

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## INTEROFFICE MEMORANDUM

**To:** Mark R. Vickery, P.G., Executive Director *MPV 2-13*  
Carlos Rubinstein, Deputy Executive Director *CR 7/17/08*  
Zak Covar, Assistant Deputy Executive Director *ZC 7/14/08* **Date:** July 14, 2008

**Through:** *exposed 7/14/08* Dan Eden, Deputy Director, Office of Permitting, Remediation & Registration **CHIEF CLERKS OFFICE**

**From:** *ALB* Alan R. Batcheller, P.G., Director, Remediation Division **2008 JUL 18 PM 1:45**

**Subject:** Docket No. 2008-0759-SPF  
Executive Summary  
Consideration of a proposed Administrative Order regarding the Spector Salvage Yard State Superfund Site, Orange, Orange County, RN101649556, which includes the listing of the Site on the state registry of superfund sites, a description of the selected remedial action, and determination of responsible parties.

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

### I. Overview

The Spector Salvage Yard State Superfund site (Spector Site) is located in the southern portion of the city of Orange in Orange County. The property covers approximately four acres where historic activities resulted in the contamination of soil and groundwater with chlorinated and nonchlorinated hydrocarbons and heavy metals. The Spector Site 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 and an eastern two-thirds. The Spector Site is located on the outcrop of the Beaumont Formation, and the shallow groundwater is found in thin, discontinuous sand stringers within the Upper Chicot Aquifer. There are no current complete exposure pathways to the groundwater that is contaminated above protective concentration levels (PCLs). The entire vicinity of the Site is served by the City of Orange municipal water system.

The remainder of this memorandum summarizes the Spector Site regulatory history, characterization of nature and extent of the contamination, removal action, remedy selection process, efforts to identify responsible parties, and staff recommendation.

### II. Site Regulatory History

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

The TCEQ received notice from the City of Orange Fire Marshall in 1993 that a number of drums were discovered during site-clearing activities by the City. The TCEQ inspected the site and requested that the site operator complete a site investigation and cleanup. In 1994, the operator 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 began an evaluation of the Spector Site for inclusion in the Superfund program by completing the Hazard Ranking System (HRS) report pursuant to 30 Texas Administrative Code (TAC) § 335.343. The HRS report is a numerically based screening system that uses information from initial investigations to assess whether a site qualifies for the state or federal Superfund program. The HRS scoring for the Spector Site was prepared by the TCEQ in August 1998, and the site earned a score of 12.88, which met the minimum HRS score qualifications for the state Superfund program. On July 16, 1999, notices were published in the *Orange Leader* and the *Texas Register* (24 TexReg 5593-5594) proposing the Site for listing on the State Registry of Superfund Sites and also proposing to use commercial/industrial land use specifications for remediation of the site contamination. A public meeting to receive comment on the proposed listing and land use was held in Orange on August 19, 1999.

In accordance with Section 361.185 of the Texas Health and Safety Code (Code), the identified potentially responsible parties (PRPs) were given an opportunity to fund or perform the remedial investigation/feasibility study (RI/FS) in 1999. The PRPs did not come forward with a good faith offer (GFO) to fund or perform the RI/FS.

### **III. Characterization of the Nature and Extent of Contamination**

The TCEQ conducted the remedial investigation (RI) at the Spector Site in four phases between March 2000 and August 2005. Due to the heavy vegetation found at the site, site-clearing activities were initiated in May 2000 and completed in January 2001. Following completion of these clearing activities, site sampling and analyses were conducted in August 2001, April 2002, June 2003 and December 2004.

The August 2001 site investigation included the installation of six onsite soil borings to a depth of 26 feet and the collection of surface and subsurface soil samples from these borings. These soil borings were converted to groundwater monitor wells, and groundwater samples were collected. This phase also included the collection of 33 onsite surface soil (0 to 2 feet below grade (fbg)) samples. As the Spector Site was considered to be an uncontrolled dump site, these samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), heavy metals, pesticides and polychlorinated biphenyls (PCBs). The results of this phase of sampling and analyses activities indicated that surface soil was contaminated by VOCs, SVOCs, heavy metals, pesticides and PCBs; and groundwater was contaminated by VOCs. The Phase 1 RI Technical Memorandum (TM), dated October 17, 2001, included a summary of this phase of work and identified the need for additional onsite surface soil and offsite sediment sampling and analysis. Pursuant to 30 TAC § 350.77, a Tier 1 Exclusion Criteria Checklist, which is intended to aid the TCEQ in determining whether further ecological evaluation is necessary at a site, was also completed during this phase of the RI. Exclusion criteria refer to those conditions at a site which preclude the need for a formal ecological risk assessment because there are incomplete or insignificant ecological exposure pathways due to the nature of the affected property setting and/or the condition of the affected property media. The TCEQ concluded that additional ecological risk assessment was appropriate for the site due to the site's proximity to Adams Bayou, an estuarine wetland environment that provides habitat for wider ranging receptors.

The next phase of the RI was conducted in April 2002 and included the collection and analysis of 21 offsite sediment samples in stormwater drainage ditches adjacent to the site. The sediment samples were analyzed for heavy metals. The Phase 2 RI TM, dated June 14, 2002, concluded that a background sediment sampling exercise should be conducted to determine if the concentrations of heavy metals found in the sediment of the adjacent stormwater drainage ditches were due to waste management activities at the Spector Site. A round of groundwater samples was also collected and analyzed from the six site monitor wells.

The additional surface soil samples and the background sediment samples were collected and analyzed in June 2003. A round of groundwater samples was also collected and analyzed from the six site monitor wells. The Phase 3 RI TM, dated September 19, 2003, concluded that, based on the background study, the concentrations of heavy metals found in the sediments of the stormwater ditches adjacent to the site were not related to site waste management activities at the Spector Site. The Phase 3 RI TM further concluded that sufficient surface soil samples existed to satisfy the need identified in the Phase I RI TM. A site-specific groundwater classification was also conducted during this phase, and the groundwater was found to meet the definition of a Class 2 groundwater resource as defined at 30 TAC § 350.52.

In December 2004, surface soil samples were collected at offsite locations adjacent to the Spector Site. These soil samples were analyzed for VOCs, SVOCs, heavy metals, pesticides and PCBs. The analytical results of the offsite surface soil samples were compared to cleanup levels appropriate for residential land use. The Phase 4 RI TM, dated March 11, 2005, concluded that no contaminants were found above residential cleanup levels in the offsite surface soil samples.

In response to the need, identified in the Phase I RI TM, to conduct additional ecological risk assessment at the site, a Tier 2 Screening Level Ecological Risk Assessment (SLERA) was completed in July 2005, pursuant to 30 TAC § 350.77. The SLERA, dated August 31, 2005, concluded that based on conservative factors applied in calculating ecological risk at the Spector Site, ecological risk from site-related constituents was not present.

#### **IV. Removal Action**

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 the onsite surface soil which contained hazardous substances in excess of applicable cleanup standards. The contaminated soil was properly disposed of at a facility permitted to receive Class I and Class II wastes. In order to conduct the excavation of the contaminated soil, it was necessary for the TCEQ to remove an estimated 1,460 tons of debris that remained on the Spector Site from the historical operations of the salvage yard. The debris primarily consisted of large trees and other vegetation, gas cylinders, metal debris, construction materials and other general municipal waste. After the removal of the debris, the TCEQ conducted additional soil sampling and analysis to fully delineate the extent of the soil contamination. Before the removal action was undertaken by the TCEQ, the identified PRPs were given an opportunity to fund or perform the removal activities by a letter dated August 25, 2006. Additionally, on September 8, 2006, a legal notice was published in the *Texas Register*

(31 TexReg 7720) of the intent to perform a removal action consisting of excavation and offsite disposal of soil containing concentrations of hazardous substances above commercial/industrial use cleanup levels. The TCEQ received no offers to fund or perform the removal action.

## **V. Remedy Selection Process**

In December 2006, the TCEQ completed a focused feasibility study (FS) to evaluate appropriate remedial options to clean up the site groundwater. The following options were considered in the FS:

- Option 1, Natural Attenuation

Natural attenuation is defined as the reduction in mass or concentration of a chemical of concern (COC), including chlorinated organic constituents 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. Due to the clayey nature of the shallow groundwater-bearing zone, it is anticipated that the natural attenuation processes could require in excess of 30 years to reduce the concentrations of VOCs in the groundwater to the applicable cleanup levels. The estimated cost for this option is \$691,000 due to the extended time frame required for groundwater monitoring to confirm that all COCs have attenuated to levels below the applicable cleanup levels.

- Option 2, Air Sparging

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 recovered with a soil vapor extraction system. The estimated cost for this remedial option is \$1,207,000.

- Option 3, In-situ 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. The estimated cost for this remedial option is \$1,274,000.

- Option 4, Liquid Phase 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). The estimated cost for this remedial option is \$890,000.

- 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 and inorganic and natural polymeric materials. The estimated cost for this remedial option is \$925,000.

- 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 the Texas Risk Reduction Program Rules (TRRP) at 30 TAC § 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 form of restrictive covenants or deed notices in the real property records of Orange County. These instruments are designed to prevent future exposure by providing notice of the contaminated groundwater. This option would also require the installation of additional monitoring wells to conduct long-term groundwater monitoring. The estimated cost for this remedial option is \$598,000.

The evaluation of the remedial options was based on long term effectiveness; compliance with the applicable regulations; reduction in toxicity, mobility and volume of COCs; relative cost; impacts of implementation and technical merit. Based on this evaluation, a PMZ (Option 6) was selected as the remedial action for the Spector Site. The institutional controls will be secured and implemented in accordance with TRRP at 30 TAC § 350.111 and will remain in place unless it is demonstrated that concentrations of contaminants in groundwater no longer exceed the applicable cleanup levels. For the Spector Site, the proposed implementation of a PMZ includes the installation of nine additional monitor wells, for a total of 15 monitor wells, and the collection and analysis of groundwater samples until such time as necessary to confirm that the groundwater plume remains stable, and will not expand beyond the PMZ.

The remedy meets the criteria established in 30 TAC § 335.348, including the requirement that "(t)he remedial action for a particular facility shall be selected based on the remedial alternative that the executive director determines to be 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."

The proposed remedy was presented for public comment in February 2007 and was the subject of a public meeting held in Orange on March 29, 2007. There was no public comment received in opposition to the proposed remedy.

A complete summary of TCEQ remedial investigation and feasibility study activities can be found at <http://www.tceq.state.tx.us/remediation/superfund/state/spector.html>.

## **VI. Efforts to Identify Responsible Parties**

The TCEQ has identified 51 persons that are responsible parties (RPs) for the solid waste and/or hazardous substances at the Spector Site as provided by Section 361.271 of the Code. The RPs have been identified through the review of available site records, interviews of individuals associated with site operations, and an affidavit supporting the information from the prior interviews. In accordance with Section 361.187 of the Code and by letter dated February 15, 2007, the PRPs were given an opportunity to fund or perform the remedial action for the Spector Site. On May 15, 2007 the TCEQ conducted a meeting at the request of some of the PRPs to facilitate the possibility of settlement among the PRPs and the TCEQ. Thereafter, the PRPs requested and were granted additional time to discuss settlement. The discussions concluded on October 29, 2007, and the TCEQ did not receive an offer by any PRPs to fund or perform the remedial actions at the Spector Site. As the TCEQ did not receive a GFO to fund or perform the remedial actions, following issuance of this Administrative Order, the TCEQ will undertake the remedial actions described in Section V of this summary.

## **VII. Staff Recommendation**

The TCEQ staff recommends that the Commission issue this Administrative Order to require responsible parties to implement the selected remedial action, which is cost effective and protective of public health and safety and the environment, and to pay the TCEQ investigation costs as authorized by Section 361.188 of the Texas Health and Safety Code. Issuance of the Order will also cause the Site to be listed on the state registry of superfund sites and make a determination as to responsible parties.

If you have any questions, please contact Ms. Carol Boucher, P.G., Project Manager, State Lead Section at 239-2501, or Ms. Charmaine Backens, Staff Attorney, Litigation Division at 239-0634.

