



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19103-2852

SUBJECT: Long-Term Stewardship Assessment
Lehighton Electronics Inc.
EPA ID: PAD002399186
15 Blakeslee Blvd Drive W
Lehighton, PA 18235

DATE: March 28, 2023

TO: Alizabeth Olhasso, Branch Chief
RCRA CA Branch 2

FROM: Priscilla Ortiz, RPM
Long-Term Stewardship File for Lehighton Electronics Inc.
RCRA Corrective Action Branch 2

REMEDY ASSESSMENT SUMMARY:

On April 8, 2002, in a Final Decision and Response to Comments (FDRTC or Final Remedy), EPA announced its selection of a final remedy for Lehighton Electronics Inc. (LEI/Facility) located at 15 Blakeslee Blvd Drive W, Lehighton, PA. On August 14, 2020, EPA issued a proposed Explanation of Significant Differences (ESD) modifying the United States Environmental Protection Agency's (EPA) Final Remedy for the Lehighton Electronics, Inc. The ESD required additional environmental investigations, additional remediation if warranted by the results of the additional investigations, and land and groundwater use restrictions if contaminant concentrations remain above levels that pose an unacceptable risk to human health and the environment. LEI was accepted into the EPA/Pennsylvania Department of Environmental Protection (PADEP) Act 2 and One Cleanup program on July 30, 2020. Based on the site visit and file review information gathered EPA concludes the Facility is meeting most of the objectives of the 2002 Statement of Basis, 2002 FDRTC and 2020 ESD. Additional information and changes are needed as described in the conclusion of this document including the placement of an Environmental Covenant on the property.

INTRODUCTION:

Long-term stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be enforced. The purpose of the EPA Region 3 LTS program is to periodically assess the efficacy of the implemented remedies (i.e., ECs and ICs) and to update the community on the status of the RCRA Corrective Action facilities. The assessment is conducted in twofold, which consists of a record review and a field inspection, to ensure that the remedies are implemented and maintained in accordance with the final decision.

FACILITY BACKGROUND:

The Lehigh Electronics Inc. Printed Circuit Facility is located in Mahoning Township, Carbon County, Pennsylvania. The single-story Facility is situated on 0.6-acre parcel at 15 Blakeslee Blvd Drive W, Lehigh, PA, at the intersection of Route 443 and Seneca Road. The Facility manufactured printed circuit boards from 1963 to 2001. Operations at the Facility included five plating lines, an etching line, an infrared reflow operation, a photographic developing process, and a solvent cleaning process.

Following Soil Remediation Workplan completion, EPA documented additional actions and the final environmental conditions at the site through the issuance of an ESD to the FDRTC. The ESD modifications to the Final Remedy are the following:

1. Phased Approach Plan:

- Additional environmental investigations and any necessary remediation shall be completed in accordance the Phased Approach Plan.
- The Phased Approach Plan requires the following:
 - Complete the characterization of groundwater, including the siting and installation of bedrock groundwater wells;
 - Conduct an aquifer test and evaluate aquifer characterization and groundwater quality so that EPA and PADEP may determine whether additional groundwater treatment or soil excavation are necessary; and
 - Implement additional groundwater or soil remediation and monitoring, as required by EPA and PADEP.

2. Land and Groundwater Use Restrictions

- Implementation of land and groundwater use restrictions for contaminants remaining in groundwater above their respective MCLs or RSLs, as applicable, and in soil above levels suitable for unrestricted use.
- Land and groundwater use restrictions shall be implemented in an environmental covenant pursuant to the Pennsylvania Uniform Environmental Covenants Act, 27 Pa. C.S.A. §§ 6501 et seq., to be recorded with the Carbon County Recorder of Deeds.

Groundwater Remediation

Groundwater pump and treat operations started as an interim measure in 1994 and continued in accordance with the FDRTC until May 2022. TCE is the primary groundwater contaminant. The first 5 years of operation reduced the TCE contamination from approximately 150 ppb to the 30 ppb range. Since the initial reduction, the TCE concentration has leveled off at approximately 20 ppb.

At the time of the Final Remedy, groundwater contamination was attributed to a release from the TCE storage tank. In 2012, additional soil samples were collected to identify other possible sources of contamination that may be releasing contaminants into the groundwater.

TCE and lead were detected at high concentrations in samples taken below the building foundation slab, particularly in the areas of the former sump wells. The contaminated soil was likely acting as a source of continuing release of TCE to the groundwater. There are residences

located close to the facility with private wells. These wells have been periodically tested and contamination has never been detected in nearby residential wells.

In September 2019, contaminated soil was excavated, and groundwater wells were installed in accordance with the Proposed Phased Approach for the Completion of Investigation and Remedial Activities to Achieve Closure (Phased Approach Plan) approved by EPA and PADEP. The Phased Approach Plan was originally submitted to EPA and PADEP in June 2019, and most recently revised in August 2020. The Phased Approach Plan is included in the ESD.

