



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 W. JACKSON BLVD
CHICAGO, IL 60604



16 AUG 2012

MEMORANDUM

SUBJECT: ACTION MEMORANDUM - Request for a Time-Critical Removal Action and Exemptions from the 12-Month and \$2 Million Statutory Limits at the Tuchman Cleaners Site, Indianapolis, Marion County, Indiana (Site ID # B5ZU)

FROM: Shelly Lam, On-Scene Coordinator
Emergency Response Branch 1/Response Section 1

THRU: Jason H. El-Zein, Chief
Emergency Response Branch 1

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

This memorandum requests and documents your approval to expend up to \$2,632,311 to conduct time-critical removal actions and for exemptions from the 12-month and \$2 million statutory limits at the Tuchman Cleaners Site (the Site) in Indianapolis, Marion County, Indiana.

The response actions proposed herein are necessary in order to mitigate threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances at the Site, a former dry cleaner. EPA's On-Scene Coordinator (OSC) has documented the presence of hazardous substances at the Site.

The time-critical removal actions include the following: develop and implement a Site Health and Safety Plan and a Site Security Plan; remove soil that poses a direct contact threat; backfill excavated areas; conduct vapor intrusion assessment and mitigation; and transportation and disposal off-site of hazardous substances, pollutants and contaminants.

If responsible parties cannot be found, EPA will conduct these response actions in accordance with Section 104(a)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9604(a)(1), and 40 C.F.R. § 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) to abate or eliminate the immediate threats posed to public health and/or the environment.

The uncontrolled conditions of the hazardous substances present at the Site require that this action be classified a time-critical removal action. The project will require approximately 145 working days to complete, including the time to complete vapor intrusion assessment and mitigation activities.

There are no nationally significant or precedent setting issues associated with the Site. The Indiana Department of Environmental Management (IDEM) Site Investigation Section is proposing this Site to be included as part of the larger Keystone Corridor Site for the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: INN000510530
RCRA ID: IND982425662
Category: Time-Critical Removal Action

A. Site Description

1. Removal Site Evaluation

The following sections provide background information on the Site. EPA utilized historical data from previous investigations and results from a Site Assessment to determine site conditions.

a. Tuchman Cleaners

Tuchman Cleaners (Photo 1) operated as a dry cleaner at the Keystone facility beginning in 1953 until 2008 when the parent company declared bankruptcy. Prior to the construction of the dry cleaning facility, the property was an empty lot. The Site is currently vacant.

In 2002, the URS Corporation (URS) conducted a site assessment and began remediation at Tuchman Cleaners for the former owner. URS's historical data documented volatile organic compound (VOC) contamination on Site, including the chlorinated solvents tetrachloroethene (PCE) and trichloroethene (TCE), in soil and groundwater. PCE was detected in near-surface soil (1 foot below ground surface (bgs)) at a maximum concentration of 2,400 milligrams per kilogram (mg/kg) (Administrative Record [AR] No. 6). In July 2007, PCE was detected in groundwater at a maximum concentration of 135,000 micrograms per liter (ug/L) in groundwater monitoring well MW-2i. TCE was detected at a maximum concentration of 2,960 ug/L (AR #10). URS's data indicated that the Tuchman plume had migrated vertically to an intermediate aquifer and laterally toward municipal production well FC-17 at the Fall Creek Water Treatment Plant, which is southwest of the Site. Data collected by URS also indicated that production well FC-11, although hydrogeologically upgradient of Tuchman, was hydraulically connected to the Tuchman site and contained low levels of contamination attributed to Tuchman.

b. IDEM

IDEM's Site Investigations Section is proposing that the Tuchman Cleaners be listed as part of a larger site, the Keystone Corridor, on the NPL. IDEM conducted a Preliminary Assessment/Site Investigation (PA/SI), and has identified multiple potential source areas that are contributing chlorinated solvents to the aquifers in the area of the Fall Creek well field, including Tuchman Cleaners, Thomas Caterers of Distinction, Purtee Plating, and others. Of the source areas in the Keystone Corridor, IDEM determined that Tuchman Cleaners has the highest levels of contamination. PCE in groundwater at the Tuchman Site was detected at a maximum concentration of 150,000 ug/L, while PCE in groundwater at Thomas Caterers of Distinction was detected at a maximum concentration of 520 ug/L. The contamination at Tuchman is over 288 times higher than the next most contaminated source area in the Keystone Corridor (AR #1).

c. City of Indianapolis

The City of Indianapolis placed municipal well FC-17 on restricted use on October 24, 2004 pending remediation of the Tuchman Cleaners Site. Municipal well FC-11 is still in use although low levels of chlorinated solvents have been detected in the well (AR #2). Previous investigations by URS documented that there is a hydraulic connection between FC-11 and Tuchman Cleaners. The City of Indianapolis demolished the Site building in early 2012 to assist with removal actions.

d. EPA

At the request of IDEM's State Cleanup Section, EPA performed Site Assessments January 24 – 27, 2011 and April 9-10, 2012. In general, EPA's objectives in the Site Assessment were to focus sample collection on areas where little historical data existed and document current site conditions. Activities performed during the Site Assessment included:

- Documenting Site conditions;
- Conducting air monitoring; and
- Collecting samples from soil, groundwater, and soil gas.

EPA and the Superfund Technical Assessment and Response Team (START) contractor collected seven subsurface soil samples for VOC and Toxicity Characteristic Leachate Procedure (TCLP) VOC analysis; ten groundwater samples from existing monitoring wells for VOC analysis; and nine soil gas samples, two of which were collected on-Site and seven of which were collected off-Site in a residential neighborhood about ¼ mile west of the Site. Analytical results are in Tables 1 - 3 and in START's Site Assessment Reports (AR #15 and 16). Photos 2-6 show various site assessment activities. Soil and groundwater sample locations are presented in Figure 3, and soil gas locations are shown in Figure 4.

EPA compared soil results to May 2012 Regional Screening Levels (RSL) for industrial soil. 1,1,2,2-Tetrachloroethane was detected in one sample at a concentration of 11 mg/kg, above the

RSL of 2.8 mg/kg. All samples were below the Resource Conservation Recovery Act (RCRA) criteria for toxicity. Soil results are in Table 1.

Groundwater results were compared to Superfund Removal Actions Levels (RAL), which were developed for contaminated drinking water sites. The groundwater at Tuchman is not a drinking water source but could potentially migrate into the drinking water supply in the Fall Creek well field. Six of the ten monitoring wells sampled contained VOCs above the Superfund RALs. These included on-Site monitoring wells MW2i, MW-4i, MW-9, and MW-11; and off-Site monitoring wells MW-13 and MW-14. Groundwater results are in Table 2.

- cis-1,2-Dichloroethene (DCE) was detected in 3 samples above the RAL of 400 micrograms per liter (ug/L). Concentrations ranged from 640 to 1,200 ug/L.
- PCE was detected in 5 samples above the RAL of 70 ug/L. Concentrations ranged from 780 to 49,000 ug/L.
- TCE was detected in two samples at concentrations of 1,200 and 2,300 ug/L, above the RAL of 300 ug/L.
- Vinyl chloride was detected in 5 samples above the RAL of 2 ug/L at concentrations ranging from 3.2 to 220 ug/L.

