



health

Department:  
Health  
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# Lead Sampling and Screening Guidelines for Environmental Health Practitioners



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## FOREWORD

Lead is a toxic metal that is widely spread in the environment. There are various sources of exposure to lead, however, exposure to lead-based paint is very common and most widespread. Exposure to lead from paint occurs mainly in the home, due to old flaking paint that can be disturbed during home maintenance and renovation, causing the generation of lead-containing dust. Households can be exposed to lead dust through inhalation of dust particles or accidental ingestion of lead dust from soiled contaminated hands or contaminated food. Soil around the indoor and outdoor home surrounding may also become contaminated.

Exposure to lead has serious health effects for both adults and children. Exposure to lead through the above-mentioned scenarios in the home environment, are also possible to occur in the schools or childcare premises, where children also spend most of their day. Young children and unborn babies are particularly vulnerable because their organ systems are still developing.

Determining concentration of lead in paint or from contaminated dust and soil through sampling is vital step to ensure appropriate mitigation measures are applied in the home, childcare and schooling environment. This is the role expected of Environmental Health Practitioners (EHPs) as empowered in the pieces of legislation outlined in section 5 of this guideline.

It is anticipated that this guideline serves the purpose it is intended in terms of guiding practitioners on what to sample, when to sample, how to sample, and which laboratory to take samples to, including required resources and principles to apply in conducting this important exercise.



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**Director-General: Health**

**Date:** 24/09/2023

## 1. INTRODUCTION

Lead is a heavy metal, which is widely used in modern society but has toxic effects that can affect the health of the community. It can affect the health of various systems of the body such as the neuro-logical, haematological, gastrointestinal, cardiovascular and renal systems. Children are especially at high risk of exposure because of their elevated rates of development, ingestion and metabolism. Populations can be exposed to lead from various sources and activities, including exposure to lead contaminated paint, soil and dust. Lead based paint is still widely available and used in painting of interior and exterior of buildings and houses and in furniture, toys, children's playground equipment, even in countries that has banned it. Children can also be exposed to lead in paint through eating peeling off paint from painted wall surfaces, toys or other objects. Building and house renovations can also result in release of lead dust that can be inhaled or ingested. Lead based paint is a major source of lead exposure. Exposure to lead based paint can occur through inhalation, ingestion and trans-placental (endogenous) routes from mother to the fetus. Ingestion is the most common human exposure route.

The main role of EHPs in the public health space is to protect human health from exposure to environmental risk factors such as exposure to lead in contaminated paint and dust. Therefore, sampling of paint products, painted articles, objects or materials for laboratory analysis or through screening by using a portable analysing equipment can be done by an EHP as part of functions to investigate and determine the existence of a health hazard due to exposure to lead.

This guideline is intended to provide protocols and directions on how to take samples from various articles and paint products for laboratory analysis as outlined in the guideline and how to conduct an on site lead screening using an XRF equipment. In the development of this guideline, reference on the some of the sampling protocol and procedure for paint products has been sourced from the Regulations under the Hazardous Substances Act, 1973 (Act 15 Of 1973), GNR 453 of 25 March 1977 as amended. In case of sampling wall surfaces paint chips, soil and settled dust, and lead screening with the use of an XRF, the World Health Organization (WHO) and United States Environment Protection Agency (USEPAs) guidelines have been consulted.

## 2. ACRONYMS AND ABBREVIATIONS

EHP	Environmental Health Practitioner
PPE	Personal Protective Equipment
SDS	Safety data sheet
USEPA	United States Environmental Protection Agency
WHO	World Health Organization
XRF	X-ray fluorescence

### 3. PURPOSE OF THE GUIDELINE

This guideline has been developed to assist EHPs on protocols and procedure to follow in taking samples to determine lead content on painted wall surfaces or objects using a portable X-ray fluorescence (XRF) analyzing device and to take samples of supplied (manufactured; imported and retail sold) paint products; paint chips; and from soil and settled dust on surfaces in residential premises, school and child care premises. The guideline further aims to ensure uniformity in data sample collection and sample investigation report compilation.

#### 3.1 Scope of application

This guideline is applicable for use by EHPs when sampling painted surfaces/objects using an XRF and when supplied paint products, sampling paint chips, soil and settled dust on surfaces in residential premises, school and childcare premises.

### 4. LEGISLATIVE CONTEXT

The following pieces of legislation are applicable in relation to taking of samples by EHPs:

#### 5.1 *Declaration of Leaded Paint As Group 1 Hazardous Substance, GNR. 801 of 31 July 2009, under Hazardous Substances Act No. 15 of 1973 as amended*

Leaded paint is declared as a Group 1 hazardous substance.

**NB.** The revised leaded paint declaration as a Group II hazardous substance notice. GNR. 1067 that aims to repeal GNR. 801 of 31 July 2009 has been published for public comment on 22 October 2021.

The Regulations relating to lead in paint, GNR. 1456 has been published for public comment on the 29 October 2021. These regulations make provision for the inspector to also makes use of a calibrated portable analyzing device to instantly determine the lead content in samples of paint.

#### 5.2 *Hazardous Substances Act, 1973 (Act No. 15 of 1973) as amended*

One of the purposes of the Act is to provide control on the supply, use and application of hazardous substances (lead included) in order to prevent injury, ill-health or death by these substances as a result of being toxic, corrosive, irritant, strongly sensitizing or flammable nature.

In terms of section 9 (1) and 9(1)(a) of the Hazardous Substances Act No. 15 of 1973 as amended, gives power to an inspector to enter any premises that supply, sell, label, mark, pack, use or store hazardous substances (lead included) containing products, articles, objects or materials; open suspected packages, remove and to take samples of products, articles, objects or materials, that is suspected to be used, or is intended for use, or in connection with the manufacture, packing, marking, labelling, storage, conveyance, use, application or administration of a grouped hazardous substance.

Section 9 (3) of the Act also makes provision for samples to be obtained and transmitted by following prescribed procedure.

### **5.3 National Health Act, 2003 (Act No. 61 of 2003) as amended**

Section 83 of the National Health Act, 2003 as amended makes provision for health officers to conduct environmental health investigation of conditions causing or constituting health nuisances or pollution that is harmful to health. These health officers are empowered the section 82 of the Act to enter any premises at reasonable times and to also take samples of any substances that is relevant for inspection.

### **5.4 National Environmental Health Policy GN 951 of 13 December 2013**

The policy serves as broad guiding document that provides a framework for implementation of environmental health services in South Africa. Risk assessment and risk management approach is one of the interventions, including conduction of sampling outlined in section 10 of the Policy to address biological, chemical, physical, and social and psychosocial stressors in the living environment in order to protect and promote human health. Lead being a chemical, is an environmental stressor that needs to be mitigated. The policy also highlight sampling, as another intervention activity that take place on an ad hoc basis.

