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Proposed
Remedial Action Document
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J.C. Pennco Waste Oil Service

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February 19, 2004

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PROPOSED REMEDIAL ACTION DOCUMENT



J.C. PENNCO WASTE OIL SERVICE
PROPOSED STATE SUPERFUND SITE
SAN ANTONIO, BEXAR COUNTY, TEXAS

February 19, 2004

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REMEDATION DIVISION***

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I. INTRODUCTION

The J.C. Pennco Waste Oil Service Proposed State Superfund Site (Pennco Site) is located at 4927 Higdon Road, southeast of San Antonio, just outside the city limits in Bexar County, Texas. The Pennco Site consists of a rectangular piece of land occupying approximately 5 acres. The Pennco Site is bordered by Higdon Road to the south and farmland across the road, farmland to the north, and residential property and light industry to the east and west. The Pennco Site was the location of a former waste oil recycling facility. In addition to this original facility, the Pennco Site consists of all contaminated property impacted by the source site (off-site), as well as the source site itself (on-site). Historic activities at the Pennco Site resulted in the contamination of soil and groundwater, with heavy metals, chlorinated and nonchlorinated hydrocarbons and other chemicals of concern (COCs).

The Texas Commission on Environmental Quality (TCEQ) is an agency in the State of Texas given responsibility for implementing the laws of the state relating to the conservation of natural resources and the protection of public health and safety and the environment. The TCEQ addresses certain sites that may constitute an imminent and substantial endangerment to public health and safety or the environment through the state Superfund program.

II. PURPOSE

This *Proposed Remedial Action Document* (PRAD) presents the proposed *Remedial Action* (also known as the remedy) for the Pennco Site, which is designed to address the contamination and provide protection of public health and safety and the environment. Words appearing in italics in this document are defined in Section X, "Glossary" of this PRAD.

- A. The purpose of this document is:
 - 1. to describe the actions taken by the TCEQ and the US Environmental Protection Agency (EPA), to investigate the contamination, including any mitigating actions;
 - 2. to describe the proposed *Remedial Action* and solicit public review and comment on that proposed *Remedial Action*; and
 - 3. to provide information on how the public can comment on the proposed *Remedial Action*.

- B. This PRAD summarizes information that can be found in greater detail in various studies and reports located in the Pennco Site files. Relevant documents are identified and summarized in Part V, "Summary of Reports" of this PRAD.

The TCEQ encourages the public to review these documents to gain a better understanding of the Pennco Site, the state Superfund process, the actions taken by the TCEQ and the EPA, and the actions proposed by the TCEQ to address the threats presented by the Pennco Site. Copies of the documents summarized in this PRAD, as well as other relevant information, can be viewed at the local repository:

McCreless Branch Library
1023 Ada Street
San Antonio, Texas 78223
(210) 532-4254 (also TTY)
Facsimile: (210) 533-0041

or in Austin at the TCEQ Records Management Center:

Building E, 1st Floor
12100 Park 35 Circle
Austin, Texas 78753
(512) 239-2920

III. LEGAL AUTHORITY

The investigation of the nature and extent of contamination at the Pennco Site and the selection of the proposed *Remedial Action* is in accordance with the *Solid Waste Disposal Act* (codified as Chapter 361 of the Texas Health and Safety Code); Subchapter K: Hazardous Substance Facilities Assessment and Remediation rules found in Chapter 335 of 30 Texas Administrative Code (Subchapter K); and the *Texas Risk Reduction Program* (TRRP) rules found in Chapter 350 of 30 Texas Administrative Code.

While the Subchapter K rules are specific to the Superfund process, the TRRP rules are a comprehensive program for addressing environmental contamination and apply to many different types of corrective action administered by the TCEQ. The TRRP rules establish procedures for determining the concentration of contaminants to which a person or other environmental receptor can be exposed without unacceptable risk of harm. These acceptable concentration levels are called *Protective Concentration Levels* (PCLs).

A three-tiered approach may be used under the TRRP rules to calculate the PCLs for a site. The tiers represent increasing levels of evaluation where site-specific information is factored into the process. For example, Tier 1 uses conservative, generic models that do not account for site-specific factors, Tier 2 allows for the use of site-specific information, but must use PCL equations provided by the TCEQ, and Tier 3 allows for more detailed and complex evaluations so that PCLs are appropriate for specific site conditions. The PCLs for the Pennco Site were developed under Tier 1 for groundwater and Tier 2 for soil.

