

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

Revised 11/8/00

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

Current Human Exposures Under Control

Facility Name: TPI Petroleum
Facility Address: Arkansas City, KS
Facility EPA ID #: KSD087418695

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

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 [e.g., Maximum Contaminant Levels (MCLs), the maximum permissible level of a contaminant in water delivered to any user of a public water system under the Safe Drinking Water Act] 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>	—	—	<i>See Below^A/Benzene,bis(2-ethylhexyl)phthalate, Lead, Antimony, Cadmium, Chromium, Lead & Nickel</i>
Air (indoors) ²	—	<u>X</u>	—	<i>See Below^B</i>
Surface Soil (e.g., <2 ft)	<u>X</u>	—	—	<i>See Below^C/1,4-dioxane, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Benzo(b)fluoranthene, Chloroform, Lead, Arsenic, Antimony</i>
Surface Water	—	<u>X</u>	—	<i>See Below^D</i>
Sediment	—	<u>X</u>	—	<i>See Below^E</i>
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	—	—	<i>See Below^C/1,4-dioxane, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Benzo(b)fluoranthene, Chloroform, Lead, Arsenic, Antimony</i>
Air (outdoors)	—	<u>X</u>	—	<i>See Below^B</i>

_____ 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):

^A Groundwater contamination has been documented at the site in excess of standards. The Phase II RFI indicates elevated levels of both organic and inorganic contaminants. Three organic compounds (benzene, tetrachloroethylene, and trichloroethylene) were found at or exceeding MCLs. Eight inorganic compounds (Antimony, Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel, and Vanadium) were found to exceed either the MCL or Kansas Tier II Risk Based Ground Water Standards. The summary table found below provides information regarding these samples.

<i>Summary of Ground Water Sample Contaminants*</i>						
<i>Contaminant</i>	<i># detects</i>	<i># samples</i>	<i>min</i>	<i>max</i>	<i>Standards</i>	
					<i>MCL</i>	<i>KDHE Tier 2</i>
<i>Benzene (ppb)</i>	7	21	2.5	220	5	5
<i>Tetrachloroethylene (ppb)</i>	3	21	2	5	5	5
<i>Trichloroethylene (ppb)</i>	5	21	1	5	5	5
<i>Antimony (ppm)</i>	1	21	0.0025	0.0076	.006	.006
<i>Arsenic (ppm)</i>	16	21	.00165	0.0328	.001	.05
<i>Cadmium (ppm)</i>	5	21	.00015	.0213	.005	.005
<i>Chromium (ppm)</i>	17	21	.0006	0.179	0.1	0.1
<i>Lead (ppm)</i>	12	21	.00105	0.046	0.015	0.015
<i>Mercury (ppm)</i>	9	21	0.0000 5	0.00024	.002	.002
<i>Nickel (ppm)</i>	21	21	0.0009 6	0.210	-	0.1
<i>Vanadium (ppm)</i>	19	21	0.0004 5	0.139	-	0.11

*TPI Petroleum RFI, 2000

^B Air contamination (both indoor and outdoor) has not been documented in excess of applicable standards. Additionally, since refinery operations are inactive, no current or future reasonable releases are expected from processes or tanks. Accordingly any release would not be expected to be in excess of applicable standards. However, current activities at the plant do include demolition and excavation activities which may result in introduction of subsurface soil gas to ambient air in the vicinity of workers or construction workers. As part of the RFI, the facility conducted a soil vapor study to document gas levels across the facility. Elevated soil gas concentrations were found across the northern portion of the facility. The highest concentration detected at the 5 foot depth was 320 ppm, at the 10 foot depth 429 ppm, and at the 15 foot depth greater than 400 ppm. These values could be expected to be encountered during demolition/excavation activities, although currently contamination of air is not reasonably expected to occur in excess of applicable standards.

^C Soil contamination (both surface and subsurface) has been documented in excess of standards at several locations throughout the facility (RFI, 2000). Seven organic contaminants (1,4-dioxane, benzene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chloroform, and dibenz(a,h)anthracene) were found at levels in surface soil exceeding EPA Region IX's Preliminary Remediation Goals (PRGs). Three inorganic compounds (antimony, arsenic, and lead) were also found to exceed standards. The same seven organic contaminants were found in sub-surface soil exceeding PRGs, while only lead and arsenic exceeding PRGs in subsurface soil. The following tables provide the results of soil contamination at the facility that exceeds EPA Region IX's PRGs.

