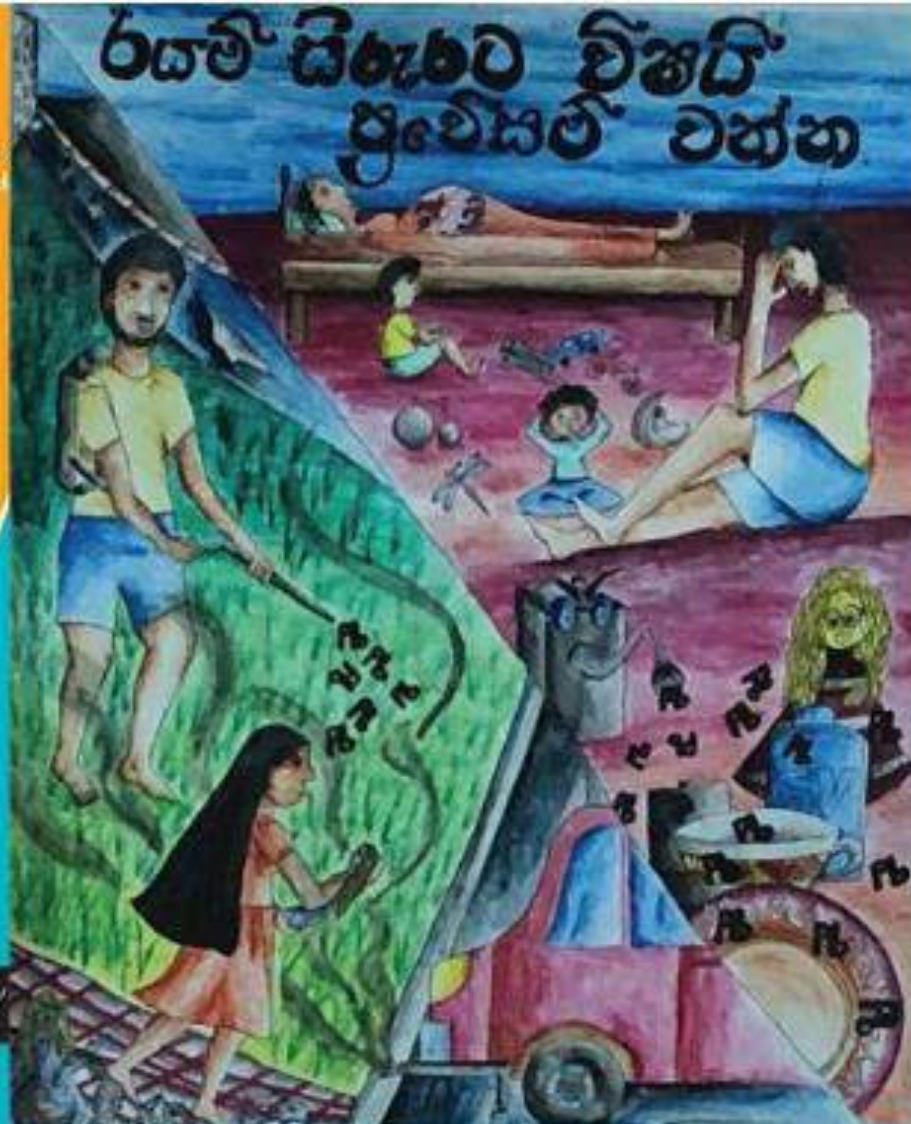


JOIN
the Action



ELIMINATE
Lead Paint

www.who.int/lead/campaign/en/
#ELPPW2020 #BanLeadPaint



S. Janyal Gunathunga, Grade 10, Matthreepala M.M.V, Anuradhapura

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රසම් දූෂණයේ වැළැක්වීමේ ප්‍රවේශය සම්බන්ධ කළ නොහැකි ලෙස හානි පමුණුවන විෂ ඖෂධ ප්‍රවේශය, රසම් පිළිබඳව විෂ දූෂණයේ ප්‍රවේශය පිළිබඳව අඩු වේ. ඉහත සඳහන් අවධානය යොමු කිරීම අඩු වේ, ඉහත සඳහන් පැහැදිලි ප්‍රවේශය වේ, වෘත්තීය චර්යාත්මක (සෞඛ්‍ය) සෞඛ්‍ය ප්‍රවේශය අවධානය වැඩි කරයි.



Centre For Environmental Justice

October 27 at 12:39 AM · 🌐



K.P.J. Nethmi Navanjana, Grade 8,
Madagama Abhaya Maha Vidyalaya, Chilaw



ඊයම් ලේරියට ඇතුළු ඊය හැකි ප්‍රධානම ආකාරය ඊයම් අඩංගු තිත්ත
හරහාය. හැමවිටම ඊයම් රහිත තිත්ත භාවිතා කරන්න.



Centre For Environmental Justice

October 27 at 9:11 PM · 🌐

ரீயுதி ஂபுலு வீசு துருது ஔ.

Sources of Lead.

ஈயத்தின் ஂதாரங்கள்.

ஈயம் வேண்டாம் ஂன்று ஂசுல்லுங்கள்!

SAY NO TO LEAD!



ரீயுதி ஂலுலு ஂயுது!

புச்சுதுகுகுல்லுதுகள், வர்ணம் பசுப்பு பீங்கான் புகாருதுகள்.



Centre For Environmental Justice

October 31 at 1:55 AM · 🌐

...



சாயத்தின் தீங்கு விளைவிக்கும் விளைவுகளுக்கு பரவலான அங்கீகாரம் உள்ளது. மேலும் சாயத்தை வெளிப்படுத்துவது குறிப்பாக குழந்தை பருவத்தில், கடுமையான உடல்நல அபாயத்தை ஏற்படுத்துகிறது என்று ஆராய்ச்சி காட்டுகிறது. இது தொடர்பாக நடத்தப்பட்ட ஒரு விஞ்ஞான ஆய்வின் முடிவுகளின் அடிப்படையில், குழந்தைகளின் ஆரோக்கியத்தை சாயத்திலிருந்து பாதுகாக்க வண்ணப்பூச்சுகள் தயாரிப்பதற்கு கட்டாய தரத்தை கோரி சுற்றுச்சூழல் நீதி மையம் உச்ச நீதிமன்றத்தில் வழக்குத் தாக்கல் செய்தது (வழக்கு எண் 64/2011).

அந்த வழக்கின் விளைவாக, நுகர்வோர் விவகார ஆணையம் செப்டம்பர் 30, 2011 அன்று ஒரு வர்த்தமானி அறிவிப்பை வெளியிட்டது, எந்தவொரு வண்ணப்பூச்சு உற்பத்தியிலும் 1 ஜனவரி 2013 (1725/30) முதல் நடைமுறைக்கு வரக்கூடிய அதிகபட்ச சாயத்திற்கு புதிய வரம்பை விதித்தது.



சர்வதேச சாய விஷம் தடுப்பு வாரம் - அக்டோபர் 25 முதல் 31 வரை
சுற்றுச்சூழல் நீதிக்கான மையம்.



Chalani Harshini Rubesinghe and 3 others

3 Shares



Centre For Environmental Justice

October 31 at 1:58 AM · 🌐

...



International Lead Poisoning Prevention Week, 25-31 October

There is a widespread recognition of the harmful effects of lead, and research has shown that exposure to lead, especially in childhood, poses a serious health risk.

Based on the results of 2009 analysis of paints in Sri Lanka, CEJ went to the Supreme Court requesting a mandatory standard for protecting the health of children from lead in Sri Lanka (Case no. 64/2011).

In response, the consumer affairs Authority made a gazette notification (Gazette Extra Ordinary No. 1725/30 on 30th September 2011) establishing a new mandatory standard for the lead levels in paint to take effect on 01st of January 2013.

This standard limits the allowed lead content of enamel paint to a maximum of 500 parts per million (ppm) of the dry weight of the paint.



Centre for Environmental Justice - is a public interest environmental organisation based in Sri Lanka working towards environmental justice and good Governance.



9

7 Shares



Mr Hemantha Withanage, Executive Director of Centre for Environmental Justice joined for a radio program with Sri Lanka Broadcasting Corporation on environment “Mihitalaya” during the Lead safe week to talk about lead exposure in the country, regulations and CEJ campaign to minimize lead poisoning.



Even though, we had planned several other activities, they were cancelled due to Covid 19 lockdown and social distancing practices. We had planned a conference with large scale and SME paint manufacturers, government agencies to review the lead safe legislations in Sri Lanka.

Article 20 ILPPWA Report 2020 from CEPHED, Nepal

Prevention of Lead Exposure through Effective Implementation of Lead Paint Standard in Nepal, ILPPWA 2020



ILPPW 2020 Kick Off and National Level Interaction Program

Prevention Lead Exposure and Effective Implementation of Lead Paint Standards in Nepal

नेपाल त्रिभुवनको विभिन्न भागहरूमा लागि अन्तराष्ट्रिय सम्मेलन सत्र





International Lead Poisoning Prevention Week 2020

23rd October 2020 (2077 Kartik 15), 11 AM to 1:30 PM Kathmandu, Nepal through ZOOM

Organized by CEPHED and supported by National Health Education, Information and Communication Center (NHEICC), Ministry of Health and Population (MoHP), Government of Nepal & WHO Country Office for Nepal



Awareness Raising & Capacity Building program, Province No. 1 on Prevention Lead Exposure and Effective Implementation of Lead Paint Standards

29th October 2020 (2077 Kartik 13), Kathmandu, Nepal through ZOOM

Organized by CEPHED and supported by National Health Education, Information and Communication Center (NHEICC), Ministry of Health and Population (MoHP), Government of Nepal & WHO Country Office for Nepal in Coordination with Ministry of Industry, Tourism, Forest and Environment (MoISTE) & Health Standards, Province No. 1, Bhairahawa

Awareness Raising & Capacity Building program, Province No. 2 on Prevention Lead Exposure and Effective Implementation of Lead Paint Standards

31st October 2020 (2077 Kartik 15), Kathmandu, Nepal through ZOOM

Organized by CEPHED and supported by National Health Education, Information and Communication Center (NHEICC), Ministry of Health and Population (MoHP), Government of Nepal & WHO Country Office for Nepal in Coordination with Ministry of Industry, Tourism, Forest and Environment, Health Standards and WHO Bhairahawa, Province No. 2, Bhairahawa

Awareness Raising & Capacity Building program, Lumbini Province on Prevention Lead Exposure and Effective Implementation of Lead Paint Standards

30th October 2020 (2077 Kartik 14), Kathmandu, Nepal through ZOOM

Organized by CEPHED and supported by National Health Education, Information and Communication Center (NHEICC), Ministry of Health and Population (MoHP), Government of Nepal & WHO Country Office for Nepal in Coordination with Ministry of Industry, Tourism, Forest and Environment (MoISTE) & Health Standards, Province No. 3, Bhairahawa

.....Center..... for.....