Soil gas data was compared to soil gas screening levels for a 10^{-4} cancer risk as established in EPA's Vapor Intrusion Screening Level (VISL) spreadsheet, which were then converted from units of micrograms per cubic meter (ug/m^3) to parts per billion by volume (ppbv) using standard atmospheric temperature and pressure and the molecular weight of each chemical constituent. Seven of the nine soil gas samples contained VOCs above the VISL screening levels. These included samples from two on-Site locations and five off-Site locations in the residential area. Soil gas results are in Table 3.

- Chloroform was detected above the screening level of 22.5 ppbv in one sample at a concentration of 260 ppbv.
- Propylbenzene was detected in one sample at a concentration of 4,500 ppbv, which was above the screening level of 2,036 ppbv.
- PCE was detected in 3 samples above the screening level of 60 ppbv. Concentrations ranged from 150 to 36,000 ppbv. One off-Site sample in the residential area had a concentration of 1,400 ppbv.
- TCE was detected in 7 samples above the screening level of 3.9 ppbv at concentrations ranging from 4.2 to 210 ppbv, with the highest concentration from a sample collected in the residential area.

2. Physical location

The Tuchman Cleaners Site is located at 4401 N. Keystone Avenue in Indianapolis, Marion County, Indiana, 46205 (see Figures 1 and 2 and Photo 1). The Site is located in an area that is commercial and residential. Approximately 10,000 people live within one mile of the Site.

The Fall Creek well field is less than ¼ mile from the Site. Fall Creek, a major tributary to the White River, is located approximately 500 feet south of the Site. The geographical coordinates for the Site are latitude 39.836942 ° north and longitude 86.121094° west.

The OSC screened the area surrounding the Tuchman Cleaners Site for Environmental Justice (EJ) concerns using Region 5's EJ Assist Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSEAT)). Census tracts with a score of 1, 2, or 3 are high-priority potential EJ areas of concern according to EPA Region 5. The Tuchman Cleaners Site is in a census tract with a score of 1 (Attachment III). Therefore, Region 5 considers this Site to be a high-priority potential EJ area of concern. Please refer to the attached analysis for additional information.

3. Site characteristics

The Site is 2.2 acres in size. The City of Indianapolis demolished the site building in early 2012. As such, the site contains the former building foundation and a parking lot. The Site has been vacant since 2008, but was operated as a dry cleaning business from 1953 to 2008. The proposed time-critical removal will be the first removal action at the Site by EPA.

4. Release or threatened release into the environment of a hazardous substance, or pollutant, or contaminant

A release or threat of release of hazardous substances, pollutants, or contaminants is present at the Site. EPA documented the presence of hazardous substances as defined by section 101(14) of CERCLA including PCE, TCE, cis-1,2- DCE, vinyl chloride, chloroform, and 1,1,2,2-tetrachloroethane; and pollutants and contaminants as defined by 101(33) of CERCLA. The Site Assessment Reports documenting these findings are part of the Administrative Record for the Site.

Hazardous substances are present in soil, groundwater, and soil vapor. Possible exposure routes to hazardous substances include dermal contact with contaminated surface and subsurface soil during excavation activities; inhalation of contaminated air that has migrated through subsurface soil and groundwater, i.e. vapor intrusion; and ingestion of contaminated drinking water. Potential human receptors include future on-Site workers and nearby residents, including children in a day care adjacent to the Site.

5. NPL status

IDEM is proposing to include the Site as part of the larger Keystone Corridor Site for the NPL based on the threat to municipal drinking water supplies.

6. Maps, pictures and other graphic representations

The following figures are attached to this memorandum.

Figure 1 Site Location Map
Figure 2 Site Layout Map
Figure 3 Sample Location Map
Figure 4 Soil Gas Results Map
Photographs of the Site, and
Attachment III - Environmental Justice (EJ) analysis

B. Other Actions to Date

1. Previous actions

URS conducted remedial activities including installation of a groundwater pump and treat system and dense non-aqueous phase liquid (DNAPL) recovery system. Remedial activities occurred from 2003 to 2006, and are estimated to have removed over 2,000 pounds of DNAPL from the subsurface (AR #9).

2. Current actions

No actions are currently being conducted at the Site.

C. State and Local Authorities' Roles

In an e-mail dated February 11, 2009, Harry Atkinson of IDEM's State Cleanup Section requested that EPA conduct a removal assessment on the Site (AR #12). In a conference call on September 23, 2010, Harry Atkinson again requested assistance from EPA to investigate and address the potential threats posed by the Site. IDEM has not been able to provide resources to immediately mitigate the threat of release other than coordination demolition of the Site building to assist with removal actions.

III. THREATS TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions present at the Tuchman Cleaners Site present an imminent and substantial threat to the public health, or welfare, and the environment based upon the factors set forth in NCP § 300.415(b)(2). These factors include, but are not limited to, the following:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

Analytical results from the Site Assessment indicate that hazardous substances, as defined by CERCLA § 101(14), pollutants, and contaminants are present at the Site and represent an actual or potential exposure threat to nearby human populations. Concentrations of hazardous substances exceed relevant action or screening levels.

Possible exposure routes include dermal contact with contaminated subsurface soil during excavation activities; inhalation of contaminated air that has migrated through subsurface soil and groundwater, i.e. vapor intrusion; and ingestion of contaminated drinking water. Potential human receptors include future on-Site workers and nearby residents, including children in a day care adjacent to the Site.

Hazardous substances identified during the Site Assessment include PCE, TCE, cis-1,2- DCE, vinyl chloride, chloroform, and 1,1,2,2-tetrachloroethane. The Agency for Toxic Substances and Disease Registry (ATSDR) has studied toxicological effects of the hazardous substances, and information about each is provided below and referenced in the Administrative Record (Attachment II).

High concentrations of PCE can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Irritation may result from repeated or extended skin contact with it. These symptoms occur almost entirely in work (or hobby) environments when people have been accidentally exposed to high concentrations or have intentionally used PCE to get a "high." The Department of Health and Human Services (DHHS) has determined that PCE may reasonably be anticipated to be a carcinogen. PCE has been shown to cause liver tumors in mice and kidney tumors in male rats (AR #4).

Breathing small amounts of TCE may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating. Breathing large amounts of TCE may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage. Drinking large amounts of TCE may cause nausea, liver damage, unconsciousness, impaired heart function, or death. Drinking small amounts of TCE for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women, although the extent of some of these effects is not yet clear. Skin contact with TCE for short periods may cause skin rashes. Some studies of people exposed over long periods to high levels of TCE in drinking water or in workplace air have found evidence of increased cancer (AR #7).

Breathing high levels of 1,2-DCE can cause nausea, drowsiness, and tiredness; breathing very high levels can be fatal. Animals that ingested extremely high doses of cis- or trans-1,2-DCE died. Lower doses of cis-1,2-DCE caused effects on the blood, such as decreased numbers of red blood cells, and also effects on the liver. The long-term (365 days or longer) human health effects after exposure to low concentrations of 1,2-DCE are not known. One animal study suggested that an exposed fetus may not grow as quickly as one that has not been exposed (AR #5).

Breathing high levels of vinyl chloride can cause dizziness or sleepiness. Breathing very high levels can cause one to pass out, and breathing extremely high levels can cause death. Some people who have breathed vinyl chloride for several years have changes in the structure of their livers. Some people who work with vinyl chloride have nerve damage and develop immune reactions. The lowest levels that produce liver changes, nerve damage, and immune reaction in people are not known. Some workers exposed to very high levels of vinyl chloride have

problems with the blood flow in their hands. Their fingers turn white and hurt when they go into the cold. DHHS has determined that vinyl chloride is a known carcinogen. Studies in workers who have breathed vinyl chloride over many years showed an increased risk of liver, brain, lung cancer, and some cancers of the blood have also been observed in workers (AR #8).

