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Photo: Children near an unsecured former smelting site in the Ashulia area outside of Dhaka

Toxic Sites Identification Program in Bangladesh

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LIST OF ACRONYMS

EC - European Commission
DoE - Department of Environment
ISS - Initial Site Screening
LMICs - Low and Middle-Income Countries
PE - Pure Earth
TSIP - Toxic Sites Identification Program
ULAB - Used Lead-Acid Battery
UNIDO - United Nations Industrial Development Organization
WB - World Bank
XRF - Alpha X-Ray Fluorescence

LIST OF ANNEXES

Annex A: Contaminated sites identified and screened in Bangladesh through the Toxic Sites Identification Program from 2011 to present.

ACKNOWLEDGEMENTS

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INTRODUCTION

Pure Earth is an international non-profit organization dedicated to solving pollution problems in low- and middle-income countries, where human health is at risk. Since 2009, Pure Earth has implemented the Toxic Sites Identification Program (TSIP) to identify and screen contaminated sites in low- and middle-income countries where public health is at risk. The TSIP has been supported by the United Nations Industrial Development Organization (UNIDO), European Commission, Asian Development Bank (ADB), United States Agency for International Development (USAID), World Bank, and Green Cross Switzerland, among others.

Pure Earth focuses on locations throughout the developing world where human health is most affected by pollution. To date, Pure Earth and its partners have identified more than 4,600 contaminated sites and have completed more that 3,000 rapid site screening assessments in 47 countries. These sites alone represent a health risk to more than 80 million local low-income residents. The 3,000 sites that Pure Earth has screened likely represent a small fraction of the actual number of contaminated sites globally.

To implement this ongoing work, Pure Earth trains highly qualified local professionals to identify and assess contaminated sites using a standardized global methodology called the Initial Site Screening (ISS) protocol. The ISS protocol allows for a rapid on-site quantitative evaluation to help understand the risks posed by pollution, specifically including the types and concentrations of contaminants, size of the site, number of impacted people, magnitude of health risks, the land uses and relevant geographic features, and a preliminary analysis of appropriate risk-reduction or remediation methods.

BACKGROUND

The economy of the People's Republic of Bangladesh is evolving and growing rapidly, from one previously based primarily on agriculture, to a more diversified manufacturing and service economy. In 2015, Bangladesh moved up the World Bank's income bracket to

become a lower-middle income country, and the country aims to become an upper-middle income country by 2021. The swift evolution of Bangladesh's economy has brought sustained growth, but has also created challenges regarding pollution control and environmental health. This growth and the associated pollution challenges have, in some cases, outpaced the collection of information on chemical pollution and the Department of Environment's capacity to effectively manage environmental health risks.

The TSIP in Bangladesh began in 2011. Since then, several phases of the Program funded by different development partners have been completed. While some of these phases looked at a broad spectrum of chemical contaminants, more recent phases have focused specifically on lead contamination. Bangladesh faces significant challenges from lead. Childhood lead poisoning is believed to be widespread in Bangladesh, and prevents exposed children from reaching their full intellectual potential. Lead is a powerful neurotoxin. In children's blood, lead impairs brain and nervous system development, leading to lower IQ as well as attention and behavior disorders and poor performance in school. Much of the lead that contaminates sites in Bangladesh is believed to be released during the informal manufacturing and recycling of lead-acid batteries. To better understand full impacts of this informal industry, Pure Earth has concentrated its TSIP program on this particular source, with the aim of developing sufficient data and understanding to contribute meaningfully to a national solution.

TSIP project leaders have identified sites for screening though a variety of methods, including consultations with the Department of Environment (DoE) and other national agencies and civil society groups, information collected from national and international reports on chemicals and waste, newspaper articles, suggestions by local officials, and through recommendations by local residents and workers received in the processes of conducting screenings.

TOXIC SITES IDENTIFICATION PROGRAM (TSIP)

TSIP is designed and managed by Pure Earth and implemented in Bangladesh in partnership with the Department of Geology of the University of Dhaka and the Bangladesh DoE.
The TSIP identifies active and abandoned toxic hotspots resulting from both formal and informal industrial activities in low- and middle-income countries (LMICs). Informal sector activities include but are not limited to electronic waste or scrap metal recycling, used lead-acid battery recycling, small-scale gold mining, leather tanning, and ceramic pottery making. The TSIP does not include exposure data from non-point sources such as vehicle traffic, sewage contaminated water, or naturally occurring arsenic contamination. As part of a TSIP investigation, a "key pollutant" is identified and analyzed.

TSIP Training

Prior to conducting field screening assessments at suspected contaminated sites, Pure Earth conducts a training program for site investigators. The TSIP training is both a theoretical and

practical training, aimed at training experienced environmental professional on how to conduct the Initial Site Screening (ISS) protocol. The theoretical training introduces participants to the work of Pure Earth; the health impacts of pollution; the model of Pollution-Migration-Pathway-People as the basis for understanding and assessing risks at a particular site; and how to use a hand-held Alpha X-ray Fluorescence (XRF) spectrometer, which is a precise instrument that permits collection of real time field data and is key to building in country capacity to monitor and assess heavy metal contamination. The practical component of the training allows participants to conduct a demonstration site assessment, using the ISS protocol, and enter the data collected in the online TSIP database. Between February 2016 and Oct 2018, two such trainings were conducted in Bangladesh.

IMPLEMENTATION STRATEGY AND COORDINATION WITH GOVERNMENT

Pure Earth's implementation strategy for TSIP includes information sharing and coordination with government agencies at all stages of the project. In 2016, Pure Earth held an Inception Meeting in Dhaka to introduce the TSIP program goals, activities and methodologies to relevant government agencies and other critical stakeholders. The Inception Meeting was attended by representatives from the Department of Environment, Ministry of Environment, Forests and Climate Charge; the National Institute of Preventative and Social Medicine; the Institute of Epidemiology Disease Control And Research; the Department of Public Health Engineering; the Geological Service of Bangladesh; and the Soil Resource Development Institute.

Pure Earth's representatives met regularly with government officials to share data and findings as a way to help government officials and community members gain a better understanding of the scope of toxic pollution, its impact on public health, and implications for economic growth and sustainable development. Since the focus of the Bangladesh TSIP has been on lead contamination, these meetings have centered on the issue of lead and the sources of lead contamination.

During execution of the project, the contaminated site investigators worked closely with local authorities, community leaders, and residents of the effected communities to integrate them into the project. In addition, government officials accompanied investigators to site assessments to learn about the process of conducting a site assessment using the ISS protocol. The involvement of the government and community in the project has been essential for sustainability and effectiveness.

Program Implementation Activities

- Introduction of the project to national and local government officials to gain support and collaboration for successful implementation of the project.
- Recruitment of researchers
    - 9 investigators with in the environmental field were hired.

- Provided two rounds of training on how to conduct a rapid site assessment, using the ISS protocol. Included:
    - Pure Earth's investigators
    - Government representatives from the Department of Environment
    - National NGOs - Environment and Social Development Organization (ESDO) and International Centre for Diarrheal Disease Research, Bangladesh (ICDDR,B)
- Coordination with national and local authorities on sites selection and priorities
- Site assessment
    - Collection of information such as site history, estimation of population at risk, location map, photos taken
- Collection of data and samples (primarily soil) to determine the scale and severity of the pollution problem at the site, exposure pathways, and estimated number of people at risk.
- Analysis of samples by XRF by the University of Dhaka, or through a laboratory when necessary
- Sample results are compared to internationally accepted standards for acceptable levels of pollutants found in air, water and soil, such as those calculated by the World Health Organization or the US Environmental Protection Agency.
- Entry of assessment information into existing TSIP database
- Review of data collected by for quality and consistency performed by PE team in New York.

Analysis of Environmental Samples

Investigators collected soil samples according to the ISS protocol provided by Pure Earth. In certain situations, in-situ analysis of lead concentrations in soil were measured in the field using an XRF. When the XRF was not available for field use, soil samples were taken to Pure Earth's office and analyzed with the XRF there. XRFs are calibrated accordingly prior to soil sample analysis.

Water samples were not collected at sites suspected of lead contamination. Lead dust resulting from the recycling of lead-acid batteries is generally not water soluble. The lead dust emitted from such processes typically stays in the top 5 centimeters of soil and does not contamination groundwater.

SUMMARY OF SITES ASSESSED

In Bangladesh, a total of 249 sites have been assessed by Pure Earth's investigators. Their distribution is shown in Figure 1. Of these sites, 205 were assessed during the duration of UNIDO Project Number 150416 from February 1, 2016 through January 1, 2018. Additional sites have been assessed with the support of USAID.