DOCKET NUMBER 2008-0759-SPF

2008 JUL 18 PM 1:42

CHIEF CLERKS OFFICE

IN THE MATTER OF  
THE SITE KNOWN AS  
SPECTOR SALVAGE YARD  
STATE SUPERFUND SITE

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BEFORE THE  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

AN ADMINISTRATIVE ORDER

I. Introduction

- A. On August 6, 2008, the Texas Commission on Environmental Quality ("Commission" or "TCEQ") considered the Executive Director's ("ED") allegations of the existence of a release or threat of release of solid wastes and/or hazardous substances into the environment on, at or from the Spector Salvage Yard State Superfund Site ("Site") that poses an imminent and substantial endangerment to the public health and safety or the environment pursuant to the Solid Waste Disposal Act, TEX. HEALTH & SAFETY CODE, Chapter 361 (the "Act"), and the ED's requested relief including issuance of a Commission order to require persons responsible for such solid wastes or hazardous substances to perform the Work, including conducting the Remedial Activities, as authorized by Sections 361.188 and 361.272 of the Act.
- B. After proper notice, the TCEQ makes the following Findings of Fact and Conclusions of Law:

II. Findings of Fact

- A. For purposes of this Administrative Order ("AO"), TCEQ has identified the following persons that are potentially responsible parties ("PRPs") for the solid waste and/or hazardous substances at the Site:

Abex Corporation

Allied Chemical Corporation

Alpha Portland Cement Co

American Bridge Company

Atlantic Reserve Fleet

Bridgestone Firestone Inc  
Burlington Northern Santa Fe Corporation  
Burton Shipbuilding Company Inc  
Chevron Chemical Company  
Chrysler Corporation-Space Division  
City Of Beaumont  
City Of Orange  
Defense Contract Administration Services  
Defense Supply Agency  
Defense Surplus Sales Office  
E I Du Pont De Nemours and Company  
General Services Administration  
Goodrich-Gulf Chemicals Inc  
Great Lakes Carbon Corporation  
Gulf Oil Corporation  
Gulf States Utilities Company  
Harms Marine Service Inc  
Higman Towing Company  
J H Spector & Sons  
Jefferson Chemical Co Inc  
Kelly Air Force Base

Lockheed Aircraft Service Co A Div of Lockheed Aircraft Corp

Louisiana Department of Public Welfare

Marathon Oil Company

Mathieson Chemical Corporation

National Aeronautics and Space Administration

Neches Butane Products Company

Owens-Illinois Inc

Paul Cormier Well Service Co

Phillips Echo Carbon Black Company

Sabine Towing and Transportation

Sneed Shipbuilding Inc

Spencer Chemical Company

Texas Creosoting Company

Texas Department of Criminal Justice

Texas Department of Transportation

The Boeing Company

The Pure Oil Corporation

United States Department of Health Education and Welfare

US Department of Commerce Maritime Administration

US Department of Labor

US Department of the Army

US Department of the Navy

US Naval Air Station Corpus Christi

US Naval Inactive Ship Maintenance Facility

Zapata Off-Shore Company

and these parties

1. are the owners or operators of the Site;
  2. owned or operated the Site at the time of processing, storage, or disposal of any solid waste;
  3. by contract, agreement, or otherwise, arranged to process, store, or dispose of, or arranged with a transporter for transport to process, store, or dispose of solid waste owned or possessed by the PRPs or by any other person or entity at the Site; or
  4. accepted solid waste for transport to the Site as selected by the PRP.
- B. Reserved.
- C. The following PRPs entered into this AO as Agreeing Respondents but do not admit liability regarding the Site except for the purpose of enforcing this AO:
- There are no Agreeing Respondents to this AO.
- D. When ranked, the Site had a State Superfund Hazard Ranking System ("HRS") score of 12.88.
- E. The portion of the Site used for ranking on the State Registry of Superfund Sites is described as follows:

Being 3.731 acres (162,525 square feet), comprised of two (2) tracts, situated in the Nathan Cordrey Survey, Abstract 59, Orange County, Texas, said 3,731 acres being the residue of that certain tract of land conveyed to Joe Spector by deed dated February, 1944, recorded in Volume 78, Page 145 of the Deed Records of Orange County, Texas (D.R.O.C.T.) and being the residue of Outlot No. Nine (9) of the Gates Addition to the City of Orange and said 3.731 acres being more particularly described by metes and bounds as follows with all bearing referenced to the Texas Co-ordinate System, Central Zone, North American Datum 1983 (NAD83):

Tract 1

Being 0.944 of an acre (41,137 square feet) and being all of Outlot No. 9 Nine (9) of the Gates Addition of the City of Orange lying west of 10<sup>th</sup> Street (60 feet wide) as conveyed to Orange County by deed dated May 1, 1969, recorded in Volume 389, Page 569 of the D.R.O.C.T. and said 0.944 of an acre being more particularly described by metes and bounds as follows:

BEGINNING at a ½-inch iron rod with plastic cap stamped "LAND TECH" set in the southerly right-of-way of Polk Avenue (60 feet wide) for the northwesterly corner of the herein described tract and said Outlot No. Nine (9), the same being the northeasterly corner of a tract of land conveyed to the City of Orange by deed recorded in Volume 214, Page 580 of the D.R.O.C.T.;

THENCE, North 88°32'14" East, 216.62 feet along the southerly right-of-way of Polk Avenue to a ½-inch iron rod with plastic cap stamped "LAND TECH" set for the northeasterly corner of the herein described tract at the intersection of the southerly right-of-way of Polk Avenue with the northwesterly right-of-way of 10<sup>th</sup> Street;

THENCE, South 28°11'12" West, 437.03 feet (South called 30°10'00" West, 422.65 feet) along the northwesterly right-of-way of 10<sup>th</sup> Street to a ½-inch iron rod plastic cap stamped "LAND TECH" set for the southerly corner of the herein described tract of land at the intersection of the northwesterly right-of-way of 10<sup>th</sup> Street with the westerly line of Outlot No. Nine (9), the same being the easterly line of said City of Orange tract;

THENCE, North 01°31'36" West, 379.81 feet (called North 444.1 feet) along the westerly line of said Outlot No. Nine (9) and the easterly line of said City of Orange tract to the POINT OF BEGINNING and containing within its bounds a computed area of 0.944 of an acre (41,137 square feet) of land.

Tract 2

Being 2.787 acres (121,388 square feet) and being all of Outlot No. Nine (9) of the Gates Addition to the City of Orange lying east of 10<sup>th</sup> Street (60 feet wide) as conveyed to Orange County by deed dated May 1, 1969, recorded in Volume 389, Page 569 of the D.R.O.C.T. and said 2.787 acres being more particularly described by metes and bounds as follows:

BEGINNING at a ½-inch iron rod with plastic cap stamped "LAND TECH" set for the northeasterly corner of the herein described tract and said Outlot No. Nine (9) at the intersection of the southerly right-of-way of Polk Avenue (60 feet wide) with the westerly right-of-way of Livingston Street (60 feet wide - Not Improved);

THENCE, South  $01^{\circ}31'36''$  East, 445.25 feet (called South, 444.1 feet) along the westerly right-of-way of Livingston Street to a 1/2-inch iron rod with plastic cap stamped "LAND TECH" set for the southeasterly corner of the herein described tract and said Outlot No. Nine (9) at the intersection of the westerly right-of-way of Livingston Street with the northerly right-of-way of Jackson Avenue (60-feet wide);

THENCE, South  $89^{\circ}00'15''$  West, 399.23 feet along the northerly right-of-way of Jackson Avenue to a 1/2-inch iron rod with plastic cap stamped "LAND TECH" set for the southwesterly corner of the herein described tract at the intersection of the northerly right-of-way of Jackson Avenue with the southeasterly right-of-way of 10<sup>th</sup> Street;

THENCE, North  $28^{\circ}11'12''$  East, 508.59 feet (called North  $30^{\circ}10'00''$  East, 506.95 feet) along the southeasterly right-of-way of said 10<sup>th</sup> Street to a 1/2-inch iron rod with plastic cap stamped "LAND TECH" set for the northwesterly corner of the herein described tract at the intersection of the southeasterly right-of-way of 10<sup>th</sup> Street with the southerly right-of-way of Polk Avenue;

THENCE, North  $88^{\circ}32'14''$  East, 147.12 feet along the southerly right-of-way of Polk Avenue to the POINT OF BEGINNING and containing within its bounds a computed area of 2.787 acres (121,388 square feet) of a combined total computed area of 3.731 acres (162,525 square feet) of land.

- F. The Site consists of the area listed in Paragraph E above. In addition, the Site includes any areas outside the area listed in Paragraph E above where as a result, either directly or indirectly, of a release of solid waste or hazardous substances from the area described in Paragraph E above, solid waste or hazardous substances have been deposited, stored, disposed of, placed or have otherwise come to be located.
- G. The Site was proposed for listing on the State Registry of Superfund Sites in the *Texas Register* on July 16, 1999, 24 Tex. Reg. 5593-5594.
- H. The Site has historically been used for general salvage, including surplus equipment and supplies purchased from military, industrial and chemical facilities.
- I. The Chemicals of Concern at the Site include those substances listed in Exhibit B. The substances listed in Exhibit B have been processed, deposited, stored, disposed of, placed or have otherwise come to be located on the Site.
- J. The substances listed in Exhibit B have been documented in surface soil and groundwater at the Site.

K. The substances listed in Exhibit B are:

1. substances designated under Section 311(b)(2)(A) of the Federal Water Pollution Control Act, as amended (33 United States Code ("U.S.C.") Section 1321);
2. elements, compounds, mixtures, solutions, or substances designated under Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") (42 U.S.C. Section 9601 et seq., as amended);
3. hazardous wastes having the characteristics identified under or listed under Section 3001 of the Federal Solid Waste Disposal Act, as amended (42 U.S.C. Section 6921), excluding wastes, the regulation of which has been suspended by Act of Congress;
4. toxic pollutants listed under Section 307(a) of the Federal Water Pollution Control Act (33 U.S.C. Section 1317);
5. hazardous air pollutants listed under Section 112 of the Federal Clean Air Act, as amended (42 U.S.C. Section 7412); or
6. any imminently hazardous chemical substances or mixtures with respect to which the administrator of the Environmental Protection Agency ("EPA") has taken action under Section 7 of the Toxic Substances Control Act (15 U.S.C. Section 2606).

L. The substances listed in Exhibit B include the following: garbage; rubbish; refuse; sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility; or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations and from community and institutional activities, or hazardous substances, for the purposes of TEX. HEALTH & SAFETY CODE Sections 361.271 through 361.277 and 361.343 through 361.345.

M. The substances listed in Exhibit B are solid wastes or hazardous substances.

N. Solid wastes or hazardous substances at the Site listed in Exhibit B are, or potentially are, spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

O. Potential pathways for exposure to the solid wastes or hazardous substances listed in Exhibit B include groundwater ingestion.

- P. Exposure to levels of carbon tetrachloride, chloroform and methylene chloride found at the Site poses an unacceptable carcinogenic risk or an unacceptable toxicity risk.
- Q. The solid wastes or hazardous substances at the Site are not capable of being managed separately under the remedial action plan.
- R. On July 16, 1999, the Commission provided written notice of the proposed listing of the Site on the State Registry to each PRP identified as of that date at the PRP's last known address.
- S. On February 15, 2007, the Commission provided written notice of the public meeting and of the opportunity to comment on the proposed Remedy as specified in Sections 361.187(b) and (c) of the Act to each PRP identified as of that date at the PRP's last known address.
- T. On February 15, 2007, each PRP identified as of that date was provided an opportunity to fully fund or perform the proposed Remedial Activities, as specified in Sections 361.187(d) and 361.133 (c) of the Act.
- U. No voluntary actions have been undertaken at the Site by any PRPs.
- V. The Remedy Selection Document ("RSD") for the Site is attached to this AO as Exhibit A.
- W. The remedy adopted in Exhibit A is selected as the Remedy to be implemented in accordance with this AO.

### III. Conclusions of Law and Determinations

- A. The PRPs listed in Section II (Findings of Fact) Paragraph A are responsible parties ("RPs") pursuant to Section 361.271 of the Act.
- B. Some of the substances referenced in Section II (Findings of Fact) Paragraph I, which are found at the Site, are hazardous substances as defined in Section 361.003(11) of the Act.
- C. Some of the substances referenced in Section II (Findings of Fact) Paragraph I, which are found at the Site, are solid wastes as defined in Section 361.003(34) of the Act.
- D. Hazardous substances were deposited, stored, disposed of, placed or otherwise came to be located at the Site and solid wastes were stored, processed, disposed of, or discarded at the Site.

- E. The Site is a facility as defined in Section 361.181(c) of the Act.
- F. The Site is a solid waste facility as defined in Section 361.003 (36) of the Act.
- G. "Imminent and substantial endangerment" is defined by rule as follows: A danger is imminent if, given the entire circumstances surrounding each case, exposure of persons or the environment to hazardous substances is more likely than not to occur in the absence of preventive action. A danger is substantial if, given the current state of scientific knowledge, the harm to public health and safety or the environment which would result from exposure could cause adverse environmental or health effects. 30 TEX. ADMIN. CODE Section 335.342.
- H. There has been a release (as defined in Section 361.003(28) of the Act) or threatened release of hazardous substances or solid wastes into the environment at the Site that poses an imminent and substantial endangerment (as defined in 30 TEX. ADMIN. CODE Section 335.342) to the public health and safety or the environment and, therefore, the Site will be listed on the State Registry of Superfund Sites as per Section V (Order) Paragraph A.
- I. The release or threatened release of hazardous substances or solid wastes into the environment at or from the Site has not been proven to be divisible pursuant to Section 361.276 of the Act.
- J. The actions required by this AO are reasonable and necessary to protect the public health and safety or the environment.
- K. The Site is ineligible for listing on the National Priorities List ("NPL") because the HRS score was below 28.5.
- L. Funds from the Federal Government are unavailable for the Remedial Activities at this Site because it is ineligible for the NPL.

#### IV. Exhibits and Definitions

- A. The following exhibits are incorporated by reference into this AO:
  - "Exhibit A" Remedy Selection Document
  - "Exhibit B" List of Solid Wastes and Hazardous Substances at the Site
  - "Exhibit C" Field Sampling Plan Contents Outline
- B. The following terms have the meaning set out below:

“Agreeing Respondent”	The PRPs listed in Section II (Findings of Fact) Paragraph C that fund or perform the Work and have agreed to the terms and conditions of this AO as evidenced by signing a consent form.
“Chemicals of Concern”	Any chemical that has the potential to adversely affect ecological or human receptors due to its concentration, distribution, and mode of toxicity.
“Day”	A calendar day.
“Defaulting Performing Party”	Any Performing Party that fails to comply with the terms or conditions of this AO.
“De Minimis Responsible Party”	The PRPs listed in Section II (Findings of Fact ) Paragraph B.
“Demobilization”	The dismantling and removal of all construction equipment from the Site.
“Effective Date”	The Day ten (10) Days after the issue date of this AO.
“Executive Director (ED)”	The Executive Director of the TCEQ or a designee.
“include”	Use of the term include, in all its forms, in this AO is intended to express an enlargement or illustrative application specifying a particular thing already included within the preceding general words. It is not used as a term of limitation.
“Institutional Control”	A legal instrument which indicates the limitations on or the conditions governing use of the property which ensures protection of human health and the environment in accordance with 30 TEX. ADMIN. CODE Chapter 350 and as required by the Remedy.
“Parties”	Collectively, the Respondents and the Commission.
“Performing Parties”	Collectively, the Agreeing Respondents and persons that did not enter into this AO but that fund or perform the Work.
“Post Construction Activities (PCA)”	All Remedial Activities at the Site, subsequent to issuance of the Approval of RA Completion, required to complete the Remedial Activities in accordance with this AO.