### **5.5 National Environmental Health Strategy, 2016-2020**

This Strategic document outlines key approaches and goals to strengthen the delivery of environmental health services in South Africa. In terms of this Strategy, strengthen programme based environmental health services monitoring is one of the strategic goals included in the Strategy, and hazardous substances control (lead included) as a programme is also included as one of the listed environmental health programmes, which require improvement on compliance monitoring and enforcement. Therefore, lead sampling is a critical part of ensuring compliance to the relevant legislation.

### **5.6 Regulations Defining the Scope of Profession for Environmental Health, GNR 698 of 26 June 2009**

Control on the supply and use of hazardous substances to prevent human health effects and death is also covered in the scope of Profession, including provision for ensuring sampling is done according to approved procedures

### **5.7 Regulations under the Hazardous Substances Act, 1973 (Act 15 Of 1973), GNR 453 of 25 March 1977 as amended**

Regulation 9 of these Regulations outlines the procedure for sampling Group I and II hazardous substances.

## **6. SAMPLING PRINCIPLES**

### **6.1 Sampling Introduction**

The EHP must introduce self and the purpose of sampling before any sampling activity commences.

### **6.2 Samples offering**

- If the sample is not paid for, the notification that the sample was not paid for shall be in writing.

### **6.3 Protection of samples**

- Samples must be protected from adventitious contamination.
- All the precautionary measures to avoid contamination of samples that are prescribed in specific sampling procedures in the relevant sections of this guideline are to be followed.
- Appropriate, clean equipment and containers should be used to take and retain samples.

### **6.4 Personal Safety and Precautions**

- Examine leakages or unstable enclosures/lids from potential products containers/packages to be sampled
- No leaking or damaged new prepackaged paint products containers/packages must be sampled.
- Read and where applicable follow the precautions on the label and Safety Data Sheet (SDS) instructions.
- Know the chemical product you are dealing with by identifying the active ingredient, physical (e.g. flammable, oxidizing, etc.) and chemical (e.g. health toxicity) properties of the chemical product to be sampled
- Always conduct risk assessment. Estimate risk and take necessary control measures such as wearing appropriate Personal Protective Equipment (PPE).
- Any maintenance of the PPE such as cleaning, should be carried out.
- When sampling paint chips, before you begin, take precautions to protect yourself and prevent the contamination of the area with lead dust.
- When using an XRF device, radiation and x-ray safety precautions should be taken.

### **6.5 Equipment Calibration**

- If a portable XRF device is used for sampling and screening lead content on painted surfaces, the EHP should ensure that the device used for the investigation is calibrated before use.
- Documentation of the calibration protocol, sequence, margin of error(s), and readings must be provided in the report.

#### **a. Documentation**

- All field data related to the samples should be recorded on the prescribed sample labels and forms.
- An investigation report should be compiled after sample results are obtained.

## **7. SAMPLING RESOURCES**

This section outlines types of resources required for different sampling articles as per the scope of the guideline.

### **7.1 General key resources**

- An inspector/EHP appointment authorization letter in terms of section 8(1) Hazardous Substances Act, 1973 (Act No. 15 of 1973), amended, and/or an appointment letter as a

health officer in terms of section 80 of the National Health Act, 2003 (Act. No. 61 of 2003) as amended.

- Funding/budget- to procure specific sampling materials and equipments, samples of pre-packaged paint products where samples are not offered free, and to pay for laboratory analysis costs.
- Means of transport to collect and deliver sample to the laboratory.
- Sample containers and storage containers.
- Sample labels and forms.
- Note book.
- Permanent writing pen/marker.

## **7.2 Recommended materials and equipment for paint chips sample collection**

- Resealable rigid walled container for use as paint chip sample collection containers, e.g. screw-top plastic centrifuge tube. (Resealable plastic bags are not suitable for holding and transporting dried paint chip samples due to potential losses of paint chips during laboratory handling).
- Steel or plastic measuring ruler - metric only with millimeter and centimeter divisions
- Cloths and disposable wet wipes for cleaning purposes.
- White A4 size paper for making paper funnels (paint chip sample collection trays) or a A4 size reusable plastic sheet.
- Masking and duct tape.
- Permanent (indelible) marking pen.
- Personal safety gear.
- Plastic gloves, powderless.
- Cutting and scraping tools:
  - Sharp-edged razor knife
  - Single-edged safety razor blades
  - Pocket knife with locking blade
  - Rigid blade paint scraper with extra blades
  - Flexible putty knife
  - Chisels
  - Hammer
- Flashlight.
- Refuse bags.
- Protective sheeting.
- Paint Chip Sample Collection Form.

## **7.3 Recommended materials and equipment for new pre-packed paint tins sample collection**

- Adhesive sample label.
- Sealant to seal the samples.
- Transport container, plastic or cardboard, for interim storage and transport of sample collection containers.

## **7.4 Recommended materials and equipment for sampling and screening new paint or painted surfaces using a portable XRF device**

- A calibrated portable XRF device.



- Training on the use of portable XRF device.
- A small paintbrush.
- A table or working surface.
- Clean A4 pages, to cover the working area.
- For Method 1 – Using a Painted Non-Metal Surface, a Wood stick or glass slide to apply paint is required
- For Method 2 – Using Special Sample Cups, special sample cups and films are required.
- For laboratory analysis- resealable sample bags, to collect scrapped off paint from wood stick or glass slide, and sharp-edged razor knife to scrap off paint.
- For laboratory analysis- sample label for sample bags.

## **7.5 Recommended materials and equipment for soil sample collection**

### **Scoop sampling equipment**

- Plastic centrifuge tube, 50ml with crew-on cap x 2.
- Sample collection container, resealable plastic bags or sealable rigid walled container with 50ml minimum volume.
- Spoon, stainless steel or disposable plastic.
- Steel or plastic measuring tape or ruler, divisions to at least 1/8 inch (3.2 mm).

### **Core sampling equipment**

- Coring probe, 0.5 inch (12.7 mm) minimum diameter, lead free.
- Coring plungers.
- Sample collection container, resealable plastic bags or sealable rigid walled container with 50ml minimum volume.
- Spoon, stainless steel or disposable plastic.
- Steel or plastic measuring tape or ruler, divisions to at least 1/8 inch (3.2 mm).

### **General supplies for soil sample collection**

- Field notebook.
- Indelible ink marker, blue or black.
- Ink pens, blue or black.
- packaging tape to seal sample transportation containers.
- Refuse plastic bags.
- Powderless plastic gloves.
- Preprinted sample log forms.
- Transport container, plastic or cardboard, for interim storage and transport of sample collection containers.

### **Cleaning supplies for soil sample collection**

- Clean water to clean sample equipment.
- Disposable wet wipes to clean sample equipment.

