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:	Le-Jo Enterprises, Inc. (formerly Sovereign Special Chemicals)
Facility Address:	765 Pike Springs Road; Phoenixville, PA 19460
Facility EPA ID #:	PAD002915445

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 Controls" 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	?	Rationale/Key Contaminants
Groundwater		X		
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurface Soil (e.g., >2 ft)	X			UST removals/BTEX
Air (outdoors)		X		

If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support 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.

Rationale and Reference(s):

EPSYS, the facility's consultant, found contaminated soils during the removal of two underground storage tanks (UST) in November 1994. Soil from the excavations was screened using Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO); results ranged from 9 parts-per-million (ppm) to 3600 ppm. Although TPH-DRO is an old measurement that is no longer in wide use, 500 ppm was considered a generally acceptable/appropriate level for this remediation. Removal of contaminated soil was performed and each excavation was re-sampled. All results were well below 500 ppm with the exception of the sample from the center of the bottom of the 1000-gallon UST excavation (14 feet below ground surface), with TPH-DRO at 1100 ppm. Due to reaching more competent bedrock, the excavation was not deepened further. To obtain further evidence that this exceedance was not impacting groundwater beneath the facility, EPSYS sampled a facility production well approximately 200 feet east of, and apparently along bedrock strike to, the former tank area in March 1996 for benzene, toluene, ethylbenzene, and xylenes (BTEX), oil and grease, and TPH. The small stream downgradient from the tank area was also sampled for these parameters. Only toluene was detected at 0.66 ug/L in the well and 0.52 ug/L in the stream, which are well below any regulatory standard and suggest that groundwater and surface water are not being adversely impacted from any remaining soil contamination at the UST removal site.

Reference: Environmental Indicator Inspection Report, Tetra Tech EC, December 2005

[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.

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)	no	no	no	yes	no	no	no
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.

Rationale and Reference(s):

Construction workers at the facility could potentially be exposed to contaminated subsurface soils during excavatory activities in the vicinity of the former 1000-gallon UST.

Reference: Environmental Indicator Inspection Report, Tetra Tech EC, December 2005

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

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"** (i.e., potentially[4] " unacceptable" levels) 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.

Rationale and Reference(s):

Residual contamination from the 1000-gallon UST removal remains at 14 feet below ground surface, which effectively prohibits exposure to construction workers in most scenarios (i.e. most construction work would not occur to that depth). Additionally, EPSYS demonstrated, through groundwater and surface water sampling, that this residual contamination is not expected to result in any negative impacts to the surroundings. Furthermore, the elevated detection of TPH-DRO is not specific enough to determine what chemical constituents are actually present, and it is likely that most of the constituents in the elevated sample are of low hazard to human health and the environment.

Reference: Environmental Indicator Inspection Report, Tetra Tech EC, December 2005

[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.

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 a "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 a "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 Le-Jo Enterprises facility, EPA ID PAD002915445, located at 765 Pike Springs Road; Phoenixville, PA 19460 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) /Griff E. Miller/ Date 9-8-10

(print) Griff Miller

(title) Remedial Project Manager

Supervisor: (signature) /Paul Gotthold/ Date 9-10-10

(print) Paul Gotthold

(title) Associate Director

(EPA Region or State) EPA Region 3

Locations where References may be found:

References have been appended to the Environmental Indicator Report and can also be found at PADEP's Southeast Regional office and USEPA's Region III office.

Contact telephone and e-mail numbers:

(name) Griff Miller

(phone #) (215) 814-3407

(e-mail) miller.griff@epa.gov

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.