January 29, 2016

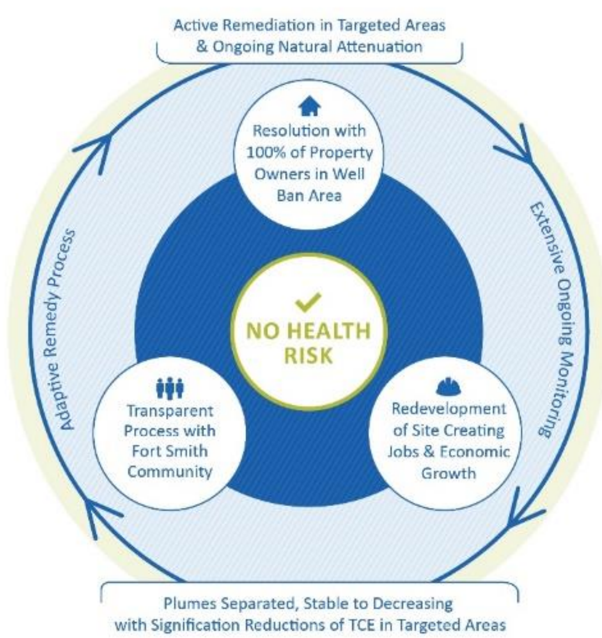
Robin Gifford
Enforcement and Inspection Branch
Hazardous Waste Division, ADEQ
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

RE: WHIRLPOOL TRANSMITTAL OF THE TWO YEAR TECHNICAL REVIEW REPORT

Dear Ms. Gifford:

Whirlpool Corporation is pleased to submit the 2015 Two Year Technical Review Report to the Arkansas Department of Environmental Quality (ADEQ), as required by the Remedial Action Decision Document (RADD) dated December 27, 2013 and the revised RADD dated November 15, 2015. The Technical Review Report summarizes the coordinated efforts between our organizations in addressing trichloroethylene (TCE) in the groundwater under and adjacent to the former Whirlpool manufacturing facility in Fort Smith. The report provides an overview of progress made both on- and off-site, as well as a thorough description of the scientific data collected, validated and summarized throughout 2014 and 2015, all which have been documented and presented to ADEQ, the City of Fort Smith and area residents in quarterly progress reports made available on www.whirlpoolfortsmith.com.

In summary, Whirlpool's extensive work in Fort Smith over the past two years has resulted in progress on a number of fronts, including:



1. The completion of required and supplemental active remediation activities following a science-driven, Adaptive Remedy process that resulted in significant reductions of TCE concentrations in the source area and enhanced the separation of the north and south plumes. Extensive monitoring and analysis of the site also indicates that groundwater in both of the now-separated north and south plumes shows stable to decreasing trends in TCE concentration, demonstrating that natural attenuation processes are effectively remediating groundwater impacts at the site;
2. Extensive, ongoing monitoring and controls implemented to ensure there remains no health risk to area residents, track the progress of remediation efforts and determine appropriate next steps based on the latest scientific data available;
3. Completion of resolution agreements with all residents whose properties are located in the original well drill ban area;
4. Ongoing efforts to redevelop the site to create economic growth and benefit the entire Fort Smith community; and
5. Ensuring that City officials and area residents had access to current information and were fully informed of significant developments through our website and regular presentations to City Directors.

These successes provide the foundation for Whirlpool's next phase of work, focused on the re-use and redevelopment of the site, which will continue to be conducted in close coordination with ADEQ. Whirlpool remains committed to ensuring that remediation is progressing through Monitored Natural Attenuation with appropriate sampling, along with other actions if needed, to assure ongoing public safety and productive re-use of the site.

I. <u>Summary of Remediation Activities Completed in 2014 and 2015</u>

Over the past two years, remediation efforts have been conducted by Whirlpool and their environmental consultant, Ramboll Environ, in accordance with the December 2013 RADD and November 2015 revised RADD, with continued oversight by ADEQ. Whirlpool followed a science-driven, Adaptive Remedy process – which involved the constant gathering, analyzing and validating of data to confirm and update the understanding of the groundwater and soil contamination on and near the former Whirlpool facility – to complete a number of required and supplemental remediation activities both on- and off-site.

In 2014, remediation activities included:

- In-situ chemical oxidation (ISCO) injections in Areas 1, 2 and 3 to quickly reduce TCE concentrations in groundwater in these areas;
- Additional voluntary remediation activities, including targeted ISCO injections within the neck area, to facilitate further separation of the north and south plumes and the removal of substantial amounts of impacted soil in the source area;
- Quarterly monitoring of groundwater for VOCs and natural attenuation parameters; and
- The imposition of a deed restriction on the Whirlpool property.

In 2015, Whirlpool's remedial actions consisted of:

- ISCO injections in the supplemental neck area and Areas 2 and 3 to maintain and enhance further separation of the north and south plumes;
- An ISCR pilot test near the northeast portion of the north plume;
- Settlements with local property owners within the originally proposed well drilling ban area related to the north groundwater plume to obtain deed restrictions precluding the use of groundwater in the future; and
- Further investigation and monitoring of soil, soil vapor and groundwater conditions both on- and off-site.

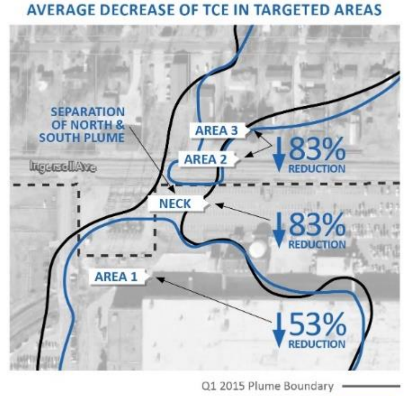
II. Impact of Remediation Activities

Remediation efforts that took place in this two year period resulted in reductions of TCE concentrations in the source area and have created and increased the separation of the north and south plume.

Overall, TCE concentrations in the source area have been reduced by:

- Approximately 83% within the neck area and Areas 2 and 3;
- Approximately 62% in monitoring wells in the source area; and
- Approximately 53% within the linear drainage feature and in Area 1.

AVERAGE DECREASE OF TCE IN TARGETED AREAS



Groundwater monitoring for the south and north plume consistently showed stable to decreasing trends in TCE concentration, demonstrating natural attenuation processes are effectively remediating groundwater impacts at the site. Continued groundwater monitoring has confirmed TCE concentrations are generally stable to decreasing for 89% and 86% of monitoring wells in the south and north plumes, respectively.

Additionally, sophisticated modeling was completed using industry-leading programs and widely-accepted processes to predict future plume activity. The results project groundwater in the south plume will not migrate offsite beyond the property boundaries at concentrations above the MCL and TCE concentrations in groundwater in the north plume will be reduced to the MCL within approximately 30 to 35 years, with natural TCE breakdown constituents anticipated to degrade in a timeframe similar to TCE. Whirlpool will reassess these modeling results, as warranted, during subsequent five year remedy reviews in light of future data collection.

Nothing in the findings over the last two years has changed the conclusion that there remains **no health risk** to Fort Smith residents from exposure to TCE in the groundwater beneath or near the Whirlpool property. These conclusions were further affirmed by a January 2016 Human Health Risk Assessment, which confirmed there are no health risks to area residents.

III. Property Redevelopment

PROPOSED SITE REDEVELOPMENT OPTION

Whirlpool has made significant progress in the redevelopment of the property.

The warehouse was sold to Spartan Logistics in September 2014 and Spartan is already employing area residents on site. Whirlpool remains in continued discussions with multiple interested buyers for the remainder of the property.

Additionally, further redevelopment options are in progress that are expected to benefit the entire Fort Smith community and these plans will be discussed more fully with state and local officials in early 2016. Whirlpool remains confident in completing a transaction that will result in the long-term and productive use of the site. There are current plans to conduct indoor air monitoring and sub-slab soil vapor testing in late January 2016 to facilitate planned interior building activities, including equipment removal and selective demolition of the mezzanine level, in order to optimize potential future use of the building.

IV. Community Engagement and Resolution with Residents

Throughout the past two years, Whirlpool has worked diligently to keep its commitment to treat residents fairly and to ensure that City officials and Fort Smith residents were informed of important developments.

In 2015, Whirlpool reached agreements with 100% of residents in the well drilling ban area. As a result of these agreements, the environmental class action lawsuit and most individual lawsuits against Whirlpool were dismissed.

Whirlpool has provided progress reports at City Directors' meetings, and continues to regularly update the website www.whirlpoolfortsmith.com to provide the Fort Smith community, elected officials and members of the press with the latest information and extensive background materials, including all reports and data submitted to ADEQ related to this project.

V. Conclusion

The progress made by Whirlpool during the mutually agreed upon two-year remediation process in Fort Smith resulted in the completion of a series of remediation activities and showed real progress in the cleanup of the site. At the same time, Whirlpool has worked to rebuild trust with area residents, closely monitored the site to ensure no health risks exist, and made real strides toward repurposing the property for the benefit of the entire community.

We are looking forward to advancing to the next phase of our efforts on behalf of the residents, economy and environment in Fort Smith, and will continue to work directly with ADEQ using the latest scientific data to appropriately manage this site.

Sincerely,

Jeff Noel, Vice President, Whirlpool Corporation



Two Year Technical Review Report

Whirlpool Facility
Fort Smith, Arkansas

Prepared for:
Whirlpool Corporation

Prepared by:
Ramboll Environ US Corporation
St. Louis, Missouri

Date:
January 2016

Author

Professional Geologist/Reviewer

STATE OF ARKANSAS
REGISTERED PROFESSIONAL GEOLOGIST
No. 1825
ANDREW A. GREMOS

RAMBOLL ENVIRON

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ACRONYMS

ADEQ	Arkansas Department of Environmental Quality
BASP	base activated sodium persulfate
bgs	below ground surface
BVC	
CAO	Consent Administrative Order
Cells/mL	cells per milliliter
cis-1,2-DCE	cis-1,2-dichoroethene
cm/sec	centimeters per second
COC	constituents of concern
DHC	Dehalococcoides
Dl	longitudinal dispersivity
DP	direct push boring
ECD	electron capture detector
feet/day	feet per day
Foc	fraction of soil organic carbon
FOD	frequency of detection
ft^2	square feet
g/mL	gram per milliliter
HASP	health and safety plan
HHRA	Human Health Risk Assessment
ISCO	in-situ chemical oxidation
ISCR	in-situ chemical reduction
ISOTEC	In-Situ Oxidative Technologies, Inc.
ITMW	monitoring well installed by Innovative Technologies, Inc.
IW	injection well
K	hydraulic conductivity
Kd	distribution coefficient
Koc	soil organic carbon-water partitioning coefficient
LDB	large diameter boring
MASP	MFR activated sodium persulfate
MCL	maximum contaminant level
MFR	modified Fenton’s Reagent

MgO	magnesium oxide
mg/kg	milligram per kilogram
MIP	Membrane Interface Probe
MNA	Monitored Natural Attenuation
msl	mean sea level
mV	millivolt
MW	monitoring well
µg/L	microgram per liter
ORP	oxidation reduction potential
OSHA	Occupational Safety and Health Administration
PEST	parameter estimation procedure
PID	photoionization detector
PQL	practical quantitation limit
PRB	permeable reactive barrier
RADD	Remedial Action Decision Document
Site	Former Whirlpool Facility
TCA	Trichloroethane
TCE	Trichloroethene
TMW	temporary monitoring well
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
Vinyl Chloride	VC
VOC	Volatile Organic Compound
ZVI	zero valent iron

EXECUTIVE SUMMARY

On behalf of Whirlpool Corporation (Whirlpool), Ramboll Environ US Corporation (Ramboll Environ) has prepared this 2015 Two Year Technical Review Report for the former Whirlpool facility on Jenny Lind Road in Fort Smith, Arkansas (Site) (see Figure 2-1).

Two Year Technical Review

This Technical Review Report is the culmination of two years of collaborative efforts by Whirlpool and the Arkansas Department of Environmental Quality (ADEQ) to complete a series of steps toward the remediation of the site, including: (i) the completion of various investigations to improve the understanding of site conditions; (ii) groundwater and soil vapor monitoring to assess groundwater plume conditions and assess vapor intrusion; and (iii) remediation at the Site to significantly reduce trichloroethene (TCE) concentrations in soil and groundwater. These activities have been conducted in accordance with the December 2013 Remedial Action Decision Document (2013 RADD) and the November 2015 revised RADD. New investigation, remediation effectiveness and monitoring data were collected while the November 2015 revised RADD was prepared. Documentation of these efforts during the past two years has been presented in quarterly progress reports from Whirlpool to ADEQ, and shared publicly with local elected officials and the Fort Smith community through a regularly-updated website specifically devoted to this site.

Site Overview

The Site is located at 6400 Jenny Lind Road on the south side of Fort Smith, Sebastian County, Arkansas. The Site formerly consisted of approximately 153 acres of which the developed portion of the property consists of the former manufacturing facility (approximately 1,175,000 square feet (ft^2), a former warehouse (approximately 622,000 ft^2) and ancillary buildings north of the former manufacturing building including, the boiler room and water treatment plant. Approximately 21 acres on the southwestern portion of the property were undeveloped vegetated areas. Concrete driveways and concrete and asphalt parking areas surround the structures. Whirlpool sold the former warehouse and surrounding property on the southern portion of the Site in late September 2014 to Spartan Logistics. The current Site now consists of approximately 93 acres (see Figure 2-2).

The Site was first developed in 1961 by Norge Corporation as a refrigerator, icemaker and gas/air conditioning manufacturing facility until it was acquired by Whirlpool in 1966. Facility activities included the manufacture of side-by-side household refrigerators, trash compactors and icemakers during Whirlpool's time of operations. Manufacturing operations ceased in 2012. Therefore, manufacturing operations occurred at the facility for more than 50 years.

Residential areas are located to the north of the property beyond Ingersoll Avenue and commercial industrial properties are located to the south, east and west. Undeveloped property used for recreational purposes is also located to the west. Groundwater is not used as a potable source in the area. In addition, as of 2015, all of the residential properties north of the Site have *groundwater use restrictions in place as part of property damage claims settled amicably by Whirlpool and the residents.*

The combination of various investigation and monitoring activities and first-hand accounts from former workers has indicated the source of TCE impact at the Site is attributable to former degreasing operations performed in the degreaser building located in the northwest area of the Site (see Section 3.1 for further discussion of the source of impact). Incidental releases of TCE impacting soil and groundwater at the linear drainage feature proximate to the degreaser building occurred in the form of: (1) incidental drips onto the degreaser building floor from parts that were being washed with TCE; and, (2) rinsing or cleaning of the degreaser building floor for general housekeeping purposes and the subsequent discharge of mop water through the overhead doors. These incidental releases occurred approximately 30 to 50 years ago.

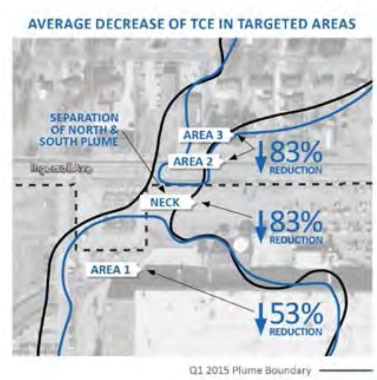
<u>*Remediation Activities*</u>

Remediation activities were performed by Whirlpool in 2014 in close consultation with and under the oversight of ADEQ, as discussed in the RADDs. These activities included the imposition of a deed restriction on the Whirlpool property; in-situ chemical oxidation (ISCO) injections in Areas 1, 2 and 3 (see Figure 5-2) to quickly reduce TCE concentrations in groundwater in these areas; and quarterly monitoring of groundwater for VOCs and natural attenuation parameters.

Whirlpool also conducted additional voluntary remediation activities beyond those required under the RADDs, including targeted ISCO injections within the neck area (see Section 5-2) coupled with the hydraulic divide have created and increased the separation of the north and south plumes, and the removal of substantial amounts of impacted soil in the source area along the linear drainage feature through the nineteen large diameter borings (LDBs) (removal of approximately 350 cubic yards or approximately 500 tons, see Figure 5-3).

In 2015, Whirlpool conducted further remedial actions, including ISCO injections in the supplemental neck area and Areas 2 and 3 to further increase the separation of the north and south plumes; performance of an ISCR pilot test near MW-61R (northeast portion of the north plume) (see Figure 5-4); and, settlements with local property owners impacted by the north groundwater plume to obtain deed restrictions precluding the use of groundwater in the future (see Figure 5-1).

<u>*Remediation Activities Impact*</u>



The remedial actions have reduced TCE concentrations in the source area (i.e. source depletion) and enhanced the separation between the source area (south plume) and the groundwater beneath the properties to the north of the former manufacturing facility (north plume).

In the source area, TCE concentrations within the linear drainage feature and Area 1 have been reduced by *approximately 53% due to the remedial actions performed in 2014 and 2015. TCE concentrations in monitoring wells in the source area have been reduced by approximately 62%. TCE concentrations within the neck area and Areas 2 and 3 have been reduced by approximately 83% in each of the areas due to the remedial actions performed in 2014 and 2015.*

Current Status

Data from the extensive, ongoing monitoring activities indicates that the source area and resulting groundwater plumes (i.e. north and south groundwater plumes) are at or approaching a "late stage" condition. The factors pointing to this "late stage" condition conclusion include: the age of the plumes, the absence of free phase product, and current maximum TCE concentrations detected in soil and groundwater. This late stage condition of the source area and plumes is attributable to source depletion that has occurred as a result of: (1) natural attenuation, (2) surface water infiltration causing desorption of TCE from vadose zone soil (generally increased TCE desorption rates from soil can be presumed due to the presence of detergents or surfactants in the released mop water); and, (3) the limited volumes and concentrations of TCE released to the linear drainage feature in the form of mop water (i.e. current estimated quantities of TCE in soil and groundwater range from approximately 20 to 70 gallons which is the residual remaining volume in soil and groundwater after accumulation and subsequent depletion of incidental releases over a period of 30 to 50 years while also considering the effects of natural attenuation).

The northern and southern groundwater plumes exhibit characteristics of mature, predominantlly stable groundwater plumes. Evidence developed based upon more than 20 years of monitoring demonstrates that natural attenuation is occurring in the north and south plumes as indicated by the presence of cis-1,2-DCE and VC in monitoring wells as a result of chemical, geochemical and biological processes.

The northeastern plume resulting from a separate lesser source (i.e. TCE concentrations in groundwater in the northeast plume are two to three orders of magnitude lower than the concentrations in the source area and south plume) has been monitored quarterly for five events (see Figure 3-4). Groundwater monitoring data suggest the plume boundaries have remained stable during these monitoring events. The presence of cis-1,2-DCE and VC in monitoring wells as a result of chemical, geochemical and biological processes indicates that natural attenuation is occurring.

Looking Forward

In order to determine appropriate next steps at this site, fate and transport models were produced for the south and north plumes. The fate and transport computer models developed for the Whirlpool site utilize software developed on behalf of USEPA and the US Army Corps of Engineers (USACE) and these models are commonly relied upon by USEPA, USACE and United States Geological Survey (USGS). Fate and transport computer models are used to demonstrate groundwater migration and to assess future groundwater contaminant *concentrations due to transport while accounting for natural attenuation via chemical, geochemical and biological processes which naturally decrease constituent concentrations in groundwater.*

These computer models are composed of a steady-state flow model based on groundwater conditions in October 2015, coupled to a transport model simulating the time periods from 2015 to 2050 and 2055 for the north and south plumes, respectively. Utilizing the existing data, and conservative assumptions, the model projects that groundwater in the north plume will achieve the maximum contaminant level (MCL) (i.e. 5 µg/L) for TCE throughout the north plume within 30 to 35 years (see Figure 4-9). The model projects that groundwater in the south plume will not migrate off Site beyond the south and west property boundaries at concentrations above the MCL (see Figure 4-13). TCE breakdown constituents are expected to degrade in a similar manner and timeframe as TCE based upon regression analysis of site specific data. The continuing validity of the computer model simulations can be verified during subsequent five year remedy reviews in light of future data collection.

The northeast plume exhibits TCE concentrations in the offsite portion of the groundwater plume that only marginally exceed the MCL. The northeast plume is anticipated to mimic the natural attenuation conditions occurring in the north plume. Monitoring will continue for the northeast plume and subsequent modeling will be performed as appropriate.

Risk Assessment

A Human Health Risk Assessment (HHRA) completed in January 2016 concluded: (1) there are no unacceptable exposures onsite since the facility is not occupied and no activities are occurring and there are no unacceptable exposures to trespassers who may access the Site; and (2) there are no unacceptable exposures to offsite residents, routine workers or utility maintenance workers.

Redevelopment and Re-Use Options

Whirlpool has made significant progress in the redevelopment of the property during the past two years. The warehouse was sold to Spartan Logistics in September 2014 (warehouse is south of the former manufacturing building) and Whirlpool remains in continued discussions with multiple interested buyers for the remainder of the property. Market studies indicate a need for high-bay warehousing in the Fort Smith area; therefore, Whirlpool is planning to auction and remove existing equipment and demolish the mezzanine structure to optimize the interior space for warehousing purposes. Indoor air monitoring and sub-slab soil vapor testing is planned for February 2016 to facilitate planned interior building activities. The property west of the former manufacturing building is planned to be subdivided for development with smaller buildings for industrial and commercial uses.

Potential Redevelopment Option

Aerial Image of Former Manufacturing Building and former Warehouse

In the event that future data collection should indicate that potential risks may exist for onsite workers, there are a variety of steps that can and will be taken to both assess and mitigate any such future risks. Ongoing monitoring will be conducted to assure all necessary data are collected. Deed restrictions are in place to mitigate inadvertent and unnecessary contact with contamination in the subsurface. Engineering controls and best practices in worker safety can further insure, when appropriate, that no unacceptable risks arise in the future in the course of the future uses of the property.

Conclusions

Based upon the work performed during the last two years and the valuable database of groundwater monitoring data generated during the last 20 to 25 years, the following conclusions are presented in this Technical Review (additional information supporting these conclusions is presented in this Technical Review):

- *No unacceptable exposures exist onsite since the facility is not occupied and no activities are occurring and there are no unacceptable exposures to trespassers who may access the Site.*
- *There are no unacceptable exposures to offsite residents, offsite routine workers or offsite utility maintenance workers.*
- *Soil and groundwater in the linear drainage feature or source area no longer cause or contribute to groundwater impacts in the north plume based upon (i) the groundwater divide identified during groundwater monitoring efforts performed for the last 20 to 25 years, and (ii) ISCO injection events in the neck area and Areas 2 and 3 which have eliminated or significantly reduced TCE concentrations in these areas to initially create the separation of the north and south plume followed by the October 2015 ISCO event to further expand and sustain the plume separation.*
- *Analytical results for VOCs in groundwater demonstrate that natural attenuation of TCE is occurring via chemical, geochemical and biological mechanisms in areas of the southern, northern and northeastern plumes as demonstrated by the presence of the reductive dechlorination byproducts cis-1,2-DCE and VC.*
- *Groundwater monitoring for the south plume has been performed for 20 to 25 years providing a valuable data base. TCE concentration trends are predominantly stable to decreasing for 89% (31 of 35 wells) of the wells in the south plume based on the data base. These stable and decreasing TCE concentration trends demonstrate that natural attenuation processes are effectively remediating groundwater impacts at the Site. The decreasing and stable concentration trends for cis-1,2-DCE and VC in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in the southern wells.*
- *Groundwater monitoring for the north plume has been performed for 20 to 25 years providing a valuable database. TCE concentration trends are predominantly stable to decreasing for 86% (36 of 42 wells) of the wells in the north plume based on the data base. These stable and decreasing TCE concentration trends demonstrate that natural*

attenuation processes are naturally addressing the groundwater impacts at the Site. The decreasing and stable concentration trends for cis-1,2-DCE and VC in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in the northern wells.

- *The regression analysis demonstrates that TCE concentrations are decreasing in monitoring wells in the source area and Area 1 (i.e. MW-25 and ITMW-19) prior to performance of remediation activities. TCE concentrations in groundwater in the source area (i.e. MW-25) decreased more than 50% during the last four years prior to remediation activities that commenced in October 2014. These substantial TCE concentrations reductions demonstrate that TCE impacts in vadose zone soil are not substantially contributing to groundwater impacts in the source area.*
- *Regression analysis of the groundwater monitoring data set determined the regression slopes for TCE, cis-1,2-DCE and VC are -0.15, -0.17 and -0.20 (i.e. slope of the concentration trend line for log transformed data), respectively, indicating the natural degradation of cis-1,2-DCE and VC is expected to occur at a similar or increased rate compared to TCE[1]. The concentration trends for cis-1,2-DCE and VC from a predominant number of wells are characterized as nondetect, decreasing or stable indicating that the natural degradation of cis-1,2-DCE and VC is not "stalling" or causing an increase in the concentrations of either of these constituents; therefore, conclusions that no unacceptable current or future exposures to cis-1,2-DCE and VC in groundwater (or vapor from groundwater) remain valid. Groundwater monitoring will continue to confirm these constituents naturally degrade similar to TCE, and further regression analysis, risk assessment or groundwater modeling will be performed in light of future data collection.*
- *The fate and transport model projects groundwater in the south plume will not migrate offsite beyond the property boundaries at concentrations above the MCL. TCE breakdown constituents (e.g. cis-1,2-DCE and VC) are expected to degrade in a similar manner and timeframe as TCE in the south plume based upon regression analysis of site specific data.*
- *The fate and transport model projects the TCE concentration in groundwater in the north plume will be reduced to the MCL within approximately 30 to 35 years. TCE breakdown constituents (e.g. cis-1,2-DCE and VC) are expected to degrade in a similar manner and timeframe as TCE in the north plume based upon regression analysis of site specific data.*
- *Whirlpool has made significant progress in the redevelopment of the property during the past two years. The warehouse was sold to Spartan Logistics in September 2014 and Whirlpool remains in continued discussions with multiple interested buyers for the remainder of the property. Whirlpool is optimizing the interior space of the former*

[1] Separate regression slopes for TCE were used for the north plume and south plumes based upon the -0.15 regression slope and the regression slopes for cis-1,2-DCE and VC are based upon the combined available data from the north and south plumes. Regression slopes in units of ln(μg/l)/year.

manufacturing building for warehousing purposes, and is planning to subdivide western portions of the property for further development for industrial and commercial purposes.

- *If future data collections indicate that there is an unacceptable exposure risk to onsite workers, maintenance workers or construction workers, such future risks will be managed by means of the existing deed restriction, engineering controls, monitoring and proper work practices and protective gear or equipment. Indoor air monitoring and sub-slab soil vapor testing is planned to occur during February 2016 to facilitate planned interior building activities including equipment removal and selective demolition of the mezzanine level to optimize potential future use of the building.*

Because the conclusions above rest firmly upon: site specific data collected over the last 20 to 25 years; remediation activities that have resulted in significant reductions in concentrations of constituents of concern; demonstration that MNA will be effective in reducing constituent concentrations below the MCLs in the north plume; and demonstration that the south plume will remain on the site while constituent concentrations continue to decrease due to MNA, there is no need at this time for further remedial action beyond continued monitored natural attenuation.The need for further remedial actions can be reassessed, if and as warranted, during subsequent five year remedy reviews in light of future data collection.

1.0 INTRODUCTION

On behalf of Whirlpool, Ramboll Environ has prepared this 2015 Two Year Technical Review Report (Report) for the former Whirlpool facility on Jenny Lind Road in Fort Smith, Arkansas (Site) (see Figure 2-1). This Report represents the culmination of two years of efforts by Whirlpool in close consultation with and under the oversight of ADEQ to accomplish:

- Completion of multiple investigations to enhance the understanding of Site conditions, groundwater and soil vapor monitoring to assess groundwater plume conditions and assess the potential for vapor intrusion; and
- Remediation activities at the Site to significantly reduce trichloroethene (TCE) concentrations in soil and groundwater in accordance with the 2013 Remedial Action Decision Document (RADD) and November 2015 revised RADD (hereafter referred to as the RADDs)[2]. New investigation, remediation effectiveness and monitoring data were collected while the November 2015 revised RADD was prepared.

Documentation of these efforts during the past two years has been presented in quarterly progress reports.

This Report presents an overview of the investigation and Site characterization phases completed during the past two years consisting of discussions of the Site setting and nature and extent of impact with description of the source area, followed by discussion of fate and transport issues and modeling efforts simulating natural attenuation effects on the south and north groundwater plumes with emphasis on the future south plume boundaries and future TCE concentrations in the north plume. The Report then provides a thorough review of remedial efforts and technical review of those efforts. The remedial efforts to date have included not only the actions described in the RADDs but also voluntary remedial efforts completed to enhance and expand reductions in TCE concentrations. Remedial efforts achieved during the last two years include the following:

- In 2014, Whirlpool
  - Placed institutional controls on the Whirlpool property;
  - Conducted three in-situ chemical oxidation (ISCO) events at multiple locations;
  - Conducted further investigation and monitoring of soil, soil vapor and groundwater conditions both onsite and offsite; and
  - Voluntarily excavated and removed approximately 350 cubic yards (approximately 500 tons) of TCE impacted soil from the linear drainage feature (the source area which is discussed in Section 3.0) via the completion of large diameter borings (LDBs).

[2] The December 2013 RADD identified three Areas for remediation consisting of Area 1 (area immediately outside the northwest corner of the former manufacturing building) and Areas 2 and 3 (located north of Ingersoll Avenue in the residential neighborhood) (see Figure 5-2).

- In 2015, Whirlpool
  - Settled with local property owners impacted by the offsite groundwater plume to obtain institutional controls precluding the use of groundwater;
  - Whirlpool conducted a fourth isco event in the supplemental neck area[3] and areas 2 and 3;
  - In-situ chemical reduction (iscr) pilot test near mw-61r (northeastern boundary of the north plume); and
  - Conducted further investigation and monitoring of soil, soil vapor and groundwater conditions both onsite and offsite.

As part of the overall site activities occurring between 2014 and 2015, Whirlpool has made significant progress in the redevelopment of the property. The warehouse was sold to Spartan Logistics in September 2014 (warehouse is south of the former manufacturing building) and Whirlpool remains in continued discussions with multiple interested buyers for the remainder of the property. Market studies commissioned on behalf of Whirlpool indicate a need for high-bay warehousing in the Fort Smith area; therefore, Whirlpool is planning to auction and remove existing equipment and demolish the mezzanine structure to optimize the interior space for warehousing purposes. Indoor air monitoring and sub-slab soil vapor testing is planned for February 2016 to insure planned interior building activities will not pose unacceptable exposure risks to workers. The property west of the former manufacturing building is planned to be subdivided for development with smaller buildings for industrial and commercial uses.

1.1 REPORT ORGANIZATION

The remaining portions of this Report are as follows:

- **Section 2: Site Setting.** This section provides data regarding the Site location, brief history and information regarding the topography, geology, hydrogeology and hydrology of the Site.
- **Section 3: Nature and Extent of Impact.** This section summarizes historical and recent data through 2015 to assess the source of impact as well as the nature and extent of soil, groundwater and soil vapor impacts at the Site.
- **Section 4: Fate and Transport.** This section presents an updated discussion of the fate and transport of the contaminants detected in impacted groundwater including discussion of the modeling efforts to simulate the future migration of the south plume.
- **Section 5: Remedy Implementation.** This section summarizes the remedial actions that have taken place through 2015 and the outcome of these successful remedial actions.

[3] The neck area was identified as a low area in the underlying bedrock surface located immediately east of the electrical substation along the north side of the Whirlpool property. The neck area partially influences the flow of impacted groundwater at the southern extreme limits of the north plume. The neck area was a focus of Site remediation activities and is discussed further throughout this report (see Figure 5-2).

- **Section 6: Risk Assessment.** This section presents a summary of the Human Health Risk Assessment first established for the Site in 2012 and updated in 2015. The risk assessment has been updated in conjunction with the quarterly monitoring reports in 2015 and based on updated USEPA Guidance Document published June 2015 (USEPA 2015).
- **Section 7: Summary and Conclusions.** This final section of the report summarizes the effectiveness of the remedial actions to date and discusses the positive effects of MNA associated with the south plume.

A full review of historical and current activities as they related to Site characterization are available in **Appendix A**.

The nature and distribution of contaminant impact is well documented based on both the data collected from 2013 through 2015 and the historical data collected during prior Site investigations on both the former manufacturing building Site and offsite. Further discussion regarding nature and distribution of impact are discussed in **Appendix B**.

Appendix C includes hydrogeologic and hydraulic characteristics associated with fate and transport as well as a discussion of plume stability and a detailed review of monitored natural attenuation (MNA) at the Site.

Appendix D includes a discussion and review of regression analysis of TCE breakdown constituents cis-1,2-DCE and VC used to assess conclusions regarding residual concentrations of these constituents as a result of TCE degradation.

2.0 SITE SETTING

The Whirlpool Fort Smith facility (Site) is located at 6400 Jenny Lind Road on the south side of Fort Smith, Sebastian County, Arkansas (Figure 2-1). The Site formerly consisted of approximately 153 acres of which the developed portion of the property consists of the former manufacturing facility (approximately 1,175,000 square feet [ft^2]), a former warehouse (approximately 622,000 ft^2) and ancillary buildings north of the former manufacturing building including the boiler room and water treatment plant. Approximately 21 acres on the southwestern portion of the property consists of undeveloped vegetated areas (Figure 2-2). Concrete driveways and concrete and asphalt parking areas surround the structures. Whirlpool sold the warehouse and surrounding property on the southern portion of the Site in September 2014 to Spartan Logistics. The current Site now consists of approximately 93 acres.

The Site was first developed in 1961 by Norge Corporation as a refrigerator, icemaker and gas/air conditioning manufacturing facility until it was acquired by Whirlpool in 1966. Facility activities included the manufacture of side-by-side household refrigerators, trash compactors and icemakers during Whirlpool's time of operations. Manufacturing operations ceased in 2012 and the only current onsite activities include occasional building maintenance (i.e. manufacturing equipment is no longer maintained). Manufacturing operations occurred at the facility for over 50 years.

Residential areas are located to the north of the property beyond Ingersoll Avenue and commercial industrial properties are located to the south, east and west. Undeveloped property used for recreational purposes is also located to the west. Groundwater is not used as a potable source in the area. In addition, as of 2015, all of the residential properties north of the Site have groundwater use restrictions in place as part of property damage claims settled amicably by Whirlpool and the residents.

Appendix A provides more details regarding site characterization data which is summarized in the remainder of this section of the report.

2.1 TOPOGRAPHY AND HYDROLOGY

The topography of the Site gently slopes to the east-northeast along the northern portion of the property and primarily to the south-southeast along the southern portion of the property. The elevation of the Site ranges from approximately 470 feet above mean sea level (msl) along the northeast portion of the property to a high of approximately 480 feet above msl along the southwest corner and south side of the building. The elevation of the residential properties north of the Site range from 455 feet above msl at the northeast corner of the intersection of Jenny Lind Road and Brazil Avenue (beyond the northeast corner of the north plume) to 475 feet above msl at MW-39R north of Ingersoll Avenue (near the south end of the north plume and north of the electric substation).

Surface water drainage ditches are located along Ingersoll Avenue on the north side of the Site and along Jenny Lind Road on the east side of the Site. Surface water runoff and roof drain flow from the eastern half of the Site generally flows toward the northeast corner of the facility (Outfall 001) where it enters the city storm sewer system under Jenny Lind Road and flows toward Mill Creek while the surface water runoff and roof drain flow from the western half of the Site generally flows toward the west central portion of the property (Outfall 002) near the rail lines exiting the Site at the intersection of Pierce Drive and Goodwin Street.

2.2 REGIONAL GEOLOGY

Fort Smith is located within the Arkansas River Valley physiographic region of the Interior Highlands Region of Arkansas. The Arkansas River Valley is a low-lying region surrounding the valley of the Arkansas River and its major tributaries and represents the northern extent of the Ouachita orogenic (mountain building) system in Arkansas. Surface rocks in this region consist of a sequence of Pennsylvanian Period coal-bearing sandstones and shales that have been compressed into well-developed east-west trending open folds (anticlines and synclines) and faults primarily due to the orogenic event. The Site is situated on the northwestern flank of the Massard Prairie Anticline.

2.3 SITE GEOLOGY

The unconsolidated subsurface material at the Site consists of stream deposited Quaternary age alluvium that ranges from approximately 25 to 35 feet in thickness. Underlying the alluvium is the Pennsylvanian Period McAlester Formation which consists primarily of gently dipping dark gray shales and siltstones with thin coal beds and is likely over 500 feet thick in the Fort Smith area (Hendricks, 1949).

A review of published geologic literature and data from investigations conducted at the Site indicate the unconsolidated alluvium consists primarily of two units; a shallow fine-grained unit (Upper Fine-Grained Unit) and a coarse textured basal unit (Basal Transmissive Zone). The Upper Fine-Grained Unit consists primarily of recent age fine grained alluvial sediment. The Basal Transmissive Zone may be equivalent to the Pleistocene age Gerty Sand and consists of unconsolidated river terrace sand and gravel. Each unit is discussed in further detail in the following paragraphs.

Upper Fine-Grained Unit

The Upper Fine-Grained Unit at the Site exhibits variations in texture from silt to sandy clay. The shallow portion of this unit (upper 4 feet) consists primarily of silty clay and silt. The central portion of this unit (from approximately 4 to 15 feet below ground surface [bgs]) generally consists of silty to sandy clay. This unit becomes characterized by thinly bedded silty clays and silts in offsite areas, primarily north of Jacobs Avenue (located approximately 300 feet north of the Site property boundary).

Within the Upper Fine-Grained Unit there are discontinuous thin zones of greater permeability that contain more silt and/or sand content. A zone of greater permeability at a depth ranging from approximately 5 to 10 feet bgs is prevalent, though not consistently present, north of the Whirlpool building and extends north into the residential areas. When present the zone is typically logged as moist or wet. A deeper shallow permeable zone at depths of greater than 10 feet was observed in some of the borings in the same areas, but it is not as prevalent as the shallower zone.

Typically, the lower portion of the Upper Fine-Grained Unit at depths greater than 15 feet bgs transitions to the sandy Basal Transmissive Zone discussed below.

Basal Transmissive Zone

The Basal Transmissive Zone can be generally subdivided into two primary units; the upper unit composed primarily of silty sand to sandy silt and the lower unit composed primarily of clayey and silty sands and gravels.

The upper unit of the Basal Transmissive Zone is composed primarily of silty sand to sandy silt grading to sandy gravel with depth. This upper “sand” unit is generally only present on Site and ranges from approximately 2 to 9 feet thick. The “sand” unit appears to thin and pinch out in some areas north of Ingersoll Avenue. The entire Basal Transmissive Zone is absent at newly installed monitoring well MW-193 located east of Jenny Lind Road and north of Brazil Avenue (see Figure 2-3). A narrow band of the “sand” unit does extend to the east of the property beneath the Boys and Girls Club. The unit gradationally transitions into the lower unit of the Basal Transmissive Zone.

The lower unit of the Basal Transmissive Zone consists primarily of sand and gravel that is generally 4 to 10 feet thick onsite with variable amounts of clay and silt. This sand and gravel layer is present in the majority of the borings on Site and it rests in an unconformable manner on weathered shale or on clay associated with weathered shale. Some of the thickest portions of this “gravel” unit are located onsite beneath the building and north from the northwest corner of the building extending to approximately Jacobs Avenue.

Both portions of the Basal Transmissive Zone are present on the southern portion of the property, south of the building. The thickest portions of the Basal Transmissive Zone appear associated with bedrock lows or on the flanks of the bedrock troughs.

McAlester Formation

The upper portion of the McAlester Formation is typically silty, black to dark gray, fissile and micaceous shale. Both weathered shale and a thin veneer of friable and laminar bedded red-orange to gray-brown clay produced from the weathering of shale are frequently encountered in the transition zone above the unweathered shale bedrock at the Site. This transition zone typically grades into the black or dark gray shale of the massive McAlester Formation.

Based on the orientation of the Massard Prairie Anticline with respect to the Site, the shale surface beneath the Site would be expected to follow the regional dip which is generally to the northwest. However, based on available data from the investigations conducted at the Site the competent shale surface appears to slope to the southeast. Within this general gradient to the southeast, there are isolated bedrock lows and highs present beneath the Site and surrounding area. A bedrock trough, historically referred to as the “neck” area, trending roughly from north to south is present just east of the electrical substation. There is a southwest to northeast low beneath the northwest portion of the manufacturing building (Figure 2-4) that transitions into a trough trending west to east along Ingersoll Avenue, extending toward the Boys and Girls Club. There are bedrock highs present at the northeast corner of the former manufacturing building and north along Jenny Lind Road between Jacobs and Brazil Avenues. To the south of the former manufacturing building, there is a high in the shale surface in the area of ITMW-8 that appears to form a shallow ridge connected with the high at the northeast corner of the building. This bedrock ridge forms the southeast flank of the trough beneath the northwest portion of the building. At the southwest corner of the property there is a narrow trough extending southwest from TMW-189 to MW-186 that bisects the southwest to northeast trending ridge (Figure 2-4). This feature appears to be the erosional remnant of a historic small southwest trending stream.

2.4 SITE HYDROGEOLOGY

The primary groundwater zone at the Site is the Basal Transmissive Zone which is under semi-confined conditions. Groundwater under semi-confined conditions is partially confined by overlying soil layers of low permeability. Though rebound to a state of equilibrium is noted when the groundwater unit is pierced, recharge and discharge can still occur at very low rates through the overlying semi-confining layers. Further details regarding hydrogeologic conditions at the Site are provided in Appendix C.

There are discontinuous thin zones of greater permeability within the Upper Fine-Grained Unit. When present the zones of higher sand content are typically logged as moist or wet indicating the presence of perched water. The water present in these zones is defined as perched, as the underlying soil of less permeability impedes the downward migration. It is highly likely that the water content in these zones is seasonal and potentially due to subsurface utilities or other subsurface structures intercepting some of these shallow permeable zones. Due to the discontinuous nature of these zones or lenses of greater permeability, any groundwater movement is minimal and localized.

Basal Transmissive Zone

Evaluation of potentiometric surface maps indicates there are three distinct groundwater flow regimes; the Northern Flow Regime, the Northeastern Flow Regime and Southern Flow Regime (see Figure 2-5). The Northern and Southern Flow Regimes are separated by a groundwater gradient divide (hydraulic divide) that trends east to west just north of the northwestern portion of former manufacturing building and extending to the east. North of this hydraulic divide the groundwater gradient is directed generally to the north/northeast. South of this hydraulic divide the groundwater gradient is directed primarily to the southeast except for a southwestern gradient in the southwestern quadrant of the property. The Northeastern Flow Regime emanates from the northeastern corner of the former manufacturing building and trends northeasterly.

The range of hydraulic conductivities in the Basal Transmissive Zone have been relatively consistent Independent of the testing method used (i.e. slug or pump tests). The historical range is from a maximum of 3.3E-02 centimeters per second (cm/sec) [93 feet/day (ft/day)] calculated for observation well MW-65 during a pump test using MW-35R as the pumping well (immediately north of Ingersoll Avenue) to a minimum of 3.4E-05 cm/sec (0.1 ft/day) at Slug-HPT-09 adjacent to DP-14 (under the west central portion of the former manufacturing building). These results are typical of hydraulic conductivities associated with silts, sandy silts and clayey sands.

Southern Flow Regime

The Southern Flow Regime extends south from the east-west groundwater divide located across the northern portion of the Whirlpool Facility. Groundwater flow is generally to the southeast with a component of flow to the southwest, south of MW-29 and west of MW-189 (Figure 2-5). The hydraulic gradient is gradual to the south beneath the facility but steepens to the east and southwest more distant from the former manufacturing building. The observed groundwater flow to the southwest, at the southwest portion of the property, appears to be, at least in part, influenced by the gradient of the competent shale surface below the Lower Basal Transmissive Zone.

The gradient in the Southern Flow Regime is relatively flat beneath the building at approximately 0.0009 feet/foot between wells MW-25 and MW-192 based on gauging data from October 2015. The hydraulic gradient increases to the southwest at approximately 0.004 feet/foot between wells ITMW-5 and MW-187 and steepens to 0.013 feet/foot in the southwest corner of the property between MW-182 and MW-186 based on gauging data from October 2015.

Slug tests completed in the south sentinel wells in October 2015 resulted in estimated hydraulic conductivities ranging from 1.4E-03 cm/sec [4 ft/day or 440 meters/year (m/yr)][4] at MW-188 to 3.0E-04 cm/sec (1 ft/day or 95 m/yr) at MW-186 (within the range of hydraulic conductivities measured at other locations at onsite and offsite locations).

Northern Flow Regime

The Northern Flow Regime extends from the groundwater divide to the north and northeast. In the Northern Flow Regime, groundwater flows consistently toward the north-northeast without significant seasonal variations. The gradient is quite flat at approximately 0.0005 feet/foot (between MW-83 and MW-46R based upon October 2015 gauging data) near the groundwater divide and extending north from the western portion of the north parking lot to just north of Jacobs Avenue (Figure 2-4). North of Jacobs Avenue the hydraulic gradient is directed generally to the north-northeast. North of Jacobs Avenue the gradient is to the northeast at approximately 0.01 feet/foot between MW-68 and MW-61 based on 2015 fourth quarter groundwater data.

[4] Alternative units for hydraulic conductivity measurements are provided for comparison and reference.

Additional slug tests were conducted in 2015 at wells within the north portion of the northern flow regime using the rising and falling head slug test methodology. The resulting hydraulic conductivities ranged from 2.5E-04 cm/sec (0.7 ft/day) at TMW-11 to 8.9E-05 cm/sec (0.3 ft/day) at MW-193 (near the lower end of the range of hydraulic conductivities measured at other locations at onsite and offsite locations). Hydraulic conductivities on these orders of magnitude are typically associated with silts, sandy silts and clayey sands.

Northeastern Flow Regime

The Northeastern Flow Regime extends from the groundwater divide at the northeast corner of the manufacturing building to the northeast. In the Northeastern Flow Regime, groundwater flows consistently toward the north northeast without significant seasonal variations. In this flow regime, the groundwater flow direction is more easterly than northeasterly (Figure 2-5). The gradient in this area is a bit steeper than in the other flow regimes. The gradient is to the east at approximately 0.02 feet/foot between MW-90 and MW-98 based on 2015 fourth quarter groundwater data.

A slug test was completed at MW-184 in the northeastern flow regime resulting in a hydraulic conductivity of 1.7E-04 cm/sec (0.5 ft/day). Hydraulic conductivities on this order of magnitude are typically associated with silts, sandy silts and clayey sands.

3.0 NATURE AND DISTRIBUTION OF IMPACT

This section summarizes the nature and distribution of contaminants based on investigations on both the former manufacturing Site and offsite locations. Appendix B provides more details regarding the nature and extent of impact at the Site.

Two sources of groundwater impact from TCE have been identified at the Site. The primary source appears to be an area of incidental TCE releases in the vicinity of the degreaser building (Area 1) and extending along a linear drainage feature (identified in a 1971 historical aerial photograph) running from the degreaser building to the west southwest toward the former rail spur on the north side of the former manufacturing building (hereafter described as “northwest corner”) (see Figure 2-2). The second lesser source area is located near the northeast exterior corner of the former manufacturing building.

The linear drainage feature is present on the 1971 aerial photograph and is still generally present today. A drainage swale in the existing concrete pavement (i.e. a slight dip in the concrete pavement) can be observed from the northwest corner of the degreaser building and extending southwest towards the general vicinity of MW-25. The drainage swale diverted surface water from the northwest corner of the Site towards the west. The dimensions of the drainage swale allowed access across the area due to the movement of parts for degreasing operations and for operation of the liquid propane distribution unit (formerly present between ITMW-18 and ITMW-19 and connected to propane storage tanks near the northwest parking lot [Malcolm Pirnie Figure 3-1, 1996]). The linear drainage feature is estimated to have exhibited a total depth of approximately 3 to 6 inches (total depth near the center of the drainage feature compared with the surrounding grade), a width of approximately 10 feet (source length parallel to the groundwater flow direction)[5] and length of approximately 250 feet.

