

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

Current Human Exposures Under Control

Facility Name:	Chaparral Steel
Facility Address:	300 Ward Rd., Midlothian, TX 76065
Facility EPA ID #:	TXD066362559 SWR 30661

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 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).

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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		
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.

Rationale and Reference(s):

The information presented here is based on a limited number of files that were available at the Texas Commission of Environmental Quality (TCEQ) Central Files. The facility is a permitted treatment storage and disposal facility, which has three closed landfills (designated Landfill Nos. 1, 2, & 3), a closed Mixed Waste container storage unit, and two active RCRA units including a Leachate Collection Tank, and a Pelletizer Silo, both units are used for storage. The facility’s hazardous waste permit number HW 50162 addresses all five units, with the landfills being under Post-Closure Care. The permit was issued May 10, 1988 and reissued April 5, 2000. The Mixed Waste Unit was cleaned closed. This unit required closure due to the inadvertent storage of scrap metals containing radioactive cesium baghouse dust. The closure of this area was approved by TCEQ by letter dated September 20, 2002. Baghouse dust (K061), which was managed at the Mixed Waste Unit is now shipped off site for disposal and/or recycled through the furnaces (CEI). The Leachate Tank collects leachate from the landfills and has a capacity of 500,000 gallons. The Pelletizer Silo holds excess baghouse dust prior to shipment and has a capacity of 203,000

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.

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pounds. An industrial solid waste storage area (NOR # 027) was clean closed in June 2004 (HW Permit).

Closed Landfill Nos. 1 and 2 have no primary or clay liner bottom, but were closed with a clay cap. Landfill No. 3 has a three-foot clay bottom liner and a composite geomembrane/clay cap. Landfill No. 3 also has an established vegetative cover. Landfill Nos. 1 and 2 are not required to have a vegetative cover (CEI). Monitoring wells are sampled semi-annually for the wells monitoring the three landfills. There has been no evidence of a release to groundwater (GMR).

According to the CEI, Chaparral was requested to conduct a RCRA Facility Investigation of the mill's stormwater drainage system and surface water quality under the Texas Risk Reduction Program (TRRP). Documentation was reportedly submitted to TCEQ on July 25, 2005 and May 24, 2005 that indicated the drainage system has low levels of chromium and lead in surface water and sediment, which appear to be below TRRP action levels. The Comprehensive Corrective Action Report (CCAR) indicates that an RFA was completed and an RFI not necessary on 05/28/1986, and the CA prioritization was established as medium on 08/11/06.

Facility Description

Based on the limited number of files available for review, it appears that the facility has always been owned by Chaparral Steel. The facility encompasses 298 acres. It is a steel mill that receives scrap metal via truck and rail. The scrap metal consist of crushed automobiles, crushed "white goods" (refrigerators, dryers, freezers, etc.), and crushed bundles of scrap that are shredded and stored near the facility's east boundary prior to smelting. Automobile Shredder Residue (ASR) is sent to a separately operated facility (Star Recycling) located in the southwest corner of the site. The scrap metals are melted in two electric arc furnaces equipped with a canopy duct and intake system to recover furnace dust (baghouse dust).

References:

- Various facility maps, dated 1981-2005
- Letter from TWC to Chaparral Steel, dated March 17, 1987
- Industrial and Hazardous Waste Part B Permit Application
- Sampling and Analysis Plan Chaparral Steel Delisting Petition, dated February 17, 1998
- Hazardous Waste Permit No. HW-50162, dated April 5, 2000.
- 2001 Annual Groundwater Monitoring Report (GMR), dated January 2002
- Letter from TNRCC to Chaparral Steel dated September 20, 2002
- Executive Summary – Enforcement Matter, docket No. 97-0247-MLM-E
- Letter from TCEQ to Chaparral Steel, dated September 30, 2004
- Notice of Registration, dated May 24, 2005
- Compliance Evaluation Inspection and Investigation Report (CEI), dated May 24-27, 2005
- Letter from Titan Engineering to TCEQ; dated July 25, 2005
- RCRAInfo Comprehensive Corrective Action Report, run on December 28, 2005, Chaparral Steel

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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

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.)

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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):