"Post Construction Cost Estimate"

An estimate of the cost to perform all of the PCA for as long as post construction activities are needed.

"Project Manager"

The individual designated by the ED to oversee implementation of the Work and to coordinate communications with the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties.

"Remedial Action (RA)"

Those Remedial Activities, except for Post Construction Activities, undertaken at the Site, including on-site physical construction and any required institutional controls, to implement the Remedy. The areal extent of the RA is not limited to the Site. It includes all suitable areas in proximity to the Site necessary for implementation of the Remedial Activities.

"Remedial Activities"

The RD, RA, PCA, and any other actions required to implement and maintain the Remedy pursuant to the RSD and 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350.

"Remedial Activities Contractors"

The individual, company, or companies retained by the Agreeing Respondents, or if there are no Agreeing Respondents to this AO, by the Performing Parties to undertake any or all phases of the Remedial Activities. Remedial Activities Contractors cannot assume the role of any quality assurance official required by this AO.

"Remedial Design (RD)"

Those Remedial Activities during which engineering plans and technical specifications are developed for the Remedy.

"Remediation Goals"

Cleanup standards or other measures of achievement of the goals of the Remedy, consistent with the Act, 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350, determined by ED to be necessary at the Site to achieve and to maintain the Remedy.

"Remedy"

The Remedy adopted for the Site in the Remedy Selection Document to clean up or control exposure at the Site in accordance with all applicable laws and regulations and to be implemented in accordance with this AO. The Remedy includes all applicable requirements contained in the Act, 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350.

"Remedy Selection Document (RSD)"	The document that was developed for the Site, based on Site specific information, that specifies the Remedy, and that was adopted by the ED and TCEQ after the opportunity for public review and comment.
"Responsible Parties"	The PRPs listed in Section II (Findings of Fact) Paragraph A.
"Respondents"	Collectively, the Agreeing Respondents, the RPs, the De Minimis Responsible Parties, and the Performing Parties.
"Samples"	Samples of environmental media taken pursuant to and in accordance with this AO.
"Sections"	Those major divisions of this AO designated by Roman numerals.
"Site Coordinator"	The individual designated by the Agreeing Respondents, or if there are no Agreeing Respondents to this AO, the Performing Parties to oversee the Remedial Activities Contractors and the implementation of the Remedial Activities and to coordinate communications with the ED.
"Site Representative"	A person designated by the Project Manager that is authorized to oversee the Remedial Activities.
"Substantial Completion"	The point, as determined by the ED in his sole discretion, at which the Work (or a specified part thereof) has been substantially completed in accordance with any work plans or documents required to be developed pursuant to this AO.
"Work"	All activities to be undertaken or performed in accordance with and as required by this AO.

V. Order

Therefore, the TCEQ orders:

- A. The Site will be listed on the State Registry of Superfund Sites.
- B. Reserved.
- C. Respondents, other than any De Minimis Responsible Parties, shall reimburse the Hazardous and Solid Waste Remediation Fee Account for all of the ED's costs of the Remedial Investigation ("RI") and the Feasibility Study ("FS"), including the oversight costs of these activities. Respondents, other than any De Minimis Responsible

Parties, shall reimburse the Hazardous and Solid Waste Fee Account for all uncompensated Pre-Remedial Investigation costs, including oversight costs of these activities.

The RPs and any Defaulting Performing Parties shall reimburse the Hazardous and Solid Waste Remediation Fee Account for all costs incurred by the ED in implementing and in overseeing the Work and for any costs incurred by the ED for activities other than the RI and FS to the extent that such costs have not been paid.

Reimbursement is to be made within forty-five (45) Days after the ED transmits a Demand Letter stating the amount owed and will be paid as specified in Section V (Order) Paragraph B. The requirement to make such payments will survive the termination of this AO in accordance with Section XXXIII (Termination of the Administrative Order).

- D. This AO applies to and is binding upon Respondents, other than any De Minimis Responsible Parties, their agents, successors, and assigns. Respondents, other than any De Minimis Responsible Parties as specified above, are jointly and severally responsible for carrying out the Work. Performance of any or all of the Work by the Performing Parties, Agreeing Respondents, or any De Minimis Responsible Parties shall not excuse any other Respondent from such performance. Upon performance by any Respondent of Remedial Activities, either alone or in conjunction with other Performing Parties, such Respondent shall, from such performance forward, become a Performing Party. Such performance by a Respondent of some of the Remedial Activities does not excuse the Respondent from performance of those Remedial Activities that took place prior to the Respondent becoming a Performing Party or any other preexisting requirement of this AO. No change in the ownership or corporate status and no acquisition of a Respondent will alter its respective responsibilities under this AO.
- E. Respondents that own or lease real property at the Site shall provide a copy of this AO to all of their lessees or sublessees of the Site until such time as this AO is terminated in accordance with Section XXXIII (Termination of the Administrative Order) and to any prospective owners or successors before all or substantially all property rights, stock, or assets are transferred.
- F. Respondents shall provide a copy of this AO to all contractors, subcontractors, laboratories, and consultants retained by Respondents to perform any or all of the Work within thirty (30) Days after the Effective Date or on the date such services are retained, whichever date occurs later. Notwithstanding the terms of any contract, Respondents remain responsible for compliance with this AO and for ensuring that their contractors and agents comply with this AO.

- G. Within forty-five (45) Days after the Effective Date each Respondent that owns real property at the Site shall record a copy or copies of this AO, with all exhibits, in the appropriate office where land ownership and transfer records are filed or recorded, and shall ensure that the recording of this AO is properly indexed to each and every property comprising any part or all of the Site so as to provide notice to third parties of the issuance and terms of this AO with respect to those properties. Each Respondent that owns real property comprising all or any part of the Site shall, within sixty (60) Days after the Effective Date, send notice of such recording and indexing to the ED. The obligations and restrictions of this AO run with the land and are binding upon any and all persons who acquire any interest in any real property comprising all or any part of the Site.

Not later than ninety (90) Days before any transfer of any property interest in any property included within the Site and in accordance with Section XII (Notices and Submittals) Respondents that own or lease such real property shall submit the transfer documents to the ED.

- H. In accordance with Section 361.1855 of the Act and for the purpose of selecting the Remedy, the ED has selected commercial/industrial as the appropriate land use for the Site. Any change in use of any or all of the Site must comply with Section 361.190 of the Act.
- I. A qualified Remedial Activities Contractor shall direct and supervise all aspects of the Remedial Activities. Within ten (10) Days after the Effective Date each Respondent that is not an Agreeing Respondent shall notify the ED of its intent to perform the Work.

In addition to fulfilling the requirements of Section VIII (Project Manager/Site Coordinator) Paragraph C, within ten (10) Days after the Effective Date, Agreeing Respondents or, if there are no Agreeing Respondents, Performing Parties shall notify the ED in writing of the name, title, qualifications, relevant licenses, and permits of the Site Coordinator and Remedial Activities Contractor proposed to be used in carrying out the Remedial Activities. The Agreeing Respondents shall demonstrate or, if there are no Agreeing Respondents, the Performing Parties shall demonstrate that each proposed Remedial Activities Contractor has any licenses necessary to do business in the State of Texas and permits necessary to perform any or all of the Remedial Activities. If at any time the Agreeing Respondents or, if there are no Agreeing Respondents, Performing Parties propose to use a different Remedial Activities Contractor, the Agreeing Respondents or Performing Parties, as appropriate, shall notify the ED before the new Remedial Activities Contractor performs any of the Remedial Activities. The Agreeing Respondents' Site Coordinator shall be the Project Manager's and Site Representative's point of contact for all Performing Parties. All Performing Parties must coordinate with and cooperate with any Agreeing

Respondents in the performance of any and all of the Work.

- J. The Remedy may be modified as specified in 30 TEX. ADMIN. CODE Section 335.349. Except as specified in the previous sentence and in Section XVIII (Extension of Deadlines), the terms of this AO may be amended upon approval by the Commission after notice to all Respondents.
- K. Respondents shall provide all the necessary information and assistance for TCEQ's Community Relations personnel to implement the Community Relations Plan.
- L. All ED-approved final submittals, documents, plans, and reports required to be developed and approved by the ED pursuant to this AO will be incorporated in and enforceable under this AO.
- M. In complying with this AO, Respondents shall at all times comply with the requirements of the Act and 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350, as applicable.

#### VI. Remedial Activities

- A. The Respondents shall undertake the Remedial Activities in the following phases:

Remedial Design ("RD");

Remedial Action ("RA"); and

Post Construction Activity ("PCA").

The ED may, in his sole discretion, waive, in writing, a requirement to submit any report, submittal, document or plan otherwise required to be submitted by this AO.

- B. Remedial Design

- 1. Not later than ten (10) Days after the Effective Date, Respondents shall submit a Design Concept Memorandum ("DCM") to the ED for review, comment, and approval. Respondents must submit a DCM that includes:
  - a. Description of key performance and design criteria for the Remedy necessary to meet the requirements of the Remedy Selection Document;

- b. Identification of all significant design options that may be considered by the design professional to meet the required performance and design criteria and the proposed option(s) to meet those criteria; and,
    - c. Identification of potential problems and unresolved issues which may affect the timely completion of the RD, RA and PCA, and proposed solutions to those problems.
  2. Within thirty (30) Days after the ED approves the DCM, Respondents shall:
    - a. Obtain written landowner consent for any institutional control to be placed on the land records for any or all of the Site as required by this AO or by TCEQ rule and submit a copy of the consent to the ED; and
    - b. Submit a Preliminary RD to the ED for review, comment, and approval.
  3. The Respondents shall submit a Preliminary RD that meets the requirements as set forth in this Section and consists of a 30% completion of all sections of the following RD submittals:

RA Schedule;

RA Field Sampling Plan (“RA FSP”);

Remedial Action Construction Quality Assurance Project Plan (“RA C-QAPP”);

RA Plans and Specifications;

RA Health and Safety Plan (“RA HASP”); and

Post Construction Activity Plan (“PCA Plan”).
  4. The RA Schedule will describe the sequence, dependency on other activities, and duration of each activity to be conducted during the RA including Project Milestones (which will be subject to the provisions of Section XXI (Stipulated Penalties), Paragraph D) and the specific mobilization date to begin the RA.
  5. The RA Sampling and Analysis Plan (RA SAP) and RA C-QAPP will describe the means of assuring quality during the RA and will specify a quality assurance official (“Respondent QA Official”), independent of the RA Contractors, to conduct a quality assurance program during the RA.

- a. The RA SAP will be comprised of the RA FSP and the "Texas Commission on Environmental Quality Superfund Cleanup Section, Remediation Division, Quality Assurance Project Plan for the Superfund Program" (Program QAPP) which is most current as of the Effective Date of this AO. The RA SAP will address sampling and analysis relating to environmental parameters which may present toxic risk to human health or the environment. Respondents and their contractors and subcontractors, including analytical laboratories, shall strictly adhere to all requirements of the approved RA SAP.
- b. The Program QAPP text will not be altered. Alterations to the Program QAPP necessitated by project specific circumstances will be effected by appropriate notation in Section 8.0 "Exceptions, Additions and Changes to the Program QAPP" of the RA FSP.
- c. The RA FSP will include:
  - i) All data required by the Program QAPP and the contents outline attached as Exhibit C to this AO;
  - ii) Data Quality Objectives ("DQO's") which provide for the collection and analysis of a sufficient quantity and quality of data to demonstrate attainment of the Remediation Goals and to demonstrate protection of off-site receptors from exposure to Chemicals of Concern during the RA; DQO's will be developed in accordance with EPA's "Guidance for the Data Quality Objectives Process, EPA QA/G-4"; and,
  - iii) A perimeter air monitoring plan including the action levels necessary to protect off-site receptors from exposure to the Chemicals of Concern; the Chemicals of Concern to be sampled; the kinds of sampling techniques to be used to sample; the number, type, and location of monitors; the calibration methods and schedule; and the sampling and reporting frequency.
- d. In regard to laboratories and laboratory analytical work, Respondents shall:
  - i) Ensure that all contracts with laboratories utilized by Respondents for analysis of Samples provide for access to those laboratories by the ED's personnel and the ED's auth-

orized representatives to assure the accuracy of laboratory results related to the Site.

- ii) Ensure that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the Chemicals of Concern in the media of interest within detection and quantitation limits consistent with both QA/QC procedures and approved DQOs for the site. The Respondent QA Official shall provide written certification that it has reviewed the laboratory's Quality Assurance Plan and capabilities and has determined that:
  - (a) The laboratory has a documented quality assurance program in place that is consistent with the National Environmental Laboratory Accreditation Conference (NELAC) standards.
  - (b) The laboratory has demonstrated and documented proficiency with each sample preparation and determinative combination to be used on the project;
  - (c) The laboratory has documented standard operating procedures for each of the methods required for the project; and,
  - (d) The laboratory has the capability of meeting the analytical objectives for the project.
  - (e) The laboratory is NELAC accredited under the Texas Laboratory Accreditation Program according to 30 TEX. ADMIN. CODE (TAC) Chapter 25 (relating to Environmental Testing Laboratory Accreditation and Certification) Subchapters A and B as amended, for the matrices, methods and parameters of analysis, or a regulatory exception specified in 30 TAC 25.6 as allowed by TCEQ. In addition, the Respondent QA Official shall provide with this written certification as applicable a copy of the laboratory's current National Environmental Laboratory Accreditation Program (NELAP) accreditation certificate to verify that the laboratory is NELAC accredited by the TCEQ in accordance with these requirements.

