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**Proposed**  
**Remedial Action Document**  
for  
**Spector Salvage Yard**

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**January, 2007**

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# PROPOSED REMEDIAL ACTION DOCUMENT



## SPECTOR SALVAGE YARD PROPOSED STATE SUPERFUND SITE ORANGE, ORANGE COUNTY, TEXAS

January 2007

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REMEDATION DIVISION***

**SPECTOR SALVAGE YARD  
PROPOSED STATE SUPERFUND SITE  
ORANGE, ORANGE COUNTY, TEXAS  
PROPOSED REMEDIAL ACTION DOCUMENT**

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**SPECTOR SALVAGE YARD  
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**I. INTRODUCTION**

The Spector Salvage Yard state Superfund site (Spector Site) is located in the southern portion of the city of Orange. The property covers approximately 4 acres. It is bordered by Polk Street and the Union Pacific Railroad tracks to the north, Jackson Street and the Evergreen Cemetery to the south, a railroad right of way and railroad yard to the east, and the City of Orange sewage treatment plant to the west. Tenth Street divides the site into a western one-third (Lot #1) and an eastern two-thirds (Lot #2) portions. A site layout is shown on Figure 1. Historic activities at the Spector 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 Spector 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 XI, "Glossary" of this PRAD.

- A. The purpose of this document is:
  - 1. to describe the actions taken by the TCEQ 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 Spector Site files. Relevant documents are identified and summarized in Part V, "Summary of Reports" of this PRAD.

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

Orange Public Library  
220 North Fifth Street  
Orange, Texas 77630-5796  
(409) 883-1086

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 Spector 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 (T.A.C.) (Subchapter K); and the *Texas Risk Reduction Program* (TRRP) rules found in Chapter 350 of 30 T.A.C.

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 Spector Site were developed under Tier 1.

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 commercial/industrial use was appropriate for the Spector 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: Remedy Standard A and Remedy Standard B. To meet Remedy Standard A requirements, the contaminated media must be removed and/or decontaminated such that physical controls, and in most cases, *institutional controls* are not necessary to protect human and ecological receptors from unprotective levels of contamination based on the designated land use. To meet the requirements of Remedy Standard B, however, physical controls and *institutional controls* may be relied on to eliminate exposure to unprotective levels of contamination. These standards are described in detail in 30 T.A.C. § 350.32 and § 350.33, respectively. The proposed remedy at the Spector site meets the criteria established for Remedy Standard B.

#### **IV. SITE HISTORY**

The Spector Site began operations sometime after 1944, when Joe Spector purchased the property from Lucher & Moore Lumber Company. In addition to general salvage, the site owners received military surplus equipment and supplies purchased from military, industrial and chemical facilities. The salvage yard ceased operations in 1971.

The Texas Natural Resource Conservation Commission (the TNRCC, predecessor agency to the TCEQ) received a request from the City of Orange Fire Marshall in 1993 after a number of drums were discovered during site clearing activities by the City. The TCEQ inspected the site, and instructed the site owner, Sammie Spector, to complete a site investigation and cleanup. In 1994, Sammie Spector demonstrated financial inability to pay for remedial activities. In 1996, the TCEQ undertook emergency actions which included consolidating drums under one of the onsite structures, and erecting a fence to restrict access to the site. The TCEQ then undertook the investigations and prepared the reports as summarized in the following Section.

## 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 August 1998 and is presented in the report titled "Hazard Ranking System (HRS) Documentation Record, Spector Salvage Yard, Orange County, Texas." The Spector Site earned a score of 12.88. The TCEQ proposed the Spector Site to the State Registry of Superfund Sites on July 16, 1999, *Texas Register*, (24 TexReg 5593-5594) and acceptance into the state Superfund program.