Breathing about 900 parts of chloroform per million parts air (900 ppm) for a short time can cause dizziness, fatigue, and headache. Breathing air, eating food, or drinking water containing high levels of chloroform for long periods of time may damage your liver and kidneys. Large amounts of chloroform can cause sores when chloroform touches your skin. DHHS has determined that chloroform may reasonably be anticipated to be a carcinogen (AR #3).

Breathing very high concentrations of 1,1,2,2-tetrachloroethane can rapidly cause drowsiness, dizziness, nausea, and vomiting. Most people recover from these effects once they are in fresh air. Breathing high levels of 1,1,2,2-tetrachloroethane for a long time can cause liver damage. Drinking very large amounts of 1,1,2,2-tetrachloroethane can cause shallow breathing, faint pulse, decreased blood pressure, and possibly unconsciousness. Liver damage has been observed in animals orally exposed to lower doses for a long time. EPA has determined that it is a possible human carcinogen (AR #11).

Actual or potential contamination of drinking water supplies or sensitive ecosystems;

The Site is approximately 1000 feet from the Fall Creek well field. Groundwater flows from the Site toward the well field and production well FC-17. The City of Indianapolis shut down production well FC-17 because of low level concentrations of VOCs, including PCE and TCE. As of 2010, the groundwater concentrations in this municipal well did not exceed RALs. However, on-site groundwater contamination has potential to migrate and increase contamination in the drinking water supply.

Additionally, low levels of chlorinated solvents have been detected in production well FC-11, which is northeast of the Site. This well has been shown to be hydraulically connected to the Site, and that hydraulic connection appears to be drawing contaminated groundwater towards the well. This is evidence to suggest that some of the contamination from the Site is migrating into the city's drinking water supply.

High levels of hazardous substances, pollutants, or contaminants in soils largely at or near the surface that may migrate;

Site investigations conducted by URS identified PCE in near-surface soil at a maximum concentration of 2,400 mg/kg at 1 foot below ground surface. This concentration is above the industrial soil level of 110 mg/kg established in the RSLs. Additionally, groundwater analytical data show that high levels of hazardous substances in soil are migrating to groundwater.

Volatilization of hazardous substances in Site soil and groundwater may be a threat to nearby residents based on concentrations in soil gas samples collected by EPA. There is a threat of

contamination in subsurface soil migrating off-Site to residential properties through vapor intrusion pathways, thereby causing potential exposure to nearby human populations to hazardous substances, pollutants or contaminants. Residential properties are located 0.2 miles from the Site.

Per the VISL spreadsheet, several of the hazardous substances, pollutants, and contaminants detected in soil gas exceed the target concentrations for soil gas. For example, the screening level for PCE is 410 ppbv. PCE was detected in a soil gas sample (TCS-G01-051012) at a concentration of 36,000 ppbv, 87 times greater than the screening level. As discussed above, PCE is a hazardous substance with the potential to cause cancer in humans.

The availability of other appropriate federal or State response mechanisms to respond to the release;

IDEM requested written and verbal assistance from EPA for investigating and addressing the potential threats posed by the Site. IDEM has not been able to provide resources to immediately mitigate the threat of release.

IV. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on Site, and the potential exposure pathways described in Sections II and III, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

Analytical data documented that soil, soil gas, and groundwater exceeded relevant screening levels. One soil sample from EPA's Site Assessment exceeded RSL for industrial soil for 1,1,2,2-tetrachloroethane. Historical soil results showed high levels of PCE in near-surface soil above the industrial RSL. Groundwater results from several groundwater monitoring wells exceeded RALs for contaminated drinking water sites. The groundwater at Tuchman is not a drinking water source but could potentially migrate into the drinking water supply in the Fall Creek well field. Additionally, soil gas data exceeded screening levels established in the VISL spreadsheet. The site conditions document the need for soil excavation and installation of an impermeable cover to protect receptors from the direct contact threat and documents the need for additional vapor intrusion investigation.

V. EXEMPTIONS FROM STATUTORY LIMITS

Section 104(c) of CERCLA, as amended, limits a Federal response action to \$2 million unless conditions at the Site meet the CERCLA section 104(c) consistency exemption from the \$2 million statutory limitation. The continued response actions are appropriate and consistent with future remedial actions. The proposed time-critical removal actions are necessary to prevent further migration of contaminants. Excavation and off-Site disposal of soil should not interfere with any remedial alternatives to address groundwater contamination. The removal action is also

appropriate because the excavated soil will be disposed of in accordance with the Off-Site Rule. The State does not have the resources to address the threats posed by the Site in a timely manner.

Section 104(c) of CERCLA also limits a Federal response action to 12 months from the date of the initial response unless the OSC can determine at the outset of the response that the removal action will exceed the statutory time limitation of 12 months. The OSC anticipates that post-installation proficiency sampling of vapor mitigation systems will exceed the 12-month statutory limit.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The OSC proposes to undertake the following response actions to mitigate threats posed by the presence of hazardous substances at the Tuchman Cleaners Site. The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

- a. Develop and implement a Site Health and Safety Plan and a Site Security Plan;
- b. Remove contaminated soil to a depth of approximately 2 feet bgs;
- c. Arrange for off-Site disposal of up to 1,500 cubic yards of contaminated soil at a RCRA-approved facility;
- d. Backfill excavated areas with clean impermeable fill;
- e. Conduct vapor intrusion assessment at up to 200 residential properties and the adjacent day care;
- f. Perform vapor intrusion mitigation at properties where relevant indoor air action levels are exceeded in accordance with current EPA guidance. The OSC has requested a consultation from ATSDR for site-specific vapor intrusion action levels. This task may include installation of vapor mitigation systems and post-installation proficiency sampling in accordance with most current Region 5 and national vapor intrusion guidance; and
- g. Consolidate and package hazardous substances, pollutants and contaminants for transportation and off-site disposal in accordance with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

The OSC will conduct removal actions in a manner not inconsistent with the NCP. The OSC will initiate planning for provision of post-removal Site control consistent with the provisions of NCP § 300.415(l).

The threats posed by uncontrolled substances considered hazardous meet the criteria listed in NCP § 300.415(b)(2), and the response actions proposed herein are consistent with any long-term remedial actions which may be required. Elimination of hazardous substances, pollutants and contaminants that pose a substantial threat of release is expected to minimize substantial requirements for post-removal Site controls.

The estimated costs to complete the activities outlined above are summarized below. These activities will require an estimated 145 on-site working days to complete; this includes time for assessing and mitigating vapor intrusion threats to include post-installation proficiency sampling.

Detailed cleanup contractor costs are presented in Attachment I.

2. Contribution to remedial performance

The proposed action should not impede future actions based on available information. The OSC has consulted with EPA's Remedial Program and IDEM's Site Investigation Section about the proposed time-critical removal actions.

3. Engineering Evaluation/Cost Analysis (EE/CA)

Not Applicable

4. Applicable or relevant and appropriate requirements (ARAR)

The OSC sent a letter on July 11, 2011, to Gabriele Hauer and Rex Osborn at IDEM requesting the identification of any applicable State ARARs (AR #13). IDEM submitted ARARs for the Site on August 1, 2011 (AR #14). After a review of the ARARs, the OSC determined that they were practicable for the Site.