The primary source has resulted in groundwater impacts to the south and north groundwater plumes. The north plume is no longer hydraulically connected to the source at the northwest corner of the former manufacturing building. A migration or shifting of the hydraulic divide to the north is presumed to have occurred between 1967 and 1990 presumably as a result of Site development limiting surface water infiltration across the Site (i.e. building construction and subsequent expansions, placement of pavement and enhancement of surface water drainage features). Prior to the presumed minor shift of the hydraulic divide (see discussion in Section 2.4), a small portion of the impacted groundwater originating at the northwest corner migrated north (see Section 3.3 for the proportion of TCE impact in the north plume compared to the south plume). The shifting of the hydraulic divide has resulted in a separation and a continued expansion of the separation between the south and north plumes, and remediation efforts in the neck area and Areas 2 and 3 have reduced the TCE concentrations in the north plume which provides further expansion of the plumes.

[5] The source length parallel to the groundwater flow is approximately 3 meters (i.e. width of the linear drainage feature). A source area must have been in contact with separate phase contaminants to distinguish the source and resulting plume as defined by the National Research Council (Contaminants in the Subsurface:Source Zone Assessment and Remediation, 2004). ERM in 2004 used a source length parallel to groundwater flow of 379 meters to calculate the soil RAL.

Site investigations have not identified the operations or activities that resulted in the presence of TCE in groundwater at the northeast exterior corner of the former manufacturing building (significantly lower concentrations of TCE are present in groundwater at the northeast corner compared to the TCE concentrations in groundwater at the northwest corner). No soil impact from TCE has been identified in this area. Membrane interface probe (MIP) data collected from the northeast corner area shows elevated responses at depths corresponding to the depth of the Basal Transmissive Zone (i.e. shallow impacts were not identified during the MIP screening). The highest concentration of TCE at the northeast corner was identified in groundwater at MW-87 located outside of the building during the second and third quarters of 2015 (TCE concentration of 758 µg/L). The interior and exterior MIP data, groundwater monitoring data from MW-22, MW-88 and MW-90 as well as a comparison of relative TCE concentrations in soil and groundwater at the northeast corner demonstrate a separation between the source areas at the northwest and northeast corners.

3.1 SOURCE OF IMPACT

The former degreaser building is a 600 ft^2 building located north of the former manufacturing building and west of the boiler house. The degreaser building contained two overhead doors on the west side of the building immediately adjacent to the linear drainage feature. The use of TCE as a solvent for degreasing operations in the building dates back to approximately 1967 and was discontinued in the mid 1980's[6]. Therefore, degreasing operations with TCE occurred between 30 and approximately 50 years ago.

Based on verbal accounts from former workers, the vapor degreasing equipment consisted of a tank and a parts rack (the former vapor degreasing equipment was reportedly removed sometime after degreasing operations ceased). The degreasing operations involved placing parts into a parts rack in the vapor degreaser. The TCE vapors condensed on the parts (i.e. the top of the degreaser is cooled to facilitate condensing of TCE vapors on the respective parts) and dissolved oils and grease drained into the heated TCE reservoir of the vapor degreaser. The parts were removed after degreasing was completed.

Potential incidental releases of TCE include:

- Drips of TCE from the cleaned parts after their removal from the vapor degreaser and placement either on the floor of the degreaser building or drips exterior of the degreaser building before the cleaned parts were returned to the former manufacturing building;
- Incidental drips on the degreasing building floor while managing TCE (i.e. filling or TCE removal from the former vapor degreaser);
- Rinsing of the degreaser building floor during general housekeeping purposes and discharge of the water through the overhead doors; and

[6] Limited historic documentation exists suggesting 1,1,1-trichloroethane (TCA) was used for degreasing operations for a limited period of time. However, the impact of significance at the Site is due to incidental TCE releases; therefore TCA is not discussed further.

- Mop water from the degreaser building containing detergent or surfactant discharged outside of the degreaser building.

The incidental spills and releases from these former degreasing operations over approximately 20 years of degreaser operations resulted in the impact to both soil and groundwater at the northwest corner of the Site. These impacts to soil and groundwater occurred 30 to 50 years ago based upon the history of TCE use at the Site. The source area and resulting north and south plumes are considered to be at or approaching a "late stage" condition due to the history of incidental releases from the degreasing building occurring 30 to 50 years ago[7]. With any middle to late stage source area or plume, any free phase product (if any free phase were ever present) is now dissolved or adsorbed in low permeability soil (Stroo, 2010).

The combined estimated quantity of TCE currently adsorbed in unsaturated and saturated soil and the TCE dissolved in the three groundwater plumes is estimated to range from approximately 20 to 70 gallons based upon investigation and monitoring events at the Site. The combined estimated quantity of TCE consists of the residual remaining volume in unsaturated and saturated soil and groundwater (south, north and northeast plumes) after accumulation of incidental releases which occurred approximately 30 to 50 years ago while also considering the effects of natural attenuation. The combined estimated quantity of TCE ranging from approximately 20 to 70 gallons consists of:

- 6 to 26 gallons of TCE in unsaturated soil (*Response to ADEQ Comments on the Fourth Quarter 2014 Progress Report*, May 2015 with source area dimensions adjusted to 250 feet long, 10 feet wide and an average thickness of unsaturated soil of 18.5 feet);
- 1 to 8 gallons of TCE in saturated soil (*Response to ADEQ Comments on the Fourth Quarter 2014 Progress Report*, May 2015);
- 8 to 30 gallons of TCE in groundwater in the south plume (see Section 3.3);
- Less than 1 to 2 gallons of TCE in groundwater in the north plume (see Section 3.3); and
- Less than 1 gallon of TCE in groundwater in the northeast plume (see Section 3.3).

[7] Chlorinated solvent sources and groundwater plumes evolve with time. The timeframes for a source area and plume to mature from early to middle and late stages is dependent upon the size and type of release (the release on the Site is presumed to be a solution of TCE, water and possibly surfactants or detergents associated with mop water as described above), hydrogeologic setting and the groundwater flow rate. During the early stage of a release, (1) the majority of the release is present as a free product (if released as free product in the first instance), (2) groundwater plumes just begin to form, and (3) little if any contaminant is present in low permeability soil (removal remedies are very effective for early stage releases). By the middle stage, much of the free phase product, if present, has migrated toward an aqueous or vapor phase, a groundwater plume is present, and contaminants are present in low permeability soil (if low permeability soil is present). Late stage or older source areas and plumes are characterized by the absence of free phase product, the presence of groundwater plumes sustained by back diffusion of contaminants from low permeability soil (i.e. typically represented by rebound in groundwater concentrations after active treatment of groundwater) (removal remedies are far less effective for late stage releases) (Stroo, 2010). The age of the plume, lack of free phase product, the current maximum TCE concentrations detected in soil and groundwater, and decreasing TCE concentration trends in groundwater in the source area (i.e. MW-25) together reflect that the source area and plumes are at or approaching late stage.

The incidental releases are expected to have consisted of solutions of TCE mixed with surface water and floor rinse water or mop water; therefore, little if any free phase TCE is anticipated to have been released at the Site to cause a potential high concentration source areas in the linear drainage feature [i.e. the current highest concentrations of TCE detected in groundwater or vadose zone soil only represent 0.01% to 0.03% TCE concentrations, respectively [131,000 µg/L at MW-86 and 270 milligrams per kilogram (mg/kg) at DP-07]. The age of the plume, lack of free phase product, and the current maximum TCE concentrations detected in soil and groundwater, and decreasing TCE concentration trends in groundwater in the source area (i.e. MW-25) together reflect that the source area and plumes are at or approaching late stage. The late stage condition of the source area and plumes is partially attributable to source depletion which has occurred due to: (1) natural attenuation, (2) historic surface water infiltration causing desorption of TCE from vadose zone soil (increased TCE desorption rates from soil are presumed due to potential detergents or surfactants from mop water); and (3) limited quantities of TCE in the original solutions of TCE released to the linear drainage feature.

3.2 VADOSE ZONE SOILS

The impact to Vadose Zone soil (the Upper Fine-Grained soil Unit defined in Section 2.3) appears to be limited to the northwest corner at and near the linear drainage feature. Initial historical investigations completed in 1996[8] included collection of soil samples from three borings located in the area of the former degreaser and linear drainage feature and the analytical results for TCE concentrations were reported as less than 1 mg/kg in all samples. MIP screening data and results of subsequent soil sampling conducted during investigations at the linear drainage feature and Area 1 and installation of injection wells in these areas suggest the contaminated soils are present in a linear manner associated with the former drainage feature and the vertical profile of impact extends into the underlying saturated Basal Transmissive Zone (see Appendix B).

Soil samples collected from soil borings advanced in the area confirm the presence of elevated concentrations of TCE in the Upper Fine-Grained Unit. The highest TCE concentrations in the Upper Fine-Grained Unit were identified in DP-07 located approximately 100 feet west of the former degreaser building. The highest TCE concentrations in DP-07 were 270 mg/kg at 5.5 to 6 feet bgs and 200 mg/kg at 12.5 to 13 feet bgs (see Figure 3-1 and 3-2)[9]. TCE concentrations detected in other soil samples from the Vadose Zone ranged from 0.0013 mg/kg at 2.5 to 3 feet

[8] In 1996, Malcolm Pirnie completed eight borings at the northwest corner of the manufacturing building to investigate subsurface conditions. The highest TCE concentrations were detected in the soil samples at B-4. In 1996 it was concluded the suspected source was incidental releases from the degreaser building based upon historic use of chlorinated solvents including TCE; the absence of any DNAPL; and, the fact that no constituents were detected in soil above health-based standards. As a result, no remedial action in soil was recommended or required.
[9] Large diameter boring 07 (LDB-07) was completed approximately 3 feet south of DP-07, LDB-19 was completed 9 feet east of DP-07 and permanent injection wells IW-134, IW-143 and IW-144 are located 15 feet north, southwest and southeast of DP-07, respectively. The pre-excavation performed for LDB-07 which was completed to a depth of 6 feet bgs removed the soil characterized from 5.5 to 6 feet bgs in DP-07. In addition, the culmination of the removal actions and subsequent ISCO performed at the three locations surrounding DP-07 should have reduced TCE concentrations in the saturated soil in this area.

bgs (DP-02) to 135 mg/kg at 3 feet bgs (DP-29). All TCE data from the soil samples collected by Ramboll Environ in 2013 through 2015 is summarized on Table 3-1.

Cross-sections across this area that show the distribution of TCE in the soil are provided in See Appendix B. The TCE concentrations in Vadose Zone soils are relatively higher near the centerline of the former linear drainage feature and decrease to the north and south with the lowest concentrations along the southern cross-section. TCE concentrations in both the Vadose Zone soils and saturated soil in the Basal Transmissive Zone were lower in borings located near the western end of the former linear drainage feature and west of Area 1. TCE concentrations in soil exhibit slightly increasing trends with depth in borings to the north and south of the former linear drainage feature. TCE concentrations generally decrease with depth in the borings along the centerline of the former linear drainage feature except at MW-86 and DP-08 where TCE concentrations are higher in saturated soil in the Basal Transmissive Zone.

Five additional monitoring wells (MW-92 through MW-95 and MW-172) were installed in September/October 2014 to supplement existing Area 1 ISCO monitoring wells. One soil sample was collected from every five foot depth interval (i.e. 0-5 feet, 5-10 feet, 10-15 feet, etc.) during well installation. Vadose zone soil samples exhibiting the highest TCE concentrations were detected at 14 feet bgs in the borings for monitoring wells MW-92 (0.364 mg/kg) and MW-172 (0.288 mg/kg). Lower concentrations were detected in all other vadose zone soil samples collected from the monitoring wells. This data is similar to the data collected in 1996.

Although vadose zone soil impacts have been characterized at the Site in the vicinity of the linear drainage feature, these soil impacts do not appear to be significantly contributing to groundwater impacts since stable to decreasing TCE concentration trends in groundwater have been demonstrated in the source area and Area 1. Although some unsaturated soil samples in the vadose zone exhibit TCE concentrations greater than the soil RAL (presented in the RADDs), TCE concentrations in groundwater in monitoring wells in the source area exhibited decreasing concentrations prior to performance of remediation activities beginning in 2014[10]. TCE concentrations in MW-25 decreased more than 50% during the four years prior to 2014. This significant TCE concentration reduction in groundwater and the overall declining TCE concentrations in groundwater in wells in the source area and Area 1 demonstrate groundwater conditions are improving regardless of TCE concentrations in vadose soil exceeding the RAL[11].

Isolated Areas within Manufacturing Building Footprint

Based on MIP data taken from areas underneath the former manufacturing building (MIP screening was generally performed on a 50 to 100 foot grid across the western half of the building), two isolated areas of elevated TCE were identified in the vadose zone soil (based on the electron capture detector (ECD) response – Appendix A). Soil borings were advanced to

[10] The decreases in TCE and cis-1,2-DCE concentrations are depicted on Figure 4-4. In addition, the decreases in TCE concentration in MW-25 are discussed in Section 4.4.1 regarding the regression analysis and groundwater modeling efforts.

[11] Adjustment of the soil remedial action level (RAL) calculated by ERM in 2004 using the appropriate length of the source parallel to the groundwater flow direction (3 meters versus 397 meters) adjusts the calculated soil RAL to range from 1 mg/kg to 10 mg/kg based upon the range of hydraulic conductivities measured for the south plume.

collect soil samples from two locations exhibiting the highest ECD responses and the TCE concentrations in soil samples were reported to be less than 1 mg/kg (DP-12 and DP-14).

In August 2014, three additional soil borings DP-54, DP-55 and DP-56 were completed within the former manufacturing building footprint to investigate shallow ECD responses detected during the MIP screening. All soil sample TCE concentrations were below 1 mg/kg.

These soil sample results indicate that there is no additional source of TCE in soils at these locations that would materially contribute to groundwater impacts.

Southwest Corner

Nine MIPs were completed at the southwest corner of the former manufacturing building property in August 2014. Most MIP screening results indicated no or very little response on the ECD. ECD responses were noted in the upper 1 to 2 feet at many MIP locations, but these responses were an artifact of the screening instrumentation. At sample location M-348/DP-62 the ECD response was 7.5 µV x 10^5 at 1 foot bgs and the soil sample analytical result was non-detect. This result provides laboratory confirmation of the absence of VOC impact in shallow soil samples where ECD responses occurred.

During installation of MW-182 in June 2015, two soil samples were obtained, from 11.5 and 28.5 feet bgs. No VOCs were detected in the shallow soil sample and TCE was the only VOC detected in the deeper saturated soil sample at a concentration of 0.01 mg/kg.

No additional potential sources of soil impact were characterized south of the building which would contribute materially to groundwater impacts.

3.3 GROUNDWATER

The Basal Transmissive Zone is the primary groundwater unit at the Site. Potentiometric surface mapping indicates that there appears to be three distinct groundwater flow regimes; the Northern Flow Regime, the Northeastern Flow Regime and Southern Flow Regime. The Northern and Southern Flow Regimes are separated by a groundwater gradient divide that trends east to west just north of the northwestern portion of former manufacturing building. North of this divide the hydraulic gradient is directed generally to the north/northeast. South of this flat divide area, the direction of the hydraulic gradient is primarily to the southeast except for a southwestern gradient in the southwestern quadrant of the property south of MW-29. The Northeastern Flow Regime emanates from the northeastern corner of the former manufacturing building and trends northeasterly.

During the 2015 fourth quarter groundwater monitoring event, the maximum onsite groundwater TCE concentration of 131,000 µg/L was detected in MW-86, located adjacent to MW-25 at the western extent of the linear drainage feature. The concentrations of the daughter products [cis-1,2-DCE,1,1-DCE and vinyl chloride (VC)] are highest in wells MW-25, MW-38 and MW-86 all located within the source area. TCE isoconcentration maps of the southern and northern plumes depicting results from the fourth quarter 2015 monitoring event are provided as Figures 3-3 and

3-4, the historical analytical data for TCE and daughter products in the southern and northern plumes is presented in Table 3-2.

The extent of affected groundwater to the south is confined to the Whirlpool property. Analytical data from monitoring wells to the south indicate that impacted groundwater with TCE concentrations above MCLs is estimated to extend approximately 700 feet south-southwest of the southwest corner of the former manufacturing building. TCE was detected at 1.2 µg/L at well MW-186 (below the MCL) which is located approximately 75 feet east of the west property boundary and 500 feet north of the south property boundary.

The extent of affected groundwater to the north has been characterized and is estimated to extend approximately 1,400 feet north-northeast from the north property boundary to MW-61R (TCE concentration of 5 µg/L at MW-61R). An ISCR pilot study is underway in the vicinity of MW-61R; and, further reductions in TCE concentrations in groundwater in this area are expected (further discussion regarding the ISCR pilot study is provided in Section 5.4).

The extent of affected groundwater in the northeast plume has been characterized and is estimated to extend approximately 200 feet north-northeast from the northeast property boundary to the location of soil probe DP-42.

An estimate of the total quantity of TCE in groundwater was calculated based upon the October 2015 monitoring data (as described in Section 3.1). The relative distribution of TCE within the south groundwater plume is based on the following conservative, data-driven assumptions:

- Aerial extent of the plume is 1,070,000 ft^2.
- Average saturated thickness of the north portion of the aquifer of 8.3 feet.
- Total porosity of 0.40[12].
- Estimated average minimum concentrations and mass estimates for respective sections of the plume were calculated based on TCE concentrations of 5, 100, 1,000 and 10,000 µg/L. Maximum average mass estimates were calculated based on 100, 1,000, 1,500 and 40,000 µg/L.
- Specific gravity for TCE of 1.46.

Given these assumptions, the quantity of TCE in groundwater in the south plume ranges from approximately 8 to 30 gallons of TCE.

[12] Total porosity is defined as the ratio of the entire pore space divided by its bulk volume. Effective porosity is the total porosity less the fraction of the pore space occupied by clay (effective porosity is discussed in Section 4.4 regarding groundwater modeling. Total porosity is assumed to be 0.40 from Freeze and Cherry, 1979 (as noted in previous quarterly progress reports). A higher porosity provides for a greater quantity of groundwater in the calculation and thus increasing the total calculated quantity of TCE in groundwater (i.e. higher porosity increases the conservatism of the calculation).

The relative distribution of TCE within the north groundwater plume is based on the following conservative, data-driven assumptions:

- Aerial extent of the plume is 455,000 ft^2.
- Average saturated thickness of the north portion of the aquifer of 3.7 feet.
- Total porosity of 0.40.
- Estimated average minimum concentrations and mass estimates for respective sections of the plume were calculated based on TCE concentrations of 5, 100 and 1,000 µg/L. Maximum average mass estimates were calculated based on 100, 1,000 and 1,500 µg/L.
- Specific gravity for TCE of 1.46.

Given these assumptions, the quantity of TCE in groundwater in the north plume ranges from less than one gallon up to less than 1.5 gallons of TCE.

The relative distribution of TCE within the northeastern groundwater plume is based on the following conservative, data-driven assumptions:

- Aerial extent of the plume is 237,000 ft^2.
- Average saturated thickness of the north portion of the aquifer of 4.4 feet.
- Total porosity of 0.40.
- Estimated average minimum concentrations and mass estimates for respective sections of the plume were calculated based on TCE concentrations of 5, 100 and 1,000 µg/L. Maximum average mass estimates were calculated based on 100, 1,000 and 1,500 µg/L.
- Specific gravity for TCE of 1.46.

Given these assumptions, the quantity of TCE in groundwater in the northeast plume ranges from approximately one tenth of gallon to less than 1 gallon of TCE.

As described above, the combined quantity of TCE in groundwater in the south, north and northeast plumes ranges from approximately less than 10 gallons to as much as 32 gallons with the vast majority of the TCE in groundwater attributed to the onsite south groundwater plume (80% to 90% of the TCE in groundwater is present in the south plume). The calculations yielding these estimated quantities are detailed in Tables 3-3 and 3-4.

3.4 SOIL VAPOR

The perched water, soil vapor and crawl space air data collected over the north groundwater plume in the residential area north of the Site have shown that the TCE impacts to groundwater do not present a public health concern in terms of potential vapor intrusion from that groundwater. These findings corroborate the groundwater vapor intrusion modeling results which indicate vapor intrusion from groundwater is not occurring at levels that would present a potential public health concern (see Updated HHRA and further discussion in Section 6).

Although soil vapor data has not been collected from locations in the southern plume (soil vapor data has been collected onsite near the north property boundary in connection with investigation of the north plume), sub-slab soil vapor and indoor air monitoring in the former manufacturing building will commence in late February 2016 due to pending activities to facilitate re-use of the existing building including equipment removal and selective demolition of the interior mezzanine level (see further discussion in Human Health Risk Assessment in Section 6.0). Based on the maximum detected COC concentrations in onsite soil and groundwater, there potentially could be a future unacceptable vapor intrusion risk to an onsite worker. Land use at the Site is deed restricted to remain commercial/industrial and routine or construction workers represent the potential exposure population of concern under both current and reasonably expected future land use. Engineering and institutional controls as well as monitoring and best practices including personnel protective equipment will be incorporated into future redevelopment plans to ensure onsite worker exposures to vapors from soil or groundwater remain within acceptable exposure levels.

The perched water, soil vapor and crawl space air data collected over the north groundwater plume in the neighborhood through Fourth Quarter 2015 have shown that TCE vapor from the groundwater is not indicative of a public health concern associated with vapor intrusion from groundwater. More specifically, TCE has not been detected in crawl space air which indicates vapor intrusion from groundwater is not occurring at levels that would present a public health concern.

Using multiple lines of evidence, these results confirm that vapor intrusion from groundwater does not pose an unacceptable risk for residences in the northern plume. Further, the risk estimates for both the measured soil vapor concentrations and the water in the soil vapor monitoring ports indicate that the modeling approach used to calculate vapor intrusion risks from groundwater is overly conservative and that the actual vapor intrusion risk is lower than that predicted by the model.

No public health concerns exist for vapor intrusion for the northeast groundwater plume since no buildings cover the offsite portions of the northeast plume. As described above, sub-slab soil vapor and indoor air monitoring in the former manufacturing building will commence in late February 2016 and this data will be used to assess any vapor intrusion issues associated with the northeast plume.

4.0 FATE AND TRANSPORT

This section discusses the hydrogeologic characterization, plume stability and natural attenuation factors affecting the TCE present in soil and groundwater. Regression analysis was performed to assess anticipated timeframes for groundwater to achieve remedial action objectives. The hydrogeologic characterization, natural attenuation and regression analysis were used to produce a fate and transport model to simulate the south and north plume for the next 40 and 35 years, respectively. These topics and the fate and transport model are discussed in this section.

The northeast plume was not modeled since the TCE concentrations in the offsite portion of the groundwater plume indicate that only marginal exceedances of the MCL have occurred at select offsite locations consisting of DP-42 (TCE concentration of 6.4 ug/L and DP-45 (TCE concentration of 6.8 ug/L). The northeast plume is anticipated to mimic the natural attenuation occurring in the north plume (discussed further throughout this report). Monitoring will continue for the northeast plume and subsequent modeling will be performed if appropriate.

4.1 HYDROGEOLOGIC AND HYDRAULIC CHARACTERISTICS

Generally, migration of TCE contamination in groundwater occurs primarily within the more highly permeable Basal Transmissive Zone and is controlled by the groundwater gradient, lithology and the shale surface. The hydrogeologic and hydraulic characteristics affecting fate and transport include:

- Both portions of the Basal Transmissive Zone are present south of the former manufacturing building. The entire zone thickens to the south with the thickest point at MW-189 near the southern property boundary.
- The absence of the upper “sand” unit and the thinning of the lower “gravel” unit of the Basal Transmissive Zone in the majority of wells drilled north of Jacobs Avenue (this zone ranges from 4 to 10 feet thick on Site but thins to three feet or less to the north). This thinning combined with the absence of the upper sand unit limits the ability for groundwater movement and thus TCE migration. The upper sand unit and the lower “gravel” unit of the Basal Transmissive Zone are absent at monitoring well MW-193 located approximately 330 feet northeast of MW-61R at the toe of the North Plume.
- The southeasterly slope of the bedrock surface at the source area that trends into a bedrock low trending southwest to northeast along a line from ITMW-7 to ITMW-1.
- A high in the shale surface on the south flank of this low from ITMW-8 may form a ridge to the northeast corner high in the area of MW-87 to MW-89. At the southwest corner of the property there is a narrow trough extending southwest from TMW-189 to MW-186 that bisects the southwest to northeast trending ridge.
- Groundwater flow is generally to the southeast from the source area with a localized component of flow to the southwest, south of MW-29 and west of MW-189.The gradual gradient to the south beneath the facility steepens to the southwest from ITMW-6.

- Groundwater flow is generally to the northeast from the hydraulic divide along the north side of the Site. The gradient to the northeast steepens north of Jacobs Avenue.
- Hydraulic conductivities south of the former manufacturing building range from 1.4E-03 cm/sec (MW-188 and MW-189) to 3.0E-04 cm/sec (MW-186) (i.e. 1 to 4 feet/day).
- Hydraulic conductivities at the southern and eastern edge of the source area range from 8.8E-04 cm/sec (Slug-HPT-06) to 3.5E-04 cm/sec (Slug-HPT-08) (i.e. 1 to 2.5 feet/day).
- Hydraulic conductivities beneath the building near the low point in the shale ranges from 3.5E-05 cm/sec (Slug-HPT-09) to 8.8E-05 cm/sec (Slug-HPT-10) (i.e. 0.1 to 0.3 feet/day).
- Hydraulic conductivities near the northeast boundary of the north plume ranges from 2.5E-4 cm/sec (TMW-11) to 8.9E-5 cm/sec (MW-193) (i.e. 0.3 to 0.7 feet/day).

4.2 PLUME STABILITY

To assess the general stability of the south groundwater plume at the Site, analytical tools or “lines of evidence” used to evaluate the overall plume stability include: statistical methods (Mann-Kendall statistical test); isoconcentration maps; and, time vs. concentration plots. Further discussion of the methods used on a quarterly basis to assess plume stability is presented in Appendix C and the Fourth Quarter 2015 Groundwater Monitoring Report.

The following discussion summarizes the findings of the statistical trend analyses:

- **Southern Plume Wells (35 wells):** Thirty-one of 35 (89%) southern plume wells exhibit either little or no TCE (< 5 µg/L) or a decreasing or stable TCE concentration trend. The trend analysis for the 35 wells associated with monitoring the southern plume indicates the following:
    - Six wells exhibit a stable trend for TCE concentrations.
    - Eighteen wells exhibit a decreasing trend for TCE concentrations.
    - Five wells exhibit no trend regarding TCE concentrations. TCE concentrations at three of the five wells have been non-detect or less than 1 µg/L since October 2011. Fourth quarter 2015 TCE concentrations at MW-85 and MW-86 exhibited increased concentrations compared to TCE concentrations reported for the third quarter of 2015 and the statistical test conclude “no trend” existed based upon the data set.
    - Three wells exhibit TCE concentrations below PQLs.
    - Three wells exhibit an increasing trend for TCE concentrations. MW-38 is a source area well and is discussed further below. ITMW-6 had a TCE concentration of 3.1 µg/L during the fourth quarter of 2015 while TCE concentrations have ranged from < 1.6 µg/L to 4.4 µg/L during 33 monitoring events since 1989; the current concentration is insignificant in reference to the overall range of concentrations.

ITMW-10 will continue to be monitored regarding the increasing trend of TCE concentrations near the south central boundary of the building; concentrations for cis-1,2-DCE and VC at ITMW-10 showed decreasing trends. TCE concentrations in October 2015 are approximately 10% lower than the concentrations measured in July 2015.

Additional monitoring wells were installed south (downgradient) of ITMW-10 and ITMW-6 in September 2015.

Cis-1,2-DCE concentrations were nondetect, decreasing or stable in 32 of 35 wells (91%). Cis-1,2-DCE concentrations were increasing in ITMW-6 (cis-1,2-DCE concentration is below the MCL) and MW-38, and no statistical trend was identified in MW-86. The decreasing and stable concentration trends for cis-1,2-DCE in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in the southern wells.

VC concentrations were nondetect, decreasing or stable in 30 of 35 wells (86%). VC concentrations were increasing in ITMW-17, but the concentration is still below the MCL. No statistical trend was identified for four wells. The decreasing and stable concentration trends for VC in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in these south wells.

- **Source Area Wells (sixteen wells):** Thirteen of the 16 source area wells showed decreasing or stable concentration trends for TCE (ten wells decreasing and three wells stable). Two wells MW-85 and MW-86 showed no trend as discussed above. MW-38 exhibited an increasing trend based upon the entire data set; however, TCE concentrations have been continuing to decrease in MW-38 since October 2014 and the TCE concentrations are currently 50% less than the TCE concentration in October 2014.
- **Northern Plume Wells (42 wells):** Thirty-six of 42 (86%) northern plume wells exhibit either little or no TCE or a decreasing or stable TCE concentration trend. As shown in Table 4-1, the average TCE concentration for wells in the northern plume decreased from 384 µg/L in April 2009 to 121 µg/L in October 2015. Eleven of the 42 Northern Plume wells (26%) have been non-detect or less than 1 µg/L since October 2012. The trend analysis for the 42 wells associated with monitoring the northern plume indicates the following:
  - Nine wells exhibit a stable trend for TCE concentrations.
  - Sixteen wells exhibit a decreasing trend for TCE concentrations.
  - Six wells exhibit no trend regarding TCE concentrations. TCE concentrations at all six of these wells consisting of MW-27, MW-31/31R, MW-36/36R, MW-39/39R, MW-68 and IW-75 have been non-detect or less than 1 µg/L since October 2012.
  - Five wells exhibit TCE concentrations below detection limits or below reporting limits.

- Six wells exhibit an increasing trend for TCE concentrations. These include wells MW-55/55R, MW-56/56R, MW-57/57R, MW-61/61R, MW-66 and MW-67/67R. Five of the six wells (all except MW-55/55R) had concentrations during the 2015 fourth quarter that were within the historical ranges of detected values. MW-55/55R has not been sampled since October 2013 because access has not been granted by the property owner (the property owner provided access prior to the April 2015 monitoring event) therefore, MW-55 has been replaced with the new well MW-55R, but exhibited a TCE concentration of 4.4 µg/L which is lower than the 13 µg/L when sampled in October 2013.

Cis-1,2-DCE concentrations were nondetect, decreasing or stable in 36 of 42 wells (86%). Cis-1,2-DCE concentrations were increasing in MW-23, MW-56 , MW-57 and MW-63 (the cis-1,2-DCE concentrations in these wells are either nondetect or below the MCL), and no statistical trend was identified in IW-73 and MW-84. The decreasing and stable concentration trends for cis-1,2-DCE in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in the northern wells.

VC concentrations were nondetect or stable in 39 of 42 wells (93%). VC concentrations were increasing in IW-73 and IW-74, but the VC concentrations remain below the MCL. No statistical trend was identified in IW-76 (the VC concentration has been below detection limits in IW-76 in 2014 and 2015). The absence of VC or stable concentration trend for VC in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in these northern wells.

- **Northeast Corner Wells (nine wells):** The five wells located on Whirlpool property in the area of the northeast corner plume have been sampled six times between June 2014 and October 2015 and four wells located on Boys & Girls Club property further to the northeast have been sampled five times between October 2014 and October 2015. TCE concentrations in MW-96 through MW-99 on the Boys & Girls Club property continue to be below detection limits (i.e. less than 0.17 µg/L). The overall TCE concentration trends are increasing in MW-87 and MW-91 with concentrations ranging from 564 µg/L to 758 µg/L and 234 µg/L to 442 µg/L, respectively. The TCE concentration at MW-87 in the fourth quarter was slightly lower than in July 2015 and the TCE concentration in MW-91 increased from 405 µg/L in July 2015 to 442 µg/L in October 2015.

Plotting of the data on the isconcentration maps depicts the reduction in TCE concentrations in the source area following ISCO injections (i.e. comparison of current concentrations to the maximum TCE concentration detected in MW-86 at 533,000 µg/L in May 2014) and also depicts the continuing expansion of the separation between the north plume and south plumes. Figures 3-3 and Figure 3-4 represents the TCE isoconcentration lines for the southern and northern plumes inclusive of the December 2015 analytical results for ISCO remediation and ISCR pilot study performance monitoring.

The average (arithmetic mean) of the detected TCE, cis-1,2-DCE and VC concentrations were calculated for each of the 17 comprehensive groundwater monitoring events conducted at the

Site beginning in 2009 and are summarized in Table 4-1[13]. Figures 4-1 through 4-3 show the average concentrations versus time for all wells, south plume wells and source area wells, respectively. Decreases in the calculated average concentrations for TCE, cis-1, 2-DCE and VC are demonstrated for the grouping of wells including: all wells; south plume wells source area wells; and, north plume wells (average concentrations fluctuate as depicted in the table).

Figure 4-4 shows concentration trends for wells ITMW-19 and MW-25 located in the source area; concentrations are generally decreasing or stable for these wells in Area 1 and the source area, respectively. Although the overall decreasing concentration trends for TCE, cis-1,2-DCE and VC is consistent, it is apparent that at MW-25 the concentrations of constituents change significantly between spring and fall sampling events with higher concentrations occurring in the fall and lower concentrations occurring in the spring. The seasonal fluctuations at MW-25 have been consistent since monitoring commenced at this location in 1999. MW-25 is the only well that has consistently exhibited seasonal fluctuations in concentrations of TCE, cis-1,2-DCE and VC.

4.3 NATURAL ATTENUATION

The natural attenuation assessment (MNA assessment) has evaluated predominant electron acceptors, the variability of these electron acceptors, major nutrients, general groundwater quality, key microbial population and enzyme activities and dissolved gasses. The assessment includes assessment of chemical, geochemical and microbial lines of evidence. Natural attenuation data has been collected from the Site commencing with the 2014 first quarter event and continuing through the 2015 fourth quarter event (i.e. two years of quarterly monitoring).

Chemical Lines of Evidence

The analytical results for VOCs in groundwater demonstrate that natural attenuation of TCE is occurring. Groundwater samples from monitoring wells in the north, northeast and south plumes consisting of (most wells are located in the south plume): ITMW-5, ITMW-7, ITMW-9, ITMW-10, ITMW-11, ITMW-12, ITMW-13, ITMW-15, ITMW-17, ITMW-18, ITMW-19, MW-25, MW-35R, MW-37, MW-38, MW-41, MW-85, MW-86, MW-87, MW-93, MW-94 and MW-95 have displayed elevated concentrations of cis-1,2-DCE (>50 µg/L), a degradation daughter product of TCE on a continuing basis. These results indicate that reductive dechlorination is occurring in various onsite wells with elevated TCE concentrations. In addition, VC, a degradation product of cis-1,2-DCE, has been observed in groundwater samples from monitoring wells in the north and south plumes (most of the subject wells are in the south plume) consisting of: ITMW-10, ITMW-11, ITMW-12, ITMW-13, ITMW-17, MW-25, MW-37, MW-38, IW-73, MW-85, MW-86, MW-92, MW-93, MW-94 and MW-95.

[13] Groundwater monitoring commenced in November 1989; however, it was not until 2009 before a more comprehensive set of monitoring wells were available for assessment of average concentrations, although additional monitoring wells have continued to be installed since 2009.

Geochemical Lines of Evidence

The detection of cis-1,2-DCE in groundwater samples from this Site is evidence that conditions likely are favorable for active reductive dechlorination processes. Geochemical data from the south plume to support reductive dechlorination processes is discussed below:

- The average ORP of the groundwater ranged from approximately 100 millivolts (mV) to 270 mV in the wells not impacted by the ISCO injections (Figure 4-5). The ISCO injections increased the ORP levels in groundwater. In general, the average ORP levels were less than 300 mV and as low as negative hundreds of mV, which indicates that the groundwater is under manganese reducing to sulfate reducing conditions.
- The pH of the groundwater typically ranged from a low around 4.3 to a high of about 14; however, the elevated pH levels were only observed on a sporadic basis and are not a general characteristic of the groundwater quality. The majority of the wells displayed pH levels between 5 and 8.
- The major competing electron acceptors for reductive dechlorination include nitrate, manganese, iron and sulfate, which were evaluated in Site groundwater samples. During the past two years of monitoring, nitrate, iron and manganese concentrations have remained fairly stable in the southern plume.
- Dissolved gasses methane, ethane and ethene were present in low levels in the southern plume wells. Elevated ethene levels observed in MW-38 corresponding to high levels of DHC and BAV1 vinyl chloride reductase demonstrating that reductive dechlorination is occurring in this area.

Microbial Lines of Evidence

The DHC microbial population was consistently detected at elevated levels in MW-38; a location that is relatively close to the source area. Likewise, the BVC gene was also detected at elevated levels in MW-38, which indicates the potential for complete reductive dechlorination in this area. The following wells displayed DHC concentrations greater than 30 cells/mL during the past two years: ITMW-7 (south plume), ITMW-18 (south plume source area), MW-22 (northeast plume), MW-28 (north plume), MW-38 (south plume/source area), MW-41 (north plume), MW46R (north plume), MW-56R (north plume), MW-58R (north plume), MW-60R (north plume), MW61R (due to inoculation in October 2015), MW-63 (north plume), MW-82 (north plume), MW-88 (northeast plume), MW-90 (northeast plume), MW-98 (northeast plume) and RW-69 (north plume), indicating that biodegradation of TCE is actively occurring at these locations.

Summary of Natural Attenuation Results

The chemical, geochemical and microbial results strongly indicate that natural attenuation of VOCs is occurring via various mechanisms in multiple portions of the southern, northern and northeastern plumes.

4.4 PLUME REGRESSION AND MODELING

The use of MNA as a remedial technology includes an expectation of achieving remedial action objectives within a reasonable timeframe. USEPA has not established a fixed time within which cleanup goals should be attained; however, USEPA has recognized that effective cleanup timeframes vary from several years to decades (*A Citizen's Guide to Monitored Natural Attenuation*, September 2012, EPA 542-F-12-014). The EPA guidance document, "An Approach for Evaluating the Progress of Natural Attenuation in Groundwater" (EPA 2011) provides the framework for determining the timeframe necessary for MNA to achieve remedial objectives. This guidance document relies upon using trends of contaminant concentrations over time to forecast future concentrations. In accordance with this guidance, regression analysis of the data from each well was performed, and separately, fate and transport models were prepared to simulate the north and south groundwater plumes. The models consisted of: (1) a groundwater flow model based upon hydrogeologic conditions for the respective plumes; coupled with (2) a transient fate and transport model to simulate the future migration of TCE in the north and south groundwater plumes. Degradation of TCE was simulated in the fate and transport model by incorporating a first order decay reaction with the reaction rate controlled by a half life parameter. The half-life parameter was selected such that the overall decay rate of the respective modeled plume best matched the historical trend determined from the regression-based trend analysis.

Regression analysis and plume modeling are discussed in the following sections.

4.4.1 Regression Analysis

Groundwater sample results for TCE, cis-1,2-DCE and VC at individual monitoring wells located in the northern plume were assessed in a stepwise evaluation of concentrations at each well as follows (the north plume was assessed first with the development of TCE degradation rates followed by the south plume):

- The concentrations of TCE, cis-1,2-DCE and VC in each individual well from historic sampling events through the fourth quarter 2015 were evaluated.
- A specific maximum detection limit was set for the analytes at each well based on the analyte's highest recorded detection limit historically recorded at that well.
- Chemical concentrations that were recorded as non-detect or were detected at lower than one-half of the method detection limit were modified to the one-half the method detection limit value.
- These new values and the associated sample dates were entered into an MNA spreadsheet for each individual well.
- The frequency of detection (FOD) in laboratory data was used to initially determine the quality of the data during the MNA evaluations. The regression model for each constituent was considered to be invalid if the FOD for an analyte was below 50%. Estimated concentrations were considered as detected values, which in each instance resulted in a higher or more conservative assumed concentration.

- The regression of log transformed concentration data was used to calculate the slope, regression significance and regression residual.

The output of this evaluation includes a regression curve, a slope and a residual graph of the three analytes for each well (TCE, cis-1,2-DCE and VC). The regression curve trend line documents whether the trend at the well being evaluated for a particular chemical of interest is increasing, not significant, or decreasing. The residual graphs from the regression were evaluated to verify if the model fits the measured values at each well and meets the statistical assumptions of linear regression. Valid models produced residuals graphs with random deviations from the measured values, homogenous variances and no temporal trends while poor models presented systematic or structured regression residuals. Additional conservatism was applied to the analysis since wells that show impacts from the ISCO or ISCR injections were analyzed by excluding sampling events after the injection to address and normalize statistical biases (excluding data which typically indicated significant TCE reductions) and some wells were refined by determining the maximum historic concentration of a respective analyte and only including data from that specific sampling event forward.

The goal of this regression analysis and the associated refinements was to estimate slopes (i.e. from the residual graphs) that characterize the ‘average or representative’ rate of reduction in the concentrations so that the slope can be used to determine a TCE degradation rate constant or half-life. The refinements are designed to target time series that will best reflect this process and to limit the influence of the ISCO injections and other transient processes that confound the estimate; although, the ISCO injections provide further conservatism to the analysis since the ISCO causes rapid reduction in TCE concentrations compared to the timeframe for decreases in concentrations for wells due to natural attenuation.

The historical contaminant concentration trends at a given location are a function of various factors: groundwater velocity, flow direction, retardation, concentration distribution, reaction rates, etc. For the MNA analysis, the regression lines were fit to measured Site data and the slopes reflect the combined influence of all these Site-specific factors.

To represent the overall representative TCE degradation rate for the North Plume, the regression slope values for wells in the North Plume with declining concentration trends were averaged resulting in an average value of -0.15. The slope values used for this calculation are shown below:

Location	Slope [a]
MW-23	-0.13
MW-24	-0.08
MW-32	-0.13
MW-33	-0.08
MW-34	-0.03
MW-35R	-0.15

MW-41	-0.14
MW-46R	-0.11
MW-56	-0.48
MW-58	-0.06
MW-65	-0.16
RW-69	-0.09
MW-70	-0.16
IW-73	-0.27
IW-74	-0.02
IW-76	-0.28
IW-78	-0.21
IW-79	-0.10
IW-80	-0.11
Max	-0.48
Min	-0.02
Average	**-0.15**

[a] Slopes in units of ln(µg/l)/year

For evaluation of the South Plume, the plume extent was divided into two regions - one region encompassing the source area where ISCO treatment was performed consisting of monitoring wells ITMW-11 to ITMW-15, ITMW-18, ITMW-19 and MW-25, and one region covering the remainder of the plume. The regression trends near the source area were temporally variable and difficult to generalize as a result of ISCO treatments and/or non-stable data trends prior to ISCO treatment. The long term data trends at MW-25 and ITMW-19 prior to ISCO treatments (both slopes of -0.04) were selected as representative of the source area (decreasing concentrations for MW-25 and ITMW-19 are also depicted on Figure 4-4).

Since there are few downgradient wells near the tail of the plume with histories of detected values or long-term data records, the model concentration trends were set to not exceed the average of predicted degradation rates at downgradient wells ITMW-4, 5, 7, 9 and MW-30, listed below. The average of these rates based on regression trends using all data, or maximum refined analysis interpretation where applicable, produced a regression slope of -0.15, equal to the North Plume average.

Location	Slope [a]
ITMW-4	-0.11
ITMW-5	-0.05
ITMW-7	-0.40
ITMW-9	-0.19
MW-30	-0.02
Average	**-0.15**

[a] Slopes in units of ln(µg/l)/year

The data set for TCE breakdown constituents cis-1,2-DCE and VC is smaller in comparison to the TCE data set since the concentrations of cis-1,2-DCE and VC are lower or not detected as often in the groundwater plumes (i.e. FOD is lower). The regression slopes for cis-1,2-DCE and VC for the combined available data from the north and south plumes are -0.17 and -0.20 (slopes in units of ln(µg/l)/year). Since the calculated regression slopes for the TCE breakdown constituents cis-1,2-DCE and VC are greater than the regression slope for TCE (i.e. –0.15), the natural degradation of cis-1,2-DCE and VC is anticipated to occur at a similar or increased rate compared to TCE. The concentration trends for cis-1,2-DCE and VC from a predominant number of wells are characterized as nondetect, decreasing or stable indicating that the natural degradation of cis-1,2-DCE and VC is not “stalling” or causing an increase in the concentrations of either of these constituents. The concentrations of cis-1,2-DCE and VC in groundwater were below the MCLs at all locations during the October 2015 monitoring event excluding onsite wells at the northwest corner of the former manufacturing building consisting of: ITMW-17, MW-25, MW-86, MW-93 and MW-95, and offsite well location MW-176 where the cis-1,2-DCE concentration exceeded the MCL[14]; therefore, conclusions that no unacceptable current or future exposures to cis-1,2-DCE and VC in groundwater (or vapor from groundwater) remain valid. Groundwater monitoring will continue to confirm these constituents naturally degrade similar to TCE, and further regression analysis, risk assessment or groundwater modelling will be performed in light of future data collection. The slope factors for cis-1,2-DCE and VC generated from the regression analysis of site specific data are discussed in Appendix D.

4.4.2 Northern Plume Model

A groundwater model was developed to simulate fate and transport of the northern TCE plume at the Whirlpool Site (the northern plume). The groundwater model is composed of a steady-state flow model based on groundwater conditions in October 2015, coupled to a transport model simulating the time period from the fourth quarter 2015 to 2050. This section describes the concepts used to derive the model, the setup of both the flow and transport components and the outcome of the simulation.

[14] At offsite locations, only cis-1,2-DCE has been detected at a concentration exceeding the MCL at offsite well MW-176. Soil vapor monitoring at VP-9 and VP-10 (adjacent to MW-176) did not detect cis-1,2-DCE in soil vapor. VC was detected in soil vapor at VP-9 and VP-10 at concentrations below risk thresholds. In addition, cis-1,2-DCE and VC have not been detected in outdoor, crawl space or indoor air during monitoring events at the residence near MW-176.

The flow model, implemented in Modflow 2000 using Groundwater Vistas software (Rumbaugh, 2011), consists of a single confined aquifer layer representing the Basal Transmissive Zone. The overlying clay and underlying shale intervals were assumed to not contribute significantly to groundwater flow and are not active in the model. The thickness and elevations at each location were estimated by interpolating the top and bottom elevations of this zone as determined from drill logs (Figure 4-6). The active portion of the model grid contains 108 rows and 102 columns and is oriented 28 degrees from north with 25 foot grid spacing.

The steady state flow model was calibrated to match water level elevations measured in October of 2015 in the vicinity of the northern plume. Calibration was achieved through the selection of constant head boundaries, no-flow (inactive) model areas, and the hydraulic conductivity distribution. A small amount of recharge (0.0013 feet/day) is applied in the unpaved, offsite area of the model.

The constant head boundaries were placed along the edges of the model and along Mill Creek to the northeast which forms the downgradient boundary of the model. The constant head values were selected to achieve the observed direction of groundwater flow[15]. No-flow boundaries were inserted north of Mill Creek to make this area inactive in the model and to the northwest of the northern plume to constrain the flow pattern in this area (Figure 4-7).
The lateral hydraulic conductivity (K) distribution in the model domain was derived using an automated parameter estimation procedure (PEST) (Doherty, 2005) implemented in Groundwater Vistas. With this technique, pilot point locations are distributed throughout the model domain, with a range of plausible K values and a starting estimate of K entered for each pilot point. A parameter estimation procedure is then applied to vary K within the specified range for each point. With each iteration, the K value of each model cell is interpolated from the pilot points and the groundwater flow model is run with that hydraulic conductivity distribution. The water levels at the monitoring wells are compared to the measured values and based on the results, the pilot point values are updated. This process is repeated until the simulated head distribution closely matches the observed potentiometric surface.

