

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: Clean Harbors Deer Park, LP
Facility Address: 2027 Battleground Road, Deer Park, Texas 77536-0609
Facility EPA ID #: TXD055141378

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).

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

Page 2

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>
a) Groundwater	X			
b) Air (indoors) ²		X		not contaminated above risk-based levels ^{1a}
c) Surface Soil (e.g., <2 ft)		X		removed or isolated ^{2a}
d) Surface Water		X		discharges from the site are controlled and closely monitored ^{3a}
e) Sediment		X		any sed. were removed during installation of concrete liner in drainage ditch ^{4a}
f) Subsurf. Soil (e.g., >2 ft)	X			
g) Air (outdoors) ²		X		not contaminated above risk-based levels ^{1a}

_____ 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)

Key contaminants:

- a) Groundwater: chlorobenzene, chloroform, trichloroethene, tetrachloroethylene, vinyl chloride.
- b) Indoor Air: not applicable.
- c) Surface soil: not applicable.
- d) Surface water: not applicable.
- e) Sediment: not applicable.
- f) Subsurface soil: chlorobenzene, chloroform, trichloroethene, dichloroethane, vinyl chloride.
- g) Outdoor air: not applicable.

Comparison to appropriate levels:

- a) 40 CFR §264 Appendix IX PQLs.
- b) not applicable.
- c) not applicable.
- d) TNRCC TPDES Permit No. 01429.
- e) not applicable.
- f) compared to chronic toxicity levels for marine environments specified in the EPA’s “Water Quality Criteria” (SNARLS) (see *RCRA Operating Permit HW-50089-001*, Section III.E.2.e.2.).
- g) Attachment M, *RCRA Operating Permit HW-50089-001*.

Footnotes:

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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 2-A

^{1a} Air (indoors)/Air (outdoors): Areas subject to RCRA Corrective Action are isolated by clay caps, paved caps, and by groundwater recovery (ENCOTEC 1992 and ENCOTEC 1995). This isolation nullifies short and long-term exposure to contaminated air. Clean Harbors Deer Park, LP is required by its Air Quality Permit (5064 and N001; issued September 5, 2000) to abide by the special conditions of the Permit, to prevent fugitive air contaminants, to monitor air conditions, and, to keep records of information and data that demonstrates compliance with the Permit.

^{2a} Surface soil (<2 ft.): Surface soil at the site that has been found contaminated has either been removed or has been capped with either a clay or concrete layer, thereby preventing exposure to plant and construction workers.

^{3a} Surface water: Surface water at the site is controlled by concrete-lined drainage ditches and storm water collection systems that are monitored to prevent the discharge of contaminated water from the site (TPDES Permit 01429, corresponds to NPDES Permit No. TX0005941). Groundwater from the site does not come into contact with surface water. Groundwater flow is controlled to prevent the movement of contaminated groundwater offsite, and, therefore, is not viewed as a threat to Tucker Bayou, the Houston Ship Channel (Buffalo Bayou), or any other surface water body.

^{4a} During the construction of the concrete channel in the east-west and north-south ditch running through the Deer Park facility, all of the sediments associated with the ditch were removed and the concrete was set into a firm Stratum 1 clay. (ENCOTEC, 1992, *RFI* Section 5.1.1.; and ENCOTEC, 1995, *Final CMS Report* Section 2.5).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 3

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 No ^{1a}	Workers No ^{2a}	Day-Care No ^{3a}	Construction No ^{2a}	Trespassers No ^{4a}	Recreation No ^{5a}	Food ³ No ^{6a}
Groundwater	No ^{1a}	No ^{2a}	No ^{3a}	No ^{2a}	No ^{4a}	No ^{5a}	No ^{6a}
Air (indoors)	--	--	--	--	--	--	--
Soil (surface, e.g., <2 ft)	--	--	--	--	--	--	--
Surface Water	--	--	--	--	--	--	--
Sediment	--	--	--	--	--	--	--
Soil (subsurface e.g., >2 ft)	No ^{1a}	No ^{2a}	No ^{3a}	No ^{2a}	No ^{4a}	No ^{5a}	No ^{6a}
Air (outdoors)	--	--	--	--	--	--	--

-- = media are not contaminated, as identified in #2 above

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

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

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 3-A

Rationale and Reference(s):

^{1a} There are no residential water supply wells within one mile of the facility. Contaminated groundwater is prevented from moving off site by an extensive groundwater recovery program instituted as part of the Interim Corrective Measures [EPA 3008(h) Order and TNRCC Compliance Plan CP-50089-001].