All hazardous substances, pollutants or contaminants removed off-site pursuant to this removal action for treatment, storage and disposal shall be treated, stored, or disposed at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

B. **Removal Project Ceiling Estimate – Extramural Costs:**

<u>Regional Removal Allowance Costs:</u>	
Total Cleanup Contractor Costs (Includes a 20% contingency)	\$1,948,556
<u>Other Extramural Costs Not Funded from the Regional Allowance</u>	
Total START, including multiplier costs	\$340,410
Subtotal, Extramural Costs	\$2,288,966
Extramural Costs Contingency (15% of Subtotal, Extramural Costs)	\$343,345
TOTAL REMOVAL ACTION PROJECT CEILING	\$2,632,311

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given the Site conditions, the nature of the hazardous substances documented on-site, and the potential exposure pathways to nearby populations described in Sections II and III above, actual or threatened release of hazardous substances from the Site, if not addressed by implementing the time-critical actions described in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment. Delayed or no action concerning the remaining hazardous substances, pollutants and contaminants at the Site will result in increased potential of the toxic and hazardous substances to release, thereby threatening the environment and the health and welfare of nearby residents and other persons who are in proximity to the Site.

VIII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$4,539,394.¹

$$(\$2,632,311 + \$156,700) + (62.76\% \times \$2,789,011) = \$4,539,394$$

X. RECOMMENDATION

This decision document represents the selected removal action for the Tuchman Cleaners Site located in Indianapolis, Marion County, Indiana. This document has been developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site (see Attachment II).

Conditions at the Site meet the NCP § 300.415(b)(2) criteria for a time-critical removal action and the CERCLA section 104(c) contingency exemptions from the 12-month and \$2 million limitations. The total project ceiling, if approved, will be \$2,632,311. Of this, as much as \$2,291,901 comes from the Regional removal allowance. I recommend your approval of the proposed removal action and 12-month and \$2 million exemptions. You may indicate your decision by signing below.

APPROVE: Richard C. Kel DATE: 8-16-12
Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Director, Superfund Division

Enforcement Addendum

¹ Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States right to cost recovery.

Figures:

- 1 Site Location Map
 - 2 Site Layout Map
 - 3 Sampling Locations Map
 - 4 Soil Gas Results Map
- Photo Log

Tables:

- 1 Soil Analytical Results
- 2 Groundwater Analytical Results
- 3 Soil Gas Analytical Results

Attachments:

- I. Detailed Cleanup Contractor Cost Estimate
- II. Administrative Record Index
- III. Region V EJ Analysis
- IV. Independent Government Cost Estimate

cc: Sherry Fielding, U.S. EPA, 5104A
Valencia Darby, U.S. DOI, **w/o Enf. Addendum**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum**
Harry Atkinson, IDEM **w/o Enf. Addendum**
Gabriele Hauer, IDEM **w/o Enf. Addendum**

BCC PAGE

REDACTED

**NOT RELEVANT TO THE SELECTION OF THE
REMOVAL ACTION**

**ENFORCEMENT ADDENDUM
FOR
TUCHMAN CLEANERS SITE
4401 N. KEYSTONE AVENUE
INDIANAPOLIS, MARION COUNTY, INDIANA
AUGUST 2012**

**REDACTED
3 PAGES**

**ENFORCEMENT SENSITIVE
DO NOT RELEASE
NOT SUBJECT TO DISCOVERY
FOIA EXEMPT**

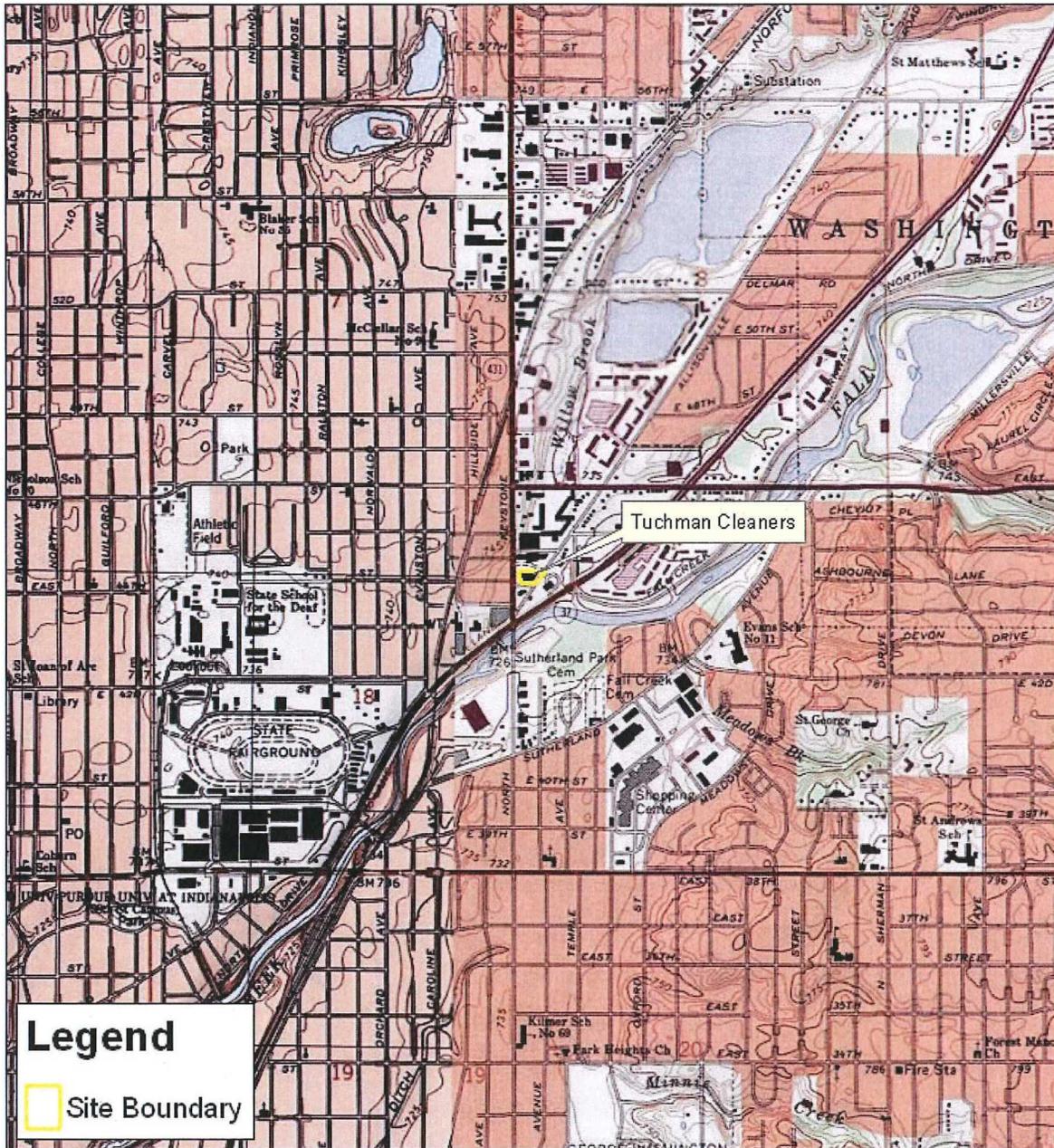
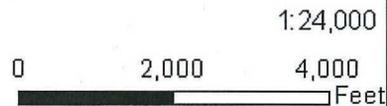


FIGURE 1
SITE LOCATION MAP
TUCHMAN CLEANERS
4401 N. KEYSTONE AVENUE
INDIANAPOLIS, MARION COUNTY, INDIANA



(c) 2009 Microsoft Corporation
 and its data suppliers
<http://www.bing.com/maps>
 Samples locations were determined
 using EPA's Visual Sample Plan.