## **7.6 Recommended materials and equipment for dust samples collection using wipe sampling**

- Disposable moist baby wipes or towelettes. It is recommended to avoid brands of wipes that contain aloe, because these have been found to contain higher background lead levels.

- Sealable rigid-walled sample collection tubes/container.
- Disposable plastic powderless gloves.
- Sampling area templates- 1ft<sup>2</sup> (0.09m<sup>2</sup>) inside area reusable aluminum plastic or disposable cardboard or plastic template. Various shaped templates can be used e.g. "rectangular" "or "square" shaped. Templates should be less than 1/8 inch (3.2 mm).
- Steel or plastic tape measure or ruler.
- Masking tape.
- Pen, indelible ink marker.
- Refuse plastic bag(s).
- Transport container, plastic or cardboard, for interim storage and transport of sample collection container.
- Dust sample collection forms.

## **8. LEAD SAMPLING PROCESSES**

### **8.1 Sampling of new prepacked paint products**

Section 9(1) of Regulations Relating to Group I Hazardous Substances, Government Gazette Notice R 453 of 25 March 1977 as amended outlines activities to be followed when taking samples of Group I and II hazardous substances. The Regulation makes provision for a division of a sample if opening of the sample package would not hamper the analysis and makes provision for taking individual random samples in case of a sample that is indivisible. In order to avoid any possible contamination by opening and dividing a prepacked sampled product, it is preferable that three individual random samples be taken. In taking samples, the following guiding steps should be followed:

#### **STEP 1: Securing resources:**

- Ensure the required materials and equipment as outlined in sampling resources section are available.
- Contact the laboratory to determine the sample size required.

#### **STEP 2: INTRODUCTION OF THE SAMPLING ACTIVITY**

The inspector/EHP to introduce self produce authorization and appointment letter prescribed in sampling resources section and notify person in charge/licensee on the purpose of the sampling.

### STEP 3: LEAD IN NEW PREPACKED PAINT SAMPLING PROCEDURE

**Sub step 1 - Offer - sample division accepted** -In the case of a product where the opening of the package would not hamper analysis, the inspector shall offer to divide the sample into 3 three approximately equal portions (1 for analyst, 1- inspector and 1- person in charge). If necessary, open another product, to add quantity to the sample, if sample quantity is insufficient and mix.  
**Offer- sample division not accepted and indivisible substance/product** - take 3 individual random samples.

**Sub step 2.** Seal the opening of the sample(s). Seal must remain intact and not be tampered with

**Sub step 3.** Label the sample(s) - Complete the label- Annexure A

**Sub step 4.** Give person in charge or licensee 1 sample each. Inspector to keep 1 sample.

**Sub step 5.** Pack sample(s) separately. 1 sample belongs to EHP to keep until case is finalized and 1 sample to be send to the laboratory for analyses- **(if offer -3 samples accepted).**

**Sub step 6.** Are samples paid for?

Yes

No

**Sub step 7.** Purchase 2 samples of 1L paint (EHP + Analyst) **(if offer -3 samples accepted)** and retain purchase slip for record purposes. Purchase 1 sample of paint **(if offer -3 samples not accepted)**

**Sub step 7.** Complete the free sampling offering notification (in duplicate-original to owner and copy for EHPs record keeping) - **Annexure B**

#### **STEP 4: SAMPLE SUBMISSION TO LABORATORY**

- Ensure samples are stored in the interim storage container.
- Send sample to a chemical laboratory that is accredited for the service. List of accredited chemical laboratories that checked for accreditation status and accredited analysis services can be perused from the South African National Accreditation System
- website- [www.sanas.co.za/Pages/index.aspx](http://www.sanas.co.za/Pages/index.aspx).
- The original label of the paint package or a copy thereof shall accompany the sample to the laboratory.
- Ensure the sample seal remains intact during sample transportation.
- Ensure the remaining portion of the sample is being kept by the analyst until case is finalized.

#### **STEP 5: SAMPLING INVESTIGATION REPORT**

The investigation report for the samples taken shall be completed, and shall include the following information:

- Information as required on the label of the sample of the new prepacked paint product as indicated in Annexure A of the guideline.
- Sampling procedure employed for paint analysis, including quality control undertaken.
- Analysis results and interpretation of the results. Refer to guiding standards in Annexure C.
- Name, signature, and HPCSA registration number of the investigating inspector.
- Attach inspector authorization letter in terms of section 8(1) and (2) of the Hazardous Substances Act, 1973 (Act No. 15 of 1973), amended and appointment letter in terms of section 80 of the National Health Act, 2003 (Act No. 61 of 2003) as amended.
- Attach copy of the analysis report as prescribed in the Regulations Relating to Group I Hazardous Substances, Government Gazette Notice R 453 of 25 March 1977 as amended.

##### **a. SAMPLING AND SCREENING NEW PAINT OR PAINTED SURFACES USING AN XRF DEVICE OR FOR LABORATORY ANALYSIS**

Sampling and screening new paint or painted surfaces can be conducted using a portable analysis XRF. Portable XRF instruments can measure the total amount of lead in a painted surface in situ without damaging the paint or the substrate. There are two types of portable XRF devices, the portable Conventional XRF and portable High Definition XRF (HDXRF). The portable Conventional XRF often has high detection limit (over 90 ppm), while the HDXRF has a low detection limit (below 90 ppm). Both XRF device types avail the screening results immediately. A HDXRF is a relatively new technology, which is expensive as compared to the conventional XRF, and has very few available models. Portable XRF devices uses a radiation source or x-ray tube to detect and measure lead. HDXRFs report results in ppm, while some Conventional XRFs report results in ppm and others report results in lead per unit area (mg/cm<sup>2</sup>). It should be noted that there is no conversion factor between ppm and mg/cm<sup>2</sup>. Therefore, it should be ensured the XRF being utilized report results in the concentration measurement required based on the analysis required. XRFs are very easy to use but, because of the radiation hazard, require special training.

## 8.2.1 SAMPLING AND SCREENING NEW PAINT FOR LABORATORY AND XRF ANALYSIS

### STEP 1: SAMPLE RESOURCES

Ensure the required materials and equipment as outlined in the sampling resources section are available.

### STEP 2: INTRODUCTION OF THE SAMPLING ACTIVITY

The inspector/EHP to introduce self, produce authorization and appointment letter prescribed in sampling resources section and notify person in charge/licensee on the purpose of the sampling

### STEP 3: SAMPLE PREPARATION (NEW PAINT)

**NB.** You cannot sample paint in the paint can directly.

Liquid paint is more difficult to send in the mail.

- Thoroughly stir the paint in the container before sampling.
- Apply the paint to a non-metal surface (e.g., wood stick or glass slide).
- Allow the paint to dry prior to sampling or analysis.