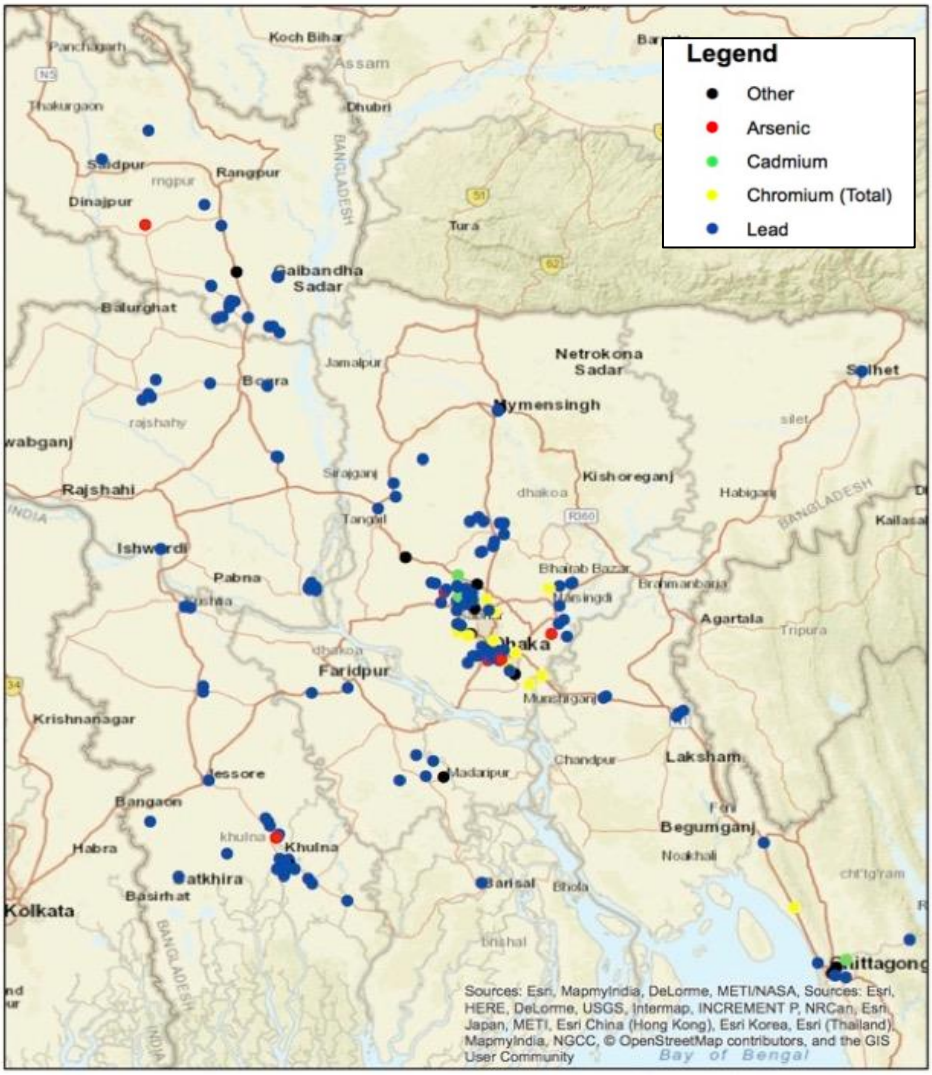


Figure 1. Map of contaminated sites screened through the Toxic Sites Identification Program color-coded by key chemical contaminant at each site, from 2011 to date.

Given the suspected prevalence of lead-contaminated sites due to informal battery recycling and smelting, focus was put on this pollutant. Thus, 175 of the assessed sites were found to be contaminated with lead.

Table 1: The number of sites as categorized by pollution source assessed by Pure Earth's investigators in the TSIP database, from February 2016 to January 2018.

Industry	Number of Sites
Lead - Battery Recycling/Manufacturing/Repair	85
Lead Smelting (with ingot production)	84
Smelting (everything except Lead)	7
Industrial Estate (mixed industries)	4
Heavy Industry (casting, rolling, stamping)	4
Dye Industry	2
Product Manufacturing (electronics, equipment, clothing)	1
Tannery Operations	1
Multiple Diverse Industries	1
Fertilizer Manufacturing	1
Petrochemical Industries (refineries)	1
Recycling / Recyclers (including salvage yards)	1

Table 2: Key pollutants from sites assessed and entered in the TSIP database in Bangladesh, from February 2016 to January 2018.

Key Pollutant	Number of sites
Lead	175
Chromium (total)	10
Arsenic	6
Other	1

When all TSIP sites assessed in Bangladesh since the program's inception to date are considered, the data captures a wider array of industries and key pollutants (Figure 2 and Figure 3). Beyond ULAB activities and lead smelting, other contributors include aluminum smelting, tannery and dye operations, heavy industry, and chemical and fertilizer manufacturing.

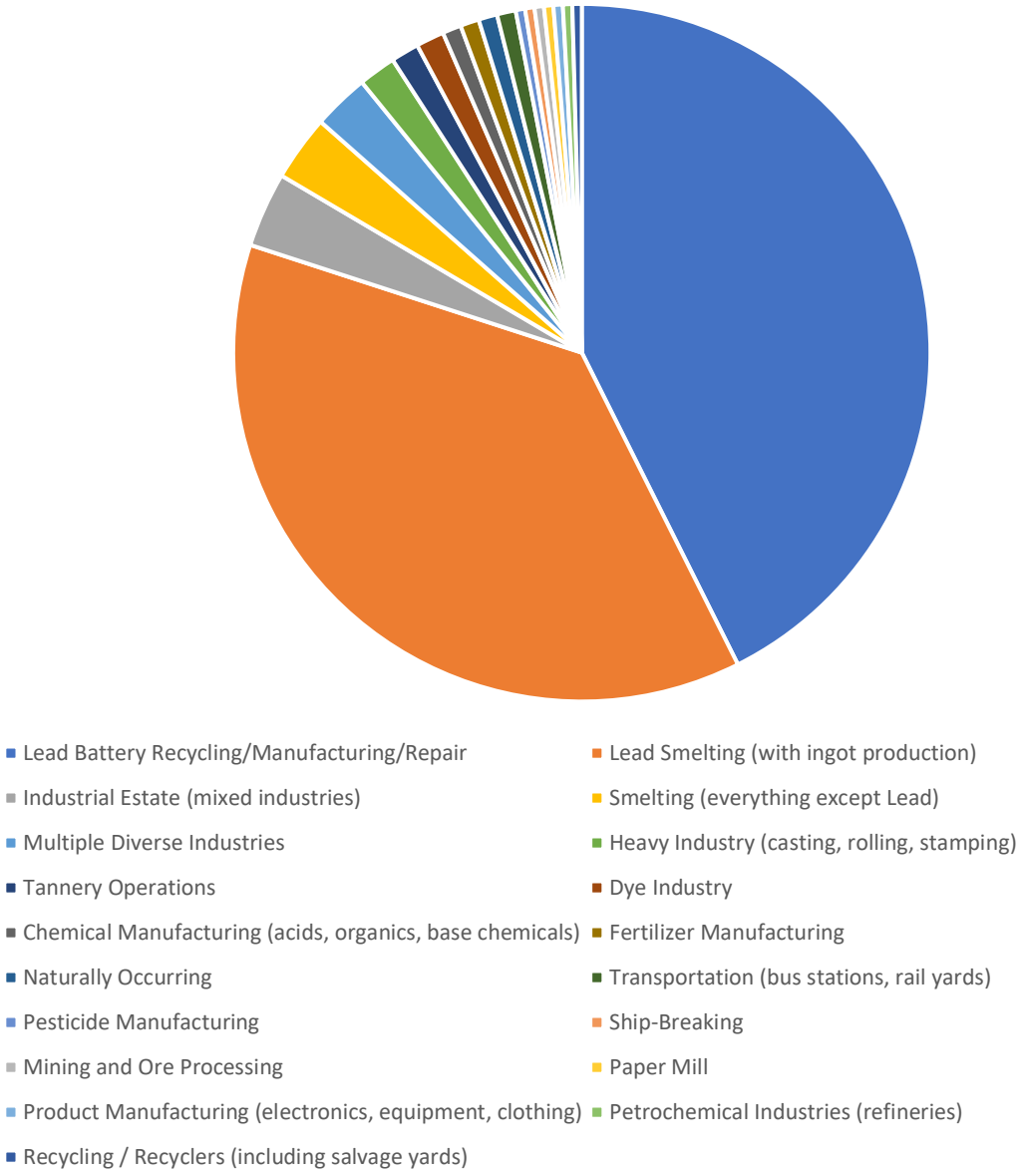


Figure 1. Distribution of site industries identified at all TSIP sites in Bangladesh since the program's inception.