For the northern plume model, the range of plausible K values was entered as 0.5 to 100 feet/day, encompassing the approximate range of historical aquifer testing results at the Site. Certain areas of the Site that are not primary flow pathways were restricted to a narrower range of values. The final distribution of K and calibration results for individual measuring points is shown in Figure 4-7. This distribution produces a very close match between modelled and observed water levels at the Site. The calibration statistics are presented in Figure 4-8.

[15] There are no nearby boundaries, aside from Mill Creek, available to serve as natural flow constraints in the model and there is no information available to indicate whether Mill Creek is hydraulically connected to groundwater in the model domain. The up-gradient constant head boundary was placed at the approximate position of the flow divide observed near the Site. The downgradient constant head boundary were positioned along Mill Creek to direct groundwater flow towards the Creek, as has been observed in the preliminary draft Site potentiometric surface dated Q415. The boundary along the eastern Site of the model near the Northeast Plume is uncertain.

4.4.2.1 Transport Model Development

A transient fate and transport model was implemented in MT3DMS (Zheng, 1999) to simulate migration of the TCE plume during the 50 year period from 2015 to 2065. The transport model incorporates groundwater TCE measurements from October 2015 as the initial concentration distribution for the northern plume. The retardation of TCE due to sorption was included in the model and values for bulk density, effective porosity and Kd were entered for the model layer. Effective porosity was set uniformly to 0.2, similar to effective porosity measurements collected at ITMW-10 and 11 in 2015 (0.22 and 0.24). Bulk density [1.9 grams per milliliters (g/mL)] was set to the average of values measured for the basal transmissive zone in geotechnical samples collected by Ramboll Environ in 2014 and analyzed by Terracon. The Kd (2.0 mL/g) was calculated with a Koc of 2 g/mL (USGS, 2006) and the average of Foc measurements in the same geotechnical samples used to estimate bulk density. A longitudinal dispersity (Dl) of 10 feet, approximately 1% of the plume length, was also added to the model to represent spreading of the plume as it flows through small-scale variations in porosity and hydraulic conductivity. The lateral and vertical Dl values were set to 1 and 0.1 feet, respectively[16].

Biodegradation of TCE was implemented in the model by incorporating a first-order decay reaction, with a reaction rate controlled by a half-life parameter. The half-life value was selected such that the overall decay rate of the plume would match the combined historical trend determined from the regression-based trend analysis. Due to spatial variability and the limited ability to reproduce this variability in the groundwater model, a simplified approach was used by identifying a centrally located well (MW-46R) which exhibits close to the average regression slope (-0.15). The reaction half-life in the model was then adjusted until the projected trend (i.e. slope of trend line fit to model results) at this location matched the average regression trend. The best fit to historical trends was observed when setting the half-life to 110 days. This half-life value was applied throughout the model domain, so the modelled attenuation rates are matched to the overall trend, but do not necessarily incorporate local variability. This approach is best suited to predicting the fate of the entire plume over time, but is not as accurate for predicting trends at individual locations.

An ISCR treatment zone is currently active in the area surrounding locations MW-61R, TMW-10 and TMW-11. This specific region was simulated in the model as having a half-life of 11 days, in order to simulate the effect of the ISCR treatment, which is presumed to continue to reduce TCE concentrations to below the MCL (i.e. TCE concentrations at MW-61R have been reduced to the MCL within 60 days of commencing the pilot test). The approximate extent of the ISCR zone is illustrated in Figure 4-9.

The fate and transport model demonstrates the TCE concentration in groundwater in the north plume will be reduced to the MCL within approximately 30 to 35 years. Figure 4-9 illustrates

[16] Field-scale longitudinal Dl is commonly estimated as 10% of the flow length [Fetter, 1993]. Given the current plume length of approximately 1000 feet, a Dl of up to 100 feet would be reasonable. The Dl value used in the model, 10 feet, produces less spreading of the plume and thus results in a more conservative estimate of offsite concentrations. The values selected for transverse and vertical diffusivity are based on the input instructions for the MT3DMS model [Zheng, 1999].

initial plume extent in the fourth quarter of 2015 and the groundwater model TCE plume predictions for the years 2025, 2035 and 2045.

4.4.2.2 Results and Sensitivity Analysis – North Plume

Additional transport model runs were performed to evaluate the sensitivity of model outcomes to certain transport parameters. The potentially sensitive parameters selected for this evaluation were Kd, reaction half-life (outside the ISCR zone) and effective porosity. The current settings were modified by +/- 25% to produce a range of estimates of the year in which the TCE MCL will be achieved in the north plume. The results are provided in the following tables:

	Low	Current	High
Kd (mL/g)	1.5	2.0	2.5
Cleanup Time (years)	26	33	41
Cleanup Year (Q4)	2041	2048	2056

	Low	Current	High
Half-Life (days)	82	110	138
Cleanup Time (years)	26	33	40
Cleanup Year (Q4)	2041	2048	2055

	Low	Current	High
Effective Porosity	0.15	0.20	0.25
Cleanup Time (years)	41	33	28
Cleanup Year (Q4)	2056	2048	2043

All three parameters produced similar ranges of outcomes in the sensitivity analysis, with best-case clean up time estimates of 26 to 28 years and worst-case estimates of 40 to 41 years compared to the model predicting the MCLs will be achieved within 30 to 35 years. The model simulation can be reassessed during subsequent five year remedy reviews to verify the continuing validity of the model in light of future data collection.

4.4.3 Southern Plume Model

The southern plume groundwater model was developed in a manner identical to the north plume to simulate fate and transport of the southern TCE plume at the Site. The groundwater model is composed of a steady-state flow model based on groundwater conditions in October 2015, coupled to a transport model simulating the time period from 2015 to 2055. This section describes the concepts used to derive the model, the setup of both the flow and transport components and the outcome of the simulation.

As with the north plume, the overlying clay and underlying shale intervals were assumed to not contribute significantly to groundwater flow and are not active in the model. The thickness and elevations at each location were estimated by interpolating the top and bottom elevations of this zone as determined from drill logs (Figure 4-10). The active portion of the model grid contains 86 rows and 118 columns and is oriented 26 degrees from north with 25 foot grid spacing.

The constant head boundaries were placed along the up-gradient and down-gradient edges of the south plume model to achieve the observed direction of groundwater flow[17]. No-flow boundaries were inserted offsite to the northwest and in the north plume area to constrain the flow patterns in these areas, which are distant from the south plume (Figure 4-11).

For the south plume model, the range of plausible K values was entered as 0.5 to 100 feet/day, generally encompassing the range of historical aquifer testing results at the Site (the same range of K values were used for the north plume). The final distribution of K is shown in Figure 4-11 (the calibrated model suggests the hydraulic conductivities under the building are slightly higher than the measured conductivities described in Section 4.1 and the hydraulic conductivities along the southwest side of the property closely match the measured hydraulic conductivities). This distribution produces a very close match between modeled and observed water levels at the Site. The calibration statistics are presented in Figure 4-12 (the simulated water levels closely match the measured or observed water levels).

4.4.3.1 Transport Model Development – South Plume

A transient fate and transport model was implemented in MT3DMS (Zheng, 1999) to simulate the TCE plume during the 40 year period from 2015 to 2055. The transport model incorporates groundwater TCE concentrations from October 2015 as the initial concentration distribution for the south plume.

Degradation of TCE was implemented in the model by incorporating a first-order decay reaction, with a reaction rate controlled by a half-life parameter. Based on the spatial distribution of TCE attenuation trends observed in the regression-based trend analysis for the south plume, two reaction zones were implemented in the model: one with a relatively low decay rate near the

[17] There are no nearby boundaries available to serve as natural flow constraints in the model. The up-gradient constant head boundary was placed at the approximate position of the flow divide observed near the Site. The down-gradient constant head boundaries were positioned to direct flow to the east and southwest, as has been observed in the Site potentiometric surface map for the fourth quarter of 2015.

source area and one with a more rapid decay rate in the remainder of the model area. The half-life values in each reaction zone were selected such that the overall decay rate of TCE in those zones was consistent with the combined historical trend determined from the regression analysis (see Section 4.4.1). The half-life values entered in the model for the south plume were 300 days near the source and 150 days for the remainder of the south plume (for comparison the half life value entered for the north plume was 110 days).

The source area and ISCO treatment areas for the south plume are encompassed by monitoring wells ITMW-11 to 15, ITMW-18, ITMW-19 and MW-25. The model decay trend in those areas is roughly -0.04, a good match to historical trends at MW-25 and ITMW-19.

Since there are few downgradient wells near the tail of the plume with long-term data records or histories of detected values, the model concentration trends were set to not exceed the average of predicted degradation rates at downgradient wells ITMW-4, 5, 7, 9 and MW-30, which was previously calculated as -0.15. The reaction settings in the model resulted in a degradation rate of roughly -0.09 in those areas and thus display conservative decay trends relative to the historical data.

The fate and transport model demonstrates groundwater in the south plume will not migrate offsite beyond the property boundaries at concentrations above the MCL. Figure 4-13 illustrates initial plume extent in 2015 and the groundwater model TCE predictions for selected years between 2020 and 2055.

4.4.3.2 Results and Sensitivity Analysis

Additional transport model runs were performed to evaluate the sensitivity of the south plume model outcomes to certain transport parameters. The potentially sensitive parameters selected for this evaluation were Kd, reaction half-life and effective porosity. The current settings were modified by +/- 25% to produce a range of estimates of the time and maximum value of TCE offsite and whether the MCL would be predicted to be exceeded[18] under those modified assumptions. The results are provided in the following tables:

	Low	Current	High
Kd (g/mL)	1.5	2.0	3.0
Max OffSite Value (µg/L)	1.0	1.0	1.0
Peak Year	2035	2042	2048

[18] Future TCE peak concentrations were calculated/simulated by the model at an offSite target placed at the Site boundary west of MW-186. No other plume boundary locations were identified as having a potential TCE peak concentration above 1 µg/L.

	Low	Current	High
Half-Life (days)	113 / 225	150 / 300	188 / 406
Max OffSite Value (µg/L)	0.67	1.0	1.8
Peak Year	2026	2042	2053

	Low	Current	High
Effective Porosity	0.15	0.20	0.25
Max OffSite Value (µg/L)	2.1	1.0	0.72
Peak Year	2055	2042	2027

None of the simulated plume scenarios resulted in potential offsite migration of groundwater with TCE concentrations exceeding the MCL. The model simulation can be reassessed during subsequent five year remedy reviews to verify the continuing validity of the model in light of future data collection.

4.4.4 Uncertainty and Limitations

The groundwater models have been applied to simulate migration of the north and south plumes at the Site over the next 35 to 40 years, respectively. Several simplifying assumptions have been made during the construction of the models which enable the models to be applied for the prediction of general trends but limits their use in predicting TCE concentrations at specific locations. These factors include:

Flow Model

- The groundwater models simplify the representation of the Site hydrogeology through the use of a single transmissive zone. Localized variations in groundwater velocity within that zone are driven by boundary conditions, variation of transmissive zone thickness (interpolated from measured values) and hydraulic conductivity (result of calibration within measured range). The resulting K distribution hasn't been verified against the identified soil types in boring logs at every location; accordingly it is possible that there may be locations within the modeled area where there are inconsistencies between modeled and actual transmissivities.
- Development of the flow models involved extrapolating geological conditions into uncharacterized areas located away from the respective plumes. In addition, natural physical flow boundaries such as surface water bodies or flow barriers are not available in close proximity to the model domain to help guide the selection of boundary

conditions. Thus, the groundwater flow pattern beyond the current downgradient plume area is uncertain.

- Although the flow model is well calibrated, it is not expected to capture fine-scale variation in groundwater flow patterns, especially in areas with sparse water level data.

Fate and Transport Model

- The regression analysis suggests that TCE concentration trends are spatially variable throughout the northern and southern plume areas. The transport models incorporate the overall trends over extended areas and thus may over-predict or under-predict degradation rates in certain areas. Similarly, other input parameters that influence transport (Kd, dispersion, porosity) are either estimates or values based on limited sampling and may not be characteristic of the entire plume areas.
- The models assume based on extensive data and investigation findings, that there is no on-going source at the Site and also assumes that matrix diffusion of TCE from clay and shale contacting the basal transmissive zone is not a significant factor. This is a reasonable assumption for the north plume where impacts are generally present in the Basal Transmissive Zone and no rebound of TCE concentrations has occurred in treatment areas (i.e. neck area and Areas 2 and 3). This is also a reasonable assumption for the south plume since a majority of the plume extends through the Basal Transmissive Zone under the building and the reduced retardation factor to account for the potential matrix diffusion that may occur in the specific area of MW-25, MW-85 and MW-86.
- The transport model outcomes are reliant on the initial distribution of TCE. For the southern plume, the sampling data from underneath the Site building is informative, but not extensive. This necessarily adds some potential uncertainty to the predictions of downgradient plume trends. In addition, an unresolved issue with the southern plume model is that it does not appear to capture an increasing trend in TCE concentrations at ITMW-10 starting in early 2014. Additional rounds of sampling will help determine whether this trend is persistent and whether refinement of the southern plume model in the vicinity of this location is necessary. However, the overall validity of model is not jeopardized by the concentration trend of a single well.

5.0. REMEDY IMPLEMENTATION

The following section describes the remedies implemented at the Site in accordance with the RADDs and summarizes the effectiveness of the remediation activities performed at the Site through 2015. Both the onsite and offsite groundwater remediation activities have been implemented. Certain additional voluntary remediation measures not required by the RADDs or associated amended Consent Administrative Orders (CAO) are also discussed as well as the effectiveness of these additional voluntary remediation measures.

5.1 INSTITUTIONAL CONTROLS

Consistent with the RADDs, Whirlpool recorded a deed restriction for the entire property with specific supplemental restrictions on a portion of the Site containing Area 1 and part of the manufacturing building on April 7, 2014. The major components of the deed restriction for all portions of the property are provided below:

- Groundwater on the property shall not be used for residential, agricultural, recreational, industrial, or commercial purposes.
- The property may only be used for industrial or commercial purposes, provided that in no event shall apartments, schools, hospitals, child daycare, adult daycare, or restaurants with playgrounds be permitted uses on the property.
- Any monitoring or injection wells must remain in place and protected during any period required by the ADEQ. Any well damaged will be replaced at owner's expense.
- ADEQ and its contractors are allowed access to the property for purposes defined under Arkansas law.

Additional deed restriction obligations are provided below for restricted areas A and B.

Restricted Area A

Southern border of Area A runs parallel to and 90 feet south of the north wall of the former manufacturing building:

- No excavation of soil, concrete or asphalt shall be permitted in the restricted area without the prior written approval of ADEQ.
- The owner shall regularly inspect, repair and maintain concrete or asphalt cover in the restricted area such that the cover continues to provide an impermeable barrier to water migrating into the subsurface soils in the restricted area.

Restricted Area B

Encompasses the entire footprint of the former manufacturing building:

- Upon submission and ADEQ approval of a work plan, the building may be demolished and all elements of the structure removed, including foundations, footings and flooring.

- Upon removal of the building, owner shall identify areas of impacted soil and then appropriately remediate the impacted soil through either excavation, placement of cover over the impacted soil, or such other remediation measures approved as appropriate by ADEQ.

Declaration of Covenants (i.e. filed deed restrictions precluding the use of shallow groundwater) have been executed for the properties north of the Site associated with the north plume (Figure 5-1).

5.2 IN-SITU CHEMICAL OXIDATION

The ISCO events were performed between 2014 and 2015, and included bench scale testing and four injection events (Figure 5-2). A total of 51,200 gallons of oxidant has been injected during the last two years as summarized in the following sections.

During 2014, Whirlpool conducted a bench scale treatability study of ISCO and a tracer test at several different injection wells to assess the efficacy of ISCO injections and the dispersion of ISCO in groundwater in order to assess the effective placement and distribution of injection locations within the treatment areas. The oxidants assessed during the bench scale test and which were ultimately used at the Site included BASP, MFR and MASP. The oxidation process using the BASP, MFR and MASP oxidants generates sulfate radicals, hydroxyl radicals and superoxide radicals that promote enhanced desorption and degradation of the constituents of concern (COCs), primarily TCE and its degradation products. The end products of the reaction are carbon dioxide, sulfate, oxygen and water.

Upon completion of the bench scale treatability test and the tracer test, Whirlpool conducted four separate ISCO injection events consisting of:

- Initial injection event was completed in March 2014 (Areas 1, 2 and 3 and the neck area);
- Second injection event was completed in late May and early June 2014 (Areas 2, 3 and the neck area and the vicinity near MW-25 in the linear drainage feature);
- Third injection event was completed in late October and early November 2014 (linear drainage feature and Area 1); and
- Fourth injection event was completed late September and early October 2015 (Areas 2 and 3 and the neck area).

The injection events summarized above included injection of oxidants in areas identified in the RADDs as well as voluntary, supplemental injection of oxidant in areas outside of those identified in the RADDs. These supplemental injection locations include the neck area and portions of the linear drainage feature outside of Area 1.

From a permitting perspective, ADEQ determined prior to each of the four injection events that the described ISCO injection activities would be "authorized by rule" as described in 40 CFR 144.84 (i.e. ISCO underground injection control permitting status).

In-Situ Oxidative Technologies, Inc. (ISOTEC) of Lawrenceville, New Jersey, provided materials, equipment and personnel needed to introduce the reagents into the subsurface at the selected locations and assisted in monitoring the progress of the each of the ISCO injection events.

Following injections, the total sum of TCE concentrations in groundwater in wells decreased by[19]:

- Approximately 83% in the Supplemental Neck Area (Table 5-1);
- Approximately 83% in Areas 2 and 3 (Table 5-2);
- Approximately 53% in Area 1 (Table 5-3); and
- Approximately 62% in the source area wells (MW-25, MW-85 and MW-86) (Table 5-4).

Monitoring of the effectiveness of oxidant injections will continue in 2016. Additional details for each injection event are provided in the following sections.

Initial ISCO Injection Event

The initial injection event, during the week of March 23, 2014, included the injection of:

- 200 gallons of BASP into IW-129 located in Area 1 (injection well Array 3);
- 800 gallons of BASP into IW-130 located in Area 3 (injection well Array 1); and
- 600 gallons of BASP into IW-131 located in Area 2 (injection well Array 2).

Monitoring of water levels, field water quality parameters and persulfate concentrations during and following the initial injection indicate that the influence of the oxidant was measured in wells located up to 18 feet from the injection point; although greater influence was observed in wells located from 5 to 10 feet from the injection point.

Second ISCO Injection Event

The second injection event, during the weeks of May 27 and June 4, 2014, included the injection of:

- 8,200 gallons of BASP solution into 11 existing permanent injection wells and 20 additional temporary direct push injection points in the supplemental neck;
- 14,000 gallons of BASP into ten existing permanent injection wells and 40 additional temporary direct push injection points in Areas 2 and 3; and

[19] Comparison of TCE concentrations in groundwater immediately prior to the May 2014 ISCO events for Areas 2 and 3 and Neck Area and prior to the October 2014 ISCO events for Area 1 and the source area wells compared with the current TCE concentrations in groundwater at the respective locations)

- 3,000 gallons of MASP solution into ten temporary direct push injection points located in the linear drainage feature in Area 1 in the vicinity of MW-25.

TCE concentrations in each of the injection areas decreased compared to baseline conditions prior to the second injection event.

Monitoring of water levels, field water quality parameters, persulfate concentrations and VOC concentrations during and following the second injection event indicate the following key observations:

- Water levels, field water quality parameters and persulfate concentrations indicate that the influence of the oxidant was measured in wells located in the injection areas and up to 35 feet from the injection areas (MW-24).
- Measurable levels of persulfate persisted in portions of the injection areas and in wells down-gradient of the injection areas for more than 90 days following the second injection event and for more than 170 days following the initial injection event in Area 1 (Injection Array 3).
- TCE concentrations at MW-25 and MW-85 initially increased following the injection and these increases were expected as a result of desorption of TCE following MASP injection.

Third ISCO Injection Event

The third injection event, during the weeks of October 26 and November 2, 2014, included the injection of oxidants in and around the linear drainage feature and in Area 1 as follows:

- 3,200 gallons of MFR solution were injected into 16 temporary injection points located in and near the linear drainage feature in the northwest portion of Area 1; and
- 12,200 gallons of BASP solution were injected into 41 permanent injection wells and 19 temporary injection points located in and around the linear drainage feature and in Area 1.

Monitoring of water levels, field water quality parameters, persulfate concentrations and VOC concentrations following the third injection event indicated the following:

- Water levels, field water quality parameters and persulfate concentrations indicate that the influence of the oxidant was measured in wells located in the injection areas and up to 15 feet from the injection areas (MW-38 and ITMW-17).
- The total sum of the TCE concentrations in wells in the linear drainage feature and Area 1[20] decreased from approximately 944,000 µg/L prior to the third injection event in September 2014 and October 2014 to approximately 432,000 µg/L in December 2014, roughly 30 days following injection (~53% decrease). Notable decreases in TCE

[20] The TCE concentrations in the following wells was used to calculate the sum of TCE concentrations: IW-127, IW-141, IW-147, IW-152, IW-153, IW-157, MW-25, MW-38, MW-85, MW-86, MW-92, MW-93, MW-94, MW-95, MW-172, ITMW-11, ITMW-12, ITMW-15, ITMW-17, ITMW-18 and ITMW-19.

concentrations were observed in 2014 at: MW-25 where the TCE concentration was reduced from 59,800 µg/L to 2,620 µg/L (96% reduction); and, ITMW-19 where the TCE concentration was reduced from 12,800 µg/L to 33.5 µg/L (99.7% reduction).

Fourth ISCO Injection Event

The fourth injection event, between September 28 and October 2, 2015, included the injection of:

- 5,200 gallons of BASP solution into five existing permanent injection wells and 21 additional temporary direct push injection points in the Supplemental Neck Area; and
- 3,800 gallons of BASP into four existing permanent injection wells and 15 additional temporary direct push injection points in the Areas 2 and 3.

Monitoring of water levels, field water quality parameters, persulfate concentrations and VOC concentrations prior, during and following the fourth injection event indicate the following key observations:

- Field water quality parameters and persulfate concentrations indicate that the influence of the oxidant was measured in wells located in the injection areas and up to 45 feet from the injection areas (MW-33R).
- Measurable levels of persulfate persisted in portions of the injection areas and in wells down-gradient of the injection areas for more than 60 days following the fourth injection event.
- The sum of the TCE concentrations in the majority of wells located in the Supplemental Neck Area (MW-23, MW-24, MW-83, MW-84 and IW-101) decreased from approximately 1,300 µg/L prior to the second injection event in May 2014 to approximately 225 µg/L by December 2015 (~83% decrease).
- The sum of the TCE concentrations in wells located in Areas 2 and 3 (MW-34, MW-35R, MW-36, MW-65, MW-81, MW-82, IW-77, IW-78, IW-79, IW-80 and IW-115) decreased from approximately 3,900 µg/L prior to the second injection event in May 2014 to approximately 700 µg/L by December 2015 (~83% decrease).

The success of the ISCO injection efforts are anticipated to be further evident after receipt and assessment of the first quarter 2016 groundwater monitoring data. No rebound in TCE concentrations has occurred in the neck area or Areas 2 and 3 based upon monitoring performed between May 2014 and July 2015, and rebound is not anticipated as a result of the October 2015 ISCO event in these areas.

TCE concentrations in MW-33R, located between the neck area and Areas 2 and 3, increased over baseline conditions measured in July 2015 to that measured 60 days following injections. TCE concentrations in MW-33R also increased after the second injection event in May and June 2014. The current TCE concentration is approximately 50% less than the TCE concentration prior to the May 2014 ISCO event. TCE concentrations in MW-33R are anticipated to decrease during subsequent monitoring events due to the substantial reduction of TCE concentrations in the neck area up-gradient of MW-33R.

TCE concentrations in the neck area have decreased by more than 83% and further reductions are anticipated due to the October 2015 ISCO event. The remediation of the neck area has facilitated plume separation comparing the north and south plumes. This separation is anticipated to continue to expand based upon the October 2015 ISCO event and the groundwater gradient divide precluding any further contribution of TCE impact to the north plume.

ISCO Summary

ISCO has been effective in reducing TCE concentrations in groundwater (and within the saturated soil in the Basal Transmissive Zone) in the linear drainage feature and in Area 1 associated with the south plume and the neck area and Areas 2 and 3 associated with the north plume. The BASP oxidant has demonstrated persistence for periods of 170 days or greater and the MFR oxidant has demonstrated success in desorbing TCE in the linear drainage feature in the vicinity of MW-25.

The overall TCE concentration reductions in both the neck area and Areas 2 and 3 has been approximately 83%. These TCE concentration reductions and the hydraulic divide in the neck area have created and increased the separation of the north and south plumes. The current separation between the north and south plumes is approximately 100 feet; and, this separation is expected to continue to increase due to anticipated further TCE concentration reductions in the neck area and Areas 2 and 3 as a result of the ISCO performed in October 2015.

The overall TCE concentration reduction in Area 1 is approximately 53%. Significant TCE concentration reductions have been achieved within the eastern half of the linear drainage feature limiting further plume flux (acknowledging the limited groundwater flow in this area due to low gradients) (i.e. approximate TCE reductions of greater than 95% have been observed in wells ITMW-18 and ITMW-19 with little or no rebound observed in these wells during five quarters of monitoring). Although higher and variable TCE concentrations have persisted in the vicinity of MW-25, MW-85 and MW-86 (western half of the linear drainage feature), the TCE reduction in this area has been approximately 62%. TCE concentration increases were identified in MW-25 and MW-85 compared to the baseline monitoring; however, the current increased concentrations may be due to the higher concentrations observed in the fall and winter due to typical seasonal fluctuations at this location (see Section 4.2) (TCE concentrations in MW-25 remain below the maximum historic TCE concentration detected in this well).

5.3 LARGE DIAMETER BORINGS

Nineteen (19) LDBs were completed along the linear drainage feature to remove TCE contaminated Vadose Zone and Basal Transmissive Zone soils in and around the linear drainage feature and Area 1 (four foot diameter borings). The work performed within the linear drainage feature was conducted as a voluntary measure, not required by the RADD or CAO. The proposed LDB locations were adjusted in the field to minimize the potential for encountering underground utilities and to maintain the proposed 15 foot spacing to the extent practicable. Figure 5-3 provides the surveyed locations of the completed borings.

Due to the relatively large number of identified utilities and potential obstructions in the work area, excavation of soil at each boring location was completed to a depth of 6 feet bgs before the LDBs were performed. When utilities and/or obstructions were encountered during excavation, assessment occurred with Whirlpool regarding proceeding with excavation or leaving the utilities intact.

The LDBs were backfilled with crushed limestone gravel and lean cement (i.e. sand with Portland cement). Gravel was placed in each boring to the approximate static groundwater level following drilling which generally ranged from approximately 13.5 to 15 feet bgs. In addition to potentially increasing the naturally low groundwater pH to promote biological natural attenuation, a secondary purpose of the gravel backfill was to fill the bottom portion of the completed borings to the approximate groundwater potentiometric level (roughly 15 feet bgs) so that contaminated groundwater would not be displaced to the surface while backfilling the LDB with lean cement. The remaining annular space of each boring was filled with lean cement to within approximately one to two feet from the surface. For borings located in areas paved with concrete, gravel was placed from the top of the cured lean cement to the bottom of the concrete surface and compacted prior to the placement of concrete to match the existing surface.

A photoionization detector (PID) was used to monitor for the presence of VOCs during excavation and drilling for health and safety purposes. No odor or PID detections were documented in the upper three feet of soil at each excavation. In general, the areas that were observed to have the highest PID readings included borings LDB-6 through LDB-8 (including LDB-19) (borings in the vicinity of DP-07[21]) and borings LDB-12 through LDB-14 (i.e. borings on the immediate sides of the underground electric service to the building).

The excavation and drilling process removed approximately 350 cubic yards of soil from the 19 LDBs (approximately 500 tons of soil removed). Excavation spoils and drill cuttings were placed into lined roll-off boxes for storage and disposal characterization prior to offsite disposal.

The LDBs facilitated removal of TCE impacted in the vadose zone and saturated soil in the vicinity of the linear drainage feature at accessible areas not encumbered by underground utilities (i.e. electric service for the building, underground fire protection line and other miscellaneous utilities). Residual TCE in saturated soil in the linear drainage feature was treated via ISCO injections in temporary and permanent wells in the vicinity of all of the LDBs.

5.4 IN-SITU CHEMICAL REDUCTION

In September 2015, Whirlpool initiated pilot testing to evaluate ISCR. The purpose of the ISCR pilot study is to perform a Site-specific test for proof of ISCR technology's effectiveness in

[21] Remedial efforts in the vicinity of DP-07 were discussed in Section 3.2 Footnote #3.

increasing the reductive dechlorination capacity of the saturated zone to reduce TCE concentrations. ISCR application reagents are typically effective for timeframes of several years.

ADEQ determined that the described injection activities would be "authorized by rule" as described in 40 CFR 144.84 (ADEQ correspondence dated September 14, 2015).

The ISCR reagent, ProvectIR-40™ (controlled release organic carbon, amendments and zero-valent iron [ZVI]), magnesium oxide (MgO) and *Dehalococcoides* (DHC) SDC-9 microbial consortium were introduced into the contaminated groundwater bearing zone in the area of monitoring well MW-61R and TMW-11 (Figure 5-4).

Innovative Environmental Technologies, Inc. of Pipersville, Pennsylvania, provided materials, equipment and personnel needed to introduce the reducing reagents into the subsurface at the selected locations and assisted in monitoring the progress of the ISCR injection event.

A total of 4,844 gallons of ISCR reagents including 7,500 pounds of ProvectIR-40™ (40 percent by weight 20-30 micron ZVI), 660 pounds MgO and 13 liters of DHC inoculum were injected across three permeable reactive barrier (PRB) treatment zones in 44 temporary direct push injection points.

A summary of the field and analytical monitoring data is discussed below:

- During injection activities, the DO levels appreciably decreased in MW-61R, which also corresponded to a reduction in ORP levels in this well.
- There was greater than a 50 percent reduction in TCE levels in TMW-11 within six days after the ISCR injection, which indicates that substantial abiotic reduction of TCE was occurring near this well.
- The sum of the TCE concentrations for MW-61R, TMW-10 and TMW-11, 60 days after ISCR injection, showed a decreasing concentration trend from approximately 238 µg/L to 120 µg/L (~50% decrease).
- The success of the ISCR injection efforts are anticipated to be further evident after receipt and assessment of the first quarter 2016 groundwater monitoring data.

The total sum of TCE concentrations in groundwater in wells decreased by approximately 50% 60 days post-injection compared to baseline data collected prior to the ISCR pilot study injections.

5.5 MONITORED NATURAL ATTENUATION

As discussed in Section 5.3, the chemical, geochemical and microbial results provide strong evidence that natural attenuation of VOCs is occurring via various mechanisms in many areas of the northern, northeastern and southern plume. This natural attenuation will continue as simulated by the fate and transport models. The south plume is expected to remain on the Whirlpool property and TCE concentrations will continue to decrease due to natural attenuation during the next 40 years as simulated in the fate and transport model. The TCE concentrations in the north plume are anticipated to be reduced to below MCLs within 30 to 35 years due to natural attenuation as simulated in the fate and transport model. The TCE concentrations in the offsite portion of the northeast plume are anticipated to be reduced to below MCLs in less than 30 years due to natural attenuation since only limited offsite TCE impact exists.

6.0 HUMAN HEALTH RISK ASSESSMENT

The Human Health Risk Assessment (HHRA) updates the HHRA that was originally drafted in November 2012 and updated in April 2013. This HHRA includes and takes account of: (1) the most recent Site investigation and monitoring data; (2) changes as a result of the USEPA *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* issued in June 2015; and (3) assessment of potential trespassers exposures at the Site (trespasser exposures were previously excluded since the facility was then operating and had continuous Site security).

Based on consideration of current and reasonably expected land use at and around the Site, the potentially exposed populations evaluated in the risk assessment are:

- OnSite:
  - Routine Workers
  - Utility Maintenance Workers
  - Redevelopment Construction Workers
  - Trespassers
- OffSite:
  - Residents
  - Routine Workers
  - Utility Maintenance Workers

The updated HHRA concludes the following regarding onsite and offsite potential risks:

- OnSite
  - No unacceptable exposures exist onsite since the facility is not occupied and no activities are occurring and there are no unacceptable exposures to trespassers who may access the Site.
- OffSite
  - Currently, there are no unacceptable exposures to offsite residents, routine workers or utility maintenance workers. Periodic monitoring will continue to ensure that potential risk from vapor intrusion into offsite properties remains within acceptable exposure levels.

If future data collections indicate that there is an unacceptable exposure risk to onsite workers, maintenance workers or construction workers, such future risks will be managed by means of the existing deed restriction, engineering controls, monitoring and proper work practices and protective gear or equipment. Indoor air monitoring and sub-slab soil vapor testing is planned to occur during February 2016 to facilitate planned interior building activities including equipment removal and selective demolition of the mezzanine level to optimize potential future use of the building. Future onsite activities will be conducted in accordance with the appropriate Site Health and Safety Plan (HASP) or OSHA requirements. A work plan to perform indoor air monitoring and the data from this monitoring event will be presented to ADEQ accordingly.

7.0 GENERAL SUMMARY AND CONCLUSIONS

The following summary for the Whirlpool Site is based upon the investigation, monitoring and remediation activities summarized in this Technical Review.

The source of TCE impact at the Site is attributable to former degreasing operations. These operations were performed in the degreaser building located in the northwest area of the facility. Releases of TCE impacting soil and groundwater at the linear drainage feature were due to incidental drips onto the degreaser building floor followed by rinsing or cleaning of the degreaser building floor for general housekeeping purposes with discharge of the mop water through the overhead doors. These incidental releases occurred approximately 30 to 50 years ago. The age of the source area and the resulting plumes, lack of free phase product and the current maximum TCE concentrations detected in soil and groundwater are indicative of a source area and plumes at or approaching a late stage condition. The late stage condition of the source area and plumes is partially due to source depletion which has occurred due to: (1) natural attenuation, (2) historic surface water infiltration causing desorption of TCE from vadose zone soil (generally increased TCE desorption rates from soil are presumed due to potential detergents or surfactants from mop water); and (3) limited quantities of TCE in the original solutions of TCE released to the linear drainage feature (i.e. current estimated quantities of TCE in soil and groundwater range from 20 to 70 gallons which is a the residual remaining volume in soil and groundwater after accumulation of incidental releases over a period of 30 to 50 years while also considering the effects of natural attenuation).

The northern and southern plumes exhibit characteristics of mature, predominantly stable groundwater plumes. Evidence developed based upon more than 20 years of monitoring demonstrates that natural attenuation is occurring in the north and south plumes as indicated by the presence of cis-1,2-DCE and VC in monitoring wells as a result of chemical, geochemical and biological processes.

The northeastern plume has been monitored quarterly for five events. Groundwater monitoring data suggest the plume boundaries have remained stable during these monitoring events. The presence of cis-1,2-DCE and VC in monitoring wells as a result of chemical, geochemical and biological processes indicates that natural attenuation is occurring.

In 2014, Whirlpool conducted remedial actions consisting of the imposition of a deed restriction on the Whirlpool property; ISCO injections in Areas 1, 2 and 3 to quickly reduce TCE concentrations in groundwater in these areas; and quarterly monitoring of groundwater for VOCs and natural attenuation parameters. Whirlpool also conducted additional voluntary remediation activities, including targeted ISCO injections within the neck area to facilitate further separation of the north and south plumes and the removal of substantial amounts of impacted soil in the source area along the linear drainage feature through the nineteen LDBs.

In 2015, Whirlpool conducted remedial actions consisting of ISCO injections in the supplemental neck area and Areas 2 and 3 to maintain and enhance further separation of the north and south plumes; ISCR pilot test near MW-61R; and, settlements with local property owners impacted by the offsite groundwater plume to obtain deed restrictions precluding the use of groundwater in the future.

Reductions in TCE concentrations following ISCO injections have reduced concentrations of TCE in monitoring wells in the source area (i.e. source depletion) and separate ISCO injections in the neck area have resulted in the separation of the north plume from the south plume (Figure 3-3). TCE concentrations within the linear drainage feature and Area 1 have been reduced by approximately 53% due to the remedial actions performed in 2014 and 2015. TCE concentrations within the neck area and Areas 2 and 3 have been reduced by approximately 83% and 83%, respectively, due to the remedial actions performed in 2014 and 2015.

The southern plume groundwater fate and transport model is composed of a steady-state flow model based on groundwater conditions in October 2015, coupled to a transport model simulating the time period from 2015 to 2055. The fate and transport model projects that groundwater in the south plume will not migrate offsite beyond the south and west property boundaries at concentrations above the MCL. The validity of the model simulation can be verified during subsequent five year remedy reviews in light of future data collection.

The northern plume groundwater fate and transport model is composed of a steady-state flow model based on groundwater conditions in October 2015, coupled to a transport model simulating the time period from 2015 to 2050. The fate and transport model predicts groundwater in the north plume will achieve the MCL (i.e. 5 µg/L) for TCE throughout the north plume within 30 to 35 years. The validity of the model simulation can be verified during subsequent five year remedy reviews in light of future data collection.

The northeast plume exhibits TCE concentrations in the offsite portion of the groundwater plume that only marginally exceed the MCL. The northeast plume is anticipated to mimic the natural attenuation conditions occurring in the north plume. Monitoring will continue for the northeast plume and subsequent modelling will be performed as appropriate.

The updated HHRA concludes[22]: (1) no unacceptable exposures exist onsite since the facility is not occupied and no activities are occurring and there are no unacceptable exposures to trespassers who may access the Site; and (2) there are no unacceptable exposures to offsite residents, routine workers or utility maintenance workers.

If future data collections indicate that there is an unacceptable exposure risk to onsite workers, maintenance workers or construction workers, such future risks will be managed by means of the existing deed restriction, engineering controls, monitoring and proper work practices and protective gear or equipment. Indoor air monitoring and sub-slab soil vapor testing is planned to occur during February 2016 to facilitate planned interior building activities including equipment removal and selective demolition of the mezzanine level to optimize potential future use of the building. A work plan to perform indoor air monitoring and the data from this monitoring event will be presented to ADEQ accordingly.

[22] Human Health Risk Assessment; December 2015

7.1 CONCLUSIONS

The following conclusions are presented for the Whirlpool Site based upon the investigation, monitoring and remediation activities including the valuable database of groundwater monitoring data generated during the last 20 to 25 years:

- No unacceptable exposures exist onsite since the facility is not occupied and no activities are occurring and there are no unacceptable exposures to trespassers who may access the Site.
- There are no unacceptable exposures to offsite residents, offsite routine workers or offsite utility maintenance workers.
- Soil and groundwater in the linear drainage feature or source area no longer cause or contribute to groundwater impacts in the north plume based upon (i) the groundwater divide identified during groundwater monitoring efforts performed for the last 20 to 25 years, and (ii) ISCO injection events in the neck area and Areas 2 and 3 which have eliminated or significantly reduced TCE concentrations in these areas to initially create the separation of the north and south plume followed by the October 2015 ISCO event to further expand and sustain the plume separation.
- Analytical results for VOCs in groundwater demonstrate that natural attenuation of TCE is occurring via chemical, geochemical and biological mechanisms in areas of the southern, northern and northeastern plumes as demonstrated by the presence of the reductive dechlorination byproducts cis-1,2-DCE and VC.
- Groundwater monitoring for the south plume has been performed for 20 to 25 years providing a valuable data base. TCE concentration trends are predominantly stable to decreasing for 89% (31 of 35 wells) of the wells in the south plume based on the data base. These stable and decreasing TCE concentration trends demonstrate that natural attenuation processes are effectively remediating groundwater impacts at the Site. The decreasing and stable concentration trends for cis-1,2-DCE and VC in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in the southern wells.
- Groundwater monitoring for the north plume has been performed for 20 to 25 years providing a valuable database. TCE concentration trends are predominantly stable to decreasing for 86% (36 of 42 wells) of the wells in the north plume based on the data base. These stable and decreasing TCE concentration trends demonstrate that natural attenuation processes are naturally addressing the groundwater impacts at the Site. The decreasing and stable concentration trends for cis-1,2-DCE and VC in a predominant number of the monitoring wells is similar to the continuing decreasing concentrations trends for TCE in the northern wells.
- The regression analysis demonstrates that TCE concentrations are decreasing in monitoring wells in the source area and Area 1 (i.e. MW-25 and ITMW-19) prior to performance of remediation activities. TCE concentrations in groundwater in the source area (i.e. MW-25) decreased more than 50% during the last four years prior to remediation activities that commenced in October 2014. These substantial TCE

concentrations reductions demonstrate that TCE impacts in vadose zone soil are not substantially contributing to groundwater impacts in the source area.

- Regression analysis of the groundwater monitoring data set determined the regression slopes for TCE, cis-1,2-DCE and VC are -0.15, -0.17 and -0.20 (i.e. slope of the concentration trend line for log transformed data), respectively, indicating the natural degradation of cis-1,2-DCE and VC is expected to occur at a similar or increased rate compared to TCE. The concentration trends for cis-1,2-DCE and VC from a predominant number of wells are characterized as nondetect, decreasing or stable indicating that the natural degradation of cis-1,2-DCE and VC is not “stalling” or causing an increase in the concentrations of either of these constituents; therefore, conclusions that no unacceptable current or future exposures to cis-1,2-DCE and VC in groundwater (or vapor from groundwater) remain valid. Groundwater monitoring will continue to confirm these constituents naturally degrade similar to TCE, and further regression analysis, risk assessment or groundwater modeling will be performed in light of future data collection.
- The fate and transport model projects groundwater in the south plume will not migrate offsite beyond the property boundaries at concentrations above the MCL. TCE breakdown constituents (e.g. cis-1,2-DCE and VC) are expected to degrade in a similar manner and timeframe as TCE in the south plume based upon regression analysis of site specific data.
- The fate and transport model projects the TCE concentration in groundwater in the north plume will be reduced to the MCL within approximately 30 to 35 years. TCE breakdown constituents (e.g. cis-1,2-DCE and VC) are expected to degrade in a similar manner and timeframe as TCE in the north plume based upon regression analysis of site specific data.
- Whirlpool has made significant progress in the redevelopment of the property during the past two years. The warehouse was sold to Spartan Logistics in September 2014 and Whirlpool remains in continued discussions with multiple interested buyers for the remainder of the property. Whirlpool is optimizing the interior space of the former manufacturing building for warehousing purposes, and is planning to subdivide western portions of the property for further development for industrial and commercial purposes.
- If future data collections indicate that there is an unacceptable exposure risk to onsite workers, maintenance workers or construction workers, such future risks will be managed by means of the existing deed restriction, engineering controls, monitoring and proper work practices and protective gear or equipment. Indoor air monitoring and sub-slab soil vapor testing is planned to occur during February 2016 to facilitate planned interior building activities including equipment removal and selective demolition of the mezzanine level to optimize potential future use of the building.

Because the conclusions above rest firmly upon: site specific data collected over the last 20 to 25 years; remediation activities that have resulted in significant reductions in concentrations of constituents of concern; demonstration that MNA will be effective in reducing constituent concentrations below the MCLs in the north plume; and demonstration that the south plume will remain on the site while constituent concentrations continue to decrease due to MNA, there is no need at this time for further remedial action beyond continued monitored natural attenuation. The need for further remedial actions can be reassessed, if and as warranted, during subsequent five year remedy reviews in light of future data collection.