### STEP 4: FOR LABORATORY ANALYSIS

- Scrape off paint from the painted non-metal surface.
- Collect scrapped off paint in resealable sample bags.
- Use permanent pen to label sample bags, using Annexure D form.
- Send sample to a chemical laboratory that is accredited for the service. List of accredited chemical laboratories that can be checked for accreditation status and accredited analysis services can be perused from the South African National Accreditation System website - [www.sanas.co.za/Pages/index.aspx](http://www.sanas.co.za/Pages/index.aspx).
- Interpret the result from the laboratory. Refer to Annexure C for guidance on acceptable lead limits/standards.

### STEP 4: FOR PORTABLE XRF ANALYSIS:

- Prepare and set up the analyzer before use as per the XRF device operator's instructions/manual.
- Use portable XRF as trained and as per the XRF device operator's instructions/manual.

### METHOD 1 USING A PAINTED NON-METAL SURFACE

- Use the portable XRF to measure lead on the painted non-metal surface without the need to scrape the paint off the test surface.
- Take a minimum of three readings from each surface when using an XRF. The average of those three readings should be taken as the result.
- If the XRF device has an option to calculate and display units in ppm, the density and thickness of the paint must be entered to enable this calculation, should the device allow.

**NB.** An XRF equipment that is reporting results only in mg/cm<sup>2</sup>, should not be used in screening new paint.  
Only the XRF equipment that report results in ppm or % is suitable for screening lead in new paint.

- Interpret the XRF results. Refer to Annexure C for guidance on acceptable lead limits/standards.
- Use the XRF analytical data collection form in Annexure E to record final XRF results.

#### **METHOD 2 USING SPECIAL SAMPLE CUPS**

- The liquid paint sample is poured in the special sample cup, sealed with a film, which is then put against the detector.
- Hold the detector correctly against the test surface.

**NB.** It is important that the correct sample cup and film are used.

It is important that the sample cup is correctly assembled, to avoid analytical error. The exact fit of the film, the outer ring and a defined height are decisive. The distance of the X-ray tube from the film on the cup must always be constant.

Measuring samples in sample cups can be a risk to the XRF instrument. Leaks in the film and damaged or poorly prepared samples cups can lead to liquids dripping onto the X-ray tube. This can cause destruction of the tube.

Many different sample cup types are available and can be used depending on the instrument's holder type.

- Take the measurement readings.
- Interpret the XRF results. Refer to Annexure C for guidance on acceptable lead limits/standards.
- Use the XRF analytical data collection form in Annexure E to record final XRF results.

#### **STEP 5: SAMPLING INVESTIGATION REPORT**

The investigation report for the samples taken shall be completed, and shall include the following information:

- For new paint sample chips - Information as required on the label of the sample bag of collected sample chips of the new paint as indicated in Annexure D of the guideline.
- For XRF analysis – Information on the XRF analytical data collection form in Annexure E.
- Serial number of the a XRF device, if used.
- Sampling procedure employed for analysis, including quality control undertaken.
- Name, signature, and HPCSA registration number of the investigating inspector.
- Attach inspector authorization letter in terms of section 8(1) and (2) of the Hazardous Substances Act, 1973 (Act No. 15 of 1973), amended and appointment letter in terms of section 80 of the National Health Act, 2003 (Act No. 61 of 2003) as amended.
- For laboratory analysis- Attach copy of the analysis report as prescribed in the Regulations Relating to Group I Hazardous Substances, Government Gazette Notice R 453 of 25 March 1977 as amended.

## 8.2.2 SAMPLING AND SCREENING PAINTED SURFACES USING AN XRF DEVICE

### STEP 1: SAMPLE RESOURCES

Ensure the required materials and equipment as outlined in the sampling resources section are available.

### STEP 2 INTRODUCTION OF THE SAMPLING ACTIVITY

The inspector/EHP to introduce self, produce authorization and appointment letter prescribed in sampling resources section and notify person in charge/licensee on the purpose of the sampling.

### STEP 3: SAMPLING AND SCREENING USING AN XRF DEVICE

- Sample and screen each location
- Samples should be collected for each different substrate and paint colour.
- Use portable XRF to measure lead on the painted surfaces.
- Take a minimum of three readings from each surface when using an XRF. The average of those three readings should be taken as the result.
- If the XRF device has an option to calculate and display units in ppm, the density and thickness of the paint must be entered to enable this calculation, if the device allows.
- Use the XRF analytical data collection form in Annexure E, to record final XRF results.

**NB.** Significantly damaged painted surfaces must be sampled by paint chip methodology.

Irregular surfaces must be sampled by paint chip methodology if the XRF does not fit flush with the surface area.

An XRF equipment that is reporting results in ppm and mg/cm<sup>2</sup>, can be used for measuring lead on painted surfaces, however for the lead concentration on painted surfaces, the results generally are reported in mg/cm<sup>2</sup>.

If the XRF is reporting results in mg/cm<sup>2</sup>, a reading of 0.9 mg/cm<sup>2</sup> should be regarded as inconclusive and therefore this results should be verified with laboratory analysis of paint chip sample.

### STEP 4: XRF RESULTS INTERPRETATION

Interpret the XRF results. Refer to Annexure C for guidance on acceptable lead limits/standards.

### STEP 5: SAMPLING INVESTIGATION REPORT

The investigation report for the samples taken shall be completed, and shall include the following information:

- Date of inspection for the conditions of the painted wall surfaces of the premises, if applicable Information on the XRF analytical data collection form in Annexure E.
- Sampling procedure employed for analysis, including quality control undertaken.
- Last date of painting the premises.
- Serial number of the XRF device, if used.
- Name, signature, and HPCSA registration number of the investigating inspector.

- Attach inspector authorization letter in terms of section 8(1) and (2) of the Hazardous Substances Act, 1973 (Act No. 15 of 1973), amended and appointment letter as prescribed in section 80 of the National Health Act, 2003 (Act No. 61 of 2003) as amended.

### **8.3 SAMPLING OF PAINT CHIPS FROM PAINTED WALL SURFACES**

The following guiding steps should be followed when taking samples of paint chips from painted wall surfaces:

#### **STEP 1: SAMPLE RESOURCES**

Ensure the required materials and equipment as outlined in the sampling resources section are available.

#### **STEP 2 INTRODUCTION OF THE SAMPLING ACTIVITY**

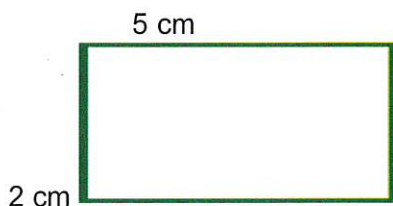
The inspector/EHP to introduce self, produce authorization and/or appointment letter prescribed in sampling resources section and notify person in charge/licensee on the purpose of the sampling

#### **STEP 3: PREPARATION BEFORE SAMPLING**

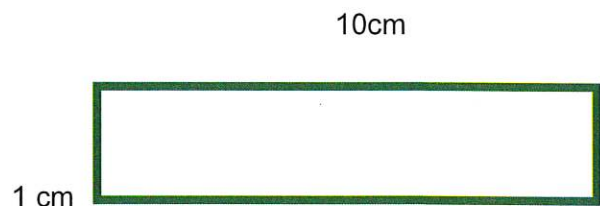
- Before you start with the sampling process, take precautions to protect yourself and prevent the contamination of the area with lead dust.
- Use the protective sheeting in the sampling area and wear the appropriate PPE.