As mentioned above, a programmatic emphasis was placed on lead pollution and associated industries. Chromium was among the other pollutants identified. Total chromium was identified at industrial estates, tannery operations, fertilizer manufacturing units, heavy industry operations, and in shipbreaking. Arsenic, sulfur dioxide, cadmium, and DDT were also identified, as were several measures of air pollution ($PM_{2.5}$, PM_{10}, and total suspended particulate)

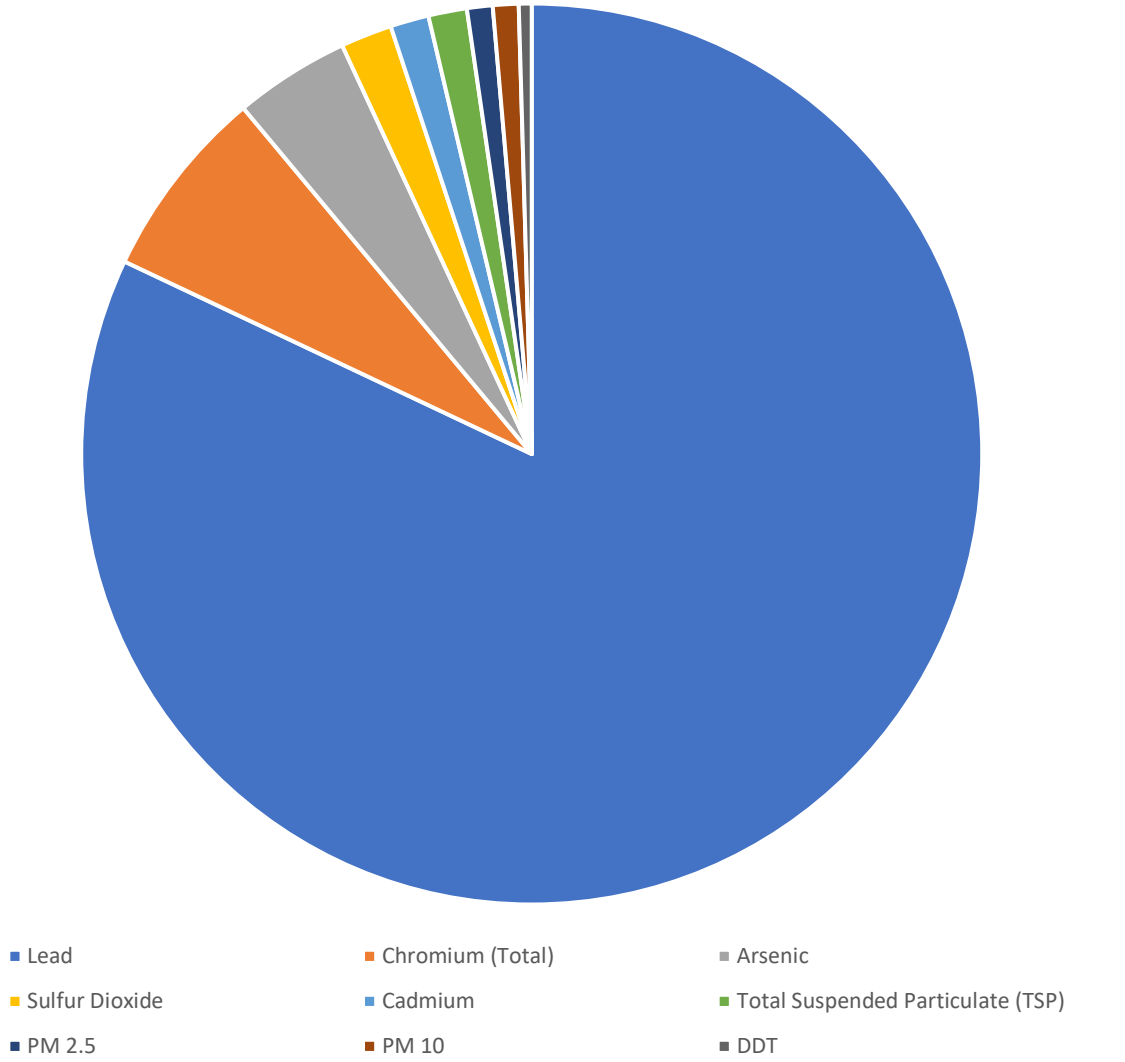


Figure 2. Distribution of key pollutants identified at all TSIP sites in Bangladesh since the program's inception.

Geographic Coverage of Identified Sites

Pure Earth investigators have visited each of Bangladesh's eight divisions. The highest concentration of sites is in the Dhaka Division, followed by Rajshahi, Khulna, and Chittagong. These cities have experienced rapid population growth and are home to increasing numbers of industrial operations (Green, 2010).

Pollutants, Sources and Health Impacts

Lead

Lead is well recognized globally as a widespread environmental contaminant. While steps have been taken to reduce ambient concentrations in Bangladesh—through, for example, the 1999 ban on leaded gas—anthropogenic sources remain.

As demand in the transportation sector has increased in Bangladesh, so too has the number of used lead acid batteries (ULABs). The dismantling and recycling of ULABs represents a major economic activity, allowing the recovered lead to be reused in new batteries and other products. Estimates of the number of ULAB processing sites range from 1,100 (Ericson et al., 2016) to 12,200 (Ahmad et al., 2014).

In the 2016 "World's Worst Pollution Problems" report by Pure Earth and Green Cross Switzerland, the informal recycling process is described, "[ULABs] are broken up using hand axes or hammers; smelting of the metallic components occurs out in the open or inside domestic homes; and the toxic waste products are disposed of into the surrounding environment untreated." These processes cause the release of lead through several routes. Breaking up components and transporting broken parts allows the release of lead fragments and lead oxide dust, which settle on nearby surfaces and on the workers themselves. Smelting and refining disperses lead fumes, which condense as particles that then settle. Draining the electrolyte within the battery can cause soil and water contamination. If the plastic components of the batteries are burned rather than recycled, toxic smoke containing dioxins and furans is also produced (World Health Organization, 2017).

The informal recycling of ULABs has the potential to create highly localized contamination hotspots and severe risks to children. Battery recycling activities are often carried out in or near residential communities where lead dust can accumulate in high-risk areas such as paths, roads, sports fields, playgrounds, schools, homes, and other areas where dust is likely to be ingested or inhaled. The dismantling of lead-acid batteries and the disposal of associated wastes can release lead into air, soil, and water. At small-scale ULAB recycling and smelting operations, lead dust released to the air is generally deposited back to land within 200 meters of the source. Once deposited on land, lead dust can migrate through wind, on shoes and the tires of automobiles, and through flooring and storm water runoff.

The most common human exposure pathways to lead at ULAB recycling sites are ingestion and inhalation of lead dust. While lead can migrate through water, the lead waste generated

from ULAB recycling generally has low water solubility, and thus does not pose a great risk to drinking water supplies. Exposure to lead through dermal contact is a much lower-risk exposure pathway than ingestion and inhalation.

In addition to public exposure to outdoor contamination, lead from ULAB recycling can also pose risks through take-home exposure. Lead-containing dust lands on workers' clothing and hair and is brought into the home. Once in the home, lead dust can contaminate food and is often ingested by children playing at ground level through to hand-to-mouth activity (World Health Organization, 2017).

Arsenic

Arsenic is a naturally occurring, brittle, steel gray semi-metallic solid. Arsenic and its compounds are highly toxic. It finds application in the manufacture of insecticides, pesticides and various alloys. It is also used for bronzing and as a wood preservative. At TSIP sites in Bangladesh, it is found as a common co-contaminant with lead at ULAB sites. Arsenic is included as an additive in lead-based batteries as a grid hardening agent, as are antimony, cadmium, copper, selenium and tin (Nedwed & Clifford, 1997).

Individuals can be exposed to arsenic through a number of routes. Most relevant to the scenarios identified through TSIP are dust inhalation and drinking water. When inhaled, high levels of arsenic can cause sore throats, irritated lungs, and with longer exposures, skin effects. There may also be an increased risk of lung cancer, impacts on fetal development, and circulatory and peripheral nervous disorders. . When found in drinking water, arsenic may cause bladder and skin cancer, skin effects, and impaired nerve function (Agency for Toxic Substances & Disease Registry, 2007).

Chromium

Chromium is a naturally occurring heavy metal that is commonly used in tanning, textiles, chromate pigment production and dye manufacturing processes. Effluent containing chromium discharged into the environment can migrate to water- surface and groundwater; soil and food, and common pollutant pathways include ingestion, inhalation, and dermal contact. Chromium is a known human carcinogen and the primary health impacts from it are damage to the gastrointestinal, respiratory, and immunological systems, as well as reproductive and developmental problems in exposed children.

LEVERAGING TSIP DATA IN BANGLADESH

Pure Earth is currently developing non-assessment activities in Bangladesh that directly result from our in-depth assessment of lead contamination through the TSIP. These activities are designed to advance a national effort to further formalize the lead-acid battery recycling industry and substantially reduce the volume of lead that enters the environment and the bodies of children in surrounding communities.