Groundwater samples were collected for 3 consecutive quarters from the 6 shallow wells in November 2019, February 2020, and May 2020. Lead and other metals were included in this analysis; no metals were detected above the drinking water standards. Four volatile organic compounds exceeded their respective drinking water standard.

The highest concentrations of contamination are in wells MW-3S and MW-4S, located north and west of the building, immediately downgradient of where historic manufacturing, drum storage, and wastewater treatment operations were located. The wells are located near the downgradient (northern) property boundary, adjacent to State Route 443/Blakeslee Boulevard Drive West. Groundwater from the Facility flows toward Mahoning Creek, approximately 500 feet north of the Facility.

Blew Enterprises, Inc. completed activities outlined in the Phased Approach Plan. Stage 1, Stage 2, and Stage 3 of the Phased Approach Plan have been completed under the joint oversight of EPA and PADEP. Stage 1 included characterization of the soil contamination, excavation of the contaminated soil, backfilling of the excavated areas, and tarping the building area to direct drainage away from excavation areas. The completed steps of Stage 2 included siting, installing, and sampling the shallow wells, installation of rock core boring, drill bedrock wells, slug testing of bedrock wells. Stage 3 includes analyzing results from groundwater wells and groundwater pumping system and developing a preliminary plan after two quarters of groundwater results from all wells to assess effectiveness of the pumping system and delineation of the plume in cooperation with the property owners.

On June 10, 2020, Blew Electronics, Inc. submitted a Notice of Intent to Remediate (NIR) the Facility under the Pennsylvania Land Recycling Program (commonly known as Act 2). The NIR proposes the following:

- Completion of the investigation and remediation of the Facility in accordance with the Phased Approach Plan;
- Remediation of soil and groundwater to meet the Act 2 non-residential statewide health standards or site-specific standards; and
- Execution of an environmental covenant that will restrict the use of the Facility property to nonresidential and prohibit the use of the groundwater without treatment.

The NIR also requested participation in the One Cleanup Program. PADEP sent a letter acknowledging receipt of the NIR to LEI on July 2, 2020. LEI was accepted into the One Cleanup program on July 30, 2020, with PADEP identified as the lead agency under Act 2 and EPA as the responsible agency for oversight of RCRA corrective action issues.

On November 1, 2021 and on behalf of Blew Enterprises, Inc. EarthRes Group, Inc. (EarthRes) submitted a letter to James Berger, P.E. of PADEP requesting to cease the Groundwater Pump and Treat System. On May 2, 2022 EPA and PADEP agreed that the Groundwater Pump and Treat System and NPDES permit sampling/reporting may be temporarily suspended, with the following conditions:

- Quarterly groundwater sampling analysis for volatile organic compounds is performed for at least a year.
- The private well owner's well is sampled quarterly during the period that the System is not operating.
- If plume dynamics change and data indicates that the private well is impacted or that concentrations begin to increase at depths or locations not previously detected, the agencies may request restart of the System and associated NPDES permit sampling/reporting.

Three (3) quarterly groundwater sampling events have been completed with the fourth event occurring on March 23, 2023. No impacts were observed to the deeper, on-site wells and the off-site Eckhart Private well. The concentrations of contaminants in groundwater had declined due to the removal of contaminated soil, which appeared to act as a source of continuing contamination. After final results are received from the March 2023 sampling, EPA and PADEP will evaluate the request to permanently cease operations of Groundwater Pump and Treat System.

Potable Water Supply

Since a municipal water supply is not available in the area of the Facility, LEI evaluated a Granular Activated Carbon (GAC) filtration system for future use to provide potable water to the property. A GAC treatment system was installed and evaluated from September 2006 through March 2010. An operation and maintenance (O&M) plan for future use was submitted in 2020. On November 15, 2022 the Facility received a Notice of Violation from PADEP's Clean Water Program relative to monitoring violations from 2017-2020. PADEP has not been successful in reaching a settlement to resolve the violations associated with the NPDES Permit. The Department is currently considering other options to resolve the violations.

Notification of Groundwater Contamination

Since the issuance of the FDRTC, Pennsylvania has enacted the Universal Environmental Covenant Act to restrict property use and prevent exposure to environmental contamination at a site. EPA has informed LEI that the required property transfer notification shall be in the form of an environmental covenant and has requested that an environmental covenant restricting land and groundwater use be placed on the property.

SITE VISIT:

On March 23, 2023, EPA conducted a site visit with LEI representatives to assess the final quarterly groundwater sampling after approval of temporary discontinuation of Groundwater Pump and Treat System.