Public Health and Environmental Development (CEPHED),

Kathmandu, Nepal, Tel/Fax: +977-1-5201786.....Email:.....

info@cephed.org.np, Web: www.cephed.org.np

November 2020



World Health Organization
Nepal



Government of Nepal,
Ministry of Health and Population
NHEICC



CEPHED



Prevention of Lead Exposure through Effective implementation of Lead Paint Standard in Nepal, ILPPW 2020

Background:

Global Alliance to Eliminate Lead Paint (GAELP) is a global joint initiative of World Health Organisation (WHO) and United Nation Environment Program (UNEP) with the goal of preventing children's exposure to lead via paints containing lead and to minimize occupational exposures to lead in paint. With the continued efforts of all concerned, Government of Nepal, Ministry of Forest and Environment (MOFE) enacted mandatory standard of 90 ppm on 22 December 2014, effective since 20th June 2015. The compliance monitoring of standard by the Government of Nepal, Ministry of Forest and Environment (MOFE) in early 2016 and Center for Public Health and Environmental Development (CEPHED) with the support of WHO Country Office for Nepal in 2018 clearly shows increased compliance over years by almost all large and multinational paints companies but yet to achieve 100 % compliance of standard by small and medium domestic paint industries. Furthermore, studies have shown elevated blood lead level-BLL ($>5 \mu\text{g/dl}$) among over 64 % of Nepalese children (NHRC 2015) among other four BLL studies so far carried out in Nepal. 54 % of tested children toys contain most toxic heavy metal like Lead, Mercury, Cadmium, Chromium and Bromine etc. (CEPHED 2013), Schools class room dust sample contains lead more than $10 \mu\text{g/ft}^2$ (CEPHED 2014). These all indicate the urgent need to have regular compliance monitoring, mass awareness raising, as well as health sector increased engagement with their enhanced capacity.

In order to prevent lead exposure through enhance awareness and effective implementation of lead paint standard, there has been absolute need of massive dissemination of BLL Nepalese studies and other available global studies along with the dissemination of status of lead in paints and status of standard compliance in all seven provinces among all concerned government agencies (Social Development Ministries, Health, Forest & Environment), Medical Institutions, local metropolitan/municipalities, paint industries, paint dealers, professional association like Grill Enterprises, OSH related groups and trade unions and general public towards eliminating lead paint.

Popularization of lead paint standard as well as customization of 8th GAELP Campaign materials for 2020 in Nepali language, its mass distribution, media campaign, organize workshop on “**Prevention of Lead Exposure and Effective Implementation of Lead Paint Standards**” jointly with all the four provinces through ZOOM Webinars and maximum use of electronic mass media (Radio and Social Media etc.) has been proposed and completed in Nepal in line with the celebrating of the **8th International Lead Poisoning Prevention Week of Action, October 25 to 31, 2020**, called by GAELP. This is the completion reports of all above said activities successfully completed in Nepal with technical and financial support from WHO.

Objectives:

Celebration of 8th International Lead Poisoning Prevention Week in Nepal through organizing series of mass media, awareness raising and interaction programs were having following objectives.



Main objective is to raise awareness and built capacity to prevent lead exposure through elimination of leaded paints in Nepal

The **specific objectives** were as follows:

1. Collection & Customizing the GAELP Campaign Materials 2020 [Posters, Flier, info graphics, materials and distribute to all events (Kick off press meet, stakeholder workshop with Four provinces No. 1, 2, 3 (Bagmati) and 5 (Lumbini) and wide dissemination.
2. Organize an ILPPW 2020 Kick Off and National Level Interaction Program to kick off the International Lead Poisoning Prevention Week of Action (ILPPWA 2020) on 22th October 2020 on October 22 (due to national holiday on 25th October) through ZOOM.
3. Organize an awareness raising and capacity building program on "Prevention of Lead Exposure and Effective Implementation of Lead Paint Standards" with three provinces: 1, 2, and Lumbini during the ILPPW 2020 through ZOOM.
4. Mass awareness through prepare, production and broadcasting of Radio PSA and social media messaging on BLL & Lead paint standard from national most popular FM Radio Station (Kantipur) etc.

Activities and events completed under ILPPW 2020 in Nepal

Center for Public Health and Environmental Development (CEPHED) with technical and financial support from WHO celebrated the 8th International Lead Poisoning Prevention Week (ILPPW 2020) by successfully organizing various activities for effectively implementation of the lead paint standard legislation and envision for Blood Lead Level (BLL) abatement policy and programs to protect children's health. CEPHED with the support of National Health Education, Information and Communication Center (NHEICC), Ministry of Health and Population (MOHP), Government of Nepal Federal Government and Provincial Governments of Province No, 1, 2, Bagmati and Lumbini and WHO country Office for Nepal had organized several awareness raising and capacity building , stakeholder workshop and policy advocacy programs along with the customization & dissemination of Global Alliance to Eliminate Lead Paints (GAELP) 2020 materials, production and broadcasting of Radio PSA through one of the most popular radio stations named Kantipur Dairy programs reaching out to over 20,00,000 population of Nepal. CEPHED successfully accomplished all planned programs for celebration of week of action in Nepal as part of globally observed events from October 25 to 31, 2020 and beyond.

In context of ongoing COVID 19 pandemic time, CEPHED had planned and successfully organized various national and provincial level programs events towards joining the global actions/efforts of eliminating lead paints. With the uncertainty of the ongoing COVID pandemic, increased mass awareness through the maximum uses of electronic media Radio, social media and messaging, News (print and electronic) though press releasing's, social media and webinars etc. with great potential of reaching to greater sectors of peoples as well as increased engagement of local government, provincial government including health, environment, industries, constructions and media professionals.

Based on direct participation in the different events and wide media outreaches organized during the project period more than 25, 00,000 people and concerned government officials, stakeholders were



directly benefitted from participations as well as having access to information through mass media popular Radio (Kantipur FM) and massive media outreaches from different national level print and online media about the weeklong programs and beyond. Government and WHO initiatives to eliminate lead paints in Nepal were also included into the program as major highlights of all completed programs.

Wide media coverage has been achieved that helps to maximize the public outreaches with massive message regarding dissemination about lead, lead toxicity and lead paint standard enacted by the Government of Nepal and most importantly the issues of Blood Lead Level among the Nepalese children and other vulnerable groups were also widely shared among health community's at all federal, provincial and local levels.

Center for Public Health and Environmental Development (CEPHED) successfully organized a ILPPW 2020 Kick Off & National Level Interaction Program and three Provincial level awareness and capacity building program on “ **Prevention of Lead Exposure through Effective Implementation of Lead Paint Standards**” .

The major objective of national and provincial level programs were raising awareness and built the capacity to prevent lead exposure through elimination of leaded paints in Nepal. Further down the province level programs objectives were: sharing and spreading Lead Paint Standard and its compliance status with Provincial Government; awareness raising & capacity building and media outreaches and translating lead paint and other chemical safety issues at provincial and local level.

All programs were organized online through a dedicated zoom webinar supported with a Information Technology expert along with face book live too.

Participants are representatives from concerned government agencies from health and environment sector from all three level of the governments (Federal, Provincial and Local), Health Directorates, District Health Offices, Faculties and Students from medical colleges, nursing colleges, environment science colleges, environmental Occupational Safety and Health (EOSH) college, Universities, OSH experts, Health Expert, Researchers, Federation of Nepalese Cottage and Small Industries (FNCSI), Butwal Chamber, Commerce and Industries (BCCI), Professional Associations, Trade Unions, Consumer Association, Grill and Steel Fabricators Association, Paint Industries and representative NGOs, youth networks, Nepal environment Society (NES), Metropolitan City, Sub Metropolitan City, Municipalities and media etc, were also participated. Representatives from Development Agencies, Nepal Human Right Commission (NHRC) and Medical Doctors, Forest Officers were also present in the programs.

All the four programs were carried out in the similar fashion with four sections: Inaugural Session; Technical Session; Question and Answer Session and Closing Sessions.

In all programs, four technical papers on different issues related to lead in paints and associated socio economic impacts, blood lead level (BLL), Government response in eliminating leaded paints and WHO initiatives towards elimination of lead paints had been presented in details with flagging of different related issues and way forward.