#### **STEP 4: OUTLINE THE COLLECTION AREA**

- Draw an outline of the sampling area (10 cm<sup>2</sup>) on the painted surface with a ruler and a permanent marking pen.
- The dimensions of the sampling area to form a square or rectangular shape. Record the dimension of the outline in cm<sup>2</sup>.



OR



- Score the outlined area with a razor knife or equivalent cutting tool.
- Use the cutting tool to retrace the outline area.
- Clean the ruler with a cloth.

#### **STEP 5: SET UP A PAINT CHIP SAMPLE COLLECTION TRAY**

##### **For Horizontal Surfaces**

- Use an A4 size white sheet paper for making a paper funnel for paint chip sample collection.



- In cases where the sampling location is too small to accommodate a funnel made with an A4 size paper, cut the paper to an appropriate smaller size.

#### **For Vertical Surfaces**

- Center a piece of tape along one of the long edges of a clean A4 sheet of white paper. The tape should be slightly shorter than the paper and placed so that sufficient adhesive is available to firmly stick the paper to the paint surface.
- Stick the paper directly below the location to be sampled with the taped edge closest to the scored location.



Source: USEPA

- Pull the two lower corners of the paper together and overlap slightly to form a funnel.
- Secure with a piece of tape.
- Fold the bottom of the newly formed funnel up and use a piece of tape to close off the funnel bottom. Be sure no sticky tape surfaces are exposed on the inside of the funnel.

#### **For Painted Surfaces Facing Down**

- Make a closed-bottom funnel in the same manner as described in “For Vertical Surfaces.”
- Affix the funnel to the painted surface in a way so that it is directly under the location to be sampled without impeding access to the surface.

#### **STEP 6: REMOVE THE PAINT CHIP SAMPLE**

- Remove the 100 mg of paint chip sample from the substrate, using a cutting tool. Peel the paint chip sample from the substrate by sliding the blade along the score and underneath the paint chip sample.
- If problems are encountered in removing the paint chip sample, use a scraping tool or other equivalent tool to aid in paint chip sample removal.
- Ensure the removal of all layers of paint, as lower layers are more likely to contain lead. Do not include any of the substrate, as they can yield erroneous results. A substrate refer to the underlying base material to which paint has been applied.
- Take representative samples of the paint from several areas, if necessary, depending on the objective of the analysis.

**NB:** Samples generally should be at least 100 mg, however, the minimum sample size needed may vary by laboratory. Therefore, it is advisable to contact the analyzing laboratory to determine their minimum sample size requirement.

#### **STEP 7: TRANSFER THE COLLECTED SAMPLE TO THE PAINT CHIP SAMPLE COLLECTION CONTAINER**

- Remove the paint chip sample collection tray from the sampling location. Avoid any sample spillage.
- Carefully tap the entire collected paint chip sample into the paint chip sample collection container.
- Seal the paint chip sample collection container.
- Dispose of paint chip sampling trays made of paper in a refuse bag.
- If a reusable paint chip sample collection tray is used, clean it thoroughly with a cloth and allow it to dry completely before reusing it at a new sampling location.

#### **STEP 8: CLEANING TOOLS AND SAMPLING AREA**

- Clean all cutting tools and the ruler used during paint chip sample collection with a cloth.
- Carefully clean the area of all dust using a wet wipe procedure.

#### **STEP 9: SAMPLING DOCUMENTATION COMPLETION**

- Complete a sample label for each paint chip sample container, detailing information in Annexure F.
- Complete the Paint Chip Sample Collection Form (Annexure F).

#### **STEP 10: PAINT CHIP SAMPLE SUBMISSION TO A LABORATORY**

Submit the paint chip sample for lead analysis to a laboratory that is accredited for the service. List of accredited chemical laboratories that can be checked for accreditation status and accredited analysis services can be perused from the South African National Accreditation System website - [www.sanas.co.za/Pages/index.aspx](http://www.sanas.co.za/Pages/index.aspx).

#### **STEP 11: LABORATORY RESULTS INTERPRETATION**

Interpret the result from the laboratory. Refer to Annexure C for guidance on acceptable lead limits/standards.

Record all results reported from the laboratory on the Paint Chip Sample Collection Form.

#### **STEP 12: SAMPLING INVESTIGATION REPORT**

The investigation report for the samples taken shall be completed, and shall contain the following:

- All the information in the Paint Chip Sample Collection Form.
- Sampling procedure employed, including quality control undertaken.
- Sampling results and interpretation of the results.
- Name, signature, and HPCSA registration number of the investigating inspector.
- Attach inspector authorization letter in terms of section 8(1) and (2) of the Hazardous

Substances Act, 1973 (Act No. 15 of 1973), amended and/or the appointment letter in terms of section 80 of the National Health Act, 2003 (Act No. 61 of 2003) as amended.

- Attach analysis report as prescribed in the Regulations Relating to Group I Hazardous Substances, Government Gazette Notice R 453 of 25 March 1977 as amended.

#### **8.4 SAMPLING OF SOIL FROM RESIDENTIAL, CHILD CARE AND SCHOOL PREMISES**

The below protocol for sampling of soil from residential, child care and school premises has been adopted from USEPA, that has ASTM 29-34, Practice field collection of soil samples for lead determination by Atomic Spectrometry Techniques, American Society of Testing Materials, since there is none in the country. Other sampling activities as outlined in the Regulations Relating to Group I Hazardous Substances, Government Gazette Notice R 453 of 25 March 1977 as amended, are incorporated.

The procedure provides for the collection of soil samples for lead determination using a scooping or coring method. Scooping method is effective for collection of semisoft, sticky, loose and sandy soil, and therefore, it is not recommended for sampling hard soil. The below steps are to be followed when taking soil samples from the mentioned premises.

#### **SCOOPING OR CORING SAMPLING PROCEDURE**

##### **STEP 1: SAMPLE RESOURCES**

Ensure the required materials and equipment as outlined in the sampling resources section are available.

##### **STEP 2 INTRODUCTION OF THE SAMPLING ACTIVITY**

The inspector/EHP to introduce self, produce an appointment letter as a health officer and notify person in charge on the purpose of the sampling.