The attendees were:

EPA: Priscilla Ortiz, RCRA CA, ortizcarrero.priscilla@epa.gov, 215-814-3428

EPA: Jeffrey Christopher, RCRA CA, christopher.jeffrey@epa.gov, 215-814-3392

Lehighton Electronics, Inc. (LEI) Representatives:
Ryan Connellan, EarthRes Group, Contractor for LEI, RConnellan@earthres.com

The representatives met at the LEI Facility, located at 15 Blakeslee Blvd Drive W, Lehighton, PA.

During the site visit EPA noted that the building frame structure was removed from the west side of the building, the location of the former atlas sump and reflow sump area. The foundation walls were still standing; however, the interior concrete slab was exposed. These activities occurred in 2017 in preparation for additional sampling and the excavation of contaminated soil.

Contaminated soil, located below the former pattern plate and atlas sumps, were removed from the Site in 2019. A tarp, described as a cap by EarthRes, was overlaying the concrete slab. EarthRes indicated that the tarp was placed in 2019. EPA noted that the partially demolished building could pose a hazard risk. EarthRes indicated the township was previously in touch with the Facility owner regarding site conditions.

EPA attendees observed the groundwater sampling event. Sampling was performed using low flow purge and sampling methods in general accordance with EPA and PADEP guidance. Onsite and offsite wells located at the north and northeastern side of the Facility were observed along with the creek. Note: The private potable supply well, located side gradient of groundwater flow, was sampled a week later on 3/27/2023.

During the site visit, EPA observed around 14 drums in rusted and deteriorating condition. EarthRes indicated that 4 drums contained contaminated soil from the TCE source area remediation activities. EPA discussed that future removal of the drums is needed as it could have potentially been contributing to soil contamination. EPA observed several piles of soil and construction and demolition debris on the site of unknown origin. EarthRes indicated that the piles of soil are not related to the soil remediation activities.

During the visit, EPA indicated they were aware of NPDES permit violations associated with the Groundwater Pump and Treat System and asked about the status of rectifying the violations. EarthRes indicated they were not involved with permit sampling and were not aware of the NPDES status. EPA will coordinate with PADEP to ensure that LEIs NPDES status does not impact the integrity of the RCRA Corrective Action Remedy Decision.

CURRENT SITE STATUS:

EPA and PADEP approved the request to temporarily suspend the Groundwater Pump and Treat System on May 2, 2022. The final groundwater sampling event to confirm stability of the contamination and the plume was on March 23, 2023. Pending results, EPA and PADEP will make a decision regarding whether the Groundwater Pump and treat System can remain inactive.

INSTITUTIONAL CONTROLS (ICS) STATUS:

After remedial activity is completed, LEI will execute an environmental covenant describing the environmental conditions and establishing any needed land use restrictions.

ENGINEERING CONTROLS (ECS) STATUS:

Groundwater – The groundwater treatment system will remain in place to treat groundwater for use as a potable water supply, until the groundwater quality meets drinking water quality standards. LEI prepared an operation and maintenance manual for the treatment system. An Environmental Covenant will prohibit the use of groundwater without treatment.

Capping- In the future, it is likely the Facility will be capped using low permeability soil or asphalt paving.

MAPPING:

Mapping will be completed in conjunction with the environmental covenant.

CONCLUSION:

Following all final sampling results and analysis of a calibrated numerical groundwater fate and transport model that will evaluate the effect of the pump and treat system and provide full characterization of the plume under future post-pumping conditions, EPA will evaluate Lehigh Electronics Inc. request to permanently cease operations of the Groundwater Pump and Treat System. EPA informed the Facility to remove the 4 drums which were observed on site each containing contaminated soil. The Facility is currently under Act 2 and EPA is awaiting the final Remedial Investigation Report before the Environmental Covenant is put into place to document engineering and institutional controls noted in the Final Decision and the ESD. The Environmental Covenant also documents the prohibition of the use of groundwater without treatment. Vapor intrusion may need to be assessed prior to construction of any new buildings. In addition, the Facility will be restricted to nonresidential use.

FILES REVIEWED

Statement of Basis, Prepared by EPA August 2000

Final Decision and Response to Comments, Prepared by EPA April 2002

Phased Approach Plan, Prepared by EarthRes June 2019

Notice of Intent to Remediate, Prepared by Blew Enterprises June 2020

Operation and Maintenance Plan, Prepared by Blew Enterprises 2020

Explanation of Significant Differences, Prepared by EPA August 2020

Memorandum: LEI Hydrogeologic Investigation & Updated Conceptual Model, Prepared by EarthRes June 2021

Bedrock Groundwater Flow Maps, Prepared by EarthRes August 2021

Off-Site Shallow Well Analytical Results Table, Prepared by EarthRes September 2021

Sample Location Map, Prepared by EarthRes September 2021

Soil Gas Analytical Results Table, Prepared by EarthRes September 2021

Off-Site Shallow Well Analytical Results Table, Prepared by EarthRes October 2021