Critical to the analysis under all three of the tiers is the land use classification for the site. Under the TRRP rules, the land can be classified as either residential or commercial/industrial. Remediation to residential standards assumes that the site may be occupied by children and therefore is applicable not only to strictly residential land but also to playgrounds, schools, daycare centers and similar land uses. Remediation to commercial/industrial standards assumes that the site will not be regularly occupied by children and is protective of persons who may occupy the site as workers. Sites remediated to commercial/industrial

standards cannot be used for residential-type activities unless further controls are implemented to make the site safe for that use. The TCEQ determined that a residential use was appropriate for the Pennco Site.

The TRRP rules allow risks posed by the presence of contamination above a PCL to be managed by any combination of the following: 1) removal or decontamination of contaminated media; 2) physical controls such as landfills and caps which limit exposure to the contaminated media; or 3) *institutional controls* such as deed restrictions on the future use of the property which are also intended to limit exposure to the contaminated media. These remedies under the TRRP rules are divided into two main categories. Remedies which do not rely on physical or *institutional controls* are considered to meet TRRP "Remedy Standard A." Remedies which utilize physical or *institutional controls* are considered to meet TRRP "Remedy Standard B." These standards are described in detail in 30 Texas Administrative Code Section 350.32 and Section 350.33, respectively.

IV. SITE HISTORY

The J.C. Pennco Waste Oil Service Pennco Site was in operation from 1984 until April 1992. During this time, the Pennco Site received an unknown quantity of drums with used chemicals such as motor oil, antifreeze and solvents. Reportedly, most of the oil and other chemicals were sold for recycling. The drums were sold for use as livestock feeders, trash receptacles and barbeque pits. Contamination resulted at the Pennco Site from spills and discharges from the oil storage tanks and barrel cleaning activities. A TCEQ investigation in 1991 discovered similar solvents in a nearby residential well as were found on the Pennco Site. In May 1992, the owner of the Pennco Site filed for bankruptcy protection and the Pennco Site was abandoned. In 1994 the TCEQ installed a fence around the Pennco Site and the EPA funded an extension of the San Antonio Water System to provide a safe domestic water supply to eight residences which had previously relied on wells found to be contaminated. Based on the results of the RI at the Pennco Site, it does not appear that the contamination found in these wells originated from the site. In 1995 and 1996, the EPA removed approximately 4,000 drums, 120 cubic yards of soil and debris, 31,500 gallons of liquid wastes and 23 tanks from the Pennco Site. In November 1996, the EPA referred the Pennco Site back to the state for further remedial action.

V. SUMMARY OF REPORTS

A. HAZARD RANKING SYSTEM REPORT

The *Hazard Ranking System* (HRS) is a numerically-based screening system that uses information from initial, limited investigations to assess whether a site qualifies for the state or federal Superfund program. Sites scoring 28.5 or greater may qualify for the federal Superfund program, while sites scoring 5 or greater may qualify for the state Superfund program. The HRS scoring for the Site was prepared by the TCEQ in July 1994 (note that this was before the EPA removal action described above) and is presented in the report titled "Hazard Ranking System Assessment, J.C. Pennco Waste Oil Service, San Antonio, Texas, Bexar County". The Pennco Site earned a score of 42.68. Following completion of the EPA removal actions described in the "Site History" section above, the TCEQ determined that additional investigation actions were warranted and proposed the Pennco Site to the State Registry of Superfund Sites on August 26, 1997, *Texas Register*, (22 TexReg 8570-8571) and acceptance into the state Superfund program.

B. *REMEDIAL INVESTIGATION* REPORTS

The *Remedial Investigation* (RI) includes field work, laboratory analysis and interpretation of collected data for the purpose of determining the nature and extent of contamination associated with the Pennco Site. The following reports, which are available at the repositories mentioned above, present the detailed findings of each phase of the RI:

- Phase I *Remedial Investigation* Report, January 2001. This report includes the results of the first phase of the RI at the Pennco Site. During this phase of the RI, a total of 156 soil borings were completed, and 514 soil samples were collected for analyses of volatile and semi-volatile organic compounds (VOCs and SVOCs, respectively), pesticides and metals, all considered Pennco Site COCs. In addition, 10 shallow groundwater monitor wells were installed within the Pennco Site. Groundwater samples were collected from the onsite wells and six offsite wells and analyzed for the same Pennco Site COCs.
- Phase II RI Technical Memorandum (TM), October 2002. This TM includes the results of the second phase of the RI at the Pennco Site. Seven additional soil and sediment samples were collected and analyzed for lead and selenium, and three additional monitor wells were installed and analyzed for heavy metals and volatile organic constituents. Additionally, groundwater samples were analyzed for monitored natural attenuation indicator parameters.
- Groundwater Resource Classification Report, January 2003. This report includes a determination of the classifications of the shallow groundwater found at the Pennco Site.
- Tier 1 Ecological Risk Exclusion Criteria Checklist, TCEQ, August 2003. This document assesses the need to conduct further ecological risk assessments at the Pennco Site.
- *Remedial Investigation* Report, October 2003. This document, also known as the Affected Property Assessment Report, presents a detailed summary of all phases of the *Remedial Investigation* and includes an evaluation of the critical PCL's at the Pennco Site.