Results of Surface Soil Sampling*						
Contaminant	# detects	# samples	min	max	Region IX PRGs	
					Residential	Industrial
<i>1,4-dioxane (ppb)</i>	1	86	830	24,000	44	2,200
<i>benzene (ppb)</i>	68	133	1	15,000	650	1,500
<i>benzo(a)anthracene (ppb)</i>	111	133	19	45,000	620	2,900
<i>benzo(a)pyrene (ppb)</i>	111	133	23	29,000	62	290
<i>benzo(b)fluoranthene (ppb)</i>	106	133	19	27,000	620	2,900
<i>chloroform (ppb)</i>	2	86	2	240	240	520
<i>dibenz(a,h)anthracene (ppb)</i>	88	133	30	15,000	62	290
<i>antimony (ppm)</i>	82	134	0.14	38.6	31	820
<i>arsenic (ppm)</i>	134	134	1.2	75	0.39	2.7
<i>lead (ppm)</i>	165	165	2.5	728	400	750

*TPI Petroleum RFI, 2000

Results of Sub-surface Soil Sampling*						
Contaminant	# detects	# samples	min	max	Region IX PRGs	
					Residential	Industrial
<i>1,4-dioxane (ppb)</i>	1	88	3,030	50,000	44	2,200
<i>benzene (ppb)</i>	85	135	1	12,000	650	1,500
<i>benzo(a)anthracene (ppb)</i>	82	134	24	20,000	620	2,900
<i>benzo(a)pyrene (ppb)</i>	77	134	18	20,000	62	290

Results of Sub-surface Soil Sampling*						
Contaminant	# detects	# samples	min	max	Region IX PRGs	
					Residential	Industrial
<i>benzo(b)fluoranthene (ppb)</i>	68	134	30	9,400	620	2,900
<i>chloroform (ppb)</i>	11	135	1	2,000	240	520
<i>dibenz(a,h)anthracene (ppb)</i>	52	134	39	4,400	62	290
<i>arsenic (ppm)</i>	134	134	0.89	15.1	0.39	2.7
<i>lead (ppm)</i>	165	165	1.9	874	400	750

*TPI Petroleum RFI, 2000

^D Surface water contamination may occur via storm water runoff from process areas, direct groundwater discharge to the river, and NPDES permitted discharge. However, contamination in surface water is not known or reasonably expected to exceed applicable standards for any contaminants. Results of data from a 1990 Surface Water and Sediment Characterization Report indicate levels of contamination, upstream, downstream, at the facility's outfall. The river was sampled on a seasonal quarterly basis to determine characteristics over time. Trace heavy metals and organic contaminants were found in both upstream, downstream, and at the facility's discharge point as provided in the tables below.

Results of Fall 1989 Surface Water Sampling at the facility*							
Contaminant	Surface			Mid-Depth			MCL
	Up	Dis	Down	Up	Dis	Down	
<i>Xylene (ppb)</i>	2	-	-	-	-	.6	10,000
<i>Trichloroethylene (ppb)</i>	5.1	5.2	4.8	-	-	-	5
<i>Toluene (ppb)</i>	5.5	6.0	-	-	-	-	1,000
<i>Carbon Tetrachloride (ppb)</i>	-	3.3	-	-	-	-	5
<i>Mercury (ppm)</i>	.0003	-	-	.0003	.0002	-	.002
<i>Barium (ppm)</i>	-	0.4	0.3	0.3	0.3	0.4	2
<i>Lead (ppm)</i>	-	-	-	.063	.032	.08	.015
<i>Nickel (ppm)</i>	-	-	-	.14	.13	-	-

*Surface Water & Sediment Characterization Report, 1990

<i>Results of Winter 1989/1990 Surface Water Sampling at the facility*</i>							
Contaminant	<i>Surface</i>			<i>Mid-Depth</i>			MCL
	<i>Up</i>	<i>Dis</i>	<i>Down</i>	<i>Up</i>	<i>Dis</i>	<i>Down</i>	
<i>Xylene (ppb)</i>	-	-	4J	1J	-	18	10,000
<i>Ethyl benzene (ppb)</i>	-	-		-	-	4J	700
<i>Chloroform</i>	1J	1J	1J	1J	-	-	0.1**
<i>Chromium</i>	-	-	-	.0052	.0072	-	0.1
<i>Mercury (ppm)</i>	-	-	-	-	-	.00054	.002
<i>Barium (ppm)</i>	.138	.134	.140	.138	.137	.138	2
<i>Lead (ppm)</i>	.003	.003	.0068	.0038	.0124	.0126	.015
<i>Nickel (ppm)</i>	-	-	.0209		.048	.0488	-
<i>Vanadium</i>	-	-	-	.0101	.0113	-	-