Off-Site Shallow Well Location Map, Prepared by EarthRes October 2021

Request to Cease Groundwater Pump & Treat System, Prepared by EarthRes November 2021

Request to Suspend Groundwater Pump & Treat System & Off-Site Investigation Activities,
Prepared by EarthRes April 2022

LEI GW Results Table 2Q22 Update, Prepared by EarthRes June 2022

LEI Water Sampling for 21 Regulated VOCs, Prepared by EarthRes July 2022

LEI Treatment System Historical Database, Prepared by EarthRes September 2022

LEI Water Sampling for 21 Regulated VOCs, Prepared by EarthRes October 2022

LEI Treatment System Historical Database, Prepared by EarthRes December 2022

LEI Water Sampling for 21 Regulated VOCs, Prepared by EarthRes February 2023

Engineering Control/Institutional Control
Corrective Action Remedy Summary

Facility Name	Lehighton Electronics Inc.			
Address	15 Blakeslee Blvd Drive W, Lehighton, PA 18235			
EPA ID Number	PAD002399186			
Are there restrictions or controls that address:	Yes	No	Areas	Description of restrictions, controls, and mechanism
Groundwater	x		Entire Facility	
Residential Use	x		Entire Facility	Nonresidential use only.
Excavation		x	Pattern Plate and Atlas Sumps	Soil was removed.
Vapor Intrusion		x		If building will be placed on site in the future Vapor Intrusion will need to be re-evaluated.
Capped Areas		x	Entire Facility	The Facility will likely be capped in the future.
Other Engineering Controls	x			Groundwater Pump and Treat System currently inactive (pilot study).
Other Restrictions	x			Use of groundwater on site without treatment is prohibited.

LTS Checklist Template

<u>IC Review and Assessment Questions:</u>	<u>Yes</u>	<u>No</u>	<u>Notes</u>
• Have the ICs specified in the remedy been fully implemented? Implementation mechanism in place?		x	A covenant is required by the ESD and will need to be put in place.
• Do the ICs provide control for the entire extent of contamination (entire site or a specific portion)?			NA
• Are the ICs eliminating or reducing exposure of all potential receptors to known contamination?			NA
• Are the ICs effective and reliable for the activities (current and future) at the property to which the controls are applied?			NA
• Have the risk of potential pathway exposures addressed under Corrective Action changed based on updated screening levels and new technologies?		x	
• Are modifications to the IC implementation mechanism needed? (i.e. UECA Covenant, Permit or Order)	x		The property is restricted to non-residential, ICs and ECs restricting land and groundwater use will be required.
• Are there plans to develop or sell the property?			Unknown, property is restricted to non-residential.
• Have all reporting requirements been met?	x		

<u>Groundwater Review and Assessment Questions:</u>	<u>Yes</u>	<u>No</u>	<u>Notes</u>
• Is groundwater onsite used for potable purposes?	x		Onsite groundwater is treated through the Pump and Treat System. Nearby private well residence is being sampled annually.
• Is the Facility connected to a public water supply?		x	
• Have any new wells been installed at the facility?	x		Nest-1, Nest-2, and Nest-3
• Are the current groundwater flow rate and direction similar as mentioned in the previous studies?	x		

• Groundwater contaminants stable or decreasing in concentration?	x		
• Are groundwater monitoring wells still in place (# wells)?	x		
• Any evidence or reason to re-evaluate the number and location of monitoring points and/or monitoring frequency?	x		Will be reevaluated following final results after the suspension of P&T System.
• For wells where groundwater monitoring is no longer required, have the wells be decommissioned?		x	
• Is there evidence of monitored natural attenuation occurring in groundwater?	x		
• Has (active remediation system) been maintained as necessary?	x		P&T System was temporarily suspended, pilot test approved by PADEP and EPA.
• Is the (groundwater containment system) effectively containing COCs and protecting potential receptors (surface water body and/or groundwater resource) via hydraulic control?	x		
• Have notification letters been sent to the local POTW, County Department of Health, and Planning and Zoning Department regarding groundwater use restrictions?			N/A

<u>Surface and Subsurface Soil Review and Assessment Questions:</u>	<u>Yes</u>	<u>No</u>	<u>Notes</u>
• Is the facility being used for residential purposes?		x	
• Have there been recent construction or earth-moving activities or plans for such?		x	

<u>Engineered Cap or Cover Review and Assessment Questions:</u>	<u>Yes</u>	<u>No</u>	<u>Notes</u>
• Have geosynthetic/vegetative landfill caps (name) been properly maintained?			N/A
• Have any repairs been necessary? (i.e. regrading, filling, root removal)			N/A

• Is the leachate collection system operating and effectively preventing groundwater contamination?			N/A
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