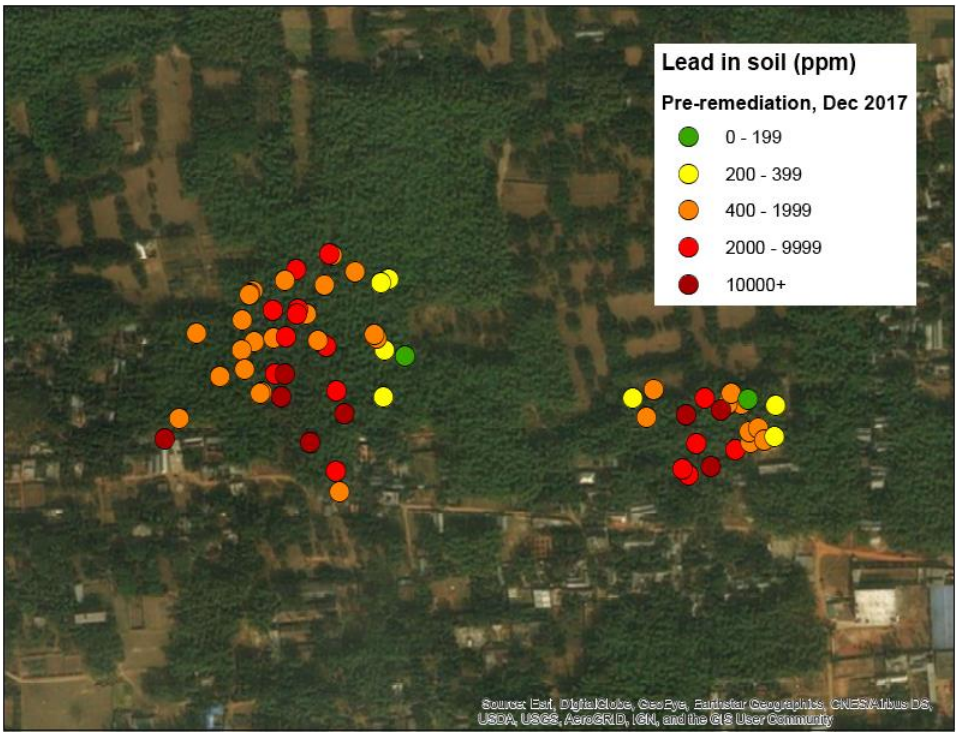
Risk reduction projects

Informed by ISS data, Pure Earth and its local partner in Bangladesh, the University of Dhaka, conducted preliminary scoping assessments of three lead-contaminated sites in 2016 to identify a suitable location for a demonstration risk-reduction project. The assessments and subsequent analysis evaluated the likely exposure risks to children at each site, the feasibility of risk-reduction activities, the likely health improvements from risk-reduction activities, and the anticipated project cost.

One of those sites, in the community of Kathgora, stood out as an exceptional candidate for a demonstration lead risk-reduction project. Kathgora was selected for intervention because of the extraordinary concentration of lead in surface soils, the fact that children played directly on lead-contaminated waste, the apparent feasibility of risk-reduction activities, and the project's capacity to serve as a proof-of-concept for replication by the government of Bangladesh. The Kathgora project aimed to dramatically reduce lead exposures for the 300 residents, including 90 children under age 7.

The impact of the project on soil contamination levels can be observed in Figures 4 and 5. A post-soil capping assessment of levels of lead in soil in the project areas revealed that all topsoil had concentrations of lead below 200 parts per million. The mean blood lead level among local children prior to risk-reduction activities was approximately 20 µg/dL. There is no safe concentration of lead in children's blood. Among children in the U.S., the mean BLL is below 2 µg/dL. The U.S. Centers for Disease Control and Prevention and the World Health Organization recommend that children's BLL be kept below 5 µg/dL. Blood lead levels will be resampled in the coming months to observe the impact of the project.

Figure 4. Analysis of lead concentrations in soil prior to risk reduction activities.



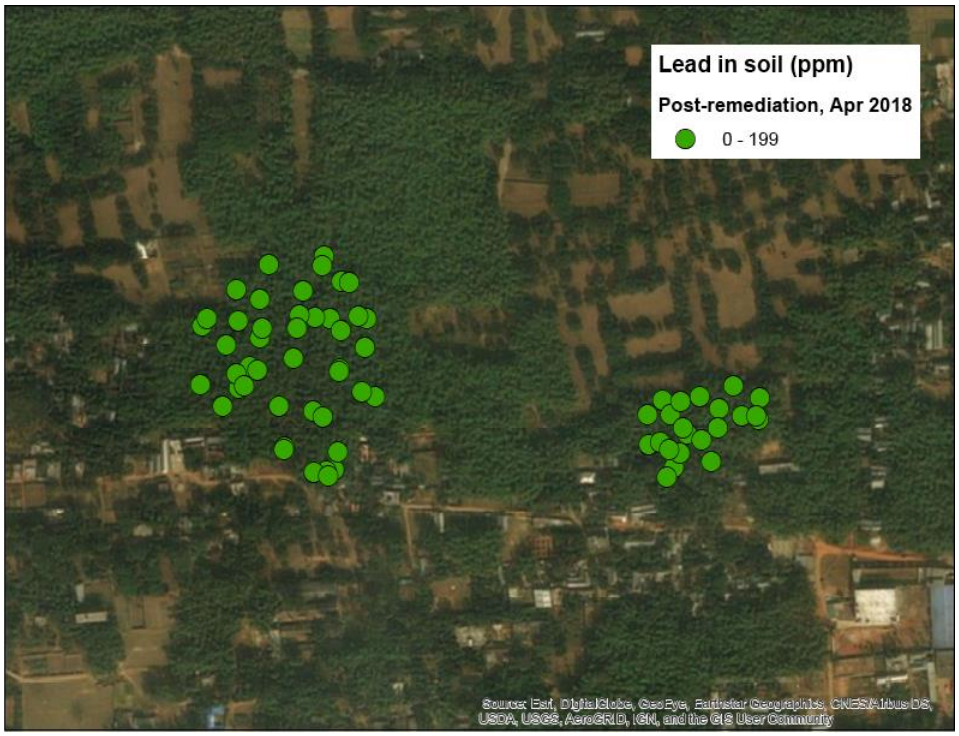


Figure 5. Analysis of lead concentrations after capping (green dots are below 200ppm).

Policy initiatives

The data collected through TSIP can also provide guidance and justification for national policy initiatives. Pure Earth is in discussions with the Department of Environment about how to support the development of possible policies around chemical pollution, such as a national contaminated land program, environmental standards for soil contamination, and a national lead risk-reduction program.

RECOMMENDATIONS

1. The government is encouraged to carry out detailed assessment in the sites with high level of contamination, in order to better understand the distribution of the contamination and develop feasible and cost-effective remediation plans that address identified problems.

2. Local authorities are encouraged to continue to use the ISS protocol to assess more sites as a way to determine locations of contaminated sites in all seven regions of the country.

3. PE recommends that the government create a national assessment/inventory program based on TSIP protocols.

4. Pure Earth encourages government officials to continue to use the data in the existing TSIP database (www.contaminatedsites.org.org) to make informed decisions about solving the country's pollution problems.

5. The Government should conduct needs assessment related to internal capacity, identify priority areas, and draft a plan for dealing with priority areas for immediate action as well as those areas that need additional investments or outside support. The country action plan will help the authorities to identify and make informed decisions about priority areas and sites for intervention.

6. The Government should advance recommendations created under the recently published Country Investment Plan supported by USAID and the Country Environmental Analysis conducted by the World Bank.

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Annex A: Contaminated sites identified and screened in Bangladesh through the Toxic Sites Identification Program from 2011 to present.

Site No.	Site Name	Key Pollutant	Latitude	Longitude	Site Industry
253	Chittagong Chemical Complex (CCC)	DDT	22.331976	91.819267	Chemical Manufacturing (acids, organics, base chemicals)
254	Hazaribagh	Not specified	23.7363	90.36175	Tannery Operations
755	Turag River, Tongi	Lead	23.891944	90.389167	Pesticide Manufacturing
756	Khulna	PM 2.5	22.8	89.56	Industrial Estate (mixed industries)
1092	Hazaribagh tannery zone, Dhaka	Lead	23.7363	90.36175	Tannery Operations
1191	Ship breaking industry, Sitakunda, Chittagong	Chromium (Total)	22.61666	91.66111	Ship-Breaking
1198	Tejgaon Industrial Area, Dhaka	Chromium (Total)	23.7616944	90.4086861	Industrial Estate (mixed industries)
1314	Urea Fertilizer Factory (UFF) & Polash Urea Fertilizer Factory (PUFF), Narshingdi	Chromium (Total)	23.983167	90.640903	Fertilizer Manufacturing
1446	Dhaka Export Processing Zone (DEPZ), Ganakbari, Savar, Dhaka	Cadmium	23.95	90.266	Chemical Manufacturing (acids, organics, base chemicals)
1462	Bangladesh - Arsenic contamination	Arsenic	23.7	90.375	Naturally Occurring
1577	Barapukuria coal mine, Power plant and adjoining Agricultural land	Arsenic	25.5480083	88.9596389	Mining and Ore Processing
2026	Karnaphuli Paper Mill (KPM)	Lead	22.475278	92.142778	Paper Mill
2027	Karnaphuli River, Chittagong	Lead	22.322133	91.831561	Multiple Diverse Industries
2064	Dhaka City Air Pollution	PM 10	23.7312	90.4062	Transportation (bus stations, rail yards)
2087	Buriganga River	Chromium (Total)	23.708056	90.402778	Multiple Diverse Industries
2165	Lead Acid Battery Recycling, Dhaka	Lead	23.709921	90.407143	Lead - Battery Recycling
2470	Bangshi River, Savar	Lead	23.9335	90.2563	Multiple Diverse Industries
2610	Cluster of Brick Kilns at Amin Bazar, Savar	Sulfur Dioxide	23.79037	90.315559	Product Manufacturing (electronics, equipment, clothing)
2619	Shitalakshya River	Chromium (Total)	23.5725	90.55972	Multiple Diverse Industries
2715	Dhaka City Air Pollution From Brick-Making Industry	PM 10	23.7312	90.4062	Transportation (bus stations, rail yards)