*Surface Water & Sediment Characterization Report, 1990

** Total Trihalomethanes

<i>Results of Spring 1990 Surface Water Sampling at the facility*</i>							
Contaminant	<i>Surface</i>			<i>Mid-Depth</i>			MCL
	<i>Up</i>	<i>Dis</i>	<i>Down</i>	<i>Up</i>	<i>Dis</i>	<i>Down</i>	
<i>Barium (ppm)</i>	0.182	0.173	0.169	0.185	0.165	0.183	2
<i>Lead (ppm)</i>	-			.0137	.0152	.0103	.015
<i>Nickel (ppm)</i>	-				.0424	.0342	-

*Surface Water & Sediment Characterization Report, 1990

<i>Results of Summer 1990 Surface Water Sampling at the facility*</i>							
Contaminant	<i>Surface</i>			<i>Mid-Depth</i>			MCL
	<i>Up</i>	<i>Dis</i>	<i>Down</i>	<i>Up</i>	<i>Dis</i>	<i>Down</i>	
<i>Barium (ppm)</i>	0.146	0.150	0.153	0.148	0.152	0.158	2
<i>Lead (ppm)</i>	0.005			0.063	0.0074	0.0102	0.015
<i>Nickel (ppm)</i>	0.0188	0.0193		0.022	0.026	0.0443	-

*Surface Water & Sediment Characterization Report, 1990

^E Sediments located at the facility have not been documented in excess of standards for the contaminants found at the facility. Sediment data exists from a 1990 Surface Water & Sedimentation Characterization Report. This report characterizes sediment samples taken upstream, downstream, and at the facility's discharge point into the Walnut River. Xylene, benzene, ethylbenzene, chlorobenzene, Di(N)Butylphthalate, Barium, Chromium, Lead, and Nickel. As depicted below, it appears that minor contamination of sediments is found in the vicinity of the facility, however none of the samples exceeded EPA Region IX's PRGs for residential soil. MCLs for water are also shown for comparative purposes.

Results of 1989 Sediment Sampling at the facility*					
Contaminant	Upstream	Discharge	Downstream	Reg IX PRG (Res.)	MCL
Xylene (ppb)	9.9	6.2	2.4	210,000 ppb	10,000 ppb
Benzene (ppb)	ND	0.7	ND	650 ppb	5 ppb
EthylBenzene (ppb)	1.7	ND	ND	230,000 ppb	700 ppb
Chlorobenzene (ppb)	1.8	ND	ND	150,000 ppb	100 ppb
Di(N) Butylphthalate (ppb)	0.7	3.2	0.9	6,100,000 ppb	-
Barium (ppm)	100	120	100	5,400	2 ppm
Chromium (ppm)	10	10	12	2,100 ppm	0.1 ppm
Lead (ppm)	23	31	8	400 ppm	.015 ppm
Nickel (ppm)	ND	ND	.09	1,600 ppm	-

*Surface Water & Sediment Characterization Report, 1990

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.

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)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	No	Yes	No	Yes	No	No	No
Air (indoors)							
Soil (surface, e.g., <2 ft)	No	Yes	No	Yes	No	Yes	No
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)	No	Yes	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):

A direct and complete pathway exists for worker and construction worker exposure to groundwater at the facility. the facility currently operates a groundwater treatment system that recovers free product from groundwater. Workers who operate this system may be expected to come in contact with groundwater in day-to-day operation of the system. Likewise, any construction workers that may install additional monitoring wells or extraction wells at the facility may also be expected to come in contact with groundwater during well installation and development. It is unlikely that any other direct exposure pathways exist for groundwater/worker contact at the site. No direct and/or complete pathway is expected for residents as ground water flows northeasterly towards the Walnut River and away from residences found to the west of the facility. Additionally, residents of Arkansas City utilize surface water, and no drinking water wells are found in the immediate vicinity of the facility (RFI, 2000). No day care facilities are located on site and site reconnaissance of the immediate neighborhood surrounding the facility found no day care facilities (Memo: Total Petroleum Trip Report, 2001 (EPA, 2001)). The facility is entirely enclosed by fencing, and site reconnaissance during a visit to the site found no indications of trespassing at the site (EPA, 2001). Additionally groundwater wells are locked. Accordingly, no direct and/or complete pathway exists for contaminated groundwater to reach trespassers. The only observed incidences of a possible complete pathway to recreation was identified by a seeps from groundwater to surface water at two locations at the facilities boundary. Sheet piling was installed at both of these areas, and currently a free-product recovery system is operated which captures ground water for treatment. Evaluation during a site visit and during the conduct of the RFA did not identify contamination in either of these areas (EPA, 2001, RFA 1992). Accordingly, no direct and/or complete pathway exists for contaminated groundwater to reach humans via recreational sources. No aboveground or belowground vegetables, crops, or fruit bearing trees were found at the facility which would be exposed to contaminated soil. The site reconnaissance also did not identify any farms in the immediate vicinity of the facility where humans might be exposed to contaminated groundwater, and as indicated previously ground water flows northeasterly towards the Walnut River and away from residences found to the west of the facility.

