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:	CITGO Petroleum Corporation- Lake Charles Manufacturing Complex
Facility Address:	4401 Louisiana Highway 108, Lake Charles, LA 70602
Facility EPA ID #:	LAD008080350

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 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).

Facility Description:

The CITGO Petroleum Corporation (CITGO) Lake Charles Manufacturing Complex (LCMC) is located approximately 6 miles southwest of Lake Charles, Louisiana, on Highway 108, 2 miles south of Interstate 10. It consists of a crude oil refinery (Refinery), south of Highway 108 and a lube oil and wax production facility (Lube Plant), north of Highway 108. The LCMC occupies approximately 600 acres of the total 1600-acre contiguous land area owned by CITGO.

The LCMC is located in a heavily industrialized area (zoned I-2) where predominant land use is for industrial purposes. Several chemical and petrochemical industrial facilities, including Westlake Polymers, Firestone, Westlake Petrochemicals, and Louisiana Pigment surround the LCMC. The nearest residential area to the western property boundary of the Lube Plant is approximately 3/8 of a mile away. The LCMC is bordered to the east by the Calcasieu River and to the north by Bayou d'Inde. The Indian Marais is a drainage feature located in the extreme southern portion of the Refinery. There are no wildlife management areas within a 2-mile radius of the LCMC. Surface storm water runoff at the Lube Plant flows generally north to Bayou d'Inde, whereas at the Refinery, the surface storm water flows generally south to the Indian Marais and is discharged via NPDES-permitted outfalls.

The LCMC produces gasoline, jet fuel, diesel, #6 fuel oil, coke, sulfur, benzene, wax, lube blendstocks, propane, propylene, butane, sulfuric acid, mixed xylene, and toluene. These end products are shipped from the LCMC by ships, barges, pipelines, trucks, and rail cars. Structures in the LCMC include process areas, tank farms, wastewater treatment systems, waste disposal areas, and office and support areas. The LCMC also generates and stores a variety of hazardous and non-hazardous wastes that are typical of facilities that refine petroleum products.

Facility Corrective Action Activities:

As a result of the issuance of the HSWA permit as part of the post-closure permit for the South Impoundment in May 1995, CITGO submitted a site-wide RCRA Facility Investigation (RFI) Work Plan to the Louisiana Department of Environmental Quality (LDEQ) in December 1995. LDEQ provided comments to CITGO on December 8, 1997 and on March 18, 1999. Subsequently, CITGO incorporated the site-wide Groundwater Certification Program Areas (GCAs) into the RFI Work Plan in accordance with the requirements of the LDEQ in December 1999. There are 61 SWMUs (59 plus 2 identified subsequent to 1999 RFI Work Plan) and 27 GCAs (22 plus 5 identified subsequent to the 1999 RFI Work Plan) that are part of the site-wide program. A substantial number of the SWMUs have been closed or have been recommended for no further action as shown below.

Recommended for No Further Action (total of 29 SWMUs and 1 GCA):

- SWMUs that are Closed: SWMUs (total of 9): Clay Ponds 1, 2 and 4 (SWMU 11), the Lube Retention/Neutralization Basins (SWMUs 24 and 25), HB-1 (SWMU 13), HB-2 (SWMU 16), wax melting pit (SWMU 14), the Interconnecting Ditch (SWMU 15), Refinery West Impoundment (SWMU 57), and the Refinery API separator (SWMU 59).
- SWMUs & GCAs Recommended for No Further Action: Nos. 7, 8, 12, 22, 32, 33, 41, 53, 54, 58(under order to close, see below), 62, 91, 97, 99, 102, 103, 104, 124, 125, 134 and GCA No. 11.

The remaining SWMUs and GCAs have been recommended for further evaluation (a total of 32 SWMUs and 26 GCAs).

In June 2002, LDEQ issued an Administrative Order to CITGO pertaining to closure of the Surge Pond (SWMU No. 58), associated SWMUs (SWMU Nos. 57, 59, 60, 79, 87, and 105) and any relevant areas of concern (AOCs) under the corrective action provisions of RCRA. CITGO submitted a RFI Work Plan for the Surge Pond and Associated SWMUs and AOCs to the LDEQ in December 2002. Additional data collection consistent with the above will proceed upon approval by the LDEQ.