2718	Cluster of Brick Kilns at Ashulia, Savar	Sulfur Dioxide	23.899719	90.329516	Product Manufacturing (electronics, equipment, clothing)
2719	Cluster of Brick Kilns at Kodda, Gazipur	Sulfur Dioxide	24.002492	90.341367	Product Manufacturing (electronics, equipment, clothing)
2720	Cluster of Brick Kilns at Dhamrai	Total Suspended Particulate (TSP)	23.790373	90.315559	Product Manufacturing (electronics, equipment, clothing)
2721	Cluster of Brick Kilns at Kaliakair	Total Suspended Particulate (TSP)	24.120831	90.042122	Product Manufacturing (electronics, equipment, clothing)
2767	Lead Poisoning in Tongi Municipal Area	Lead	23.890028	90.40729	Industrial Estate (mixed industries)
2788	Araihazar, Narayanganj District, Dhaka	Arsenic	23.7917	90.65	Naturally Occurring
2855	Industrial Pollution in Kaliakoir, Gazipur	Cadmium	24.043159	90.261696	Industrial Estate (mixed industries)
2856	Cluster of Brick Kilns at Fatullah, Narayanganj	Sulfur Dioxide	23.61781	90.49784	Product Manufacturing (electronics, equipment, clothing)
2888	Industrial Pollution in Hemayetpur and Savar	Lead	23.83365	90.259096	Dye Industry
2971	Industrial Pollution in Kalurghat, Chittagong	Cadmium	22.391274	91.878521	Multiple Diverse Industries
3041	Jewellery Studios at Tanti Bazar, Dhaka	Lead	23.709181	90.40506	Product Manufacturing (electronics, equipment, clothing)
3043	Cluster of Brick Kilns at Rupganj, Narayanganj	Total Suspended Particulate (TSP)	23.618999	90.498032	Product Manufacturing (electronics, equipment, clothing)
4591	ULAB Recycling Factory, Rosulpur, Kamrangir Char, Dhaka	Lead	23.7227	90.3698	Lead - Battery Recycling
4593	Tongi Industrial Area near Tongi River Port	Chromium (Total)	23.88574	90.41468	Industrial Estate (mixed industries)
4595	Doel Dyeing Industry, Bank Town, Savar	Chromium (Total)	23.82335	90.256	Dye Industry
4596	Fazlul Haque Steel and Re-rolling Mill, Hemayetpur, Savar	Chromium (Total)	23.796986	90.263336	Heavy Industry (casting, rolling, stamping)
4599	ULAB Recycling and Smelting Factory, Matuail, Jatrabari, Dhaka.	Lead	23.7198	90.4528	Lead - Battery Recycling
4604	Textite and dyeing industries, Borobari, Tongi	Chromium (Total)	23.93687	90.38116	Industrial Estate (mixed industries)

4606	Hamid Re-Rolling Mill, Komolpur, Pagla, Narayanganj	Chromium (Total)	23.6636	90.4602	Heavy Industry (casting, rolling, stamping)
4608	Modina Dyeing and Printing Factory Limited, Fotullah, Narayanganj	Chromium (Total)	23.6429	90.4746	Dye Industry
4609	Unique Cement Industry, Meghna Ghat, Sonargaon, Narayanganj	Chromium (Total)	23.611	90.611	Product Manufacturing (electronics, equipment, clothing)
4650	M.R. Tannery, West Rosulpur, Ashrafbad, Kamrangir Char, Dhaka	Chromium (Total)	23.72142	90.37004	Tannery Operations
4651	Rahim Afrooz Batteries Limited, Zirani Bazar, South Kashimpur, Gazipur	Lead	23.99401	90.25868	Lead - Battery Recycling
4652	Tong Rui Da Industry Limited, South Panishail, Kashimpur, Zirani Bazar, Gazipur, Dhaka	Lead	23.99119	90.26098	Lead Smelting (with ingot production)
4653	ULAB Recycle factory, Nawabgonj, Lalbag, Dhaka	Lead	23.721731	90.37595	Lead - Battery Recycling
4654	Battery ghat road, Borogram, Kamrangir char, Dhaka	Lead	23.71702	90.376731	Lead - Battery Recycling
4655	Lion Metal Works, Muslimbag, Kamrangir char, Dhaka	Lead	23.710873	90.389329	Lead Smelting (with ingot production)
4658	Rupa Metal Works, Jhillmil Housing, Chanditola, South Keraniganj, Dhaka	Lead	23.683915	90.399346	Lead Smelting (with ingot production)
4777	Al- Aksha Steel Industries Ltd, Joka, Sarolia, Demra, Dhaka	Chromium (Total)	23.709	90.5023	Heavy Industry (casting, rolling, stamping)
4778	General Battery & Rimso Battery, Kodomtoli, Shyampur, DTI Industrial Area	Lead	23.68115	90.439691	Lead Smelting (with ingot production)
4779	Ratan Metal Works, Hasnabad, South Keraniganj, Dhaka	Lead	23.67689	90.432144	Lead Smelting (with ingot production)
4781	Rostom and Moktar Batteries, Santahar, Adamdighi, Bogra	Lead	24.80793	88.98219	Lead - Battery Recycling
4782	Boubazar Battery Works, Boubazar, Kahaloo, Bogra	Lead	24.86765	89.2281	Lead - Battery Recycling
4784	Mondolpara Smelting Works, Bashipur, Santahar, Bogra	Lead	24.82207	88.97261	Lead Smelting (with ingot production)
4785	Lead Smelting Works, Genzir mill area, Santahar, Bogra	Lead	24.81277	88.97894	Lead Smelting (with ingot production)
4786	Vatkuri Battery Works, Tilokpur, Akkelpur, Joypurhat	Lead	24.88005	89.00322	Lead - Battery Recycling
4799	Ismail Iron Market, Sheikh Para, Khulna City, Khulna	Lead	22.81656	89.55318	Lead - Battery Recycling
4801	Shyampur Industrial Park, Shyampur, Kodomtoli, Dhaka	Arsenic	23.68	90.441112	Industrial Estate (mixed industries)
4802	Doyaganj ULAB market, Doyagonj, Jatrabari, Dhaka	Lead	23.709654	90.42577	Lead - Battery Recycling
4803	Yongil Metal (BD) Limited, Basta,	Lead	23.694845	90.347089	Smelting (everything

	Konakhola, Keraniganj				except Lead)
4805	Baganbari Battery Works, Khulna City, Khulna	Lead			Lead - Battery Recycling
4806	Shiddipasha Lead Smelting Works, Abhaynagar, Jessore	Lead	22.92852	89.51531	Lead Smelting (with ingot production)
4807	Yasfa Metal Works, Shakta, Keraniganj	Lead	23.695274	90.32592	Lead Smelting (with ingot production)
4808	Jamal Engineering Works, Sheikhpara, Khulna	Lead	22.81807	89.55534	Lead - Battery Recycling
4809	Avishek Metal Works, Shakta, Keraniganj, Dhaka	Lead	23.696612	90.324087	Smelting (everything except Lead)
4810	Aluminum and Lead Recycling Factory, Ruhitpur, BSCIC, New Shonakanda, Keraniganj, Dhaka	Lead	23.664929	90.301531	Industrial Estate (mixed industries)
4812	Baganbari Battery Works, Khulna City, Khulna	Lead	22.82097	89.5549	Lead - Battery Recycling
4813	Shiromoni Battery Works, Shiromoni Bazar, Khulna	Lead	22.91534	89.50249	Lead - Battery Recycling
4814	Lead Smelting Works, Halfrasta, Phultala, Khulna	Lead	22.98338	89.46986	Lead Smelting (with ingot production)
4815	Khorshed Metal Works, BSCIC Industrial Area, Shiromoni, Khulna	Lead	22.9161	89.50577	Lead Smelting (with ingot production)
4816	Gilatala Battery Works, Gilatala, Phultala, Khulna	Lead	22.92021	89.51068	Lead - Battery Recycling
4820	ULAB Sales & Servicing Shops, Ponchoboti, Fatullah, Narayanganj	Lead	23.631098	90.476261	Lead - Battery Recycling
4822	Mollah Metal Works, Sadhapur, Bongaon, Savar, Dhaka	Lead	23.825841	90.275084	Lead Smelting (with ingot production)
4823	ULAB Recycling and Smelting Works, Pandua, Ashulia, Savar, Dhaka	Lead	23.893077	90.256711	Lead Smelting (with ingot production)
4824	Matin Metal Works and Hides Burning, Mugrakanda, Bhakurta, Savar, Dhaka	Chromium (Total)	23.783786	90.306297	Multiple Diverse Industries
4829	Trisha Iron Foundry, BSCIC, Shiromoni, Khulna	Arsenic	22.91479	89.50352	Smelting (everything except Lead)
4830	ULAB Recycling and Smelting Factory, Kalampur, Dhamrai, Dhaka	Lead	23.925264	90.190648	Lead Smelting (with ingot production)
4831	Fatema Lead Smelting Factory, Goalbari, Shimulia, Savar, Dhaka	Lead	23.981718	90.212461	Lead - Battery Recycling
4832	Hasan & Harun Metal Works, Ekuria, South Keraniganj, Dhaka	Lead	23.683291	90.41319	Smelting (everything except Lead)
4833	Liton Enterprise, Aluminum Smelting Factory, Baghair, Teghoria, Keraniganj, Dhaka	Arsenic	23.676215	90.384493	Smelting (everything except Lead)
4834	Lead Smelting Works, Kuwait Mosque Area, Labanchara , Khulna	Lead	22.78241	89.55493	Lead Smelting (with ingot production)
4835	Lead Smelting Works, Tetultala, Batiaghata, Khulna	Lead	22.75134	89.53566	Lead Smelting (with ingot production)