A direct and complete pathway exists for worker and construction worker exposure to surface soil and subsurface soil at the facility. No active refinery activities currently take place at the facility, with the exception of asphalt storage. The facility is undergoing demolition activities for all existing former refinery processes. Workers and construction workers can be expected to be exposed to surface soil during both remediation activities and demolition activities. Residences are located to the west of the facility boundary, however background samples taken at the western borders of the facility did not indicate contamination. Additionally, groundwater flow is northeasterly to easterly in the vicinity of the facility, so there is no reasonable expectation that contaminants may have migrated to subsurface soils under residences via the groundwater. No day care facilities are located on site and site reconnaissance of the immediate neighborhood surrounding the facility found no day care facilities. The facility is entirely enclosed by fencing, and site reconnaissance during a visit to the site found no indications of trespassing at the site. There is a remote but complete pathway for contaminated surface soil to reach recreation activities such as hunting, fishing, and boating. The majority of the facility is either covered by concrete (in older process areas) while most other areas are covered with local ground cover.

However, some areas do witness exposed soil, and future demolition activities are likely to continue to expose such soil along the southern and eastern perimeter of the facility which may be blown via strong winds (the prevailing wind is from the south at an annual mean speed of 13 mph) to either the north and recreation activities on the Walnut River, or to the south and recreation activities in the Kaw Wildlife Reserve. Subsurface soil does not have the same direct and complete pathway for contaminants to reach recreation sources. No aboveground or belowground vegetables, crops, or fruit bearing trees were found at the facility which would be exposed to contaminated soil. The site reconnaissance also did not identify any farms in the immediate vicinity of the facility which might be exposed to contaminated surface soil should wind deposited surface soil be carried off-site. Accordingly, no direct or complete pathway currently exists for contaminated surface or subsurface soil to reach food

³ Indirect Pathway/Receptor (e.g., 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)?

_____ 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.”

 X 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):

While an exposure pathway exists for surface soil contaminants to reach recreational sources, this exposure can not be reasonably expected to be significant as it is unlikely to exceed in either intensity, frequency or duration, acceptable contaminant levels. Additionally, as noted in Section 3, the only reasonably complete exposure pathway to recreational sources is surface soil, thereby negating the cumulation of contaminants from multiple exposure pathways.

Although groundwater contamination exceeds MCLs for several contaminants, worker or construction worker exposure to contaminants in ground water is expected to be insignificant. Due to the nature of ongoing work and remediation, any exposure can reasonably be expected to be incidental and consist primarily of dermal contact. However, worker and construction worker exposure to contaminants in surface soil and subsurface soil may be expected to be significant. Sampling data from the RFI indicates that contaminant levels may exceed Risk Based Standards for several contaminants. Since workers and construction workers are expected to continue demolition and remediation activities at the site, there exists the potential for significant exposure to soil and subsurface soil.

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?

 X 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):

As previously indicated, any significant exposures that are expected to occur at the facility are likely to be associated with future remediation and corrective action activities and current interim measures work. Sampling data from the RFI indicates that contaminant levels may exceed MCLs or Risk Based Standards for several contaminants, which are likely to be encountered during remediation activities. As part of these activities, the facility will be required to develop and submit to EPA for approval, a Health and Safety Plan (HSP) that will address exposure to potential contaminants during remediation. All future remediation work at the facility will be conducted in accordance with this HSP. Adherence to this HSP will ensure that any exposure to contaminants of concern will be therefore acceptable, and will not expose either workers or construction workers to levels of contaminants without proper protection. All current work is in accordance with an existing HSP for interim measures activities.

6. Check the appropriate RCRA Info 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 TPI Petroleum facility, EPA ID #KSD087418695, located at Arkansas City, Kansas 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.

