DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name:	**Westlake Plastics Company, Inc.**
Facility Address:	**490 Lenni Road, Lenni, Pennsylvania 19052**
Facility EPA ID #:	**PAD002346773**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ If yes - check here and continue with #2 below.

☐ If no - re-evaluate existing data, or

☐ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	Unknown	Rationale / Key Contaminants
Groundwater		X		See below
Air (indoors)[2]		X		See below
Surface Soil (e.g., <2 ft)		X		See below
Surface Water		X		See below
Sediment		X		See below
Subsurf. Soil (e.g., >2 ft)		X		See below
Air (outdoors)		X		See below

☒ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

☐ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

☐ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

2.1 Facility Description & History:
Westlake Plastics Company, Inc. (Westlake or Facility) is located at 490 Lenni Road in Lenni, Delaware County, Pennsylvania. The Facility is composed of two separate properties (referred to as Section No. 1 and Section No. 2), which are separated by Lenni Road, Chester Creek, and a privately owned parcel of land. Section No. 1, the northernmost section, is located in Chester Heights Borough and consists of three parcels of land totaling approximately 8.6 acres. Section No. 1 is bordered on the south by Lenni Road, on the east by Chester Creek, and the west and north by wooded areas. Section No. 2 is located in Middletown Township and consists of two parcels of land totaling approximately 12 acres. Section No. 2 is bordered on the north by Lenni Road, on the west and south by Chester Creek, and on the east by a partially wooded/field area. The area surrounding the Facility is primarily a wooded residential area. A small number of commercial and industrial enterprises are scatter throughout, with the majority located east and south of the Facility.

Westlake was founded in 1951 and purchased the properties that comprise Section No. 1 and Section No. 2 in 1953. Ownership of the property prior to 1953 is unknown; however, the original Facility buildings were constructed in the mid-1850s and were used as a woolen mill. Westlake is a subsidiary of Pacific World Corporation and manufactures thermoplastic and thermoset plastic products by extrusion and compression-molding methods. The products are fashioned by melting plastic pellets (raw material) and forcing the liquid plastic into molds and dies to form the desired shape, such as rods, slabs, sheets, and film. The extrusion process is performed at Section No. 1; Section No. 2 is utilized by the Facility to receive deliveries, store extruded materials prior to annealing, anneal extruded material in hot air ovens, fabricate extruded materials, and store finished products.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).
[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Historically, newly formed plastics were annealed in a bath of high temperature lubricating oil (annealing oil) or diethylene glycol to prevent brittleness and remove internal stress created during the extrusion process. Following the annealing process, the plastics were washed with mineral spirits to remove residual oil, generating a mixture of spent annealing oil and mineral spirits (i.e., petroleum naphtha) waste stream. The spent annealing oil/mineral spirit mixture was stored in 55-gallon drums and managed as an ignitable (EPA Hazardous Waste Code D001) characteristic hazardous waste. The spent annealing oil/mineral spirit mixture was reclaimed on-site through distillation to recover the mineral spirits for reuse in the Facility's manufacturing operations. The waste annealing oil and the still bottoms generated by the distillation unit were determined to be non-hazardous and were shipped off-site for disposal.

In 1994, large hot air ovens were installed in Section No. 2 to replace the annealing baths. As a result, the Facility no longer generates the spent annealing oil/mineral solvent hazardous waste stream.

2.2 RCRA Regulatory Status:

Due to Westlake's past manufacturing operations, the Facility is subject to EPA's Corrective Action Program under the Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and hazardous constituents that have occurred at their property. The Commonwealth of Pennsylvania (Commonwealth) is not authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the Commonwealth for the Corrective Action Program.

On February 29, 2012, Michael Jr. Baker, Inc. (Baker) conducted an Environmental Indicator (EI) Inspection of Westlake, on behalf of EPA. An EPA representative was present during the EI Inspection. The findings of the EI Inspection are documented in an August 2012 EI Inspection Report for Westlake, prepared by Baker. Information gathered during the EI Inspection indicates that the Facility is no longer a generator of hazardous waste.