4836	ULAB Recycling Works, Zero Point, Khulna City,	Lead	22.79895	89.52802	Lead - Battery Recycling
4838	Bannex Battery Manufacturing, Satkhira, Khulna	Lead	22.74703	89.09847	Lead Smelting (with ingot production)
4839	Bashbari Lead Smelting Site, Harinatana, Khulna	Lead	22.77986	89.50608	Lead Smelting (with ingot production)
4840	Bronze casting and smithing, Notunmondol, Shimulia, Savar, Dhaka	Arsenic	23.968603	90.205441	Smelting (everything except Lead)
4841	ULAB recycling and smelting works, Roghunathpur, Dhamrai, Dhaka	Lead	24.004577	90.167729	Lead Smelting (with ingot production)
4842	ULAB recycling and smelting works, Dhantara, Dhamrai, Dhaka	Lead	24.011274	90.150055	Lead Smelting (with ingot production)
4844	Dockyard, Char Mirerbag, South Keraniganj, Dhaka	Arsenic	23.699836	90.41177	Heavy Industry (casting, rolling, stamping)
4845	ULAB recycling and smelting works, Diabari, Yearpur, Savar, Dhaka	Lead	23.93814	90.323308	Lead Smelting (with ingot production)
4849	Lead Smelting Works, Shipyard area, Labanchara, Khulna	Lead	22.78111	89.58092	Lead Smelting (with ingot production)
4859	Lead Smelting Works, Sunagar, Rakhalgachi, Bagerhat	Lead	22.71685	89.65495	Lead Smelting (with ingot production)
4860	ULAB recycling and smelting works, Bagbari, Kashimpur, Gazipur	Lead	23.960711	90.320662	Lead Smelting (with ingot production)
4895	ECO Batteries Limited, Ujilab Paschimpara, Maona, Sreepur, Gazipur, Dhaka	Lead	24.218261	90.453223	Lead-acid battery manufacturing or repair
4896	ULAB recycling and smelting works, Sardagonj Hatimara, Kashimpur, Gazipur Sadar, Gazipur, Dhaka	Lead	23.982933	90.294305	Lead Smelting (with ingot production)
4908	ULAB recycling and smelting works, Surabari, Kashimpur, Gazipur Sadar, Gazipur, Dhaka	Lead	23.962885	90.3155	Lead Smelting (with ingot production)
4909	ULAB recycling and smelting works, Shoildanga Misarbag, Kashimpur, Gazipur Sadar, Gazipur, Dhaka	Lead	23.95565	90.302911	Lead Smelting (with ingot production)
4920	ULAB recycling and smelting works, Mondolpara Pirozali, Maona, Sreepur, Gazipur, Dhaka	Lead	24.143612	90.36124	Lead Smelting (with ingot production)
4921	ULAB recycling and smelting works, Pahloanpara Kathgora, Ashulia, Savar, Dhaka	Lead	23.919411	90.292314	Lead - Battery Recycling
4923	ULAB recycling and smelting works, Hatkhola Bazar Pirozali, Maona, Sreepur, Gazipur	Lead	24.141395	90.354643	Lead Smelting (with ingot production)
4924	Power Pack Battery Manufacturing,BSCIC,Bagerhat	Lead	22.643119	89.798494	Lead - Battery Recycling

4926	ULAB recycling and smelting works, Endropur, Maona, Sreepur, Gazipur, Dhaka	Lead	24.165732	90.406673	Lead Smelting (with ingot production)
4927	ULAB recycling and smelting works, Gorgoria Masterbari, Maona, Sreepur, Gazipur, Dhaka	Lead	24.188907	90.412267	Lead Smelting (with ingot production)
4928	ULAB recycling and smelting works, Taltoli Purbopara, Telihati, Sreepur, Gazipur, Dhaka	Lead	24.2651	90.452339	Lead Smelting (with ingot production)
4929	Hamko Industries Limited, Town Noapara, Fakirhat, Bagerhat	Lead	22.73834	89.63803	Lead - Battery Recycling
4938	Badi Mia ULAB Recycling Works,Mohammadnagar,Khulna	Lead	22.788771	89.534678	Lead - Battery Recycling
4942	Sayed Battery Works, Battery Potti, Jessore municipality, Jessore	Lead	23.16203	89.22247	Lead - Battery Recycling
4943	Malek Battery works, Sonadanga, Khulna City, Khulna	Lead	22.81493	89.54145	Lead - Battery Recycling
4944	Sachibunia Lead Smelting Site,Charka-khali, Labancara,Khulna	Lead	22.78022	89.54577	Lead Smelting (with ingot production)
4945	Lead Smelting Works, Dhaowapara, Bogra Sadar, Bogra	Lead	24.85493	89.39011	Lead - Battery Recycling
4946	Lead Battery Breaking and Smelting Works, Kamalpara, Mahimagonj, Gaibandha	Lead	25.08629	89.51718	Lead - Battery Recycling
4947	Lead Battery Breaking and Smelting Works, Vudhghora, Gabtoli, Bogra	Lead	24.85332	89.46596	Lead - Battery Recycling
4948	Lead Smelting Works, Naruli, Bogra	Lead	24.85666	89.38671	Lead Smelting (with ingot production)
4950	Lead Smelting Works, Paigram, Kasba, Phultala, Khulna	Lead	22.99867	89.45871	Lead Smelting (with ingot production)
4951	ULAB recycling and smelting works, Taltoli Poschimpara, Telihati, Sreepur, Gazipur, Dhaka	Lead	24.26545	90.433588	Lead Smelting (with ingot production)
4952	ULAB recycling and smelting works, Bashbari, Gazipur Bazar, Sreepur, Gazipur, Dhaka	Lead	24.271852	90.312197	Lead Smelting (with ingot production)
4954	Lead Smelting Works,Damodar,Phultala,Khulna	Lead	22.96601	89.47717	Lead Smelting (with ingot production)
4955	ULAB recycling and smelting works, Satanibazar Dhonua, Gazipur, Sreepur, Gazipur, Dhaka	Lead	24.272975	90.367163	Lead Smelting (with ingot production)
4957	ULAB recycling and smelting works, Noyapara, Gazipur, Sreepur, Gazipur, Dhaka	Lead	24.292448	90.345837	Lead Smelting (with ingot production)
4960	Lead Smelting Works, Sultanpur, Naogaon Sadar, Naogaon	Lead	24.7973	88.94565	Lead Smelting (with ingot production)
4961	Lead Battery Works, Truck Terminal Area, Naogaon Sadar,	Lead	24.80474	88.95596	Lead - Battery Recycling

	Naogaon				
5012	ULAB recycling and smelting works, Boktarpur Bashbari, Varenga, Bera, Pabna, Rajshahi	Lead	23.980496	89.644199	Lead Smelting (with ingot production)
5013	ULAB recycling and breaking works, Notunbazar, Varenga, Bera, Pabna, Rajshahi	Lead	23.984687	89.640312	Lead - Battery Recycling
5014	ULAB recycling and smelting works,Varenga High school area Varenga, Bera, Pabna, Rajshahi	Lead	23.988469	89.639395	Lead - Battery Recycling
5015	ULAB smelting works, Kaisar char (island), Varenga, Bera, Pabna, Rajshahi	Lead	23.989669	89.669797	Lead Smelting (with ingot production)
5016	ULAB smelting works, Ghoshghata char (Island), Varenga, Bera, Pabna, Rajshahi	Lead	23.984328	89.670199	Lead Smelting (with ingot production)
5017	ULAB smelting works, Ghosher char, Varenga, Bera, Pabna, Rajshahi	Lead	23.984405	89.671195	Lead Smelting (with ingot production)
5018	ULAB smelting works, Baghmara char (Island), Varenga, Bera, Pabna, Rajshahi	Lead	23.977144	89.671345	Lead Smelting (with ingot production)
5019	ULAB recycling and smelting works, Varenga Bazar, Varenga, Bera, Pabna, Rajshahi	Lead	23.9915	89.6409	Lead Smelting (with ingot production)
5021	Navana Battery Industry Ltd, City Gate Area, Sitakund Upazila, Chittagong	Lead	22.38281	91.76854	Lead - Battery Recycling
5023	Lead Battery Works, Kalarpole, Patiya, Chittagong	Lead	22.31332	91.87534	Lead Smelting (with ingot production)
5024	Lead Battery Works, Latifur, Sitakund, Chittagong	Lead	22.37683	91.7612	Lead - Battery Recycling
5025	Lead Battery Works, Bariarhat, Mirsurai,Chittagong	Lead	22.89276	91.53528	Lead - Battery Recycling
5026	ULAB recycling and breaking works, Shimultola Batiakhora, Varenga, Bera, Pabna, Rajshahi	Lead	23.996241	89.642727	Lead - Battery Recycling
5027	ULAB breaking and recycling works, Batiakhora bazar, Varenga, Bera, Pabna	Lead	24.003833	89.648659	Lead - Battery Recycling
5035	Lead Battery Works, Kapashgola, Chalkbazar, Chittagong	Lead	22.36	91.84201	Lead - Battery Recycling
5062	ULAB breaking and Recycling Works, Majompur, Kushtia,Khulna	Lead	23.906863	89.121187	Lead - Battery Recycling
5081	Lead Battery Works, Station Road , Comilla Sadar Upazila, Comilla	Lead	23.46056	91.16888	Lead - Battery Recycling
5082	ULAB recycling and breaking works, Sluice Gate bazar Koitola, Varenga, Bera, Pabna, Rajshahi	Lead	24.006856	89.652425	Lead - Battery Recycling
5083	ULAB recycling and breking works, Joynogor Koitola, Vaenga,	Lead	24.008821	89.650565	Lead - Battery Recycling