The following is a summary of the findings of the *Remedial Investigation*:

- Groundwater - There are two distinct groundwater-bearing zones beneath the Pennco Site: the Leona Formation, which consists of a perched groundwater system underlies the north end of the Pennco Site; and, the deeper Wilcox Formation, which underlies the entire Pennco Site (dipping below the Leona Formation).

Based on field investigations the shallow Leona Formation is determined to be a Class 2 groundwater resource. Class 2 groundwater resources meet both quality (not considering potential Pennco Site contaminants) and yield criteria which make them suitable for human consumption or agricultural use. The RI also revealed that the Leona Formation under the Pennco Site is impacted by cadmium, arsenic, benzene and vinyl chloride at concentrations exceeding the PCL applicable to Class 2 groundwater resources.

The Wilcox Formation under the Pennco Site was determined to be a Class 3 groundwater resource based on its limited and erratic yield characteristics. Class 3 groundwater resources are generally considered to not be suitable for human consumption or agricultural use and therefore do not have cleanup criteria as stringent as those applied to Class 2 groundwater resources. The RI determined that the Wilcox Formation has not been impacted by any Pennco Site contaminant at concentrations exceeding the PCL applicable to Class 3 groundwater resources.

- Onsite Soil - It should be noted that the RI reflects the condition of the soil remaining onsite after the substantial removal action conducted by the EPA. No constituents were found in onsite soils exceeding any applicable PCL.
- Offsite Soil/Sediment - No offsite soil or sediment contamination was detected.
- Ecological Risks - The Tier 1 Exclusion Criteria Checklist determined that there are incomplete or insignificant ecological exposure pathways due to the nature of the Pennco Site, therefore no further ecological risk assessments or mitigation are warranted.

C. *FEASIBILITY STUDY* PHASE REPORTS

- The *Pre-Feasibility Study* Technical Memorandum (Pre-FS TM) for Soil, August 2003, concluded that no additional remedial action related to soil is required at the Pennco Site because no contaminants were found in soil exceeding PCLs.
- The Pre-FS TM for Groundwater, November 2003, concluded that there are no data gaps with respect to identifying a remedial action for groundwater.
- The Presumptive Remedy Document (PRD) for Groundwater, February 2004, presented an evaluation of potential remedial alternatives to address the cadmium, arsenic, benzene and vinyl chloride found exceeding the PCL in the Leona Formation groundwater. That evaluation is summarized in the following section of this PRAD.

VI. EVALUATION OF REMEDIAL ACTION ALTERNATIVES

In accordance with 30 Texas Administrative Code Section 335.348(l) and the requirements of Section 361.193 of the *Solid Waste Disposal Act*, the TCEQ selects the *Remedial Action* for a site by determining which remedial alternative is “the lowest cost alternative which is technologically feasible and reliable, effectively mitigates and minimizes damage to the environment, and provides adequate protection of the public health and safety and the environment.” (30 T.A.C. § 335.348(l)).

The *Remedial Action* for the Pennco Site was selected using the process outlined in the presumptive remedy document “Presumptive Remedies for Groundwater at Texas State Superfund Sites” (TNRCC, January 1999) (Groundwater PRD) as required by 30 Texas Administrative Code Section 335.348(k). The process used to develop and apply the Groundwater PRD very closely parallels the process used to develop a site-specific *Feasibility Study*. The presumptive remedy process utilizes historic data from a range of Superfund sites to evaluate a variety of remedial alternatives and identify that which best meets the criteria

described above for selection as the *Remedial Action* for sites having characteristics similar to those evaluated by the authors of the presumptive remedy document.