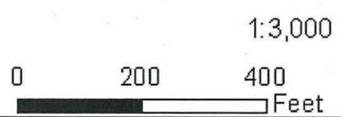
REVISION 0, JULY 29, 2011



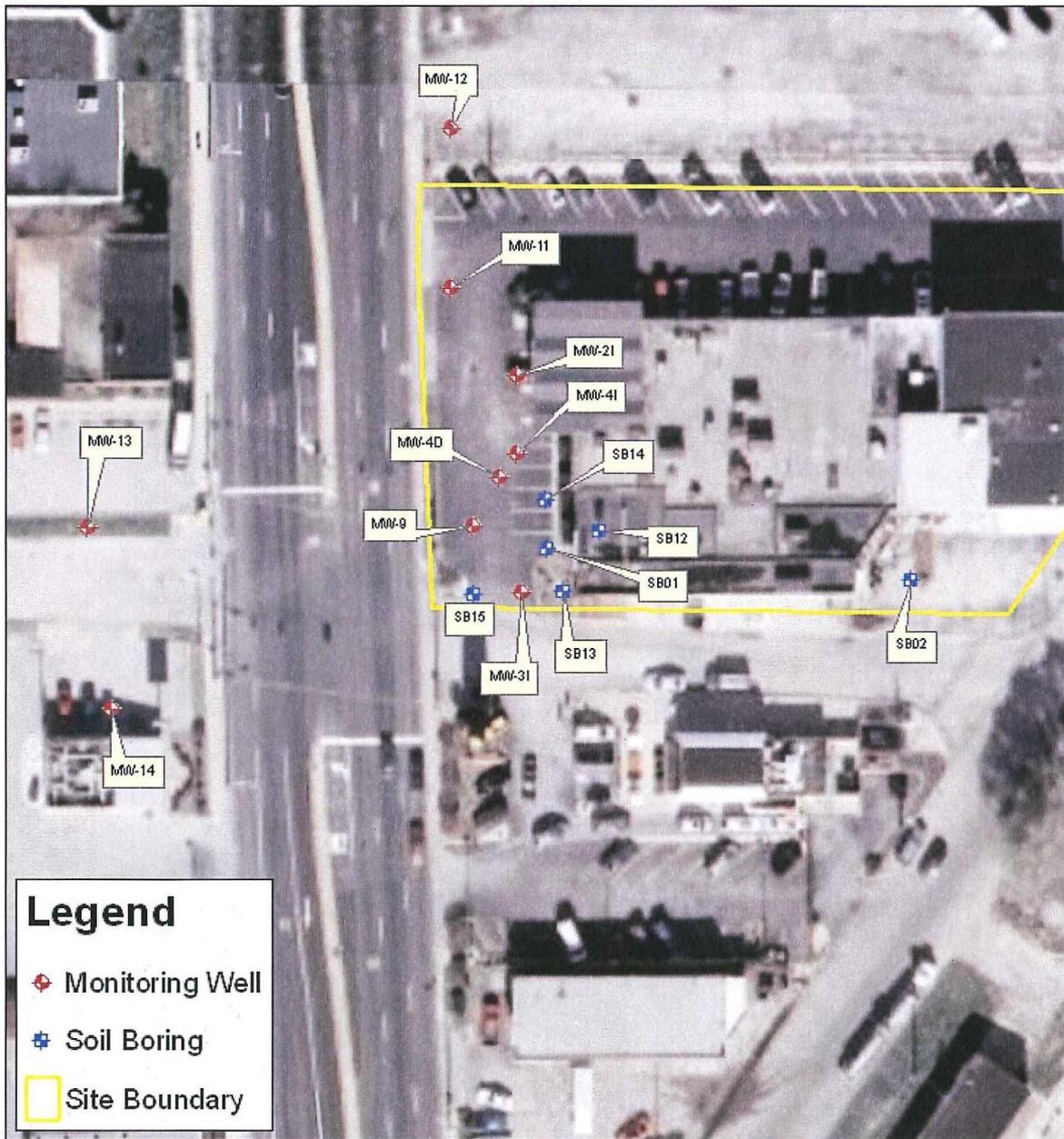
FIGURE 2
SITE LAYOUT MAP
TUCHMAN CLEANERS
4401 N. KEYSTONE AVENUE
INDIANAPOLIS, MARION COUNTY, INDIANA



(c) 2009 Microsoft Corporation
 and its data suppliers
<http://www.bing.com/maps>
 Samples locations were determined
 using EPA's Visual Sample Plan.



REVISION 0, JULY 29, 2011



Legend

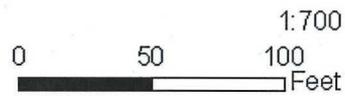
- Monitoring Well
- Soil Boring
- Site Boundary



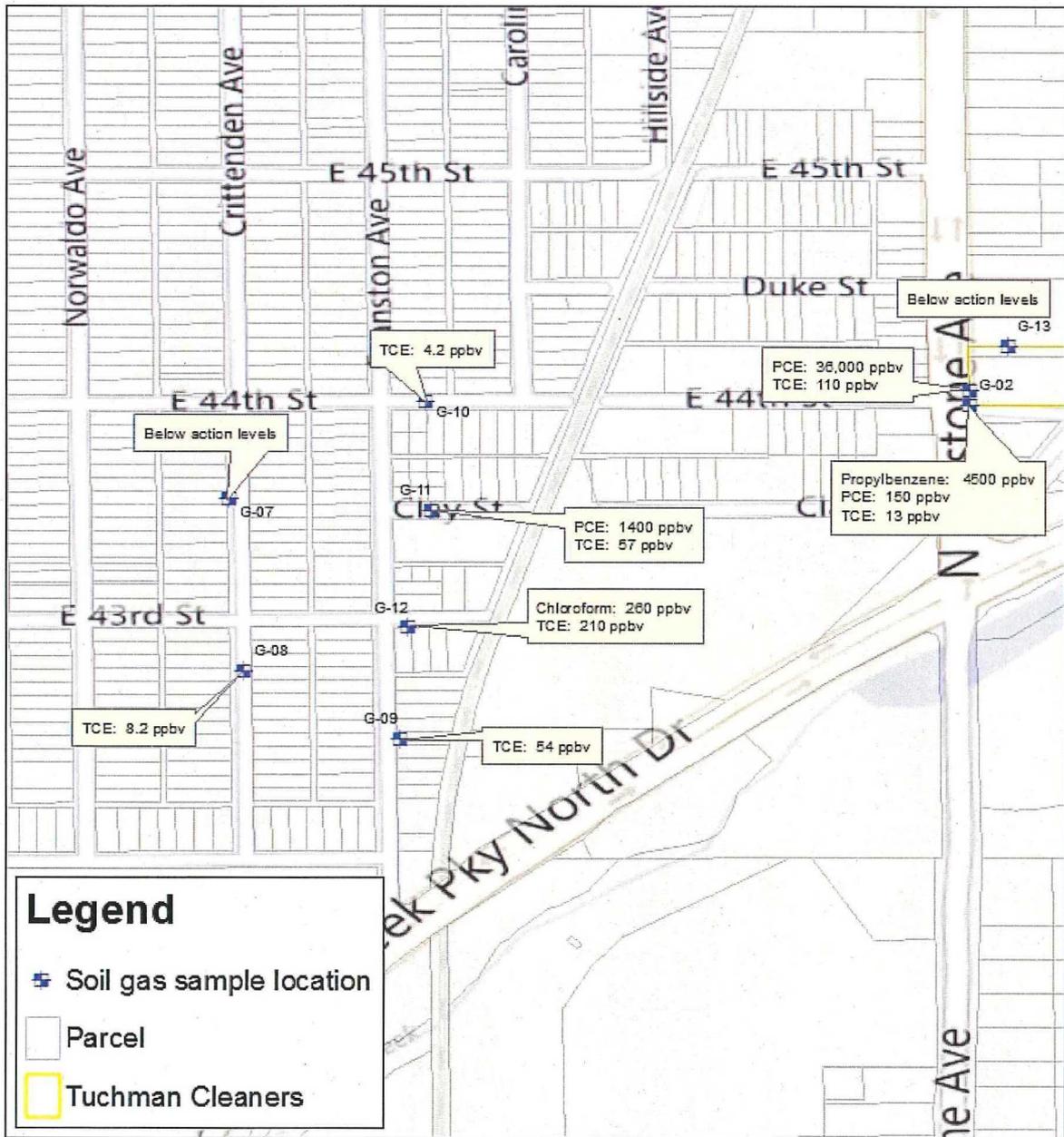
FIGURE 3
SAMPLE LOCATION MAP
TUCHMAN CLEANERS
4401 N. KEYSTONE AVENUE
INDIANAPOLIS, MARION COUNTY, INDIANA