Facility Setting:

Shallow Subsurface Geology: The upper approximately 75 feet of the subsurface deposits at the LCMC are of Pleistocene and Holocene age. These deposits are characterized as unconsolidated deposits and consist of interbedded clay, sand, gravel, and silts that are of fluvial and marine environment in origin. This interval is referred to locally as the "Alluvium", which consists of an Upper Hydrologic unit, an intervening confining Blue Clay zone, and a Lower Hydrologic Unit. The Upper Hydrologic Unit consists of two relatively more permeable zones referred to locally as the "A" Sand and the "B" Sand. The "A" Sand is the uppermost water-bearing zone encountered beneath the LCMC. This permeable zone is typically

encountered at depths of approximately 5 to 15 ft below land surface (bls) and diverges and converges across the site. In those areas where it diverges into two sub-members, the two sub-members have been designated the "A-1" Sand and the "A-2" Sand. The "B" Sand, a discontinuous sand unit which occurs as isolated lenses across the site, is the second water-bearing zone encountered beneath the LCMC. Pumping test performed on the "A" and "B" Sands gave an estimated hydraulic conductivity of approximately 1×10^{-6} cm/sec on the aquitard that separates the "A and "B" Sands. The Lower Hydrologic unit consists of those sediments encountered between the base of the Blue Clay and the base of the "C" Sand. The "C" Sand is the first permeable zone encountered beneath the Blue Clay. The base of the "C" Sand is typically about 75 ft bls. Based on lithological descriptions included on driller's logs prepared for water supply wells installed at the LCMC, there does not appear to be any continuous permeable zones within the interval between 75 and 175 feet bls.

The Blue Clay is a laterally continuous low permeability clay zone that separates the Upper Hydrologic unit from the underlying Lower Hydrologic unit. Pumping tests conducted in September and October 1998 demonstrated that the Blue Clay layer is an effective barrier to vertical groundwater movement between the Upper and the Lower Hydrologic units. Previous laboratory triaxial permeability tests conducted on soil samples around the Refinery Surge Pond indicated that the vertical hydraulic conductivity ranges from 5.8×10^{-9} cm/sec to 1.1×10^{-9} cm/sec. Results of this study can be found in the report titled "Geotechnical and Geohydrological Assessment, Refinery Surge Pond and Secondary Wastewater Treatment Plant", December 1990.

Groundwater flows in the "A" Sand in somewhat of a semi-radial pattern, away from the central portions of the LCMC. This flow pattern correlates well with the topography of the site. To the south of the Indian Marais, groundwater flow within the "A" Sand is reversed, flowing to the north towards the Indian Marais. Surficial water bodies located within the LCMC also have an influence on the direction of groundwater flow within the "A" Sand, causing the shallow groundwater to flow in more of a radial pattern in the immediate area of these features. Groundwater flow within the "B" Sand is generally to the south and east. Groundwater flow within the "C" Sand is toward the north and west, away from the Calcasieu River. The horizontal rate of groundwater flow is approximately 1.4 feet per year in the "C" Sand, as estimated through the performance of pump tests during previous assessment activities.

Chicot Aquifer System: The Pleistocene sediments encountered between approximately 175 and 800 ft bls are composed predominantly of thick sand and gravel deposits, with individual sand and gravel units separated by thick intervals of clay. The clay intervals should impede hydraulic communication between the different water-bearing zones in this sequence of sediments. In Southwestern Louisiana, this sequence of sediments is commonly referred to as the Chicot Aquifer System. In the Lake Charles area, the Chicot contains three major water producing zones, known as the "200-Foot" Sand, the "500-Foot" Sand, and the "700-Foot" Sand, based on their general depth of occurrence.

The "200-Foot" Sand is thick and extensive throughout the region, and it deepens toward the south. In the vicinity of the LCMC, the "200-Foot" Sand is encountered approximately 175 ft bls and the sand varies from about 75 to 150 feet in thickness. The "500-Foot" Sand serves as the principal source of fresh water for industries and agriculture throughout most of Calcasieu Parish. The "500-Foot" Sand is encountered approximately 400 ft bls in the vicinity of the LCMC and the sand averages about 100 to 125 feet in thickness. The "700-Foot" Sand supplies the City of Lake Charles with drinking water, as well as some farms and industrial plants in southern and central Calcasieu Parish. In the vicinity of the LCMC, the "700-Foot" Sand is encountered approximately 625 ft bls.

Natural groundwater flow within the sands of the Chicot Aquifer is to the south, towards the Gulf of Mexico. Information concerning the flow rate of groundwater within the sands of the Chicot Aquifer is not available in the immediate vicinity of the LCMC. Studies at a nearby petrochemical complex indicated that seepage rates of groundwater in the "200-Foot" Sand were on the order of 3 inches per day, or approximately one mile every 50 years. A similar flow rate would be expected beneath the LCMC. The base of fresh water in the vicinity of the LCMC is at about 900 feet bls. This depth roughly correlates to the base of the Chicot Aquifer.

The water supply wells screened in the "200-foot Sand" or "500-foot Sand" of the Chicot Aquifer within 3 miles of the LCMC consisted of 20 domestic water supply wells (excluding wells east of the Calcasieu River) and 20 public water supply wells (excluding wells east of the Calcasieu River) based on a listing of wells obtained from the Louisiana Department of Transportation and Development (LDOTD).