One of the first steps in applying the Groundwater PRD is the determination of *Remedial Action Objectives* and cleanup goals (Action Levels) for the site. For the Pennco Site, those objectives and goals (Action Levels) were selected based on the Tier 1 PCLs for Class 2 groundwater resources established in TRRP. Those objectives and Action levels are presented in the following table for the specific COCs found at the Pennco Site:

GROUNDWATER CONTAMINANT NAME	ACTION LEVEL (Critical PCL)	REMEDIAL ACTION OBJECTIVES
METALS		
Arsenic	0.010 mg/L	reduce contaminant concentration to levels protective of persons which may drink the groundwater (groundwater ingestion PCL)
Cadmium	0.005 mg/L	
VOLATILE ORGANIC COMPOUNDS		
Benzene	0.005 mg/L	reduce contaminant concentration to levels protective of persons which may drink the groundwater (groundwater ingestion PCL)
Vinyl Chloride	0.002 mg/L	

Using the procedure described in the Groundwater PRD, it was determined that the characteristics and contaminants at the Pennco Site were consistent with a group of sites considered appropriate for use of the presumptive remedy approach. For the conditions found at the Pennco Site, the Groundwater PRD remedial alternatives include a variety of groundwater containment and active groundwater extraction and treatment methods. However, considering all of the criteria for selection of a *Remedial Action*, the Groundwater PRD concluded that Monitored Natural Attenuation is the remedial alternative which best meets the criteria for selection as the Remedial Action for the Pennco Site.

Natural attenuation is defined as the reduction in mass or concentration of a COC over time or distance from the source of a COC due to naturally occurring physical, chemical and biological processes such as: biodegradation, dispersion, dilution, adsorption and volatilization. Monitored Natural Attenuation refers to those natural processes occurring within the context of a carefully controlled and monitored *Remedial Action* to achieve PCLs at a point of exposure. For the Pennco Site the proposed implementation of Monitored Natural Attenuation would include the installation of additional monitoring wells, the collection and analysis of groundwater samples and computer modeling. These activities are designed to allow TCEQ to predict the specific rate of change in the concentration or mass of contaminants, predict the time that will be required to achieve the Remedial Objectives (reach the contaminant action levels), and ensure that the COC concentrations exceeding PCLs do not extend significantly beyond the limits of the current area of contamination.

Also in accordance with TRRP, the TCEQ would establish a Plume Management Zone (PMZ) by recording *institutional controls* in the real property records of Bexar County. The *institutional control* would be placed on each property which overlies groundwater contaminated above the PCLs and would describe the specific area of the PMZ on each affected property. The *institutional controls* would remain in place until such time as the TCEQ has determined that the Action Levels have been permanently achieved. If the *Remedial Action* is implemented by the TCEQ, TCEQ would request that the owner of each affected property voluntarily agree to record a restrictive covenant to serve as the *institutional control*, but if the property owner does not agree to the restrictive covenant, the TCEQ would record a deed notice to serve as the *institutional control*. If the *Remedial Action* is implemented by a *PRP*, the *PRP* would be responsible to secure the *institutional control* from the owner of the affected property. All of the elements of the *Remedial Action* described above are in accordance with detailed requirements established in TRRP and would meet the criteria established for "Remedy Standard B."

VII. THE PROPOSED REMEDIAL ACTION

The TCEQ proposes Monitored Natural Attenuation with a Plume Management Zone established by institutional controls as the proposed *Remedial Action* for the shallow groundwater at the Pennco Site. This proposed *Remedial Action* is described in detail in Part VI. of this PRAD.

VIII. COMMUNITY PARTICIPATION IN THE SUPERFUND PROCESS

The public is invited to comment on the proposed *Remedial Action* for the Pennco Site. Those wanting to make oral comments may do so at the public meeting scheduled for March 30, 2004 at 7:00 P.M. at Salado Intermediate School Cafetorium, 3602 South W. W. White Road, San Antonio, Bexar County, Texas. The public meeting is legislative in nature and is not a contested case hearing under Chapter 2001 of the Texas Government Code. The public comment period begins February 27, 2004, and ends on March 30, 2004, at the close of the public meeting. During this time period, the public may comment on the proposed *Remedial Action* or give additional information regarding the Pennco Site or the identification of *Potentially Responsible Parties* (PRPs). Written comments concerning the proposed remedial action submitted prior to the public meeting, must be received by 5:00 p.m. on Monday, March 29, 2004. Comments should be submitted to:

Carol Boucher, PG, Project Manager
Superfund Cleanup Section (MC 143)
Remediation Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087
Facsimile: (512) 239-2450
email: cboucher@tceq.state.tx.us

Any questions not addressed at the public meeting will be addressed in writing by the TCEQ after the meeting and will be placed in the Pennco Site files.

IX. REMAINING STEPS IN THE SUPERFUND PROCESS

After the end of the public comment period described above, and after considering all comments received relating to the proposed *Remedial Action*, the TCEQ will select the *Remedial Action* to implement at the Pennco Site.