(c) 2009 Microsoft Corporation
 and its data suppliers
<http://www.bing.com/maps>
 Samples locations were determined
 using EPA's Visual Sample Plan.



REVISION 0, JULY 29, 2011



Legend

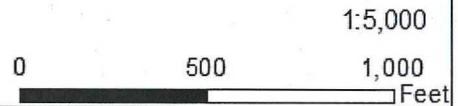
-  Soil gas sample location
-  Parcel
-  Tuchman Cleaners



FIGURE 4
SOIL GAS RESULTS MAP
TUCHMAN CLEANERS
4401 N. KEYSTONE AVENUE
INDIANAPOLIS, MARION COUNTY, INDIANA



Notes:
 PCE - Tetrachloroethene
 TCE - Trichloroethene
 ppbv - parts per billion by volume



REVISION 0, JULY 13, 2012

PHOTO LOG



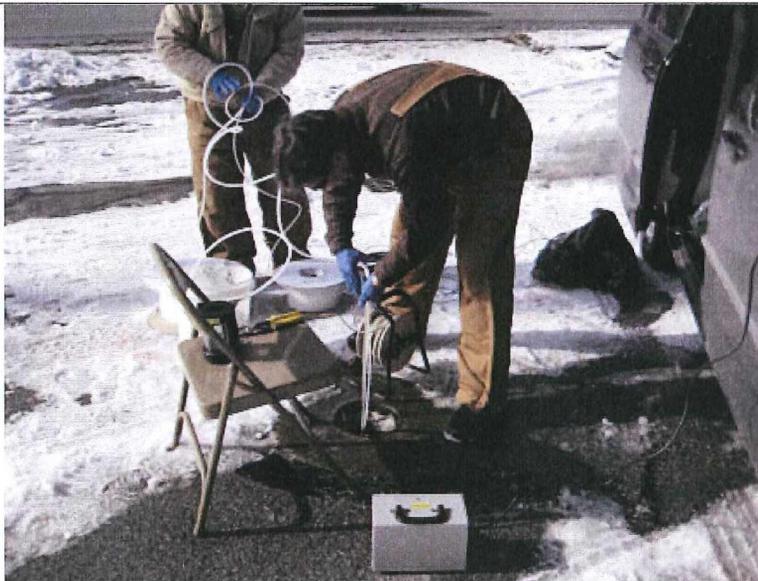
Number	1
Description	Former Tuchman Cleaners Site, looking northeast
Photographer	S. Lam
Date	1/25/2011



Number	2
Description	Geoprobe collecting soil samples, looking southeast
Photographer	S. Lam
Date	1/24/2011



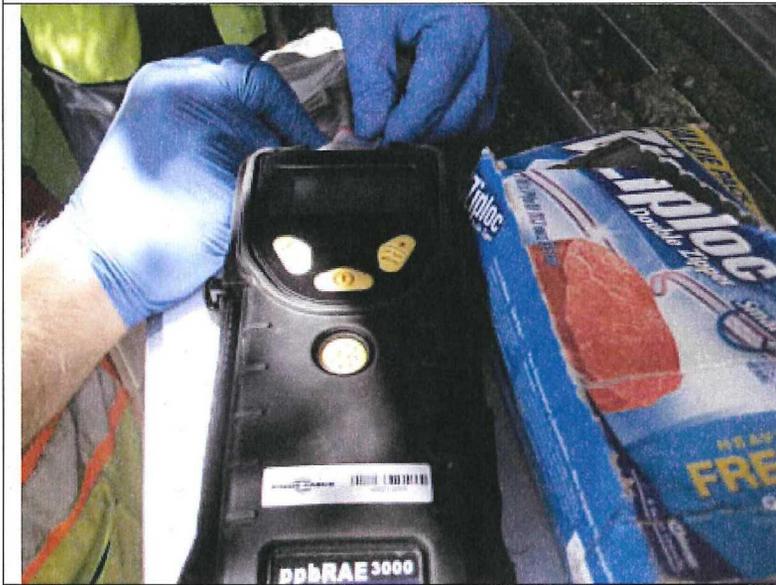
Number	3
Description	Geoprobe collecting soil samples, looking southwest towards well field
Photographer	S. Lam
Date	1/24/2011



Number	4
Description	START collecting groundwater sample
Photographer	S. Lam
Date	1/25/2011



Number	5
Description	START collecting soil gas sample
Photographer	S. Lam
Date	5/9/2012



Number	6
Description	START screening soil gas sample with ppbRAE. PID reading shows 552 ppb
Photographer	S. Lam
Date	5/9/2012