##### **STEP 3 A: SCOOP SAMPLING PROCEDURE**

##### **STEP 3.1 A SCOOP SAMPLING USING A PLASTIC CENTRIFUGE TUBE**

- Wear a pair of clean powderless plastic gloves as PPE and to protect contamination of the sample.
- Determine the exact proper scooping depth of the tube needed to collect the top 0.5inch (12.7 mm) soil, use a measuring tape and a spare plastic 50ml centrifuge tube. E.g. If the plastic centrifuge tube is 1 inch (25.4 mm) in diameter, then the proper scooping depth is to insert the tube into the soil until the soil surface is about even with the center of the tube.
- Remove the cap of the other 50ml plastic centrifuge tube to use for sample collection and insert the open end of the tube into the soil to the desired depth.
- Collect soil into the tube by pushing or pulling the tube through the soil surface and maintaining the scooping depth (0.5 inch) (12.7 mm) in the soil. In order to get a composite sample, move the tube for a distance of 6-12 inches (152.4 mm - 304.8 mm) across the soil surface to complete the collection of soil into the tube.
- Remove the tube from the ground, and remove any excess soil from the outside of the tube with gloved fingers.
- Replace the cap and label the plastic centrifuge tube containing the sample with the label form in Annexure G.

- Dispose off used gloves in the refuse bag.
- Label the soil sample bag with information as per Annexure G.

### **STEP 3.2 A SCOOP SAMPLING USING A SPOON**

- Wear a pair of clean powderless plastic gloves as PPE and to protect contamination of the sample.
- Dig a small hole with a clean spoon next to the sampling location to the depth of 0.5 inch (12.7 mm). Use a measuring tape to determine the required depth. Use this hole as a visual aid during soil collection to assist in determining the required soil sample collection depth limit of 0.5 inch (12.7 mm).
- Clean the spoon with a wipe until free of soil, if a stainless steel spoon was used.
- Scoop the soil to collect sample and continue until up to the required depth as indicated on the test hole and a 2 inch (50.8 mm) circular hole has been created.
- Place the collected soil sample in the sample container.
- Collect soil from 2 more locations within 1 foot (0.30 m) diameter circle around the first sample location, using procedure from 1 st bullet .
- Combine all three samples into one sample container.
- Seal the sample container to reduce air in the container.
- Dispose off used gloves and disposable spoon after all 3 scoop sample have been collected.
- Wear a pair of clean powerless plastic gloves.
- Clean the spoon with a wipes until free of soil, if a stainless steel spoon was used.
- Dispose off used gloves and used wipes after cleaning in a refuse bag.
- Label the soil sample bag with information as per Annexure G.

### **STEP 3.1 B CORING SAMPLING PROCEDURE**

- Wear a pair of clean powderless plastic gloves as PPE and to protect contamination of the sample.
- Ensure the sampling equipment is clean and free of any debris. If dirt is observed, clean the coring probe and coring plungers with wipes.
- Check the coring plunger stopper to ensure that it stops at a distance of 0.5 inch (12.7 mm) from the end of the coring probe.
- Hold the coring tool firmly with both hands, twist slightly and drive the tool into the soil surface of the identified sampling location to a depth of at least 2 inches (50.8 mm). For hard soils, use a hammer to drive the tool into the soil until the desired depth. If the hardness of the soil does not allow deep penetration to the required depth, an effort to be nmade to at least achive a depth of 0.5 inch (12.7 mm).
- Twist and snap the coring tool to one side and carefully remove the tool from the ground, while retaining the soil core in the tool.
- Insert a clean plunger that is equipped with a stopper, into the top end of the coring probe.
- Push out 0.5 inch (12.7 mm) of the soil from the probe with the plunger.
- Use a gloved finger to remove excess soil protruding from the probe.
- Use a clean plunger without as stopper to push the remainin 0.5 inch (12.7 mm) soil from the probe into the sample container.
- Collect 2 more soil cores using the above procedure within a diameter of 1 ft ( 0.30 m) circle around the first sampling location.
- Combine all three samples into one sample container.
- Seal the sample container to reduce air in the container.
- Dispose off used gloves and wipes into the refuse bag.



- Label the soil sample bag with information as per Annexure G.

#### **STEP 4: SOIL SAMPLE SUBMISSION TO A LABORATORY**

Submit the soil sample for lead analysis to a laboratory that is accredited for the service. List of accredited chemical laboratories that can be checked for accreditation status and accredited analysis services can be perused from the South African National Accreditation System website - [www.sanas.co.za/Pages/index.aspx](http://www.sanas.co.za/Pages/index.aspx).

#### **STEP 5: LABORATORY RESULTS INTERPRETATION**

Interpret the result from the laboratory. Refer to Annexure C for guidance on acceptable lead limits/standards.

#### **STEP 6: SAMPLING INVESTIGATION REPORT**

The investigation report for the samples taken shall be completed, and shall contain the following:

- All the information in the Soil Sample Collection Form and label in Annexure G.
- Sampling procedure employed, including quality control undertaken.
- Sampling results and interpretation of the results.
- Name, signature, and HPCSA registration number of the investigating inspector.
- Attach inspector appointment letter as a health officer in terms of the section 80 of the National Health Act, 2003 (Act No. 61 of 2003) as amended.
- Attach the laboratory analysis report.

#### **8.5 SAMPLING OF DUST FROM INDOOR SURFACES IN RESIDENTIAL, CHILD CARE AND SCHOOL PREMISES**

The below protocol for dust from indoor surfaces in residential, child care and school premises has been adopted from USEPA, that has ASTM ES 30-94, Practice for the field collection of settled dust samples using wipe sampling methods for lead determination by Atomic Spectrometry Techniques. The protocol aims to guide on sampling settled dust to determine lead contamination in the indoor area of residential, child care and school premises.

##### **STEP 1: SAMPLE RESOURCES**

Ensure the required materials and equipment as outlined in the sampling resources section are available.

##### **STEP 2 INTRODUCTION OF THE SAMPLING ACTIVITY**

- The inspector/EHP to introduce self, produce an appointment letter as a health officer and to notify the person in charge on the purpose of the sampling.
- Ask the person in charge of the premises if the sampling area was cleaned before sampling or not.
- Ask the person in charge of the premises if he/she wants the sampling area to be cleaned before.
- Offer the person in charge of the premises the two testing options (single or composite dust wipe samples) to choose from. However, it should be noted that single surface

sampling is recommended to get results for specific surfaces.

NB. The person in charge may or may not want to clean sampling area prior the sampling commences.

Advice to be provided to the person in charge to clean the surface areas is as follows:

- Water with soap or another detergent to clean dust off work surfaces, walls and floors is to be used, rather than with a dry cloth or duster.
- If paint renovation is taking place, advice on Practical steps and Precautions during Do-It-Yourself Paint Renovation as outlined in Annexure E of Guidelines for Investigation and Environmental Control of Human Chemical Exposure and Poisoning Cases.

