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:	Textileather Corporation
Facility Address:	3729 Twining Street, Toledo, Ohio 43612
Facility EPA ID #:	OHD 980 279 376

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?

   X 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).

Site Background: The Textileather Corporation facility is located in an industrialized area of Toledo just north of I-75 and east of the Ottawa River. To the north lie two land disposal facilities. A small residential area borders the east side. Five RFI field sampling events were performed. The RFI Report was received on 9/29/11 and is currently under review. The baseline risk evaluation of all site data presented in the RFI Report shows that under potential future conditions, unacceptable risk is associated with subsurface soil and NAPL (PCBs) at AOI-1, and NAPL (phthalates and PCBs) at AOI-15. The risk assessment is currently being reviewed and evaluated by EPA.

Manufacturing operations at Textileather ceased in 2009. The 462,060 square-foot building is empty except for some specialized machinery that is being dismantled and sold. There is no plan to demolish the building. However, the Toledo Port Authority (TPA) has shown interest in acquiring the property for redevelopment. The comprehensive plan for the area is future industrial development. If acquired, the TPA intends to demolish the building and construct warehouses for vendors to support the nearby Chrysler Jeep Assembly plant. Based on the RFI data and evaluation, in the event of redevelopment, certain remedies would be necessary to protect future industrial and construction workers.

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	?	Rationale / Key Contaminants
Groundwater	X			Sb, As, Co, Mn, phthalates, tetrahydrofuran, PCBs and various VOCs exceed MCLs. Phthalates and PCBs are present in a few areas as NAPL
Air (indoors)[2]		X		VOC vapor in building at AOI-28 and Calender Basement below Industrial Air Screening Criteria
Surface Soil (e.g., <2 ft)	X			PCBs, PAHs, and pentachlorophenol exceed Direct Contact Industrial Screening Criteria
Subsrf. Soil (e.g., >2 ft)	X			As, Pb, PCBs, phthalates, tetrahydrofuran, PCE and TCE exceed Direct Contact Industrial Screening Criteria
Sediment		X		evaluated earlier as part of the remediation of Ottawa River in the 1990s under Ohio EPA authority
Surface Water	X			incidental storm water sewer discharge exceeds MCLs for PCBs, PAHs, and some metals
Air (outdoors)		X		under indoor air screening criteria

[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.

____ 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.

X 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.

References:

Description of Current Conditions Report. December 2009. Haley & Aldrich, Inc.
Eastern Property Boundary Data Report. May 2010. Haley & Aldrich, Inc.
Field Event #1 Data Report. June 2010. Haley & Aldrich, Inc.
Eastern Property Boundary Investigation Summary and Evaluation Data Report. October 2010. Haley & Aldrich, Inc.
Field Event #2 Data Report. November 2010. Haley & Aldrich, Inc.
Field Event #2A and #2B Data Report. July 2011. Haley & Aldrich, Inc.
Field Event #3 Data Report. September 2011. Haley & Aldrich, Inc.
RCRA Environmental Indicators CA750 Migration of Contaminated Groundwater Under Control Report. July 29, 2011. Haley & Aldrich, Inc.
Documentation of CA750, Migration of Contaminated Groundwater Under Control. August 18, 2011. EPA.
Revised RCRA Environmental Indicators CA725 Human Exposures Under Control Report. September 14, 2011. Haley & Aldrich, Inc.
RCRA Facility Investigation Report. September 28, 2011. Haley & Aldrich, Inc.

Rationale:

Groundwater - Sporadic pockets of groundwater contamination and LNAPL occur in the upper lacustrine silt and clays. The permeability of this unit ranges from 10^{-4} to 10^{-7} cm/sec. The lacustrine silt and clays are about 38 feet thick and consist mostly of clays with thin to over one-foot thick silt layers. Groundwater is encountered on average at 4.4 feet below ground surface but is about 6 to 10 feet lower in the vicinity of sewers. The sewers act as infiltration points and route the groundwater off-site mainly via the storm water sewer system.

PCB-containing Therminol heat transfer oil is present at the Calender Basement (AOI-01), and phtahlates LNAPL is found at PZ-31 (AOI-15). There are no residential wells in the area and the on-site production well tapping bedrock from 106 to 492-feet was sampled and abandoned in February 2010. No contaminants were found.