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TABLES

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-01	DP-01	DP-02	DP-02	DP-02	DP-03	DP-03	DP-04	DP-04	DP-05	DP-05
Ramboll Environ Sample ID		DP-01 (15.5-16.0')-20131219	DP-01 (19.0-19.5')-20131219	DP-02 (2.5-3.0')-20131220	DP-02 (6.0-6.5')-20131220	DP-02 (15.0-15.5')-20131220	DP-03 (4.0-4.5')-20131218	DP-03 (12.0-12.5')-20131218	DP-04 (18.0-18.5')-20131218	DP-04 (25.0-25.5')-20131218	DP-05 (21.5-22.0')-20131217	DP-05 (24.5-25.0')-20131217
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		15.5 - 16	19 - 19.5	2.5 - 3	6 - 6.5	15 - 15.5	4 - 4.5	12 - 12.5	18 - 18.5	25 - 25.5	21.5 - 22	24.5 - 25
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method		Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core
Sample Date		12/19/2013	12/19/2013	12/20/2013	12/20/2013	12/20/2013	12/18/2013	12/18/2013	12/18/2013	12/18/2013	12/17/2013	12/17/2013
Volatile Organic Compounds												
Acetone	NE	U (0.0014)	U (0.0013)	U (0.0014)	U (0.0013)	U (0.0012)	U (0.0016)	U (0.0015)	U (0.0015)	U (0.0014)	U (0.0014)	U (0.0013)
Benzene	NE	U (0.00054)	U (0.00049)	U (0.00054)	U (0.00048)	U (0.00047)	U (0.0006)	U (0.00055)	U (0.00057)	U (0.00052)	U (0.00054)	U (0.0005)
Bromochloromethane	NE	U (0.0015)	U (0.0014)	U (0.0015)	U (0.0014)	U (0.0013)	U (0.0017)	U (0.0016)	U (0.0016)	U (0.0015)	U (0.0015)	U (0.0014)
Bromodichloromethane	NE	U* (0.00057)	U* (0.00051)	U (0.00057)	U (0.0005)	U (0.0005)	U (0.00063)	U (0.00058)	U (0.00059)	U (0.00054)	U* (0.00057)	U (0.00052)
Bromoform	NE	U* (0.0012)	U* (0.0011)	U (0.0012)	U (0.001)	U (0.001)	U (0.0013)	U (0.0012)	U (0.0012)	U (0.0011)	U* (0.0012)	U (0.0011)
Bromomethane	NE	U (0.00071)	U (0.00065)	U (0.00071)	U (0.00063)	U (0.00062)	U (0.00079)	U (0.00073)	U (0.00075)	U (0.00068)	U (0.00071)	U (0.00066)
2-Butanone	NE	U (0.0016)	U (0.0015)	U (0.0016)	U (0.0014)	U (0.0014)	U (0.0018)	U (0.0017)	U (0.0017)	U (0.0016)	U (0.0016)	U (0.0015)
Carbon Disulfide	NE	U (0.00047)	0.00091 JB (0.00043)	0.00053 JB (0.00047)	U (0.00042)	0.00042 JB (0.00041)	0.00077 JB (0.00052)	0.00066 JB (0.00048)	U (0.0005)	0.0005 JB (0.00045)	0.0012 J (0.00047)	0.0014 JB (0.00043)
Carbon Tetrachloride	NE	U (0.00097)	U (0.00088)	U (0.00097)	U (0.00086)	U (0.00085)	U (0.0011)	U (0.00099)	U (0.001)	U (0.00093)	U (0.00097)	U (0.00089)
Chlorobenzene	NE	U (0.00083)	U (0.00075)	U (0.00083)	U (0.00073)	U (0.00072)	U (0.00091)	U (0.00084)	U (0.00086)	U (0.00079)	U (0.00083)	U (0.00076)
Chloroethane	NE	U (0.0012)	U (0.0011)	U (0.0012)	U (0.0011)	U (0.0011)	U (0.0013)	U (0.0012)	U (0.0013)	U (0.0011)	U (0.0012)	U (0.0011)
Chloroform	NE	U (0.00057)	U (0.00051)	U (0.00057)	U (0.0005)	U (0.0005)	U (0.00063)	U (0.00058)	U (0.00059)	U (0.00054)	U (0.00057)	U (0.00052)
Chloromethane	NE	U (0.0014)	U (0.0013)	U (0.0014)	U (0.0013)	U (0.0012)	U (0.0016)	U (0.0015)	U (0.0015)	U (0.0014)	U (0.0014)	U (0.0013)
Dibromochloromethane	NE	U (0.00081)	U (0.00073)	U (0.00081)	U (0.00071)	U (0.00071)	U (0.00089)	U (0.00083)	U (0.00085)	U (0.00077)	U (0.00081)	U (0.00074)
1,1-Dichloroethane	NE	U (0.00075)	U (0.00068)	U (0.00075)	U (0.00066)	U (0.00065)	U (0.00083)	U (0.00077)	U (0.00078)	U (0.00071)	U (0.00075)	U (0.00069)
1,2-Dichloroethane	NE	U (0.00077)	U (0.0007)	U (0.00077)	U (0.00068)	U (0.00068)	U (0.00086)	U (0.00079)	U (0.00081)	U (0.00074)	U (0.00077)	U (0.00071)
1,1-Dichloroethene	NE	U (0.001)	U (0.00095)	U (0.001)	U (0.00093)	U (0.00092)	U (0.0012)	U (0.0011)	U (0.0011)	U (0.001)	U (0.001)	U (0.00096)
1,2-Dichloroethene (total)	NE	U (0.0016)	U (0.0015)	U (0.0016)	U (0.0014)	U (0.0014)	U (0.0018)	U (0.0017)	U (0.0017)	U (0.0016)	U (0.0016)	U (0.0015)
cis-1,2-Dichloroethene	NE	U (0.00071)	U (0.00065)	U (0.00071)	U (0.00063)	0.00084 J (0.00062)	U (0.00079)	U (0.00073)	U (0.00075)	U (0.00068)	U (0.00071)	U (0.00066)
trans-1,2-Dichloroethene	NE	U (0.00098)	U (0.00089)	U (0.00098)	U (0.00087)	U (0.00086)	U (0.0011)	U (0.001)	U (0.001)	U (0.00093)	U (0.00098)	U (0.0009)
1,2-Dichloropropane	NE	U* (0.00061)	U* (0.00055)	U (0.00061)	U (0.00054)	U (0.00053)	U (0.00067)	U (0.00062)	U (0.00064)	U (0.00058)	U (0.00061)	U (0.00056)
1,3-Dichloropropene (total)	NE	U (0.0005)	U (0.00045)	U (0.0005)	U (0.00044)	U (0.00044)	U (0.00055)	U (0.00051)	U (0.00052)	U (0.00048)	U (0.0005)	U (0.00046)
cis-1,3-Dichloropropene	NE	U (0.00046)	U (0.00042)	U (0.00046)	U (0.00041)	U (0.00041)	U (0.00051)	U (0.00048)	U (0.00049)	U (0.00044)	U (0.00046)	U (0.00043)
trans-1,3-Dichloropropene	NE	U (0.0005)	U (0.00045)	U (0.0005)	U (0.00044)	U (0.00044)	U (0.00055)	U (0.00051)	U (0.00052)	U (0.00048)	U (0.0005)	U (0.00046)
Ethyl Benzene	NE	U (0.00088)	U (0.0008)	U (0.00088)	U (0.00078)	U (0.00077)	U (0.00097)	U (0.0009)	U (0.00092)	U (0.00084)	U (0.00088)	U (0.00081)
2-Hexanone	NE	U (0.00087)	U (0.00079)	U (0.00087)	U (0.00077)	U (0.00076)	U (0.00096)	U (0.00089)	U (0.00091)	U (0.00083)	U (0.00087)	U (0.0008)
4-Methyl-2-pentanone	NE	U (0.0013)	U (0.0011)	U (0.0013)	U (0.0011)	U (0.0011)	U (0.0014)	U (0.0013)	U (0.0013)	U (0.0012)	U (0.0013)	U (0.0012)
Methylene Chloride	NE	U (0.0019)	U (0.0017)	U (0.0019)	U (0.0017)	U (0.0016)	U (0.0021)	U (0.0019)	U (0.002)	U (0.0018)	U (0.0019)	U (0.0017)
Styrene	NE	U (0.00061)	U (0.00055)	U (0.00061)	U (0.00054)	U (0.00053)	U (0.00067)	U (0.00062)	U (0.00064)	U (0.00058)	U (0.00061)	U (0.00056)
1,1,2,2-Tetrachloroethane	NE	U (0.00075)	U (0.00068)	U (0.00075)	U (0.00066)	U (0.00065)	U (0.00083)	U (0.00077)	U (0.00078)	U (0.00071)	U (0.00075)	U (0.00069)
Tetrachloroethene	NE	U (0.00061)	U (0.00055)	U (0.00061)	U (0.00054)	U (0.00053)	U (0.00067)	U (0.00062)	U (0.00064)	U (0.00058)	U (0.00061)	U (0.00056)
Toluene	NE	U (0.0012)	U (0.0011)	U (0.0012)	U (0.001)	U (0.001)	U (0.0013)	0.0012 J (0.0012)	U (0.0012)	U (0.0011)	U (0.0012)	U (0.0011)
1,1,1-Trichloroethane	NE	U (0.00064)	U (0.00058)	U (0.00064)	U (0.00056)	U (0.00056)	U (0.0007)	U (0.00065)	U (0.00067)	U (0.00061)	U (0.00064)	U (0.00058)
1,1,2-Trichloroethane	NE	U (0.00063)	U (0.00057)	U (0.00063)	U (0.00055)	U (0.00055)	U (0.00069)	U (0.00064)	U (0.00066)	U (0.0006)	U (0.00063)	U (0.00058)
Trichloroethene	0.129	0.0017 J (0.0012)	0.016 (0.0011)	0.0013 J (0.0012)	U (0.0011)	0.087 (0.0011)	0.0026 J (0.0013)	0.0019 J (0.0012)	0.0049 (0.0013)	0.027 (0.0011)	0.0039 J (0.0012)	0.0021 J (0.0011)
Vinyl Acetate	NE	U (0.0008)	U (0.00073)	U (0.0008)	U (0.00071)	U (0.0007)	U (0.00088)	U (0.00082)	U (0.00084)	U (0.00076)	U (0.0008)	U (0.00073)
Vinyl Chloride	NE	U (0.00077)	U (0.0007)	U (0.00077)	U (0.00068)	U (0.00068)	U (0.00086)	U (0.00079)	U (0.00081)	U (0.00074)	U (0.00077)	U (0.00071)
Xylenes (total)	NE	U (0.00097)	U (0.00088)	U (0.00097)	U (0.00086)	U (0.00085)	U (0.0011)	0.0031 J (0.00099)	U (0.001)	U (0.00093)	U (0.00097)	U (0.00089)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-06	DP-06	DP-06	DP-06	DP-07	DP-07	DP-07	DP-08	DP-08	DP-08	DP-09
Ramboll Environ Sample ID		DP-06 (5.5-6.0')-20140111	DP-06 (8.5-9.0')-20140111	DP-06 (25.5-26.0')-20140111	DP-06 (25.5-26.0')-20140111-FD	DP-07 (5.5-6.0')-20131217	DP-07 (12.5-13.0')-20131217	DP-07 (23.5-24.0')-20131217	DP-08 (5.0-5.5')-20140107	DP-08 (11.0-11.5')-20140107	DP-08 (18.5-19.0')-20140107	DP-09 (3.0-3.5')-20140108
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		5.5 - 6	8.5 - 9	25.5 - 26	25.5 - 26	5.5 - 6	12.5 - 13	23.5 - 24	5 - 5.5	11 - 11.5	18.5 - 19	3 - 3.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method		Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core
Sample Date		01/11/2014	01/11/2014	01/11/2014	01/11/2014	12/17/2013	12/17/2013	12/17/2013	01/07/2014	01/07/2014	01/07/2014	01/08/2014
Volatile Organic Compounds												
Acetone	NE	0.014 (0.0014)	0.0035 J (0.0015)	0.0049 J (0.0017)	U (0.0013)	U* (0.066)	0.048 (0.0012)	U (0.0014)	0.017 (0.0014)	U (0.063)	U (0.67)	U (0.0013)
Benzene	NE	0.00063 J (0.00052)	U (0.00058)	U (0.00063)	U (0.00048)	U (0.025)	U (0.00047)	U (0.00052)	U (0.00055)	U (0.024)	U (0.26)	U (0.0005)
Bromochloromethane	NE	U (0.0015)	U (0.0016)	U (0.0018)	U (0.0014)	U (0.07)	U (0.0013)	U (0.0015)	U (0.0015)	U (0.067)	U (0.72)	U (0.0014)
Bromodichloromethane	NE	U (0.00055)	U (0.00061)	U (0.00066)	U (0.0005)	U (0.026)	0.013 (0.0005)	U* (0.00055)	0.001 J (0.00057)	U (0.025)	U (0.27)	U (0.00052)
Bromoform	NE	U (0.0011)	U* (0.0013)	U (0.0014)	U (0.001)	U (0.054)	U (0.001)	U* (0.0011)	U (0.0012)	U (0.052)	U (0.56)	U (0.0011)
Bromomethane	NE	U (0.00069)	U (0.00076)	U (0.00083)	U (0.00063)	U (0.033)	U (0.00062)	U (0.00069)	U (0.00072)	U (0.031)	U (0.34)	U (0.00066)
2-Butanone	NE	U (0.0016)	U (0.0017)	U (0.0019)	U (0.0014)	U (0.075)	U (0.0014)	U (0.0016)	0.0028 J (0.0017)	U (0.072)	U (0.77)	U (0.0015)
Carbon Disulfide	NE	U (0.00046)	0.00067 J (0.00051)	U (0.00055)	U (0.00042)	U (0.022)	0.00094 JB (0.00041)	0.00065 J (0.00046)	U (0.00048)	U (0.021)	U (0.22)	U (0.00043)
Carbon Tetrachloride	NE	U (0.00094)	U (0.001)	U (0.0011)	U (0.00086)	U (0.045)	U (0.00085)	U (0.00094)	U (0.00098)	U (0.043)	U (0.46)	U (0.00089)
Chlorobenzene	NE	U (0.0008)	U (0.00088)	U (0.00096)	U (0.00073)	U (0.038)	U (0.00072)	U (0.0008)	U (0.00084)	U (0.036)	U (0.39)	U (0.00076)
Chloroethane	NE	U (0.0012)	U (0.0013)	U (0.0014)	U (0.0011)	U (0.055)	U (0.0011)	U (0.0012)	U (0.0012)	U (0.053)	U (0.57)	U (0.0011)
Chloroform	NE	U (0.00055)	0.0012 J (0.00061)	U (0.00066)	0.00092 J (0.0005)	0.057 J (0.026)	0.014 (0.0005)	U (0.00055)	0.00072 J (0.00057)	U (0.025)	U (0.27)	U (0.00052)
Chloromethane	NE	U (0.0014)	U (0.0015)	U (0.0017)	U (0.0013)	U (0.066)	U (0.0012)	U (0.0014)	U (0.0014)	U (0.063)	U (0.67)	U (0.0013)
Dibromochloromethane	NE	U (0.00078)	U (0.00086)	U (0.00094)	U (0.00071)	U (0.037)	U (0.00071)	U (0.00078)	U (0.00082)	U (0.035)	U (0.38)	U (0.00074)
1,1-Dichloroethane	NE	U (0.00072)	U (0.0008)	U (0.00087)	U (0.00066)	U (0.034)	0.00072 J (0.00065)	U (0.00072)	U (0.00076)	U (0.033)	U (0.35)	0.0065 (0.00069)
1,2-Dichloroethane	NE	U (0.00075)	U (0.00083)	U (0.0009)	U (0.00068)	U (0.036)	0.00084 J (0.00068)	U (0.00075)	U (0.00078)	U (0.034)	U (0.37)	U (0.00071)
1,1-Dichloroethene	NE	U (0.001)	0.0057 (0.0011)	U (0.0012)	0.0092 (0.00093)	0.16 J (0.048)	0.05 (0.00092)	U (0.001)	0.0097 (0.0011)	0.097 J (0.046)	1.8 J (0.5)	0.0032 J (0.00096)
1,2-Dichloroethene (total)	NE	2.8 (0.082)	0.18 (0.0017)	0.023 (0.0019)	0.092 (0.0014)	4.7 (0.075)	5.1 (0.076)	0.0048 J (0.0016)	5.2 (0.79)	2 (0.072)	8.2 (0.77)	0.83 (0.073)
cis-1,2-Dichloroethene	NE	2.8 (0.036)	0.18 (0.00076)	0.023 (0.00083)	0.092 (0.00063)	4.7 (0.033)	5.1 (0.033)	0.0048 (0.00069)	5.2 (0.35)	2 (0.031)	8.2 (0.34)	0.83 (0.032)
trans-1,2-Dichloroethene	NE	U (0.049)	U (0.001)	U (0.0011)	U (0.00087)	U (0.045)	U (0.045)	U (0.00095)	U (0.48)	U (0.043)	U (0.46)	U (0.044)
1,2-Dichloropropane	NE	U (0.00059)	U (0.00065)	U (0.00071)	U (0.00054)	U (0.028)	U (0.00053)	U (0.00059)	U (0.00062)	U (0.027)	U (0.29)	U (0.00056)
1,3-Dichloropropene (total)	NE	U (0.00048)	U (0.00053)	U (0.00058)	U (0.00044)	U (0.023)	U (0.00044)	U (0.00048)	U (0.0005)	U (0.022)	U (0.24)	U (0.00046)
cis-1,3-Dichloropropene	NE	U (0.00045)	U (0.0005)	U (0.00054)	U (0.00041)	U (0.021)	U (0.00041)	U (0.00045)	U (0.00047)	U (0.02)	U (0.22)	U (0.00043)
trans-1,3-Dichloropropene	NE	U (0.00048)	U (0.00053)	U (0.00058)	U (0.00044)	U (0.023)	U (0.00044)	U (0.00048)	U (0.0005)	U (0.022)	U (0.24)	U (0.00046)
Ethyl Benzene	NE	U (0.00085)	U (0.00094)	U (0.001)	U (0.00078)	U (0.04)	0.0012 J (0.00077)	U (0.00085)	0.0014 J (0.00089)	U (0.038)	U (0.41)	U (0.00081)
2-Hexanone	NE	U (0.00084)	U (0.00093)	U (0.001)	U (0.00077)	0.073 J (0.04)	0.052 (0.00076)	U (0.00084)	U (0.00088)	U (0.038)	U (0.41)	U (0.0008)
4-Methyl-2-pentanone	NE	U (0.0012)	U (0.0014)	U (0.0015)	U (0.0011)	U (0.058)	U (0.0011)	U (0.0012)	0.0015 J (0.0013)	U (0.055)	U (0.6)	U (0.0012)
Methylene Chloride	NE	0.1 (0.0018)	U (0.002)	U (0.0022)	U (0.0017)	0.15 J (0.087)	0.014 (0.0016)	U (0.0018)	U (0.0019)	U (0.083)	U (0.89)	U (0.0017)
Styrene	NE	U (0.00059)	U (0.00065)	U (0.00071)	U (0.00054)	U (0.028)	U (0.00053)	U (0.00059)	U (0.00062)	U (0.027)	U (0.29)	U (0.00056)
1,1,2,2-Tetrachloroethane	NE	U (0.00072)	U (0.0008)	U (0.00087)	U (0.00066)	U (0.034)	U (0.00065)	U (0.00072)	U (0.00076)	U (0.033)	U (0.35)	U (0.00069)
Tetrachloroethene	NE	0.0024 J (0.00059)	0.0021 J (0.00065)	U (0.00071)	0.0015 J (0.00054)	0.17 J (0.028)	0.098 (0.00053)	U (0.00059)	0.15 (0.00062)	U (0.027)	2.4 (0.29)	0.0007 J (0.00056)
Toluene	NE	0.0013 J (0.0011)	U (0.0013)	U (0.0014)	U (0.001)	U (0.055)	0.013 (0.001)	U (0.0011)	0.0064 (0.0012)	U (0.052)	U (0.56)	U (0.0011)
1,1,1-Trichloroethane	NE	U (0.00061)	U (0.00068)	U (0.00074)	U (0.00056)	0.032 J (0.029)	0.0068 (0.00056)	U (0.00061)	U (0.00064)	U (0.028)	1.7 J (0.3)	U (0.00058)
1,1,2-Trichloroethane	NE	U (0.00061)	U (0.00067)	U (0.00073)	U (0.00055)	0.035 J (0.029)	0.017 J (0.00055)	U (0.00061)	0.0009 J (0.00064)	U (0.028)	U (0.3)	U (0.00058)
Trichloroethene	0.129	13 (0.6)	2.1 (0.071)	3.2 (0.06)	4.6 (0.32)	270 (5.5)	200 (5.6)	1 (0.063)	66 (0.58)	110 (2.6)	3300 (57)	0.96 (0.054)
Vinyl Acetate	NE	U (0.00077)	U (0.00086)	U (0.00093)	U (0.00071)	U (0.037)	U (0.0007)	U (0.00077)	U (0.00081)	U (0.035)	U (0.38)	U (0.00073)
Vinyl Chloride	NE	U (0.00075)	0.025 (0.00083)	0.0038 J (0.0009)	0.022 (0.00068)	0.071 J (0.036)	0.04 (0.00068)	U (0.00075)	0.14 (0.00078)	U (0.034)	U (0.37)	0.1 (0.00071)
Xylenes (total)	NE	U (0.00094)	U (0.001)	U (0.0011)	U (0.00086)	U (0.045)	0.0078 (0.00085)	U (0.00094)	0.0089 (0.00098)	U (0.043)	U (0.46)	U (0.00089)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-09	DP-11	DP-11	DP-12	DP-12	DP-14	DP-14	DP-14	DP-14	DP-15	DP-15
Ramboll Environ Sample ID		DP-09-(5.0-5.5')-20140108	DP-11 (19.5-20.0')-20140107	DP-11 (19.5-20.0')-20140107-FD	DP-12 (4.5-5.0')-20140111	DP-12 (11.5-12.0')-20140111	DP-14 (11.5-12.0)-20140109	DP-14 (15.5-16.0)-20140109	DP-14 (15.5-16.0)-20140109-FD	DP-14 (28.5-29.0)-20140109	DP-15 (18.5-19.0')-20140106	DP-15 (22.5-23.0')-20140106
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		5 - 5.5	19.5 - 20	19.5 - 20	4.5 - 5	11.5 - 12	11.5 - 12	15.5 - 16	15.5 - 16	28.5 - 29	18.5 - 19	22.5 - 23
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method		Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core
Sample Date		01/08/2014	01/07/2014	01/07/2014	01/11/2014	01/11/2014	01/09/2014	01/09/2014	01/09/2014	01/09/2014	01/06/2014	01/06/2014
Volatile Organic Compounds												
Acetone	NE	0.0051 J (0.0013)	0.005 J (0.0013)	0.0018 J (0.0013)	0.015 (0.0013)	0.0067 J (0.0013)	U (0.0014)	U (0.0013)	0.0029 J (0.0013)	U (0.0013)	U (0.0014)	U (0.0014)
Benzene	NE	U (0.00049)	U (0.00049)	U (0.0005)	U (0.0005)	U (0.00051)	U (0.00052)	U (0.00051)	U (0.0005)	U (0.00049)	U (0.00052)	U (0.00052)
Bromochloromethane	NE	U (0.0014)	U (0.0014)	U (0.0014)	U (0.0014)	U (0.0014)	U (0.0015)	U (0.0014)	U (0.0014)	U (0.0014)	U (0.0015)	U (0.0015)
Bromodichloromethane	NE	U (0.00051)	U (0.00051)	U (0.00052)	U (0.00053)	U (0.00053)	U (0.00054)	U (0.00053)	U (0.00053)	U (0.00051)	U (0.00054)	U (0.00055)
Bromoform	NE	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U* (0.0011)	U* (0.0011)	U* (0.0011)	U* (0.0011)	U (0.0011)	U (0.0011)
Bromomethane	NE	U (0.00065)	U (0.00064)	U (0.00066)	U (0.00066)	U (0.00067)	U (0.00068)	U (0.00067)	U (0.00066)	U (0.00064)	U (0.00068)	U (0.00069)
2-Butanone	NE	U (0.0015)	U (0.0015)	U (0.0015)	U (0.0015)	U (0.0015)	U (0.0016)	U (0.0015)	U (0.0015)	U (0.0015)	U (0.0016)	U (0.0016)
Carbon Disulfide	NE	U (0.00043)	U (0.00042)	U (0.00043)	U (0.00044)	U (0.00045)	U (0.00045)	U (0.00045)	U (0.00044)	U (0.00042)	U (0.00045)	U (0.00046)
Carbon Tetrachloride	NE	U (0.00088)	U (0.00087)	U (0.00089)	U (0.0009)	U (0.00092)	U (0.00093)	U (0.00092)	U (0.0009)	U (0.00087)	U (0.00093)	U (0.00094)
Chlorobenzene	NE	U (0.00075)	U (0.00074)	U (0.00076)	U (0.00077)	U (0.00078)	U (0.00079)	U (0.00078)	U (0.00077)	U (0.00074)	U (0.00079)	U (0.0008)
Chloroethane	NE	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0012)
Chloroform	NE	U (0.00051)	U (0.00051)	U (0.00052)	0.00075 J (0.00053)	0.00089 J (0.00053)	U (0.00054)	U (0.00053)	U (0.00053)	U (0.00051)	U (0.00054)	U (0.00055)
Chloromethane	NE	U (0.0013)	U (0.0013)	U (0.0013)	U (0.0013)	U (0.0013)	U (0.0014)	U (0.0013)	U (0.0013)	U (0.0013)	U (0.0014)	U (0.0014)
Dibromochloromethane	NE	U (0.00073)	U (0.00072)	U (0.00074)	U (0.00075)	U (0.00076)	U (0.00077)	U (0.00076)	U (0.00075)	U (0.00072)	U (0.00077)	U (0.00078)
1,1-Dichloroethane	NE	0.0064 (0.00068)	U (0.00067)	U (0.00069)	U (0.0007)	U (0.0007)	U (0.00071)	U (0.0007)	U (0.0007)	U (0.00067)	U (0.00071)	U (0.00072)
1,2-Dichloroethane	NE	U (0.0007)	U (0.00069)	U (0.00071)	U (0.00072)	U (0.00073)	U (0.00074)	U (0.00073)	U (0.00072)	U (0.00069)	U (0.00074)	U (0.00075)
1,1-Dichloroethene	NE	0.0021 J (0.00095)	0.0014 J (0.00094)	U (0.00096)	U* (0.00098)	U* (0.00099)	U (0.001)	U (0.00099)	U (0.00098)	0.0012 J (0.00094)	U (0.001)	0.0084 (0.001)
1,2-Dichloroethene (total)	NE	1 (0.072)	0.011 (0.0015)	0.0068 J (0.0015)	0.12 (0.0015)	0.069 (0.0015)	0.051 (0.0016)	0.035 (0.0015)	0.049 (0.0015)	0.0021 J (0.0015)	U (0.0016)	0.029 (0.0016)
cis-1,2-Dichloroethene	NE	1 (0.032)	0.011 (0.00064)	0.0068 (0.00066)	0.12 (0.00066)	0.069 (0.00067)	0.051 (0.00068)	0.035 (0.00067)	0.049 (0.00066)	0.0021 J (0.00064)	U (0.00068)	0.029 (0.00069)
trans-1,2-Dichloroethene	NE	U (0.043)	U (0.00088)	U (0.0009)	U (0.00091)	U (0.00092)	U (0.00093)	U (0.00092)	U (0.00091)	U (0.00088)	U (0.00093)	U (0.00095)
1,2-Dichloropropane	NE	U (0.00055)	U (0.00055)	U (0.00056)	U (0.00057)	U (0.00058)	U (0.00058)	U (0.00058)	U (0.00057)	U (0.00055)	U (0.00058)	U (0.00059)
1,3-Dichloropropene (total)	NE	U (0.00045)	U (0.00045)	U (0.00046)	U (0.00046)	U (0.00047)	U (0.00048)	U (0.00047)	U (0.00046)	U (0.00045)	U (0.00048)	U (0.00048)
cis-1,3-Dichloropropene	NE	U (0.00042)	U (0.00042)	U (0.00043)	U (0.00043)	U (0.00044)	U (0.00044)	U (0.00044)	U (0.00043)	U (0.00042)	U (0.00044)	U (0.00045)
trans-1,3-Dichloropropene	NE	U (0.00045)	U (0.00045)	U (0.00046)	U (0.00046)	U (0.00047)	U (0.00048)	U (0.00047)	U (0.00046)	U (0.00045)	U (0.00048)	U (0.00048)
Ethyl Benzene	NE	U (0.0008)	U (0.00079)	U (0.00081)	U (0.00082)	U (0.00083)	U (0.00084)	U (0.00083)	U (0.00082)	U (0.00079)	U (0.00084)	U (0.00085)
2-Hexanone	NE	U (0.00079)	U (0.00078)	U (0.0008)	U (0.00081)	U (0.00082)	U (0.00083)	U (0.00082)	U (0.00081)	U (0.00078)	U (0.00083)	U (0.00084)
4-Methyl-2-pentanone	NE	U (0.0011)	U (0.0011)	U (0.0012)	U (0.0012)	U (0.0012)	U (0.0012)	U (0.0012)	U (0.0012)	U (0.0011)	U (0.0012)	U (0.0012)
Methylene Chloride	NE	U (0.0017)	U (0.0017)	U (0.0017)	U (0.0018)	U (0.0018)	U (0.0018)	U (0.0018)	U (0.0018)	U (0.0017)	U (0.0018)	U (0.0018)
Styrene	NE	U (0.00055)	U (0.00055)	U (0.00056)	U (0.00057)	U (0.00058)	U (0.00058)	U (0.00058)	U (0.00057)	U (0.00055)	U (0.00058)	U (0.00059)
1,1,2,2-Tetrachloroethane	NE	U (0.00068)	U (0.00067)	U (0.00069)	U (0.0007)	U (0.0007)	U (0.00071)	U (0.0007)	U (0.0007)	U (0.00067)	U (0.00071)	U (0.00072)
Tetrachloroethene	NE	U (0.00055)	U (0.00055)	U (0.00056)	U* (0.00057)	U* (0.00058)	0.004 J (0.00058)	0.0035 J (0.00058)	0.0053 (0.00057)	0.0023 J (0.00055)	U (0.00058)	0.0017 J (0.00059)
Toluene	NE	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)
1,1,1-Trichloroethane	NE	U (0.00058)	U (0.00057)	U (0.00058)	U* (0.00059)	U* (0.0006)	U (0.00061)	U (0.0006)	U (0.00059)	U (0.00057)	U (0.00061)	U (0.00061)
1,1,2-Trichloroethane	NE	U (0.00057)	U (0.00056)	U (0.00058)	U (0.00058)	U (0.00059)	U (0.0006)	U (0.00059)	U (0.00058)	U (0.00056)	U (0.0006)	U (0.00061)
Trichloroethene	0.129	1.3 (0.053)	1.2 (0.06)	1.1 (0.055)	0.63 (0.059)	0.84 (0.058)	0.57 (0.057)	0.63 (0.054)	0.73 (0.058)	1 (0.056)	0.4 (0.061)	5.8 (0.057)
Vinyl Acetate	NE	U (0.00073)	U (0.00072)	U (0.00073)	U (0.00074)	U (0.00075)	U (0.00076)	U (0.00075)	U (0.00074)	U (0.00072)	U (0.00076)	U (0.00077)
Vinyl Chloride	NE	0.054 (0.0007)	U (0.00069)	U (0.00071)	U (0.00072)	0.0024 J (0.00073)	0.0032 J (0.00074)	0.002 J (0.00073)	0.0029 J (0.00072)	U (0.00069)	U (0.00074)	0.0086 (0.00075)
Xylenes (total)	NE	U (0.00088)	U (0.00087)	U (0.00089)	U (0.0009)	U (0.00092)	U (0.00093)	U (0.00092)	U (0.0009)	U (0.00087)	U (0.00093)	U (0.00094)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected

J = Estimated concentration

B = Analyte found in associated blank

( ) = Method detection limit

RADD = Remedial action decision document

ADEQ = Arkansas Department of Environmental Quality

VOC = Volatile organic compounds

mg/kg -- miligram per kilogram

NE = Not established

NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-15	DP-16	DP-16	DP-17	DP-18	DP-18	DP-22	DP-22	DP-23	DP-23	DP-23
Ramboll Environ Sample ID		DP-15 (25.0-25.5')-20140106	DP-16 (9.0-9.5)-20140109	DP-16 (29.5-30.0)-20140109	DP-17-(9.0-9.5')-20140108	DP-18 (27.5-28.0')-20140110	DP-18 (27.5-28.0')-20140110-FD	DP-22 (8.5-9.0')-20140110	DP-22 (27.5-28.0')-20140110	DP-23 (4.5 FT) -062014	DP-23 (10.0 FT) -062014	DP-23 (15.0 FT) -062014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		25 - 25.5	9 - 9.5	29.5 - 30	9 - 9.5	27.5 - 28	27.5 - 28	8.5 - 9	27.5 - 28	4.5	10	15
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method		Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core			
Sample Date		01/06/2014	01/09/2014	01/09/2014	01/08/2014	01/10/2014	01/10/2014	01/10/2014	01/10/2014	06/24/2014	06/24/2014	06/24/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0014)	U (0.0013)	U (0.0014)	U (0.0013)	U (0.0013)	0.0035 J (0.0014)	U (0.0015)	U (0.0017)	0.0518 (0.0095)	U (0.0098)	U (0.0091)
Benzene	NE	U (0.00052)	U (0.00048)	U (0.00052)	U (0.00049)	U (0.00049)	U (0.00052)	U (0.00055)	U (0.00066)	U (0.0024)	U (0.0025)	U (0.0023)
Bromochloromethane	NE	U (0.0015)	U (0.0014)	U (0.0015)	U (0.0014)	U (0.0014)	U (0.0015)	U (0.0016)	U (0.0019)	NM	NM	NM
Bromodichloromethane	NE	U (0.00055)	U (0.0005)	U (0.00054)	U (0.00051)	U (0.00051)	U (0.00054)	U (0.00058)	U (0.00069)	U (0.0024)	U (0.0025)	U (0.0023)
Bromoform	NE	U (0.0011)	U* (0.001)	U* (0.0011)	U (0.0011)	U* (0.0011)	U* (0.0011)	U* (0.0012)	U* (0.0014)	U (0.0024)	U (0.0025)	U (0.0023)
Bromomethane	NE	U (0.00069)	U (0.00063)	U (0.00068)	U (0.00065)	U (0.00064)	U (0.00068)	U (0.00073)	U (0.00086)	U (0.0024)	U (0.0025)	U (0.0023)
2-Butanone	NE	U (0.0016)	U (0.0014)	U (0.0016)	U (0.0015)	U (0.0015)	U (0.0016)	U (0.0017)	U (0.002)	0.0114 (0.0048)	U (0.0049)	U (0.0046)
Carbon Disulfide	NE	U (0.00046)	U (0.00042)	U (0.00045)	U (0.00043)	U (0.00042)	U (0.00045)	U (0.00048)	U (0.00057)	U (0.0024)	U (0.0025)	U (0.0023)
Carbon Tetrachloride	NE	U (0.00094)	U (0.00086)	U (0.00093)	U (0.00088)	U (0.00087)	U (0.00093)	U (0.00099)	U (0.0012)	U (0.0024)	U (0.0025)	U (0.0023)
Chlorobenzene	NE	U (0.0008)	U (0.00073)	U (0.00079)	U (0.00075)	U (0.00074)	U (0.00079)	U (0.00084)	U (0.001)	U (0.0024)	U (0.0025)	U (0.0023)
Chloroethane	NE	U (0.0012)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0012)	U (0.0015)	U (0.0024)	U (0.0025)	U (0.0023)
Chloroform	NE	U (0.00055)	0.00073 J (0.0005)	U (0.00054)	U (0.00051)	U (0.00051)	U (0.00054)	U (0.00058)	U (0.00069)	0.0078 (0.0024)	0.0202 (0.0025)	0.0029 J (0.0023)
Chloromethane	NE	U (0.0014)	U (0.0013)	U (0.0014)	U (0.0013)	U (0.0013)	U (0.0014)	U (0.0015)	U (0.0017)	U (0.0024)	U (0.0025)	U (0.0023)
Dibromochloromethane	NE	U (0.00078)	U (0.00071)	U (0.00077)	U (0.00073)	U (0.00072)	U (0.00077)	U (0.00083)	U (0.00098)	U (0.0024)	U (0.0025)	U (0.0023)
1,1-Dichloroethane	NE	U (0.00072)	U (0.00066)	U (0.00071)	U (0.00068)	U (0.00067)	U (0.00071)	U (0.00077)	U (0.0009)	U (0.0024)	U (0.0025)	U (0.0023)
1,2-Dichloroethane	NE	U (0.00075)	U (0.00068)	U (0.00074)	U (0.0007)	U (0.00069)	U (0.00074)	U (0.00079)	U (0.00094)	U (0.0024)	U (0.0025)	U (0.0023)
1,1-Dichloroethene	NE	0.0052 (0.001)	0.0011 J (0.00093)	U (0.001)	U (0.00095)	U (0.00094)	U (0.001)	U (0.0011)	U (0.0013)	0.0115 (0.0024)	0.0077 (0.0025)	U (0.0023)
1,2-Dichloroethene (total)	NE	0.021 (0.0016)	0.49 (0.074)	U (0.0016)	0.021 (0.0015)	0.009 (0.0015)	0.009 (0.0016)	U (0.0017)	U (0.002)	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.021 (0.00069)	0.49 (0.032)	0.0011 J (0.00068)	0.021 (0.00065)	0.009 (0.00064)	0.009 (0.00068)	U (0.00073)	U (0.00086)	9.68 (0.571)	1.58 J (1.08)	0.0414 (0.0023)
trans-1,2-Dichloroethene	NE	U (0.00095)	U (0.045)	U (0.00093)	U (0.00089)	U (0.00088)	U (0.00093)	U (0.001)	U (0.0012)	0.0496 (0.0024)	0.0048 J (0.0025)	U (0.0023)
1,2-Dichloropropane	NE	U (0.00059)	U (0.00054)	U (0.00058)	U (0.00055)	U (0.00055)	U (0.00058)	U (0.00062)	U (0.00074)	U (0.0024)	U (0.0025)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.00048)	U (0.00044)	U (0.00048)	U (0.00045)	U (0.00045)	U (0.00048)	U (0.00051)	U (0.0006)	U (0.0024)	U (0.0025)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.00045)	U (0.00041)	U (0.00044)	U (0.00042)	U (0.00042)	U (0.00044)	U (0.00048)	U (0.00056)	U (0.0024)	U (0.0025)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.00048)	U (0.00044)	U (0.00048)	U (0.00045)	U (0.00045)	U (0.00048)	U (0.00051)	U (0.0006)	U (0.0024)	U (0.0025)	U (0.0023)
Ethyl Benzene	NE	U (0.00085)	U (0.00078)	U (0.00084)	U (0.0008)	U (0.00079)	U (0.00084)	U (0.0009)	U (0.0011)	U (0.0024)	U (0.0025)	U (0.0023)
2-Hexanone	NE	U (0.00084)	U (0.00077)	U (0.00083)	U (0.00079)	U (0.00078)	U (0.00083)	U (0.00089)	U (0.0011)	U (0.0095)	U (0.0098)	U (0.0091)
4-Methyl-2-pentanone	NE	U (0.0012)	U (0.0011)	U (0.0012)	U (0.0011)	U (0.0011)	U (0.0012)	U (0.0013)	U (0.0015)	0.0175 (0.0048)	U (0.0049)	U (0.0046)
Methylene Chloride	NE	U (0.0018)	U (0.0017)	U (0.0018)	U (0.0017)	U (0.0017)	U (0.0018)	U (0.0019)	U (0.0023)	2.98 (0.571)	3.14 (1.08)	0.0201 (0.0023)
Styrene	NE	U (0.00059)	U (0.00054)	U (0.00058)	U (0.00055)	U (0.00055)	U (0.00058)	U (0.00062)	U (0.00074)	U (0.0024)	U (0.0025)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.00072)	U (0.00066)	U (0.00071)	U (0.00068)	U (0.00067)	U (0.00071)	U (0.00077)	U (0.0009)	U (0.0024)	U (0.0025)	U (0.0023)
Tetrachloroethene	NE	0.0011 J (0.00059)	0.0018 J (0.00054)	U (0.00058)	U (0.00055)	U (0.00055)	U (0.00058)	U (0.00062)	U (0.00074)	0.0516 (0.0024)	0.0269 (0.0025)	0.0043 J (0.0023)
Toluene	NE	U (0.0011)	0.0016 J (0.001)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0012)	U (0.0014)	0.0172 (0.0024)	0.0086 (0.0025)	U (0.0023)
1,1,1-Trichloroethane	NE	U (0.00061)	U (0.00056)	U (0.00061)	U (0.00058)	U (0.00057)	U (0.00061)	U (0.00065)	U (0.00077)	U (0.0024)	U (0.0025)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.00061)	U (0.00055)	U (0.0006)	U (0.00057)	U (0.00056)	U (0.0006)	U (0.00064)	U (0.00076)	0.0034 J (0.0024)	0.0053 (0.0025)	U (0.0023)
Trichloroethene	0.129	5.7 (0.058)	1.7 (0.055)	0.01 (0.0011)	0.011 (0.0011)	0.35 (0.055)	0.38 (0.053)	U (0.0012)	0.0049 J (0.0015)	44.8 (0.571)	93.3 (1.08)	17.9 (0.224)
Vinyl Acetate	NE	U (0.00077)	U (0.00071)	U (0.00076)	U (0.00073)	U (0.00072)	U (0.00076)	U (0.00082)	U (0.00097)	NM	NM	NM
Vinyl Chloride	NE	0.0062 J (0.00075)	0.038 (0.00068)	U (0.00074)	U (0.0007)	U (0.00069)	U (0.00074)	U (0.00079)	U (0.00094)	4.43 (0.571)	U (1.08)	0.0408 (0.0023)
Xylenes (total)	NE	U (0.00094)	U (0.00086)	U (0.00093)	U (0.00088)	U (0.00087)	U (0.00093)	U (0.00099)	U (0.0012)	U (0.0024)	U (0.0025)	U (0.0023)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected

J = Estimated concentration

B = Analyte found in associated blank

( ) = Method detection limit

RADD = Remedial action decision document

ADEQ = Arkansas Department of Environmental Quality

VOC = Volatile organic compounds

mg/kg -- miligram per kilogram

NE = Not established

NM = Not measured

RAMBOLL ENVIRON

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-23	DP-24	DP-24	DP-24	DP-24	DP-24	DP-25	DP-25	DP-25	DP-25	DP-25
Ramboll Environ Sample ID		DP-23 (20.5 FT) - 062014	DP-24 (9.5 FT) - 062014	DP-24 (12.0 FT) - 062014	DP-24 (18.0 FT) - 062014	DP-24 (20.5 FT) - 062014	DP-24 (27.0 FT) - 062014	DP-25 (4.5 FT) - 062014	DP-25 (6.0 FT) - 062014	DP-25 (14.0 FT) - 062014	DP-25 (17.0 FT) - 062014	DP-25 (25.5 FT) - 062014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		20.5	9.5	12	18	20.5	27	4.5	6	14	17	25.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/24/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/27/2014	06/27/2014	06/27/2014	06/27/2014	06/27/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0091)	0.0099 (0.0085)	0.0096 (0.0091)	U (0.0089)	U (0.0086)	0.0093 (0.0087)	U (0.0097)	U (0.009)	U (0.0089)	U (0.0085)	U (0.0079)
Benzene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Bromoform	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Bromomethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
2-Butanone	NE	U (0.0045)	U (0.0042)	U (0.0045)	U (0.0045)	U (0.0043)	U (0.0043)	U (0.0048)	U (0.0045)	U (0.0044)	U (0.0042)	U (0.0039)
Carbon Disulfide	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Carbon Tetrachloride	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Chlorobenzene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Chloroethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Chloroform	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Chloromethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Dibromochloromethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,1-Dichloroethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,2-Dichloroethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,1-Dichloroethene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	0.0099 (0.0024)	0.0103 (0.0022)	0.0177 (0.0022)	0.0044 (0.0021)	U (0.002)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0154 (0.0022)	0.0132 (0.0021)	0.0074 (0.0023)	0.012 (0.0022)	0.0093 (0.0021)	0.0056 (0.0022)	1.32 (0.228)	1.56 (0.222)	0.608 (0.229)	0.0677 (0.0021)	U (0.002)
trans-1,2-Dichloroethene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	0.0063 (0.0024)	0.0073 (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,2-Dichloropropane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,3-Dichloropropene (total)	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
cis-1,3-Dichloropropene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
trans-1,3-Dichloropropene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Ethyl Benzene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
2-Hexanone	NE	U (0.0091)	U (0.0085)	U (0.0091)	U (0.0089)	U (0.0086)	U (0.0087)	U (0.0097)	U (0.009)	U (0.0089)	U (0.0085)	U (0.0079)
4-Methyl-2-pentanone	NE	U (0.0045)	U (0.0042)	U (0.0045)	U (0.0045)	U (0.0043)	U (0.0043)	U (0.0048)	U (0.0045)	U (0.0044)	U (0.0042)	U (0.0039)
Methylene Chloride	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Styrene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,1,2,2-Tetrachloroethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Tetrachloroethene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	0.0092 (0.0024)	0.0133 (0.0022)	0.0103 (0.0022)	0.0023 J (0.0021)	U (0.002)
Toluene	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	0.006 (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,1,1-Trichloroethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
1,1,2-Trichloroethane	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)
Trichloroethene	0.129	0.191 (0.0022)	0.772 (0.115)	0.625 (0.112)	1.07 (0.113)	0.664 (0.116)	0.549 (0.105)	15.8 (0.228)	28.9 (1.11)	22.3 (0.229)	6.37 (0.214)	2.55 (0.102)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	0.217 (0.0024)	0.0755 (0.0022)	0.0659 (0.0022)	0.0062 (0.0021)	U (0.002)
Xylenes (total)	NE	U (0.0023)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.002)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-26	DP-26	DP-26	DP-26	DP-26	DP-27	DP-27	DP-27	DP-27	DP-28	DP-28
Ramboll Environ Sample ID		DP-26 (11.0 FT) - 062014	DP-26 (16.0 FT) - 062014	DP-26 (24.0 FT) - 062014	DP-26 (24.0 FT) - 062014 - DUP	DP-26 (28.0 FT) - 062014	DP-27 (12.5 FT) - 062014	DP-27 (23.5 FT) - 062014	DP-27 (26.5 FT) - 062014	DP-27 (26.5 FT) - 062014 - DUP	DP-28 (4.5 FT) - 062014	DP-28 (7.5 FT) - 062014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		11	16	24	24	28	12.5	23.5	26.5	26.5	4.5	7.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/24/2014	06/24/2014
Volatile Organic Compounds												
Acetone	NE	0.0157 (0.0103)	U (0.0087)	0.0105 (0.0083)	0.0111 (0.0086)	U (0.0104)	0.0096 (0.009)	U (0.009)	U (0.0088)	U (0.0093)	U (0.0088)	U (0.0093)
Benzene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Bromoform	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Bromomethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
2-Butanone	NE	U (0.0051)	U (0.0044)	U (0.0041)	U (0.0043)	U (0.0052)	U (0.0045)	U (0.0045)	U (0.0044)	U (0.0047)	U (0.0044)	U (0.0046)
Carbon Disulfide	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Carbon Tetrachloride	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Chlorobenzene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Chloroethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Chloroform	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	0.0042 J (0.0022)	0.0068 (0.0023)
Chloromethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Dibromochloromethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
1,1-Dichloroethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	0.0088 (0.0022)	0.007 (0.0023)
1,2-Dichloroethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
1,1-Dichloroethene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	0.0026 J (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	0.0219 (0.0022)	0.0249 (0.0023)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0026)	U (0.0022)	0.0136 (0.0021)	0.0163 (0.0022)	0.0038 J (0.0026)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0023)	4.15 (0.224)	3.48 (0.216)
trans-1,2-Dichloroethene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	0.0145 (0.0022)	0.0098 (0.0023)
1,2-Dichloropropane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Ethyl Benzene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
2-Hexanone	NE	U (0.0103)	U (0.0087)	U (0.0083)	U (0.0086)	U (0.0104)	U (0.009)	U (0.009)	U (0.0088)	U (0.0093)	U (0.0088)	U (0.0093)
4-Methyl-2-pentanone	NE	U (0.0051)	U (0.0044)	U (0.0041)	U (0.0043)	U (0.0052)	U (0.0045)	U (0.0045)	U (0.0044)	U (0.0047)	U (0.0044)	U (0.0046)
Methylene Chloride	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	1.03 (0.224)	1.55 (0.216)
Styrene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Tetrachloroethene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	0.0077 (0.0022)	0.0123 (0.0023)
Toluene	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	0.0675 (0.0022)	0.0703 (0.0023)
1,1,1-Trichloroethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)
Trichloroethene	0.129	0.0319 (0.0026)	0.0445 (0.0022)	0.567 (0.114)	0.798 (0.0967)	3.39 (0.309)	U (0.0023)	0.0043 J (0.0022)	U (0.0022)	U (0.0023)	11.9 (0.224)	18.1 (0.216)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0026)	U (0.0022)	0.0033 (0.0021)	0.0044 (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	0.463 (0.224)	0.382 J (0.216)
Xylenes (total)	NE	U (0.0026)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0023)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-28	DP-28	DP-28	DP-29	DP-29	DP-29	DP-29	DP-30	DP-30	DP-30	DP-30
Ramboll Environ Sample ID		DP-28 (12.0 FT) - 062014	DP-28 (17.0 FT) - 062014	DP-28 (20.5 FT) - 062014	DP-29 (3.0 FT) - 062014	DP-29 (9.0 FT) - 062014	DP-29 (14.5 FT) - 062014	DP-29 (20.5 FT) - 062014	DP-30 (4.5 FT) - 062014	DP-30 (8.0 FT) - 062014	DP-30 (13.5 FT) - 062014	DP-30 (22.0 FT) - 062014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		12	17	20.5	3	9	14.5	20.5	4.5	8	13.5	22
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/24/2014	06/24/2014	06/24/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014
Volatile Organic Compounds												
Acetone	NE	U (0.009)	U (0.0099)	U (0.0086)	0.0506 (0.0089)	U (0.0095)	0.0095 (0.0091)	U (0.0094)	0.0097 (0.0087)	0.0155 (0.009)	U (0.0088)	U (0.0086)
Benzene	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	0.0026 J (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Bromoform	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Bromomethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
2-Butanone	NE	U (0.0045)	U (0.0049)	U (0.0043)	U (0.0045)	U (0.0047)	U (0.0045)	U (0.0047)	U (0.0044)	U (0.0045)	U (0.0044)	U (0.0043)
Carbon Disulfide	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	0.0028 J (0.0022)	U (0.0022)
Carbon Tetrachloride	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.0052 (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Chlorobenzene	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Chloroethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Chloroform	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.0258 (0.0022)	0.0329 (0.0024)	0.0062 (0.0023)	U (0.0023)	U (0.0022)	0.0039 (0.0022)	0.0067 (0.0022)	U (0.0022)
Chloromethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Dibromochloromethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
1,1-Dichloroethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
1,2-Dichloroethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
1,1-Dichloroethene	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.11 (0.0022)	0.0948 (0.0024)	0.0341 (0.0023)	0.0097 (0.0023)	0.0046 (0.0022)	0.064 (0.0022)	0.0945 (0.0022)	0.0024 J (0.0022)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.04 (0.0023)	0.0432 (0.0025)	0.0049 (0.002)	18.5 (1.14)	0.169 (0.0024)	0.0284 (0.0023)	0.0231 (0.0023)	0.531 (0.241)	2.23 (0.228)	2.01 J (1.1)	0.015 (0.0022)
trans-1,2-Dichloroethene	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.24 (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	0.0139 (0.0022)	0.017 (0.0022)	U (0.0022)
1,2-Dichloropropane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
1,3-Dichloropropene (total)	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
cis-1,3-Dichloropropene	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
trans-1,3-Dichloropropene	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Ethyl Benzene	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
2-Hexanone	NE	U (0.009)	U (0.0099)	U (0.0086)	U (0.0089)	U (0.0095)	U (0.0091)	U (0.0094)	U (0.0087)	U (0.009)	U (0.0088)	U (0.0086)
4-Methyl-2-pentanone	NE	U (0.0045)	U (0.0049)	U (0.0043)	U (0.0045)	U (0.0047)	U (0.0045)	U (0.0047)	U (0.0044)	U (0.0045)	U (0.0044)	U (0.0043)
Methylene Chloride	NE	0.0277 (0.0023)	U (0.0025)	U (0.0021)	U (1.14)	1.21 (1.09)	0.0575 (0.0023)	0.0046 (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Styrene	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
1,1,2,2-Tetrachloroethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
Tetrachloroethene	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.11 (0.0022)	0.008 (0.0024)	0.0033 (0.0023)	U (0.0023)	0.0059 (0.0022)	0.0167 (0.0022)	0.0152 (0.0022)	U (0.0022)
Toluene	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.026 (0.0022)	0.0044 J (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	0.0037 (0.0022)	0.0048 (0.0022)	U (0.0022)
1,1,1-Trichloroethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)
1,1,2-Trichloroethane	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.0155 (0.0022)	0.0107 (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	0.0024 J (0.0022)	U (0.0022)
Trichloroethene	0.129	3.59 (0.26)	1.59 (0.305)	0.0853 (0.002)	135 (1.14)	87.4 (1.09)	20.7 (0.205)	1.74 (0.253)	4.03 (0.241)	21.4 (0.228)	55.2 (1.1)	1.62 (0.225)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0023)	U (0.0025)	U (0.0021)	U (1.14)	0.0601 (0.0024)	0.0062 (0.0023)	U (0.0023)	0.113 (0.0022)	0.404 (0.228)	U (1.1)	0.0025 J (0.0022)
Xylenes (total)	NE	U (0.0023)	U (0.0025)	U (0.0021)	0.0069 (0.0022)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0022)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