**TABLE 1
SOIL ANALYTICAL RESULTS
TUCHMAN CLEANERS**

Analysis	Criteria Level	Sample Designation						
		TCS-SB01-012411	TCS-SB02-012411	TCS-SB12-012511	TCS-SB13-012511	TCS-SB14-012511	TCS-SB15-012511	TCS-SOLID01-012511
		Subsurface Soil	Subsurface Soil	Subsurface Soil	Subsurface Soil	Subsurface Soil	Subsurface Soil	Subsurface Soil
TCLP¹ VOCs² (mg/L)^{3,4}								
Tetrachloroethene	0.7	0.085	0.26	0.076	0.11	0.31	0.056	ND (0.050)
Total VOCs (mg/kg)^{5,6}								
Acetone	630,000	ND (0.620) ⁷	ND (0.025)	ND (0.620)	ND (0.025)	0.083	ND (0.620)	ND (0.025)
n-Butylbenzene	51000	3.1	ND (0.025)	3.9	ND (0.025)	0.25	ND (0.620)	ND (0.025)
sec-Butylbenzene	NA	6.5	ND (0.025)	11	0.039	0.64	0.98	ND (0.025)
tert-Butylbenzene	NA	ND (0.620)	ND (0.025)	1.2	ND (0.025)	ND (0.025)	ND (0.620)	ND (0.025)
2-Hexanone	1,400	ND (0.620)	ND (0.025)	ND (0.620)	ND (0.025)	ND (0.025)	0.9	ND (0.025)
Isopropylbenzene (Cumene)	11,000	0.98	ND (0.025)	0.98	ND (0.025)	ND (0.025)	ND (0.620)	ND (0.025)
p-Isopropyltoluene	NA ⁸	2.1	ND (0.025)	ND (0.620)	ND (0.025)	ND (0.025)	ND (0.620)	ND (0.025)
n-Propylbenzene	21,000	4.2	ND (0.025)	3.4	ND (0.025)	ND (0.025)	ND (0.620)	ND (0.025)
1,1,2,2-Tetrachloroethane	2.8	ND (0.620)	ND (0.025)	ND (0.620)	ND (0.025)	ND (0.025)	11⁹	ND (0.025)
Tetrachloroethene	110	ND (0.620)	4	ND (0.620)	0.035	0.68	ND (0.620)	0.031
Trichloroethene	6.4	ND (0.620)	0.029	ND (0.620)	ND (0.025)	ND (0.025)	ND (0.620)	ND (0.025)
1,2,4-Trimethylbenzene	260	20	ND (0.025)	ND (0.620)	ND (0.025)	ND (0.025)	1.8	ND (0.025)
m,p-Xylene	2,500	ND (0.620)	ND (0.025)	ND (0.620)	ND (0.025)	ND (0.025)	ND (0.620)	0.034
Xylenes, total	2,700	ND (0.620)	ND (0.025)	ND (0.620)	ND (0.025)	ND (0.025)	ND (0.620)	0.048

Notes:

1. TCLP - Toxicity Characteristic Leachate Procedure
2. VOC - Volatile Organic Compound
3. mg/L - micrograms per liter
4. Criteria based on 40 CFR Part 261.24, Subpart C

5. mg/kg - milligrams per kilogram
6. Criteria based on U.S. EPA Regional Screening Levels (RSL) for industrial soil, May 2012
7. ND (0.620) - Not detected at 0.620 mg/kg
8. NA - Not applicable
9. Bolded results exceed criteria level.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
TUCHMAN CLEANERS

Analysis	Criteria Level ¹	Sample Designation				
		MW-2i	MW-3i	MW-4i	MW-4d	MW-9
Total VOC² (µg/L)³						
Acetone	3,500	ND ⁴ (5)	ND (5)	ND (5)	ND (5)	ND (5)
2-Butanone	21,000	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Chlorobenzene	700	16	ND (5)	ND (5)	ND (5)	ND (5)
2-Chlorotoluene	700	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-Dichlorobenzene	3,000	18	ND (5)	ND (5)	ND (5)	ND (5)
1,1-Dichloroethene	70	14	ND (5)	ND (5)	ND (5)	ND (5)
cis-1,2-Dichloroethene	400	300	ND (5)	1000 ⁵	7.5	1,200
trans-1,2-Dichloroethene	600	5.4	ND (5)	20	ND (5)	19
n-Propylbenzene	NA ⁶	6.5	ND (5)	ND (5)	ND (5)	ND (5)
Tetrachloroethene	70	49,000	ND (5)	6,100	ND (5)	33
Toluene	2,000	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Trichloroethene	300	1,200	ND (5)	2,300	ND (5)	ND (5)
1,2,4-Trimethylbenzene	NA	9.7	ND (5)	ND (5)	ND (5)	ND (5)
1,3,5-Trimethylbenzene	NA	7.5	ND (5)	ND (5)	ND (5)	ND (5)
Vinyl chloride	2	3.2	ND (5)	14	ND (5)	220
m,p-Xylene	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
o-Xylene	NA	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Xylenes, total	40,000	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)

TABLE 2
GROUNDWATER ANALYTICAL RESULTS (cont)
TUCHMAN CLEANERS

Analysis	Criteria Level	Sample Designation			
		MW-11	MW-12	MW-13	MW-14
Total VOCs (µg/L)					
Acetone	3,500	ND (5)	ND (5)	ND (5)	ND (5)
2-Butanone	21,000	ND (5)	ND (5)	ND (5)	ND (5)
Chlorobenzene	700	ND (5)	ND (5)	ND (5)	ND (5)
2-Chlorotoluene	700	ND (5)	ND (5)	ND (5)	ND (5)
1,2-Dichlorobenzene	3,000	ND (5)	ND (5)	ND (5)	ND (5)
1,1-Dichloroethene	70	ND (5)	ND (5)	ND (5)	ND (5)
cis-1,2-Dichloroethene	400	110	ND (5)	640	130
trans-1,2-Dichloroethene	600	ND (5)	ND (5)	ND (5)	ND (5)
n-Propylbenzene	NA	ND (5)	ND (5)	ND (5)	ND (5)
Tetrachloroethene	70	2,100	13	1,100	780
Toluene	2,000	ND (5)	ND (5)	ND (5)	ND (5)
Trichloroethene	300	120	ND (5)	150	160
1,2,4-Trimethylbenzene	NA	ND (5)	ND (5)	ND (5)	ND (5)
1,3,5-Trimethylbenzene	NA	ND (5)	ND (5)	ND (5)	ND (5)
Vinyl chloride	2	ND (5)	ND (5)	23	5.4
m,p-Xylene	NA	ND (5)	ND (5)	ND (5)	ND (5)
o-Xylene	NA	ND (5)	ND (5)	ND (5)	ND (5)
Xylenes, total	40,000	ND (5)	ND (5)	ND (5)	ND (5)

Notes:

1. Criteria based on U.S. EPA Removal Action Levels (RALs) for Contaminated Drinking Water Sites: Superfund RALs
2. VOC – Volatile organic compounds
3. µg/L – micrograms per liter
4. ND (5) – Not detected at 5 µg/L
5. Bolded results exceed criteria level.
6. NA – Not applicable

**TABLE 3
SOIL GAS ANALYTICAL RESULTS
TUCHMAN CLEANERS**

Chemical	Sampling Date	Soil Gas Action Levels	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012
	Soil Gas Probe ID		G-01	G-02	G-07	G-08	G-09	G-10	G-11	G-12	G-13
	Sampling Depth		12'	10'	14'	14'	14'	15.5'	14'	14'	12'
	Field Sample ID		TCS-G01-051012	TCS-G02-051012	TCS-G07-051012	TCS-G08-051012	TCS-G09-051012	TCS-G10-051012	TCS-G11-051012	TCS-G12-051012	TCS-G12-051012
	Unit	ppbv									
Chloroform	ppbv	22.5	ND (110)	ND (9.6)	ND (0.79)	1.3	4.0	ND (0.83)	5.4	260	ND (12)
Propylbenzene	ppbv	2,036	ND (110)	4500	ND (0.79)	ND (0.78)	ND (0.79)	ND (0.83)	ND (5.4)	ND (0.80)	ND (12)
Tetrachloroethene	ppbv	60.4	36000	150	1.8	2.0	0.82	3.1	1400	55	ND (12)
Trichloroethene	ppbv	3.9	110	13	ND (0.79)	8.2	54	4.2	57	210	ND (12)

Notes:

ND = Not detected above method reporting limit in parentheses

ppbv = Part per billion by volume

ATTACHMENT 1

**DETAILED CLEANUP CONTRACTOR COST ESTIMATE
INDEPENDENT GOVERNMENT CLEANUP CONTRACTOR
ESTIMATE
FOR
TUCHMAN CLEANERS SITE
INDIANAPOLIS, MARION COUNTY, INDIANA
AUGUST 2012**