First paper entitled “ **Status of Lead in Paints and associated Socio-Economic Impacts in Nepal** “ were presented jointly by Mr. Sumin Maharjan, Program Officer and Mr. Ram Charitra Sah Executive Director/Environment Scientist, CEPHED;

This paper clearly pointed out the high lead legacy in the paints in Nepal from the series of studies being carried out before and after the lead paint standards being promulgated in Nepal. Very rigorous research based campaign lead by NGOs has able to bring the lead paint standards in Nepal. The standards



getting effectively implemented over the years as revealed from the compliance monitoring. Still 30 percent industries yet to improve their products. Court case issues related to lead paint standards were clearly presented. High level of socio-economic losses as well as high level of blood lead level (BLL) among Nepalese children were also raised. Clear recommendations about the required things to be done by respective government agencies at all level along with the role and responsibility all other concerned stakeholder were presented. .

Second paper presented by Dr, Keyoor Gautam, Dr. Santosh Pradhan, and Dr, Vivek Panta, Samyak Diagnostic Pvt. Ltd. entitled “**Summary of Researchers on Blood Lead Levels tested at Samyak Diagnostic**”.

Explained clearly the history of lead, lead toxicity, mechanism of lead intoxication and associated health impacts were briefly presented. The high lead level among Nepalese children and its links with the leaded paints were clearly established in the different researches summarized and presented in all the four programs.

These Doctors groups presented the three researches about the BLL carried out from their centers with clear diagnosis and way forward for the abatement in all four programs.

Firstly, Study of BLL among children in Kathmandu and Birgunj Industrial area were presented. In case of Kathmandu among 50 Children, on an average BLL is 7.01 µg/dL. Situation among the Children of Birgunj among school children adjoin to an industrial area were still very alarming. In Birgunj, among 50 Children, on an average BLL was 20.33 µg/dL with 100 % of children in the study have elevated BLL. These findings were more or less coherence with the other previous studies carried out in Nepal as well as the reported from recent UNICEF and PRURE EARTH 2020 report.

Secondly, BLL among 50 Rag pickers study findings about evaluate blood lead level in Rag picker working in selected area of Kathmandu including hematological and biochemical parameters were also tested among them were presented.

The average BLL among paper and metals collectors were 7.35 µg/dL; among Plastic, Metal and Paper collectors 8.47 µg/dL; plastic, Metals, paper and Paint Container 8.47 µg/dL and Plastic, Metals, Papers, Paints containers and electronics waste workers were having average BLL 12.89 µg/dL.

The findings of this study suggest that the Rag-pickers working in Kathmandu are at increased risk of lead toxicity and this occupational exposure to lead is attributed to the use of bare hands for handling solid waste. There has been high possibility of transfer their lead exposure to their near and family members.

Thirdly, the lead toxicity due to Ayurvedic Medicine use in a 38 year old people with acute abdomen pain health complication following intake of Ayurvedic medicines for increasing power were presented. He had initial blood level was 82.3 µg/dL. The used Ayurvedic medicine when analyzed for presence of lead revealed very high concentration of lead (102 ppm) against the prescribed limit is only 10 ppm by WHO.

Lists of lead poisoning prevention measures with major highlights as “**Lead Poisoning is 100% Preventable**” were given. Washing hands before eating; washing toys regularly; do not use old or imported toys unless you know they are lead free; clean surface with wet mop weekly, chipping, peeling paints chips; moisture, molds and mildew and calcium and iron supplements can help to prevent the absorption of Lead.



Third Paper entitled “Role, Responsibility and Program of **“LEAD PAINT ELIMINATION of Federal, Provincial and Local Government in Nepal”** by Mr. Bhupendra Sharma, Environment Inspector, Department of Environment, MOFE, Government of Nepal.

The major highlights of this paper were role and responsibility of all three level governments for lead paint elimination starting from the Constitutional right to live in healthy environment, provision of federal EPA, EPR, Provincial EPA and EPR as well as Gazette Notification of Lead Paint Standard and its content and compliance status. He focussed on the need to do effective IEE, EIA as well as effectively implement the laws and standard. He provided the suggestion for paint industry to produce the paints complying the standards as well as put the uniform label about the lead content on the can as per the standards. He also suggested the role and responsibility of the provincial government in addressing the lead paint and other chemicals safety issues by including these provision in relevant laws, regulation, standards and having increased institutional capacity of hiring relevant environment officers at provincial and local level and to regular market and industry monitoring.

Fourth Paper entitled “WHO initiatives towards prevention and control of Lead Exposure in light of ILPPW 2020” were presented by Mr. Raja Ram Pote Shrestha, National Professional Officer, WHO Country Office for Nepal.

The fourth paper covered many sector including health and economic impacts, reason of using lead in paint etc., in much simple and understandable manners.

He then described briefly about the role of WHO, contribution of WHO from global, regional and national level and help to government of Nepal and CEPHED to bring this issues up to this level. Cited different countries example, He finally highlighted the awareness is the major requirement to help individual, communities, government to cope with this lead poisoning and associated implications. He also provided information regarding various important documentation prepared by WHO with GAELP and SAICM related to lead widely available through the web portal.

So all the four paper were very good, educative and informative as appreciated by all the participants and mainly by all the guest speakers. A lot of information with the clear message to be carried out by us as an individual and organization level and hence it creates hopes among us to do something to solve this problem. Second point he highlight is the initiative lead by NGO sector results up to the gazette notification of having lead paint standards in place is the clear example of how NGO and Government can work together and all we should encourage this kind of collaboration.

Citing the serious health, environment and associated huge economic losses, all programs summarized by calling for federal and provincial government to address the issues of high lead in paints, high BLL among Nepalese children through including of lead in paint and chemical safety issues in the provincial level acts, regulation, policy, guideline and standards while developing different environment and health related laws. The need of developing infrastructures like laboratory facilities, trained human resources and sufficient budget allocation to test BLL national level through having BLL National Screening Policy and Programs.

- A. **Final Press Release and Review of weeklong program:** Press release highlight the status of lead paint, BLL, socio economic impacts and also for the required control measures from different sectors especially from the concerned government agencies. The major review were, despite of the ongoing COVID, the week long proposed, planned activities to celebrate ILPPW 2020 in Nepal were successfully completed with increased awareness among federal, provincial and local government as well as stakeholder level with the great realisation of needs of inclusion of lead paint issues in provincial level laws, regulation, policy and programs.



International Lead Poisoning Prevention Week (ILPPW)

Prevention of Lead Exposure through Effective Implementation of Lead Paint Standards in Nepal

लेड (सिसा)को विषबाट बचावका लागि अन्तर्राष्ट्रिय सचेतना सप्ताह

**BAN LEAD
PAINT**

लेडयुक्त पेन्टसहर
प्रतिबन्ध गरौं ।



**LEARN
the Risks**

**JOIN
the Action**

**ELIMINATE
Lead Paint**

25-31 October 2020 (२०७७ कार्तिक ८ देखि १५)

**International Lead Poisoning
Prevention Week 2020**

www.who.int/lead_campaign/en/ #ILPPW2020 #BanLeadPaint



Government of Nepal,
Ministry of Health and Population
NHEICC



Province Government,
Ministry of Industry, Tourism, Forest and Environment
Health Directorates
Province No. 1, 2, Bagmati and Lumbini



World Health
Organization



Center for Public Health and
Environmental Development
www.cephed.org.np

Organized by CEPHED, Kathmandu and Supported by: National Health Education, Information and Communication Center (NHEICC), Ministry of Health and Population (MOHP), Government of Nepal, Provincial Governments & World Health Organization (WHO) Country Office for Nepal



Customized GAELP Materials



२०७७ कार्तिक ९ देखि १५ सम्म

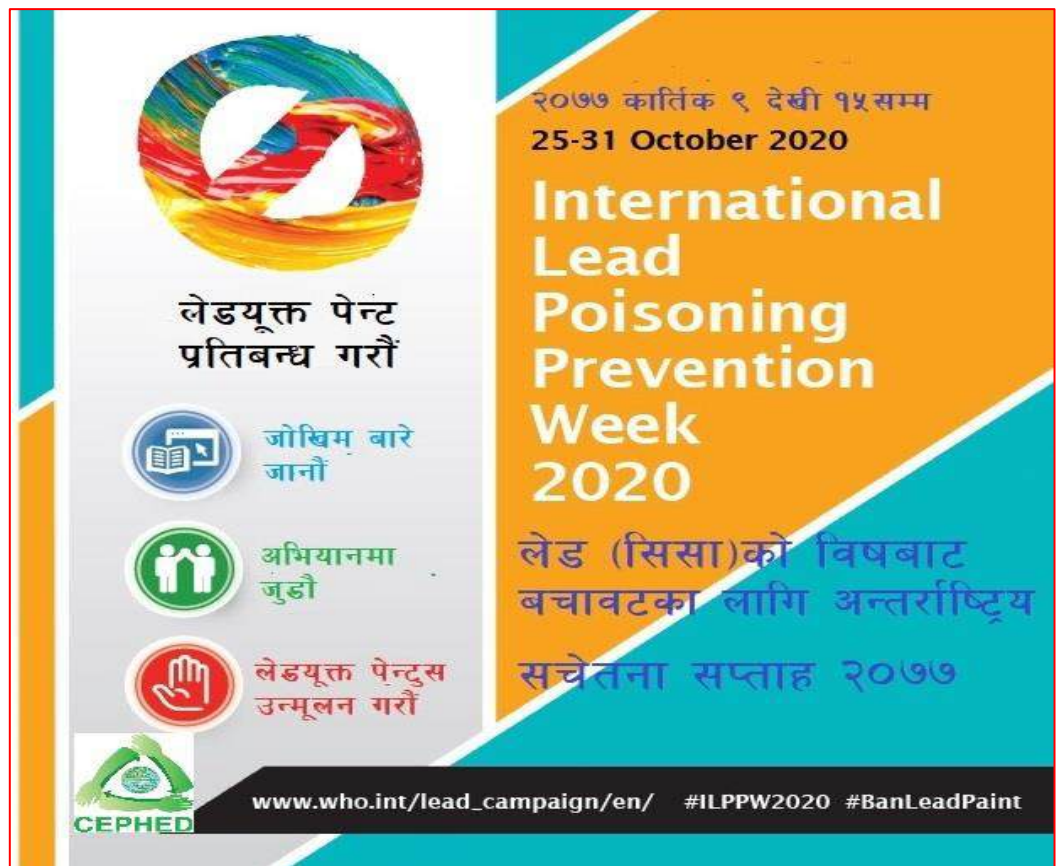
लेड (सिसा) को विषबाट बचावटका लागि अन्तर्राष्ट्रिय सचेतना सप्ताह २०७७