RAMBOLL ENVIRON

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-30	DP-31	DP-31	DP-31	DP-31	DP-31	DP-31	DP-32	DP-32	DP-32	DP-32
Ramboll Environ Sample ID		DP-30 (22.0 FT) - 062014-DUP	DP-31 (3.0 FT) - 062014	DP-31 (9.5 FT) - 062014	DP-31 (12.0 FT) - 062014	DP-31 (22.0 FT) - 062014	DP-31 (22.0 FT) - 062014 - DUP	DP-31 (27.0 FT) - 062014	DP-32 (4.5 FT) - 062014	DP-32 (9.5 FT) - 062014	DP-32 (12.0 FT) - 062014	DP-32 (22.5 FT) - 062014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		22	3	9.5	12	22	22	27	4.5	9.5	12	22.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/25/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0088)	0.0163 (0.0098)	0.014 (0.0088)	0.0148 J (0.0087)	U (0.0074)	U (0.0074)	0.0108 (0.0085)	0.0163 (0.0091)	0.0316 (0.0088)	0.02 (0.0099)	U (0.0094)
Benzene	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Bromoform	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Bromomethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
2-Butanone	NE	U (0.0044)	U (0.0049)	U (0.0044)	U (0.0044)	U (0.0037)	U (0.0037)	U (0.0043)	U (0.0045)	U (0.0044)	0.0057 J (0.005)	U (0.0047)
Carbon Disulfide	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Carbon Tetrachloride	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Chlorobenzene	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Chloroethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Chloroform	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Chloromethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Dibromochloromethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
1,1-Dichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	0.0034 (0.0022)	0.0028 J (0.0025)	U (0.0023)
1,2-Dichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
1,1-Dichloroethene	NE	U (0.0022)	U (0.0025)	0.0143 (0.0022)	0.0175 (0.0022)	0.0147 (0.0019)	0.0134 (0.0018)	0.0025 (0.0021)	0.0137 (0.0023)	0.0441 (0.0022)	0.033 (0.0025)	0.0118 (0.0023)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0104 (0.0022)	0.181 (0.0025)	1.33 (0.218)	1.68 (0.427)	0.0453 (0.0019)	0.0444 (0.0018)	0.0047 (0.0021)	2.62 (0.238)	6.16 (1.13)	5.01 (0.233)	0.628 (0.23)
trans-1,2-Dichloroethene	NE	U (0.0022)	U (0.0025)	0.0079 (0.0022)	0.0091 (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	0.0044 (0.0023)	0.0144 (0.0022)	0.0229 (0.0025)	0.0029 (0.0023)
1,2-Dichloropropane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Ethyl Benzene	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
2-Hexanone	NE	U (0.0088)	U (0.0098)	U (0.0088)	U (0.0087)	U (0.0074)	U (0.0074)	U (0.0085)	U (0.0091)	U (0.0088)	U (0.0099)	U (0.0094)
4-Methyl-2-pentanone	NE	U (0.0044)	U (0.0049)	U (0.0044)	U (0.0044)	U (0.0037)	U (0.0037)	U (0.0043)	U (0.0045)	U (0.0044)	U (0.005)	U (0.0047)
Methylene Chloride	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Styrene	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Tetrachloroethene	NE	U (0.0022)	U (0.0025)	0.0199 (0.0022)	0.0291 (0.0022)	0.0024 J (0.0019)	0.0029 J (0.0018)	U (0.0021)	0.031 (0.0023)	0.0101 (0.0022)	0.0062 (0.0025)	U (0.0023)
Toluene	NE	U (0.0022)	U (0.0025)	0.0026 (0.0022)	0.0033 J (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	0.0044 (0.0023)	0.0046 (0.0022)	0.0033 J (0.0025)	U (0.0023)
1,1,1-Trichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	0.0171 (0.0019)	0.0176 (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)
Trichloroethene	0.129	1.66 (0.122)	0.698 (0.134)	20.6 (0.218)	22 (0.427)	7.59 (0.224)	7.05 (0.2)	3.02 (0.223)	6.66 (0.238)	36 (1.13)	28.3 (1.17)	7.4 (0.23)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0022)	0.127 (0.0025)	0.0293 (0.0022)	0.0586 (0.0022)	0.0123 (0.0019)	0.0132 (0.0018)	U (0.0021)	0.291 (0.238)	U (1.13)	1.2 (0.233)	0.126 (0.0023)
Xylenes (total)	NE	U (0.0022)	U (0.0025)	U (0.0022)	U (0.0022)	U (0.0019)	U (0.0018)	U (0.0021)	U (0.0023)	U (0.0022)	U (0.0025)	U (0.0023)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-32	DP-32	DP-33	DP-33	DP-33	DP-33	DP-33	DP-34	DP-34	DP-34	DP-34
Ramboll Environ Sample ID		DP-32 (27.0 FT) - 062014	DP-32 (27.0 FT) - 062014 - DUP	DP-33 (2.0 FT) - 062014	DP-33 (5.5 FT) - 062014	DP-33 (11.5 FT) - 062014	DP-33 (21.5 FT) - 062014	DP-33 (21.5 FT) - 062014-DUP	DP-34 (10.0 FT) - 062014	DP-34 (14.5 FT) - 062014	DP-34 (17.0 FT) - 062014	DP-34 (21.0 FT) - 062014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		27	27	2	5.5	11.5	21.5	21.5	10	14.5	17	21
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/26/2014	06/26/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/27/2014	06/27/2014	06/27/2014	06/27/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0082)	U (0.0093)	0.028 (0.0092)	U (0.0093)	U (0.0081)	U (0.0088)	U (0.0092)	U (0.0089)	U (0.0087)	U (0.0089)	U (0.0093)
Benzene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Bromoform	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Bromomethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
2-Butanone	NE	U (0.0041)	U (0.0047)	U (0.0046)	U (0.0047)	U (0.004)	U (0.0044)	U (0.0046)	U (0.0044)	U (0.0044)	U (0.0045)	U (0.0047)
Carbon Disulfide	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Carbon Tetrachloride	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Chlorobenzene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Chloroethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Chloroform	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Chloromethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Dibromochloromethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,1-Dichloroethane	NE	U (0.002)	U (0.0023)	0.0032 (0.0023)	0.0051 (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,2-Dichloroethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,1-Dichloroethene	NE	U (0.002)	U (0.0023)	0.0062 (0.0023)	0.0123 (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	0.016 (0.0022)	0.0237 (0.0022)	0.0032 J (0.0023)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0045 (0.0023)	0.0064 (0.0023)	0.853 (0.122)	1.41 (0.217)	0.038 (0.002)	0.0045 (0.0021)	0.0043 J (0.0022)	U (0.0023)	0.0131 (0.0022)	0.0331 (0.0022)	0.0116 (0.0023)
trans-1,2-Dichloroethene	NE	U (0.002)	U (0.0023)	0.0033 (0.0023)	0.0178 (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,2-Dichloropropane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Ethyl Benzene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
2-Hexanone	NE	U (0.0082)	U (0.0093)	U (0.0092)	U (0.0093)	U (0.0081)	U (0.0088)	U (0.0092)	U (0.0089)	U (0.0087)	U (0.0089)	U (0.0093)
4-Methyl-2-pentanone	NE	U (0.0041)	U (0.0047)	U (0.0046)	U (0.0047)	U (0.004)	U (0.0044)	U (0.0046)	U (0.0044)	U (0.0044)	U (0.0045)	U (0.0047)
Methylene Chloride	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Styrene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Tetrachloroethene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Toluene	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,1,1-Trichloroethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Trichloroethene	0.129	0.0948 (0.0023)	0.108 (0.0023)	1.08 (0.122)	3.14 (0.217)	0.205 (0.002)	0.0867 (0.0021)	0.0959 (0.0022)	0.0354 (0.0023)	1.52 (0.114)	3.48 (0.229)	0.872 (0.117)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0023)	U (0.0023)	0.0042 (0.0023)	0.0044 J (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)
Xylenes (total)	NE	U (0.002)	U (0.0023)	U (0.0023)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0022)	U (0.0023)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-34	DP-34	DP-35	DP-35	DP-35	DP-35	DP-36	DP-36	DP-36	DP-36	DP-36
Ramboll Environ Sample ID		DP-34 (21.0 FT) - 062014 - DUP	DP-34 (25.0 FT) - 062014	DP-35 (8.0 FT) - 062014	DP-35 (13.0 FT) - 062014	DP-35 (17.0 FT) - 062014	DP-35 (21.5 FT) - 062014	DP-36 (6.5 FT) - 062014	DP-36 (14.0 FT) - 062014	DP-36 (19.5 FT) - 062014	DP-36 (21.5 FT) - 062014	DP-36 (21.5 FT) - 062014 - DUP
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		21	25	8	13	17	21.5	6.5	14	19.5	21.5	21.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/27/2014	06/27/2014	06/25/2014	06/25/2014	06/25/2014	06/25/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014
Volatile Organic Compounds												
Acetone	NE	U (0.009)	U (0.009)	0.0121 (0.0089)	0.0095 (0.0085)	U (0.0087)	U (0.0074)	U (0.0092)	U (0.0083)	U (0.0086)	U (0.0092)	U (0.0083)
Benzene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Bromoform	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Bromomethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
2-Butanone	NE	U (0.0045)	U (0.0045)	U (0.0044)	U (0.0043)	U (0.0043)	0.004 J (0.0037)	U (0.0046)	U (0.0042)	U (0.0043)	U (0.0046)	U (0.0041)
Carbon Disulfide	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Carbon Tetrachloride	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Chlorobenzene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Chloroethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Chloroform	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Chloromethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Dibromochloromethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
1,1-Dichloroethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
1,2-Dichloroethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
1,1-Dichloroethene	NE	0.0077 (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	0.0032 J (0.0022)	0.0049 (0.0019)	U (0.0023)	U (0.0021)	0.012 (0.0022)	0.0031 J (0.0023)	0.0047 (0.0021)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0185 (0.0023)	0.006 (0.0022)	U (0.0024)	U (0.0023)	0.0206 (0.0022)	0.014 (0.0019)	0.0029 (0.0023)	0.0058 (0.0021)	0.18 (0.0022)	0.0315 (0.0023)	0.0305 (0.0021)
trans-1,2-Dichloroethene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	0.0041 J (0.0022)	0.0049 (0.0023)	0.004 J (0.0021)
1,2-Dichloropropane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
1,3-Dichloropropene (total)	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
cis-1,3-Dichloropropene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
trans-1,3-Dichloropropene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Ethyl Benzene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
2-Hexanone	NE	U (0.009)	U (0.009)	U (0.0089)	U (0.0085)	U (0.0087)	U (0.0074)	U (0.0092)	U (0.0083)	U (0.0086)	U (0.0092)	U (0.0083)
4-Methyl-2-pentanone	NE	U (0.0045)	U (0.0045)	U (0.0044)	U (0.0043)	U (0.0043)	U (0.0037)	U (0.0046)	U (0.0042)	U (0.0043)	U (0.0046)	U (0.0041)
Methylene Chloride	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Styrene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
1,1,2,2-Tetrachloroethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Tetrachloroethene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	0.0036 J (0.0022)	U (0.0023)	U (0.0021)
Toluene	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
1,1,1-Trichloroethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	0.011 (0.0022)	0.0027 J (0.0023)	0.0026 J (0.0021)
1,1,2-Trichloroethane	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)
Trichloroethene	0.129	1.04 (0.229)	2.08 (0.158)	0.038 (0.0024)	0.121 (0.0023)	2.03 (0.218)	2.14 (0.2)	U (0.0022)	0.98 (0.104)	8.79 (0.201)	4.7 (0.243)	4.14 (0.212)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	0.0024 J (0.0019)	U (0.0023)	U (0.0021)	0.0514 (0.0022)	0.0058 (0.0023)	0.0064 (0.0021)
Xylenes (total)	NE	U (0.0023)	U (0.0022)	U (0.0022)	U (0.0021)	U (0.0022)	U (0.0019)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0023)	U (0.0021)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

RAMBOLL ENVIRON

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-36	DP-37	DP-37	DP-37	DP-37	DP-37	DP-38	DP-38	DP-38	DP-38	DP-38
Ramboll Environ Sample ID		DP-36 (25.5 FT) - 062014	DP-37 (7.5 FT) - 062014	DP-37 (14.0 FT) - 062014	DP-37 (19.5 FT) - 062014	DP-37 (24.5 FT) - 062014	DP-37 (24.5 FT) - 062014 - DUP	DP-38 (5.0 FT) - 082014	DP-38 (14.5 FT) - 082014	DP-38 (18.0 FT) - 082014	DP-38 (22.0 FT) - 082014	DP-38 (25.0 FT) - 082014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		25.5	7.5	14	19.5	24.5	24.5	5	14.5	18	22	25
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	06/26/2014	08/05/2014	08/05/2014	08/05/2014	08/05/2014	08/05/2014
Volatile Organic Compounds												
Acetone	NE	0.0095 (0.0088)	U (0.0086)	0.0143 (0.0086)	U (0.0086)	U (0.0125)	U (0.0083)	U (0.0107)	U (0.0093)	U (0.0086)	U (0.009)	U (0.0086)
Benzene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Bromoform	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Bromomethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
2-Butanone	NE	U (0.0044)	U (0.0043)	U (0.0043)	U (0.0043)	U (0.0062)	U (0.0041)	U (0.0054)	U (0.0047)	U (0.0043)	U (0.0045)	U (0.0043)
Carbon Disulfide	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Carbon Tetrachloride	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Chlorobenzene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Chloroethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Chloroform	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Chloromethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Dibromochloromethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,1-Dichloroethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,2-Dichloroethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,1-Dichloroethene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0026 (0.0022)	0.0039 (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	0.0195 (0.0023)	0.0042 J (0.0021)	U (0.0022)	U (0.0022)
trans-1,2-Dichloroethene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,2-Dichloropropane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,3-Dichloropropene (total)	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
cis-1,3-Dichloropropene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
trans-1,3-Dichloropropene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Ethyl Benzene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
2-Hexanone	NE	U (0.0088)	U (0.0086)	U (0.0086)	U (0.0086)	U (0.0125)	U (0.0083)	U (0.0107)	U (0.0093)	U (0.0086)	U (0.009)	U (0.0086)
4-Methyl-2-pentanone	NE	U (0.0044)	U (0.0043)	U (0.0043)	U (0.0043)	U (0.0062)	U (0.0041)	U (0.0054)	U (0.0047)	U (0.0043)	U (0.0045)	U (0.0043)
Methylene Chloride	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Styrene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,1,2,2-Tetrachloroethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Tetrachloroethene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Toluene	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,1,1-Trichloroethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
1,1,2-Trichloroethane	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Trichloroethene	0.129	<u>1.18 (0.118)</u>	U (0.0021)	U (0.0021)	0.0472 (0.0023)	0.0099 (0.0022)	0.0288 (0.0024)	U (0.0027)	0.0224 (0.0023)	0.0037 J (0.0021)	U (0.0022)	U (0.0022)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)
Xylenes (total)	NE	U (0.0022)	U (0.0021)	U (0.0021)	U (0.0022)	U (0.0031)	U (0.0021)	U (0.0027)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0022)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are <u>double underlined</u>.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality

VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-39	DP-39	DP-39	DP-39	DP-39	DP-39	DP-40	DP-40	DP-40	DP-41	DP-41
Ramboll Environ Sample ID		DP-39 (4.0 FT) - 082014	DP-39 (7.0 FT) - 082014	DP-39 (7.0 FT) - 082014-DUP	DP-39 (16.5 FT) - 082014	DP-39 (23.5 FT) - 082014	DP-39 (28.0 FT) - 082014	DP-40 (4.0 FT) - 082014	DP-40 (11.0 FT) - 082014	DP-40 (14.5 FT) - 082014	DP-41 (4.0 FT) - 082014	DP-41 (10.0 FT) - 082014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		4	7	7	16.5	23.5	28	4	11	14.5	4	10
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		08/06/2014	08/06/2014	08/06/2014	08/06/2014	08/06/2014	08/06/2014	08/07/2014	08/07/2014	08/07/2014	08/08/2014	08/08/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0108)	U (0.0089)	U (0.0091)	U (0.0088)	U (0.0083)	U (0.0099)	U (0.0097)	U (0.0089)	U (0.0097)	U (0.012)	U (0.0091)
Benzene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Bromoform	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Bromomethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	0.0031 J (0.003)	U (0.0023)
2-Butanone	NE	U (0.0054)	U (0.0044)	U (0.0046)	U (0.0044)	U (0.0042)	U (0.005)	U (0.0049)	U (0.0044)	U (0.0048)	U (0.006)	U (0.0046)
Carbon Disulfide	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Carbon Tetrachloride	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Chlorobenzene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Chloroethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Chloroform	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Chloromethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Dibromochloromethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,1-Dichloroethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,2-Dichloroethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,1-Dichloroethene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
trans-1,2-Dichloroethene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,2-Dichloropropane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Ethyl Benzene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
2-Hexanone	NE	U (0.0108)	U (0.0089)	U (0.0091)	U (0.0088)	U (0.0083)	U (0.0099)	U (0.0097)	U (0.0089)	U (0.0097)	U (0.012)	U (0.0091)
4-Methyl-2-pentanone	NE	U (0.0054)	U (0.0044)	U (0.0046)	U (0.0044)	U (0.0042)	U (0.005)	U (0.0049)	U (0.0044)	U (0.0048)	U (0.006)	U (0.0046)
Methylene Chloride	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Styrene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Tetrachloroethene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Toluene	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,1,1-Trichloroethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Trichloroethene	0.129	0.0032 J (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	0.0022 J (0.0021)	0.007 (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)
Xylenes (total)	NE	U (0.0027)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0021)	U (0.0025)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.003)	U (0.0023)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

RAMBOLL ENVIRON

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-41	DP-42	DP-42	DP-42	DP-43	DP-43	DP-43	DP-44	DP-44	DP-44	DP-44
Ramboll Environ Sample ID		DP-41 (14.0 FT) - 082014	DP-42 (4.0 FT) - 082014	DP-42 (8-0 FT) - 082014	DP-42 (12.0 FT) - 082014	DP-43-SL (4.0 FT) - 20140811	DP-43-SL (10.0 FT) - 20140811	DP-43-SL (19.0 FT) - 20140811	DP-44-SL (4.0 FT) - 20140811	DP-44-SL (11.0 FT) - 20140811	DP-44-SL (18.0 FT) - 20140811	DP-44-SL (21.5 FT) - 20140811
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		14	4	8	12	4	10	19	4	11	18	21.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		08/08/2014	08/08/2014	08/08/2014	08/08/2014	08/11/2014	08/11/2014	08/11/2014	08/11/2014	08/11/2014	08/11/2014	08/11/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0091)	U (0.0098)	U (0.0092)	U (0.0086)	U (0.0121)	U (0.0089)	U (0.0084)	U (0.0117)	U (0.0092)	U (0.0098)	U (0.0102)
Benzene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Bromoform	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Bromomethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
2-Butanone	NE	U (0.0045)	U (0.0049)	U (0.0046)	U (0.0043)	U (0.0061)	U (0.0044)	U (0.0042)	U (0.0058)	U (0.0046)	U (0.0049)	U (0.0051)
Carbon Disulfide	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Carbon Tetrachloride	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Chlorobenzene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Chloroethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Chloroform	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Chloromethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Dibromochloromethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,1-Dichloroethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,2-Dichloroethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,1-Dichloroethene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
trans-1,2-Dichloroethene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,2-Dichloropropane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,3-Dichloropropene (total)	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
cis-1,3-Dichloropropene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
trans-1,3-Dichloropropene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Ethyl Benzene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
2-Hexanone	NE	U (0.0091)	U (0.0098)	U (0.0092)	U (0.0086)	U (0.0121)	U (0.0089)	U (0.0084)	U (0.0117)	U (0.0092)	U (0.0098)	U (0.0102)
4-Methyl-2-pentanone	NE	U (0.0045)	U (0.0049)	U (0.0046)	U (0.0043)	U (0.0061)	U (0.0044)	U (0.0042)	U (0.0058)	U (0.0046)	U (0.0049)	U (0.0051)
Methylene Chloride	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	0.0033 J (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Styrene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,1,2,2-Tetrachloroethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Tetrachloroethene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Toluene	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,1,1-Trichloroethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
1,1,2-Trichloroethane	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Trichloroethene	0.129	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)
Xylenes (total)	NE	U (0.0023)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.003)	U (0.0022)	U (0.0021)	U (0.0029)	U (0.0023)	U (0.0024)	U (0.0026)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

RAMBOLL ENVIRON

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-45	DP-45	DP-45	DP-46	DP-46	DP-46	DP-47	DP-47	DP-48	DP-48	DP-49
Ramboll Environ Sample ID		DP-45-SL (4.0 FT) - 20140811	DP-45-SL (12.0 FT) - 20140811	DP-45-SL (18.0 FT) - 20140811	DP-46-SL (4.5 FT) - 20140812	DP-46-SL (13.5 FT) - 20140812	DP-46-SL (18.0 FT) - 20140812	DP-47-SL (5.0 FT) - 20140812	DP-47-SL (22.0 FT) - 20140812	DP-48-SL (4.0 FT)- 20140814	DP-48-SL (11.5 FT)- 20140814	DP-49-SL (4.0 FT)- 20140814
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		4	12	18	4.5	13.5	18	5	22	4	11.5	4
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		08/11/2014	08/11/2014	08/11/2014	08/12/2014	08/12/2014	08/12/2014	08/12/2014	08/12/2014	08/14/2014	08/14/2014	08/14/2014
Volatile Organic Compounds												
Acetone	NE	0.0371 (0.0089)	U (0.0098)	U (0.009)	U (0.0105)	U (0.0083)	U (0.0083)	U (0.0101)	U (0.0087)	0.0153 J (0.0092)	0.0093 J (0.0086)	0.0154 J (0.0097)
Benzene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Bromoform	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Bromomethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
2-Butanone	NE	U (0.0044)	U (0.0049)	U (0.0045)	U (0.0052)	U (0.0042)	U (0.0042)	U (0.005)	U (0.0043)	U (0.0046)	U (0.0043)	U (0.0048)
Carbon Disulfide	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Carbon Tetrachloride	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Chlorobenzene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Chloroethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Chloroform	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Chloromethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Dibromochloromethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,1-Dichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,2-Dichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,1-Dichloroethene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
trans-1,2-Dichloroethene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,2-Dichloropropane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,3-Dichloropropene (total)	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
cis-1,3-Dichloropropene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
trans-1,3-Dichloropropene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Ethyl Benzene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
2-Hexanone	NE	U (0.0089)	U (0.0098)	U (0.009)	U (0.0105)	U (0.0083)	U (0.0083)	U (0.0101)	U (0.0087)	U (0.0092)	U (0.0086)	U (0.0097)
4-Methyl-2-pentanone	NE	U (0.0044)	U (0.0049)	U (0.0045)	U (0.0052)	U (0.0042)	U (0.0042)	U (0.005)	U (0.0043)	U (0.0046)	U (0.0043)	U (0.0048)
Methylene Chloride	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Styrene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,1,2,2-Tetrachloroethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Tetrachloroethene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Toluene	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,1,1-Trichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
1,1,2-Trichloroethane	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Trichloroethene	0.129	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)
Xylenes (total)	NE	U (0.0022)	U (0.0025)	U (0.0023)	U (0.0026)	U (0.0021)	U (0.0021)	U (0.0025)	U (0.0022)	U (0.0023)	U (0.0022)	U (0.0024)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected

J = Estimated concentration

B = Analyte found in associated blank

( ) = Method detection limit

RADD = Remedial action decision document

ADEQ = Arkansas Department of Environmental Quality

VOC = Volatile organic compounds

mg/kg -- miligram per kilogram

NE = Not established

NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-49	DP-49	DP-50	DP-50	DP-51	DP-51	DP-52	DP-52	DP-53	DP-53	DP-54
Ramboll Environ Sample ID		DP-49-SL (10.0 FT)-20140814	DP-49-SL (13.0 FT)-20140814	DP-50-SL (4.0 FT)-20140814	DP-50-SL (10.0 FT)-20140814	DP-51-SL (1.0 FT) -20140818	DP-51-SL (14.0 FT) -20140818	DP-52-SL (4.0 FT) -20140818	DP-52-SL (11.0 FT) -20140818	DP-53-SL (1.0 FT) -20140818	DP-53-SL (8.5 FT) -20140818	DP-54-SL (3.0 FT) -20140819
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		10	13	4	10	1	14	4	11	1	8.5	3
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		08/14/2014	08/14/2014	08/14/2014	08/14/2014	08/18/2014	08/18/2014	08/18/2014	08/18/2014	08/18/2014	08/18/2014	08/19/2014
Volatile Organic Compounds												
Acetone	NE	0.0123 J (0.0087)	0.0142 J (0.0113)	U (0.0092)	U (0.0079)	0.0414 (0.0098)	U (0.0079)	0.0202 (0.0093)	0.0094 J (0.0082)	0.0587 (0.009)	0.0101 J (0.0089)	U (0.0094)
Benzene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Bromoform	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Bromomethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	0.0081 (0.002)	0.0093 (0.0023)	U (0.002)	0.0093 (0.0022)	U (0.0022)	U (0.0024)
2-Butanone	NE	U (0.0043)	U (0.0056)	U (0.0046)	U (0.004)	U (0.0049)	U (0.004)	U (0.0046)	U (0.0041)	0.0063 J (0.0045)	U (0.0044)	U (0.0047)
Carbon Disulfide	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Carbon Tetrachloride	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Chlorobenzene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Chloroethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Chloroform	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Chloromethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Dibromochloromethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,1-Dichloroethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,2-Dichloroethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,1-Dichloroethene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
trans-1,2-Dichloroethene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,2-Dichloropropane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,3-Dichloropropene (total)	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
cis-1,3-Dichloropropene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
trans-1,3-Dichloropropene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Ethyl Benzene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
2-Hexanone	NE	U (0.0087)	U (0.0113)	U (0.0092)	U (0.0079)	U (0.0098)	U (0.0079)	U (0.0093)	U (0.0082)	U (0.009)	U (0.0089)	U (0.0094)
4-Methyl-2-pentanone	NE	U (0.0043)	U (0.0056)	U (0.0046)	U (0.004)	U (0.0049)	U (0.004)	U (0.0046)	U (0.0041)	U (0.0045)	U (0.0044)	U (0.0047)
Methylene Chloride	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Styrene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,1,2,2-Tetrachloroethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Tetrachloroethene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Toluene	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,1,1-Trichloroethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
1,1,2-Trichloroethane	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Trichloroethene	0.129	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	0.0501 (0.0024)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)
Xylenes (total)	NE	U (0.0022)	U (0.0028)	U (0.0023)	U (0.002)	U (0.0025)	U (0.002)	U (0.0023)	U (0.002)	U (0.0022)	U (0.0022)	U (0.0024)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-54	DP-55	DP-55	DP-55	DP-55	DP-55	DP-56	DP-56	DP-57	DP-57	DP-57
Ramboll Environ Sample ID		DP-54-SL (13.0 FT) - 20140819	DP-55-SL (4.0 FT) - 20140819	DP-55-SL (8.0 FT) - 20140819	DP-55-SL (13.0 FT) - 20140819	DP-55-SL (27.0 FT) - 20140819	DP-55-SL (31.0 FT) - 20140819	DP-56-SL (3.0 FT) - 20140819	DP-56-SL (11.0 FT) - 20140819	DP-57-SL (1.0 FT) - 20140825	DP-57-SL (20.5 FT) - 20140825	DP-57-SL (28.0 FT) - 20140825
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		13	4	8	13	27	31	3	11	1	20.5	28
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		08/19/2014	08/19/2014	08/19/2014	08/19/2014	08/19/2014	08/19/2014	08/19/2014	08/19/2014	08/25/2014	08/25/2014	08/25/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0091)	U (0.0094)	U (0.0098)	U (0.0094)	U (0.0085)	U (0.01)	U (0.0091)	U (0.0091)	U (0.0086)	U (0.0083)	U (0.0076)
Benzene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00056)	U (0.00054)	U (0.0005)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00055)	U (0.00053)	U (0.00049)
Bromoform	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0011)	U (0.001)	U (0.00095)
Bromomethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00081)	U (0.00078)	U (0.00072)
2-Butanone	NE	U (0.0045)	U (0.0047)	U (0.0049)	U (0.0047)	U (0.0043)	U (0.005)	U (0.0045)	U (0.0046)	U (0.0014)	U (0.0013)	U (0.0012)
Carbon Disulfide	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00069)	U (0.00067)	U (0.00061)
Carbon Tetrachloride	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00067)	U (0.00065)	U (0.0006)
Chlorobenzene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00057)	U (0.00055)	U (0.0005)
Chloroethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00081)	U (0.00079)	U (0.00073)
Chloroform	NE	U (0.0023)	0.0045 J (0.0023)	0.0052 (0.0025)	0.0024 J (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00055)	U (0.00053)	U (0.00049)
Chloromethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00069)	U (0.00067)	U (0.00061)
Dibromochloromethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00052)	U (0.00051)	U (0.00047)
1,1-Dichloroethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0007)	U (0.00068)	U (0.00063)
1,2-Dichloroethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00063)	U (0.00061)	U (0.00056)
1,1-Dichloroethene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0007)	U (0.00068)	U (0.00063)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0023)	0.0082 (0.0023)	0.0078 (0.0025)	0.0034 J (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	0.004 J (0.0023)	U (0.0011)	U (0.0011)	U (0.001)
trans-1,2-Dichloroethene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0006)	U (0.00058)	U (0.00054)
1,2-Dichloropropane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00043)	U (0.00042)	U (0.00038)
1,3-Dichloropropene (total)	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00048)	U (0.00047)	U (0.00043)
cis-1,3-Dichloropropene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00048)	U (0.00047)	U (0.00043)
trans-1,3-Dichloropropene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00048)	U (0.00047)	U (0.00043)
Ethyl Benzene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00051)	U (0.0005)	U (0.00046)
2-Hexanone	NE	U (0.0091)	U (0.0094)	U (0.0098)	U (0.0094)	U (0.0085)	U (0.01)	U (0.0091)	U (0.0091)	U (0.0013)	U (0.0012)	U (0.0011)
4-Methyl-2-pentanone	NE	U (0.0045)	U (0.0047)	U (0.0049)	U (0.0047)	U (0.0043)	U (0.005)	U (0.0045)	U (0.0046)	U (0.0011)	U (0.0011)	U (0.00099)
Methylene Chloride	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0026)	U (0.0025)	U (0.0023)
Styrene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0026)	U (0.0025)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00069)	U (0.00067)	U (0.00062)
Tetrachloroethene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00061)	U (0.00059)	U (0.00054)
Toluene	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0043)	U (0.0042)	U (0.0038)
1,1,1-Trichloroethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00064)	U (0.00062)	U (0.00057)
1,1,2-Trichloroethane	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00063)	U (0.00061)	U (0.00056)
Trichloroethene	0.129	0.0313 (0.0023)	0.6 (0.146)	0.973 (0.15)	0.388 (0.146)	0.0063 (0.0028)	0.0277 (0.0025)	U (0.0023)	0.0049 (0.0023)	U (0.00067)	U (0.00065)	U (0.0006)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.00072)	U (0.0007)	U (0.00064)
Xylenes (total)	NE	U (0.0023)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0021)	U (0.0025)	U (0.0023)	U (0.0023)	U (0.0017)	U (0.0016)	U (0.0015)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-58	DP-58	DP-59	DP-59	DP-60	DP-60	DP-60	DP-61	DP-61	DP-61	DP-62
Ramboll Environ Sample ID		DP-58-SL (1.0 FT) - 20140825	DP-58-SL (8.0 FT) - 20140825	DP-59-SL (1.0 FT) - 20140825	DP-59-SL (37.0 FT) - 20140825	DP-60-SL (1.0 FT) - 20140826	DP-60-SL (11.0 FT) - 20140826	DP-60-SL (26.0 FT) - 20140826	DP-61-SL (1.0 FT) - 20140826	DP-61-SL (4.0 FT) - 20140826	DP-61-SL (23.0 FT) - 20140826	DP-62-SL (1.0 FT) - 20140826
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		1	8	1	37	1	11	26	1	4	23	1
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		08/25/2014	08/25/2014	08/25/2014	08/25/2014	08/26/2014	08/26/2014	08/26/2014	08/26/2014	08/26/2014	08/26/2014	08/26/2014
Volatile Organic Compounds												
Acetone	NE	0.0623 (0.0083)	U (0.0083)	0.0516 (0.0095)	U (0.0088)	U (0.0089)	U (0.0087)	U (0.0086)	U (0.0086)	U (0.0091)	U (0.0083)	U (0.0096)
Benzene	NE	U (0.00054)	U (0.00054)	U (0.00062)	U (0.00057)	U (0.00058)	U (0.00057)	U (0.00056)	U (0.00056)	U (0.00059)	U (0.00054)	U (0.00062)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.00053)	U (0.00053)	U (0.00061)	U (0.00056)	U (0.00057)	U (0.00056)	U (0.00055)	U (0.00055)	U (0.00059)	U (0.00053)	U (0.00061)
Bromoform	NE	U (0.001)	U (0.001)	U (0.0012)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.001)	U (0.0012)
Bromomethane	NE	U (0.00078)	U (0.00078)	U (0.00089)	U (0.00082)	U (0.00084)	U (0.00082)	U (0.00081)	U (0.0008)	U (0.00086)	U (0.00078)	U (0.0009)
2-Butanone	NE	U (0.0013)	U (0.0013)	U (0.0015)	U (0.0014)	U (0.0014)	U (0.0014)	U (0.0014)	U (0.0014)	U (0.0015)	U (0.0013)	U (0.0015)
Carbon Disulfide	NE	U (0.00067)	U (0.00066)	U (0.00076)	U (0.0007)	U (0.00071)	U (0.0007)	U (0.00069)	U (0.00068)	U (0.00073)	U (0.00066)	U (0.00077)
Carbon Tetrachloride	NE	U (0.00065)	U (0.00065)	U (0.00074)	U (0.00068)	U (0.00069)	U (0.00068)	U (0.00067)	U (0.00067)	U (0.00071)	U (0.00065)	U (0.00075)
Chlorobenzene	NE	U (0.00055)	U (0.00055)	U (0.00063)	U (0.00058)	U (0.00059)	U (0.00057)	U (0.00057)	U (0.00056)	U (0.0006)	U (0.00055)	U (0.00063)
Chloroethane	NE	U (0.00079)	U (0.00079)	U (0.0009)	U (0.00083)	U (0.00085)	U (0.00083)	U (0.00082)	U (0.00081)	U (0.00087)	U (0.00079)	U (0.00091)
Chloroform	NE	U (0.00053)	U (0.00053)	U (0.00061)	U (0.00056)	U (0.00057)	U (0.00056)	U (0.00055)	U (0.00055)	U (0.00059)	U (0.00053)	U (0.00061)
Chloromethane	NE	U (0.00067)	U (0.00066)	U (0.00076)	U (0.0007)	U (0.00071)	U (0.0007)	U (0.00069)	U (0.00068)	U (0.00073)	U (0.00066)	U (0.00077)
Dibromochloromethane	NE	U (0.00051)	U (0.00051)	U (0.00058)	U (0.00054)	U (0.00054)	U (0.00053)	U (0.00052)	U (0.00052)	U (0.00056)	U (0.0005)	U (0.00059)
1,1-Dichloroethane	NE	U (0.00068)	U (0.00068)	U (0.00078)	U (0.00072)	U (0.00073)	U (0.00071)	U (0.0007)	U (0.0007)	U (0.00075)	U (0.00068)	U (0.00079)
1,2-Dichloroethane	NE	U (0.00061)	U (0.00061)	U (0.00069)	U (0.00064)	U (0.00065)	U (0.00064)	U (0.00063)	U (0.00062)	U (0.00067)	U (0.0006)	U (0.0007)
1,1-Dichloroethene	NE	U (0.00068)	U (0.00068)	U (0.00078)	U (0.00072)	U (0.00073)	U (0.00071)	U (0.0007)	U (0.0007)	U (0.00075)	U (0.00068)	U (0.00079)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0011)	U (0.0011)	U (0.0013)	U (0.0012)	U (0.0012)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0012)	U (0.0011)	U (0.0013)
trans-1,2-Dichloroethene	NE	U (0.00058)	U (0.00058)	U (0.00066)	U (0.00061)	U (0.00062)	U (0.00061)	U (0.0006)	U (0.0006)	U (0.00064)	U (0.00058)	U (0.00067)
1,2-Dichloropropane	NE	U (0.00042)	U (0.00042)	U (0.00047)	U (0.00044)	U (0.00045)	U (0.00044)	U (0.00043)	U (0.00043)	U (0.00046)	U (0.00041)	U (0.00048)
1,3-Dichloropropene (total)	NE	U (0.00047)	U (0.00047)	U (0.00053)	U (0.00049)	U (0.0005)	U (0.00049)	U (0.00048)	U (0.00048)	U (0.00051)	U (0.00046)	U (0.00054)
cis-1,3-Dichloropropene	NE	U (0.00047)	U (0.00047)	U (0.00053)	U (0.00049)	U (0.0005)	U (0.00049)	U (0.00048)	U (0.00048)	U (0.00051)	U (0.00046)	U (0.00054)
trans-1,3-Dichloropropene	NE	U (0.00047)	U (0.00047)	U (0.00053)	U (0.00049)	U (0.0005)	U (0.00049)	U (0.00048)	U (0.00048)	U (0.00051)	U (0.00046)	U (0.00054)
Ethyl Benzene	NE	U (0.0005)	U (0.0005)	U (0.00057)	U (0.00053)	U (0.00053)	U (0.00052)	U (0.00052)	U (0.00051)	U (0.00055)	U (0.0005)	U (0.00058)
2-Hexanone	NE	U (0.0013)	U (0.0012)	U (0.0014)	U (0.0013)	U (0.0013)	U (0.0013)	U (0.0013)	U (0.0013)	U (0.0014)	U (0.0012)	U (0.0014)
4-Methyl-2-pentanone	NE	U (0.0011)	U (0.0011)	U (0.0012)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0011)	U (0.0012)	U (0.0011)	U (0.0012)
Methylene Chloride	NE	U (0.0025)	U (0.0025)	U (0.0028)	U (0.0026)	U (0.0027)	U (0.0026)	U (0.0026)	U (0.0026)	U (0.0027)	U (0.0025)	U (0.0029)
Styrene	NE	U (0.0025)	U (0.0025)	U (0.0028)	U (0.0026)	U (0.0027)	U (0.0026)	U (0.0026)	U (0.0026)	U (0.0027)	U (0.0025)	U (0.0029)
1,1,2,2-Tetrachloroethane	NE	U (0.00068)	U (0.00067)	U (0.00077)	U (0.00071)	U (0.00072)	U (0.00071)	U (0.0007)	U (0.00069)	U (0.00074)	U (0.00067)	U (0.00078)
Tetrachloroethene	NE	U (0.00059)	U (0.00059)	U (0.00067)	U (0.00062)	U (0.00063)	U (0.00062)	U (0.00061)	U (0.00061)	U (0.00065)	U (0.00059)	U (0.00068)
Toluene	NE	U (0.0042)	U (0.0042)	U (0.0047)	U (0.0044)	U (0.0045)	U (0.0044)	U (0.0043)	U (0.0043)	U (0.0046)	U (0.0041)	U (0.0048)
1,1,1-Trichloroethane	NE	U (0.00063)	U (0.00062)	U (0.00071)	U (0.00066)	U (0.00067)	U (0.00065)	U (0.00064)	U (0.00064)	U (0.00069)	U (0.00062)	U (0.00072)
1,1,2-Trichloroethane	NE	U (0.00061)	U (0.00061)	U (0.00069)	U (0.00064)	U (0.00065)	U (0.00064)	U (0.00063)	U (0.00062)	U (0.00067)	U (0.0006)	U (0.0007)
Trichloroethene	0.129	U (0.00065)	U (0.00065)	U (0.00074)	U (0.00068)	U (0.00069)	U (0.00068)	U (0.00067)	U (0.00067)	U (0.00071)	U (0.00065)	U (0.00075)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0007)	U (0.0007)	U (0.0008)	U (0.00074)	U (0.00075)	U (0.00073)	U (0.00072)	U (0.00072)	U (0.00077)	U (0.0007)	U (0.00081)
Xylenes (total)	NE	U (0.0016)	U (0.0016)	U (0.0018)	U (0.0017)	U (0.0017)	U (0.0017)	U (0.0017)	U (0.0017)	U (0.0018)	U (0.0016)	U (0.0019)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

RAMBOLL ENVIRON

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	DP-62	DP-63	DP-63	DP-64	DP-65	DP-65	DP-66	DP-67	MW-85	MW-85	MW-85
Ramboll Environ Sample ID		DP-62-SL (24.5 FT) - 20140826	DP-63-SL-5.5 FT-20141217	DP-63-SL-10.5 FT-20141217	DP-64-SL-14.5 FT-20141217	DP-65-SL-14.0 FT-20141217	DUP-01-SL-20141217	DP-66-SL-14.5 FT-20141218	DP-67-SL-14.5 FT-20141218	MW-85 (4.5-5.0 FT)	MW-85 (9.0-9.5 FT)	MW-85 (14.0-14.5 FT)
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		24.5	5.5	10.5	14.5	14	14	14.5	14.5	4.5 - 5	9 - 9.5	14 - 14.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method										Terra Core	Terra Core	Terra Core
Sample Date		08/26/2014	12/17/2014	12/17/2014	12/17/2014	12/17/2014	12/17/2014	12/18/2014	12/18/2014	05/21/2014	05/21/2014	05/21/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0084)	0.0156 J (0.0114)	0.0175 J (0.0105)	U (0.0089)	U (0.0098)	U (0.0096)	U (0.009)	U (0.0095)	U (0.486)	U (0.451)	U (0.516)
Benzene	NE	U (0.00054)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.00054)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Bromoform	NE	U (0.001)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Bromomethane	NE	U (0.00079)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	0.198 J (0.122)	0.186 J (0.113)	0.244 J (0.129)
2-Butanone	NE	U (0.0013)	U (0.0057)	U (0.0053)	U (0.0044)	U (0.0049)	U (0.0048)	U (0.0045)	U (0.0047)	U (0.243)	U (0.225)	U (0.258)
Carbon Disulfide	NE	U (0.00067)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Carbon Tetrachloride	NE	U (0.00065)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Chlorobenzene	NE	U (0.00055)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Chloroethane	NE	U (0.0008)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Chloroform	NE	U (0.00054)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Chloromethane	NE	U (0.00067)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Dibromochloromethane	NE	U (0.00051)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,1-Dichloroethane	NE	U (0.00069)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,2-Dichloroethane	NE	U (0.00061)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,1-Dichloroethene	NE	U (0.00069)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0011)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	0.133 J (0.122)	U (0.113)	U (0.129)
trans-1,2-Dichloroethene	NE	U (0.00059)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,2-Dichloropropane	NE	U (0.00042)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,3-Dichloropropene (total)	NE	U (0.00047)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
cis-1,3-Dichloropropene	NE	U (0.00047)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
trans-1,3-Dichloropropene	NE	U (0.00047)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Ethyl Benzene	NE	U (0.0005)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
2-Hexanone	NE	U (0.0013)	U (0.0114)	U (0.0105)	U (0.0089)	U (0.0098)	U (0.0096)	U (0.009)	U (0.0095)	U (0.486)	U (0.451)	U (0.516)
4-Methyl-2-pentanone	NE	U (0.0011)	U (0.0057)	U (0.0053)	U (0.0044)	U (0.0049)	U (0.0048)	U (0.0045)	U (0.0047)	U (0.243)	U (0.225)	U (0.258)
Methylene Chloride	NE	U (0.0025)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Styrene	NE	U (0.0025)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,1,2,2-Tetrachloroethane	NE	U (0.00068)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Tetrachloroethene	NE	U (0.00059)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Toluene	NE	U (0.0042)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,1,1-Trichloroethane	NE	U (0.00063)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
1,1,2-Trichloroethane	NE	U (0.00061)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Trichloroethene	0.129	U (0.00065)	U (0.0028)	U (0.0026)	0.0039 J (0.0022)	0.119 (0.0024)	0.112 (0.0024)	U (0.0022)	0.0025 J (0.0024)	2.93 (0.122)	8.59 (0.113)	9.99 (0.129)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0007)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)
Xylenes (total)	NE	U (0.0016)	U (0.0028)	U (0.0026)	U (0.0022)	U (0.0024)	U (0.0024)	U (0.0022)	U (0.0024)	U (0.122)	U (0.113)	U (0.129)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	MW-85	MW-85	MW-85	MW-86	MW-86	MW-86	MW-86	MW-86	MW-86	MW-87	MW-87
Ramboll Environ Sample ID		MW-85 (16.0-16.5 FT)	MW-85 (24.5-25.0 FT)	MW-85 (28.5-29.0 FT)	MW-86 (3.5-4.0 FT)	MW-86 (8.5-9.0 FT)	MW-86 (14.0-14.5 FT)	MW-86 (15.5-16.0 FT)	MW-86 (21.0-21.5 FT)	MW-86 (26.0-26.5 FT)	MW-87 (4.5 FT) - 062014	MW-87 (15.0 FT) - 062014
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		16 - 16.5	24.5 - 25	28.5 - 29	3.5 - 4	8.5 - 9	14 - 14.5	15.5 - 16	21 - 21.5	26 - 26.5	4.5	15
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method		Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core	Terra Core		
Sample Date		05/21/2014	05/21/2014	05/21/2014	05/21/2014	05/21/2014	05/21/2014	05/21/2014	05/21/2014	05/21/2014	06/24/2014	06/24/2014
Volatile Organic Compounds												
Acetone	NE	U (0.437)	U (0.0093)	U (0.0079)	U (0.469)	U (0.497)	U (0.472)	U (0.466)	U (0.447)	U (0.427)	0.0259 (0.0088)	U (0.0084)
Benzene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Bromoform	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Bromomethane	NE	0.182 J (0.109)	U (0.0023)	U (0.002)	0.124 J (0.117)	0.203 J (0.124)	0.136 J (0.118)	0.156 J (0.116)	0.173 J (0.112)	0.115 J (0.107)	U (0.0022)	U (0.0021)
2-Butanone	NE	0.231 J (0.219)	U (0.0047)	U (0.004)	U (0.234)	0.25 J (0.249)	U (0.236)	U (0.233)	U (0.223)	U (0.213)	U (0.0044)	U (0.0042)
Carbon Disulfide	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Carbon Tetrachloride	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Chlorobenzene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Chloroethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Chloroform	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Chloromethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Dibromochloromethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
1,1-Dichloroethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
1,2-Dichloroethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	0.181 J (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
1,1-Dichloroethene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	0.133 J (0.107)	U (0.0022)	U (0.0021)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.109)	U (0.0023)	0.0213 (0.002)	1.8 (0.117)	2.55 (0.124)	1.03 (0.118)	0.359 (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
trans-1,2-Dichloroethene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
1,2-Dichloropropane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
1,3-Dichloropropene (total)	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
cis-1,3-Dichloropropene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
trans-1,3-Dichloropropene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Ethyl Benzene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
2-Hexanone	NE	U (0.437)	U (0.0093)	U (0.0079)	U (0.469)	U (0.497)	U (0.472)	U (0.466)	U (0.447)	U (0.427)	U (0.0088)	U (0.0084)
4-Methyl-2-pentanone	NE	U (0.219)	U (0.0047)	U (0.004)	U (0.234)	U (0.249)	U (0.236)	U (0.233)	U (0.223)	U (0.213)	U (0.0044)	U (0.0042)
Methylene Chloride	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Styrene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
1,1,2,2-Tetrachloroethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Tetrachloroethene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Toluene	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
1,1,1-Trichloroethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	0.68 (0.107)	U (0.0022)	U (0.0021)
1,1,2-Trichloroethane	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Trichloroethene	0.129	6.58 (0.109)	0.0911 (0.0023)	0.238 (0.112)	3.03 (0.117)	40.3 (0.622)	58.7 (2.36)	28.7 (0.582)	22.8 (0.558)	137 (4.27)	U (0.0022)	U (0.0021)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.109)	U (0.0023)	0.0034 J (0.002)	0.248 (0.117)	0.382 (0.124)	0.162 J (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)
Xylenes (total)	NE	U (0.109)	U (0.0023)	U (0.002)	U (0.117)	U (0.124)	U (0.118)	U (0.116)	U (0.112)	U (0.107)	U (0.0022)	U (0.0021)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected

J = Estimated concentration

B = Analyte found in associated blank

( ) = Method detection limit

RADD = Remedial action decision document

ADEQ = Arkansas Department of Environmental Quality

VOC = Volatile organic compounds

mg/kg -- miligram per kilogram

NE = Not established

NM = Not measured

RAMBOLL ENVIRON

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	MW-88	MW-89	MW-90	MW-90	MW-91	MW-92	MW-92	MW-92	MW-92	MW-92	MW-93
Ramboll Environ Sample ID		MW-88 (12.0 FT) - 062014	MW-89 (17.5 FT) - 062014	MW-90 (14.5 FT) - 062014	MW-90 (20.5 FT) - 062014	MW-91 (12.5 FT) - 062014	MW-92-SL-4FT-20140929	MW-92-SL-7FT-20140929	MW-92-SL-14FT-20140929	MW-92-SL-20FT-20140929	MW-92-SL-24FT-20140929	MW-93-SL-5FT-20141002
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		12	17.5	14.5	20.5	12.5	4	7	14	20	24	5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		06/23/2014	06/23/2014	06/23/2014	06/23/2014	06/24/2014	09/29/2014	09/29/2014	09/29/2014	09/29/2014	09/29/2014	10/02/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0088)	U (0.0088)	U (0.0102)	U (0.01)	0.0188 (0.0093)	U (0.01)	U (0.009)	U (0.0095)	U (0.0093)	U (0.0081)	0.0136 J (0.0093)
Benzene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Bromoform	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Bromomethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
2-Butanone	NE	U (0.0044)	U (0.0044)	U (0.0051)	U (0.005)	U (0.0047)	U (0.005)	U (0.0045)	U (0.0047)	U (0.0046)	U (0.004)	U (0.0046)
Carbon Disulfide	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	0.0074 (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Carbon Tetrachloride	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Chlorobenzene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Chloroethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Chloroform	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Chloromethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Dibromochloromethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,1-Dichloroethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,2-Dichloroethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,1-Dichloroethene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	0.0023 J (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
trans-1,2-Dichloroethene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,2-Dichloropropane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Ethyl Benzene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
2-Hexanone	NE	U (0.0088)	U (0.0088)	U (0.0102)	U (0.01)	U (0.0093)	U (0.01)	U (0.009)	U (0.0095)	U (0.0093)	U (0.0081)	U (0.0093)
4-Methyl-2-pentanone	NE	U (0.0044)	U (0.0044)	U (0.0051)	U (0.005)	U (0.0047)	U (0.005)	U (0.0045)	U (0.0047)	U (0.0046)	U (0.004)	U (0.0046)
Methylene Chloride	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	0.0024 J (0.002)	U (0.0023)
Styrene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Tetrachloroethene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Toluene	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,1,1-Trichloroethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Trichloroethene	0.129	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	0.364 (0.124)	U (0.0023)	0.0334 (0.002)	U (0.0023)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)
Xylenes (total)	NE	U (0.0022)	U (0.0022)	U (0.0025)	U (0.0025)	U (0.0023)	U (0.0025)	U (0.0023)	U (0.0024)	U (0.0023)	U (0.002)	U (0.0023)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected

J = Estimated concentration

B = Analyte found in associated blank

( ) = Method detection limit

RADD = Remedial action decision document

ADEQ = Arkansas Department of Environmental Quality

VOC = Volatile organic compounds

mg/kg -- miligram per kilogram

NE = Not established

NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	MW-93	MW-93	MW-93	MW-93	MW-93	MW-93	MW-94	MW-94	MW-94	MW-94	MW-94
Ramboll Environ Sample ID		MW-93-SL-7FT-20141002	MW-93-SL-10FT-20141002	MW-93-SL-19FT-20141002	MW-93-SL-23FT-20141002	MW-93-SL-26FT-20141002	MW-93-SL-34.5FT-20141002	MW-94-SL-5FT-20141002	MW-94-SL-10FT-20141002	MW-94-SL-15FT-20141002	MW-94-SL-19FT-20141002	MW-94-SL-24FT-20141002
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		7	10	19	23	26	34.5	5	10	15	19	24
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		10/02/2014	10/02/2014	10/02/2014	10/02/2014	10/02/2014	10/02/2014	10/02/2014	10/02/2014	10/02/2014	10/02/2014	10/02/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0095)	U (0.0101)	0.0118 J (0.0094)	U (0.009)	0.0126 J (0.0085)	0.0114 J (0.0087)	0.0207 (0.0103)	0.025 (0.0094)	U (0.0096)	0.0106 J (0.0096)	U (0.009)
Benzene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Bromoform	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Bromomethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
2-Butanone	NE	U (0.0047)	U (0.005)	U (0.0047)	U (0.0045)	U (0.0043)	U (0.0044)	U (0.0051)	U (0.0047)	U (0.0048)	U (0.0048)	U (0.0045)
Carbon Disulfide	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Carbon Tetrachloride	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Chlorobenzene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Chloroethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Chloroform	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Chloromethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Dibromochloromethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,1-Dichloroethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,2-Dichloroethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,1-Dichloroethene	NE	U (0.0024)	U (0.0025)	U (0.0024)	0.0042 J (0.0023)	0.0037 J (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0046 J (0.0024)	0.0048 J (0.0025)	U (0.0024)	0.0155 (0.0023)	0.0168 (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	0.0108 (0.0023)
trans-1,2-Dichloroethene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,2-Dichloropropane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Ethyl Benzene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
2-Hexanone	NE	U (0.0095)	U (0.0101)	U (0.0094)	U (0.009)	U (0.0085)	U (0.0087)	U (0.0103)	U (0.0094)	U (0.0096)	U (0.0096)	U (0.009)
4-Methyl-2-pentanone	NE	U (0.0047)	U (0.005)	U (0.0047)	U (0.0045)	U (0.0043)	U (0.0044)	U (0.0051)	U (0.0047)	U (0.0048)	U (0.0048)	U (0.0045)
Methylene Chloride	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Styrene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Tetrachloroethene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Toluene	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,1,1-Trichloroethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Trichloroethene	0.129	U (0.0024)	U (0.0025)	0.0204 (0.0024)	3.98 (1.3)	3.25 (1.26)	0.343 (0.111)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	0.144 (0.0023)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)
Xylenes (total)	NE	U (0.0024)	U (0.0025)	U (0.0024)	U (0.0023)	U (0.0021)	U (0.0022)	U (0.0026)	U (0.0024)	U (0.0024)	U (0.0024)	U (0.0023)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	MW-94	MW-94	MW-95	MW-95	MW-95	MW-95	MW-95	MW-95	MW-95	MW-172	MW-172
Ramboll Environ Sample ID		MW-94-SL-30FT-20141002	MW-94-SL-33FT-20141002	MW-95-SL-5FT-20141003	MW-95-SL-7FT-20141003	MW-95-SL-14FT-20141003	MW-95-SL-20FT-20141003	MW-95-SL-25FT-20141003	MW-95-SL-28FT-20141003	MW-95-SL-33FT-20141003	MW-172-SL-4FT-20141010	MW-172-SL-9.5FT-20141010
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		30	33	5	7	14	20	25	28	33	4	9.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method												
Sample Date		10/02/2014	10/02/2014	10/03/2014	10/03/2014	10/03/2014	10/03/2014	10/03/2014	10/03/2014	10/03/2014	10/10/2014	10/10/2014
Volatile Organic Compounds												
Acetone	NE	U (0.0103)	U (0.0097)	0.0114 J (0.0099)	0.0164 J (0.011)	U (0.0098)	U (0.0096)	U (0.0091)	0.0116 J (0.0091)	U (0.0087)	0.0123 J (0.0095)	0.0586 (0.0094)
Benzene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Bromoform	NE	U (0.0026)	U (0.0024)	0.0061 (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Bromomethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
2-Butanone	NE	U (0.0052)	U (0.0049)	U (0.005)	U (0.0055)	U (0.0049)	U (0.0048)	U (0.0046)	U (0.0046)	U (0.0043)	U (0.0047)	U (0.0047)
Carbon Disulfide	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Carbon Tetrachloride	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Chlorobenzene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Chloroethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Chloroform	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Chloromethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Dibromochloromethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,1-Dichloroethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,2-Dichloroethane	NE	U (0.0026)	U (0.0024)	0.0072 (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,1-Dichloroethene	NE	0.0278 (0.0026)	0.0025 J (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	0.0055 (0.0023)	0.0069 (0.0022)	U (0.0024)	U (0.0023)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0502 (0.0026)	0.0505 (0.0024)	U (0.0025)	0.0185 (0.0028)	0.0504 (0.0024)	0.0187 (0.0024)	0.0041 J (0.0023)	0.0268 (0.0023)	0.0224 (0.0022)	0.01 (0.0024)	U (0.0023)
trans-1,2-Dichloroethene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,2-Dichloropropane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,3-Dichloropropene (total)	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
cis-1,3-Dichloropropene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
trans-1,3-Dichloropropene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Ethyl Benzene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
2-Hexanone	NE	U (0.0103)	U (0.0097)	0.059 (0.0099)	U (0.011)	U (0.0098)	U (0.0096)	U (0.0091)	U (0.0091)	U (0.0087)	U (0.0095)	U (0.0094)
4-Methyl-2-pentanone	NE	U (0.0052)	U (0.0049)	U (0.005)	U (0.0055)	U (0.0049)	U (0.0048)	U (0.0046)	U (0.0046)	U (0.0043)	U (0.0047)	U (0.0047)
Methylene Chloride	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	0.0027 (0.0023)	0.0041 (0.0023)	0.003 (0.0022)	U (0.0024)	U (0.0023)
Styrene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,1,2,2-Tetrachloroethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Tetrachloroethene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Toluene	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,1,1-Trichloroethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
1,1,2-Trichloroethane	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)
Trichloroethene	0.129	2.17 (0.122)	0.814 (0.131)	U (0.0025)	0.0189 (0.0028)	0.0872 (0.0024)	0.0503 (0.0024)	0.971 (0.124)	4.02 (0.236)	4.92 (0.254)	U (0.0024)	0.0068 (0.0023)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	0.0039 J (0.0023)	0.0031 J (0.0022)	U (0.0024)	U (0.0023)
Xylenes (total)	NE	U (0.0026)	U (0.0024)	U (0.0025)	U (0.0028)	U (0.0024)	U (0.0024)	U (0.0023)	U (0.0023)	U (0.0022)	U (0.0024)	U (0.0023)

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected

J = Estimated concentration

B = Analyte found in associated blank

( ) = Method detection limit

RADD = Remedial action decision document

ADEQ = Arkansas Department of Environmental Quality

VOC = Volatile organic compounds

mg/kg -- miligram per kilogram

NE = Not established

NM = Not measured

TABLE 3-1
SUMMARY SOIL ANALYTICAL RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued December 2013	MW-172	MW-172	MW-172	MW-172	MW-182	MW-182
Ramboll Environ Sample ID		MW-172-SL-14FT-20141010	MW-172-SL-18FT-20141010	MW-172-SL-24FT-20141010	MW-172-SL-27FT-20141010	MW-182-SL-11.5 FT-20150626	MW-182-SL-28.5 FT-20150626
Matrix		Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft bgs)		14	18	24	27	11.5	28.5
depth_unit		ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs
Sample Method							
Sample Date		10/10/2014	10/10/2014	10/10/2014	10/10/2014	06/26/2015	06/26/2015
Volatile Organic Compounds							
Acetone	NE	U (0.0096)	U (0.0094)	0.01 J (0.0082)	0.0115 J (0.0078)	U (0.0094)	U (0.0076)
Benzene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Bromochloromethane	NE	NM	NM	NM	NM	NM	NM
Bromodichloromethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Bromoform	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Bromomethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
2-Butanone	NE	U (0.0048)	U (0.0047)	U (0.0041)	U (0.0039)	U (0.0047)	U (0.0038)
Carbon Disulfide	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Carbon Tetrachloride	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Chlorobenzene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Chloroethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Chloroform	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Chloromethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Dibromochloromethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,1-Dichloroethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,2-Dichloroethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,1-Dichloroethene	NE	0.0041 J (0.0024)	0.0046 J (0.0023)	0.0066 (0.002)	0.0061 (0.0019)	U (0.0023)	U (0.0019)
1,2-Dichloroethene (total)	NE	NM	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	NE	0.0026 J (0.0024)	0.0106 (0.0023)	0.0138 (0.002)	0.0043 (0.0019)	U (0.0023)	U (0.0019)
trans-1,2-Dichloroethene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,2-Dichloropropane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,3-Dichloropropene (total)	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
cis-1,3-Dichloropropene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
trans-1,3-Dichloropropene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Ethyl Benzene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
2-Hexanone	NE	U (0.0096)	U (0.0094)	U (0.0082)	U (0.0078)	U (0.0094)	U (0.0076)
4-Methyl-2-pentanone	NE	U (0.0048)	U (0.0047)	U (0.0041)	U (0.0039)	U (0.0047)	U (0.0038)
Methylene Chloride	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Styrene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,1,2,2-Tetrachloroethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Tetrachloroethene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Toluene	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,1,1-Trichloroethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
1,1,2-Trichloroethane	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Trichloroethene	0.129	0.288 (0.0024)	2.49 (0.126)	2.76 (0.227)	3.04 (0.204)	U (0.0023)	0.01 (0.0019)
Vinyl Acetate	NE	NM	NM	NM	NM	NM	NM
Vinyl Chloride	NE	U (0.0024)	U (0.0023)	0.0031 J (0.002)	U (0.0019)	U (0.0023)	U (0.0019)
Xylenes (total)	NE	U (0.0024)	U (0.0023)	U (0.002)	U (0.0019)	U (0.0023)	U (0.0019)

Notes:
1 All concentrations are presented in mg/kg (ppm).
2 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued December 2013 are double underlined.

U = Not detected
J = Estimated concentration
B = Analyte found in associated blank
( ) = Method detection limit
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
mg/kg -- miligram per kilogram
NE = Not established
NM = Not measured

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-1	ITMW-1-19891101	11/1/1989	ND	NT	ND
ITMW-1	ITMW-1-19900101	1/1/1990	ND	NT	ND
ITMW-1	ITMW-1-19931101	11/1/1993	10	NT	ND
ITMW-1	ITMW-1-19961201	12/1/1996	21	NT	ND
ITMW-1	ITMW-1-19990201	2/1/1999	37	ND	ND
ITMW-1	ITMW-1-20000301	3/1/2000	125	8	ND
ITMW-1	ITMW-1-20000919	9/19/2000	30.7	7.45	< 10 U
ITMW-1	ITMW-1-20010327	3/27/2001	30	6	< 10 U
ITMW-1	ITMW-1-20010911	9/11/2001	27	9	< 10 U
ITMW-1	ITMW-1-20020910	9/10/2002	35	9	< 10 U
ITMW-1	ITMW-1-20030227	2/27/2003	29.6	7.14	< 10 U
ITMW-1	ITMW-1-20030923	9/23/2003	25	12	< 10 U
ITMW-1	ITMW-1-20040413	4/13/2004	42.2	11.1	< 10 U
ITMW-1	ITMW-1-20040921	9/21/2004	26	16.7	< 10 U
ITMW-1	ITMW-1-20040921-FD	9/21/2004	26.1	15.8	< 10 U
ITMW-1	ITMW-1-20050928	9/28/2005	34.7	11.3	< 10 U
ITMW-1	ITMW-1-20061014	10/14/2006	20	11	< 10 UJ
ITMW-1	ITMW-1-20070920	9/20/2007	18	13	< 10 U
ITMW-1	ITMW-1-20081209	12/9/2008	14	7.3	< 5 U
ITMW-1	ITMW-1-20111027	10/27/2011	17	8.2	< 5 U
ITMW-1	ITMW-1-20120418	4/18/2012	32	13	< 5 U
ITMW-1	ITMW-1-20121019	10/19/2012	10	8.3	< 0.11 U
ITMW-1	ITMW-1-20130424	4/24/2013	26	9.1	< 0.11 U
ITMW-1	ITMW-1-101513	10/15/2013	7.2	5.8	< 0.11 U
ITMW-1	ITMW-1-201403	3/8/2014	23.4	8.9	< 0.13 U
ITMW-1	ITMW-1-201405	5/13/2014	21.3	8.7	< 0.13 U
ITMW-1	DUP-5-201407	7/30/2014	9.2	5.7	< 0.50 U
ITMW-1	ITMW-1-201407	7/30/2014	8.9	5.4	< 0.50 U
ITMW-1	ITMW-1-201410	10/15/2014	6.1	4.5 J	< 0.50 U
ITMW-1	ITMW-1-201501	1/14/2015	22.7	9.7	< 0.50 U
ITMW-1	ITMW-1-201504	4/15/2015	19.2	9.7	< 0.50 U
ITMW-1	ITMW-1-201507	7/22/2015	10.5	5.3	< 0.13 U
ITMW-1	ITMW-1-201510	10/7/2015	7.8	4.4	< 0.13 U
ITMW-2	ITMW-2-19891001	10/1/1989	ND	NT	ND
ITMW-2	ITMW-2-19891101	11/1/1989	ND	NT	ND
ITMW-2	ITMW-2-19900101	1/1/1990	ND	NT	ND
ITMW-2	ITMW-2-19900101-FD	1/1/1990	ND	NT	ND
ITMW-2	ITMW-2-19910301	3/1/1991	ND	NT	ND
ITMW-2	ITMW-2-19931101	11/1/1993	4	NT	ND
ITMW-2	ITMW-2-19961201	12/1/1996	3.4	NT	ND
ITMW-2	ITMW-2-20000301	3/1/2000	ND	ND	ND
ITMW-2	ITMW-2-20000919	9/19/2000	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040413-FD	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040921-FD	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20061014	10/14/2006	4 J	< 5 U	< 10 U
ITMW-2	ITMW-2-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20120417	4/17/2012	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-2	ITMW-2-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-2	ITMW-2-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-2	ITMW-2-201403	3/6/2014	0.23 J	0.40 J	< 0.13 U
ITMW-2	ITMW-2-201403-FD	3/6/2014	0.28 J	0.51 J	< 0.13 U
ITMW-2	ITMW-2-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-2	ITMW-2-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-2	ITMW-2-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-2	ITMW-2-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-2	ITMW-2-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-2	ITMW-2-201507	7/22/2015	0.24 J	0.26 J	< 0.13 U
ITMW-2	ITMW-2-201510	10/6/2015	0.22 J	0.21 J	< 0.13 U
ITMW-3	ITMW-3-19891001	10/1/1989	ND	NT	ND
ITMW-3	ITMW-3-19900101	1/1/1990	ND	NT	ND
ITMW-3	ITMW-3-19931101	11/1/1993	3	NT	ND
ITMW-3	ITMW-3-19961201	12/1/1996	1.7	NT	ND
ITMW-3	ITMW-3-19990201	2/1/1999	ND	ND	ND
ITMW-3	ITMW-30-20000301-FD	3/1/2000	ND	ND	ND

RAMBOLL ENVIRON

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-3	ITMW-3-20000301	3/1/2000	ND	ND	ND
ITMW-3	ITMW-3-20000919	9/19/2000	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20020910	9/10/2002	15	< 5 U	< 10 U
ITMW-3	ITMW-3-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20061014	10/14/2006	< 5 U	< 5 U	< 10 UJ
ITMW-3	ITMW-3-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
ITMW-3	ITMW-3-20101104	11/4/2010	190	3.9 J	< 5 U
ITMW-3	ITMW-3-20111027	10/27/2011	4.1 J	< 5 U	< 5 U
ITMW-3	ITMW-3-20120417	4/17/2012	< 5 U	< 5 U	< 5 U
ITMW-3	ITMW-3-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-3	ITMW-3-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-3	ITMW-3-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-4	ITMW-4-19891001	10/1/1989	ND	NT	ND
ITMW-4	ITMW-4-19891101	11/1/1989	ND	NT	ND
ITMW-4	ITMW-4-19900101	1/1/1990	ND	NT	ND
ITMW-4	ITMW-4-19931101	11/1/1993	ND	NT	ND
ITMW-4	ITMW-4-19961201	12/1/1996	75	NT	ND
ITMW-4	ITMW-4-19990201	2/1/1999	93	54	ND
ITMW-4	ITMW-4-20000301	3/1/2000	22	16	ND
ITMW-4	ITMW-4-20000920	9/20/2000	13.9	10.6	< 10 U
ITMW-4	ITMW-4-20010328	3/28/2001	9	< 5 U	< 10 U
ITMW-4	ITMW-4-20010913	9/13/2001	6	8	< 10 U
ITMW-4	ITMW-4-20020910	9/10/2002	9	< 5 U	< 10 U
ITMW-4	ITMW-4-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20050927	9/27/2005	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20061011	10/11/2006	6	8	< 10 U
ITMW-4	ITMW-4-20070920	9/20/2007	5 J	5 J	< 10 U
ITMW-4	ITMW-4-20081209	12/9/2008	< 5 U	3.2 J	< 5 U
ITMW-4	ITMW-4-20111025	10/25/2011	4.8 J	5.1	< 5 U
ITMW-4	ITMW-4-20121017	10/17/2012	3.3 J	4.5 J	7.9
ITMW-4	ITMW-4-101413	10/14/2013	3.7 J	6.1	< 0.11 U
ITMW-4	ITMW-4-201403	3/6/2014	1.4 J	2.0 J	0.19 J
ITMW-4	ITMW-4-201405	5/13/2014	2.0 J	2.1 J	0.18 J
ITMW-4	ITMW-4-201407	7/30/2014	2.8 J	4.6 J	< 0.50 U
ITMW-4	ITMW-4-201410	10/16/2014	3.4 J	4.9 J	< 0.50 U
ITMW-4	ITMW-4-201501	1/13/2015	1.7	2.3	< 0.50 U
ITMW-4	ITMW-4-201504	4/14/2015	1.6	2.6	0.84 J
ITMW-4	ITMW-4-201507	7/22/2015	2.0	2.6	0.17 J
ITMW-4	ITMW-4-201510	10/7/2015	2.3	2.8	0.23 J
ITMW-5	ITMW-5-19891001	10/1/1989	ND	NT	ND
ITMW-5	ITMW-5-19900101	1/1/1990	ND	NT	ND
ITMW-5	ITMW-5-19961201	12/1/1996	21	NT	ND
ITMW-5	ITMW-5-19990201	2/1/1999	86	39	ND
ITMW-5	ITMW-5-20000301	3/1/2000	73	59	ND
ITMW-5	ITMW-5-20000920	9/20/2000	85	64.4	< 10 U
ITMW-5	ITMW-5-20010328	3/28/2001	100	46	< 10 U
ITMW-5	ITMW-5-20010913	9/13/2001	72	64	< 10 U
ITMW-5	ITMW-5-20020910	9/10/2002	108	72	< 10 U
ITMW-5	ITMW-5-20030228	2/28/2003	90.4	68.7	< 10 U
ITMW-5	ITMW-5-20030924	9/24/2003	97.3	73.7	< 10 U
ITMW-5	ITMW-5-20040414	4/14/2004	83.9	55.4	< 10 U
ITMW-5	ITMW-5-20040922	9/22/2004	105	75.8	< 10 U
ITMW-5	ITMW-5-20050406	4/6/2005	93.2	72.6	< 10 U
ITMW-5	ITMW-5-20050406-FD	4/6/2005	87	71	< 10 U
ITMW-5	ITMW-5-20050928	9/28/2005	79	53.5	< 10 U
ITMW-5	ITMW-5-20050928-FD	9/28/2005	82.1	54.4	< 10 U
ITMW-5	ITMW-5-20060314	3/14/2006	92	66.1	< 10 U
ITMW-5	ITMW-5-20060314-FD	3/14/2006	98.4	66.1	< 10 U
ITMW-5	ITMW-5-20061010	10/10/2006	110	51	4 J
ITMW-5	ITMW-5-20070418	4/18/2007	115	39.3	< 10 U
ITMW-5	ITMW-5-20070920	9/20/2007	120	49	4 J
ITMW-5	ITMW-5-20080429	4/29/2008	120	43	< 10 U
ITMW-5	ITMW-5-20081209	12/9/2008	200 E	42	< 5 U
ITMW-5	ITMW-5-20090427	4/27/2009	160	34	< 5 U
ITMW-5	ITMW-5-20100511	5/11/2010	190 EF	40	< 5 U
ITMW-5	ITMW-5-20101106	11/6/2010	350	50	< 5 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-5	ITMW-5-20110322	3/22/2011	370	39	< 5 U
ITMW-5	ITMW-5-20111025	10/25/2011	150	35	< 5 U
ITMW-5	ITMW-5-20120417	4/17/2012	290	26	< 5 U
ITMW-5	ITMW-5-20121018	10/18/2012	260	33	0.64 J
ITMW-5	ITMW-5-20130425	4/25/2013	220	20	0.50 J
ITMW-5	ITMW-5-101613	10/16/2013	260	27	0.55 J
ITMW-6	ITMW-6-19891001	10/1/1989	ND	NT	ND
ITMW-6	ITMW-6-19900101	1/1/1990	ND	NT	ND
ITMW-6	ITMW-6-19961201	12/1/1996	6.8	NT	ND
ITMW-6	ITMW-6-19970501	5/1/1997	7	ND	ND
ITMW-6	ITMW-6-19990201	2/1/1999	25	ND	ND
ITMW-6	ITMW-6-19990201-FD	2/1/1999	6	ND	ND
ITMW-6	ITMW-6-20000301	3/1/2000	ND	ND	ND
ITMW-6	ITMW-6-20000920	9/20/2000	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20010328	3/28/2001	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20020910-FD	9/10/2002	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20061011	10/11/2006	< 5 U	4 J	< 10 U
ITMW-6	ITMW-6-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
ITMW-6	ITMW-6-20091028	10/28/2009	< 5 U	2.1 J	< 5 U
ITMW-6	ITMW-6-20100510	5/10/2010	< 5 U	1.9 J	< 5 U
ITMW-6	ITMW-6-20111025-FD	10/25/2011	< 5 U	2.7 J	< 5 U
ITMW-6	ITMW-6-20111025	10/25/2011	< 5 U	2.4 J	< 5 U
ITMW-6	ITMW-6-20120417	4/17/2012	< 5 U	2.9 J	< 5 U
ITMW-6	ITMW-6-20121017	10/17/2012	< 1.6 U	3.1 J	< 0.11 U
ITMW-6	ITMW-6-20130422	4/22/2013	< 1.6 U	2.1 J	0.33 J
ITMW-6	ITMW-6-101413	10/14/2013	3.4 J	5.5	0.18 J
ITMW-6	ITMW-6-201403	3/6/2014	2.7 J	4.9 J	0.18 J
ITMW-6	ITMW-6-201405	5/13/2014	3.6 J	5.3	0.17 J
ITMW-6	ITMW-6-201407	7/30/2014	4.4 J	6.7	< 0.50 U
ITMW-6	ITMW-6-201410	10/15/2014	3.1 J	5.2	< 0.50 U
ITMW-6	ITMW-6-201501	1/13/2015	3.7	5.7	< 0.50 U
ITMW-6	ITMW-6-201504	4/14/2015	3.7	5.3 J	< 0.50 U
ITMW-6	ITMW-6-201507	7/22/2015	4.7	6.3	0.31 J
ITMW-6	ITMW-6-201510	10/7/2015	3.1	5.5	0.21 J
ITMW-7	ITMW-7-19891101	11/1/1989	ND	NT	ND
ITMW-7	ITMW-7-19900101	1/1/1990	ND	NT	ND
ITMW-7	ITMW-7-19961201	12/1/1996	290	NT	3
ITMW-7	ITMW-7-19970501	5/1/1997	380	180	ND
ITMW-7	ITMW-7-19990201	2/1/1999	ND	ND	ND
ITMW-7	ITMW-7-19990601	6/1/1999	320	144	ND
ITMW-7	ITMW-7-19990601-FD	6/1/1999	300	140	ND
ITMW-7	ITMW-7-20000301	3/1/2000	262	100	ND
ITMW-7	ITMW-7-20000301-FD	3/1/2000	207	92	ND
ITMW-7	ITMW-7-20000919	9/19/2000	207	100	< 10 U
ITMW-7	ITMW-7-20000921-FD	9/21/2000	109	< 5 U	< 10 U
ITMW-7	ITMW-7-20010328	3/28/2001	161	66	< 10 U
ITMW-7	ITMW-7-20010913	9/13/2001	139	68	< 10 U
ITMW-7	ITMW-7-20020910	9/10/2002	137	56	< 10 U
ITMW-7	ITMW-7-20020910-FD	9/10/2002	128	54	< 10 U
ITMW-7	ITMW-7-20030227	2/27/2003	172	92.5	< 10 U
ITMW-7	ITMW-7-20030924	9/24/2003	125	57.3	< 10 U
ITMW-7	ITMW-7-20040414	4/14/2004	201	80.7	< 10 U
ITMW-7	ITMW-7-20040922	9/22/2004	132	48.4	< 10 U
ITMW-7	ITMW-7-20050407	4/7/2005	122	39	< 10 U
ITMW-7	ITMW-7-20050928	9/28/2005	100	30.5	< 10 U
ITMW-7	ITMW-7-20060314	3/14/2006	153	59.5	< 10 U
ITMW-7	ITMW-7-20061010	10/10/2006	140	44	1 J
ITMW-7	ITMW-7-20070417	4/17/2007	83	29.4	< 10 U
ITMW-7	ITMW-7-20070921	9/21/2007	72	22	< 10 U
ITMW-7	ITMW-7-20080430	4/30/2008	70	18	< 10 U
ITMW-7	ITMW-7-20081211	12/11/2008	66	19	< 5 U
ITMW-7	ITMW-7-20090427	4/27/2009	87	26	< 5 U
ITMW-7	ITMW-7-20091028	10/28/2009	60	20	< 5 U
ITMW-7	ITMW-7-20100510	5/10/2010	73	18	< 5 U
ITMW-7	ITMW-7-20110323	3/23/2011	225 EF	93.2	56.5
ITMW-7	ITMW-7-20111025	10/25/2011	99	26	< 5 U
ITMW-7	ITMW-7-20120418	4/18/2012	100	20	< 5 U
ITMW-7	ITMW-7-20121018	10/18/2012	63	17	< 0.11 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-7	ITMW-7-20130425	4/25/2013	69	16	0.27 J
ITMW-7	ITMW-7-101713	10/17/2013	47	12	< 0.11 U
ITMW-7	ITMW-7-201403	3/8/2014	37.4	10	0.24 J
ITMW-7	ITMW-7-201405	5/14/2014	37.0	11.1	0.22 J
ITMW-7	ITMW-7-201407	7/30/2014	36.7	11.2	< 0.50 U
ITMW-7	ITMW-7-201410	10/15/2014	33.7	10.3	< 0.50 U
ITMW-7	ITMW-7-201501	1/14/2015	34.7	10.5	< 0.50 U
ITMW-7	ITMW-7-201504	4/14/2015	29.3	9.2	< 0.50 U
ITMW-7	ITMW-7-201507	7/22/2015	26.4	8.3	0.19 J
ITMW-7	ITMW-7-201510	10/8/2015	27.6	8.8	0.19 J
ITMW-9	ITMW-9-19900101	1/1/1990	ND	NT	ND
ITMW-9	ITMW-9-19961201	12/1/1996	230	NT	ND
ITMW-9	ITMW-9-19970501	5/1/1997	7	ND	ND
ITMW-9	ITMW-9-19990201	2/1/1999	40	24	ND
ITMW-9	ITMW-9-20000301	3/1/2000	69	45	ND
ITMW-9	ITMW-9-20000920	9/20/2000	57.3	14.3	< 10 U
ITMW-9	ITMW-9-20000920-FD	9/20/2000	54.8	14	< 10 U
ITMW-9	ITMW-9-20010328	3/28/2001	40	12	< 10 U
ITMW-9	ITMW-9-20010913	9/13/2001	40	12	< 10 U
ITMW-9	ITMW-9-20020910	9/10/2002	61	21	< 10 U
ITMW-9	ITMW-9-20030228	2/28/2003	54.2	37.2	< 10 U
ITMW-9	ITMW-9-20030923	9/23/2003	91	49.5	< 10 U
ITMW-9	ITMW-9-20030923-FD	9/23/2003	97.6	53.9	< 10 U
ITMW-9	ITMW-9-20040414	4/14/2004	71.8	38.8	< 10 U
ITMW-9	ITMW-9-20040922	9/22/2004	80.7	21.1	< 10 U
ITMW-9	ITMW-9-20050406	4/6/2005	79	30.4	< 10 U
ITMW-9	ITMW-9-20050927	9/27/2005	98.8	54.6	< 10 U
ITMW-9	ITMW-9-20060314	3/14/2006	101	78.7	< 10 U
ITMW-9	ITMW-9-20061011	10/11/2006	110	77	6 J
ITMW-9	ITMW-9-20070417	4/17/2007	79	39.6	< 10 U
ITMW-9	ITMW-9-20070920	9/20/2007	76	26	< 10 U
ITMW-9	ITMW-9-20080428	4/28/2008	82	37	< 10 U
ITMW-9	ITMW-9-20081209	12/9/2008	90	62	< 5 U
ITMW-9	ITMW-9-20090427	4/27/2009	110	51	< 5 U
ITMW-9	ITMW-9-20091027	10/27/2009	120	67	5.7
ITMW-9	ITMW-9-20091027-FD	10/27/2009	120	71	6.1
ITMW-9	ITMW-9-20100511	5/11/2010	130	38	< 5 U
ITMW-9	ITMW-9-20110322	3/22/2011	120	48	2.4 J
ITMW-9	ITMW-9-20111025	10/25/2011	90	57	< 5 U
ITMW-9	ITMW-9-20120417	4/17/2012	150	50	2.5 J
ITMW-9	ITMW-9-20121018	10/18/2012	120	53	5.2
ITMW-9	ITMW-9-20130424	4/24/2013	140	44	1.6 J
ITMW-9	ITMW-9-101713	10/17/2013	83	42	16
ITMW-9	ITMW-9-201403	3/8/2014	112	40.4	0.41 J
ITMW-9	ITMW-9-201405	5/14/2014	113	42.2	0.64 J
ITMW-9	DUP-6-201407	7/30/2014	143	43.9	0.54 J
ITMW-9	ITMW-9-201407	7/30/2014	141	44.4	0.53 J
ITMW-9	DUP-02-201410	10/15/2014	75.3	38.8	1.7 J
ITMW-9	ITMW-9-201410	10/15/2014	76.9	39.1	1.8 J
ITMW-9	DUP-02-201501	1/13/2015	89.4	39.1	1.4
ITMW-9	ITMW-9-201501	1/13/2015	89.6	39.1	1.4
ITMW-9	ITMW-9-201504	4/15/2015	100	35.4	< 0.50 U
ITMW-9	ITMW-9-201507	7/21/2015	142	35.5	0.40 J
ITMW-9	DUP-09-201510	10/7/2015	55.2	26.8	1.1
ITMW-9	ITMW-9-201510	10/7/2015	55.6	26.6	1.0
ITMW-10	ITMW-10-19900101	1/1/1990	ND	NT	ND
ITMW-10	ITMW-10-19961201	12/1/1996	4	NT	ND
ITMW-10	ITMW-10-19990201	2/1/1999	25	13	ND
ITMW-10	ITMW-10-20000301	3/1/2000	23	17	ND
ITMW-10	ITMW-10-20000920	9/20/2000	18.1	15.9	< 10 U
ITMW-10	ITMW-10-20010328	3/28/2001	40	21	< 10 U
ITMW-10	ITMW-10-20010913	9/13/2001	29	28	< 10 U
ITMW-10	ITMW-10-20010913-FD	9/13/2001	30	27	< 10 U
ITMW-10	ITMW-10-20020910	9/10/2002	55	38	< 10 U
ITMW-10	ITMW-10-20030228	2/28/2003	57.6	50.9	< 10 U
ITMW-10	ITMW-10-20030716	7/16/2003	55.3	49.2	< 10 U
ITMW-10	ITMW-10-20030923	9/23/2003	65.9	56.5	< 10 U
ITMW-10	ITMW-10-20040414	4/14/2004	80	57.4	< 10 U
ITMW-10	ITMW-10-20040922	9/22/2004	59.6	50	< 10 U
ITMW-10	ITMW-10-20050406	4/6/2005	72.1	57.7	< 10 U
ITMW-10	ITMW-10-20050928	9/28/2005	57.6	41.6	< 10 U
ITMW-10	ITMW-10-20060314	3/14/2006	82	67.2	< 10 U
ITMW-10	ITMW-10-20061010	10/10/2006	88	54	5 J
ITMW-10	ITMW-10-20070417	4/17/2007	76	52.4	< 10 U
ITMW-10	ITMW-10-20070920	9/20/2007	67	48	5 J
ITMW-10	ITMW-10-20080428	4/28/2008	61	46	< 10 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-10	ITMW-10-20081209	12/9/2008	78	50	< 5 U
ITMW-10	ITMW-10-20090427	4/27/2009	87	52	4.4 J
ITMW-10	ITMW-10-20091027	10/27/2009	110	50	4.2 J
ITMW-10	ITMW-10-20100511	5/11/2010	85	46	2.4 J
ITMW-10	ITMW-10-20110322	3/22/2011	92	42	2.7 J
ITMW-10	ITMW-10-20111025	10/25/2011	94	39	2.5 J
ITMW-10	ITMW-10-20121018	10/18/2012	100	37	2.5
ITMW-10	ITMW-10-101513	10/15/2013	100	32	3.1
ITMW-10	ITMW-10-201403	3/6/2014	166	32.3	1.2 J
ITMW-10	ITMW-10-201405	5/14/2014	184	32.4	1.4 J
ITMW-10	ITMW-10-201407	7/30/2014	273	38.3	1.8 J
ITMW-10	ITMW-10-201410	10/15/2014	243	32.3	1.7 J
ITMW-10	ITMW-10-201501	1/14/2015	403	38.9	1.4
ITMW-10	ITMW-10-201504	4/15/2015	258	34.8	0.98 J
ITMW-10	DUP-08-201504	4/16/2015	303	36.1	1.2
ITMW-10	DUP-01-201507	7/22/2015	501	36.7	1.5
ITMW-10	ITMW-10-201507	7/22/2015	504	36.2	1.3
ITMW-10	DUP-04-201510	10/7/2015	445	37.9	1.6
ITMW-10	ITMW-10-201510	10/7/2015	437	37.5	1.5
ITMW-11	ITMW-11-19900101	1/1/1990	19000	NT	180
ITMW-11	ITMW-11-19901101	11/1/1990	4700	NT	93
ITMW-11	ITMW-11-19910201	2/1/1991	3400	NT	ND
ITMW-11	ITMW-11-19931101	11/1/1993	2300	NT	43
ITMW-11	ITMW-11-19961201	12/1/1996	510	NT	ND
ITMW-11	ITMW-11-19990201	2/1/1999	650	10	ND
ITMW-11	ITMW-11-20000301	3/1/2000	3370	206	ND
ITMW-11	ITMW-11-20000919	9/19/2000	8030	327	11.7
ITMW-11	ITMW-11-20010327	3/27/2001	7000	200	< 10 U
ITMW-11	ITMW-11-20010913	9/13/2001	6000	183	< 10 U
ITMW-11	ITMW-11-20011120	11/20/2001	< 5 U	< 5 U	< 10 U
ITMW-11	ITMW-11L-20020909	9/9/2002	7100	206	10
ITMW-11	ITMW-11T-20020909	9/9/2002	800	72	< 10 U
ITMW-11	ITMW-11-20030226	2/26/2003	4110	346	58.8
ITMW-11	ITMW-11-20030226-FD	2/26/2003	3630	306	60.7
ITMW-11	ITMW-11-20030924	9/24/2003	3990	269	11.8
ITMW-11	ITMW-11-20040413	4/13/2004	3160	240	37.8
ITMW-11	ITMW-11-20040921	9/21/2004	3450	204	< 10 U
ITMW-11	ITMW-11-20050407	4/7/2005	4210	282	66.7
ITMW-11	ITMW-11-20050929	9/29/2005	3910	199	18
ITMW-11	ITMW-11-20060316	3/16/2006	14600	1290	482
ITMW-11	ITMW-11-20060316-FD	3/16/2006	12800	1210	381
ITMW-11	ITMW-11-20061013	10/13/2006	8000	340	47
ITMW-11	ITMW-11-20070419	4/19/2007	3970	199	< 200 U
ITMW-11	ITMW-11-20070921	9/21/2007	7600	180	21
ITMW-11	ITMW-11-20080430	4/30/2008	4500	210	58
ITMW-11	ITMW-11-20081210	12/10/2008	5800	190	27
ITMW-11	ITMW-11-20090427	4/27/2009	2500	200	24
ITMW-11	ITMW-11-20100511-FD	5/11/2010	6200	290	28
ITMW-11	ITMW-11-20100511	5/11/2010	6200	290	45
ITMW-11	ITMW-11-20110323	3/23/2011	9700	520	130
ITMW-11	ITMW-11-20111026	10/26/2011	8800	310	16
ITMW-11	ITMW-11-20121019	10/19/2012	1400	34	2.4
ITMW-11	ITMW-11-101713	10/17/2013	180	8.7	2.9
ITMW-11	ITMW-11-201403	3/8/2014	2980	187 M1	22.5
ITMW-11	DUP-4-201405	5/15/2014	1470	107	4.9
ITMW-11	ITMW-11-201405	5/15/2014	1590	99.5	5.5
ITMW-11	ITMW-11-201407	7/31/2014	7380	156	6.9
ITMW-11	ITMW-11-201410	10/15/2014	2050	70.4	3.5
ITMW-11	ITMW-11-20141204	12/4/2014	1530	55.0	6.4
ITMW-11	ITMW-11-201501	1/15/2015	68.3	9.8	1.9
ITMW-11	ITMW-11-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-11	ITMW-11-201507	7/22/2015	33.2	5.9	< 0.13 U
ITMW-11	ITMW-11-201510	10/7/2015	721	57.9	0.96 J
ITMW-12	ITMW-12-19901101	11/1/1990	2400	NT	140
ITMW-12	ITMW-12-19910201	2/1/1991	2100	NT	ND
ITMW-12	ITMW-12-19931101	11/1/1993	2500	NT	35
ITMW-12	ITMW-12-19961201	12/1/1996	1200	NT	ND
ITMW-12	ITMW-12-19990201	2/1/1999	3100	480	34
ITMW-12	ITMW-12-20000301	3/1/2000	3110	320	19
ITMW-12	ITMW-12-20000919	9/19/2000	3350	180	12
ITMW-12	ITMW-12-20010327	3/27/2001	3900	200	20
ITMW-12	ITMW-12-20010913	9/13/2001	3100	159	< 10 U
ITMW-12	ITMW-12-20011120	11/20/2001	2400	300	20
ITMW-12	ITMW-12-20020911	9/11/2002	4200	300	< 10 U
ITMW-12	ITMW-12-20030226	2/26/2003	3460	287	< 10 U
ITMW-12	ITMW-12-20030226-FD	2/26/2003	3940	308	< 10 U