	Bera, Pabna, Rajshahi.				
5086	Lead Battery Works, Jangaliya Bus Stand, Comilla South Sadar Upazila, Comilla,	Lead	23.43523	91.17198	Lead - Battery Recycling
5093	ULAB recycling and breaking works, Sonapodda Rakhsha, Varenga, Bera, Pabna, Rajshahi	Lead	23.990032	89.644257	Lead - Battery Recycling
5094	ULAB recycling and breaking works, Rakhsha bazar, Varenga, Bera, Pabna, Rajshahi.	Lead	23.988462	89.6485	Lead - Battery Recycling
5099	Lead Smelting Works, Chandaikona, Raiganj Upazila, Sirajgonj	Lead	24.54715	89.51225	Lead Smelting (with ingot production)
5100	Lead Battery Works, Elliotganj, Daudkandii, Comilla	Lead	23.51409	90.86784	Lead - Battery Recycling
5101	Lead Battery Works, Paduarbazar, Bissoroad, Comilla	Lead	23.41912	91.17362	Lead - Battery Recycling
5102	ULAB recycling and breaking works, Gopalpur, Shaara, Ishurdi, Pabna, Rajshahi	Lead	24.154889	89.023482	Lead - Battery Recycling
5104	ULAB recycling and breaking works, Arambaria bazar Arambaria, Shaara, Ishurdi, Pabna, Rajshahi.	Lead	24.15736	89.024677	Lead - Battery Recycling
5120	Lead Battery Works, Shaktala, Laksam Road, Comilla	Lead	23.44638	91.17638	Lead - Battery Recycling
5121	Lead Battery Works, Gudirpukorpar, Nurpur, Comilla	Lead	23.46002	91.20116	Lead - Battery Recycling
5123	Lead Battery Works, Chandaikona Bazar, Raiganj Upazila, Sirajganj	Lead	24.55036	89.50626	Lead - Battery Recycling
5124	Lead Battery Works, Chandaikona, Raiganj Upazila, Sirajgonj	Lead	24.54945	89.50977	Lead - Battery Recycling
5129	ULAB breaking and Recycling Works, Boro Station Road,Kushtia,Khulna	Lead	23.902291	89.145045	Lead - Battery Recycling
5130	Minto Battery Works, EPZ Road, South Chartha, Comilla	Lead	23.44988	91.18266	Lead - Battery Recycling
5131	Lead Battery Breaking and Smelting Works, Rampur, Muradnagar, Comilla	Lead	23.52322	90.87834	Lead - Battery Recycling
5152	ULABs Recycling And Breaking Works,Raiganj Upazila, Sirajgonj	Lead	24.552586	89.504617	Lead - Battery Recycling
5159	ULAB recycling and smelting works, Char kalibari, Kotoali, Mymensingh sadar, Mymensingh, Dhaka	Lead	24.749344	90.426843	Lead Smelting (with ingot production)
5160	ULAB recycling and smelting works, Purbopara Madrasha road, Char kalibari, Kotoali, Mymensingh sadar, Mymensingh, Dhaka	Lead	24.747312	90.427619	Lead Smelting (with ingot production)

5164	ULAB breaking and recycling works, Poschimpara Lalkuthi Dorbarsharif road, Charkalibari, Kotoali, Mymensingh sadar, Mymensingh, Dhaka	Lead	24.75348	90.425094	Lead - Battery Recycling
5165	ULAB breaking and recycling works, China more, Kotoali, Mymensingh sadar, Mymensingh, Dhaka	Lead	24.761363	90.437472	Lead - Battery Recycling
5166	ULAB recycling and smelting works, Dholpur Shalikabazar, Mohishmara, Modhupur, Tangail, Dhaka	Lead	24.539584	90.113357	Lead Smelting (with ingot production)
5167	ULAB recycling and smelting works, Bramhan shoshan, Shamna, Ghatail, Tangail, Dhaka	Lead	24.436402	89.9933661	Lead Smelting (with ingot production)
5176	ULAB recycling and smelting works, Kustha, Balla, Kalihati, Tangail, Dhaka	Lead	24.378242	90.001729	Lead Smelting (with ingot production)
5177	ULAB recycling and smelting works, Chinamura, Elenga, Kalihati, Tangail, Dhaka	Lead	24.327508	89.928452	Lead Smelting (with ingot production)
5200	Jannat Battery, ULAB recycling and breaking works, Madaripur BSCIC, Madaripur Sadar, Madaripur, Dhaka	Lead	23.176709	90.200946	Lead - Battery Recycling
5201	ULAB recycling and breaking works, Ghatakchar, West pherpur, Madaripur sadar, Madaripur, Dhaka	Lead	23.177711	90.126209	Lead - Battery Recycling
5203	ULAB recycling and smelting works, Hobiganj, South Berangul, Bahadurpur, Madaripur Sadar, Madaripur, Dhaka	Lead	23.244936	90.157571	Lead Smelting (with ingot production)
5204	ULAB smelting works, Sreenadi Hat, Bahadurpur, Madaripur Sadar, Madaripur, Dhaka	Lead	23.269226	90.086052	Lead Smelting (with ingot production)
5245	ULAB smelting works, Shenkhali, Amgram, Rajoir, Madaripur, Dhaka	Lead	23.159185	90.019117	Lead Smelting (with ingot production)
5246	ULAB recycling and smelting works, Shomeshpur, Koijuri, Faridpur Sadar, Faridpur, Dhaka	Lead	23.560338	89.800679	Lead Smelting (with ingot production)
5254	SB Agro Industries limited, Jhenaidaha BSCIC, Jhenaidaha Sadar, Jhenaidaha, Khulna	Lead	23.539582	89.198356	Fertilizer Manufacturing
5255	Altu Khan Jute Mills Limited (Panna group), Porikhitpur, Modhukhali, Faridpur, Dhaka	Lead	23.536372	89.652679	Lead-acid battery manufacturing or repair
5292	Tamim Battery Limited, Pobahati, Jhenaidah Sadar, Jhenaidah, Khulna	Lead	23.56525	89.19861	Lead-acid battery manufacturing or repair
5293	ULAB breaking and smelting works, Shunshungir more,	Lead	25.32502	89.51354	Lead - Battery Recycling

	Ballamjhar, Gaibandha sadar, Gaibandha, Rajshahi				
5294	ULAB breaking and smelting works, Jineshwar, Ballamjhar, Gaibandha sadar, Gaibandha, Rajshahi	Lead	25.32678	89.5097	Lead - Battery Recycling
5295	ULAB breaking and smelting works, Middle Dhangora, BSCIC area, Gaibandha sadar, Gaibandha, Rajshahi	Lead	25.32539	89.5084	Lead Smelting (with ingot production)
5298	Lead Smelting Works,Mostofar Mor, Dumuria,Khulna	Lead	22.823575	89.518123	Lead Smelting (with ingot production)
5299	Shokor Ali Lead Battery Smelting, Gossogram, Rajigonj, Dinajpur	Lead	25.28527	89.23199	Lead Smelting (with ingot production)
5300	Fulahar Lead Battery Smelting, Fulahar Masjid Para, 2-katabari,Gobindogonj,Gaibandha	Lead	25.21997	89.31591	Lead Smelting (with ingot production)
5301	Nayeb Ali Lead Battery Smelting, 2-Katabari, Gobindogonj, Gaibandha	Lead	25.20761	89.30825	Lead Smelting (with ingot production)
5302	Polerhat Lead Battery Smelting, Polerhat, Goaldighi Union, Khanshama Upazila, Dinajpur.	Lead	25.82707	88.77819	Lead Smelting (with ingot production)
5308	Continental Battery Industry,Samta,Sharsha,Jessore	Lead	22.985297	88.979405	Lead - Battery Recycling
5310	ULAB smelting works, Dhangora, BSCIC area, Gaibandha sadar, Gaibandha, Rajshahi	Lead	25.32489	89.50742	Lead Smelting (with ingot production)
5311	ULAB breaking and smelting works, PEKS Eye Hospital, Boalia, Gobindaganj, Gaibandha, Rajshahi	Lead	25.14659	89.38719	Lead Smelting (with ingot production)
5312	ULAB breaking and smelting works, Gopalpur, Mahimagonj, Gobindaganj, Gaibandha, Rajshahi	Lead	25.10947	89.47346	Lead - Battery Recycling
5313	ULAB breaking and smelting works, Sripotipur, Mahimagonj, Gobindaganj, Gaibandha, Rajshahi	Lead	25.10998	89.48923	Lead Smelting (with ingot production)
5339	Samad Battery Works, Chuknagar, Keshabpur, Jessore	Lead	22.844226	89.299127	Lead Smelting (with ingot production)
5343	ULAB breaking and smelting works, Soighoria, Mahimagonj, Gobindaganj, Gaibandha, Rajshahi	Lead	25.112555	89.490567	Lead - Battery Recycling
5344	ULAB breaking works, Dhaperhat, Sadullapur, Gaibandha, Rajshahi	Lead	25.34678	89.34063	Lead - Battery Recycling
5345	ULAB breaking and smelting works, Shahargachi, Rajahar, Sadllapur, Gaibandha, Rajshahi	Lead	25.14492	89.25742	Lead Smelting (with ingot production)
5346	ULAB breaking and smelting	Lead	25.14984	89.28149	Lead Smelting (with