लेडयुक्त पेन्ट प्रतिबन्ध गरौं

- जोखिम बारे जानौं
- अभियानमा जुडौं
- लेडयुक्त पेन्ट्स उन्मूलन गरौं

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www.who.int/lead_campaign/en/ #ILPPW2020 #BanLeadPaint



२०७७ कार्तिक ९ देखि १५ सम्म
25-31 October 2020

International Lead Poisoning Prevention Week 2020

लेड (सिसा) को विषबाट बचावटका लागि अन्तर्राष्ट्रिय सचेतना सप्ताह २०७७

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- लेडयुक्त पेन्ट्स उन्मूलन गरौं

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लेड(सिसा)को सम्पर्कमा आउन सक्ने माध्यमहरु...

#BanLeadPaint



लेड(सिसा)को सम्पर्कमा आउनुको कुनैपनि सुरक्षित सिमा हुदैन ।



World Health
Organization

#BanLeadPaint

तथ्य: लेड(सिसा) खतरनाक धातु हो।

यसले सबैलाई
हानी गर्दछ र



विगर्दछ : मस्तिष्क मृगौला फोक्सो रगत प्रजनन प्रणाली

बालबालिकाहरु

are most vulnerable.
Their nervous systems
are still developing and
they absorb 4-5 times
more than adults,
which can cause:

- intellectual disability
- underperforming at school
- behavioural issues



वयस्कहरु

lead exposure increases
the risk of:

- ischaemic heart disease
- stroke



गर्भवती महिलाहरु

lead exposure damages
many organs but also affects:

- the developing foetus



लेड(सिसा)को सम्पर्कमा आउनुको कुनैपनि सुरक्षित सिमा हुदैन ।



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Massive Media Outreaches

Dissemination of lead paint standards and its impact through radio, social media (Face Book/ Whatsapp & Viber etc.)

1. The Radio PSA produced and broadcasted from one of most popular Radio Station Kanpur FM in-between the main news program called Kantipur Dairy twice a day have reached over 20,00,000 peoples
2. The Video Message from Dr. Maria Neira, WHO Head Quarter has been shared widely during the program and also through social media. It has got 145 views during the week of action.
3. The Video PSA (previously produced from CEPHED with the help of WHO & IPEN) were also widely shared during the programs and also through the social media have got 81 views during the week of action.



1. There has been news publication from three print media of main national newspaper and other online media have reached over millions of readers.



<https://myrepublica.nagariknetwork.com/news/stakeholders-urge-governments-to-effectively-execute-legislations-to-protect-children-s-health/>? Circulation: 1,52,000

<https://risingnepaldaily.com/nation/intl-lead-poisoning-prevention-week-from-oct-26>

<https://english.khabarhub.com/2020/24/137530/>

https://www.naiummid.com/2020/11/blog-post_18.html?m



Conclusion:

International Lead Poisoning Prevention Week (ILPPW) 2020 has been successfully celebrated in Nepal through the effective implementation of the project entitled "Prevention of Lead Exposure through Effective Implementation of Lead Paint Standard in Nepal" with support of :National Health Education, Information and Communication Center (NHEICC), Ministry of Health and Population (MOHP), Government of Nepal; Provincial Government, Ministry of Industry, Tourism, Forest and Environment (MoITFE); Health Directorates, Ministry of Social Developments (MoSD) of Province No.1, 2, Bagmati and Lumbini and technical and financial support from WHO Country Office for Nepal.

Programs were successfully implemented by carrying out several activities including customization of GAELP Materials (Banners and Fact Sheets), production of radio jingle and broadcasting from one of the widely listened Radio Stations in between the main news programs. Four (One National and three Provincial level) stakeholder programs on awareness raising and capacity building on prevention of lead exposure and effective implementation of lead paint standard were organized with technical and financial support of WHO and in close coordination, collaboration and support of NHEICC, provincial MoITFE and Health Directorates.

Wide participation of different stakeholders and experts from different sectors of government, non government, industry, health, environment, doctors, students, teachers, media personnel etc.

Along with major highlights of the lead paint, lead paint standard and associated economic and health impacts, compliance of lead paint standards, high blood lead level, huge economic losses and mechanism of lead toxicity were raised throughout the programs, numbers of way forwards were suggested by different stakeholders and experts towards eliminating leaded paints from Nepal and thus eliminating its impacts on public health and environment.

Outcomes:

Major outcomes like massive IEC materials, raised awareness, built capacity of provincial and local government as well as realization of inclusion of chemicals safety issues including lead in paint into the provincial legislative and recruitments of required relevant human resources were achieved from all the programs carried out in collaboration and coordination with provincial, local governments and other stakeholders.

- Successfully completion of all the proposed program with great success and sectorial commitments.
- Awareness and Capacity building about the Lead, its impact on health, lead in paint issues and their associated risk, economic losses, abatement of lead exposure and prevention of exposure and alternatives throughout the country.
- Status of BLL among Nepalese children and other vulnerable groups, global BLL studies, its contributing factors, compliance of Lead Paint standard were massively disseminated to raise the awareness about the safer paints that contribute towards effective implementation of the government legal frameworks.
- The IEC materials, video recording and Video PSA, Radio PSA links were made available through sharing on the chat box as well as shared through the email of each individuals.



- 25,00,000 People were increasingly known about health hazards of Lead as well as related government lead paint standard through Radio PSA, News Paper article, Social Media as well as from all four national and province level programs.
- Promotion of Lead free paints standard of the government thus increased their compliances and hence reduces the potential exposure as committed by all the provincial level high officials.
- Meet GAELP Goals of eliminate lead paints, accelerate progress towards the global phase out of lead paint through regulatory and legal measures.
- Sectorial commitment were enhanced the effective prevention of lead exposure and implementation of the lead paint standard.
- Help in translating Lead Paint and other chemical safety issues at Provincial and Local level importantly required for the nation were well accepted and gasped by all collaborating provincial level governments.
- Overall lead toxicity related awareness was realised better for all, public health, children health and environment.

Way forward:

Based on the successful completion of four national and provincial level programs including massive dissemination of lead paint issues, status of lead paint & standars complaicne, blood lead level among Nepalese children, associated socio-economic and health impacts, initiatives from governments of Nepal, development agencies like WHO`s initiatives and global initiatives and more from the stakeholder interaction, there was numerous urgent realization for further reuired actions to be taken for overall sectoral improvements as way forward to eliminate leaded paints and its associated impacts on public health and environment listed below under different categories.

A. Regulatory and Institutional Frameworks :

1. Formulation and Adoption of National Blood Lead Level (BLL) Screening Policy, Program and Infrastructure developments including laboratory facilities in each provinces of Nepal
2. Local government should also opt for having required legislation and institutional framework of regulating lead in paints and other environment and public health issues.
3. Provincial government needs to recruited the required level of human resources as soon as possible and also suitably include the lead paint and other chemical safety issues in required act, regulation and standards and opt for their effective implementation.
4. All three tires of Government (Federal, Provincial and Local Government) should include mandatory provision of using paints that only fully comply the Government of Nepal`s Lead Paint standard during MAP APPROVAL of building and any infrastructures construction within their jurisdiction including building code, green building guideline development and adoption.
5. Required to formulate mandatory standards of chemicals including lead in Toys, Cosmetics, Ayurvedic Medicine, Occupational Lead Exposure limits etc. for all thee government levels and implement them effectively.



6. Concerned authorities (Federal, Provincial and Local) should immediately start discussing with Paint and other industries to solve their challenges to meet and enhance the lead paint standards compliances as well as make uniform labeling provision and stop mal advertisement of paints and other products.
7. Develop clear policy, plan, guideline and programs needed in the area of lead poisoning prevention with time bound framework by center and conveyed to the most enthusiasms province and local level to work together to be implemented at province and local government level.
8. Help and support Provincial and Local Government to include chemical safety issues including lead toxicity in their provincial level laws, policy and standards.
9. Formulate a solid work plan of eliminating lead paint from Nepal as well as BLL abatement Action plan through a large stakeholder consultation.

B. Research and Monitoring

1. National Level Blood Lead Level (BLL) study needs to be carried out so as to present national level status/picture..
2. Needs to do larger study of Lead in Blood and its association with prevalence of anemia among Nepalese Population.
3. Need to do larger study of identification of Lead in Ayurvedic Medicine (Imported and Nationally Produced) and among the consuming patients/population along with exclusive awareness among these sector of health professional and consumers.
4. Develop BLL testing program for all children especially from province No. 1, 2, Lumbini and Bagmati.
5. Periodic study of larger compliance monitoring of Lead Paint Standards in Nepal.
6. Promoting the possibility of producing Organic Paints (vegetation based) at commercial level in Nepal.
7. Study of lead and other heavy metals in cosmetics, toys, food items etc of daily usable and/or consumable items.