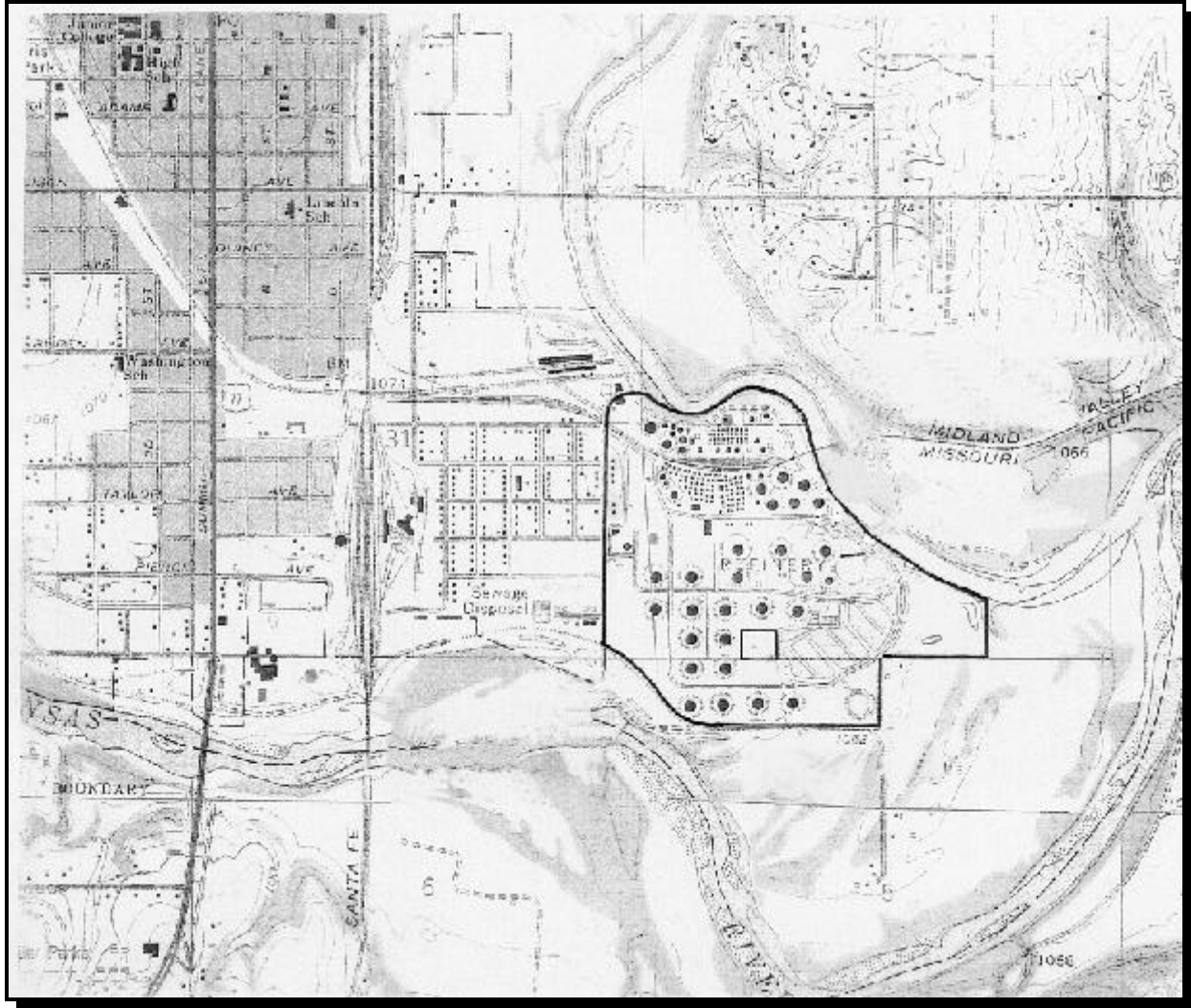
Completed by original signed by
Jeffery Scott Robichaud
Environmental Engineer

Date January 8, 2002

Facility: Total Petroleum

CA725

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**Map of
Total Petroleum Facility, Arkansas City, Kansas**

Supervisor _____ original signed by
John Smith
Chief, RCAP Branch
Region 7

Date January 8, 2002

Locations where References may be found:

The referenced documents may be found in the EPA Region 7 RCRA Records center and at the Kansas Department of Health and Environment.

Contact telephone and e-mail numbers:

Jeffery S. Robichaud

Facility: Total Petroleum

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913-551-7146

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FINAL NOTE: THE HUMAN EXPOSURES \mathbf{E} 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.