A table which presents the laboratory's method detection limits and quantitation limits and the preliminary remediation goal for each analyte of concern, and a table that presents the laboratory's control limits for quality control parameters, i.e., surrogates, matrix spike/matrix spike duplicate samples, and laboratory control samples must be submitted along with the certification letter and must be submitted attached or inserted into the RA FSP.

- iii) Ensure that all laboratories used for analysis of Samples are acceptable to the ED. A laboratory may be deemed unacceptable for any of the following reasons:
  - (a) repeated or numerous deficiencies found in the laboratory quality assurance program during the ED's or EPA's laboratory inspections;
  - (b) repeated or numerous deficiencies in laboratory performance;
  - (c) debarment by EPA; or
  - (d) failure to comply with any requirement or criteria of the Program QAPP or this AO.
- iv) Ensure that all data submitted to the agency is produced by laboratories accredited by TCEQ according to 30 Tex. Admin. Code Chapter 25 (relating to Environmental Testing Laboratory Accreditation and Certification) Subchapters A and B.

- 6. The RA C-QAPP will describe the activities necessary to ensure that the Remedy is constructed to meet or exceed all design criteria, plans, specifications, and all applicable Remediation Goals. The RA C-QAPP will address sampling and analysis relating to physical properties of constructed engineered controls which must meet specified criteria to ensure the long-term performance of those features (e.g. physical soil properties of soil backfill or constructed clay caps, physical properties of geotextiles and liner materials, leak testing of piping systems and containment vessels, etc.). At a minimum, the RA C-QAPP will include the following elements:
  - a. The responsibility and authority of organizations and key personnel involved in designing and constructing the RA;

- b. The qualifications of the Respondent QA Official(s) and supporting inspection personnel;
  - c. The observations and tests that will be used to ensure that the construction meets or exceeds all design criteria, plans and specifications and all applicable Remediation Goals;
  - d. The sampling activities, sample size, methods for determining locations, frequency of sampling, acceptance and rejection criteria, and methods for ensuring that corrective measures are implemented; and
  - e. Detailed reporting requirements.
7. The RA Plans and Specifications will establish the sequences, procedures and requirements to be implemented at the Site including at a minimum:
- a. Demolition activities including monitor well closure, decontamination, building demolition methods, environmental controls, and disposal.
  - b. Excavation activities including: establishment of limits of initial excavation for surface and subsurface soils with provisions for field controls; excavation materials handling including stockpiling; excavation confirmation sampling; backfill procedures; air emissions control; stormwater management; cross-contamination prevention; and equipment and personnel decontamination procedures and facilities.
  - c. Estimated quantities of material to be excavated and estimated quantities of materials to be disposed of off-site.
  - d. Details of cap(s) construction including: lines, grades and cross-sections; clay and synthetic materials' properties, placement and testing; vegetative cover installation; cap infiltration testing; air emissions controls; stormwater management; and equipment and personnel decontamination procedures and facilities.
  - e. Details regarding construction and installation of fences, signs and other engineered controls.
  - f. Site restoration activities, including backfill materials, compaction, and final cover.
  - g. Plans including at a minimum:

- i) Site plan;
  - ii) All other plans and specifications necessary to describe sequences, procedures, and requirements to conduct the Remedial Activities in a manner protective of human health and the environment.
8. The RA HASP will specify the procedures that are sufficient to protect on-site personnel and the public from the physical, chemical and/or biological hazards of the site. The HASP will address all requirements of 29 CFR Chapter XVII - "Occupational Safety and Health Administration (OSHA), Department of Labor," 40 CFR §35.6015(a)(21) "Health and Safety Plan," and all applicable safety regulations, ordinances and statutes pertaining to the safety of on-site personnel and the public. The HASP and any revisions or addenda will be reviewed and signed by a Board Certified Industrial Hygienist.

The TCEQ relies on the Respondent in the preparation of an adequate HASP. However, TCEQ reserves the right to review and provide comments on the Respondent's HASP. If TCEQ provides comments, they constitute only general safety guidelines which are not intended to cause the Respondent to reduce the level of protection. Any language in the comments or in this AO which appears to give the TCEQ the right to direct or control the Respondent's means, methods and details of the Work shall be deemed to mean that the Respondent will follow TCEQ's desires only as to the results of the Work. The Respondent is solely responsible for preparing an adequate HASP, for complying with the RD and the applicable safety laws and regulations, for performing the Work in a safe manner and for protecting the health and safety of on-site personnel and the public. The Respondent shall address the TCEQ's comments and concerns and if necessary submit a revised HASP. TCEQ notation of "approval," "acceptance," or similar language in response to a HASP submittal for review shall not alter the responsibilities of the parties as described in this Section. In the event that TCEQ notes a HASP "approved" or "accepted" or uses similar language to indicate that there are no further comments, such notation shall be deemed to mean only:

*We have reviewed your HASP under the AO provision reserving the right for TCEQ to review and provide comments constituting general safety guidelines (not intended to cause the Respondent to reduce the level of protection). The reviewer(s) might not be Board Certified Industrial Hygienist or any other type of safety professional. We have no comments (or further comments) at this time on your HASP. We recognize this HASP as your final HASP. If you*

*change this HASP you must submit a revision or addendum for review and potential comment in accordance with this AO.*

***Do not rely on TCEQ review or comments (or lack thereof) on your HASP for any purposes.***

*By telling you we have no comments (or further comments) we are not assuming responsibility for your means, methods, details or sequences, nor are we assuming any duty of protection to you, your employees, your subcontractors or suppliers, or their employees, or to any third party. Any language in the comments or in this AO which appears to give the TCEQ the right to direct or control your means, methods and details of the Work shall be deemed to mean that you will follow TCEQ's desires only as to the results of the Work. You are solely responsible for preparing and implementing an adequate HASP, for complying with the RD and the applicable safety regulations, ordinances and statutes, for performing the Work in a safe manner and for protecting the health and safety of on-site personnel and the public.*

9. The PCA Plan will describe all sequences, procedures and requirements for implementing the PCA. The PCA Plan will, at a minimum, include the following:
  - a. A Post Construction Sampling and Analysis Plan ("PC SAP") and Post Construction Quality Assurance Project Plan ("PC-QAPP") meeting the criteria established herein for the RA SAP and RA C-QAPP but addressing all sampling and analyses relating to PCA;
  - b. Post Construction Plans and Specifications necessary to assure that the Remedial Activities attain and maintain the Remediation Goals;
  - c. A PCA Schedule describing the sequence, dependency on other activities, and duration of each activity to be conducted during the PCA including Project Milestones (which will be subject to Section XXI Stipulated Penalties Paragraph D), and the specific mobilization date to begin the PCA;
  - d. A Post Construction Cost Estimate providing an estimate for a qualified third party to perform all of the tasks necessary for post construction for as long as PCA are needed, in accordance with the PCA Schedule; and

- e. A Post Construction Activities HASP ("PCA HASP") which meets all of the requirements specified above for the RA HASP but which is appropriate to protect on-site personnel and the public from any physical, chemical and/or biological hazards of the site relating to the Post Closure period and activities.
10. Within thirty (30) Days after the ED provides written comments to the Site Coordinator on the Preliminary RD, Respondents shall submit a Pre-Final RD to the ED for review, comment, and approval. The Pre-Final RD will consist of 95% RD submittals. Respondents shall address the ED's comments on the Preliminary RD and submit a summary note which clearly and explicitly indicates how each comment by the ED on the Preliminary RD has been satisfactorily addressed and which will also identify all other revisions or changes from the Preliminary RD.
11. Within twenty (20) Days after the ED provides the Site Coordinator with the ED's written comments on the Pre-Final RD, Respondents shall submit the Final RD, prepared and sealed by a Professional Engineer registered in the State of Texas, to the ED. The Final RD will consist of 100% complete RD submittals except the PCA Plan. A Professional Engineer shall include a certification that the design was prepared to attain all Remediation Goals upon implementation. Respondents shall address the ED's comments on the Pre-Final RD and submit a summary note which clearly and explicitly indicates how each of the ED's comments on the Pre-Final RD has been satisfactorily addressed and which will also identify all other revisions or changes from the Pre-Final RD.
12. The ED will notify the Site Coordinator of his approval or disapproval of the Final RD including written comments. Within fifteen (15) Days after the ED provides written comments to the Site Coordinator, Respondents shall resubmit the Final RD, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the previous draft of the Final RD has been satisfactorily addressed and which will also discuss all other revisions or changes from the previous draft of the Final RD.
13. The ED will notify the Site Coordinator of his approval or disapproval of each resubmittal of the Final RD. Each resubmittal will be submitted as specified in Paragraph 12 above. Disapproval of the first resubmittal, and each subsequent resubmittal, is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).

14. Upon the ED's approval, the documents comprising the Final RD will be incorporated as requirements into and will be enforceable under this AO.

C. Remedial Action

1. Respondents and Respondents' contractors and subcontractors shall not mobilize to the Site until the Final RD is approved by the TCEQ. Under no circumstance will mobilization occur prior to TCEQ approval of the RA HASP.<sup>1</sup> The Respondents will be responsible for initiating, maintaining, and supervising all safety precautions and programs required for the protection of: all persons who may be affected by the Work, the Work, and any property which maybe affected by the Work.
2. As soon as practicable after the award of any contract to ship solid wastes and/or hazardous substances from the Site and prior to any such actual shipment, Respondents shall submit to the Project Manager a written certification containing all relevant information regarding such shipments. The certification will include:
  - a. The name and location of the facility to which the solid wastes and/or hazardous substances are to be shipped;
  - b. The type and quantity of the solid wastes and/or hazardous substances to be shipped;
  - c. The expected schedule for the shipment of the solid wastes and/or hazardous substances; and
  - d. The method of transportation and the name, address, and phone number of the transporter.
3. In addition, Respondents shall certify that:
  - a. No enforcement order is currently imposed on any selected receiving facility or transporter by any regulating authorities;
  - b. The selected receiving facility and transporter are permitted to accept the specific solid wastes and/or hazardous substances to be shipped from the Site by all appropriate regulating authorities; and

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<sup>1</sup>TCEQ's "approval" or "acceptance" of the HASP will be given the meaning as explained in Section VI (Remedial Activities) Paragraph B.8.

- c. After appropriate inquiry, they have no knowledge that either the selected receiving facility or transporter is non-compliant with any federal, state, or local requirement.
4. The ED may inspect the Remedial Activities and/or the Site at any time to evaluate compliance with this AO.
5. At least ten (10) Days prior to the expected date of achieving Substantial Completion of the RA, the Site Coordinator shall conduct a pre-Substantial Completion inspection and shall develop and submit to the ED a preliminary punch list identifying any nonconformance with the requirements of the RA Plans and Specifications.
6. At the same time that the Performing Parties submit the Substantial Completion punch list, they shall schedule a Substantial Completion inspection by the ED. The Site Coordinator shall accompany the ED during the Substantial Completion inspection.
7. Within 10 Days after the ED's on-site inspection, the Respondents shall submit to the ED in writing a revised punch list incorporating any deficiencies identified by the ED during the Substantial Completion inspection, indicating those deficiencies that are completely addressed and providing a proposed schedule and list of activities necessary to complete the RA. The ED will notify the Site Coordinator in writing of his approval or disapproval of the revised punch list.

If the ED disapproves the revised punch list, the ED will provide written comments to the Site Coordinator. Within ten (10) Days after the ED provides written comments to the Site Coordinator on the revised punch list, Respondents shall submit a final punch list, in both clean and redline, strikeout format, with a summary note that clearly and explicitly indicates how each of the ED's comments on the revised punch list has been satisfactorily addressed.

The ED will notify the Site Coordinator of his approval or disapproval of the final punch list with comments. If disapproved by the ED, within fifteen (15) Days after the ED provides written comments, Respondents shall resubmit the final punch list. The ED will notify the Site Coordinator of his approval or disapproval of each resubmittal of the final punch list. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).

8. When Respondents believe that they have completed the RA, they shall submit a certification to the ED that the RA is complete. If the ED identifies RA

items to be corrected or completed, Respondents shall immediately correct or complete these items.

9. Within forty five (45) Days after Respondents certify that the RA is complete, Respondents shall submit to the ED a draft RA Report, containing the following:
  - a. A certification from a Professional Engineer licensed in the State of Texas that the RA has been completed in compliance with the Final RD and this AO and that the RA is complete;
  - b. All data collected during the RA and documentation of compliance with the terms of the RA Quality Assurance Project Plan and the RA Construction Quality Assurance Plan;
  - c. Copies of waste manifests for all Class II, Class I, and hazardous wastes and substances disposed of off-site;
  - d. As-built drawings showing:
    - i) Areas and depths of excavation, with verification sample results by grid area;
    - ii) Final site plan with topographic contours;
    - iii) Progress photographs;
    - iv) Proposed areas for soil and groundwater that will require land use restrictions and/or other deed notices, certifications, or restrictions; and,
    - v) Proposed language for any institutional controls in accordance with and as required by this AO and TCEQ rules.
10. The ED will notify the Site Coordinator of his approval or disapproval of the draft RA Report. If the ED disapproves the draft RA Report, the ED will provide written comments to the Site Coordinator.
11. Within fifteen (15) Days after the ED provides written comments to the Site Coordinator on the draft RA Report, Respondents shall submit a final RA Report, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the draft

RA Report has been satisfactorily addressed and which also discusses all other revisions or changes from the draft RA Report.