C. Awareness Raising and Capacity Building

1. Continue stakeholder programs for effective implementation of Lead Paints standard in all provinces, local government and even community level is utmost required and demanded from all over.
2. The widely dissemination of IEC materials, Radio and TV PSA for longer period of time from national and provincial level mass Medias (electronics and print).
3. Exclusive program on Lead Paint and Chemical Safety for Provincial Health Fraternity and Ministry of Industry, Tourism, Forest and Environment (MoITFE) should be developed and implemented in each provinces of Nepal.



4. Massive awareness and capacity building programs at different level especially provincial and local government, students, teachers and health communities.
5. Empower all stakeholder especially all concerned government agencies to ensure the right to live in clean environment as fundamental rights ensured by the Constitution of Nepal.

D. Technical and Financial Support

1. World Health Organization (WHO) should continue its financial and technical support towards long term Research, Awareness Raising, National Capacity Building (BLL testing laboratories and required legislative framework adoption in each provinces) beyond the international lead poisoning prevention week celebration on overall chemical safety including lead.
2. Internalization of the cost of lead testing, control and mitigation measures based on polluters pays principles i.e. from the corporate soiceity doing lead associated business and trade.
3. All three tire government should allocate required budget to address lead paint and lead toxicity issues for develop required legislation, institutional frameworks and established reuired infrastructures.

For detail information, please contact:

Ram Charitra Sah
Executive Director and Environment Scientist
CEPHED
Kathmandu, Nepal
Tel/Fax: 977-1-5201786
Mob: +977-98033047621
Web: www.cephed.org.np



Figure. Mr. Ram Charitra Sah, Executive Director, CEPHED holding the ILPPW 2020 Banner



ILPPWA Report 2020 from Eco-Accord, Russia



LEAD
IN PAINT MATERIALS:
FOR HUMAN HEALTH AND
SUSTAINABLE DEVELOPMENT



Webinar, October 26, 2020

Summary of the discussion

The webinar was attended by 38 participants representing the Russian governmental agencies, the Eurasian Economic Commission (EAEC), Russian paint manufactures, and NGOs from Eastern Europe, Caucasus and Central Asia (EECCA) region. The aim of the meeting was to discuss the current situation of the development and approval of the Technical Regulations "On the Safety of Paints " of the Eurasian Economic Union (EAEU); analyze challenges and opportunities for its adoption and enforcement; and agree on ways forward.

Olga Speranskaya, IPEN / Eco-Accord, described the activities of the International Pollutants Elimination Network (IPEN) in monitoring lead in paint in various countries and the work to develop legislation to ban lead in paint. Since 2008, 59 countries have been involved in IPEN's campaign to eliminate lead in paint, including 9 out of 12 countries in Eastern Europe, Caucasus and Central Asia. Over 3,500 paint samples have been analysed. The results showed the presence of lead in at least 30% of paint samples taken from each of the participating countries. According to Olga Speranskaya, a WHO legislative study, shows that lead paints are still used in many countries despite the global goal of phasing out these paints by 2020. As of 31 May 2020, 39% of countries confirmed that they had legally binding controls over lead paints. However, many of these regulations are not sufficiently protective as they contain exemptions, weak restrictions or are not enforced.



Mr. Kanagat Dyusambaev, chief expert of the Ministry of Development and Investments of the Republic of Kazakhstan, spoke about the development of the Eurasian Economic Union (EAEU) Technical Regulations "On the safety of paints". At the last discussion sessions of this document, which took place on 2 and 8 October 2020, the main unresolved issues were lead in paint and the use of volatile organic compounds. It is proposed to use the standard lead content of 90 ppm (0, 009%), as recommended by WHO and the authorized bodies in the health sector of Kazakhstan. All EAEU countries, except Russia, agree with this. Some Russian government agencies and industry still have questions about why 90 ppm is proposed, as well as concerns that the transition to the new standards will require major changes in production technology. The length of the period required for transition to the new regulations is also a discussion issue. It was agreed that the Russian Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing (Rospotrebnadzor) would present its official position and that the Russian paint and varnish industry would also justify its position. It is expected that the next meeting on the Technical Regulations will develop an agreed position on this issue - and this meeting is likely to be the final one.

Dr. Khalidya Khamidulina, Director of the Russian Register of Potentially Hazardous Chemical and Biological Substances. (Russian Register) of the Russian Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing (Rospotrebnadzor) noted that the last discussion of the draft Technical Regulations "On the safety of paints" looked "unconstructive and unsightly". She expressed hope that both regulatory authorities and business would finally understand that Russia and the EUEU will still switch to the 0.009% (90 ppm) lead content in paints and varnishes.

An important issue is how long the transition period to the new standard will last. Rospotrebnadzor has set a strict period of 24 months, with a maximum of 36 months. Besides, the Technical Regulations on Safety of Paints cannot come into force before the end of 2022. Therefore, we have enough time - at least two years + 36 months, and a lot can be done during this period. We cannot stretch the process for decades. Just a small number of manufacturers in Russia still use lead. Most paints on the Russian market contains no lead.

"We are sounding the alarm, as we have a sad example of the implementation of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, for which Rospotrbnadzor is responsible and for which the Russian Register is a special authorized body," Kh.Khamidulina stressed. - We see how many substances that are banned or severely restricted in the EU, China, Serbia and other countries around the world enter the Russian market for the simple reason that we do not regulate these chemicals in any way. It is easier to regulate pesticide import because we have a state catalogue of permitted pesticides which forms the base for import or import ban of certain pesticides. The situation is more complicated with industrial chemicals, so we are slowly turning into a dumping ground for chemicals that are not used in other countries but that are imported to Russia at low price. It is more expensive for these other countries to destroy prohibited substances than to sell them at dumping prices to the Russian Federation. According to the Director of the Russian Registry, lead pigments and paints banned in



other countries will be imported to countries where these products are allowed. Therefore, as Khamidulina stressed, we have deep concerns that we could become a lead paint dump.

Earlier, during the discussion of lead-related regulations, many questions were raised about how lead in paint could be controlled. Kh.Khamidulina noted that this problem is now being solved. At the initiative of the Russian Register, the development of guidelines for the control of lead in paint has been included in the Plan for the development of regulatory and methodological documents of Rospotrebnadzor for the next year. Thus, by the time the implementation of technical regulations begins, the document will be approved. If it is necessary to formalize it as an interstate standard (GOST), the Russian Register is ready to do so.

Mr. Sergei Fedotov, President of the Russian Paint Quality Association (RPQA) noted with satisfaction that the issues of the content of the Technical Regulations "On the Safety of Paints", including the regulation of lead in paint, began to be discussed widely, with the participation of all stakeholders, while a year ago this was not the case.

He emphasized that the experience of companies that are members of the Paint Quality Association shows that if lead chromates or lead siccatives are not intentionally added to the formulation, the lead concentration in paint will be less than 90 ppm. However, in his opinion, there are several problems here, the main of which is the difficulty of controlling the quality of raw materials for small and medium-sized enterprises, which form the basis of the Russian paint industry: while the RPQA member companies are large enough and have their own well-equipped laboratories, hundreds of small decorative paint companies do not have the financial or human resources to test the incoming raw materials for lead content. According to Fedotov, these companies are unable to effectively conduct the quality control of raw materials and cannot obtain information on the content of lead and other ingredients in raw materials supplied from South-East Asia, Western Europe and North America. The documents accompanying the raw materials for paint manufacturing often do not contain this information. After all, if testing the end product reveals an increased lead content, this is blamed on small paint manufacturers, whereas in reality it is the result of a poor quality control system for the raw material, which allows for the import of lead-contaminated components. According to Fedotov, this not only concerns lead, but also volatile organic compounds (VOCs) and formaldehyde.

Another important problem, according to Fedotov, is related to lab methods for determining lead in paint. The existing methods in Russia allow lead to be determined with an accuracy of 0.05%. Therefore, during the transition period, the industry initially proposed to set the standard for lead content at 0.05% (500 ppm), so that the standard could be changed to 0.009% later. Although there are examples in Russia of using precise methods to determine 0.009% lead in paint (for example, in the Yaroslavl laboratory), this method is unqualified, so it cannot be used for mass product control. The good news, according to Fedotov, is that accurate methods for determining lead in paint will soon be developed by Rospotrebnadzor. Another question, he noted, is how long and how much time and capital investment it will take to provide all regional centres with the necessary equipment. This is not an easy task and there is doubt that it will be done in 36 months. But if we have outlined this path, we must follow it.



Mr. Gennady Averyanov, President of the Tsentrak Association, one of the oldest associations of paint and varnish industry enterprises, believes that Russia has had a coherent system of market regulation for paints and varnishes, which includes Unified Sanitary Requirements, GOSTs and Sanitary Regulations, and is currently developing the EAEU Technical Regulations on the safety of paint. The standard for lead content in paints and varnishes is quite high (5000 ppm), and our enterprises work as Rospotrebnadzor allows us to.

In Averyanov's opinion, the paint and varnish industry is not against tightening the standards to better address the content of harmful substances in paint. However, Tsentrak believes that such tightening should not lead to the collapse of the industry. The industry consists of approximately 1,500 companies, which is 70% of the companies in countries of the Eurasian Economic Union. If regulation is improved through shock therapy, companies go bankrupt and budget contributions will become less.

Averyanov believes that the situations in the paint and varnish industry in Russia differs from the situation in Europe and the USA where giant paint manufacturers are located. Russian enterprises are not represented in the Global Lead Paint Alliance and the recommendations of the Alliance are not suitable for the Russian paint industry. According to Averyanov, the Model Law does not reflect the specifics of Russian situation - there are analysts from Africa, Asia and the Caribbean, but not from our country. We do not know if our paints really affect the health of our people and children. According to materials provided by the Alliance, dry paint can crumble and sneak into dust, which can enter the body of a child. But we have no proof that toys painted with our colours can poison children even if they suck on them.