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	yes			See below for all media.
Air (indoors)[2]		no		
Surface Soil (e.g., <2 ft)	yes			
Surface Water		no		
Sediment	yes			
Subsurf. Soil (e.g., >2 ft)	yes			
Air (outdoors)		no		

___ 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):

Data is currently available via past investigations and current/on-going monitoring. Based upon this data and facility/process knowledge, the following rationale/ key contaminants are provided for each media. It is also noted that CITGO took a very conservative approach to determining whether any media were "contaminated." Data were compared to the LDEQ RECAP screening standards which is the most conservative position that can be taken. Thus, risk evaluations conducted in the future may show that some areas are not are not in excess of appropriately protective risk-based levels.

Groundwater- Non-aqueous phase liquid (NAPL) has been detected during groundwater sampling in wells near SWMU No. 105 (Refinery Burn Pits), and SWMU No. 128 (Refinery South Burn Pits) and during excavation at GCA Nos. 2, 13 (Debutanizer/ Depentanizer Unit at C4 Area), 9 (Laydown Yard Area M), 16 (Butane Handling Unit), 18 (Road "C" Area of Cat Feed Hydro. Project), and 19 (D Dock Substation).

Groundwater sampling has also been performed at other areas where constituents in groundwater have been detected

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[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.

at levels above LDEQ RECAP groundwater screening standards. These areas include the Refinery Surge Pond (SWMU No. 58) and GCA Nos. 1, 3 through 8, 10, 12, 14, 15, 17, 20 through 22, and 25 through 27.

Key contaminants are constituents commonly associated with petroleum refining: BETX, PAHs, chlorinated organic compounds, and metals. Reference the tables from Section 4.0 of Environmental Data Evaluation Report: Refinery Surge Pond, July 1999 that list constituents detected in Surge Pond groundwater wells and ranges of concentrations. Analyses of sampling performed at GCAs can be found in Appendix E of the December 1999 RCRA Facility Investigation Work Plan, Phase I.

Air (indoors) - No indoor air pathways are associated with the SWMUs and GCAs subject to investigation during the RFI. Control rooms located within the facility are operated under positive pressure and office buildings are located away from process areas.

Surface soil (e.g., <2 ft) - Based upon facility/process knowledge and observation of staining or suspect material, some SWMUs are suspected of having contaminated surface soils. They include Nos.: 23, 26, 60, 74, 77, 79, 87, 106, and 127.

Key contaminants are constituents associated with petroleum refining: BETX, PAHs, chlorinated organic compounds, and metals.

Surface Water- There is currently no known release to surface water from SWMUs and GCAs subject to investigation during the RFI.

Sediment- Based upon process knowledge and sampling within the Lagoon (AOC), sediment has been impacted.

Key contaminants are constituents associated with petroleum refining: BETX, PAHs, chlorinated organic compounds, metals. Attachment 4-4 of the Remedial Facility Investigation Work Plan Refinery Surge Pond and Associated SWMUs and AOC, December 2002, lists constituents detected in Lagoon solids.

Subsurface soil (e.g., >2 ft) - Based upon process knowledge and/or observation of staining during excavation, some SWMUs and GCAs are suspected of having contaminated subsurface soils. They include SWMU Nos.: 80, 105, 128, 129, 130, 131, 132 and 133 and GCA Nos.: 1, 3 through 8, 10, 12, 14, 15, 17, 20 through 22, and 25 through 27.

Key contaminants are constituents associated with petroleum refining: BETX, PAHs, chlorinated organic compounds, and metals.

Air (outdoors) - CITGO LCMC personnel are trained and properly equipped for work within the facility. CITGO has operating procedures for health and safety throughout the facility and a permitting system that requires workers to obtain permission to enter areas and to perform various activities within the facility. The air outdoors is unconfined and no outdoor air concentrations are known or reasonably expected to be above appropriate risk-based levels based upon current and on-going air monitoring performed under OSHA by CITGO's industrial hygiene group.

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	No	No	No	Yes	--	--	No
~~Air (indoors)~~	----	----	----	--	--	--	--
Soil (surface, e.g., <2 ft)	No	Yes	No	Yes	No	No	No
~~Surface Water~~	----	----	--	--	----	----	----
Sediment	No	No	--	Yes	No	No	No
Soil (subsurface e.g., >2 ft)	No	No	No	Yes	--	--	--
~~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):

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

Residents- There are no complete exposure pathways to residents from any known environmental media at the LCMC. The LCMC is located in a heavily industrialized area as discussed in the response to Question 1. Most of the residents live in non-adjacent areas northeast of CITGO's property boundary and separated by the Calcasieu River. There are no residential areas within three or more miles south of the most southern SWMU, the Refinery Aeration Basin. The nearest residential area to the western property boundary of the Lube Plant is approximately 3/8 of a mile away. The nearest residential area along the western property boundary of the Refinery is approximately ¾ of a mile away, which is ¼ mile west beyond the adjacent Westlake Petrochemicals facility. The northernmost property boundary is approximately 9/16 of a mile north of the nearest SWMU (Holding Basin No. 2). Bayou D'Inde separates Holding Basin No. 2 from the northern boundary, which is adjacent to a residential area.