**REDACTED
1 PAGE**

**NOT RELEVANT TO THE SELECTION OF THE
REMOVAL ACTION**

ATTACHMENT II

U.S. ENVIRONMENTAL PROTECTION AGENCY REMOVAL ACTION

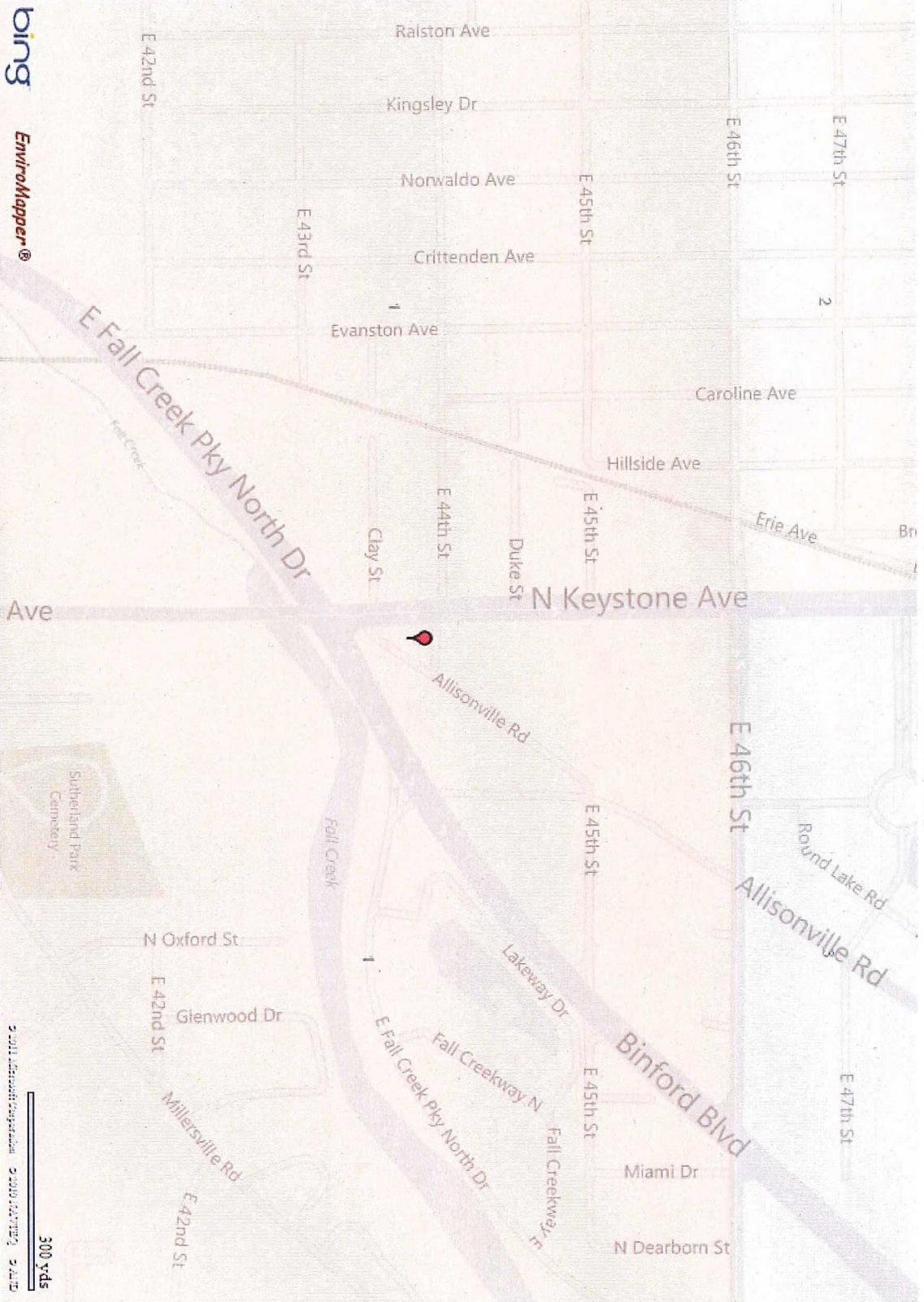
ADMINISTRATIVE RECORD FOR TUCHMAN CLEANERS SITE INDIANAPOLIS, MARION COUNTY, INDIANA JULY 2012

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	00/00/00			Key Findings for Ground Water Samples at the Tuchman Cleaners Site	1
2	00/00/00			Excel Spreadsheet re: Modified Well VOC Data for the Tuchman Cleaners Site	
3	09/00/97	ATSDR	File	ToxFAQs Sheet for Chloroform CAS #67-66-3	2
4	09/00/97	ATSDR	File	ToxFAQs Sheet for Tetrachloroethylene CAS #127-18-4	2
5	09/00/97	ATSDR	File	ToxFAQs Sheet for 1,2-Dichloroethene CAS # 540-59-0, 156-59-2, and 156-60-5	2
6	11/01/02	URS Corporation	National Drycleaners, Inc.	Interim Summary Report Stage I Field Activities Groundwater Investigation for the Tuchman Cleaners Facility	167
7	07/00/03	ATSDR	File	ToxFAQs Sheet for Trichloroethylene CAS #79-01-6	2
8	07/00/06	ATSDR	File	ToxFAQs Sheet for Vinyl Chloride CAS #75-01-4	2
9	10/10/06	Vaske, R., URS Corporation	Groves, D., IDEM	Letter re: Enhanced Pumping Test Results for the Tuchman Cleaners Site	9

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
10	07/31/07	Eckhoff, W., & D. Connair, URS Corporation	Groves, D., IDEM	Letter re: Analytical Results for Second Quarter 2007 Groundwater Monitoring at the Tuchman Cleaners Site	12
11	09/00/08	ATSDR	File	ToxFAQs Sheet for 1,1,2,2,2- Tetrachloroethane CAS # 79-34-5	2
12	02/11/09	Atkinson, H., IDEM	Gebien, C., U.S. EPA	E-mail Message re: IDEM Request for U.S. EPA Assistance in Conducting a Removal Assessment of the Tuchman Cleaners Site	2
13	07/08/11	Lam, S., U.S. EPA	Hauer, G., IDEM	Letter re: U.S. EPA Request that IDEM Identify any ARARs for the Tuchman Cleaners Site	2
14	08/01/11	Andrews, S., IDEM	Lam, S., U.S. EPA	Letter re: Applicable or Relevant and Appropriate Requirements (ARARs), Tuchman Cleaners Site, Removal Action, Indianapolis, IN	2
15	08/02/11	Weston Solutions, Inc.	Lam, S., U.S. EPA	Tuchman Cleaners Site Assessment Report	84
16	00/00/00	Weston Solutions, Inc.	Lam, S., U.S. EPA	Tuchman Cleaners Soil Gas Assessment Report (PENDING)	
17	00/00/00	Lam, S., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Tuchman Cleaners (PENDING)	

ATTACHMENT III
REGION 5 EJ ANALYSIS

Tuchman Cleaners EJ Assessment



bing

EnviroMapper®

300 feet
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ATTACHMENT 4

**INDEPENDENT GOVERNMENT COST ESTIMATE
FOR
TUCHMAN CLEANERS SITE
INDIANAPOLIS, MARION COUNTY, INDIANA
AUGUST 2012**

**REDACTED
3 PAGES**

**NOT RELEVANT TO THE SELECTION OF THE
REMOVAL ACTION**