Averyanov also noted, that according to GAELP not all countries accepted the 90ppm standard . This standard varies from 100 ppm to 600 ppm in some countries.

For this reason, Tsentrak proposes to accept 500 ppm of lead content in paints and make it the EAEU standard. This standard, which is 10 times lower than today, has been agreed by Tsentrak with the Paint Quality Association and can be controlled using existing control capabilities in Russia.

A.V.Averyanov echoed concerns about the quality of raw materials for the paint industry, which may contain lead. He noted that tougher regulations on lead will lead to market redistribution in favour of imported pigments from the EU and the USA, the cost of which is approximately 6 times higher than that of pigments from BRICS countries. Meanwhile, we now have 70% of raw materials from the BRICS countries and 30% from the EU.

Analysis conducted by Centrallak shows that 90 ppm standard of lead content in paint will be a shock to the Russian paint industry: companies will not be able to control the compliance, there are no methods, equipment and lab specialists available. In the meantime, the costs of the final products will increase, and their competitiveness will decrease. According to Averyanov, the Rospotrebnadzor system also has little control over the market. It is therefore necessary to approve the 500 ppm standard at this time, while stricter standards will be applied at a later stage when all necessary technical prerequisites will be met.

G.V.Averyanov expressed no concern about the flooding of the Russian market with lead-



contaminated paint. In his opinion, the share of imported materials in the Russian paint and varnish market is only 10-15%. They belong to the high-value goods segment and are imported mainly from European countries where they are produced in accordance with European standards.

Mr. Pavel Filatkin, Deputy Director of the Department of Chemical and Technological Complex and Bioengineering Technologies of the Ministry of Industry and Trade of the Russian Federation, said that he conceptually shared Centrallak's concerns. In his opinion, 1,500 paint and varnish industry enterprises provide jobs and pay taxes to the budget. Therefore, by taking radical steps, we can do more harm than help.

In Filatkin's opinion, the Ministry of Industry and Trade does not deny the importance of environmental issues, human safety, and environmental protection; nobody argues with this. The only question is not to apply any measures drastically, not to hit the development of the industry, but to go through transitional periods, the duration of which can be discussed, to find consensus. Even in Europe, the transition to the new standards takes considerable time.

Filatkin reminded that on 2 October 2020 the Government of the Russian Federation approved the National Action Plan to ensure the restoration of employment and income, economic growth and long-term structural changes in the economy. In this document there is a special section devoted to the postponement of entry into force of normative legal acts in the sphere of technical regulation. As Filatkin explained, this is due to the fact that the Government understands that in the current situation it is not quite right to make any sharp moves to tighten requirements. Therefore, the representative of the Ministry of Economy agrees with industry representatives that it is necessary to approach this issue very carefully and, of course, transition periods are necessary.

Olga Ponizova, Eco-Accord, said that Eco-Accord Center in its activities is guided by the concept of sustainable development and the need to harmonize the ecological, social and economic spheres. Olga Ponizova told about the results of oil paint testing conducted by Eco-Accord in 2016 in cooperation with IPEN and in 2020 with the support of the Russian Presidential Grant. In both cases, about 60% of the paints contained lead in concentrations above 90 ppm. She spoke about the recommendations of non-governmental organizations to address the problem of lead in paint.

In the discussion, **Olga Speranskaya** commented on the control of the quality of children's goods by Rospotrebnadzor. She spoke about the research conducted by the Eco-Accord, which revealed significant heavy metal contamination of children's toys purchased in Russia. She noted that lead concentration in some toy samples was several times higher than the corresponding Russian standards.

Gennady Averyanov expressed regret that, in his opinion, non-governmental organisations do not hear industry concerns. Meanwhile, in his opinion, it is necessary to know the production process and listen to the industry representatives, because a doctor cannot cure a patient without knowing his body. He suggested going down to earth and building the relationships with industries that fill the budget, provide employment and produce good quality paints. If someone violates the law, such producers must be fined by Rospotrebnadzor. The percentage of violations that are recorded is



relatively small. Deviations can be found in products of any group. In his opinion, if we do a study on paint quality in Europe or America, there will also be deviations. Averyanov suggested to better understand the paint industry and people who work there, and not to argue with those companies that work well and produce high-quality paints. According to G.V. Averyanov, there are potboilers in all countries, but it is necessary to follow an evolutionary path, not a revolutionary one. "We survived 1917, we survived the 1990s, when everything stopped," said Averyanov, and we do not need such shocks anymore".

Sergey Fedotov supported the idea that other countries' standards and rules not always fall on our soil, and this is a reflection of the fact that we do not take part in the development of these rules.

He stressed that the Technical Regulations are just one of the links in the chain for regulating lead in paint. A quality control system for raw materials needs to be put in place that small businesses themselves are unable to implement - perhaps by creating a register of hazardous chemicals where they all need to be registered. Everything that is imported must have absolutely clear information about the composition of raw materials. According to Syrgey Fedotov, any norms can be adopted, but they need to be fulfilled.

In response to comments about the non-participation of Russian industry representatives in the Global Alliance to Eliminate Lead Paint, **Olga Speranskaya** noted that participation in the Global Alliance is not limited - on the contrary, it is in every possible way encouraged, but the participation of Russian industrial associations is not yet visible. **Gennady Averyanov** raised the question of why the Russian industry should participate in the Alliance at all. **Olga Ponizova** noted that the representatives of the Russian paint manufacturers do not use the opportunity to participate in international meetings to discuss lead paint elimination. Thus, they did not even respond to UNEP's invitation in March 2019 to take part in a workshop on this topic for Eastern Europe, Caucasus and Central Asia held in Almaty and lost an excellent opportunity to learn about the work of the Alliance and provide input to the international discussions.

Khalidya Khamidulina considers it necessary to maintain a balance between the need to develop the economy, preserve jobs and protect the health of the population. She urged to tackle the problem constructively, introduce transitional periods, strive for better standards, and seek compromise on these issues.

Vladislava Minakova, JSC Hempel, noted that if there are mineral components in the paintwork materials, they may contain lead. Hempel manufactures anti-corrosive primers that are paintable and do not directly affect human health. Vladislav Minakova urged Rospotrebnadzor to consider the differences in paints by purpose and type of use.

Oleg Speranskaya spoke about the analytical note just published by WHO that discusses the impact of lead in paint on the health of people, children and pregnant women and promised to distribute this material as soon as possible.

Pavel Filatkin noted that in our country there is a huge number of support measures for business, and the Ministry of Industry and Trade is open to proposals on this topic.

According to **Olga Ponizova**, the transition to the production of lead-free paint is inevitable, and this



will increase the competitiveness of the Russian industry both domestically and internationally.

All the participants in the discussion expressed high appreciation of the event and agreed that such a dialogue is very important for all stakeholders. It is important to listen and hear each other and be able to find a compromise.



ILPPWA Report 2020 from Foundation to Support Civil Initiatives, Tajikistan

The workshop dedicated to the International week of eliminating lead damage in paints was held by environmental organization "Foundation to support civil initiatives " (FSCI, Dastgiri Center), Tajikistan on October 31, 2020 in Dushanbe city.



The seminar was attended by teachers and students of 3-4 courses of the Tajik National University, chemistry faculty. Much attention was paid to the invitation of female students to the seminar. Information about lead pollutants and how to reduce their damage should first be conveyed to women who run households and raise and instill environmentally friendly lifestyle habits in their children.

The seminar covered the impact of lead-containing paint pollution on health and the environment at the national and international levels, the stages of research of the FSCI on oil paints for domestic use in Tajikistan, the results of monitoring the sale of lead-containing oil paints in the country's retail network. The employees of the FSCI also spoke about the important task set – the Development of Technical Regulations for paint and varnish products in Tajikistan, which includes the need to produce and import oil paints with a lead content of no more than 90 ppm (international level). Technical regulations on paint and varnish products of Tajikistan should be developed and submitted to the



government of Tajikistan for approval in December 2020.

The seminar held a live dialogue with students; they were asked a lot of questions. At the beginning of seminar, teachers and students filled out questionnaires on lead paints, which resulted in an interesting conversation.

All participants of the seminar (25 people) have received information brochures on lead paints and a Calendar for 2021 year "A world without lead pollutants" developed by the FSCI in the state languages.

At the end of seminar, a video film devoted to FSCI research on lead-containing paints was shown, video stories on lead in paints.



The photos are of participants at the beginning and at the end of the seminar.

Muazama Burkhanova, PhD, environmental specialist
Chair of Ecological Organization "Foundation to support civil initiatives"
78 Rudaki Avenue, m/b 327, Dushanbe, Tajikistan
Tel: (+992) 918183355, (+992) 907780478
E-mail: mburkhanova@mail.ru; muazamab@gmail.com



ILPPWA Report 2020 from Human Environmental Association for Development (HEAD), Lebanon

Report of Human Environmental Association for Development (HEAD)-LEBANON

International Lead Poisoning Prevention week (ILPPW) from 25 to 31 October

Name of Event/activity: Extending awareness Campaign on health hazards of Lead in paint

Date, Time and Location: Thursday 29 October, 2020. Time: 6:00pm-9:00pm EST time (GMT+2)

- **Type of activity :** Virtual Zoom Meeting, Meeting ID 849 9015 3791. Passcode 729473

- **Description of the Event/activity:**

Human Environmental Association for Development (HEAD) participated in the International Lead Poisoning Prevention week (ILPPW) from 25 to 31 October. This year's campaign focuses on the need to accelerate progress towards the global goal of phasing out lead paint through regulatory and legal measures. The Action Week is led by the Global Alliance to Eliminate Lead in Paint, led by the United Nations Environment Program (UNEP) and the World Health Organization (WHO) and which relies on the International Network for Elimination of Persistent Organic Pollutants and its many points of sale from developing countries. Its partners. What follows is a brief summary of the planned activities of our procurement organizations for the week-long campaign to raise awareness of the dangers and dangers of lead, particularly on the health of children and other vulnerable groups, and mobilize stakeholder support to enact and effectively enforce strong lead paint laws.