Land use surrounding the Clean Harbors Deer Park, LP facility is intensive industrial with major chemical manufacturing plants and tank farms completely surrounding the facility. There is no recreational, residential, or general commercial use within one mile of the facility. Based on these land uses, human use of the facility's land is limited to the staff and contractors of Clean Harbors Deer Park, LP. Off-site residents do not have access to on-site surface or subsurface soils.

^{2a} Contaminated soil and groundwater are isolated from workers involved in plant operations. Workers involved with Corrective Actions are OSHA HAZWOPER trained and are required to wear the appropriate level of personal protective equipment.

Subsurface Soil (>2 ft.): A general site worker is not reasonably expected to have routine contact with subsurface soils. In addition, exposure to subsurface soils and groundwater are not reasonably expected to occur for a construction worker for the following reasons: 1) the average depth to groundwater in the shallowest water bearing unit (Stratum 1) is greater than 10 feet; and 2) personal protective equipment will be worn by construction workers during any activities requiring the movement of soil.

^{3a} There are no day care facilities on-site or within a one-mile radius of the facility.

^{4a} The site is fenced and access is through a monitored security gate; therefore, trespassers are not reasonably expected to access the site.

^{5a} There are no recreational areas on-site, and potential off-site recreational areas are greater than one mile from the site.

^{6a} Food crops are not grown on-site, nor are there any animal husbandry or fishing activities on-site.

Note: † Former name of Clean Harbors Deer Park, LP

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

Page 4

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

Not Applicable.

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

Page 6

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):

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 Clean Harbors Deer Park, LP facility, EPA ID # TXD 055141378, located at 2027 Battleground Road, Deer Park, TX 77536-0609 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
	<u>Craig M. Dingler</u>	_____
	(print)	
	<u>Groundwater Supervisor</u>	
	(title)	

Supervisor	(signature)	Date
	<u>Dennis Wainwright</u>	_____
	(print)	
	<u>General Manager</u>	
	(title)	
	<u>Clean Harbors Deer Park, LP</u>	

Locations where References may be found:

All references are available from Clean Harbors Deer Park, LP or can be viewed in file rooms at the Texas Natural Resource Conservation Commission's[†] offices in Austin or Houston.

TNRCC[‡] *TPDES Permit No. 01429* (corresponds to EPA *NPDES Permit No. TX0005941*). April 1, 1994.

TNRCC[‡] *RCRA Operating Permit HW-50089-001*. March 15, 1988 as amended April 26, 1994.

TNRCC[‡] *Air Quality Permit Nos. 5064 and N001*. September 5, 2000.

ENCOTEC 1992. *RCRA Facility Investigation (RFI)* for Rollins Environmental Services (TX), Inc.[†], June 10, 1992.

ENCOTEC 1995. *Final Corrective Measures Study (CMS) Report* for Rollins Environmental Services (TX), Inc.[†], March 30, 1995

Safety-Kleen (Deer Park), Inc.[†], 1999. *1998 Annual Groundwater Monitoring Report*, January 1999.

Notes: [†] Former name of Clean Harbors Deer Park, LP

[‡] Now named the Texas Commission on Environmental Quality (TCEQ)

Contact telephone and e-mail numbers

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**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**
Page 6-A

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 REGISTERING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 6**

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):

- 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 Clean Harbors Deer Park, L.P. facility, EPA ID #TXD055141378, located at 2027 Battleground Road, Deer Park 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: *07-31-03*
 (print) Kelly K. Wilson
 (title) TCEQ Project Manager

Supervisor (signature) _____ Date: *07-31-03*
 (print) Don Boothby
 (title) Supervisor
Texas Commission on Environmental Quality

Locations where References may be found:
 Clean Harbors completed the CA 725 EI Checklist on June 27, 2003. The TCEQ approved the checklist on July 31, 2003. _____
References may be found in: _____
TCEQ Central Records, Austin, TX _____

Contact telephone and e-mail numbers

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Final Note: The purpose of the Human Exposures EI is to qualitatively screen exposures based on current land and groundwater use. A "YE" determination does not constitute a screening tool that ends the corrective action process. The "YE" determination may be changed at any time as new information becomes available.

Note: Administrative information on signature page in italics was added to electronic file 4/12/04.