### B. REMEDIAL INVESTIGATION REPORT

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 Spector Site. The RI Technical Memorandum, dated April 2004, includes a summary of the *remedial investigation* activities conducted at the site from April 2001 until June 2003. The following is a summary of the findings of the *Remedial Investigation*:

- Groundwater – The shallow groundwater beneath the site occurs in the Quaternary alluvium deposits and the uppermost unit of the Beaumont Formation, which comprise the Upper Chicot Aquifer in the Orange area. Based on field investigations, the Upper Chicot Aquifer is determined to be a Class 2 groundwater resource. Class 2 groundwater resources meet both quality (not considering potential Spector Site contaminants) and yield criteria which make them suitable for human consumption or agricultural use. The RI also revealed that the Upper Chicot under the Spector Site is impacted by carbon tetrachloride, chloroform and lead concentrations exceeding the PCL applicable to Class 2 groundwater resources.
- Soil – The shallow surface soil at the site, 0 to 1 foot below grade, has been impacted by semi-volatile organic contaminants (SVOCs), polychlorinated biphenyls (PCBs) and heavy metals, including lead and mercury. In order to prevent additional releases of hazardous substances to the shallow groundwater beneath the site, the TCEQ conducted a removal action in February and March, 2007. The removal action consisted of the excavation and offsite disposal of surface soil which contained hazardous substances in excess of TRRP Tier 1 PCLs.

- Offsite Soil/Sediment – No offsite soil or sediment contamination was detected.
- Ecological Risks – The Tier 1 Exclusion Criteria Checklist determined that there are complete ecological exposure pathways at the site, and a Tier 2 Screening Level Ecological Risk Assessment (SLERA) was conducted between February 2004 and May 2005. The Tier 2 SLERA, dated July 2005, concluded that based on conservative factors applied in calculating ecological risk at the site, it is likely that actual risk from site-related chemicals is not present.

### C. FEASIBILITY STUDY PHASE REPORT

The Focused *Feasibility Study* for Groundwater, December 2006, presented an evaluation of potential remedial alternatives to address the COCs in the site groundwater found exceeding the applicable PCLs in the Upper Chicot Aquifer. That evaluation is summarized in the following section of this PRAD.

## VI. DESCRIPTION OF REMEDIAL ACTION ALTERNATIVES

In accordance with 30 T.A.C. § 335.348(1) and the requirements of § 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(1)).

In the Focused *Feasibility Study* for Groundwater, several options for cleaning up the groundwater were evaluated, and are described below:

### Option 1 - Natural Attenuation

Natural attenuation is defined as the reduction in mass or concentration of a COC, including metals and volatile organic constituents (VOCs), 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.

### Option 2 - Sparging/Soil Vapor Extraction

Air sparging involves the injection of a gaseous medium (usually air) under pressure into the saturated zone within the areas of contamination to volatilize the VOCs dissolved in groundwater and adsorbed to soils. The volatilized contaminants are assumed to be recovered with a soil vapor extraction system.

### Option 3 - Enhanced Biodegradation

In-situ biodegradation technologies rely on indigenous or introduced microorganisms to biodegrade dissolved VOCs in groundwater to less toxic by-products under controlled subsurface conditions. Microorganisms obtain energy and carbon for growth through degradation of VOCs.

#### Option 4 - Carbon Adsorption

Liquid phase carbon adsorption involves pumping groundwater through a series of vessels containing activated carbon to which dissolved metals are adsorbed. The carbon is removed and replaced once the effluent concentration exceeds a certain limit (referred to as breakthrough).

#### Option 5 - Ion Exchange

Ion exchange removes ions from the aqueous phase by the exchange of cations or anions between the water being treated and the exchange medium. Ion exchange materials may consist of resins made from synthetic materials, inorganic and natural polymeric materials.

#### Option 6 - *Plume Management Zone (PMZ)*

A PMZ is defined as the area of the groundwater protective concentration level exceedance (PCLE) zone, plus any additional area allowed in accordance with 30 T.A.C. § 350.33(f). The PCLE zone is that area of groundwater beneath the site which contains COCs at concentrations greater than the standard groundwater cleanup levels. A PMZ modifies the standard groundwater cleanup objectives by controlling and preventing the use of and exposure to the groundwater within the PMZ by recording *institutional controls* in the real property records.

## **VII. EVALUATION OF REMEDIAL ACTION ALTERNATIVES**

The evaluation of the remedial options are based on long term effectiveness, compliance with the applicable regulations, reduction in toxicity, mobility and volume, relative cost, impacts of implementation and technical merit. Each criterion is rated on a scale from 1 to 6, with 6 being the most preferred and 1 being the least preferred.

The long term effectiveness of the groundwater remedial options is evaluated to the extent which each remedy mitigates long term exposure of residual contamination. Options 2, 3, 4 and 5 rank the highest among the six options with respect to long term effectiveness since these options include active remediation, thus there is no need for ongoing groundwater monitoring following completion of the remedy.