12. The ED will notify the Site Coordinator of his approval or disapproval of the final RA Report with comments.
13. If disapproved by the ED, within fifteen (15) Days after the ED provides written comments, Respondents shall resubmit the RA Report as specified in Paragraph 11 above. Each resubmittal will also be submitted in accordance with Paragraph 11 above.
14. The ED will notify the Site Coordinator of his approval or disapproval of each resubmittal of the final RA Report including written comments. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).
15. Within thirty (30) Days after approval of the final RA Report and after obtaining the required written landowner consent in accordance with Paragraph B2 of this Section Respondents shall:
  - a. record a copy or copies of any required institutional controls in compliance with the requirements found in 30 Tex. Admin. Code Chapter 350.111 in the appropriate local or county office where land ownership and transfer records are filed or recorded;
  - b. ensure that the recording of these documents is properly indexed and recorded to each and every property at the Site in the appropriate office where land ownership and transfer records are filed so as to provide notice to third parties concerning those properties; and
  - c. send evidence of such recording, landowner consent, and indexing to the ED.
16. After he approves the final RA Report, receives evidence of the filing of any institutional control from each property owner or other person as required by Section V (Order) Paragraph G, and determines that the financial assurance requirements of Paragraph E below have been satisfied, the ED will issue an Approval of RA Completion to the Agreeing Respondents, or if there are no Agreeing Respondents to this AO, any Performing Parties.

D. Post Construction Activity

1. Concurrent with the submittal of the preliminary punch list for the Substantial Completion inspection, the Site Coordinator shall 1) submit a list of the name, title, qualifications, relevant licenses and permits of the Remedial Activities Contractors proposed to be used in carrying out any or all of the PCA and 2) submit to the ED a Revised PCA Plan.
2. The ED will notify the Site Coordinator of his approval or disapproval of the Revised PCA Plan including written comments to the Site Coordinator.
3. Within fifteen (15) Days after the ED provides written comments to the Site Coordinator, Respondents shall submit the Final PCA Plan, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the Revised PCA Plan has been satisfactorily addressed and which will also discuss all other revisions or changes from the Revised PCA Plan.
4. The ED will notify the Site Coordinator of his approval or disapproval of the submittal and each resubmittal of the Final PCA Plan. Each resubmittal will be submitted as specified in Paragraph 3 above. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).
5. Upon the ED's approval of the final PCA Plan, Respondents shall begin the PCA in accordance with the schedule included in the PCA Plan.

E. Post Construction Financial Assurance

1. Respondents shall provide financial assurance in the minimum amount of the final Post Construction Cost Estimate and shall maintain such financial assurance for the full duration of the PCA. Within ten (10) Days of the ED's approval of the PCA Plan, Respondents shall submit a written proposal for providing financial assurance to the ED for approval.
2. Subject to the ED's approval, financial assurance may be demonstrated by one or a combination of the following mechanisms: letter of credit, surety bond guaranteeing payment, surety bond guaranteeing performance, fully funded trust, insurance, escrow account or other approved mechanism. Each financial assurance document will be issued by an institution with the authority to issue the document whose operations are regulated and examined by a federal or state agency.

3. Within fifteen (15) Days after the ED provides written approval of Respondents proposed financial assurance mechanism to the Site Coordinator, Respondents shall submit the necessary financial assurance documents to the ED. The ED will notify the Site Coordinator of his approval or disapproval of the financial assurance documents with comments. If disapproved by the ED, within fifteen (15) Days after the ED provides written comments to the Site Coordinator, Respondents shall resubmit the financial assurance documents, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the previous draft of the financial assurance documents has been satisfactorily addressed and which will also discuss all other revisions or changes from the previous draft of the financial assurance documents.
4. The ED will notify the Site Coordinator of his approval or disapproval, with comments, of each resubmittal of the financial assurance documents. Each resubmittal will be submitted in accordance with Paragraph 3 above. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).

#### VII. Failure to Attain Remediation Goals or Findings of Significant Difference

- A. If at any point in the Remedial Activities the Performing Parties conclude that the Remedial Activities as implemented in accordance with this AO will not attain the Remediation Goals, or if the Performing Parties find that conditions at the Site differ from those that form the basis of the RSD and significantly change the scope, performance or costs of the Remedial Activities, then the Performing Parties shall take the actions specified in this Section.
- B. Within ten (10) Days after the Performing Parties initially determine that a failure to attain Remediation Goals or that a significant difference in the scope, performance or cost of the Remedial Activities as described in this Section exists, Performing Parties shall notify the ED of that determination with a description of its basis.
- C. Not later than sixty (60) Days after the initial assertion of a failure to attain Remediation Goals or of a significant difference in the scope, performance or cost of the Remedial Activities, the Performing Parties shall submit a Failure Evaluation Report to the ED for his approval.
- D. The Performing Parties shall submit a Failure Evaluation Report that meets the requirements of this Section. The Failure Evaluation Report will include a discussion of the following: the data related to the failure to attain Remediation Goals or to the assertion of a significant difference, conclusions concerning all such data, and any

known cause of the failure to attain Remediation Goals or of the significant difference, and a recommendation for any necessary additional studies. Data presented in the Failure Evaluation Report will comply with the DQOs.

- E. The ED will not consider the failure of a design element or remedial action that is not required by this AO to be the basis for a failure to attain the Remediation Goals.
- F. The ED will consider differences in the quantity or extent of contaminants as the basis for a determination of a significant difference only when such differences are so significant as to cause the Remedy not to be the lowest cost alternative that is technologically feasible and reliable and that effectively mitigates and minimizes damage to and provides adequate protection of the public health and safety or the environment.
- G. After receipt of the Failure Evaluation Report, the ED will notify the Site Coordinator of his approval or disapproval of the report with comments. If the ED determines that the basis of the Performing Parties' assertion of a failure to attain Remediation Goals or of a significant difference is valid, no applicable stipulated penalties will be imposed for missed deadlines subsequent to the Performing Parties' notification made in accordance with Paragraph B above, except for failure to submit documents pursuant to this Section. If the ED determines that the basis of a failure to attain Remediation Goals or of an assertion of a significant difference is not valid, the ED will direct that Remedial Activities continue and that the Performing Parties pay any applicable stipulated penalties for any missed deadlines.
- H. Unless the ED approves the Failure Evaluation Report and/or directs continuation of Remedial Activities, within thirty (30) Days after the ED provides written comments to the Site Coordinator, the Performing Parties shall resubmit the Failure Evaluation Report, in both clean and redline, strikeout format, with a summary note which clearly and explicitly indicates how each of the ED's comments on the previous draft of the Failure Evaluation Report has been satisfactorily addressed and which will also identify all other revisions or changes from the previous version of the Failure Evaluation Report.
- I. The ED will notify the Site Coordinator of his approval or disapproval, with comments, of each resubmittal of the Failure Evaluation Report. Each resubmittal will be submitted in accordance with Paragraph H above. Disapproval of the first resubmittal and each subsequent resubmittal is subject to assessment of stipulated penalties in accordance with Section XXI (Stipulated Penalties).
- J. Not later than ninety (90) Days after a determination by the ED that the Remedy will not attain the Remediation Goals or a significant difference exists, the Respondents shall submit to the ED for approval a written report evaluating alternatives to the

Remedial Activities and may submit a proposal for such alternative Remedial Activities as may be necessary to achieve the Remediation Goals. Any proposed alternatives must comply with the remedy selection criteria contained in 30 TEX. ADMIN. CODE Chapter 335, Subchapter K and 30 TEX. ADMIN. CODE Chapter 350. The Remedy may be modified, as stated in Section V (Order) Paragraph J, only as specified in 30 TEX. ADMIN. CODE Section 335.349.

- K. In the event TCEQ determines that alternate or additional remedial actions are necessary because of the Remedy's failure, TCEQ may terminate this AO.

#### VIII. Project Manager/Site Coordinator

- A. Not later than the Effective Date, the ED will designate a Project Manager to oversee implementation of the Work and to coordinate communication between the ED and the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties.
- B. Respondents shall direct all communications regarding the Remedial Activities, whether written or oral, at a minimum, to the Project Manager or, if not available, the alternate Project Manager.
- C. In addition to fulfilling the requirements of Section V (Order) Paragraph I, within ten (10) Days after the Effective Date, the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties shall submit a written notice to the Project Manager containing the Site Coordinator's address, phone number and/or pager number at which he/she may be contacted at any time in case of emergency. The Site Coordinator shall notify the ED in writing at least seven (7) Days prior to the start date of any field activities associated with the Remedial Activities. All Performing Parties must coordinate with and cooperate with any Agreeing Respondents in the performance of any and all of the Work.
- D. The Project Manager has the authority to require that the Remedial Activities are performed in accordance with all applicable statutes and regulations and with this AO and to require a cessation of the performance of any part or all of the Remedial Activities that:
  - 1. In the Project Manager's opinion, may present or contribute to an imminent and substantial endangerment to public health, welfare, or the environment because of an actual or threatened release of solid wastes or hazardous substances from the Site; or
  - 2. In the Project Manager's opinion, is not in conformance with any work plan developed in accordance with this AO; or

3. In the Project Manager's opinion, is a violation of any work plan developed in accordance with this AO, HASP, or RA Quality Assurance Project Plan.
- E. Within 24 hours after the Project Manager issues an oral order to halt any or all of the Remedial Activities, if time permits, the Project Manager will provide a brief explanation of the basis for the order. As soon as possible, but in any event no more than fourteen (14) Days after the initial order to halt any or all of the Remedial Activities, the Project Manager will provide a written explanation of the basis for the order to halt any or all of the Remedial Activities to the Site Coordinator. The Remedial Activities may be resumed only after the basis for the order to halt any or all of the Remedial Activities has been corrected and instructions to proceed have been provided to the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties by the Project Manager. All additional costs associated with the cessation of any or all of the Remedial Activities will be borne by Respondents.
  - F. During the RD and RA, the Project Manager and Site Coordinator shall hold meetings at least once per month to review the progress and details of the Remedial Activities and to review and resolve any discrepancies in data. At the ED's discretion, these meetings may be held by telephone. At least seven (7) Days prior to each meeting, the Performing Parties shall deliver an agenda for the meeting and any documents to be discussed to the Project Manager.
  - G. The ED and the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties may change their respective Project Manager, Alternate Project Manager, or Site Coordinator by written notice to each other of the name, address, and telephone number of the new Project Manager, Alternate Project Manager, or Site Coordinator seven (7) Days prior to the change, or if seven (7) Days notice is not feasible, as soon as possible.
  - H. The Project Manager may assign other persons, including other TCEQ employees or contractors, to serve as a Site Representative and may temporarily delegate her or his responsibilities to such Site Representative. The Project Manager will notify the Site Coordinator orally or in writing of such delegation.

IX. Endangerment and Immediate Threat

- A. In the event of any action or occurrence during the performance of the Remedial Activities which causes or threatens a release of a solid waste or hazardous substance or which may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action to prevent, abate, or minimize such release or threat and shall immediately notify the Project

Manager and Site Representative or, if the Project Manager cannot be contacted, the alternate Project Manager and Site Representative. Respondents shall also notify the Beaumont Regional Office, Region 10, at 409-898-3838. Respondents shall take such action in accordance with all applicable provisions of the HASP. If Respondents fail to take appropriate response action as required by this Section and the ED takes such action instead, Respondents shall reimburse the ED all costs of the response action. Respondents shall make payments of such costs as specified in Section V (Order) Paragraph B and not later than forty-five (45) Days after the ED transmits a Demand Letter stating the amount owed.

- B. Nothing in the preceding paragraph will be deemed to limit any authority of the State of Texas to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of solid wastes or hazardous substances to the environment on, at, or from the Site.

#### X. Submittals Requiring the ED's Approval

- A. Upon the ED's approval of a submittal, Respondents shall proceed to implement all actions required by the submittal according to the schedule approved by the ED.
- B. Approved submittals may be modified upon agreement by the ED and the Performing Parties. The Performing Parties shall submit proposed modifications and obtain approval in accordance with the process for submittals specified in this AO generally. Upon approval of any modification, the modification is incorporated into the original submittal for all purposes.
- C. The ED's approval of submittals or modifications is administrative in nature and allows the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties to proceed to the next steps in the Remedial Activities. The ED's approval does not imply any warranty of performance, does not imply that the Remedy, when constructed, will meet the Remediation Goals, nor does it imply that the Remedy will function properly and ultimately be accepted by the ED.

#### XI. Submittal of Documents, Sampling, and Analyses

- A. Respondents shall provide to the ED all data, information, documents, or records related to the Site which are generated or obtained by any Respondent within twenty (20) Days of any written request from the ED for such data, information, document, or record. Respondents shall provide written notice to the ED immediately upon generating or obtaining any such data, information, document or record.

- B. Subject to the confidentiality provisions set forth in Paragraph C below, all data, information, documents, and records developed pursuant to this AO or submitted by Respondents to the ED pursuant to this AO will be available to the public.
- C. Respondents may assert a claim of business confidentiality pursuant to the Texas Public Information Act as to any process, method, technique, or any description thereof that the Respondents claim constitutes proprietary or trade secret information developed by Respondents or developed by their contractors or subcontractors. If no confidentiality claim accompanies the process, method, technique, or description thereof when submitted to the ED, any such process, method, technique, or description thereof may be made available to the public by the ED or the State of Texas without further notice to Respondents. Respondents shall make business confidentiality determinations in good faith.
- D. The ED or his Site Representatives may take splits or duplicates of any samples obtained by any Respondent at the Site at any time including during the implementation of the Remedial Activities. The Respondents shall provide assistance necessary for the ED to take split or duplicate samples.
- E. Respondents shall provide the ED with a schedule of routine sampling and notify the ED at least seven (7) Days before any non-routine sampling is conducted at the Site, except in the event of situations provided for by Section IX (Endangerment and Immediate Threat). Respondents shall collect and analyze all Samples in accordance with approved work plans developed pursuant to this AO and shall handle all Samples in accordance with the approved RA Quality Assurance Project Plan.
- F. Respondents shall submit all data, information, reports, schedules, and other documents required by this AO in hard copy format (two hard copies of draft submittals and three of final submittals) and in specific computer software format (one electronic copy of each draft and final submittal) as determined by the Project Manager.