The shallow water-bearing strata in the vicinity of CITGO (A, B, and C Sands) are not used for domestic purposes. As discussed in the response to Question 1, water supply wells within a three-mile radius of the facility are screened in the "200-foot Sand" or "500-foot Sand" of the Chicot Aquifer. Thus, exposure of off-site residents to constituents from CITGO via drinking water is not a complete pathway.

LCMC Workers and/or Construction Workers- A potentially complete pathway exists for LCMC workers and/or construction workers. It is assumed that LCMC workers may potentially come in contact with surficial soils, but do not perform excavation activities that may enable exposure to subsurface soils and/or groundwater. Such exposure, however, is not expected to be significant. Impacted surficial soils are limited in number and are not present in high traffic areas. All LCMC workers are properly trained and subject to a work permitting process, as well as health and safety protocol (including use of proper personal protective equipment), to assure exposure to workers is not significant.

Construction workers at the LCMC could potentially be exposed to surficial soils, as well as subsurface soils and groundwater, during excavation activities. Construction workers may also potentially come in contact with impacted sediments if performing activities at the Lagoon. However, should any of these activities occur, compliance with CITGO permitting, health and safety protocols, and OSHA regulations are required. In addition, contract construction workers must also present to CITGO their own site-specific Health and Safety plans for CITGO approval. In conformance with the above, proper personal protection equipment must be worn and monitoring conducted. Only trained personnel having the proper OSHA training would be allowed to participate in these activities. CITGO rigorously enforces adherence to all the above permitting, protocols, regulations and plans which results in limited potential for exposure and duration of exposure.

Day Care- The LCMC does not have a day-care facility. Children are not allowed onto the LCMC.

Trespassers- There are no complete exposure pathways to trespassers from media impacted by the LCMC. A security system has been provided to ensure that site ingress and egress to the LCMC is controlled. The facility is enclosed by a 6-foot chain link fence with 24-hours surveillance cameras installed at strategic locations and/or is patrolled on a regular basis by both security and operations personnel. Entry to the facility is through gates manned by security personnel or through locked gates that can only be accessed by either a key or key-card. Persons requesting entry into the facility must receive clearance from the guard by providing proper authorization and/or training.

Recreation- There is currently no known release to surface water from SWMUs and GCAs subject to investigation during the RFI. Therefore, there are no exposures to recreational users of such surface waters. Because the LCMC is located in a highly industrialized area, it is assumed that recreation in surface water near the LCMC would be limited to non-contact activities (i.e., recreational fish consumption and incidental water ingestion.)

Food- There is currently no known release to surface water or groundwater used for irrigation purposes from SWMUs and GCAs subject to investigation during the RFI. Therefore, there are no indirect exposures via 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**"[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 LCMC workers could potentially be exposed to impacted surficial soils. Such exposure, however, is not expected to be significant. Impacted surficial soils are limited in number and are not present in high traffic areas. All LCMC workers are properly trained and subject to a work permitting process, as well as health and safety protocol (including use of proper personal protective equipment), to assure exposure to workers is not significant.

Construction workers at the LCMC could potentially be exposed to surficial soils, as well as subsurface soils and groundwater, during excavation activities. Construction workers may also potentially come in contact with impacted sediments if performing activities at the Lagoon. However, should any of these activities occur, compliance with CITGO permitting, health and safety protocols, and OSHA regulations are required. In addition, contract construction workers must also present to CITGO their own site-specific Health and Safety plans for CITGO approval. In conformance with the above, proper personal protection equipment must be worn and monitoring conducted. Only trained personnel having the proper OSHA training would be allowed to participate in these activities. CITGO rigorously enforces adherence to all the above permitting, protocols, regulations and plans which results in limited potential for exposure and duration of exposure. Exposure risks from construction activities are not expected to be significant.

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[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 "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):

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 **CITGO Petroleum Corporation – Lake Charles Manufacturing Complex**, EPA ID # LAD008080350, located in **Lake Charles, LA** 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.

REVIEWED ~~Completed~~ by (signature) Louis A. Donlon II Date 4/19/05
(print)
(title) GEOLOGIST SUPERVISOR
Toxicology Supervisor

Supervisor (signature) Date
(print)
(title)
(EPA Region or State)

Locations where References may be found:

CITGO PETROLEUM CORPORATION
P.O. BOX 1562
Lake Charles, LA 70602

Louisiana Department of Environmental Quality
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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.

ATTACHMENTS AVAILABLE UPON REQUEST