

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: Motiva Enterprises LLC - Port Arthur Refinery
Facility Address: P.O. Box 712, Port Arthur, Texas, 77640
Facility EPA ID #: TX008097529

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).

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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	___	<u>X</u>	___	Compliance monitoring data.
Air (indoors) ²	___	<u>X</u>	___	Buildings are not located in contact w/SWMUs.
Surface Soil (e.g., <2 ft)	<u>X</u>	___	___	Lead and TPH at some locations. See RFI data.
Surface Water	___	<u>X</u>	___	
Sediment	___	<u>X</u>	___	
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	___	___	Lead and TPH at some locations. See RFI data.
Air (outdoors)	___	<u>X</u>	___	

___ 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.

Rationale and Reference(s):

The RFI identified areas of concern near waste management units or former waste management units with concentrations of lead and TPH in soils above the TCEQ Standard 2 Media Specific Concentrations.

References:

April 30, 1993 - RFI Phase I reformatted documentation submitted following TNRCC NOD in response to original RFI submittal dated April 2, 1991. Nine volume set includes:

- *Volume I - Investigative Area Alpha - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume II - Investigative Area Beta - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume III - Investigative Area Gamma - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume IV - Investigative Area Delta - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume V - Investigative Area Epsilon - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume VI - Additional Facility Investigative Areas - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume VII - Figures and Supporting Information - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume VIII - RFI Report Information - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*
- *Volume IX - RFI Workplan Addendums - RFI Report Revision 1 As Amended - GeoMonitoring Services - May 1993*

September 25, 1998 -- RFI Phase 2 report submitted:

- *RFI Phase 2 Report - Volume 1 - General Information and Epsilon Area Report - ENSR Consulting & Engineering - September 1998*

December 8, 1998 --RFI Phase 2 reports submitted for remainder of the areas. This four volume set includes:

- ❑ *RFI Phase 2 Report - Volume 2 -Gamma Area Report -ENSR Consulting & Engineering - December 1998*
- ❑ *RFI Phase 2 Report - Volume 3 -Alpha Area Report -ENSR Consulting & Engineering - December 1998*
- ❑ *RFI Phase 2 Report - Volume 4 -Beta Area Report -ENSR Consulting & Engineering - December 1998*
- ❑ *RFI Phase 2 Report - Volume 5 -Delta Area Report -ENSR Consulting & Engineering - December 1998*

December 1999 - Corrective Measures Implementation Reports. Four volume set. Titles are:

- ❑ *Alpha Area CMI Report - ENSR Consulting & Engineering - December 1999*
- ❑ *Beta Area CMI Report - ENSR Consulting & Engineering - December 1999*
- ❑ *Gamma Area CMI Report - ENSR Consulting & Engineering - December 1999*
- ❑ *Delta Area CMI Report - ENSR Consulting & Engineering - December 1999*

February 19, 1998 - Compliance Plan Application - RMT, Inc. - February 1998

December 19, 1997 - Combined Receiving Water and Biological Assessment Data Report - EVS Environmental Consultants - December 1997

January 2004 – Compliance Monitoring for RCRA Regulated Units:

- ❑ *Annual Compliance Monitoring Report for MTRs 4, 10, 11, C9/C10, and L-1 Landfill*

May 2003 – Compliance Plan Modification

- ❑ *Class 3 Modification Compliance Plan CP-50188 - JDC*

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.

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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)	No	Yes	No	Yes	No	No	No
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)

Potential worker and construction worker exposure to surface soils that contain TPH and lead may exist. Potential construction worker exposure to subsurface soils that contain TPH and lead may also exist. The most likely scenario would involve excavation activities taking place in areas that could potentially contain affected soils both at the surface and below the surface.

References: See Number 2 Above.

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)?

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)

- The potential exposure from surface and subsurface soils to company worker or construction workers is considered to be insignificant because of the controls in place at the facility that restrict access to the soil contamination.**
- Current OSHA health and safety protocols are in place at the facility to manage potential exposures to soils during construction activities.**
- Manned guard gates control access to the facility. Therefore, potential trespassers and recreational exposure scenarios are highly unlikely.**

References: See Number 2 Above.

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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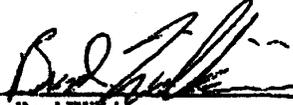
6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination table (and attach appropriate supporting documentation as well as a map of the facility):

YP - 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 Motiva Enterprises LLC facility, RPA ID # TXD000097529, located in Port Arthur, Texas under current and expected conditions. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

NO - "Current Human Exposures" are NOT "Under Control."

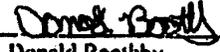
IN - More information is needed to make a determination.

Completed by

(signature) 
(print) Brad Wilkinson
(title) Project Manager, TCEQ

Date: April 13, 2004

Supervisor

(signature) 
(print) Donald Boothby
(title) Team Leader, TCEQ

Date: April 13, 2004

Locations where References may be found:

TCEQ Central Records, Austin, Texas

Contact telephone and e-mail numbers

Project Manager listed above
(512) 239-2343
corraet@tceq.state.tx.us

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE INFORMATION 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.