Any PRPs are then allowed a period of 60 days to make an offer to fund or perform the selected remedy. If any PRPs make an offer, they will be allowed an additional 60 days to negotiate the terms of an order to fund or perform the selected remedy. Whether or not PRPs come forward to fund or perform the remedy, the TCEQ will issue a final administrative order as provided by Section 361.188 of the *Solid Waste Disposal Act* (188 Order). At that time, the Pennco Site will no longer be considered a “proposed” state Superfund site but will then be “listed” on the State Registry of Superfund Sites. The State Registry is a list of sites that pose an imminent and substantial endangerment to public health and safety or the environment.

Following issuance of the 188 Order, either the PRPs or the TCEQ will complete the detailed design of the selected remedy and cause that remedy to be implemented in its entirety. At any time in this process, the TCEQ may determine that a *minor change*, *significant change*, or *fundamental change* should be made to the *Remedial Action*. If a *minor change* is implemented, the TCEQ will document the change in the Pennco Site files without the necessity for another public meeting. If a *significant change* is made, a notice describing the changes will be posted in the Texas Register and in a newspaper of general circulation in the county where the Pennco Site is located. If a *fundamental change* is considered, another public comment period and public meeting will be held to discuss that fundamentally changed proposed remedy.

Upon completion of the *Remedial Action*, the TCEQ may propose to delete the Pennco Site from the State Registry of Superfund Sites. A public meeting will be held before the Pennco Site is deleted from the State Registry.

X. GLOSSARY

Feasibility Study - A description, screening, and analysis of the potential *Remedial Action* alternatives for a site.

Fundamental change - A change to the *Remedial Action* which uses a different approach to achieve the remedial action goals, or one that uses the same approach but results in a remedial action that is less protective than the originally proposed remedial action.

Hazard Ranking System (HRS) - The scoring system used by the TCEQ to evaluate a site for the state or federal Superfund program. The scoring system was developed by the U.S. Environmental Protection Agency (EPA) as described in 40 Code of Federal Regulations Part 300, Appendix A.

Institutional Control - A legal instrument placed in the property records in the form of a deed notice, restrictive covenant, or other form established in the TRRP rules which indicates the limitations on or conditions governing the use of the property which ensures protection of human health and the environment.

Minor change - A change to the *Remedial Action* which does not significantly affect the scope, performance, or cost of the originally proposed *Remedial Action*.

Potentially Responsible Parties (PRPs) - Persons or entities that the TCEQ considers potentially responsible for the contamination of the site pursuant to Section 361.271 of the Texas Health and Safety Code.

Proposed Remedial Action Document (PRAD) - The document which describes the TCEQ's proposed *Remedial Action*.

Protective Concentration Level (PCL) - The concentration of a chemical of concern which can remain within the source medium and not result in levels which exceed the applicable human health risk-based exposure limit or ecological protective concentration level at the point of exposure for that exposure pathway.

Remedial Action - An action, including remedial design and post- closure care, consistent with a remedy taken instead of or in addition to a removal action in the event of a release or threatened release of hazardous substances into the environment to prevent or minimize the release of a hazardous substance so that the hazardous substance does not cause an imminent and substantial endangerment to present or future public health and safety or the environment.

Remedial Investigation - An investigative study which may include removals, and/or a *feasibility study*, in addition to the development of *protective concentration levels*, designed to adequately determine the nature and extent of release or threatened release of hazardous substances and, as appropriate, its impact on air, soils, groundwater and surface water, both within and beyond the boundaries of the facility.

Significant change - A change to the *Remedial Action* which materially affects the scope, performance, or cost of the *Remedial Action* but which uses the same approach and results in a *Remedial Action* at least as protective as the originally proposed *Remedial Action*.

Solid Waste Disposal Act - Chapter 361 of the Texas Health and Safety Code. The purpose of the *Solid Waste Disposal Act* is to safeguard the health, welfare, and physical property of the people and to protect the environment by controlling the management of solid waste, including any hazardous waste that is generated. Subchapter F of Chapter 361 relates to the state Superfund process. The Texas Health and Safety Code is available online at: <http://www.capitol.state.tx.us/statutes/statutes.html>.

Texas Risk Reduction Program (TRRP) - A program of the TCEQ that provides a consistent corrective action process directed toward protection of human health and the environment balanced with the economic welfare of the citizens of the state. The rules for this program are located in Chapter 350 of 30 Texas Administrative Code. The Texas Administrative Code is available online at: <http://www.sos.state.tx.us/tac/>.