For additional information regarding historical and current generation and management of hazardous waste at the Facility, please refer to Section A – Permit and Regulatory Action History of the August 2012 EI Inspection Report.

2.3 Solid Waste Management Units and Areas of Concern:

Summaries of the Facility's former Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), identified as a result of past operations, are provided below. The SWMUs were identified during a March 8, 1990 Environmental Priorities Initiative (EPI) Preliminary Assessment (PA) conducted by NUS Corporation (NUS). The PA was conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to evaluate the potential for a release of hazardous substances from the Site. On August 8, 1990, NUS recommended no further action (NFA) for the Site under CERCLA.

Further details regarding the SWMUs and AOCs may be found in Section B of the August 2012 EI Inspection Report.

SWMU 1 – Former New Product/Raw Material/Waste Drum Storage Area

The former drum storage area was located near the southeastern perimeter of Section No. 2, along Chester Creek. The area consists of a concrete containment receptacle that is approximately 30 feet long, 5 feet wide and 1.5 feet high. Materials stored in this area included annealing oil, methanol (used as an anti-freeze agent in Facility's non-contact cooling water system; discontinued in mid-1990's), diethylene glycol, and mineral spirits. SWMU 1 was in operation between 1985 and 1999. No spills and/or releases have been reported or documented for this unit and no stained soils were observed by NUS during the 1990 PA.

SWMU 2 – Former Used Annealing Oil Drum Storage Area

The former used annealing oil drum storage area was located on the southeast end of the Section No. 1 building, east of the water cooling area containment structure. The unit was consisted of an uncovered concrete pad with a cinder-block berm along a majority of its perimeter and it was surrounded by an eight-foot high chain-link fence with a locked gate. The Facility used this area to store 55-gallon drums of waste annealing oil generated by the Facility's on-site distillation of spent mineral spirits/annealing oil mixtures. SWMU 2 was in operation prior to 1980 and remained active until the mid-1990's. During the 1990 NUS site visit, stained soils were observed near the entrance gate where a section of the cinder-block berm was missing. The unit was empty and no signs of releases or spills were evident at the time of the February 2012 EI Inspection.

SWMU 3 – Former Distilling/Annealing Rooms
The former annealing room was located inside of the south end of the Section No. 1 building. This room housed several above-ground annealing oil tanks (3,000-gallon, 3/32-inch thick steel walled tanks) and the diethylene glycol tank. The floor was constructed of concrete and one blind concrete trench was located near the annealing tanks that extended to the east. On the east end of the room were two doorways that led to the distillation room. A nine-inch high concrete berm and six-inch high retractable dam berm (dike) were installed at the doorways. The floor drain was blocked off near the dike to prevent oil spillage from migrating beyond the annealing room. Spills of annealing oil were directed into the trench and vacuumed out into drums. Wastes managed in the annealing room included 55-gallon drums of used annealing oil and used annealing oil/mineral spirit mixtures.

The distillation room was located in a separate room to the east of the annealing room and consisted of a concrete floor and cinder-block walls. The distillation unit was situated directly on the concrete floor. No berms were located in the doorway leading to the distillation unit, and no floor drains were observed in the distillation room. Operation of the distillation room was initiated some time before 1985 and ceased operation in the mid-1990's. No releases were reported or documented for SWMU 3; however, during the 1990 NUS site visit, the floor near the distillation unit and the annealing tanks was reported to be heavily coated with oil.

The former annealing room currently houses one extruder that is equipped with a remote self-sustaining non-contact cooling water system. The room was clean, and the floor trench was covered with steel during the February 2012 EI Inspection. The former distillation room is currently used for storage. The area was clean and the cinder-block wall enclosing the room had been removed. No signs of releases or spills were evident form SWMU 3 at the time of the February 2012 EI Inspection.