RAMBOLL ENVIRON

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-12	ITMW-12-20030924	9/24/2003	2920	242	< 10 U
ITMW-12	ITMW-12-20040413	4/13/2004	2410	245	< 10 U
ITMW-12	ITMW-12-20040921	9/21/2004	1780	238	< 10 U
ITMW-12	ITMW-12-20050929	9/29/2005	2120	273	< 10 U
ITMW-12	ITMW-12-20061013	10/13/2006	3500	310	9 J
ITMW-12	ITMW-12-20070921	9/21/2007	2100	220	< 10 U
ITMW-12	ITMW-12-20081209	12/9/2008	1500	180	< 5 U
ITMW-12	ITMW-12-20111026	10/26/2011	1600	230	1.8 J
ITMW-12	ITMW-12-20121019	10/19/2012	2500	200	3.6
ITMW-12	ITMW-12-101713	10/17/2013	2300	190	3.2
ITMW-12	ITMW-12-20131017-FD	10/17/2013	2300	160	4.1
ITMW-12	ITMW-12-201403	3/8/2014	1910	148	3.4
ITMW-12	ITMW-12-201403-FD	3/8/2014	2400	207	3.4
ITMW-12	ITMW-12-201405	5/14/2014	2740	164	14.0
ITMW-12	ITMW-12-201407	7/31/2014	2710	173	13.6
ITMW-12	DUP-04-201410	10/15/2014	2950	192	3.7
ITMW-12	ITMW-12-201410	10/15/2014	2570	188	3.5
ITMW-12	ITMW-12-20141204	12/4/2014	468	51.1	0.88 J
ITMW-12	DUP-04-201501	1/15/2015	59.3	4.8	< 0.50 U
ITMW-12	ITMW-12-201501	1/15/2015	57.1	4.2	< 0.50 U
ITMW-12	ITMW-12-201504	4/15/2015	2260	149	< 0.13 U
ITMW-12	ITMW-12-201507	7/23/2015	652	46.2	0.58 J
ITMW-12	ITMW-12-201510	10/7/2015	314	34.6	0.42 J
ITMW-13	ITMW-13-19901101	11/1/1990	34	NT	18
ITMW-13	ITMW-13-19910201	2/1/1991	32	NT	35
ITMW-13	ITMW-13-19931101	11/1/1993	NT	NT	29
ITMW-13	ITMW-13-19961201	12/1/1996	36	NT	36
ITMW-13	ITMW-13-19990201	2/1/1999	36	140	48
ITMW-13	ITMW-13-20000301	3/1/2000	37	121	53
ITMW-13	ITMW-13-20000919	9/19/2000	22.4	112	50.5
ITMW-13	ITMW-13-20010328	3/28/2001	44	92	40
ITMW-13	ITMW-13-20010913	9/13/2001	35	111	80
ITMW-13	ITMW-13L-20020909	9/9/2002	99	110	10
ITMW-13	ITMW-13T-20020909	9/9/2002	81	86	20
ITMW-13	ITMW-13-20030226	2/26/2003	70.2	85.5	< 10 U
ITMW-13	ITMW-13-20030924	9/24/2003	159	130	< 10 U
ITMW-13	ITMW-13-20040413	4/13/2004	48.4	87.2	< 10 U
ITMW-13	ITMW-13-20040921	9/21/2004	25.5	71.6	< 10 U
ITMW-13	ITMW-13-20050407	4/7/2005	71.8	103	< 10 U
ITMW-13	ITMW-13-20050930	9/30/2005	72.7	114	17.9
ITMW-13	ITMW-13-20060316	3/16/2006	141	187	< 10 U
ITMW-13	ITMW-13-20061014	10/14/2006	100	150	17
ITMW-13	ITMW-13-20070418	4/18/2007	83.1	78	4.3 J
ITMW-13	ITMW-13-20070920	9/20/2007	28	40	< 10 U
ITMW-13	ITMW-13-20080429	4/29/2008	69	72	< 10 U
ITMW-13	ITMW-13-20081210	12/10/2008	26	23	< 5 U
ITMW-13	ITMW-13-20090427	4/27/2009	79	78	< 5 U
ITMW-13	ITMW-13-20091027	10/27/2009	18	22	< 5 U
ITMW-13	ITMW-13-20100512	5/12/2010	97	72	< 5 U
ITMW-13	ITMW-13-20110323	3/23/2011	130	83	< 5 U
ITMW-13	ITMW-13-20111027-FD	10/27/2011	64	40	< 5 U
ITMW-13	ITMW-13-20111027	10/27/2011	65	41	< 5 U
ITMW-13	ITMW-13-20120419	4/19/2012	97	63	< 5 U
ITMW-13	ITMW-13-20121018	10/18/2012	400	260	1.0 J
ITMW-13	ITMW-13-20130425	4/25/2013	86	52	0.14 J
ITMW-13	ITMW-13-101613	10/16/2013	150	74	< 0.11 U
ITMW-13	ITMW-13-201403	3/8/2014	69.3	45.3	< 0.13 U
ITMW-13	ITMW-13-201405	5/14/2014	54.0	34.7	0.17 J
ITMW-13	ITMW-13-201407	7/30/2014	36.5	27.5	< 0.50 U
ITMW-13	ITMW-13-201410	10/15/2014	40.8	25.9	< 0.50 U
ITMW-13	ITMW-13-201501	1/14/2015	45.8	28.5	< 0.50 U
ITMW-13	ITMW-13-201504	4/15/2015	43.1	26.5	< 0.50 U
ITMW-13	DUP-03-201504	4/15/2015	47.7	26.7	< 0.50 U
ITMW-13	DUP-02-201507	7/22/2015	36.1	20.8	0.17 J
ITMW-13	ITMW-13-201507	7/22/2015	37.3	20.1	0.18 J
ITMW-13	DUP-01-201510	10/7/2015	25.5	17.6	0.18 J
ITMW-13	ITMW-13-201510	10/7/2015	29.9	17.8	0.20 J
ITMW-14	ITMW-14-19901101	11/1/1990	ND	NT	13
ITMW-14	ITMW-14-19910201	2/1/1991	ND	NT	ND
ITMW-14	ITMW-14-19931101	11/1/1993	6	NT	ND
ITMW-14	ITMW-14-19961201	12/1/1996	ND	NT	ND
ITMW-14	ITMW-14-19990201	2/1/1999	ND	29	20
ITMW-14	ITMW-14-20000301	3/1/2000	ND	24	12
ITMW-14	ITMW-14-20000919	9/19/2000	< 5 U	13.6	< 10 U
ITMW-14	ITMW-14-20010327	3/27/2001	< 5 U	24	10
ITMW-14	ITMW-14-20010913	9/13/2001	< 5 U	5	< 10 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-14	ITMW-14-20020911	9/11/2002	41	6	< 10 U
ITMW-14	ITMW-14-20030226	2/26/2003	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20061014	10/14/2006	4 J	8	< 10 UJ
ITMW-14	ITMW-14-20070921	9/21/2007	5 J	9	< 10 U
ITMW-14	ITMW-14-20081210	12/10/2008	5.7	9.3	< 5 U
ITMW-14	ITMW-14-20101104	11/4/2010	110	14	< 5 U
ITMW-14	ITMW-14-20111027	10/27/2011	6.3	11	< 5 U
ITMW-14	ITMW-14-20120419	4/19/2012	7.6	16	< 5 U
ITMW-14	ITMW-14-20121019	10/19/2012	5.4	11	< 0.11 U
ITMW-14	ITMW-14-20130425	4/25/2013	6.8	14	< 0.11 U
ITMW-14	ITMW-14-101613	10/16/2013	2.9 J	4.9 J	< 0.11 U
ITMW-14	ITMW-14-201403	3/8/2014	6.1	11.9	< 0.13 U
ITMW-14	ITMW-14-201405	5/14/2014	5.3	11.3	< 0.13 U
ITMW-14	ITMW-14-201407	7/30/2014	4.0 J	9.2	< 0.50 U
ITMW-14	ITMW-14-201410	10/15/2014	4.1 J	9.4	< 0.50 U
ITMW-14	ITMW-14-201501	1/14/2015	4.9	11.5	< 0.50 U
ITMW-14	ITMW-14-201504	4/15/2015	5.0	10.7	< 0.50 U
ITMW-14	ITMW-14-201507	7/22/2015	4.3	9.6	< 0.13 U
ITMW-14	ITMW-14-201510	10/7/2015	4.6	9.8	< 0.13 U
ITMW-15	ITMW-15-19901101	11/1/1990	2500	NT	55
ITMW-15	ITMW-15-19910201	2/1/1991	1700	NT	ND
ITMW-15	ITMW-15-19910415	4/15/1991	2000	NT	ND
ITMW-15	ITMW-15-19910419	4/19/1991	2100	NT	ND
ITMW-15	ITMW-15-19910420	4/20/1991	2400	NT	ND
ITMW-15	ITMW-15-19931101	11/1/1993	4300	NT	10
ITMW-15	ITMW-15-19961201	12/1/1996	240	NT	ND
ITMW-15	ITMW-15-19990201	2/1/1999	400	120	ND
ITMW-15	ITMW-15-20000301	3/1/2000	339	97	ND
ITMW-15	ITMW-15-20000919	9/19/2000	362	92.7	< 10 U
ITMW-15	ITMW-15-20000919-FD	9/19/2000	376	91	< 10 U
ITMW-15	ITMW-15-20010328	3/28/2001	290	57	< 10 U
ITMW-15	ITMW-15-20010913	9/13/2001	380	87	< 10 U
ITMW-15	ITMW-15-20010913-FD	9/13/2001	370	80	< 10 U
ITMW-15	ITMW-15-20011120	11/20/2001	157	30	< 10 U
ITMW-15	ITMW-15-20020911	9/11/2002	320	75	< 10 U
ITMW-15	ITMW-15-20030226	2/26/2003	301	98.7	< 10 U
ITMW-15	ITMW-15-20030925	9/25/2003	490	91.9	< 10 U
ITMW-15	ITMW-15-20040414	4/14/2004	334	126	< 10 U
ITMW-15	ITMW-15-20040921	9/21/2004	774	118	< 10 U
ITMW-15	ITMW-15-20050407	4/7/2005	685	133	< 10 U
ITMW-15	ITMW-15-20050929	9/29/2005	862	189	< 10 U
ITMW-15	ITMW-15-20060316	3/16/2006	908	183	12
ITMW-15	ITMW-15-20061013	10/13/2006	680	140	7 J
ITMW-15	ITMW-15-20070419	4/19/2007	591	110	8.5 J
ITMW-15	ITMW-15-20070921	9/21/2007	1000	190	27
ITMW-15	ITMW-15-20080429	4/29/2008	100	18	< 10 U
ITMW-15	ITMW-15-20081210	12/10/2008	1100	150	< 5 U
ITMW-15	ITMW-15-20090427	4/27/2009	2800	130	17
ITMW-15	ITMW-15-20100511	5/11/2010	2800	160	11
ITMW-15	ITMW-15-20111026	10/26/2011	1100	74	< 5 U
ITMW-15	ITMW-15-20121019	10/19/2012	240	14	1.1 J
ITMW-15	ITMW-15-101613	10/16/2013	2800	170	14
ITMW-15	ITMW-15-201403	3/8/2014	1630	152	11.6
ITMW-15	DUP2-201405	5/14/2014	899	61.7	4.4
ITMW-15	ITMW-15-201405	5/14/2014	729	60.7	4.1
ITMW-15	DUP-4-201407	7/30/2014	1850	82.8	3.0
ITMW-15	ITMW-15-201407	7/30/2014	1820	82.5	3.1
ITMW-15	DUP-05-201410	10/16/2014	1660	66.4	1.8 J
ITMW-15	ITMW-15-201410	10/16/2014	1490	63.0	2.0
ITMW-15	ITMW-15-20141205	12/5/2014	63.0	< 0.50 U	< 0.50 U
ITMW-15	DUP-05-201501	1/15/2015	61.7	3.8	< 0.50 U
ITMW-15	ITMW-15-201501	1/15/2015	56.5	2.9	< 0.50 U
ITMW-15	ITMW-15-201504	4/15/2015	101	7.5	< 0.50 U
ITMW-15	ITMW-15-201507	7/22/2015	110	22.4	1.3
ITMW-15	ITMW-15-201510	10/8/2015	38.9	2.4	< 0.13 U
ITMW-16	ITMW-16-19910201	2/1/1991	31	NT	ND
ITMW-16	ITMW-16-19931101	11/1/1993	41	NT	7
ITMW-16	ITMW-16-19961201	12/1/1996	ND	NT	ND
ITMW-16	ITMW-16-19990201	2/1/1999	ND	ND	ND
ITMW-16	ITMW-16-20000301	3/1/2000	7	ND	ND
ITMW-16	ITMW-16-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20010326	3/26/2001	< 5 U	< 5 U	< 10 U

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TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-16	ITMW-16-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20050929-FD	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20061014	10/14/2006	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
ITMW-16	ITMW-16-20101106	11/6/2010	17	< 5 U	< 5 U
ITMW-16	ITMW-16-20111027	10/27/2011	< 5 U	< 5 U	< 5 U
ITMW-16	ITMW-16-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
ITMW-16	ITMW-16-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-16	ITMW-16-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-16	ITMW-16-101613	10/16/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-16	ITMW-16-201403	3/7/2014	0.30 J	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-16	ITMW-16-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-16	ITMW-16-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-16	ITMW-16-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-16	ITMW-16-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-17	ITMW-17-19910201	2/1/1991	21000	NT	ND
ITMW-17	ITMW-17-19910415	4/15/1991	21000	NT	ND
ITMW-17	ITMW-17-19910424	4/24/1991	21000	NT	ND
ITMW-17	ITMW-17-19931101	11/1/1993	18000	NT	15
ITMW-17	ITMW-17-19961201	12/1/1996	9300	NT	ND
ITMW-17	ITMW-17-19990201	2/1/1999	11000	240	ND
ITMW-17	ITMW-17-20000301	3/1/2000	6780	171	ND
ITMW-17	ITMW-17-20000919	9/19/2000	5500	180	< 10 U
ITMW-17	ITMW-17-20010105	1/5/2001	8310	179	< 10 U
ITMW-17	ITMW-17-20010328	3/28/2001	6700	134	< 10 U
ITMW-17	ITMW-17-20010913	9/13/2001	6300	158	< 10 U
ITMW-17	ITMW-17-20020911	9/11/2002	6500	153	< 10 U
ITMW-17	ITMW-17-20030226	2/26/2003	4380	134	< 10 U
ITMW-17	ITMW-17-20030925	9/25/2003	6090	136	< 10 U
ITMW-17	ITMW-17-20040414	4/14/2004	5050	184	< 10 U
ITMW-17	ITMW-17-20040414-FD	4/14/2004	4920	182	< 10 U
ITMW-17	ITMW-17-20040921	9/21/2004	5760	156	< 10 U
ITMW-17	ITMW-17-20050407	4/7/2005	5750	156	< 10 U
ITMW-17	ITMW-17-20050929	9/29/2005	5460	111	< 10 U
ITMW-17	ITMW-17-20060315	3/15/2006	15900	211 E	26.3
ITMW-17	ITMW-17-20061012	10/12/2006	19000	220	21
ITMW-17	ITMW-17-20070418	4/18/2007	13000	298	< 10 U
ITMW-17	ITMW-17-20070921	9/21/2007	11000	210	3 J
ITMW-17	ITMW-17-20080429	4/29/2008	6200	140	< 10 U
ITMW-17	ITMW-17-20081210	12/10/2008	5600	130	< 5 U
ITMW-17	ITMW-17-20090427	4/27/2009	5200	130	< 5 U
ITMW-17	ITMW-17-20100511	5/11/2010	4500	85	< 5 U
ITMW-17	ITMW-17-20101104	11/4/2010	5400	110	< 5 U
ITMW-17	ITMW-17-20110322	3/22/2011	5300	100	< 5 U
ITMW-17	ITMW-17-20111026	10/26/2011	4500	98	< 5 U
ITMW-17	ITMW-17-20120419	4/19/2012	4700	110	< 5 U
ITMW-17	ITMW-17-20121019	10/19/2012	3500	100	0.48 J
ITMW-17	ITMW-17-20130425	4/25/2013	5600	130	0.90 J
ITMW-17	ITMW-17-101713	10/17/2013	4800	79	< 0.11 U
ITMW-17	ITMW-17-201403	3/8/2014	3770	86.1	0.57 J
ITMW-17	ITMW-17-201403-FD	3/8/2014	4040	87.3	0.74 J
ITMW-17	DUP-3-201405	5/15/2014	3370	88.5	1.1 J
ITMW-17	ITMW-17-201405	5/15/2014	3630	82.9	1.3 J
ITMW-17	ITMW-17-201407	7/30/2014	2260	64.7	< 0.50 U
ITMW-17	ITMW-17-201410	10/16/2014	3510	70.5	3.2
ITMW-17	ITMW-17-20141205	12/5/2014	4630	210 J	7.7
ITMW-17	ITMW-17-201501	1/15/2015	3840	110	1.5
ITMW-17	ITMW-17-201504	4/15/2015	3920	142	< 0.13 U
ITMW-17	ITMW-17-201507	7/22/2015	5350	116	0.51 J
ITMW-17	ITMW-17-201510	10/8/2015	3970	77.2	2.5
ITMW-18	ITMW-18-19910201	2/1/1991	3700	NT	ND
ITMW-18	ITMW-18-19931101	11/1/1993	4500	NT	6
ITMW-18	ITMW-18-19961201	12/1/1996	1600	NT	ND
ITMW-18	ITMW-18-19990201	2/1/1999	6300	480	ND
ITMW-18	ITMW-18-20000301	3/1/2000	3560	401	ND
ITMW-18	ITMW-18-20000919	9/19/2000	4080	409	< 10 U

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TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-18	ITMW-18-20010327	3/27/2001	4000	400	< 10 U
ITMW-18	ITMW-18-20010327-FD	3/27/2001	4200	370	< 100 U
ITMW-18	ITMW-18-20010911	9/11/2001	4100	300	< 10 U
ITMW-18	ITMW-18-20020911	9/11/2002	6700	300	< 10 U
ITMW-18	ITMW-18-20030226	2/26/2003	5110	290	< 10 U
ITMW-18	ITMW-18-20030924	9/24/2003	7700	415	< 10 U
ITMW-18	ITMW-18-20040413	4/13/2004	7740	410	< 10 U
ITMW-18	ITMW-18-20040921	9/21/2004	7050	380	< 10 U
ITMW-18	ITMW-18-20050408	4/8/2005	7080	389	< 10 U
ITMW-18	ITMW-18-20050929	9/29/2005	4660	241	< 10 U
ITMW-18	ITMW-18-20060315	3/15/2006	5750	373	< 50 U
ITMW-18	ITMW-18-20061013	10/13/2006	6600	300	< 10 U
ITMW-18	ITMW-18-20070418	4/18/2007	15000	387	< 10 U
ITMW-18	ITMW-18-20070921	9/21/2007	8300	310	< 100 U
ITMW-18	ITMW-18-20080430	4/30/2008	9000	350	< 10 U
ITMW-18	ITMW-18-20081209	12/9/2008	7200	320	< 5 U
ITMW-18	ITMW-18-20090427	4/27/2009	7100	320	< 5 U
ITMW-18	ITMW-18-20091027	10/27/2009	7800	360	< 5 U
ITMW-18	ITMW-18-20100511	5/11/2010	11000	360	< 5 U
ITMW-18	ITMW-18-20111026	10/26/2011	8500	290	< 5 U
ITMW-18	ITMW-18-20120419	4/19/2012	9800	360	2.9 J
ITMW-18	ITMW-18-20121019	10/19/2012	7600	260	1.2 J
ITMW-18	ITMW-18-20130425	4/25/2013	7200	270	0.90 J
ITMW-18	ITMW-18-101713	10/17/2013	7000	280	0.64 J
ITMW-18	ITMW-18-201403	3/8/2014	9380	285	< 6.5 U
ITMW-18	ITMW-18-201403-FD	3/8/2014	8550	242 J	1.7 J
ITMW-18	DUP-5-201405	5/15/2014	2500	108	< 0.13 U
ITMW-18	ITMW-18-201405	5/15/2014	2940	101	< 0.13 U
ITMW-18	ITMW-18-201407	7/31/2014	5360	139	1.6 J
ITMW-18	ITMW-18-201410	10/15/2014	3540	68.5	< 0.50 U
ITMW-18	ITMW-18-20141204	12/4/2014	3690	74.3	< 0.50 U
ITMW-18	ITMW-18-201501	1/15/2015	488	26.5	< 0.50 U
ITMW-18	DUP-04-201504	4/16/2015	42.8	1.7	< 0.50 U
ITMW-18	ITMW-18-201504	4/16/2015	43.5	1.6	< 0.50 U
ITMW-18	DUP-07-201507	7/23/2015	24.7	0.81 J	< 0.13 U
ITMW-18	ITMW-18-201507	7/23/2015	22.9	0.69 J	< 0.13 U
ITMW-18	DUP-06-201510	10/8/2015	12.4	0.41 J	< 0.13 U
ITMW-18	ITMW-18-201510	10/8/2015	12.9	0.40 J	< 0.13 U
ITMW-19	ITMW-19-19910201	2/1/1991	9900	NT	ND
ITMW-19	ITMW-19-19931101	11/1/1993	27000	NT	7
ITMW-19	ITMW-19-19961201	12/1/1996	25000	NT	ND
ITMW-19	ITMW-19-19990201	2/1/1999	33000	150	ND
ITMW-19	ITMW-19-20000301	3/1/2000	33100	128	ND
ITMW-19	ITMW-19-20000919	9/19/2000	35700	197	< 10 U
ITMW-19	ITMW-19-20010105	1/5/2001	34000	166	< 10 U
ITMW-19	ITMW-19-20010328	3/28/2001	38000	119	< 10 U
ITMW-19	ITMW-19-20010913	9/13/2001	19000	132	< 10 U
ITMW-19	ITMW-19-20020911	9/11/2002	27000	167	< 10 U
ITMW-19	ITMW-19-20030226	2/26/2003	16200	126	< 10 U
ITMW-19	ITMW-19-20030924	9/24/2003	27300	186	< 10 U
ITMW-19	ITMW-19-20040413	4/13/2004	19400	186	< 10 U
ITMW-19	ITMW-19-20040921	9/21/2004	20000	148	< 10 U
ITMW-19	ITMW-19-20050407	4/7/2005	18300	146	< 10 U
ITMW-19	ITMW-19-20050407-FD	4/7/2005	16200	145	< 10 U
ITMW-19	ITMW-19-20050929	9/29/2005	25700	144	< 10 U
ITMW-19	ITMW-19-20060315	3/15/2006	21300	177	< 100 U
ITMW-19	ITMW-19-20061012	10/12/2006	16000	150	2 J
ITMW-19	ITMW-19-20070418	4/18/2007	20000	131	< 10 U
ITMW-19	ITMW-19-20070921	9/21/2007	19000	110	< 200 U
ITMW-19	ITMW-19-20080429	4/29/2008	17000	98	< 100 U
ITMW-19	ITMW-19-20081210	12/10/2008	11000	93	< 5 U
ITMW-19	ITMW-19-20090427	4/27/2009	13000	100	< 5 U
ITMW-19	ITMW-19-20100511	5/11/2010	19000	130	< 5 U
ITMW-19	ITMW-19-20101104-FD	11/4/2010	19000	150	< 5 U
ITMW-19	ITMW-19-20101104	11/4/2010	18000	140	< 5 U
ITMW-19	ITMW-19-20110322	3/22/2011	16000	110	1 J
ITMW-19	ITMW-19-20111026	10/26/2011	17000	120	< 5 U
ITMW-19	ITMW-19-20120419-FD	4/19/2012	15000	110	< 5 U
ITMW-19	ITMW-19-20120419	4/19/2012	18000	110	< 5 U
ITMW-19	ITMW-19-20121019	10/19/2012	15000	110	0.89 J
ITMW-19	ITMW-19-20130425	4/25/2013	13000	110	0.57 J
ITMW-19	ITMW-19-101813	10/18/2013	16000	91 J	< 0.11 U
ITMW-19	ITMW-19-10182013-FD	10/18/2013	14000	100 J	< 0.11 U
ITMW-19	ITMW-19-201403	3/8/2014	8850	66.7	0.57 J
ITMW-19	ITMW-19-201403-FD	3/8/2014	8270	60.8 J	< 6.5 U
ITMW-19	DUP-6-201405	5/15/2014	15300 J	67.2	0.87 J

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TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-19	ITMW-19-201405	5/15/2014	9780 J	65.8	0.85 J
ITMW-19	ITMW-19-201407	7/31/2014	13300	85.5	0.96 J
ITMW-19	ITMW-19-201410	10/16/2014	12800	76.7	1.9 J
ITMW-19	ITMW-19-20141205	12/5/2014	33.5	< 0.50 U	< 0.50 U
ITMW-19	ITMW-19-201501	1/15/2015	17.4	< 0.50 U	< 0.50 U
ITMW-19	ITMW-19-201504	4/15/2015	594	2.2	< 0.50 U
ITMW-19	ITMW-19-201507	7/23/2015	15.2	< 0.080 U	< 0.13 U
ITMW-19	ITMW-19-201510	10/8/2015	87.1	0.41 J	< 0.13 U
ITMW-20	ITMW-20-19910301	3/1/1991	ND	NT	ND
ITMW-20	ITMW-20-19931101	11/1/1993	ND	NT	ND
ITMW-20	ITMW-20-19961201	12/1/1996	290	NT	ND
ITMW-20	ITMW-20-19970501	5/1/1997	ND	ND	ND
ITMW-20	ITMW-20-19990201	2/1/1999	ND	ND	ND
ITMW-20	ITMW-20-20000301	3/1/2000	ND	ND	ND
ITMW-20	MW-20-20000921-FS	9/21/2000	< 5 U	< 5 U	< 10 U
ITMW-20	MW-20-20010327-FS	3/27/2001	< 5 U	< 5 U	< 10 U
ITMW-20	MW-20-20010911-FS	9/11/2001	21	< 5 U	< 10 U
ITMW-20	ITMW-20-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20101105	11/5/2010	15	< 5 U	< 5 U
ITMW-20	ITMW-20-20111026-FD	10/26/2011	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-20	ITMW-20-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-20	ITMW-20-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-20	ITMW-20-201403	3/5/2014	< 0.17 U	< 0.080 U	0.15 J
ITMW-20	ITMW-20-201405	5/12/2014	0.21 J	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-20	ITMW-20-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-20	ITMW-20-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-20	ITMW-20-201504	4/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-20	ITMW-20-201507	7/22/2015	0.20 J	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-21	ITMW-21-19910301	3/1/1991	21	NT	ND
ITMW-21	ITMW-21-19931101	11/1/1993	37	NT	ND
ITMW-21	ITMW-21-19961201	12/1/1996	150	NT	ND
ITMW-21	ITMW-21-19990201	2/1/1999	190	ND	ND
ITMW-21	ITMW-21-20000301	3/1/2000	196	ND	ND
ITMW-21	ITMW-21-20000919	9/19/2000	192	< 5 U	< 10 U
ITMW-21	ITMW-21-20010328	3/28/2001	123	< 5 U	< 10 U
ITMW-21	ITMW-21-20010913	9/13/2001	116	< 5 U	< 10 U
ITMW-21	ITMW-21-20020910	9/10/2002	13	< 5 U	< 10 U
ITMW-21	ITMW-21-20030226	2/26/2003	39.5	< 5 U	< 10 U
ITMW-21	ITMW-21-20030923	9/23/2003	9.09	< 5 U	< 10 U
ITMW-21	ITMW-21-20040414	4/14/2004	52.9	< 5 U	< 10 U
ITMW-21	ITMW-21-20040922	9/22/2004	7.8	< 5 U	< 10 U
ITMW-21	ITMW-21-20050928	9/28/2005	6.45	< 5 U	< 10 U
ITMW-21	ITMW-21-20061012	10/12/2006	9	< 5 U	< 10 U
ITMW-21	ITMW-21-20070921	9/21/2007	10	< 5 U	< 10 U
ITMW-21	ITMW-21-20081209	12/9/2008	15	< 5 U	< 5 U
ITMW-21	ITMW-21-20091027	10/27/2009	14	< 5 U	< 5 U
ITMW-21	ITMW-21-20101104	11/4/2010	1100	4.4 J	< 5 U
ITMW-21	ITMW-21-20110322	3/22/2011	24	< 5 U	< 5 U
ITMW-21	ITMW-21-20111025	10/25/2011	11	< 5 U	< 5 U
ITMW-21	ITMW-21-20120417	4/17/2012	30	< 5 U	< 5 U
ITMW-21	ITMW-21-20121019	10/19/2012	7.7	< 0.56 U	< 0.11 U
ITMW-21	ITMW-21-20130424	4/24/2013	18	< 0.56 U	< 0.11 U
ITMW-21	ITMW-21-101513	10/15/2013	20	< 0.56 U	< 0.11 U
ITMW-21	ITMW-21-201403	3/6/2014	14.8	< 0.080 U	< 0.13 U
ITMW-21	ITMW-21-201405	5/14/2014	17.6	< 0.080 U	< 0.13 U
ITMW-21	DUP-3-201407	7/30/2014	9.3	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201407	7/30/2014	9.4	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201410	10/15/2014	6.0	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201501	1/14/2015	10.8	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201504	4/14/2015	12.7	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201507	7/22/2015	7.6	0.20 J	< 0.13 U

RAMBOLL ENVIRON

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
ITMW-21	ITMW-21-201510	10/8/2015	7.2	0.29 J	< 0.13 U
IW-72	IW-72-20090116	1/16/2009	27	< 5 U	< 5 U
IW-72	IW-72-20090423	4/23/2009	40	< 5 U	< 5 U
IW-72	IW-72-20090508	5/8/2009	40	< 5 U	< 5 U
IW-72	IW-72-20110303-FS	3/3/2011	3.1 J	< 0.56 U	< 0.85 U
IW-72	IW-72-20110519-FS	5/19/2011	< 1.6 U	< 0.56 U	NT
IW-72	IW-72-20111024	10/24/2011	< 5 U	< 5 U	< 5 U
IW-72	IW-72-20120417	4/17/2012	3.8 J	< 5 U	< 5 U
IW-72	IW-72-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
IW-72	IW-72-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
IW-72	IW-72-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
IW-72	IW-72-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
IW-72	IW-72-201405	5/12/2014	< 0.17 U	< 0.080 U	< 0.13 U
IW-72	IW-72-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
IW-72	IW-72-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U
IW-72	IW-72-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
IW-72	IW-72-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
IW-72	IW-72-201507	7/20/2015	0.48 J	< 0.080 U	< 0.13 U
IW-72	IW-72-201510	10/6/2015	0.74 J	< 0.080 U	< 0.13 U
IW-73	IW-73-20090423	4/23/2009	400	16	< 5 U
IW-73	IW-73-20110519-FS	5/19/2011	160	3.6 J	NT
IW-73	IW-73-20111025	10/25/2011	250	4.9 J	< 5 U
IW-73	IW-73-20120417	4/17/2012	180	5.8	< 5 U
IW-73	IW-73-20121020	10/20/2012	170	7.0	< 0.11 U
IW-73	IW-73-20130424	4/24/2013	200	6.5	< 0.11 U
IW-73	IW-73-20130424-FD	4/24/2013	180	6.4	< 0.11 U
IW-73	IW-73-101513	10/15/2013	140	47	6.3
IW-73	IW-73-201403	3/7/2014	183	20.9	4.6
IW-73	IW-73-201405	5/14/2014	31.9	0.81 J	< 0.13 U
IW-73	IW-73-201407	7/29/2014	138	24.3	26.1
IW-73	IW-73-201410	10/14/2014	8.5	0.84 J	1.1 J
IW-73	IW-73-201501	1/14/2015	70.8	6.3	4.1
IW-73	IW-73-201504	4/15/2015	96.8	6.8	1.6
IW-73	IW-73-201507	7/21/2015	143	9.0	1.5
IW-73	IW-73-201510	10/6/2015	154	7.8	0.59 J
IW-74	IW-74-20090423	4/23/2009	260	8.1	< 5 U
IW-74	IW-74-20110519-FS	5/19/2011	74	< 0.56 U	NT
IW-74	IW-74-20111025	10/25/2011	150	3.1 J	< 5 U
IW-74	IW-74-20120417	4/17/2012	130	2.4 J	< 5 U
IW-74	IW-74-20121020	10/20/2012	160	3.4 J	< 0.11 U
IW-74	IW-74-20130424	4/24/2013	160	4.8 J	< 0.11 U
IW-74	IW-74-101513	10/15/2013	190	5.7	< 0.11 U
IW-74	IW-74-201403	3/7/2014	135	4.3 J	1.5 J
IW-74	IW-74-201403-FD	3/7/2014	151	4.5 J	2.2
IW-74	IW-74-201405	5/14/2014	169	4.3 J	0.80 J
IW-74	IW-74-201407	7/29/2014	177	5.8	0.91 J
IW-74	DUP-01-201410	10/14/2014	143	3.3 J	< 0.50 U
IW-74	IW-74-201410	10/14/2014	144	3.3 J	< 0.50 U
IW-74	DUP-01-201501	1/14/2015	139	3.5	< 0.50 U
IW-74	IW-74-201501	1/14/2015	141	3.8	< 0.50 U
IW-74	DUP-05-201504	4/15/2015	153	4.8	< 0.50 U
IW-74	IW-74-201504	4/15/2015	147	5.0	< 0.50 U
IW-74	DUP-08-201507	7/21/2015	168	4.2	1.3
IW-74	IW-74-201507	7/21/2015	168	4.6	1.4
IW-74	DUP-10-201510	10/7/2015	122	3.8	0.33 J
IW-74	IW-74-201510	10/7/2015	121	3.8	0.36 J
IW-75	IW-75-20090116	1/16/2009	140	2.4 J	< 5 U
IW-75	IW-75-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
IW-75	IW-75-20120417	4/17/2012	2.9 J	< 5 U	< 5 U
IW-75	IW-75-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
IW-75	IW-75-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
IW-76	IW-76-20090423	4/23/2009	730	28	< 5 U
IW-76	IW-76-20090507	5/7/2009	460	28	< 5 U
IW-76	IW-76-20110304-FS	3/4/2011	380	11	< 0.85 U
IW-76	IW-76-20110523-FS	5/23/2011	460	12	NT
IW-76	IW-76-20111025	10/25/2011	130	2.2 J	< 5 U
IW-76	IW-76-20120417	4/17/2012	400	8.9	< 5 U
IW-76	IW-76-20121020	10/20/2012	610	16	< 0.11 U
IW-76	IW-76-20130424	4/24/2013	420	13	0.39 J
IW-76	IW-76-101513	10/15/2013	450	8.7	< 0.11 U
IW-76	IW-76-201403	3/8/2014	127	1.5 J	< 0.13 U
IW-76	IW-76-201405	5/14/2014	10.3	< 0.080 U	< 0.13 U
IW-76	IW-76-201407	7/29/2014	319	2.7 J	< 0.50 U
IW-76	IW-76-201410	10/15/2014	214	6.7	< 0.50 U
IW-76	IW-76-201501	1/14/2015	288	8.8	< 0.50 U
IW-76	IW-76-201504	4/15/2015	354	11.2	< 0.50 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
IW-76	IW-76-201507	7/21/2015	323	7.3	< 0.13 U
IW-76	IW-76-201510	10/6/2015	106	1.6	< 0.13 U
IW-77	IW-77-20090423	4/23/2009	570	20	< 5 U
IW-77	IW-77-20090507	5/7/2009	300	17	< 5 U
IW-77	IW-77-20090527	5/27/2009	250	13	< 5 U
IW-77	IW-77-20091028	10/28/2009	380	13	< 5 U
IW-77	IW-77-20091221-FS	12/21/2009	250	12	< 1.6 U
IW-77	IW-77-20100513	5/13/2010	260	11	< 5 U
IW-77	IW-77-20101105	11/5/2010	1400	41	< 5 U
IW-77	IW-77-20110304-FS	3/4/2011	430	14	< 0.85 U
IW-77	IW-77-20110523-FS	5/23/2011	440	15	NT
IW-77	IW-77-20111025	10/25/2011	1400	32	< 5 U
IW-77	IW-77-20120417-FD	4/17/2012	520	20	< 5 U
IW-77	IW-77-20120417	4/17/2012	510	23	< 5 U
IW-77	IW-77-20121019	10/19/2012	1000	32	0.65 J
IW-77	IW-77-20130424	4/24/2013	530	21	< 0.11 U
IW-77	IW-77-101613	10/16/2013	1000	39	1.6 J
IW-77	IW-77-20131016-FD	10/16/2013	990	39	0.49 J
IW-77	IW-77-201403	3/8/2014	546	24.4	0.22 J
IW-77	IW-77-201405	5/14/2014	1460	36.0	0.66 J
IW-77	20140709-GW-IW-77	7/9/2014	1200	21.1	< 0.50 U
IW-77	IW-77-201407	7/29/2014	1540	35.2	< 0.50 U
IW-77	IW-77-201410	10/15/2014	741	15.8	< 0.50 U
IW-77	IW-77-20141023	10/23/2014	554	11.9	< 0.50 U
IW-77	IW-77-201501	1/14/2015	201	4.8	< 0.50 U
IW-77	IW-77-201504	4/14/2015	153	2.9	< 0.50 U
IW-77	IW-77-201507	7/21/2015	130	2.4	< 0.13 U
IW-77	IW-77-201510	10/8/2015	24.3	0.54 J	< 0.13 U
IW-77	IW-77-201512	12/2/2015	87.8	1.3	< 0.13 U
IW-78	IW-78-20111025	10/25/2011	350	12	< 5 U
IW-78	IW-78-20120418	4/18/2012	120	2.3 J	< 5 U
IW-78	IW-78-20121020	10/20/2012	310	8.7	< 0.11 U
IW-78	IW-78-20130424	4/24/2013	7.0	< 0.56 U	< 0.11 U
IW-78	IW-78-101713	10/17/2013	190	4.6 J	< 0.11 U
IW-78	IW-78-201405	5/28/2014	255	6.2	< 0.13 U
IW-78	IW-78-201409	9/11/2014	39.6	1.2 J	< 0.50 U
IW-79	IW-79-20111025	10/25/2011	570	13	< 5 U
IW-79	IW-79-20120417	4/17/2012	430	2.1 J	< 5 U
IW-79	IW-79-20121020	10/20/2012	670	20	0.45 J
IW-79	IW-79-20121020-FD	10/20/2012	480	16	< 0.11 U
IW-79	IW-79-20130424	4/24/2013	420	9.0	< 0.11 U
IW-79	IW-79-101713	10/17/2013	440	12	< 0.11 U
IW-79	IW-79-201405	5/28/2014	426	6.9	< 0.13 U
IW-79	IW-79-201409	9/11/2014	105	1.8 J	< 0.50 U
IW-80	IW-80-20090423	4/23/2009	170	4 J	< 5 U
IW-80	IW-80-20090507	5/7/2009	69	< 5 U	< 5 U
IW-80	IW-80-20110519-FS	5/19/2011	27	< 0.56 U	NT
IW-80	IW-80-20111025	10/25/2011	9.7	< 5 U	< 5 U
IW-80	IW-80-20120417	4/17/2012	55	2.2 J	< 5 U
IW-80	IW-80-20121019	10/19/2012	48	< 0.56 U	< 0.11 U
IW-80	IW-80-20130424	4/24/2013	40	< 0.56 U	< 0.11 U
IW-80	IW-80-101713	10/17/2013	58	2.4 J	< 0.11 U
IW-80	IW-80-20131017-FD	10/17/2013	62	2.4 J	< 0.11 U
IW-80	IW-80-201403	3/8/2014	79.1 J	2.7 J	< 0.13 U
IW-80	IW-80-201405	5/13/2014	24.2	< 0.080 U	< 0.13 U
IW-80	IW-80-201407	7/30/2014	25.6	0.85 J	< 0.50 U
IW-80	IW-80-201410	10/14/2014	11.8	< 0.50 U	< 0.50 U
IW-80	IW-80-201501	1/13/2015	7.1	< 0.50 U	< 0.50 U
IW-80	IW-80-201504	4/14/2015	9.2	< 0.50 U	< 0.50 U
IW-80	IW-80-201507	7/21/2015	12.5	0.39 J	< 0.13 U
IW-80	IW-80-201510	10/6/2015	10.6	0.37 J	< 0.13 U
IW-80	IW-80-201512	12/2/2015	9	0.36 J	< 0.13 U
IW-101	IW-101-20140323	3/23/2014	314	7.5	0.21 J
IW-101	IW-101-20140430	4/30/2014	794	18.9	< 0.13 U
IW-101	IW-101-20140523	5/23/2014	509	11.2	< 0.13 U
IW-101	20140708-GW-IW-101	7/8/2014	150	4.5 J	< 0.50 U
IW-101	IW-101-201409	9/12/2014	139	3.4 J	< 0.50 U
IW-102	IW-102-20140323	3/23/2014	685	14.6	0.45 J
IW-102	IW-102-20140430	4/30/2014	239	5.4	< 0.13 U
IW-103	IW-103-20140323	3/23/2014	692	13.1	0.76 J
IW-103	IW-103-20140430	4/30/2014	729	22.8	0.83 J
IW-104	IW-104-20140323	3/23/2014	637	13.5	0.69 J
IW-104	IW-104-20140430	4/30/2014	527	12.6	< 0.13 U
IW-105	IW-105-20140323	3/23/2014	901	14.4	0.54 J
IW-105	IW-105-20140430	4/30/2014	185	4.9 J	< 0.13 U
IW-106	IW-106-20140323	3/23/2014	198	4.2 J	< 2 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
IW-106	IW-106-20140430	4/30/2014	163	6.8	< 0.13 U
IW-106	IW-106-20140523	5/23/2014	132	2.6 J	< 0.13 U
IW-107	IW-107-20140323	3/23/2014	198	4.3 J	0.14 J
IW-107	IW-107-20140430	4/30/2014	110	3.3 J	< 0.13 U
IW-108	IW-108-20140323	3/23/2014	1280	27.8	0.83 J
IW-108	IW-108-20140429	4/29/2014	72.1	4.1 J	< 0.13 U
IW-108	IW-108-20140523	5/23/2014	59.0	1.5 J	< 0.13 U
IW-109	IW-109-20140323	3/23/2014	362	7.4	0.23 J
IW-109	IW-109-20140429	4/29/2014	91.2	2.5 J	< 0.13 U
IW-109	IW-109-20140523	5/23/2014	110	1.9 J	< 0.13 U
IW-110	IW-110-20140323	3/23/2014	464	9.8	0.5 J
IW-110	IW-110	4/16/2014	397	9.4	0.17 J
IW-110	IW-110-20140430	4/30/2014	268	8.2	0.33 J
IW-111	IW-111-20140323	3/23/2014	704	14	0.63 J
IW-111	IW-111-20140429	4/29/2014	260	6.4	< 0.13 U
IW-112	IW-112-20140323	3/23/2014	219	4.9 J	0.23 J
IW-112	IW-112	4/16/2014	200	4.8 J	< 0.13 U
IW-112	IW-112-20140430	4/30/2014	104	3.8 J	< 0.13 U
IW-113	IW-113-20140324	3/24/2014	510	11.1	0.43 J
IW-113	IW-113	4/14/2014	435	8.7	< 0.13 U
IW-114	IW-114-20140324	3/24/2014	397	9.7	0.25 J
IW-114	IW-114	4/14/2014	336	8.1	< 0.13 U
IW-115	IW-115-20140324	3/24/2014	622	14	0.25 J
IW-115	IW-115-20140407	4/7/2014	455	9.1 J	< 1.3 U
IW-115	IW-115	4/14/2014	449	9.3	< 0.13 U
IW-115	IW-115-201405	5/28/2014	504	11.2	0.27 J
IW-115	20140709-GW-IW-115	7/9/2014	352	7.4	< 0.50 U
IW-115	IW-115-201409	9/11/2014	355	8.0	< 0.50 U
IW-116	IW-116-20140324	3/24/2014	486	10.9	0.33 J
IW-116	IW-116	4/15/2014	546	10.8	0.34 J
IW-117	IW-117-20140324	3/24/2014	384	9.1	0.23 J
IW-117	IW-117	4/15/2014	384	9.9	< 0.13 U
IW-118	IW-118-20140324	3/24/2014	496	11.6	0.34 J
IW-118	IW-118	4/15/2014	395	9.7	< 0.13 U
IW-118	IW-118-201405	5/28/2014	437	9.3	< 0.13 U
IW-119	IW-119-20140324	3/24/2014	524	11.5	0.33 J
IW-119	IW-119-20140407	4/7/2014	478	9.1 J	< 1.3 U
IW-119	IW-119	4/15/2014	509	11.3	< 0.13 U
IW-120	IW-120-20140324	3/24/2014	289	7.9	0.14 J
IW-120	IW-120	4/15/2014	390	10.2	< 0.13 U
IW-121	IW-121-20140324	3/24/2014	402	8.9 J	< 10 U
IW-121	IW-121	4/15/2014	445	11.7	< 0.13 U
IW-122	IW-122-20140324	3/24/2014	473	11.5	0.29 J
IW-122	IW-122	4/15/2014	384	10.0	< 0.13 U
IW-123	IW-123-20140324	3/24/2014	532	12.2	0.40 J
IW-123	IW-123-20140407	4/7/2014	539	8.8 J	< 1.3 U
IW-123	IW-123	4/15/2014	488	10.0	< 0.13 U
IW-124	IW-124-20140324	3/24/2014	455	6.8 J	< 10 U
IW-124	IW-124	4/15/2014	448	8.7	0.26 J
IW-125	IW-125-20140325	3/25/2014	2140	207	3.1
IW-125	IW-125-201405	5/29/2014	17.1	2.9 J	< 0.13 U
IW-125	IW-125-201409	9/11/2014	7.3	1.0 J	< 0.50 U
IW-126	IW-126-20140325	3/25/2014	2020	197	10.4
IW-126	IW-126-201405	5/29/2014	787	59.1	< 0.13 U
IW-127	IW-127-20140324	3/24/2014	3700	219 J	7.6
IW-127	IW-127-201405	5/29/2014	639	34.7	< 0.13 U
IW-127	IW-127-201409	9/11/2014	1020	38.5	2.6
IW-127	IW-127-20141204	12/4/2014	182	7.2	< 0.50 U
IW-128	IW-128-20140325	3/25/2014	2980	178	11.7
IW-128	IW-128-20140429	4/29/2014	1250	68.4	4.9
IW-128	IW-128-201405	5/29/2014	1190	62.7	< 0.13 U
IW-129	IW-129-20140325	3/25/2014	2540	192	< 0.13 U
IW-129	IW-129-201405	5/29/2014	25.8	1.8 J	< 0.13 U
IW-130	IW-130-20140323	3/23/2014	358	7.6 J	< 10 U
IW-130	IW-130-20140523	5/23/2014	75.5	0.78 J	< 0.13 U
IW-131	IW-131-20140324	3/24/2014	526	11.5	0.35 J
IW-131	IW-131-20140430	4/30/2014	318	8.5	0.31 J
IW-131	IW-131-201405	5/28/2014	443	8.8	0.30 J
IW-132	IW-132-20141023	10/23/2014	714	3.5 J	< 0.50 U
IW-135	IW-135-20141023	10/23/2014	3840	43.3	2.0
IW-141	IW-141-20141023	10/23/2014	368000	< 1000 U	82.6
IW-141	IW-141-20141205	12/5/2014	46300	232 E	31.0
IW-143	IW-143-20141023	10/23/2014	13100	44.8	2.5
IW-147	IW-147-20141023	10/23/2014	199000	1640 J	< 1000 U
IW-147	IW-147-20141205	12/5/2014	91600	1420 J	176