Lebanon: The Human Environmental Association for Development (HEAD) work to raise awareness about the problems of lead paint and the need to adopt the lead paint regulation through a virtual meeting with the youth of the Red Cross in Lebanon 🇱🇧, Ministry of Industry and through the media.

We start our campaign on the first week of October by spreading the awareness of prevention week on social Media ,Facebook, Instagram and Twitter following a contact with the Ministry of Environment but with the Coronavirus the offices of the Ministry was closed ,we involve the Ministry of Industry (MOI), the Association Industrialists in Lebanon (ALI),The Lebanese standards Institutions (LIBNOR),Arab Network for Environment and Development (RAED Network of 22 Arabs countries),Land and Human for Advocate Progress (LHAP from Jordan),IPEN hub in MENA region, then preparing the posters in Arabic and in English, preparing a press release in English send it to IPEN and in Arabic and put it in Lebanese newspapers, website etc....

<http://elissarnews.org/single?Id=20201029163047>

<https://zawayamedia.com/single/1462>



https://l.facebook.com/l.php?u=https%3A%2F%2Fipen.org%2Fnews%2Fipen-pos-join-2020-global-action-accelerate-phase-out-lead-paints&h=AT1MCc48pEXFGHqgiltkw94_woHiWVKvcQkj8dycmyWym0XbKyByDVHrYikPFnjxvRyxlONSdUehtFYBLr_SqRt5kiEgyCbSAFYRrSLZ5FqkisFLQE9KAIML3YPQOXgjZ8WZv7PH4qRTNnKy7rJOGs&s=1
<https://www.facebook.com/headNGO/posts/1579218335595703>
<https://www.facebook.com/headNGO/posts/1581093032074900>
<https://www.facebook.com/100001430798160/videos/3573098482747810/>

On 29 of October at 6:00pm Beirut time we start our virtual meeting, by the opening note from Mrs. Marie Therese Seif the president of HEAD:

The eighth edition of the International Week for the Prevention of Lead Poisoning, which lasts for a week from October 25 to 31. Commitment to accelerate the need to phase out lead in paint.

This initiative was carried out by the Human Environmental Association for Development with the support of the International Network for Pollutant Reduction (IPEN), which is an international network of non-governmental organizations concerned with health and the environment from all over the world, and HEAD is one of its members since 2015 and under the auspices of the World Health Organization, and with representative partners From the Ministry of Industry, Eng. Ramzi Shasha, the Lebanese Industrialists Association, Eng. Sami Assaf, the Standards and Specifications Institution – Libnor, Eng Rosy Al-Hajj and Mrs. Rola Darwich, Dr. Emad Adly, Secretary-General of the Arabs Network for Environment and Development "RAED", which includes 22 Arab countries, Mr. Ziad Alawneh Founder of LHAP, President and members of the Lebanese Green Party of Lebanon, civil society organizations, legislators, certification providers, insurance, supply chain (distributors and retailers), medical associations, citizens, consumers and women's groups, Head of the Lebanese Red Cross Byblos Mrs. Randa Kallab, the Youth sector in Red Cross Mount Lebanon 68 participants, and youth members from Scouts.

And many NGO's attended from Egypt, Jordan, Tunisia, Saudi Arabia, Bahrain, Yemen, in addition to Yarmouk University students from Jordan.

The meeting culminated in the presence and opening speech from the ex-Minister of Environment Mr. Fadi Jreissati and contribution from the IPEN,MENA Hub Mrs.Semia Gharbi.

The number of participants reached 131persons "between the Webinar and Facebook Live."

A press release was sent later to the Media follow by a preparation of the Recommendations and pursued later "to become a decree and then a law".

<https://www.facebook.com/headNGO/posts/1581447882039415>

Evaluation: Evaluate the event/activity using the following criteria or any other criteria that is important to your organization.

- The Number exceed the expectation, we expected the presence of 70 persons we receive 131 persons almost the double.



- The target persons was there mean the youth of Red Cross Byblos and there was many others from other region from Jounieh, Antelias and many others cities in Lebanon, plus there was a Young youth from Scouts also and unexpected a Youth from University of Yarmouk from Jordan,we,like a HEAD contribute with them before, by giving two lectures about Environmental Tourism .
- The webinar was attended by many friends NGO's from Saudi Arabia, Bahrein, Yemen, Tunisia, Egypt and Jordan.

-We cover all the agenda planned, the meeting was previous for one hour 30 minutes but in reality the meeting didn't finish before 3 hours.

For the next time ,we do the same since we rich our target but with another contact, since with Zoom it's difficult to rich 150 participants.

- The objective of the event was :

1-Spread awareness,

2- Prepare the recommendations .

3- Go to the legislation then the Law.

The first Phase was successful accomplished, we are preparing the second phase with the Ministries concern, then we will do a lobbying to prepare the Legislation then the Law. Hopefully we rich our goal with the help of our friends and others Major Groups.

- The Zoom meeting was not enough to support 150 participants, I would like to use another alternative to get more contributions in our virtual meetings.

The other materials was very helpful specially the flyer of UNEP and WHO.

- If I do it again I let the contribution more precise with the contribution of WHO in Lebanon, Ministry of Health and all Ministries concerns.
- I'm continue first to prepare the recommendations, make a lobbying with the Ministries of Environment, Health,Industry,Libnor then going to make a Legislation from the Parliament then going to proceed with a Law from the Council of Ministers.

I'm preparing an Awareness page in Facebook to spread information concern the Lead Poisoning and add all the Youth presented during the virtual meeting ,we would like to work like a (Snow Ball) to rich the largest part of students, CSO and Stakeholders.

Poster of International Lead Poisoning Prevention Week 2020



BAN LEAD PAINT

LEARN the Risks

JOIN the Action

ELIMINATE Lead Paint

25-31 October 2020

International Lead Poisoning Prevention Week 2020

www.who.int/lead_campaign/en/ #ILPPW2020 #BanLeadPaint

INTERNATIONAL LEAD POISONING PREVENTION WEEK 2020

World Health Organization

HEAD
جمعية إنسان للبيئة والتنمية
Human Environmental Association for Development

IPEN
For a toxics-free future

Extending awareness campaign on health hazards of lead in paint
A HEAD initiative for Chemical Safe & Sustainable Future

Venue: Virtual Meeting On
Date: Thursday 29 October, 2020
Time: 6:00pm - 7:30pm
EST time (GMT+2)

Zoom meeting
Meeting ID 849 9015 3791
Passcode: 729473

A certificate of attendance for the students.

المملكة العربية السعودية
وزارة الصناعة

RAED

World Health Organization

HEAD
جمعية إنسان للبيئة والتنمية
Human Environmental Association for Development

IPEN
For a toxics-free future

LHAC
Lead Hazard Assessment and Control

For a toxics-free future

Certificate of Attendance

This is to certify that

Yara Chalhoub

has successfully attended & participated in the webinar
International lead poisoning prevention week 2020
"Extending awareness campaign on health hazards of lead in paint"
A HEAD initiative for Chemical Safe & Sustainable Future
Byblos 29th October 2020

President of HEAD
Eng. Marie Therese Merhej Seif



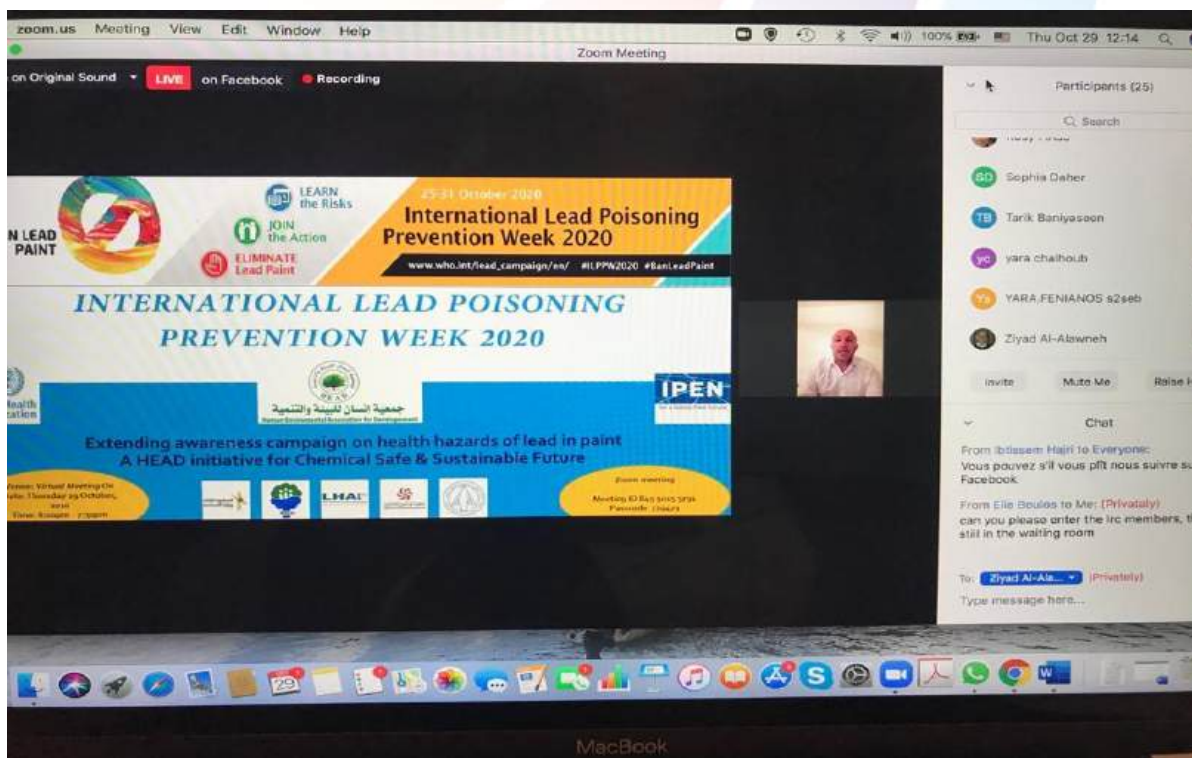
Certificate of appreciation for the participants and lecture in the webinar.