All six options comply with applicable regulations.

The reduction of toxicity, mobility and volume is evaluated on the basis of which option permanently and significantly reduces the volume, toxicity and mobility of the hazardous components. Options 2, 3, 4 and 5 rank the highest among the six options with respect to the reduction of toxicity, mobility and volume since these options include active remediation, thus the constituents are removed from the groundwater. Option 1 ranks the lowest as there is little evidence that natural attenuation is occurring at the site.

Relative cost is based on the present value cost, including cost of implementation and annual O&M. Options 1 and 6 were ranked first in this category. Options 4 and 5 are ranked next. Options 2 and 3 are the most expensive.

Options 2, 3, 4, and 5 rank first in impact of implementation, as future O&M is eliminated. Options 1 and 6 are ranked last, as these options include both continued groundwater monitoring and the placement of *institutional controls*.

Options 1 through 5 were found to rank the lowest in technical merit. Options 2 through 5 were found to rank low as there are both VOCs and lead in the groundwater, and each of these options address only one class of COCs (metals or VOCs). Only Options 1 and 6 were found to address both classes of COCs. Option 1 was found to rank low as an evaluation of site groundwater monitoring data did not indicate that natural attenuation of the COCs was occurring at the site. However, review of the groundwater monitoring data did indicate that the groundwater plume was stable, and not expanding, which supports Option 6, the establishment of a PMZ.

The estimated costs for all six options are presented in Table 1.

Based on this evaluation, the TCEQ proposes to establish a PMZ. A PMZ modifies the standard groundwater cleanup objectives by controlling and preventing the use of and exposure to the groundwater within the PMZ by recording *institutional controls* in the real property records. 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 the affected property. The *institutional controls* will be secured and implemented in accordance with TRRP and would remain in place unless it is demonstrated that concentrations of COCs in groundwater no longer exceed the applicable PCLs. For the Spector Site, the proposed implementation of a PMZ would also include the installation of additional monitor wells and the collection and analysis of groundwater samples to confirm that the groundwater plume remains stable, and does not expand beyond the PMZ.

## **VIII. THE PROPOSED REMEDIAL ACTION**

The TCEQ proposes that a *Plume Management Zone* established by *institutional controls* as the proposed *Remedial Action* for the shallow groundwater at the Spector Site. This proposed *Remedial Action* is described in detail in Part VII of this PRAD.

## **IX. COMMUNITY PARTICIPATION IN THE SUPERFUND PROCESS**

The public is invited to comment on the proposed *Remedial Action* for the Spector Site. Those wanting to make oral comments may do so at the public meeting scheduled for Thursday, March 29, 2007 at 7:00 P.M. in Council Chambers of the Orange Public Library Orange, 220 North 5th Street, Orange 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, 2007, and ends on March 29, 2007, 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 Spector 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 March 28, 2007. Comments should be submitted to:

Carol Boucher, P.G., Project Manager  
State Lead Section (MC 136)  
Remediation Division  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, Texas 78711-3087  
Facsimile: (512) 239-2303  
email: [cboucher@tceq.state.tx.us](mailto: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 Spector Site files.

## **X. 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 Spector 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 Spector 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 Spector 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 Spector 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 Spector Site from the State Registry of Superfund Sites. A public meeting will be held before the Spector Site is deleted from the State Registry.

## **XI. 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*.

*Plume Management Zone (PMZ)* - The area of the groundwater protective concentration level exceedance (PCLE) zone, plus any additional area allowed in accordance with 30 T.A.C. § 350.33(f).

*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 (RI)* – 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 airs, soils, groundwater and surface water, both within and beyond the boundaries of the site.

*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://tlo2.tlc.state.tx.us/statutes/hs.toc.htm>.

*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/>.



**TABLE 1**  
**Estimated Total Cost**

<b>Remedial Option</b>	<b>Estimated Cost</b>	<b>Comments</b>
1. Natural Attenuation	\$591,000	Addresses both metals and VOCs
2. Sparging/Soil Vapor Extraction	\$1,207,000	Addresses VOCs only
3. Enhanced Biodegradation	\$1,274,000	Addresses VOCs only
4. Carbon Adsorption	\$890,000	Addresses metals only
5. Ion Exchange	\$925,000	Addresses metals only
6. Plume Management Zone	\$598,000	Addresses both metals and VOCs