## XII. Notices and Submittals

- A. Respondents shall make all notices and submittals required by this AO in writing and in accordance with the contact information contained in this Section unless otherwise expressly authorized. Receipt by the Site Coordinator of any notice or communication from the ED relating to this AO will be deemed by the ED to be receipt by all Respondents. All information required to be submitted pursuant to this AO, including data, documents, records, reports, approvals, and other correspondence, will be submitted to the following Parties at the addressees listed below or to such other addressees as such Party hereafter may designate in a written communication to all other Parties:

*As to the Texas Commission on Environmental Quality:*

*For mail:*

Texas Commission on Environmental Quality  
Remediation Division  
Mail Code 136  
P.O. Box 13087  
Austin, TX 78711-3087  
Attention: Project Manager/Spector Salvage Yard State Superfund Site

*For overnight express mail or delivery service:*

Project Manager  
Mail Code 136  
Spector Salvage Yard State Superfund Site  
TCEQ, Remediation Division  
Building D, Floor 1, Room 184  
12100 Park 35 Circle  
Austin, TX 78753

*By facsimile:*

Project Manager  
Spector Salvage Yard State Superfund Site  
State Lead Section  
(512) 239-2303

### XIII. Periodic Review

- A. Respondents shall provide written progress reports on the Remedial Activities to the ED, as specified below in Paragraphs B and C.
- B. RD/RA Progress Reports
  - 1. Respondents shall submit written monthly progress reports to the ED beginning on the tenth Day of the month following the Effective Date. These progress reports will describe the actions taken pursuant to this AO during the previous month, including a general description of activities and progress during the reporting period, activities projected to be commenced or completed during the next reporting period, and any problems encountered or

anticipated by Performing Parties in commencing or completing the Remedial Activities. Progress reports will include all data received during the reporting period and an up-to-date progress schedule. Progress reports will identify any violations of this AO and calculate any applicable stipulated penalty required under Section XXI (Stipulated Penalties). The requirement to submit these monthly progress reports will be terminated at the earlier of: 1) if no PCA Plan is required, when the AO is terminated in accordance with Section XXXIII (Termination of the Administrative Order) or 2) if a PCA Plan is required, upon the ED's approval of a Final PCA Plan in accordance with Section VI (Remedial Activities) Paragraph C.

2. If an RD/RA progress report submitted by Performing Parties is deficient, the ED will provide written notice to the Site Coordinator. The notice will include comments and a description of the deficiencies.
3. Within ten (10) Days of the ED providing the Site Coordinator with a notice of deficiency of an RD/RA progress report, Performing Parties shall make such changes as the ED deems necessary and resubmit the progress report to the ED.

C. Post Construction Progress Reports

1. Performing Parties shall submit written monthly post construction progress reports to the ED beginning on the tenth Day of the month following the initiation of the PCA as described in Section VI (Remedial Activities) Paragraph D.1. These progress reports will describe the actions taken pursuant to this AO, including a general description of activities and progress during the reporting period, activities projected to be commenced or completed during the next reporting period, and any problems encountered or anticipated by Performing Parties in commencing or completing the Remedial Activities. Post construction progress reports will include all data received during the reporting period and an up-to-date progress schedule. Post construction progress reports will identify any violations of this AO and calculate any applicable stipulated penalty required under Section XXI (Stipulated Penalties). The requirement to submit monthly post construction progress reports will be terminated when the conditions specified in Section XIV (Termination of Post Construction Activities) have been met as determined by the ED in his sole discretion.
2. If a monthly post construction progress report submitted by Performing Parties is deficient, the ED will provide written notice to the Site Coordinator. This notice will include comments and a description of the deficiencies.

3. Not later than ten (10) Days after the ED provides the Site Coordinator with a notice of deficiency of a post construction progress report, Performing Parties shall make such changes as the ED deems necessary and resubmit the post construction progress report to the ED.

#### XIV. Termination of Post Construction Activities

The ED will terminate the requirement to perform PCA if Respondents demonstrate that all Remediation Goals have been met. The Respondents shall satisfactorily perform PCA for the duration of time specified in the RSD, and the Remediation Goals will not be deemed achieved before the time specified in the RSD.

#### XV. Records

- A. Each Respondent shall preserve and retain, and shall instruct its accountants, attorneys, employees, agents, contractors, and subcontractors and anyone else acting on its behalf at the Site to preserve and retain, in the form of originals or copies, all data, records, documents, and information of whatever kind, nature, or description that relate in any way to the Site that are now or that come to be in its possession or control. The previous sentence is meant to include data, records, documents, or information relating to each Respondent's potential liability or to any other person's potential liability for the Site under Section 361.271 of the Act.
- B. All data, records, documents, and information required to be preserved and retained in accordance with Paragraph A will be preserved and retained for a minimum of ten (10) years after the ED's issuance of the Approval of RA Completion. At the end of these ten (10) years, each Respondent shall notify the ED at least ninety (90) Days before any such data, records, documents, or information is destroyed. If the ED requests, Respondents shall, at no cost to TCEQ, provide the ED originals or copies of such data, records, documents, or information which are not protected by a privilege as per Paragraph C below.

Until this AO is terminated in accordance with Section XXXIII (Termination of the Administrative Order), Respondents shall maintain an index of documents that Respondents claim contain privileged information. The index will contain, for each document, the date, author, addressee, and subject of the document. Respondents shall submit a copy of the index to the ED within ten (10) Days after the ED submits a written request.

- C. Any Respondent refusing to provide copies of any data, information, records, or documents based upon a claim of privilege shall identify the data, information, record, or document and explain the basis for the claim. Notwithstanding the immediately

preceding sentence, any data, record, information, or document required to be developed or submitted pursuant to this AO will be available to the public.

- D. At any time prior to the completion of the Work, the ED may contact the Site Coordinator to determine the location and/or to obtain copies of any or all of the data, records, documents, or information developed in accordance with this AO. The Respondents shall provide copies of any such data, records, documents, and information to the ED at no cost to TCEQ.
- E. Upon request by the ED, Respondents shall submit to the ED all data, information, records, and documents requested, including those relevant to the items specified in Section 361.182(b) of the Act for possible inclusion in the administrative record in accordance with 30 TEX. ADMIN. CODE Section 335.345.

#### XVI. Access

- A. As of the Effective Date, any Respondent that owns, in whole or in part, the Site, an off-site area that is to be used for access to the Site, property subject to or affected by the Remedial Activities, or other property where documents generated in accordance with this AO are or come to be located shall provide access to such property to the ED; any federal, state or local authorities and their contractors approved by the ED; and the Performing Parties and their authorized representatives and contractors. Failure to provide such access may result in the imposition of statutory and/or stipulated penalties. Respondents shall indemnify TCEQ, and TCEQ will not be liable, for any loss or claim arising out of Respondents' activities at the Site, on off-site areas to be used for access to the Site, on property subject to or affected by the Remedial Activities, and on other property where documents generated in accordance with this AO are or come to be located.
- B. If a person other than a Respondent owns, in whole or in part, the Site, an off-site area that is to be used for access to the Site, property subject to or affected by the Remedial Activities, or other property where documents generated in accordance with this AO are or come to be located, Respondents shall obtain, or use their best efforts to obtain, Site access agreements from the then current owner(s) within ninety (90) Days of the Effective Date. Respondents shall secure agreements to provide access for the ED, federal, state or local authorities and their contractors as approved by the ED, and the Performing Parties and their authorized representatives and contractors. Respondents shall insure that such agreements specify that TCEQ is not liable for any loss or claim arising out of any activities at the Site, on off-site areas to be used for access to the Site, on property subject to or affected by the Remedial Activities, or on other property where documents generated in accordance with this AO are or come to be located. Respondents shall provide copies of such agreements to the ED before the Performing Parties initiate field activities. Respondents' best efforts shall include, if

necessary, providing reasonable compensation to any property owner not a Party. If access agreements are not obtained within the ninety (90) Days, Respondents shall immediately notify the ED of their failure to obtain access. If the ED determines, in his sole discretion, that the Performing Parties have used best efforts to obtain such access, the ED will, pursuant to statutory authority, make appropriate efforts to obtain such access upon reasonable terms to the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, to the Performing Parties. Any revision to the deadlines specified in this AO necessitated by Respondents' inability to obtain such access may be considered a reasonable ground for extending any affected deadline pursuant to Section XVIII (Extension of Deadlines).

- C. Subject to the Performing Parties' reasonable safety and internal security requirements, the ED will have the authority to enter, freely move about, and exit the Site, any off-site area that is to be used for access to the Site, property subject to or affected by the Remedial Activities, or other property where documents generated in accordance with this AO are located or come to be located, for the purposes of: inspecting conditions at the Site, the Remedial Activities and all information, documents, data, records, operating logs, and contracts related to the Site; reviewing the Performing Parties' progress in performing the Remedial Activities; conducting such tests as the ED deems necessary; using a camera, sound recording device, or other documentary type equipment; verifying the data submitted to the ED by the Performing Parties; and performing any Remedial Activities not being performed or not being satisfactorily performed by the Performing Parties. Nothing herein will be interpreted as limiting or affecting the ED's right of entry or inspection authority under state or federal law. All persons with access to the Site shall comply with the HASP.

#### XVII. Delay in Performance

Respondents shall notify the ED of any delay or anticipated delay in achieving compliance with any requirement of this AO. Such notification will be made by telephone to the Project Manager or, if not available, the alternate Project Manager, within forty-eight (48) hours after Respondents first knew or should have known that an event might cause a delay. Within seven (7) Days after notifying the ED by telephone, Respondents shall provide written notification fully describing the cause of the delay, the anticipated duration of the delay, the measures taken and to be taken by Respondents, their contractors, or consultants, to prevent or minimize the delay, and the timetable by which these measures have been, are being, and will be implemented. A revised timetable will be implemented upon its approval by the ED.

#### XVIII. Extension of Deadlines

Upon failure to comply with the terms and conditions of this AO, any Defaulting Performing Parties shall cease to be Performing Parties and all such rights and privileges as accrue to the Performing Parties pursuant to this AO will immediately terminate as to such Defaulting

Performing Parties. At that time all responsibilities and obligations that attach to RPs in addition to those that attach to Performing Parties will attach to Defaulting Performing Parties that are RPs, including the requirement to pay TCEQ costs in accordance with Section V (Order) Paragraph C.

Notwithstanding anything to the contrary in this AO, the Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties shall bear no costs for any fines, penalties, or increases in the ED's oversight of the Remedial Activities resulting from Defaulting Performing Parties actions or inactions. Defaulting Performing Parties and the RPs may be assessed the ED's full costs for oversight of the Work. If actions required by this AO are delayed or are not timely completed because of acts or omissions of one or more Defaulting Performing Parties, the Agreeing Respondents, or if there are no Agreeing Respondents to this AO, the Performing Parties may request a time extension. Upon such request, the ED will approve the time extension, disapprove it, or approve such alternative time extension as the ED in his sole discretion deems appropriate. Thereafter, Respondents shall adhere to all remaining deadlines in this AO and in any documents developed in accordance with this AO and approved by the ED.

The Performing Parties may seek and the ED may grant an extension of any deadline contained in this AO or in any document submitted pursuant to this AO. Performing Parties shall submit the request for a deadline extension no later than seven (7) Days prior to the deadline date and shall substantiate good cause for extension of the deadline. The determination of what constitutes good cause and the length of any deadline extension will be at the ED's sole discretion.

XIX. Reserved

XX. Compliance with Applicable Laws

- A. Respondents shall perform all actions pursuant to this AO in accordance with the requirements of all applicable or relevant and appropriate federal, state, and local laws, including the Texas Solid Waste Disposal Act as codified in the Texas Health and Safety Code and the Texas Oil and Hazardous Substance Spill Prevention and Control Act as codified in the Texas Water Code. This AO is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.
- B. All materials removed from the Site shall be disposed of or treated at a facility which is in compliance with all applicable or relevant and appropriate Federal, State, and local laws and shall be disposed of or treated in accordance with all such requirements.

XXI. Stipulated Penalties

- A. Subject to the provisions of Sections XXII (Force Majeure) and XXIII (Resolution of Disagreements), noncompliance with this AO shall result in the imposition of stipulated penalties as set forth below.
- B. Penalties Related to Timeliness of Submittals Required by this AO

For failure to:

1. meet the deadlines set forth in Sections V (Order) and VI (Remedial Activities);
2. submit timely reports as set forth herein;
3. submit data in a timely fashion or provide timely notice of sampling as required by Section XI (Submittal of Documents, Sampling, and Analyses); or
4. resubmit a document within the timeframes specified herein;

Agreeing Respondents shall pay stipulated penalties in the following amounts for each Day and part thereof during which any delay listed in Subparagraphs B.1 through B.4 above continues:

<i>Period of Delay</i>	<i>Amount/Day</i>
1st through 14th Day	\$500.00
15th through 45th Day	\$2,000.00
46th Day and beyond	\$3,000.00

- C. Penalties Related to Competency of Submittals

This Paragraph applies to submittals of any document required by Sections VI (Remedial Activities), VII (Failure to Attain Remediation Goals or Findings of Significant Difference), and XIII (Periodic Review) which fail to be responsive and acceptable. Agreeing Respondents shall pay a stipulated penalty of \$5,000 for each week and part thereof that an acceptable and responsive document is not submitted. This penalty may be assessed in addition to any penalties assessed under Paragraph B of this Section.

- D. Penalties Related to Project Milestones

For failure to:

1. achieve any RA Project Milestones in accordance with the schedule approved under Section VI (Remedial Activities) Paragraph B; or
2. achieve any PCA Project Milestones in accordance with the schedule approved under Section VI (Remedial Activities) Paragraph B.