SWMU 4 – Former Empty Drum Storage Area
The former empty drum storage area was located outside the Section No. 2 warehouse, west of the new product/raw material drums storage area (SWMU 1). Empty product drums (e.g., annealing oil, mineral spirits) were stored on wooden pallets on the gravel/dirt ground surface and were either returned to the supplier or used by the Facility for non-liquid material storage. Surface run-off from this unit is to the east, toward Chester Creek. No releases were reported or documented for SWMU 4; however, soil staining was observed by NUS during the 1990 site visit. It is unknown when SWMU 4 began operation. This unit is not currently being used for storage.

AOC 1 – Fuel Oil Underground Storage Tank
One 8,000-gallon steel underground storage tank (UST) containing No. 2 fuel oil was located at Section 1 to heat the building. The UST was located in the parking lot east of the former used annealing drum storage area (SWMU 2). Due to the close proximity of high tension transformers, the Facility cleaned and closed the UST in place in 1998 and changed the fuel source for the Facility to natural gas.

In October 1998, GAC Associates, Inc. (GAC) was contracted to collect three soil samples from directly beneath the UST (0 to 1 foot interval) along the centerline of the tank. The samples were analyzed for heating oil constituents (benzene, toluene, ethylbenzene, cumene, naphthalene, fluorine, and phenanthrene). Naphthalene was detected in two soil samples (Sample S1 @ 700 ug/kg; Sample S3 @ 150 ug/kg) below the Pennsylvania Department of Environmental Protection's (PADEP) action level of 8,000 ug/kg. None of the other parameters analyzed were detected above the practical quantitation limits (PQL).

AOC 2 – Section No. 2 Warehouse Drum Storage Area
During a March 28, 1984 industrial waste inspection by PADEP, drums of raw materials, waste mineral spirits, and waste annealing oil were being improperly stored behind the warehouse on Section No. 2. PADEP issued the Facility a Notice of Violation (NOV) on April 5, 1984. The NOV recommended that the drum storage area be provided with an impermeable pad and dike, or the drums of material should be moved to a storage area inside of the building.

PADEP conducted a follow up inspection on December 18, 1984 and noted that drums of raw and waste materials were still being improperly stored behind the warehouse on Section No. 2. PADEP issued the Facility a NOV for this violation on January 7, 1985 stating that the drums must be stored on an impervious and adequately sized pad equipped with secondary containment.

PADEP conducted an industrial waste inspection of the Facility on August 29, 1985 which revealed the drum storage area containment structure had been constructed; however, it was not being used. Drums of material were still being stored in an uncontained area adjacent to the containment structure.

2.4 Potential Releases of Hazardous Waste/Exposure Pathways:

EPA has concluded that the soil and groundwater quality at the Facility does not pose any potential for harm to human health or the environment. Based on a review of all available information for the Site, there have been no reportable releases and no instances or evidence of soil or groundwater contamination. EPA also took into consideration the types and amounts of raw, intermediate and waste materials managed by the Facility. Throughout its operational history, spent mineral spirits (i.e., petroleum naphtha) was the only hazardous waste stream generated by the Facility. The mineral spirit waste stream generated by the Facility was hazardous because it exhibited the characteristic of ignitability (EPA Hazardous Waste Code D001); it did not contain any hazardous waste constituents. Petroleum naphtha is not pervasive in the environment; therefore, in the event of a spill or release, it would be readily metabolized through natural attenuation.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

☐ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

☐ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

☐ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

[3]Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

☐ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

4 If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

☐ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

☐ If no - (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

☐ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code.

Rationale and Reference(s):

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Westlake Plastics Company, Inc. facility, EPA ID No. PAD002346773, located at 490 Lenni Road, Lenni, Pennsylvania under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

☐ NO - "Current Human Exposures" are NOT "Under Control."

☐ IN - More information is needed to make a determination.

Completed by (signature) _____ Date 3/25/13
(print) Jeanna R. Henry
(title) Remedial Project Manager
Office of Pennsylvania Remediation

Supervisor (signature) _____ Date 3-26-13
(print) Paul Gotthold
(title) Associate Director
Office of Pennsylvania Remediation
EPA Region 3

Locations where References may be found:

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