Di-n-octyl phthalate and tetrahydrofuran are site contaminants but do not have EPA Regional Screening Levels (RSL). Exceedances of RSLs in groundwater from 35 monitoring locations during two sampling events are:

Groundwater Contaminant	Maximum Concentration (µg/l)	Tap Water RSL (µg/l)
Antimony	41	15
Arsenic	56	0.045
Cobalt	53	11
Manganese	3370	880
PCBs	0.6	0.034
Bis(2-ethylhexyl)phthalate	1410	4.8
Naphthalene	0.3	0.14
1,1-DCA	5	2.4
Benzene	0.5	0.41
Bromodichloromethane	0.2	0.12
Chloroform	2	0.19
Methyl tert butyl ether	210	12
PCE	1.64	0.11
TCE*	5.93	2
Vinyl chloride	17	0.016
Di-n-octyl phthalate	12,500	-
Tetrahydrofuran	180,000	95**

* The TCE concentration in groundwater beneath AOI-28 within the former manufacturing building exceeds the calculated industrial groundwater target for vapor intrusion screening.
** State of Michigan (MDNRE) RSL.

Air (indoors) - Various VOCs are present in the sump in the Calender Basement (AOI-1). Indoor air concentrations were subsequently measured in the basement using Summa canisters and all VOCs were below industrial air RSLs. TCE and PCE are present in soil, soil vapor, and groundwater underneath the building concrete slab at AOI-28. Both TCE and PCE in soil vapor exceeded the industrial shallow gas target concentration for indoor air. Indoor air concentrations were subsequently measured using Summa canisters at AOI-28 and all VOCs were below industrial air RSLs.

Surface and Subsurface Soil - Soil data was compared to direct contact RSLs for industrial soils. The maximum concentrations of the soil contaminants that exceeded their RSL were found at AOI-01, 02, 03, 10, 13, 17, 19, 22, and 28. Exceedances of RSLs in soil are:

Surface Soil Contaminant (0 -2 feet)	Maximum Concentration (mg/kg)	RSL (mg/kg)
Benzo(a) pyrene	5.94	0.21
Benzo(a)anthracene	6.09	2.1
Benzo(b)fluoranthene	6.15	2.1
PCBs	4.7	0.74
Pentachlorophenol	30.3	2.7
Tetrahydrofuran	29.4	21

Subsurface Soil* Contaminant (>2 feet)	Maximum Concentration (mg/kg)	RSL (mg/kg)
Arsenic	15.9	1.6
Lead	3140	800
Bis(2-ethylhexyl)phthalate	598	120
PCBs	2167	0.74
Tetrahydrofuran	5500	21
PCE	12.1	2.6

* Includes soil from 0 -2 feet underneath manufacturing building slab.

Sediment - A cleanup and reshaping of Fraleigh Creek was performed by the previous owner in the 1990s. In 1994, under an Ohio EPA consent order, the on-site storm sewers were cleaned out and off-site releases of PCBs were controlled through excavation and off-site disposal of contaminated soil, containment of residual PCBs by a slurry wall, and the installation of a PCB oil collection system in the Calender Basement. Additional remediation in 1998 removed over 8,000 cubic yards of contaminated sediment from the former drainageway (now called Fraleigh Creek) and the creek was re-routed to its current position.

Additional activities were performed 10 years later under the Great Lakes Legacy Act which provided $47M in funding for the investigation and cleanup of the Ottawa River system, including Fraleigh Creek. A 5.5 mile stretch of the Ottawa River was remediated and dredged from May 2010 to December 2010. A total of 242,000 cubic yards of contaminated sediment was removed to address potential human health and environmental risks.

Surface Water (Sewer Water) Discharges - A low volume of about 1gpm of contaminated groundwater infiltrates each of the storm and sanitary sewers which discharge to the Toledo POTW and 72-inch storm sewer main to Fraleigh Creek. Within the storm sewer system, some site contaminants exceed drinking water standards. TSCA regulations limit PCB discharge to sanitary sewers at 3 ppb. The measured concentration of PCBs in the sanitary sewer discharge to the Toledo sewer system is 1.5 ppb. Contaminant concentrations in the sanitary sewer at the NPDES sampling point will be monitored semiannually for PCBs.