### **STEP 3: DETERMINE SAMPLING AREA**

Determine the sampling area, which, based on the purpose of investigation could be preferably be where children spend most time e.g classroom or playroom or bedroom or living area or kitchen; or could be in a room where paint renovation work was done or a room where there is deteriorated paint.

NB. Deteriorated paint” means any interior or exterior paint or similar coating material that is peeling, chipping, chalking or cracking, or any paint or similar coating material located on an interior or exterior surface or fixture that is otherwise damaged or separated from the substrate.

### **STEP 4: CONDUCT A PHYSICAL INSPECTION OF THE SAMPLING AREA**

- Inspect the sampling area. If there are visible dust, construction debris or paint chips in the sampling area, advise the client to clean the dust and debris before taking dust samples.
- If there is deteriorated paint in the sampling area, inform the person in charge that the deteriorated paint should be repaired to prevent possible lead exposure.
- Advice on practical steps and precautions during Do-It-Yourself (DIY) paint renovation as outlined in Annexure E of Guidelines for Investigation and Environmental Control of Human Chemical Exposure and Poisoning Cases.
- After the inspection of the sampling area, complete the required information on the dust sample collection form in Annexure H.

### **STEP 5: DETERMINE THE SAMPLING AREA SURFACES**

- Conduct dust sampling in at least 4 rooms, where children spent most of the time.
- Determine surfaces to take dust samples as follows:
- 4 floors (1 floor per room - 4 single samples or 1 composite sample).
- 2 interior window sills (2 single samples or 1 composite sample).

### **STEP 6: LAY OUT THE SAMPLE AREA**

Tape the template to the floor or use tape to outline the sample area.

NB. Do not touch or disturb the area inside the template or tape.

### **STEP 7: PREPARE THE SAMPLE COLLECTION TUBE/CONTAINER**

- Use an indelible/permanent marker/pen to label each tube/container with the information as per the dust sample collection form.
- Place partially opened tubes near the spot you will sample.

#### **STEP 8: WEAR CLEAN GLOVES**

- Wear clean powderless gloves before collecting each sample. Take care not touch anything other than the wipe after putting on the gloves.

NB. Do not use gloves with powder to avoid potential contamination of samples from powder material.  
Wear a new clean pair of gloves for each sample location.

#### **STEP 9: COLLECT DUST SAMPLE**

Use a moist baby wipe or towelette to sample area, as follows:

Starting at an upper corner of the sample area, wipe the entire area inside the template or tape, making an "S" like motion wiping the entire sample area. Press firmly with your fingers. Fold the wipe in half, dirty side to dirty side.

- Then make another "S" motion in the opposite direction, perpendicular to the first "S" motion.
- For narrow interior window sills and troughs, use a side to side motion.
- Place the folded wipe in the sample collection tube or sampling container.

NB. If you do composite sampling:

- Be sure the identified analysis laboratory will analyze composite samples.
- Up to four floor wipes can be put into one tube.
- Do not mix wipes from different sample areas. For example, do not put wipes from a windowsill and floor in the same tube.

#### **STEP 10: RECORD THE MEASUREMENTS OF THE SAMPLE AREA**

If a template is used, record its measurement. If tape is used, measure the width and length of the sample area.

#### **STEP 11: CLEAN THE SAMPLING EQUIPMENT**

Clean all of the sampling equipment including tape measure or ruler.

#### **STEP 12: SAMPLE SUBMISSION TO A LABORATORY**

Place sample tube/container in the plastic or cardboard made interim storage and transport container.

Submit the collected dust sample for lead analysis to a laboratory that is accredited for the service. List of accredited chemical laboratories that can be checked for accreditation status and accredited analysis services can be perused from the South African National Accreditation

System website - [www.sanas.co.za/Pages/index.aspx](http://www.sanas.co.za/Pages/index.aspx).

### **STEP 13: LABORATORY RESULTS INTERPRETATION**

Interpret the result from the laboratory. Refer to Annexure C for guidance on acceptable lead limits/standards.

### **STEP 14: SAMPLING INVESTIGATION REPORT**

The investigation report for the samples taken shall be completed, and shall contain the following:

- All the information in the Dust Sample Collection Form and label in Annexure H.
- Sampling procedure employed, including quality control undertaken
- Sampling results and interpretation of the results.
- Name, signature, and HPCSA registration number of the investigating inspector.
- Attach inspector appointment letter as a health officer in terms of the section 80 of the National Health Act, 2003 (Act No. 61 of 2003) as amended.
- Attach the laboratory analysis report.



## REFERENCES

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**LABEL OF A PREPACKED PAINT PRODUCT SAMPLE**

Samples of.....Inspector's identification No.

--

Sample product batch number:.....

Sample description (paint type (e.g. enamel decorative paint), colour, sample size)  
.....

Name and address of Inspector.....  
.....

Nature of examination.....

Date taken.....20..... Time .....

Quantity taken: .....

Name and business address of person in charge/licensee from whom sample was obtained:  
.....  
.....

Sample not divided

Offer of taking 3 individual samples accepted:

Yes	No
-----	----

Date dispatched to analyst:.....

Person in charge/licensee: Full names:.....Signature:.....Date:.....

Inspector/EHP's signature:..... Date:.....

(Letterhead of the sampling health authority)

**HAZARDOUS SUBSTANCES ACT, 1973 (ACT NO. 15 OF 1973)**

**NOTIFICATION OF UNPAID SAMPLE IN TERMS OF SECTION 9(1)(a) OF REGULATIONS RELATING TO GROUP I HAZARSOUS SUBSTANCES, GOVERNEMENT GAZETTE NOTICE R 453 OF 25 MARCH 1977 AS AMENDED**

I.....(Full names of the person in charge/licensee) on this day of .....( dd/mm/yyyy in full) at.....( name and address of the paint dealer's premises) hereby authorize.....( full names of the inspector) who is in the employ of

.....  
( name and address of the employer) as.....(designation) to freely take sample(s) of .....( description of sample (name, colour ( if any) ,batch number, quantity) from the present stock for the purpose of analyzing.....(type of analyses).

Signature of the person in charge/license:.....Date:.....

Full names and address of the inspector/EHP:.....

Signature of the Inspector/EHP):.....Date.....