Agreeing Respondents shall pay stipulated penalties in the following amounts for each Day and part thereof during which any delay listed in Subparagraphs D.1 through D.2 above continues:

<i>Period of Delay</i>	<i>Amount/Day</i>
1st through 14th Day	\$1,000.00
15th through 45th Day	\$3,000.00
46th Day and beyond	\$10,000.00

- E. For disobeying an order to halt any or all of the Remedial Activities under Section VIII (Project Manager/Site Coordinator), Agreeing Respondents shall pay stipulated penalties of \$10,000 per Day.
- F. For failure to use best efforts to obtain Site access in accordance with Section XVI (Access), Agreeing Respondents shall pay a stipulated penalty of \$1,000 per Day.
- G. For denying access provided for in Section XVI (Access) Agreeing Respondents shall pay stipulated penalties of \$10,000 per Day.
- H. Any Agreeing Respondent who fails to provide records within ten (10) Days after receipt of a written request from the ED or within such other period as specified herein shall pay a stipulated penalty of \$10,000 per Day.
- I. With the exception of the stipulated penalties referenced in Paragraphs E, G and H above which attach to individual Agreeing Respondents, all stipulated penalties assessed in accordance with this Section are joint and several, not individual, obligations.
- J. Agreeing Respondents shall pay stipulated penalties assessed under this Section as specified in Paragraph K below within sixty (60) Days after ED transmits a demand letter stating that stipulated penalties have accrued or after resolution of a disagreement as specified in Section XXIII (Resolution of Disagreements), whichever comes later. Stipulated penalties will accrue from the date of noncompliance until the noncompliance is corrected, provided however, that if any Agreeing Respondent prevails in resolution of disagreements as specified in Section XXIII (Resolution of

Disagreements), it shall have no liability to pay stipulated penalties with regard to those matters submitted for resolution of disagreements in accordance with Section XXIII (Resolution of Disagreements) in which it prevails.

- K. Agreeing Respondents shall pay stipulated penalties to "General Revenue Fund of the State of Texas" and shall mail payments to:

Chief Fiscal Officer (MC 180)  
Texas Commission on Environmental Quality  
"Re: Spector Salvage Yard State Superfund Site Administrative Order, Docket  
No. 2008-0759-SPF "  
P.O. Box 13088  
Austin, Texas 78711-3088

- L. The requirement to pay stipulated penalties that have been incurred prior to the termination of this AO in accordance with Section XXXIII (Termination of the Administrative Order) will survive termination of this AO.
- M. A single act or omission may be the basis for more than one type of stipulated penalty. A single act or omission may also be subject to more than one (1) Day of stipulated penalties. In cases where more than one stipulated penalty applies to a single act or omission, the ED may choose which stipulated penalties to assess.
- N. The ED has the sole discretion to reduce or waive stipulated penalties and to do so as to specific Agreeing Respondents or groups of Agreeing Respondents.
- O. Stipulated penalties against Agreeing Respondents will be in lieu of administrative and civil penalties for the same violation but will not prevent TCEQ from seeking enforcement of the ordering provisions by injunctive relief. Respondents that are not Agreeing Respondents are subject to administrative and civil penalties.

## XXII. Force Majeure

- A. If a delay in performance is caused (in whole or in part) by events beyond the reasonable control of the Performing Parties, that failure will not be construed as a violation of this AO. The burden of establishing that an event is beyond their reasonable control lies with the Performing Parties. The Performing Parties shall notify the ED in writing within seven (7) Days of the start of the Force Majeure event and within seven (7) Days of the end of the Force Majeure event. Performing Parties shall submit the notification as specified in this Section. Failure to so notify the ED will constitute a waiver of the claim of Force Majeure.

Such notice will describe in detail the cause of the delay, the anticipated duration of the delay, the measures taken and to be taken by the Performing Parties, their contractors, or consultants, to prevent or minimize the delay, the timetable by which these measures have been, are being, and will be implemented. Measures to prevent or minimize the delay will be implemented upon the ED's written approval of the timetable. The Performing Parties shall also submit, for the ED's approval, a proposed schedule for subsequent Remedial Activities whose deadlines have been affected by the Force Majeure event. Neither the ED's approval of the timetable of measures to be taken to prevent or minimize delays or of the revised schedule of Remedial Activities will be construed as excusing the delay or as a waiver of TCEQ's rights to enforce this AO.

- B. Force Majeure events will not include increased costs or expenses of any part or all of the Work, nor the financial inability of any Performing Party to perform any part or all of the Work.
- C. If the ED and the Performing Parties cannot agree that the cause for the delay was a Force Majeure event or cannot agree upon the schedule for subsequent Remedial Activities, then the disagreement will be resolved according to Section XXIII (Resolution of Disagreements). The Performing Parties shall have the burden of demonstrating that Force Majeure is warranted.

### XXIII. Resolution of Disagreements

- A. The Agreeing Respondents and the ED shall attempt to resolve on an informal basis any issues arising under Sections V (Order) through XXXIII (Termination of the Administrative Order) on which there is disagreement. The Agreeing Respondents shall commence informal negotiations by notifying the Project Manager in writing that there is a disagreement and that this Section is being invoked. Except as provided below in Paragraph D, informal negotiations will not extend beyond thirty (30) Days from the date the Project Manager receives such notification, unless the Agreeing Respondents and the ED agree otherwise in writing.
- B. The Agreeing Respondents shall notify the Project Manager within thirty (30) Days after the Day the Agreeing Respondents knew or should have known of the events giving rise to the disagreement. Should the Agreeing Respondents fail to give such notice, the ED's decision on any disagreement will be binding.
- C. Notification of the Project Manager in accordance with Paragraph A above will not by itself postpone the deadlines established in accordance with this AO or stay the accrual of any applicable stipulated penalties for the matter at issue. However, the obligation to pay any applicable stipulated penalties to the TCEQ will be stayed pending resolution of the disagreement in accordance with this Section.

- D. If the ED makes a determination to perform a portion or all of the Remedial Activities, the Agreeing Respondents shall have five (5) Days after notification to the Site Coordinator to commence informal negotiations by notifying the Project Manager in accordance with Paragraph A above. Informal negotiations will not extend beyond fifteen (15) Days from the date the ED receives notification, unless the Agreeing Respondents and the ED agree otherwise in writing.
- E. The procedure for any resolution of disagreements subsequent to informal negotiations will be found in Sections 361.321 and/or 361.322 of the Act.
- F. Unless otherwise specifically set forth herein, the fact that resolution of disagreements is not specifically set forth in individual Sections is not intended to and will not bar the Agreeing Respondents from invoking this Section as to any disagreement arising under Sections V (Order) through XXXIII (Termination of the Administrative Order), including any disagreement concerning the ED's exercise of discretion under the terms of this AO.

#### XXIV. Indemnification

Respondents agree to indemnify and hold harmless TCEQ and its officers, employees, agents, principals and assigns from and against all fines, penalties, claims, damages, losses, demands, judgments, settlements, costs of suit, and attorney's fees that arise out of or result from:

1. Respondents' performance of an inherently dangerous activity or handling of a solid waste or hazardous substance at or from the Site;
2. Respondents' negligent, reckless, or intentional acts or omissions or such acts or omissions of any of its agents or employees; and
3. the negligent, reckless, or intentional acts or omissions of any of Respondents' contractors or suppliers or their agents or employees.

#### XXV. Liability

The State of Texas, by issuing this AO, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions of Respondents, or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any of the Work. Neither TCEQ nor the State of Texas will be deemed a party to any contract entered into by any Respondent or its directors, officers, employees, agents, successors, assigns, contractors, or consultants to perform any or all of the Work or any other activity at the Site.

## XXVI. Severability

The provisions of this AO are intended to be severable and are deemed severable. Should any provision of this AO be rendered unenforceable by a court of competent jurisdiction or other appropriate authority the remaining provisions will remain valid and enforceable.

## XXVII. TCEQ's General Reservation of Rights and Retention of Claims

Except as specified herein, nothing in this AO will constitute or be construed as a covenant not to sue by TCEQ or the State of Texas or a release from any claim, cause of action, or demand in law or equity against any person, firm, partnership, or corporation. Except as specified herein, the ED reserves and this AO is without prejudice to all rights against Respondents with respect to all matters including:

1. Claims based on Respondents' failure to fulfill the requirements of this AO;
2. Liability arising from the past, present, or future disposal, release, or threat of release of solid wastes or hazardous substances outside of or not related to the Site;
3. Liability for future disposal of solid wastes or hazardous substances at the Site, other than as provided in the RSD or in any work plan required to be developed in accordance with this AO;
4. Liability for violations of federal or state law which occur during or after implementation of the Remedial Activities;
5. Claims based on criminal liability; and
6. Claims for natural resource damages as defined by CERCLA (42 U.S.C. Sections 9601 et seq.), the Oil Pollution Act of 1990 (33 U.S.C. Sections 2701 et seq.), the Oil Spill Prevention and Response Act (Texas Natural Resources Code Chapter 40), and the Federal Water Pollution Control Act (33 U.S.C. Sections 1251 et seq.).

Notwithstanding any other provisions of this Section, any De Minimis Responsible Party will be released from any further liability to the TCEQ and the State of Texas arising out of or relating to the Site only upon satisfactory completion of its requirements under this AO as specified in Section V (Order) Paragraph D.

## XXVIII. Section Headings

Section headings are included for convenience of reference only and will be disregarded in the construction and interpretation of any of the provisions of this AO.

## XXIX. Continuing Authority

TCEQ specifically retains authority over Respondents for the duration of this AO for the purposes of issuing such further orders or directions as may be necessary or appropriate to construe, implement, modify, enforce, terminate, or reinstate the terms of this AO or for any further relief as the interest of the State of Texas may require.

## XXX. Enforcement

Except as provided in Section XXI (Stipulated Penalties) Paragraph O, nothing herein will preclude TCEQ from taking any additional enforcement actions against Respondents at any time including issuing such additional orders as TCEQ may deem necessary or from requiring Respondents, but not any De Minimis Responsible Parties, to perform additional activities in the future and to completely perform all of the Work.

This AO in no way obligates the State of Texas to assist Respondents in defending contribution actions brought by other persons or entities.

## XXXI. Computation of Time

- A. Deadlines falling on a weekend or a State of Texas holiday will be extended until the next business day.
- B. The terms "submit" and "provide" as used herein will refer to the date on which information, data, a document, or a record is to be received by the appropriate Party. Submittals received on the deadline date will be deemed timely.

## XXXII. Opportunity to Conference

- A. The Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties may, within twenty (20) Days after the Effective Date, request a conference with the Project Manager. The request must be submitted in writing to the Project Manager. Any such conference will occur at the TCEQ's main campus in Austin.
- B. The purpose and scope of the conference will be limited to issues involving the implementation of the Remedial Activities. The conference is not an evidentiary hearing, does not constitute a proceeding to challenge this AO, and does not give

Agreeing Respondents or, if there are no Agreeing Respondents to this AO, the Performing Parties the right to seek review of this AO.

#### XXXIII. Termination of the Administrative Order

- A. The ED may terminate this AO when he determines that alternative or additional work is required at the Site because the Remediation Goals will not be attained by implementation of the Remedial Activities, unless Performing Parties and the ED agree on such alternative or additional work, agree to modify the Remedial Action to include such additional or alternative work in accordance with Section V (Order) Paragraph J, and agree to modify this AO in accordance with Section V (Order) Paragraph J.
- B. Except as provided in this Section, when the ED determines that the Work has been completed in accordance with this AO, the ED will provide written notice to Performing Parties that Performing Parties have fully satisfied the requirements of this AO. Such notice will be issued within one hundred and eighty (180) Days after the ED determines that the Work has been completed in accordance with this AO. This notice will not, however, terminate Respondents' obligations to comply with those provisions specified herein that are intended to survive this AO, including requirements regarding record preservation and Sections XV (Records), XXI (Stipulated Penalties), XXV (Liability), XXIX (Continuing Authority), and XXX (Enforcement).

#### XXXIV. Rules of Construction

The masculine, feminine, and neuter gender will each include the other and the singular and plural number will each include the other.

This AO may be executed in two or more counterparts each of which will be deemed an original but all of which together will constitute one and the same document.

#### XXXV. Sovereign Immunity

The Parties hereby agree that nothing in this AO waives the State of Texas' sovereign immunity relating to suit, liability, and the payment of damages. The Parties further agree that all claims, suits, or obligations arising under or relating to this AO are subject to and limited to the availability of funds appropriated by the Texas Legislature for that respective claim, suit or obligation.

*The Chief Clerk shall send a copy of this Administrative Order to all Parties.*

Issue date:

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Texas Commission on Environmental Quality

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Buddy Garcia, Chairman

**SPECTOR SALVAGE YARD  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT A**

**REMEDY SELECTION DOCUMENT**

# REMEDY SELECTION DOCUMENT



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

April 2008

*PREPARED BY: CAROL BOUCHER, P.G., PROJECT MANAGER  
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
REMEDATION DIVISION*

**SPECTOR SALVAGE YARD STATE SUPERFUND SITE  
ORANGE, ORANGE COUNTY, TEXAS  
REMEDY SELECTION DOCUMENT**

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**SPECTOR SALVAGE YARD STATE SUPERFUND SITE  
ORANGE, ORANGE COUNTY, TEXAS  
REMEDY SELECTION DOCUMENT**

**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 (Tract 1) and an eastern two-thirds (Tract 2) portions. 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 *Remedy Selection Document* (RSD) presents the *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 VIII, "Glossary" of this RSD.

**III. LEGAL AUTHORITY**

The investigation of the nature and extent of contamination at the Spector Site and the selection of the *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 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 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 for assistance 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. Additional investigation activities were conducted in June 2003, which included additional onsite surface soil sampling and analysis, and December 2004, which included offsite surface soil sampling and analysis.

