

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: Bulova Technologies LLC
Facility Address: 101 North Queen Street, Lancaster, PA 17604
Facility EPA ID #: PAD 000800680

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 #6 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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Bulova Technologies, LLC**

Background

The Bulova Technologies, LLC facility is a 210,000 four-story brick building in downtown Lancaster, PA that was built in the early 1970s and originally housed a Hess' Department Store. Hamilton Technology, Inc. purchased the building in 1980, refurbished it for commercial use and began the design, manufacturing and assembly of arming devices under a government contract in the spring of 1981. The facility changed hands in 1986, when Hamilton Technology, Inc. was taken over by the Clabir Corporation, and in 1988, when the Olin Corporation purchased the facility. The facility was purchased by 101 N. Queen Street Associates in 1991 and Bulova Technologies, LLC concurrently began operations at the property.

Bulova's operations at the facility included the manufacturing and assembly of military detonators, safety equipment, commercial computer chips, and circuit boards. In 2001, Bulova sold the defense products portion of its business to BT Fuze Products Division, a subsidiary of the L-3 Communications Corporation. Bulova had leased a portion of the facility to BT Fuze until L-3 decided to move its operations out of state in January 2007. Bulova continued to assemble printed wiring boards until it also closed down its operations in Lancaster, PA in November 2008. The building has remained vacant since that time.

Several solid waste management units (SWMUs) were historically used at the facility including a wastewater treatment system, electroplating sludge tank, filter press, waste solvent storage area, solvent recycling still and a permitted air scrubber. Hamilton Technology, Inc. and subsequently BT Fuze operated a permit-by-rule elementary neutralization and wastewater treatment system that discharged to the Lancaster publicly owned treatment works (POTW) until BT Fuze ceased operations at the facility. All of the above equipment was either removed or pressure washed and left in place and there has never been a known or suspected release from any of the facility's SWMUs. An underground storage tank (UST) used to store No. 2 fuel oil was removed from service in 1982 and closed in place in 1995.

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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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale/Key Contaminants</u>
Groundwater	_____	X	_____	<u>No record of contamination</u>
Air (indoors) ²	_____	X	_____	<u>No record of contamination</u>
Surface Soil (e.g., <2 ft)	_____	X	_____	<u>Low levels TCE detected: no remediation necessary</u>
Surface Water	_____	X	_____	<u>No record of contamination</u>
Sediment	_____	X	_____	<u>No record of contamination</u>
Subsurf. Soil (e.g., >2 ft)	_____	X	_____	<u>Low levels TPH-DRO detected: no cleanup required</u>
Air (outdoors)	_____	X	_____	<u>No record of contamination</u>

 X 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):

Groundwater

Soils at the site are classified as Urban land by the Soil Conservation Service, which indicates that more than 85% of the surface is covered by roads, parking areas, buildings or other structures. The site is underlain by the Conestoga Formation, a gray limestone of Cambrian and Ordovician age. Groundwater in the Conestoga aquifer is under water-table conditions and is believed to flow in the downward-sloping direction of the overlying topography toward the Conestoga River to the south/southeast.

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.

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No releases of hazardous constituents are known or suspected to have occurred at the facility. There have been no past, current or planned groundwater monitoring efforts at the facility. The portion of Lancaster surrounding the facility is supplied water from the City of Lancaster, which obtains its water supply from one intake on the Conestoga River and another on the Susquehanna River.

Air (indoors)

Solvents and degreasers were historically used at the facility but no releases of solvents or any contaminants of indoor air concern to the environment were ever reported or suspected. A Phase I Environmental Site Assessment completed in 2001 included both a passive soil vapor survey and discrete soil sampling. Several volatile organic compounds (VOCs) including trichloroethylene (TCE), tetrachloroethylene (PCE), 1,1,1-trichloroethane (1,1,1-TCA) and BTEX-related compounds were detected by the passive soil vapor survey, but TCE was the only VOC detected in the soils beneath the building. TCE was found in only one soil sample at a concentration of 19 ug/kg, which is more than two orders of magnitude less than the EPA Region 3 risk based concentration for residential soil for TCE (2,800 ug/kg). Based on the low single occurrence TCE concentration, a significant impact to indoor air from the subsurface is not indicated.

Surface and Subsurface Soils

The only soil characterization completed at the site was part of the Phase I Environmental Site Assessment in 2001. The only contamination detected during that study was the single sample containing TCE (19 ug/kg) and two samples exhibiting low concentrations of total petroleum hydrocarbons-diesel range organics (TPH-DRO). A soil sample taken from two feet below the sidewalk surface directly under the outside fill port of the former fuel oil UST system exhibited a TPH-DRO concentration of 610 mg/kg, which is slightly above the PADEP action level of 500 mg/kg. A second composite soil sample taken between 3 and 6 feet at the same location returned a TPH-DRO concentration of 27 mg/kg, confirming that only a very limited amount of soil had been impacted. Based on the above results, no further soil sampling or remediation is warranted.

Surface Water/Sediment

The surface water drainage in the vicinity of the site is to the Conestoga River watershed. The Conestoga River is located approximately 1 to 1.5 miles east of the facility. The City of Lancaster utilizes independent sanitary and storm sewer lines. Sanitary sewer lines deliver domestic and industrial sewage directly to the City's POTW. During rain events, the storm sewer system collects stormwater and delivers it to the Conestoga River and/or Little Conestoga Creek.

While in operation, effluent from the facility was discharged to the POTW under Industrial Waste Discharge Permit No. 1012 issued by the City of Lancaster. As all operations were conducted inside the building and there are no known or suspected releases of hazardous constituents, no impact to the Conestoga River or its sediments is suspected.

Air (outdoors)

A release of contaminants from the facility to the air above a risk-based level is not suspected. The concentration of TCE detected in the subsurface does not warrant a concern for a release to the atmosphere.

Ref: Final Environmental Indicator Inspection Report for Bulova Technologies, LLC, prepared by Michael Baker Jr., Inc., August 2009; Record of Telephone Conversation between Steve Gurba, President and CEO of Buloval Technologies, LLC and Andrew Clibanoff, RCRA Project Manager, July 26, 2010.

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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

Contaminated Media	Potential Human Receptors (Under Current Conditions)						
	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food³</u>
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 mediareceptor 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 (and attach appropriate supporting documentation as well as a map of the facility):

 X 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 Bulova Technologies LLC facility, EPA ID # PAD 000800680 , located at 101 North Queen Street Lancaster, PA 17604 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) Andrew Clibanoff Date 08/02/10
(print) Andrew Clibanoff
(title) RCRA Project Manager

Supervisor (signature) Paul Gotthold Date 8-2-2010
(print) Paul Gotthold
(title) Associate Director, Office of PA Remediation
(EPA Region or State) EPA Region 3

Locations where References may be found:

USEPA Region III
Land and Chemicals Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Contact telephone and e-mail numbers

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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.