	works, Pearapur, Sakhahar, Sadullapur, Gaibandha, Rajshahi				ingot production)
5347	Tire Burning Factory, Damgari, Rajahar, Sadullapur, Gaibandha, Rarajshahi	Arsenic	25.14999	89.26981	Petrochemical Industries (refineries)
5348	ULAB breaking and smelting works, Rupshi Fakirhat Ranipukur, Mithapukur, Rangpur, Rajshahi	Lead	25.63592	89.20424	Lead Smelting (with ingot production)
5350	Lead Battery Smelting, Gossogram, Ranigonj, Dinajpur.	Lead	25.28145	89.23301	Lead Smelting (with ingot production)
5351	Lead Battery Smelting, Mission Road, Gobindogonj, Gaibandha.	Lead	25.19262	89.3095	Lead - Battery Recycling
5352	Lead Battery Smelting, Korihata, Votala Polashbari, Gaibandha.	Lead	25.21646	89.33201	Lead Smelting (with ingot production)
5365	ULAB breaking and smelting works, Shothibari, Latifpur, Mithapukur, Rangpur, Rajshahi	Lead	25.54215	89.27483	Lead Smelting (with ingot production)
5368	ULAB breaking and smelting works, Sholdanga, Uttar Kalikapur, Kachukata, Nilphamari Sadar, Nilphamari, Rajshahi	Lead	25.95411	88.97281	Lead Smelting (with ingot production)
5440	ULAB breaking and smelting works, South Sadhar Char, Ward no-7, Block-B, Shibpur, Narshingdi, Dhaka	Lead	23.9943	90.682115	Lead - Battery Recycling
5441	Aluminum breaking and smelting works, Chalak Char, Araihajar, Narayangonj, Dhaka	Lead	23.780471	90.71409	Smelting (everything except Lead)
5447	ULAB smelting works, Khilgao Mohishasura, Narshingdi sadar, Narshingdi, Dhaka	Lead	23.850437	90.700364	Lead - Battery Recycling
5448	ULAB breaking & smelting works, Shimulerkandi Nuralpur, Narshingdi sadar, Narshingdi, Dhaka	Lead	23.832978	90.679821	Lead - Battery Recycling
5452	ULAB breaking & smelting works, Masimnagar Shilmandi, Shibpur, Narsingdi, Dhaka	Lead	23.911616	90.682846	Lead - Battery Recycling
5453	Asia Battery (BD) Ltd, Purandia bazar, Shibpur, Narshingdi, Dhaka	Lead	24.008167	90.736981	Lead - Battery Recycling
5457	ULAB breaking & smelting works, Baroi Algii, Shibpur, Narshingdi, Dhaka	Lead	24.005514	90.730155	Lead - Battery Recycling
5458	Suntec Energy Limited, BSCIC Industrial area, Khadimnagar, Sylhet	Lead	24.916043	91.942347	Lead - Battery Recycling
5459	ULAB breaking and Recycling Works,BCIC,Kawnia,Barisal	Lead	22.719722	90.359883	Lead - Battery Recycling
5463	ULAB breaking & smelting works, BSCIC Industrial area, Khadimnagar, Sylhet	Lead	24.916821	91.942685	Lead Smelting (with ingot production)

5546	ULAB breaking and smelting works, Malipara, Jampur, Sonargaon, Narayanganj, Dhaka	Lead	23.748166	90.599964	Lead Smelting (with ingot production)
5547	ULAB breaking and smelting works, Baliapara, Rupgonj, Narayangonj, Dhaka	Lead	23.773984	90.583367	Lead Smelting (with ingot production)
5550	Gaston Battery Limited, Brahmmonbagha,Mohojompur, Sonargaon, Narayangonj, Dhaka	Lead	23.738457	90.595385	Lead-acid battery manufacturing or repair
5551	ULAB breaking and smelting works, Srirampur, Bondor, Narayangonj, Dhaka	Lead	23.681561	90.56714	Lead - Battery Recycling
5552	Arabi Traders, Used plastic recycling factory, Vinglabari, Debidwar, Comilla, Chittagong	Other	23.628474	90.970227	Recycling / Recyclers (including salvage yards)
5553	ULAB breaking and smelting works, BSCIC Industrial area, Nondonpur, Brahmanbaria, Chittagong	Lead	24.037311	91.112158	Lead Smelting (with ingot production)
5554	ULAB smelting works, Suhilpur, Nondonpur, Brahmanbaria sadar, Braahmanbaria, Chittagong	Lead	24.039557	91.108673	Lead Smelting (with ingot production)
5555	ULAB breaking & smelting works, Noyonpur, Word no-9, Brahmanbaria Pourosova, Brahmanbaria, Chittagong	Lead	23.952559	91.098369	Lead - Battery Recycling
5619	ULAB breaking and smelting works, 2 no ward, Bhairabpur, Bhairab, Kishoregonj, Dhaka	Lead	24.048983	90.984125	Lead - Battery Recycling
5620	ULAB breaking and smelting works, Chowdhuryhat Nilgonj, Kishoreganj sadar, Kishoreganj, Dhaka	Lead	24.484872	90.800718	Lead Smelting (with ingot production)
5621	ULAB breaking and smelting works, Katabaria, Kishoreganj Sadar, Kishoreganj, Dhaka	Lead	24.475279	90.768199	Lead - Battery Recycling
5622	ULAB breaking and smelting works, Jhautolibazar, Karimganj, Kishoreganj, Dhaka	Lead	24.429087	90.885622	Lead - Battery Recycling
5633	ULAB breaking and smelting works, Bhuiyabazar, Karimganj, Kishoreganj, Dhaka	Lead	24.440386	90.863609	Lead Smelting (with ingot production)
5634	ULAB breaking works, East Char Kalibari, Kotoali, Mymensingh sadar, Mymensing, Dhaka	Lead			Lead - Battery Recycling
5636	ULAB smelting works, Beparipara, Char Nilaxmia, Mymensingh sadar, Maymensingh, Dhaka	Lead			Lead Smelting (with ingot production)
5637	ULAB breaking and smelting works, Kandapara, Char Niloxmia, Mymensingh, Dhaka	Lead			Lead - Battery Recycling

7149	Chinese Battery Factory, Dubaliapara, Hobirpur, Valuka, Mymensingh, Dhaka	Lead	24.306114	90.378532	Lead - Battery Recycling
7156	ULAB recycling factory, Boyra Bazar, Gouripur, Mymensingh	Lead	24.709594	90.468763	Lead - Battery Recycling
7157	ULAB breaking and smelting factory, Shomvuganj, Kotoali, Mymensingh sadar, Mymensingh	Lead	24.761008	90.439913	Lead - Battery Recycling
7164	Tulshi Lead Acid Battery Recycling Factory, Near Netrokona Railway Station, Ukilpara, Kotoali, Netrokona	Lead	24.886871	90.733415	Lead - Battery Recycling
7165	ULAB Breaking and Smelting Site, Near Kamalapur Rubber Garden, 8 No Daugaon Union, Muktagacha, Mymensingh	Lead	24.644979	90.147516	Lead Smelting (with ingot production)
7171	ULAB recycling factory, Boilore More, Trishal, Mymensingh	Lead	24.634184	90.399452	Lead - Battery Recycling
7172	ULAB recycling factory, Uzan Boilore, Trishal, Mymensingh	Lead	24.634472	90.397862	Lead - Battery Recycling
7173	ULAB breaking and smelting works, Kazir, Shimla, Dewanbari, Trishal, Mymensingh	Lead	24.658145	90.401958	Lead - Battery Recycling
7174	ULAB smelting works, Kaishar char (Khechur more), Modhyapara, Gopalpur, Mymensingh	Lead	24.690863	90.469953	Lead - Battery Recycling
7175	ULAB selling and recycling shop, J.C. Guha Dash Road, Kotoali, Mymensingh shadar, Mymensingh	Lead	24.752245	90.415103	Lead-acid battery manufacturing or repair
7195	ULAB Braking Site, Nagpara Mor, Ward No. 2, Madhupur Paurashava, Madhupur Upazila, Tangail	Lead	24.628769	90.024886	Lead - Battery Recycling
7205	ULAB Smelting works, Jotabari, Madhupur Paurashava, Madhupur, Tangail	Lead	24.638534	90.03071	Lead Smelting (with ingot production)
7206	ULAB recycling works, Kestopur beside Mymensingh railway station, Kotoali, Mymensingh	Lead	24.747066	90.413794	Lead - Battery Recycling