## GUIDING LEAD STANDARDS

Article/environment	Lead standard/ guidance estimates of lead hazards in painted surfaces/lead occupational exposure limits	Reference for the standard <b>NB. Always check the latest copy of the national regulation or standard, where applicable, and the effective dates of the law</b>
New packaged decorative paint	0.06% or 600ppm – from 2009 until the GNN 801 of 31 July 2009 is repealed and a new replacement GNR is in place and is effective	NDOH. Declaration of Leaded Paint as a Group I Hazardous Substance. GNN 801 of 31 July 2009
Painted wall surface	If measuring lead on existing painted wall surface using an XRF - 600ppm – from 2009 until the GNN 801 of 31 July 2009 is repealed and a new replacement GNR is in place and is effective	NDOH. Declaration of Leaded Paint as a Group I Hazardous Substance. GNN 801 of 31 July 2009
Paint chips from painted wall surface	<p><b>NB. For paint chip laboratory analysis results can be reported as a percentage (%) of lead by sample weight or as milligram per square centimeter (mg/cm<sup>2</sup>).</b></p> <p>If the paint chip laboratory analysis results are reported in %, refer to the active NDOH Leaded paint Declaration Government Gazette Notice.</p> <p>If the paint chip laboratory analysis results are reported mg/cm<sup>2</sup>, the <b>USEPA standard of 1.0 mg/cm<sup>2</sup> or more as positive for lead</b> should be used when interpreting the results to determine and estimate lead exposure hazard, together with reference to the below WHO and UNEP Technical Brief guiding standards that are to be read in conjunction with the applicable permissible lead content limit in paint as per the active NDOH Lead Paint Declaration Notice and related Regulations</p> <p>For paints with a lead content of 10 000 ppm, a 1 cm<sup>2</sup> paint chip is estimated to contain between 65 µg and 650 µg of lead, depending on the number of layers of paint (range 1–10 layers) For a paint containing</p>	<p>NDOH. Declaration of Leaded Paint as a Group I Hazardous Substance. GNN 801 of 31 July 2009</p> <p>USEPA – Hazard Standards for Lead in Paint, Dust and Soil- Toxic Substances Control Act of 1996 as amended</p> <p>WHO and UNEP - Global elimination of lead paint: why and how countries should take action. Technical brief. WHO: 2020</p>



Article/environment	Lead standard/ guidance estimates of lead hazards in painted surfaces/lead occupational exposure limits	Reference for the standard
	<p>500 ppm of lead, the amount of lead in a 1 cm<sup>2</sup> paint chip is estimated to be between 3.2 µg and 32 µg.</p> <p>For a paint containing 90 ppm of lead, a 1 cm<sup>2</sup> paint chip would contain 0.6 µg of lead if there was one layer of paint and 6 µg if there were 10 layers.</p>	
Ground soil (Child care and residential premises)	400 parts per million (ppm) in play areas of bare soil in children's play areas.	USEPA – Hazard Standards for Lead in Paint, Dust and Soil- Toxic Substances Control Act of 1996 as amended
	1,200 ppm (average) in bare soil in the remainder of the yard	
Indoor - dust (Child care and residential premises)	100 micrograms of lead in dust per square foot (ft <sup>2</sup> )/(0.09 m <sup>2</sup> ) or (900 cm <sup>2</sup> ) on interior window sills.	
	10 micrograms (µg) of lead in dust per square foot (ft <sup>2</sup> )/(0.09 m <sup>2</sup> ) or (900 cm <sup>2</sup> ) on floors	

**LABORATORY ANALYSIS - PAINT CHIP SAMPLE COLLECTION FORM FOR SAMPLE COLLECTION FROM NEW PAINT PRODUCT**

Type of premises where sample was collected: Mark with an "X"

Paint manufac- ture	Paint im- porter	Paint retail shop
------------------------	---------------------	----------------------

Name of owner of the premises: .....

Address of the premises:  
.....

Contact number of the owner of the premises: .....

Email of the owner of the premises:.....

Paint chip sample label information

**For each sample collected, fill out all of the following information**

Sample Identification No: .....

Date of sample collection:.....

Sample product batch number:.....

Sample description ( paint type (e.g. enamel decorative paint), colour, sample size)  
.....

Sample submission date: .....

Full names of the inspector/EHP:.....

Signature of the Inspector/EHP):.....Date.....

**XRF DATA COLLECTION FORM**

Type of premises where sampling/screening was collected/conducted: Mark with an "X"

Paint manufacture	Paint im-porter	Paint retail shop	Other type of premises (Specify)
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Name of owner of the premises: .....

Address of the premises: .....

Contact number of the owner of the premises: .....

Email of the owner of the premises:.....

Date of sampling/ screening	Sample Number	Location	Color Substrate	XRF Reading Time (in seconds)	Results		Results interpretation	
					(mg/cm <sup>2</sup> )	ppm	Pb +	Pb -

**LABORATORY ANALYSIS- PAINT CHIP SAMPLE COLLECTION FORM FOR SAMPLE COLLECTION FROM PAINTED WALL SURFACES**

Type of premises where sample was collected: Mark with an "X"

Residential	Child care	School
-------------	------------	--------

Name of owner of the premises: .....

Address of the premises: .....

Contact number of the owner of the premises: .....

Email of the owner of the premises: .....

Paint chip sample label information

**For each sample collected, fill out all of the following information**

Sample Identification No: .....

Sampling Location: (e.g. main bedroom-window sill or door or wall):  
.....

Date of sample collection:.....

Sampling Dimensions (cm):..... Calculate sample Area (cm<sup>2</sup>):.....

Sample submission date: .....

Full names of the inspector/EHP:.....

Signature of the Inspector/EHP):.....Date.....



**SOIL SAMPLE COLLECTION FORM**

Type of premises where sample was collected: Mark with an "X"

Residential	Child care	School
-------------	------------	--------

Name of owner of the premises: .....

Physical Address of the premises:  
.....

Contact number of the owner of the premises: .....

Email of the owner of the premises:.....

---

Soil sample label information

**For each sample collected, fill out all of the following information**

Sample Identification No: .....

Sampling Location: (e.g. backyard): .....

Date of sample collection:.....

Sampling size (ml) ..... Or depth.....

Sampling collection method: Mark with an "X"

Scooping Method		Coring Method	
Using a Plastic Centrifuge Tube	Using a Spoon		

Sample submission date: .....

Full names of the inspector/EHP:.....  
.....

Signature of the Inspector/EHP):.....Date.....

**DUST SAMPLE COLLECTION FORM**

Type of premises where sample was collected: Mark with an "X"

Residential	Child care	School
-------------	------------	--------

Name of owner of the premises: .....

Address of the premises:  
.....

Contact number of the owner of the premises: .....

Email of the owner of the premises:.....

The following identified during physical screening of the sampling location/area: Mark with an "X"

Identified during physical inspection	Yes	No
Visible dust		
Construction debris		
Paint chips		
Deteriorated paint		

Dust and debris cleaned before taking dust samples Mark with 

Yes	No
-----	----

 an "X"

Dust sample label information

**For each sample collected, fill out all of the following information**

Sample Identification No: .....

Sampling Location: (e.g. classroom or playroom or bedroom or living area or kitchen; or could be in a room where paint renovation work was done or a room where there is deteriorated paint:  
.....

Type of sampling: Mark with an "X" 

Single sampling	Composite sampling
-----------------	--------------------

Date of sample collection.....

Sample submission date: .....

Full names of the inspector/EHP:.....

Signature of the Inspector/EHP):.....Date.....