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

Groundwater - The Upper Chicot aquifer beneath the Spector Site is impacted by various volatile organic constituent concentrations exceeding the PCL applicable to Class 2 groundwater resources.

Onsite Soil - The shallow surface soil at the site, 0 to 2 feet below grade, had 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 - A 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.

#### D. REMEDY SELECTION PHASE REPORTS AND MEETING

The Proposed Remedial Action Document (PRAD), January 2007, presented a brief discussion of all remedial actions evaluated and the specific remedy proposed by the TCEQ to address the contaminants exceeding the PCLs at the Spector site.

A Public Meeting was held on Thursday, March 29, 2007 at 7:00 P.M. in the Council Chambers of the Orange Public Library Orange, 220 North 5th Street, Orange County, Texas, for the purpose of presenting the PRAD and soliciting public comment about the proposed remedy. Upon consideration of the comments received during the public comment period the TCEQ selected the remedy described in this Remedy Selection Document.

### VI. ACTION LEVELS

*Remedial Action* Objectives are the stated goal of the remedy that must be achieved to make the site protective of human health and the environment. Action levels are the maximum numeric concentrations of the COCs, which if not exceeded at the point of exposure (POE), i.e. the Plume Management Zone (PMZ) limit, will not pose an unacceptable risk of adverse health effects. For the Spector Site, the 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 Spector site:

GROUNDWATER CONTAMINANT NAME	ACTION LEVEL (Critical PCL)	REMEDIAL ACTION OBJECTIVES
carbon tetrachloride	0.005 mg/L	control and prevent use of, and exposure to, the groundwater within the PMZ
chloroform	0.24 mg/L	
methylene chloride	0.005 mg/L	

## VII. THE SELECTED REMEDIAL ACTION

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 Texas Administrative Code Section 335.348(l)). The TCEQ has selected a Plume Management Zone (PMZ) established by *institutional controls* as the *Remedial Action* for the shallow groundwater at the Spector Site. 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.

Also in accordance with TRRP, the *Performing Parties* (or the TCEQ if no parties agree to fund or perform the remedial action) shall establish a PMZ by recording *institutional controls* in the real property records of Orange County. The *institutional control* shall be placed on each property which overlies groundwater contaminated above the PCLs and shall describe the specific area of the PMZ on each affected property. The *institutional controls* shall remain in place until such time as the TCEQ has determined that the Remedial Action Objectives have been permanently achieved. If the *Remedial Action* is implemented by the TCEQ, the TCEQ will request that the owner of each affected property voluntarily agree to record a restrictive covenant to serve as the *institutional control*. If the property owner does not agree to the restrictive covenant, the TCEQ shall record a deed notice to serve as the *institutional control*. If the *Remedial Action* is implemented by *Performing Parties*, the *Performing Parties* shall be responsible to secure the *institutional control* in the form of a restrictive covenant from the owner of the affected property. All of the elements of the *Remedial Action* described above shall be in accordance with detailed requirements established in TRRP.

Monitor wells installed at the Spector Site shall be sampled for the COCs identified in Section “VI. Action Levels” and the hydraulic gradient shall be measured quarterly during the first five years of the *Remedial Action*. Monitoring results shall be evaluated no less frequently than annually to verify that the plume has not, and is not expected to, grow beyond the limits of the PMZ. If at any time during the 30-year post remedial action care period the TCEQ determines that the behavior of the contaminant plume is reliably predictable in terms of attenuation and growth management, the TCEQ may consider reducing the monitoring frequency and duration. This may include a reduction in monitoring requirements to include monitoring the hydraulic gradient only. If during site groundwater monitoring activities undertaken by the TCEQ to monitor the effectiveness of the

*Remedial Action*, the TCEQ determines that the Action Levels and/or Remedial Action Objectives have been permanently achieved; the TCEQ may discontinue sampling and/or monitoring activities.

## VIII. GLOSSARY

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

*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.

*Performing Parties* – Collectively, 1) any parties who agreed to fund or conduct the remedial action by entering into an agreed order with the TCEQ and 2) parties that did not enter into an agreed order with the TCEQ but that fund or perform the selected *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 air, soils, groundwater and surface water, both within and beyond the boundaries of the site.

*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/>.

**SPECTOR SALVAGE YARD  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT B**

**LIST OF SOLID WASTES AND HAZARDOUS  
SUBSTANCES AT THE SITE**

Solid Wastes

Transformers containing Poly Chlorinated Biphenols (PCBs)  
Miscellaneous Scrap Metal  
Empty Gas Cylinders  
Drums Containing Chlorinated Organic Wastes  
Drums Containing Paint-Related Wastes  
Drums Containing Used Oil and Water

Hazardous Substances

Carbon Tetrachloride  
Chloroform  
Methylene Chloride  
Lead  
Mercury  
Benzo-a-pyrene  
Endrin  
PCBs

**SPECTOR SALVAGE YARD  
STATE SUPERFUND SITE  
ADMINISTRATIVE ORDER**

**EXHIBIT C**

**FIELD SAMPLING PLAN CONTENTS OUTLINE**

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FOR  
FIELD SAMPLING PLAN**

# FIELD SAMPLING PLAN

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Title and Approval Sheet

Distribution List

Table of Contents

### 1.0 Introduction

- **Investigation Phase: Purpose** – Briefly states the specific purpose of this FSP relative to the Quality Assurance Project Plan, Work Plan and/or other documents. A schematic presentation of the project documents and the location of key planning components should be presented.
- **RA Phase: Purpose** – Briefly states the specific purpose of this FSP relative to the RA Contract Document, Quality Assurance Project Plan and/or other documents. A schematic presentation of the project documents and the location of key planning components should be presented.
- **Project/Task Organization** – Identifies the key individuals or organizations participating in the project, their role(s) and responsibilities, and the organizational chart for the project. (Project-specific information for QAPP Element A4)<sup>1</sup>

### 2.0 Site and Project Summary

- **Investigation Phase: Problem Definition/Background** - Briefly states the site description, surrounding area, historical information, previous investigation, suspected contamination source, probable transport pathways and other site information. Most of this information is available from the Conceptual Site Model developed during the planning phase. Any specific data gaps and methods to fill the data gaps should also be discussed. States the specific problem to be solved or the decision to be made and identifies the decision maker. (Project specific information for QAPP Element A5)<sup>1</sup>
- **RA Phase: Problem Definition/Background** - Briefly states the site description, historical information, previous investigation, a summary of the selected remedy, a brief discussion of the remedial action activities. States the specific problem to be solved or the decision to be made and identifies the decision maker. (Project specific information for QAPP Element A5)<sup>1</sup>
- **Project/Task Description and Schedule** - Briefly summarizes the project and the project tasks, the turnaround time for the project, including the turnaround time requirement for laboratory analysis. (Project specific information for QAPP Element A6)<sup>1</sup>

- Describes any **special personnel and equipment** required for the specific type of work being planned or measurement being taken and any special training/certification requirements. (Project specific information for QAPP Element A8)<sup>1</sup>
- **Data Acquisition Requirements (Non-direct Measurements)** - Defines the criteria for the use of non-measurement sources, such as computer databases, programs, literature files, and historical databases. (Project specific information for QAPP Element B9)<sup>1</sup>
- **Assessment Techniques** - Defines the number, frequency, and type of quality assessment activities, the responsible staff, the procedures to be performed during the life of the project. (Project specific information for QAPP Element C1)<sup>1</sup>

### 3.0 Analytical Requirements and Data Quality Objectives

- **Data Quality Objectives** - Summarizes the project specific quality objectives and measurement performance criteria. This section should include the summary of the outcomes of the technical planning process (e.g., the 7-Step DQO process) used to develop the project objectives. The summary should also include a reference to Appendix B of the FSP, which contains a full discussion of the proposed DQOs for the project from which the summary was taken. Designates and briefly describes sampling units (e.g. AOCs, surface soil to 6 inches). States objectives by sampling unit or media. The project specific calculations or algorithms are also specified in this section. (Project specific information for QAPP Element A7)<sup>1</sup>
- This section should include a summary table containing a list of all chemicals of concern identified for the project with the corresponding Level of Required Performance (LORP) (e.g., action levels and preliminary remedial goals), analytical methods (including the preparation, analysis and cleanup methods), and the corresponding method quantitation limits for all analytes of concern.

### 4.0 Sampling Plan Design

- **Sampling Process Design** - All the relevant components of the experimental design and the key parameters to be evaluated are included in this section. This section should include the sampling activities, the rationale for the design (in terms of meeting the DQOs), the sampling design assumptions, the procedures for locating and selecting environmental samples, a classification of measurements as critical or noncritical, the type and number of samples required for the project including the required field QC samples, the sampling locations and frequency, the applicable sample matrices, and an identification of samples critical to the project. Most of this information should be available from the output from Step 7 of the DQO process. (Project specific information for QAPP Element B1)<sup>1</sup>
- Describes the sampling plan for each media, as applicable, including figures and tables.

Surface Soil

Subsurface Soil

Groundwater  
Surface Water and Sediment  
Air  
Other Matrices

## 5.0 Sampling Methods and Sample Handling

- **Sampling Method Requirements** - Identifies sampling methods and equipment and describes the procedures for sample collection, preparation, and decontamination. This section should reference the Standard Operating Procedures located in Appendix A. (Project specific information for QAPP Element B2)<sup>1</sup>
- **Sampling Handling and Custody Requirements** - This section should include the required sample volumes, container types, and preservation requirements for non-standard or other analytical methods proposed for project work that are not listed in Table B2-1 of the Superfund Program QAPP. This section also includes the field sample handling and custody requirements for the project. (Project specific information for QAPP Element B3)<sup>1</sup>
- This section contains the specific requirements for field instrument/equipment testing, inspection and maintenance for the project. Additionally, field instrument calibration and **frequency requirements** for water level, pH, temperature, conductivity, dissolved oxygen, redox potential, turbidity and other field measurements are addressed in this section as applicable to the project. This section also includes the critical field supplies, the inspection or acceptance testing requirements, and the acceptance criteria. (Project specific information for QAPP Element B6, B7, and B8)<sup>1</sup>

## 6.0 Field Survey and Measurements

- This section describes the sampling methods and criteria for **field survey and measurements**, such as land surveys, hydrogeological tests and measurements, geophysical surveys and soil gas surveys, required for the project.

## 7.0 Additional Field Activities

- This section contains descriptions and procedures for **other field activities**, such as presampling/mobilization activities, required notification, property access, site restoration and investigative-derived waste (IDW) handling and disposal.

## 8.0 Exceptions, Additions and Changes to the TCEQ Superfund Program QAPP

- List any **exceptions, additions and changes to the Superfund Program QAPP** in each of the appropriate sub-sections corresponding to the table of contents of the Program QAPP below. Site specific information (e.g., Group A and Group B elements) specified above should not be restated in this section. Please refer to the Program QAPP for details. This section should also include specifications for non-standard methods and other analytical methods not specified in the Program QAPP.

GROUP A: PROJECT MANAGEMENT

- A.1 Title and Approval Sheet
- A.2 Table of Contents
- A.3 Distribution List
- A.4 Project/Task Organization
- A.5 Problem Definition/Background
- A.6 Project/Task Description
- A.7 Quality Objectives and Criteria
- A.8 Special Training/Certification
- A.9 Documentation and Records
  - A.9.1 Field Operation Records
  - A.9.2 Laboratory Data Package
  - A.9.3 Laboratory Performance Criteria Data
  - A.9.4 Data Handling Records
  - A.9.5 Data Reporting Package Format and Document Control
  - A.9.6 Field Records/Data Reporting Package Archiving and Retrieval

GROUP B: DATA GENERATION AND ACQUISITION

- B.1 Sampling Process Design (Experimental Design)
- B.2 Sampling Methods
  - B.2.1 Sample Containers
  - B.2.2 Sample Volumes, Container Types, and Preservation Requirements
- B.3 Sample Handling and Custody
  - B.3.1 Field Sample Handling and Custody
  - B.3.2 Laboratory Sample Handling and Custody
- B.4 Analytical Methods
  - B.4.1 Screening Methods
  - B.4.2 Definitive Preparation Methods
  - B.4.3 Definitive Analysis Methods
  - B.4.4 Non-standard Method Validation
- B.5 Quality Control
  - B.5.1 Definitive Analytical Methods
  - B.5.2 Screening Methods
  - B.5.3 Quality Control Measure Descriptions
  - B.5.4 Elements of Quality Control
  - B.5.5 Method Detection Limit, Method Quantitation Limit and Sample Quantitation Limit
- B.6 Instrument/Equipment Testing, Inspection, and Maintenance
  - B.6.1 Maintenance Responsibilities
  - B.6.2 Maintenance Schedules
  - B.6.3 Spare Parts
  - B.6.4 Maintenance Records
- B.7 Instrument/Equipment Calibration and Frequency
- B.8 Inspection/Acceptance of Supplies and Consumables
- B.9 Non-direct Measurements
- B.10 Data Management

- B.10.1 Logbooks and Forms*
- B.10.2 Data Storage/Retrieval*

GROUP C: ASSESSMENT AND OVERSIGHT

- C.1 Assessments and Response Actions*
- C.2 Reports to Management*

GROUP D: DATA VALIDATION AND USABILITY

- D.1 Data Review, Verification and Validation*
- D.2 Verification and Validation Methods*
- D.3 Reconciliation with User Requirements*

List of Tables

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List of Appendices

- *Appendix A - Standard Operating Procedures*
- *Appendix B - Data Quality Objectives Document*
- *Appendix C-Z - Other supporting documents as necessary.*

<sup>1</sup> Guidelines used in the preparation of the QAPP elements are:

- EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5 (EPA/240/B-01/003), March 2001
- EPA Guidance for Quality Assurance Project Plans, EPA QA/G-5 (EPA/240/R-02/009), December 2002