Air (outdoors) - areas of significant VOC contamination are generally found under the building and would be expected to only potentially impact indoor air. Indoor VOC concentrations were used as a conservative surrogate and worst-case scenario for outdoor air. VOCs in indoor air do not pose an unacceptable risk to industrial workers.

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/ Visitors	Recreation	Food[3]
Groundwater	No	**Yes**	No	**Yes**	No	No	No
~~Air (indoors)~~							
Soil (surface, e.g., <2 ft)	No	**Yes**	No	**Yes**	No	No	No
Soil (subsurface e.g., >2 ft)	No	No	No	**Yes**	No	No	No
Surface Water	No	**Yes**	No	**Yes**	**Yes**	No	No
~~Sediment~~							
~~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).

X 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.

References:

Field Event #1 Data Report. June 2010. Haley & Aldrich, Inc.
Field Event #2 Data Report. November 2010. Haley & Aldrich, Inc.

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

Field Event #2A and #2B Data Report. July 2011. Haley & Aldrich, Inc.
Field Event #3 Data Report. September 2011. Haley & Aldrich, Inc.
Revised RCRA Environmental Indicators CA725 Human Exposures Under Control Report. September 14, 2011. Haley & Aldrich, Inc.

Rationale:

The Textileather facility is generally bound by industrial property except for a small residential area along the east side. Manufacturing at the facility ceased in 2009. The plant is closed, secured with a fence and gate, and the majority of the site is paved or covered with buildings. It is occupied by two full-time professional employees and one maintenance employee remaining at the plant during decommissioning activities. The professional staff spend the majority of their day in the administrative building at the main entrance. The maintenance worker moves throughout the facility. Redevelopment of the property is being pursued by the Toledo Port Authority but nothing definite has been worked out yet.

Groundwater - Potential on-site exposure to contaminated groundwater in the upper lacustrine silts and clay can occur from direct contact during excavation activities, sampling, and ongoing management of PCB-contaminated water and NAPL collected in the Calender Basement sums (AOI-1).

Potential off-site exposure to contaminated groundwater in the upper lacustrine silts and clay is not possible under current conditions. Old leaky storm and sanitary sewers act as infiltration and collection points, causing an inward groundwater gradient that prevents offsite migration of contaminants in groundwater. The sanitary sewer discharges to the Toledo sewer system and the storm sewer discharges to a trunk line, with point discharge to Fraleigh Creek and the Ottawa River. The facility currently relies on city water for on-site use.

Surface and subsurface soil - Potentially complete exposure pathways to soil under current land use include direct contact, and inhalation of dust and vapors. Many of the AOIs where contamination exceeds screening levels are covered by buildings or pavement. Contamination present at AOI-02, 03, 13, 17, and 22 is not paved over. Facility maintenance and construction workers could potentially be exposed to soil contamination. The entire facility is fenced, gated, and locked to prevent trespassing.

Surface Water (Storm Sewer) Discharges - Facility maintenance workers may be required to clean storm drain catch basins or unclog blocks. Area residents who trespass at the outfall of the 72-inch storm sewer main to Fraleigh Creek may contact contaminated storm water. However, site contaminants would be further diluted from upstream storm sewer contributions. Nevertheless, the significance of potential exposures to site contaminants from storm water is calculated in Question #4 below.

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)?

X 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

References:

Revised RCRA Environmental Indicators CA725 Human Exposures Under Control Report. September 14, 2011. Haley & Aldrich, Inc.

E-mail providing additional information on the Calender Basement collection system. October 20, 2011. Haley & Aldrich, Inc.

Rationale:

Groundwater - Any intrusive, collection, or sampling activities performed on-site requires workers to adhere to the site Health and Safety Plan prepared under the corrective action Consent Order. Implementation of the plan further minimizes exposures to site-related contaminants in groundwater. Currently, there is no anticipated exposure to construction workers.