Some Pictures from the Event:

Opening session by the Minister of Environment: Mr.Fady Jreissati



Mrs.Semia Gharbi Coordinateur Hub regional IPEN-MENA/ North Africa

During her intervention

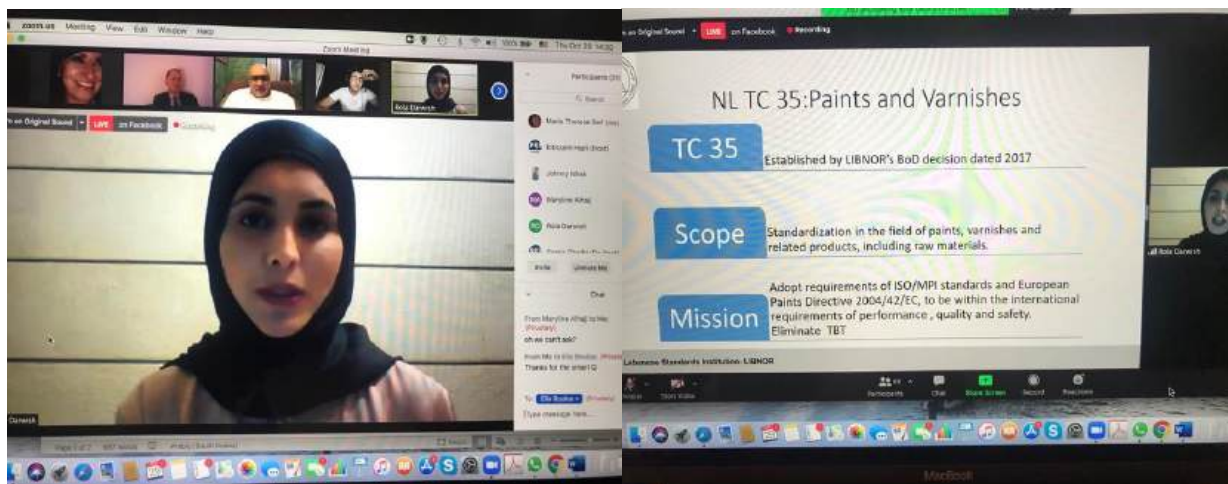




Eng.Rosy Hajj from LIBNOR Lebanon during her intervention



Mrs.Rola Darwich from LIBNOR talking about the Lead Paint and specification in Lebanon





Eng. Marie Therese Seif President of HEAD & the Moderator of the webinar.



Dr. Emad Adly the Secretary General of RAED (Arabs Network for Environment & Development)





Youth Red Cross contribution during Q & A



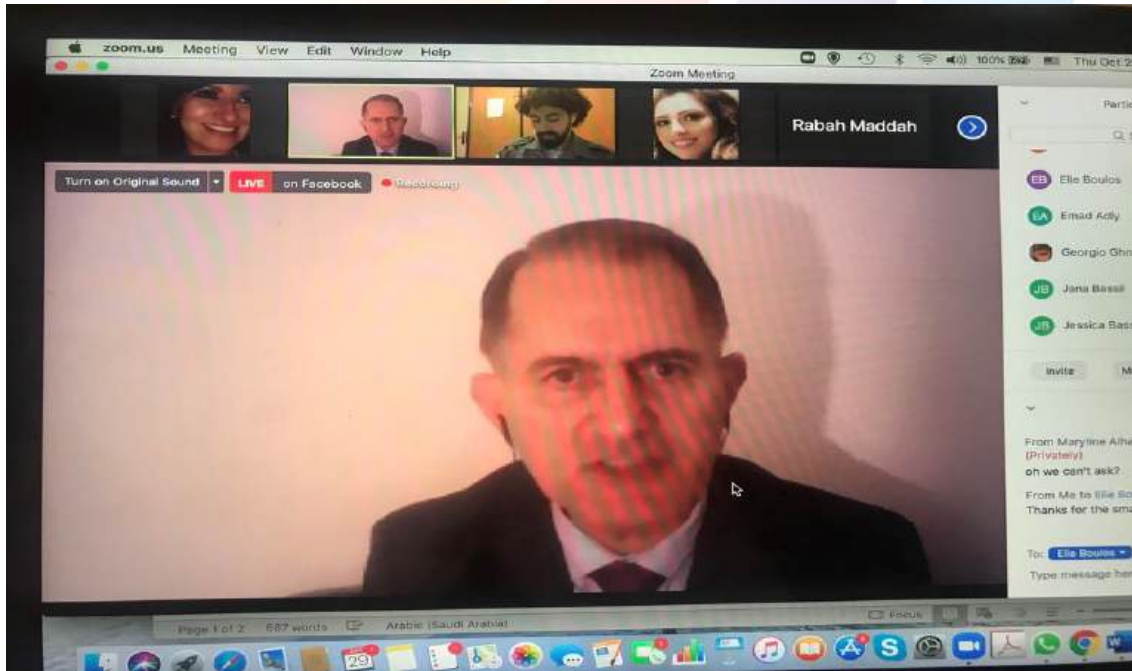
Group of Participants from Youth of Red Cross,CSO from Lebanon

and Students from University of Yarmouk Jordan





Eng. Ramzi Shasha representing the Ministry of Industry MOI



Human Environmental Association for Development HEAD

Edde- Jbeil, Al Merej Road, No.130, Merhej Bldg, Underground.

Tel/fax : +961 9 944254-+9613814370

Email : headorg4@gmail.com, mtseif4@gmail.com

Facebook: Human Environmental Association for Development HEAD

Instagram: head_org

Twitter: head_org

Website: www.headngo.org

P.O.Box: 2532/116 Justice Palace Beirut-Lebanon

HEAD selected a UNEP Regional Facilitators of Major Groups & Stakeholders in West Asia Region 2016-2017-2018-2019-2020.

Member in the Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE),

Member in Arab Network for Environment and Development (RAED),

Vice President of Green Party of Lebanon & Representing Women in APGFNW.

Vice President of Lebanese Environment Forum (Umbrella of 60 NGO's)

Vice President of Green Party Lebanon (Member of Green Party Asia-Pacific) & Co-Covener of APGFNW.

Member of IPEN- A Toxic free Future

Member of GNDR & National Focal Point in Lebanon



ILPPWA 2021 Report from Dr Were, University of Nairobi

Background

Kenya participated in the 9th International Lead Poisoning Prevention Week of Action (ILPPWA) between 24th and 30th October, 2021. These activities were coordinated by the Department of Chemistry, Faculty of Science and Technology of the University of Nairobi. The main sponsor was Basco Paint Product Ltd.

The activities were aligned with the established limit of total lead content of 90 ppm maximum that regulates lead in paints across the East Africa region. This was aimed at enhancing commitments and promoting actions to phase out lead in paint, with the theme: “Working Together to Eliminate Lead in Paint from the Universe”



The event

It involved over 50 key stakeholders drawn from the National Multi-sectoral Committee on Sound Chemical Management under the Ministry of Environment and Forestry, the Technical Committee of the Kenya Bureau of Standards, Basco Paints Product Ltd, Lead Paint Alliance Partners, National Environment Management Authority, Chairpersons of various organizations, Civil Societies, Kenya Chemical Society, Kenya Association of Manufacturers, Department of Chemistry, Faculty of Science and Technology University of Nairobi staff, University of Nairobi Chemistry Student Association and the Organizing Committees participated face to face. These activities were live streamed. The program had five sessions:

- Key Note Speeches: (Introduction) and Technical Presentations and the walk.

<https://drive.google.com/drive/folders/1qfohly-8xNQmz92B3cvjxgbacjB4tQIH>



A Group Photo of the Key Stakeholders at the Faculty of Science and Technology of the University of Nairobi:

- Oral Narrative Key stakeholders and Lead Paint Alliance Partners to “Work Together to Eliminate Lead Paint from the Universe: <https://youtu.be/DYYXU-zBq3M>



a) Key stakeholders participating in a technical workshop



b) Key stakeholders participating in a technical meeting



a) Marching walk for awareness raising



b) Matching walk for awareness raising

Post Event

- i) Certificate of participation was awarded to all participants, both face to face and online (a sample of the certificate awarded)





- ii) Press release urging expedite efforts to eliminate lead paint in Kenya-The Standardmedia .co.ke/opinion 3rd November 2021:
- <https://www.standardmedia.co.ke/opinion/article/2001427899/accelerate-efforts-to-phase-out-lead-based-paints-in-kenya>
- iii) This was followed by the Business Daily Africa.com 5th November 2021, the regulator, Kenya Bureau of Standards recalling lead containing paints
- <https://www.businessdailyafrica.com/bd/news/kebs-recalls-paint-brands-containing-lead-3608296>

By Faridah Hussein Were

Lecturer in the Department of Chemistry of the University of Nairobi Kenya
and a member of Advisory Council of Lead Paint Alliance

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