

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

**RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA725)**

Current Human Exposures Under Control

Facility Name: SET Environmental Inc.
Facility Address: 5738 Cheswood, Houston, Texas, 77087
Facility EPA ID #: TXD055135388

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

Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo 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>
Groundwater		X		See below
Air (indoors) ²		X		“”
Surface Soil (e.g., <2 ft)		X		“”
Surface Water		X		“”
Sediment		X		“”
Subsurf. Soil (e.g., >2 ft)		X		“”
Air (outdoors)		X		“”

- 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.

Facility Background:

SET Environmental, Inc. (SET), formerly Treatment One, is located in a mixed residential and industrial area southeast of downtown Houston, south of Loop 610 and west of Interstate 45-South. The facility is set on two sides of Cheswood. The offices, supply warehouse and maintenance shop including satellite accumulation area are located at 5738 Cheswood Street. The processing and storage of the hazardous waste takes place directly across the street at 4743 Cheswood in the chemical storage warehouse, ignitable storage building, lab pack processing area and cylinder processing area. The processing and storage parts of the facility are bound to the west by facility offices, to the north by NSSI, Nuclear Sources and Services, Inc., to the east by NSSI (across the street), and to the south by a commercial warehouse. Water and wastewater services are provided by the City of Houston. The facility is in the watershed area of the San Jacinto River Basin. Both areas are manned with 24hour security and have a perimeter fence.

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) suggests 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) RCRAInfo code (CA725)
Page 3

SET is a permitted treatment/storage facility and large quantity generator. The corporate offices are located in Wheeling, Illinois. SET receives Hazardous, Class 1 and 2 wastes, mostly from small quantity generators. The facility is authorized to manage hazardous and industrial solid wastes generated from both on-site and off-site sources. By permit, the facility is authorized to blend fuel, consolidate wastes into lab packs, break down lab packs, performs chemical reactions to treat hazardous waste, sell unopened materials, and return to manufacturers materials received as wastes. SET has six permitted container storage areas (CSAs); two in the process building, two in the central warehouse building and three in the west side of the warehouse building. SET has eight permitted tanks; three at the west end of the warehouse building; three at the west end of the processing building; and two which have not been built. There is also one non-hazardous tank and two less than 90 day storage tanks (generator tanks). The tanks and CSAs have secondary containment structures, with a concrete floor and curbing around the areas. In some CSAs the floor slopes to a low point to collect any releases (Reference 10).

Regulatory History:

The facility was originally granted a RCRA permit, TNRCC Permit No. HW-50267, to operate a treatment, storage and disposal facility on October 3, 1990 (Reference 3). The permit was renewed in 2002. Since that time, several modifications have been granted, mainly Class I or minor modifications. SET generates 64 waste streams, 39 of which are hazardous. SET has 25 waste management units and seven storage tanks (including both hazardous and non-hazardous waste) (Reference 10). SET employs two caustic scrubbers and three carbon beds for effluent treatment.

TCEQ and its predecessors have performed routine inspections at the facility. SET has had several incidents and non-compliance issues since receiving its permit in 1990. The most notable are listed below.

- In 1992/1993, hazardous wastes were mistakenly stored in the wrong tanks. Treatment One performed closure on four hazardous waste storage tanks in response to the problem. The closure plan required the removal of all hazardous waste accidentally stored in the tanks and cleaning of the tanks (Reference 2).
- A Notice of Enforcement was issued on July 28, 1999, due to repeat violations concerning hazardous waste labeling and storage (Reference 3).
- On June 17, 2002, SET experienced an in-service failure of Tank PT-1, Permitted Unit 007. The spill resulted in the release of less than 1000 gallons. The tank was emptied and taken out of service. SET received tank closure approval from the TCEQ in a letter dated October 7, 2003 (Reference 10).
- On Monday, May 6, 2003 at 6:22 p.m., SET Environmental, Inc. experienced a fire in Container Storage Area CS-1, Permit Unit Number 001, NOR Unit Number 001. The fire was ignited by a 10 lb. bag of zinc dust. The fire then involved approximately 30 additional partial lab pack drums. There were no injuries as a result of the fire. No threat to human health is anticipated as a result of the fire. Approximately 6,500 gallons of contaminated fire suppression water and approximately 20 cubic yards off contaminated debris were sent offsite for disposal (Reference 7).
- On April 5, 2005, fine droplets of the caustic scrubbing solution exited the fugitive emissions scrubber. These droplets reached a maximum distance of 150 feet to the northeast. The caustic substance was neutralized with vinegar and power washed. Since SET was able to clean-up the spill before any precipitation, it is assumed that no environmental impacts took place. The scrubber was repaired and returned to service (Reference 9).

The most recent inspection indicated no unresolved issues. In a telephone conversation with TechLaw, Inc. the TCEQ Inspector indicated the facility has a good compliance record and he is not aware of any releases or potential impacts to human health or the environment.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo code (CA725)
Page 4

Rationale

According to the Comprehensive Corrective Action Report database, the site was investigated last in 1988, and in 1992 the facility was given a low-priority corrective action status. During the course of facility operation there have been several small spills; however available records appear to indicate appropriate response was taken by SET. The site is routinely inspected for regulatory compliance with the most recent inspection conducted in March 2006. The TCEQ inspector states the facility has a good compliance record with no history of significant releases. The facility has 24hour, manned security fencing to prevent unauthorized access. It is not anticipated that the site poses an unacceptable risk to human health or the environment.

References:

1. Letter to Ms. Susan D Bredhoeft, Treatment One, from Daniel A Dieder, T1; regarding response to September 1, 1992 Notice of Alleged Solid Waste Violation; dated October 1, 1992.
2. Letter to Daniel A Dieder, T1, from Susan Ferguson TWC; regarding Closure Plan Approval with Modification; dated October 8, 1992.
3. File Review of Treatment One IHW #50267; Jill C Burris, TNRCC; dated June 22, 2001.
4. Technical Summary and Executive Director's Preliminary Decision; Treatment One IHW #50267; dated July 5, 2001.
5. Compliance Summary; Treatment One IHW #50267; dated July 6, 2001.
6. Letter to Daniel A Dieder, T1, from Ladonna Castanuela, TNRCC; regarding T1 Permit No.HW-50267; dated September 4, 2001
7. Letter to Brad Jackson, TCEQ, from Daniel A Dieder, T1; regarding Report of Contingency Plan Implementation; dated May 6, 2003.
8. Letter to Daniel A Dieder, T1, from Enoch Johnbull, TCEQ; regarding Acceptance of Closure Certification Report; dated October 7, 2003.
9. Letter to Lance Walker, TCEQ, from Daniel A Dieder, T1; regarding 30-Day Spill Report; dated April 18, 2005.
10. TCEQ CEI Investigation Report dated December 15, 2004
11. TCEQ CEI Investigation Report dated January 20, 2006 through February 2, 2006
12. TCEQ CEI Investigation Report dated March 13, 2006
13. Record of Communication; Telephone Conversation; Bruce Arnett, TCEQ Inspector; with Andrew Dorn, TechLaw, Inc.; Regarding Set Environmental Compliance History; dated June 9, 2006.
14. Facility map

Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo code (CA725)
Page 5

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.)

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

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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo code (CA725)
Page 7

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):