There may be exposure to groundwater and PCB oil collected and managed in sumps located in the Calender Basement. Floating free product (NAPL) in the sump has a PCB concentration of 300 ppm. PCB concentrations in the sump water were found at 1100 ppb which exceeds the derived regional screening level for direct contact to groundwater for the maintenance worker of 85.2 ppb. PCB concentrations in groundwater at piezometers within the Calender Basement were found at 1 to 17 ppb and at 1.9 to 2.2 ppb at monitoring wells outside the slurry wall. These concentrations do not exceed the derived regional

[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.

screening level of 49.3 ppb for the future construction worker.

The site Health and Safety Plan describes operation and maintenance activities for the Calender Basement. Collected NAPL is separated and the PCB oil is placed in totes for off-site disposal and the groundwater is discharged to the sanitary sewer. The sanitary discharge of collected groundwater in the Calender Basement is 1.5 ppb PCB at the sanitary manhole (SS-109) which is less than the regulatory limit of 3 ppb. Contaminant concentrations in the sanitary sewer at the NPDES sampling point will be monitored semiannually for PCBs.

Collection of NAPL in the Calendar Basement is automated but actuated manually based on visual observations of NAPL collection in the sumps. PCB oil and groundwater that enters the basement drains to two collection sumps and is pumped to a central collection sump. From there, the NAPL and water is transferred to an above-grade oil-water separator. NAPL is pulled off the water and stored in a drum. The water is discharged to the sanitary sewer.

All collection operations are handled with pumping equipment but because of the low volume of NAPL collection, the pumps are manually actuated 2 to 3 times per week. NAPL recovery is only a few gallons per month. There is minimal worker contact with NAPL during collection operations. The operation is inspected daily. Any maintenance and troubleshooting operations are performed by workers in accordance with the site Health and Safety Plan which minimizes potential contact with PCBs. Work and maintenance is conducted in modified level D PPE, which includes face shield, appropriate gloves, tyvek suit, and chemical resistant boots or boot covers.

Surface and Subsurface soil - EPA evaluated the risk posed to exposure of the maximum soil contaminants in unpaved areas provided in the table in Question #2. The cumulative risk in the unpaved areas for potential industrial worker scenario is 4.7×10^{-5}. The highest concentrations of arsenic, lead, and PCBs are located under the building slab and not a complete pathway at this time under current site use.

Since the facility is closed, construction activity is not anticipated but if it were to take place, any excavation activities are subject to the site Health and Safety Plan and an excavation/sewer permit must be obtained from the Site Manager. Future construction under a redevelopment scenario could expose workers to contaminated soil and unacceptable human exposures would need to be addressed. Appropriate remediation/institutional controls would be necessary to ensure that long and short-term exposures remain insignificant.

Surface Water (Storm Sewer) Discharges - Risks posed to adolescent trespassers at the outfall of the 72-inch storm sewer main to Fraleigh Creek were calculated. A very conservative contaminant concentration was used at the outfall, being equal to the highest contaminant concentration found one-quarter mile upstream and on-site. The excess lifetime cancer risk and hazard index values were 5×10^{-6} and 0.9 respectively, indicating that even under a very conservative scenario, potentially complete exposures to storm water are not significant.

Facility workers are required to follow the site Health & Safety Plan that addresses and minimizes exposures to site contaminants while conducting activities at the facility. In the future, if possible redevelopment occurs at the site, appropriate remediation/institutional controls would be necessary to ensure that long and short-term exposures remain insignificant.

TSCA regulations limit PCB discharge to storm sewers at 0.5 ppb. The measured concentration of PCBs in the storm sewer discharge to the trunk line to Fraleigh Creek is 0.5 ppb. Contaminant concentrations in the onsite storm water prior to discharge at the main trunk line will be monitored semiannually for PCBs.

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):

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 Textileather Corporation facility, EPA ID No. OHD 980 279 376, located at Toledo, Ohio 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) Kenneth S. Bardo Date Nov. 7, 2011
(print) Kenneth S. Bardo
(title) Environmental Scientist

Supervisor (signature) George Hamper Date Nov 8, 2011
(print) George Hamper
(title) Section Chief
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Locations where References may be found:

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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.