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
IW-152	IW-152-20141022	10/22/2014	17600	224 J	8.2
IW-152	IW-152-20141204	12/4/2014	< 0.50 U	< 0.50 U	< 0.50 U
IW-153	IW-153-20141023	10/23/2014	293	85.3	12.3
IW-153	IW-153-20141204	12/4/2014	1.6 J	< 0.50 U	< 0.50 U
IW-155	IW-155-20141023	10/23/2014	14600	36.4	5.8
IW-157	IW-157-20141023	10/23/2014	74200	712 J	195
IW-157	IW-157-20141205	12/5/2014	31700	391 E	66.8
IW-169	IW-169-20141022	10/22/2014	163	1.7 J	< 0.50 U
MW-22	MW-22-19961201	12/1/1996	ND	NT	ND
MW-22	MW-22-19970501	5/1/1997	ND	5	ND
MW-22	MW-22-19990201	2/1/1999	ND	5	ND
MW-22	MW-22-20000301	3/1/2000	ND	ND	ND
MW-22	MW-22-20000919	9/19/2000	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20020910	9/10/2002	9	< 5 U	< 10 U
MW-22	MW-22-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20030923-FD	9/23/2003	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20061014	10/14/2006	< 5 U	< 5 U	< 10 UJ
MW-22	MW-22-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20111027	10/27/2011	2.1 J	< 5 U	< 5 U
MW-22	MW-22-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-22	MW-22-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-22	MW-22-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-22	MW-22-201403	3/5/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201405	5/12/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-22	MW-22-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-22	MW-22-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-22	MW-22-201504	4/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-22	MW-22-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-23	MW-23-19961201	12/1/1996	210	NT	ND
MW-23	MW-23-19970501	5/1/1997	2400	NT	ND
MW-23	MW-23-19990201	2/1/1999	350	10	ND
MW-23	MW-23-19990201-FD	2/1/1999	440	10	ND
MW-23	MW-23-20000301-FD	3/1/2000	147	ND	ND
MW-23	ITMW-23-20000921	9/21/2000	67	< 5 U	< 10 U
MW-23	ITMW-23-20010105	1/5/2001	137	< 5 U	< 10 U
MW-23	ITMW-23-20010326	3/26/2001	87	< 5 U	< 10 U
MW-23	ITMW-23-20010911	9/11/2001	23	< 5 U	< 10 U
MW-23	ITMW-23-20020911	9/11/2002	111	< 5 U	< 10 U
MW-23	MW-23-20020911-FD	9/11/2002	105	< 5 U	< 10 U
MW-23	ITMW-23-20030227	2/27/2003	54	< 5 U	< 10 U
MW-23	ITMW-23-20030925	9/25/2003	83.9	< 5 U	< 10 U
MW-23	ITMW-23-20040415	4/15/2004	70.3	< 5 U	< 10 U
MW-23	ITMW-23-20040922	9/22/2004	73.4	< 5 U	< 10 U
MW-23	ITMW-23-20050405	4/5/2005	55.5	< 5 U	< 10 U
MW-23	ITMW-23-20050929	9/29/2005	65.8	< 5 U	< 10 U
MW-23	ITMW-23-20060317	3/17/2006	47.1	< 5 U	< 10 U
MW-23	ITMW-23-20061014	10/14/2006	59	< 5 U	< 10 UJ
MW-23	ITMW-23-20070419	4/19/2007	39.9	9.79	< 10 U
MW-23	ITMW-23-20070919	9/19/2007	47	< 5 U	< 10 U
MW-23	ITMW-23-20080429	4/29/2008	29	< 5 U	< 10 U
MW-23	ITMW-23-20081210	12/10/2008	69	< 5 U	< 5 U
MW-23	ITMW-23-20090427	4/27/2009	32	< 5 U	< 5 U
MW-23	ITMW-23-20091029	10/29/2009	45	< 5 U	< 5 U
MW-23	MW-23-20100512-FD	5/12/2010	55	< 5 U	< 5 U
MW-23	ITMW-23-20100512	5/12/2010	52	< 5 U	< 5 U
MW-23	ITMW-23-20101105	11/5/2010	76	< 5 U	< 5 U
MW-23	ITMW-23-20110323	3/23/2011	46	< 5 U	< 5 U
MW-23	ITMW-23-20111027	10/27/2011	41	< 5 U	< 5 U
MW-23	ITMW-23-20120418	4/18/2012	36	< 5 U	< 5 U
MW-23	ITMW-23-20121019	10/19/2012	43	< 0.56 U	< 0.11 U
MW-23	ITMW-23-20130425	4/25/2013	20	< 0.56 U	< 0.11 U
MW-23	MW-23-101613	10/16/2013	54	< 0.56 U	< 0.11 U
MW-23	MW-23-20140522	5/22/2014	22.8	< 0.080 U	< 0.13 U
MW-23	20140708-GW-MW-23	7/8/2014	27.8	0.68 J	< 0.50 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-23	MW-23-201409	9/12/2014	62.1	1.8 J	< 0.50 U
MW-23	MW-23-20141023	10/23/2014	189	3.5 J	< 0.50 U
MW-23	MW-23-201501	1/15/2015	115	2.2	< 0.50 U
MW-23	MW-23-201504	4/14/2015	57.5	1.1	< 0.50 U
MW-23	MW-23-201507	7/23/2015	37.8	0.95 J	< 0.13 U
MW-23	MW-23-201510	10/8/2015	0.65 J	< 0.080 U	< 0.13 U
MW-23	MW-23-201512	12/2/2015	<0.17 U	< 0.080 U	< 0.13 U
MW-24	MW-24-19990201	2/1/1999	1400	49	ND
MW-24	MW-24-20000301	3/1/2000	403	25	ND
MW-24	MW-24-20000301-FD	3/1/2000	595	24	ND
MW-24	MW-24-20000921	9/21/2000	128	11	< 10 U
MW-24	MW-24-20010105	1/5/2001	247	12	< 10 U
MW-24	MW-24-20010326	3/26/2001	330	11	< 10 U
MW-24	MW-24-20010911	9/11/2001	124	6	< 10 U
MW-24	MW-24-20020911	9/11/2002	199	6	< 10 U
MW-24	MW-24-20030227	2/27/2003	253	7.01	< 10 U
MW-24	MW-24-20030925	9/25/2003	155	< 5 U	< 10 U
MW-24	MW-24-20040415	4/15/2004	181	5.12	< 10 U
MW-24	MW-24-20040923	9/23/2004	116	< 5 U	< 10 U
MW-24	MW-24-20050406	4/6/2005	152	6.04	< 10 U
MW-24	MW-24-20050929	9/29/2005	161	< 5 U	< 10 U
MW-24	MW-24-20060316	3/16/2006	347	7.57	< 10 U
MW-24	MW-24-20061014	10/14/2006	620	11	2 J
MW-24	MW-24-20070419	4/19/2007	196	11.6	< 10 U
MW-24	MW-24-20070920	9/20/2007	140	< 5 U	< 10 U
MW-24	MW-24-20070920-FD	9/20/2007	150	< 5 U	< 10 U
MW-24	MW-24-20080429	4/29/2008	150	3 J	< 10 U
MW-24	MW-24-20081210	12/10/2008	150	3.4 J	< 5 U
MW-24	MW-24-20081210-FD	12/10/2008	130	3.4 J	< 5 U
MW-24	MW-24-20090427	4/27/2009	120	< 5 U	< 5 U
MW-24	MW-24-20091029	10/29/2009	110	2.6 J	< 5 U
MW-24	MW-24-20100512	5/12/2010	150	4.3 J	< 5 U
MW-24	MW-24-20110323	3/23/2011	170	3.6 J	< 5 U
MW-24	MW-24-20111027	10/27/2011	170	1.9 J	< 5 U
MW-24	MW-24-20111027-FD	10/27/2011	170	1.4 J	< 5 U
MW-24	MW-24-20120418	4/18/2012	150	2.9 J	< 5 U
MW-24	MW-24-20121019	10/19/2012	190	3.7 J	< 0.11 U
MW-24	MW-24-20130425	4/25/2013	110	3.5 J	0.23 J
MW-24	MW-24-20140522	5/22/2014	79.7	1.2 J	< 0.13 U
MW-24	20140708-GW-MW-24	7/8/2014	102	1.4 J	< 0.50 U
MW-24	MW-24-201409	9/12/2014	55.7	0.66 J	< 0.50 U
MW-24	MW-24-20141023	10/23/2014	33.1	< 0.50 U	< 0.50 U
MW-24	MW-24-201501	1/15/2015	26.9	< 0.50 U	< 0.50 U
MW-24	MW-24-201504	4/16/2015	18.8	< 0.50 U	< 0.50 U
MW-24	MW-24-201507	7/23/2015	178	3.1	< 0.13 U
MW-24	MW-24-201510	10/8/2015	44.1	0.83 J	< 0.13 U
MW-24	MW-24-201512	12/2/2015	84.1	0.59 J	< 0.13 U
MW-25	MW-25-19990201	2/1/1999	29000	170	100
MW-25	MW-25-19990201-FD	2/1/1999	27000	180	110
MW-25	MW-25-19991201	12/1/1999	94500	ND	ND
MW-25	MW-25-20000301	3/1/2000	35900	245	63
MW-25	MW-25-20000921	9/21/2000	59000	300	50
MW-25	MW-25-20010328	3/28/2001	34000	117	60
MW-25	MW-25-20010913	9/13/2001	60000	300	< 200 U
MW-25	MW-25L-20020909	9/9/2002	157000	440	180
MW-25	MW-25T-20020909	9/9/2002	56000	370	200
MW-25	MW-25-20030226	2/26/2003	45900	557	75.7
MW-25	MW-25-20030717	7/17/2003	62200	621	243
MW-25	MW-25-20030924	9/24/2003	103000	775	< 500 U
MW-25	MW-25-20040414	4/14/2004	25600	255	31.8
MW-25	MW-25-20040921	9/21/2004	85200	819	422
MW-25	MW-25-20050407	4/7/2005	21100	353	61.1
MW-25	MW-25-20050928	9/28/2005	136000	837	< 500 U
MW-25	MW-25-20060315	3/15/2006	36300	774	< 200 U
MW-25	MW-25-20061012	10/12/2006	64000	1300	610
MW-25	MW-25-20061012-FD	10/12/2006	65000	1400	600
MW-25	MW-25-20070418	4/18/2007	19000	321	20
MW-25	MW-25-20070418-FD	4/18/2007	18000	319	20
MW-25	MW-25-20070921	9/21/2007	54000	1200	800
MW-25	MW-25-20070921-FD	9/21/2007	55000	1200	780
MW-25	MW-25-20080429	4/29/2008	23000	470	10 J
MW-25	MW-25-20080429-FD	4/29/2008	25000	510	10 J
MW-25	MW-25-20081210	12/10/2008	100000	1200	430
MW-25	MW-25-20090427	4/27/2009	36000	2100	140
MW-25	MW-25-20090427-FD	4/27/2009	39000	2000	190
MW-25	MW-25-20091027	10/27/2009	140000	1500	570

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-25	MW-25-20100511	5/11/2010	81000	1400	11
MW-25	MW-25-20101104	11/4/2010	270000	1500	400
MW-25	MW-25-20110322	3/22/2011	57000	2400	34
MW-25	MW-25-20111026	10/26/2011	120000	2100	< 250 U
MW-25	MW-25-20120417	4/17/2012	18000	690	18
MW-25	MW-25-20121019	10/19/2012	56000	4200	1500
MW-25	MW-25-20121019-FD	10/19/2012	49000	3600	1500
MW-25	MW-25-20130425	4/25/2013	9100	330	7.9
MW-25	MW-25-20130425-FD	4/25/2013	9500	380	11
MW-25	MW-25-101813	10/18/2013	43000	2900	1300
MW-25	MW-25-201403	3/8/2014	14500	625	33.6 J
MW-25	MW-25-201405	5/15/2014	18500	600 J	30.3
MW-25	20140709-GW-MW-25	7/9/2014	49900	1750	< 0.50 U
MW-25	MW-25-201407	7/31/2014	71700	2310 J	< 500 U
MW-25	MW-25-201410	10/16/2014	42500	2870 J	540 J
MW-25	MW-25-20141024	10/24/2014	59800	2650 J	0.66 J
MW-25	MW-25-20141205	12/5/2014	2620 J	31.5	2.1
MW-25	MW-25-201501	1/15/2015	2510	126	1.6
MW-25	MW-25-201504	4/16/2015	4650	204	6.4
MW-25	MW-25-201507	7/23/2015	39800	580 J	66.4
MW-25	MW-25-201510	10/8/2015	68700	957 J	< 0.13 U
MW-26	MW-26-19990201	2/1/1999	360	150	ND
MW-26	MW-26-19990601	6/1/1999	ND	ND	ND
MW-26	MW-26-20000301	3/1/2000	ND	ND	ND
MW-26	MW-26-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20010326	3/26/2001	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20010911-FD	9/11/2001	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20101105	11/5/2010	22	< 5 U	< 5 U
MW-26	MW-26-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-26	MW-26-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-26	MW-26-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-26	MW-26-201403	3/5/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201405	5/12/2014	0.25 J	< 0.080 U	< 0.13 U
MW-26	MW-26-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-26	MW-26-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-26	MW-26-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-26	MW-26-201504	4/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-26	MW-26-201507	7/22/2015	0.18 J	< 0.080 U	< 0.13 U
MW-26	MW-26-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-27	MW-27-19991201	12/1/1999	ND	ND	ND
MW-27	MW-27-19991207	12/7/1999	< 5 U	< 5 U	< 10 U
MW-27	MW-27-19991209	12/9/1999	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20000301	3/1/2000	ND	ND	ND
MW-27	MW-27-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20010105	1/5/2001	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20010105-FD	1/5/2001	5.55	< 5 U	< 10 U
MW-27	MW-27-20010326	3/26/2001	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20020911-FD	9/11/2002	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20061014	10/14/2006	2 J	< 5 U	< 10 U
MW-27	MW-27-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-27	MW-27-20100512	5/12/2010	3.1 J	< 5 U	< 5 U
MW-27	MW-27-20101105	11/5/2010	42	< 5 U	< 5 U
MW-27	MW-27-20111027	10/27/2011	< 5 U	< 5 U	< 5 U
MW-27	MW-27-20120418	4/18/2012	2.6 J	< 5 U	< 5 U

RAMBOLL ENVIRON

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-27	MW-27-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-27	MW-27-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-27	MW-27-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-27	MW-27-201403	3/7/2014	0.31 J	< 0.080 U	< 0.13 U
MW-27	MW-27-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-27	MW-27-201407	7/30/2014	0.63 J	< 0.50 U	< 0.50 U
MW-27	MW-27-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-27	MW-27-201501	1/14/2015	0.84 J	0.59 J	< 0.50 U
MW-27	MW-27-201504	4/13/2015	0.59 J	< 0.50 U	< 0.50 U
MW-27	MW-27-201507	7/22/2015	0.18 J	< 0.080 U	< 0.13 U
MW-27	MW-27-201510	10/7/2015	0.55 J	0.33 J	< 0.13 U
MW-28	MW-28-19991201	12/1/1999	ND	ND	ND
MW-28	MW-28-19991209	12/9/1999	< 5 U	< 5 U	< 10 U
MW-28	MW-28-19991209-FD	12/9/1999	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20000301	3/1/2000	ND	ND	ND
MW-28	MW-28-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20010327-FD	3/27/2001	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20061014	10/14/2006	< 5 U	< 5 U	< 10 UJ
MW-28	MW-28-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20100512	5/12/2010	2.6 J	< 5 U	< 5 U
MW-28	MW-28-20101105	11/5/2010	54	< 5 U	< 5 U
MW-28	MW-28-20110323	3/23/2011	1.6 J	< 5 U	< 5 U
MW-28	MW-28-20111027	10/27/2011	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20120419	4/19/2012	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-28	MW-28-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-28	MW-28-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-28	MW-28-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201405	5/13/2014	0.30 J	< 0.080 U	< 0.13 U
MW-28	MW-28-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-28	MW-28-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-28	MW-28-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-28	MW-28-201504	4/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-28	MW-28-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-19991201	12/1/1999	ND	ND	ND
MW-29	MW-29-19991209	12/9/1999	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20000301	3/1/2000	ND	ND	ND
MW-29	MW-29-20000920	9/20/2000	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20081210-FD	12/10/2008	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-29	MW-29-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-29	MW-29-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-29	MW-29-201403	3/5/2014	0.52 J	< 0.080 U	< 0.13 U
MW-29	MW-29-201405	5/13/2014	0.18 J	< 0.080 U	< 0.13 U
MW-29	MW-29-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-29	MW-29-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-29	MW-29-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-29	MW-29-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-29	MW-29-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-30	MW-30-19991201	12/1/1999	115	34	ND

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-30	MW-30-19991209	12/9/1999	115	34	< 10 U
MW-30	MW-30-20000301	3/1/2000	86	25	ND
MW-30	MW-30-20000920	9/20/2000	102	25	< 10 U
MW-30	MW-30-20010327	3/27/2001	43	11	< 10 U
MW-30	MW-30-20010911	9/11/2001	63	18	< 10 U
MW-30	MW-30-20020910	9/10/2002	48	14	< 10 U
MW-30	MW-30-20030227	2/27/2003	60	20.3	< 10 U
MW-30	MW-30-20030924	9/24/2003	46.8	13.7	< 10 U
MW-30	MW-30-20040414	4/14/2004	36.6	11.8	< 10 U
MW-30	MW-30-20040922	9/22/2004	36.2	12.1	< 10 U
MW-30	MW-30-20050928	9/28/2005	59.6	15.6	< 10 U
MW-30	MW-30-20061012	10/12/2006	53	15	< 10 U
MW-30	MW-30-20070920	9/20/2007	39	11	< 10 U
MW-30	MW-30-20081210	12/10/2008	37	11	< 5 U
MW-30	MW-30-20101103	11/3/2010	50	15	< 5 U
MW-30	MW-30-20111026	10/26/2011	57	16	< 5 U
MW-30	MW-30-20120418	4/18/2012	150	32	< 5 U
MW-30	MW-30-20121018	10/18/2012	65	19	< 0.11 U
MW-30	MW-30-20130425	4/25/2013	49	18	0.49 J
MW-30	MW-30-101413	10/14/2013	40	16	< 0.11 U
MW-31	MW-31-20010105	1/5/2001	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20010326	3/26/2001	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20050405	4/5/2005	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20050927	9/27/2005	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20060315	3/15/2006	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20061011	10/11/2006	3 J	< 5 U	< 10 U
MW-31	MW-31-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20070918	9/18/2007	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20080430	4/30/2008	2 J	< 5 U	< 10 U
MW-31	MW-31-20081211	12/11/2008	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20090425	4/25/2009	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20101107	11/7/2010	48	< 5 U	< 5 U
MW-31	MW-31-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-31	MW-31-101813	10/18/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-31	MW-31-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-31	MW-31-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-31	DUP-1-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-31	MW-31-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-31	MW-31-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-31	MW-31-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-31R	MW-31R-GW-20150119	1/19/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-31R	MW-31R-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-31R	MW-31R-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-31R	MW-31R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-32	MW-32-20010105	1/5/2001	108	< 5 U	< 10 U
MW-32	MW-32-20010327	3/27/2001	174	< 5 U	< 10 U
MW-32	MW-32-20010913	9/13/2001	95	< 5 U	< 10 U
MW-32	MW-32-20020911	9/11/2002	109	< 5 U	< 10 U
MW-32	MW-32-20030228	2/28/2003	133	< 5 U	< 10 U
MW-32	MW-32-20030925	9/25/2003	32.3	< 5 U	< 10 U
MW-32	MW-32-20040415	4/15/2004	76.9	< 5 U	< 10 U
MW-32	MW-32-20040923	9/23/2004	51.4	< 5 U	< 10 U
MW-32	MW-32-20050405	4/5/2005	158	< 5 U	< 10 U
MW-32	MW-32-20050927	9/27/2005	97.6	< 5 U	< 10 U
MW-32	MW-32-20060315	3/15/2006	111	< 5 U	< 10 U
MW-32	MW-32-20061012	10/12/2006	85	4 J	< 10 U
MW-32	MW-32-20070419	4/19/2007	66.3	10.1	< 10 U
MW-32	MW-32-20070918	9/18/2007	78	< 5 U	< 10 U
MW-32	MW-32-20080430	4/30/2008	70	2 J	< 10 U
MW-32	MW-32-20081211	12/11/2008	60	< 5 U	< 5 U
MW-32	MW-32-20090425	4/25/2009	47	< 5 U	< 5 U
MW-32	MW-32-20091028	10/28/2009	68	1.8 J	< 5 U
MW-32	MW-32-20100512	5/12/2010	58	< 5 U	< 5 U
MW-32	MW-32-20101106	11/6/2010	120	< 5 U	< 5 U
MW-32	MW-32-20110324	3/24/2011	66	1.4 J	< 5 U
MW-32	MW-32-20111026	10/26/2011	73	< 5 U	< 5 U
MW-32	MW-32-20121019	10/19/2012	61	1.2 J	< 0.11 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-32	MW-32-101813	10/18/2013	48	1.4 J	< 0.11 U
MW-32	MW-32-201403	3/8/2014	36.8	1.1 J	< 0.13 U
MW-32	MW-32-201405	5/13/2014	33.1	0.19 J	< 0.13 U
MW-32	MW-32-201407	7/29/2014	37.2	1.0 J	< 0.50 U
MW-32	MW-32-201410	10/14/2014	29.7	0.80 J	< 0.50 U
MW-32	MW-32-201501	1/14/2015	20.2	0.55 J	< 0.50 U
MW-32R	MW-32R-GW-20150119	1/19/2015	12.9	< 0.50 U	< 0.50 U
MW-32R	MW-32R-201504	4/15/2015	11.2	< 0.50 U	< 0.50 U
MW-32R	MW-32R-201507	7/21/2015	7.4	0.29 J	< 0.13 U
MW-32R	MW-32R-201510	10/7/2015	8.2	0.37 J	< 0.13 U
MW-33	MW-33-20010105	1/5/2001	120	< 5 U	< 10 U
MW-33	MW-33-20010327	3/27/2001	260	7	< 10 U
MW-33	MW-33-20010913	9/13/2001	310	8	< 10 U
MW-33	MW-33-20020911	9/11/2002	450	8	< 10 U
MW-33	MW-33-20030228	2/28/2003	274	6.62	< 10 U
MW-33	MW-33-20030925	9/25/2003	198	5.95	< 10 U
MW-33	MW-33-20040415	4/15/2004	871	21.3	< 10 U
MW-33	MW-33-20040923	9/23/2004	798	15.3	< 10 U
MW-33	MW-33-20050405	4/5/2005	1430	24.5	< 10 U
MW-33	MW-33-20050927	9/27/2005	1030	15.2	< 10 U
MW-33	MW-33-20060315	3/15/2006	1610	20.5	< 10 U
MW-33	MW-33-20061012	10/12/2006	1300	19	< 10 U
MW-33	MW-33-20070419	4/19/2007	1430	9.2 J	< 50 U
MW-33	MW-33-20070918	9/18/2007	1700	25	< 10 U
MW-33	MW-33-20080430	4/30/2008	1100	16	< 10 U
MW-33	MW-33-20081211	12/11/2008	1200	18	< 5 U
MW-33	MW-33-20090425	4/25/2009	1200	19	< 5 U
MW-33	MW-33-20090527	5/27/2009	1000	19	< 5 U
MW-33	MW-33-20091028	10/28/2009	1200	20	< 5 U
MW-33	MW-33-20100512	5/12/2010	1100	21	< 5 U
MW-33	MW-33-20101106	11/6/2010	1200	17	< 5 U
MW-33	MW-33-20110304-FS	3/4/2011	500	14	< 0.85 U
MW-33	MW-33-20110523-FS	5/23/2011	1300	18	NT
MW-33	MW-33-20111026	10/26/2011	1000	16	< 5 U
MW-33	MW-33-20121019	10/19/2012	1300	18	0.56 J
MW-33	MW-33-101813	10/18/2013	1100	19	< 0.11 U
MW-33	MW-33-201403	3/8/2014	918	15.9	0.56 J
MW-33	MW-33-201405	5/14/2014	954	15.1	0.56 J
MW-33	MW-33-201407	7/29/2014	1600	20.8	0.59 J
MW-33	MW-33-201410	10/15/2014	1290	15.3	< 0.50 U
MW-33	MW-33-201501	1/14/2015	1080	13.9	< 0.50 U
MW-33R	MW-33R-GW-20150118	1/18/2015	799	9.9	< 0.50 U
MW-33R	DUP-01-201504	4/15/2015	624	10.5	< 0.50 U
MW-33R	MW-33R-201504	4/15/2015	570	12.2	0.37 J
MW-33R	DUP-04-201507	7/22/2015	447	6.1	< 0.13 U
MW-33R	MW-33R-201507	7/22/2015	488	6.8	< 0.13 U
MW-33R	DUP-05-201510	10/8/2015	460	6.3	0.28 J
MW-33R	MW-33R-201510	10/8/2015	562	6.1	0.31 J
MW-33R	MW-33R-201512	12/2/2015	675	6.5	0.3 J
MW-34	MW-34-20010328	3/28/2001	83	< 5 U	< 10 U
MW-34	MW-34-20010913	9/13/2001	61	< 5 U	< 10 U
MW-34	MW-34L-20020909	9/9/2002	84	< 5 U	< 10 U
MW-34	MW-34-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
MW-34	MW-34-20030925	9/25/2003	28.4	< 5 U	< 10 U
MW-34	MW-34-20031114	11/14/2003	121	< 5 U	< 10 U
MW-34	MW-34-20040415	4/15/2004	119	< 5 U	< 10 U
MW-34	MW-34-20040923	9/23/2004	81.1	< 5 U	< 10 U
MW-34	MW-34-20041209	12/9/2004	93.3	< 5 U	< 10 U
MW-34	MW-34-20050405	4/5/2005	65.8	< 5 U	< 10 U
MW-34	MW-34-20050930	9/30/2005	83.7	< 5 U	< 10 U
MW-34	MW-34-20060314	3/14/2006	77.1	< 5 U	< 10 U
MW-34	MW-34-20061011	10/11/2006	63	4 J	< 10 U
MW-34	MW-34-20070418	4/18/2007	41	9.79	< 10 U
MW-34	MW-34-20070919	9/19/2007	61	< 5 U	< 10 U
MW-34	MW-34-20080430	4/30/2008	32	< 5 U	< 10 U
MW-34	MW-34-20081210	12/10/2008	53	< 5 U	< 5 U
MW-34	MW-34-20090424	4/24/2009	43	< 5 U	< 5 U
MW-34	MW-34-20090527	5/27/2009	12	< 5 U	< 5 U
MW-34	MW-34-20091028	10/28/2009	34	< 5 U	< 5 U
MW-34	MW-34-20100512	5/12/2010	38	< 5 U	< 5 U
MW-34	MW-34-20101107-FD	11/7/2010	70	< 5 U	< 5 U
MW-34	MW-34-20101107	11/7/2010	73	< 5 U	< 5 U
MW-34	MW-34-20110324-FD	3/24/2011	40	< 5 U	< 5 U
MW-34	MW-34-20110324	3/24/2011	42	< 5 U	< 5 U
MW-34	MW-34-20111026	10/26/2011	56	< 5 U	< 5 U
MW-34	MW-34-20121020	10/20/2012	90	1.6 J	< 0.11 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-34	MW-34-101713	10/17/2013	43	0.90 J	< 0.11 U
MW-34	MW-34-201403	3/8/2014	28.7	0.61 J	< 0.13 U
MW-34	MW-34-201405	5/13/2014	19.9	< 0.080 U	< 0.13 U
MW-34	MW-34-201407	7/29/2014	78.2	1.7 J	< 0.50 U
MW-34	MW-34-201410	10/15/2014	47.7	0.96 J	< 0.50 U
MW-34	MW-34-201501	1/13/2015	22.0	< 0.50 U	< 0.50 U
MW-34	MW-34-201504	4/14/2015	13.8	< 0.50 U	< 0.50 U
MW-34R	MW-34R-201507	7/21/2015	3.5	< 0.080 U	< 0.13 U
MW-34R	MW-34R-201510	10/8/2015	4.5	0.16 J	< 0.13 U
MW-35R	MW-35R-20010328	3/28/2001	960	34	< 10 U
MW-35R	MW-35R-20010913	9/13/2001	1030	40	< 20 U
MW-35R	MW-35L-20020909	9/9/2002	900	31	< 10 U
MW-35R	MW-35R-20030228	2/28/2003	246	15.1	< 10 U
MW-35R	MW-35R-20030925	9/25/2003	297	19.8	< 10 U
MW-35R	MW-35R-20031114	11/14/2003	990	34.9	< 10 U
MW-35R	MW-35R-20040415	4/15/2004	1150	45.8	< 10 U
MW-35R	MW-35R-20040923	9/23/2004	685	28.4	< 10 U
MW-35R	MW-35R-20041209	12/9/2004	880	42	< 10 U
MW-35R	MW-35R-20050406	4/6/2005	886	35	< 10 U
MW-35R	MW-35R-20050930	9/30/2005	804	29.3	< 10 U
MW-35R	MW-35R-20060314	3/14/2006	858	24.2	< 10 U
MW-35R	MW-35R-20060406	4/6/2006	1540	52.5	< 10 U
MW-35R	MW-35R-20061011	10/11/2006	910	29	< 10 U
MW-35R	MW-35R-20070418	4/18/2007	900	27.6	< 10 U
MW-35R	MW-35R-20070919	9/19/2007	1100	28	< 10 U
MW-35R	MW-35R-20080430	4/30/2008	1100	33	< 10 U
MW-35R	MW-35R-20081211	12/11/2008	790	27	< 5 U
MW-35R	MW-35R-20090424	4/24/2009	1100	37	< 5 U
MW-35R	MW-35R-20090507	5/7/2009	< 5 U	< 5 U	< 5 U
MW-35R	MW-35R-20090527	5/27/2009	< 5 U	< 5 U	< 5 U
MW-35R	MW-35R-20101105	11/5/2010	240	9.9	< 5 U
MW-35R	MW-35R-20110304-FS	3/4/2011	180	8.4	< 0.85 U
MW-35R	MW-35R-20110523-FS	5/23/2011	260	13	NT
MW-35R	MW-35R-20111025	10/25/2011	280	12	< 5 U
MW-35R	MW-35R-20121020	10/20/2012	280	10	< 0.11 U
MW-35R	MW-35R-101713	10/17/2013	200	12	< 0.11 U
MW-35R	MW-35R-20131017-FD	10/17/2013	220	13	< 0.11 U
MW-35R	MW-35R-201403	3/8/2014	345	14.9	< 0.13 U
MW-35R	MW-35R-201405	5/13/2014	183	6.1	< 0.13 U
MW-35R	MW-35R-201407	7/30/2014	64.7	2.8 J	< 0.50 U
MW-35R	MW-35R-201410	10/14/2014	79.2	2.6 J	< 0.50 U
MW-35R	MW-35R-201501	1/13/2015	10.9	< 0.50 U	< 0.50 U
MW-35R	MW-35R-201504	4/14/2015	39.5	1.3	< 0.50 U
MW-35R	MW-35R-201507	7/21/2015	33.7	1.0	< 0.13 U
MW-35R	MW-35R-201510	10/7/2015	15.4	0.58 J	< 0.13 U
MW-35R	MW-35R-201512	12/2/2015	0.89 J	<0.08 U	< 0.13 U
MW-36	MW-36-20010328	3/28/2001	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
MW-36	MW-36L-20020909	9/9/2002	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20031114	11/14/2003	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20050406	4/6/2005	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20061011	10/11/2006	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20080430	4/30/2008	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20081211	12/11/2008	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090507	5/7/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090508	5/8/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090528	5/28/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20101107	11/7/2010	9.9	< 5 U	< 5 U
MW-36	MW-36-20110324	3/24/2011	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-36	MW-36-101713	10/17/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-36	MW-36-201403	3/6/2014	0.22 J	< 0.080 U	< 0.13 U
MW-36	MW-36-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-36	MW-36-201407	7/29/2014	0.61 J	< 0.50 U	< 0.50 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-36	MW-36-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-36	MW-36-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-36	MW-36-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-36R	MW-36R-201507	7/20/2015	< 0.17 UJ	< 0.080 UJ	< 0.13 UJ
MW-36R	MW-36R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-37	MW-37-20010914	9/14/2001	5000	340	< 100 U
MW-37	MW-37-20011120	11/20/2001	< 5 U	< 5 U	< 10 U
MW-37	MW-37-20020911	9/11/2002	1400	10000	300
MW-37	MW-37-20030227	2/27/2003	4050	5660	2500
MW-37	MW-37-20030717	7/17/2003	2560	1710	316
MW-37	MW-37-20030924	9/24/2003	3700	7020	973
MW-37	MW-37-20040413	4/13/2004	5190	3160	1180
MW-37	MW-37-20040921	9/21/2004	5030	5650	1370
MW-37	MW-37-20050405	4/5/2005	5310	2360	1030 E
MW-37	MW-37-20050929	9/29/2005	6780	3210	910 E
MW-37	MW-37-20060316	3/16/2006	11200	5020	1730
MW-37	MW-37-20061013	10/13/2006	13000	5300	1200
MW-37	MW-37-20061013-FD	10/13/2006	13000	5000	1200
MW-37	MW-37-20070419	4/19/2007	9490	3010	780
MW-37	MW-37-20070921	9/21/2007	22000	9100	2800
MW-37	MW-37-20080430	4/30/2008	16000	3300	1800
MW-37	MW-37-20081210	12/10/2008	24000	6300	1800
MW-37	MW-37-20090427	4/27/2009	11000	3200	1200
MW-37	MW-37-20091027	10/27/2009	37000	7400	2200
MW-37	MW-37-20100511	5/11/2010	33000	7200	2400
MW-37	MW-37-20101104	11/4/2010	54000	10000	2200
MW-37	MW-37-20110322	3/22/2011	36000	6000	2300
MW-37	MW-37-20111026	10/26/2011	57000	9700	2500
MW-37	MW-37-20120418	4/18/2012	29000	5300	2100
MW-37	MW-37-20121019	10/19/2012	4800	1100	230
MW-37	MW-37-20130425	4/25/2013	1700	900	230
MW-37	MW-37-101713	10/17/2013	1100	1500	1300
MW-38	MW-38-20010914	9/14/2001	620	90	< 20 U
MW-38	MW-38-20050929	9/29/2005	< 5 U	98.9	2150
MW-38	MW-38-20061013	10/13/2006	26	130	2000 J
MW-38	MW-38-20081210	12/10/2008	44	110	1400
MW-38	MW-38-20111026	10/26/2011	580	870	1100
MW-38	MW-38-20121018	10/18/2012	1000	750	700
MW-38	MW-38-101613	10/16/2013	2300	1200	560
MW-38	MW-38-201403	3/8/2014	1790	535	68.4
MW-38	DUP1-201405	5/14/2014	2040	426 J	98.2
MW-38	MW-38-201405	5/14/2014	1650	428	97.9
MW-38	MW-38-201407	7/31/2014	1720	637	197
MW-38	DUP-06-201410	10/16/2014	6970	869	370
MW-38	MW-38-201410	10/16/2014	6750	781	321
MW-38	MW-38-20141204	12/4/2014	3190	697	193
MW-38	DUP-06-201501	1/15/2015	3910	1190	143
MW-38	MW-38-201501	1/15/2015	5440	1900	133
MW-38	MW-38-201504	4/16/2015	3060	2060	33.7
MW-38	MW-38-201507	7/23/2015	3420	1340	119
MW-38	MW-38-201510	10/8/2015	2740	1340	190
MW-39	MW-39-20030718	7/18/2003	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20031114	11/14/2003	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20050408	4/8/2005	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20061011	10/11/2006	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20080430	4/30/2008	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20101107	11/7/2010	20	< 5 U	< 5 U
MW-39	MW-39-20110324	3/24/2011	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-39	MW-39-101813	10/18/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-39	MW-39-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-39	MW-39-201405	5/13/2014	0.23 J	< 0.080 U	< 0.13 U
MW-39	MW-39-201407	7/29/2014	0.79 J	< 0.50 U	< 0.50 U
MW-39	MW-39-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U

RAMBOLL ENVIRON

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-39	MW-39-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-39	MW-39-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-39R	MW-39R-201507	7/20/2015	< 0.17 UJ	< 0.080 UJ	< 0.13 UJ
MW-39R	MW-39R-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-40	MW-40-20030718	7/18/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20031114	11/14/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20031114-FD	11/14/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20050407	4/7/2005	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20060314	3/14/2006	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20061010	10/10/2006	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20070918	9/18/2007	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20080428	4/28/2008	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20081211	12/11/2008	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20090527	5/27/2009	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20101104	11/4/2010	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20120418	4/18/2012	3.9 J	< 5 U	< 5 U
MW-40	MW-40-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-40	MW-40-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-40	MW-40-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-40	MW-40-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-40	MW-40-201405	5/12/2014	0.76 J	< 0.080 U	< 0.13 U
MW-40	MW-40-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-40	MW-40-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-40	MW-40-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-40	MW-40-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-40R	MW-40R-201507	7/20/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	DUP-03-201510	10/6/2015	0.83 J	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201510	10/6/2015	0.30 J	0.23 J	< 0.13 U
MW-41	MW-41-20030718	7/18/2003	972	50.6	< 10 U
MW-41	MW-41-20030718-FD	7/18/2003	964	45.5	< 10 U
MW-41	MW-41-20030925	9/25/2003	722	37.8	< 10 U
MW-41	MW-41-20031114	11/14/2003	331	205	< 10 U
MW-41	MW-41-20040415	4/15/2004	760	54.2	< 10 U
MW-41	MW-41-20040923	9/23/2004	1060	48	< 10 U
MW-41	MW-41-20050407	4/7/2005	1170	58	< 10 U
MW-41	MW-41-20050930	9/30/2005	1120	55.8	< 10 U
MW-41	MW-41-20060317	3/17/2006	917	52.5	< 10 U
MW-41	MW-41-20061013	10/13/2006	970	43	< 10 UJ
MW-41	MW-41-20070418	4/18/2007	900	30.1	< 10 U
MW-41	MW-41-20070920	9/20/2007	850	32	< 10 U
MW-41	MW-41-20080430	4/30/2008	730	31	< 10 U
MW-41	MW-41-20081211	12/11/2008	820	29	< 5 U
MW-41	MW-41-20090424	4/24/2009	660	25	< 5 U
MW-41	MW-41-20090507	5/7/2009	180	4.7 J	< 5 U
MW-41	MW-41-20090508	5/8/2009	180	4.7 J	< 5 U
MW-41	MW-41-20090527	5/27/2009	230	16	< 5 U
MW-41	MW-41-20091028	10/28/2009	180	4 J	< 5 U
MW-41	MW-41-20100513	5/13/2010	610	19	< 5 U
MW-41	MW-41-20101105	11/5/2010	930	31	< 5 U
MW-41	MW-41-20110304-FS	3/4/2011	120	20	< 0.85 U
MW-41	MW-41-20110523-FS	5/23/2011	370	15	NT
MW-41	MW-41-20111025	10/25/2011	420	18	< 5 U
MW-41	MW-41-20121020	10/20/2012	620	23	< 0.11 U
MW-41	MW-41-20121020-FD	10/20/2012	550	21	< 0.11 U
MW-41	MW-41-101613	10/16/2013	520	24	< 0.11 U
MW-41	MW-41-201403	3/7/2014	501	19.7	0.68 J
MW-41	MW-41-201405	5/14/2014	518	18.0	0.50 J
MW-41	DUP-2-201407	7/30/2014	511	19.1	< 0.50 U
MW-41	MW-41-201407	7/30/2014	480	19.7	< 0.50 U
MW-41	MW-41-201410	10/15/2014	491	16.9	< 0.50 U
MW-41	MW-41-201501	1/14/2015	425	15.6	< 0.50 U
MW-41	DUP-02-201504	4/15/2015	410	13.5	< 0.50 U
MW-41	MW-41-201504	4/15/2015	386	15.2	0.27 J
MW-41R	DUP-03-201507	7/21/2015	43.0	2.8	< 0.13 U
MW-41R	MW-41R-201507	7/21/2015	40.4	3.3	< 0.13 U
MW-41R	DUP-07-201510	10/6/2015	46.4	35.2	0.33 J

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-41R	MW-41R-201510	10/6/2015	48.7	36.7	0.39 J
MW-42B	MW-42B-20031114	11/14/2003	481	21.1	< 10 U
MW-42B	MW-42B-20040415	4/15/2004	856	29.3	< 10 U
MW-42B	MW-42B-20040923	9/23/2004	400	19.8	< 10 U
MW-42B	MW-42B-20050405	4/5/2005	1310	32	< 10 U
MW-42B	MW-42B-20050927	9/27/2005	1470	27.3	< 10 U
MW-42B	MW-42B-20060315	3/15/2006	2270	37.2	< 10 U
MW-42B	MW-42B-20061010	10/10/2006	2000	35	2 J
MW-42B	MW-42B-20070417	4/17/2007	1600	36.8	< 10 U
MW-42B	MW-42B-20070918	9/18/2007	2100	39	4 J
MW-42B	MW-42B-20080429	4/29/2008	1600	33	3 J
MW-42B	MW-42B-20081209	12/9/2008	1100	30	< 5 U
MW-42B	MW-42B-20090425	4/25/2009	1500	35	< 5 U
MW-43	MW-43-20031114	11/14/2003	223	18.5	< 10 U
MW-43	MW-43-20040415	4/15/2004	510	12.1	< 10 U
MW-43	MW-43-20040923	9/23/2004	64.7	6.31	< 10 U
MW-43	MW-43-20050405	4/5/2005	304	11.9	< 10 U
MW-43	MW-43-20050927	9/27/2005	518	21.3	< 10 U
MW-43	MW-43-20060315	3/15/2006	1300	35	< 10 U
MW-43	MW-43-20061011	10/11/2006	920	30	< 10 U
MW-43	MW-43-20070417	4/17/2007	220	14.1	< 10 U
MW-43	MW-43-20070918	9/18/2007	350	13	< 10 U
MW-43	MW-43-20080428	4/28/2008	120	4 J	< 10 U
MW-43	MW-43-20081209	12/9/2008	150	5.3	< 5 U
MW-43	MW-43-20090425	4/25/2009	120	< 5 U	< 5 U
MW-43	MW-43-20090507	5/7/2009	180	6	< 5 U
MW-43	MW-43-20090508	5/8/2009	180	6	< 5 U
MW-46R	MW-46R-20031114	11/14/2003	39.9	< 5 U	< 10 U
MW-46R	MW-46R-20040415	4/15/2004	77.1	27.2	< 10 U
MW-46R	MW-46R-20040923	9/23/2004	142	21.2	< 10 U
MW-46R	MW-46R-20050406	4/6/2005	210	28.4	< 10 U
MW-46R	MW-46R-20050928	9/28/2005	222	15.6	< 10 U
MW-46R	MW-46R-20060316	3/16/2006	111	6.37	< 10 U
MW-46R	MW-46R-20060406	4/6/2006	300	< 5 U	< 10 U
MW-46R	MW-46R-20061011	10/11/2006	450	8	< 10 U
MW-46R	MW-46R-20070417	4/17/2007	440	12.5	< 10 U
MW-46R	MW-46R-20070918	9/18/2007	420	9	< 10 U
MW-46R	MW-46R-20080429	4/29/2008	430	8	< 10 U
MW-46R	MW-46R-20081209	12/9/2008	310	19	< 5 U
MW-46R	MW-46R-20090425	4/25/2009	460	11	< 5 U
MW-46R	MW-46R-20090527	5/27/2009	< 5 U	< 5 U	< 5 U
MW-46R	MW-46R-20091027	10/27/2009	390	12	< 5 U
MW-46R	MW-46R-20091221-FS	12/21/2009	410	10	< 1.6 U
MW-46R	MW-46R-20100511	5/11/2010	610	13	< 5 U
MW-46R	MW-46R-20101105	11/5/2010	650	12	< 5 U
MW-46R	MW-46R-20110307-FS	3/7/2011	670	14	< 0.85 U
MW-46R	MW-46R-20110322	3/22/2011	680	11	< 5 U
MW-46R	MW-46R-20110523-FS	5/23/2011	610	13	NT
MW-46R	MW-46R-20111026	10/26/2011	460	10	< 5 U
MW-46R	MW-46R-20120418	4/18/2012	680	14	< 5 U
MW-46R	MW-46R-20121020	10/20/2012	410	7.9	0.44 J
MW-46R	MW-46R-20130423	4/23/2013	470	7.6	0.91 J
MW-46R	MW-46R-101813	10/18/2013	410	11	< 0.11 U
MW-46R	MW-46R-201403	3/7/2014	469	12.8	0.46 J
MW-46R	MW-46R-201405	5/14/2014	471	12.8	0.76 J
MW-46R	MW-46R-201407	7/29/2014	472	13.7	0.64 J
MW-46R	DUP-03-201410	10/16/2014	373	25.2	< 0.50 U
MW-46R	MW-46R-201410	10/16/2014	410	24.6	< 0.50 U
MW-46R	DUP-03-201501	1/13/2015	428	12.0	0.90 J
MW-46R	MW-46R-201501	1/13/2015	452	11.6	0.71 J
MW-46R	DUP-07-201504	4/14/2015	482	13.9	0.51 J
MW-46R	MW-46R-201504	4/14/2015	220 J	13.8	0.47 J
MW-46R	DUP-05-201507	7/21/2015	444	10.3	0.40 J
MW-46R	MW-46R-201507	7/21/2015	460	11.2	0.37 J
MW-46R	MW-46R-201510	10/7/2015	371	10.2	0.43 J
MW-50	MW-50-20040415	4/15/2004	6.51	< 5 U	< 10 U
MW-50	MW-50-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20041210	12/10/2004	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20050406	4/6/2005	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20081210	12/10/2008	< 5 U	< 5 U	< 5 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-50	MW-50-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20101105	11/5/2010	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-50	MW-50-101613	10/16/2013	1.6 J	< 0.56 U	< 0.11 U
MW-50	MW-50-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-50	MW-50-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-50	MW-50-201407	7/28/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-50	MW-50-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-50	MW-50-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-50	MW-50-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-50R	MW-50R-201507	7/21/2015	0.22 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201510	10/6/2015	0.35 J	< 0.080 U	< 0.13 U
MW-55	MW-55-20041209	12/9/2004	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20050408	4/8/2005	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20060316	3/16/2006	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20061013	10/13/2006	2 J	< 5 U	< 10 UJ
MW-55	MW-55-20070419	4/19/2007	2.6 J	< 5 U	< 10 U
MW-55	MW-55-20070919	9/19/2007	5 J	< 5 U	< 10 U
MW-55	MW-55-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-55	MW-55-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-55	MW-55-20091027	10/27/2009	3.6 J	< 5 U	< 5 U
MW-55	MW-55-20100512	5/12/2010	4.2 J	< 5 U	< 5 U
MW-55	MW-55-20101106	11/6/2010	14	< 5 U	< 5 U
MW-55	MW-55-20110323	3/23/2011	5.5	< 5 U	< 5 U
MW-55	MW-55-20111025	10/25/2011	7	< 5 U	< 5 U
MW-55	MW-55-20121020	10/20/2012	9.2	< 0.56 U	< 0.11 U
MW-55	MW-55-101613	10/16/2013	13	< 0.56 U	< 0.11 U
MW-55R	MW-55R-201507	7/20/2015	8.2	0.42 J	0.13 J
MW-55R	MW-55R-201510	10/6/2015	4.4	0.53 J	0.14 J
MW-56	MW-56-20041210	12/10/2004	90.2	< 5 U	< 10 U
MW-56	MW-56-20050408	4/8/2005	88.2	< 5 U	< 10 U
MW-56	MW-56-20050928	9/28/2005	207	< 5 U	< 10 U
MW-56	MW-56-20060316	3/16/2006	8.7	< 5 U	< 10 U
MW-56	MW-56-20061014	10/14/2006	110	2 J	< 10 UJ
MW-56	MW-56-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-56	MW-56-20070919	9/19/2007	38	< 5 U	< 10 U
MW-56	MW-56-20080429	4/29/2008	4 J	< 5 U	< 10 U
MW-56	MW-56-20081210	12/10/2008	93	< 5 U	< 5 U
MW-56	MW-56-20090424	4/24/2009	14	< 5 U	< 5 U
MW-56	MW-56-20091027	10/27/2009	8.7	< 5 U	< 5 U
MW-56	MW-56-20100512	5/12/2010	230	6.4	< 5 U
MW-56	MW-56-20110323	3/23/2011	71	2.6 J	< 5 U
MW-56	MW-56-20111025	10/25/2011	150	11	1.9 J
MW-56	MW-56-20121020	10/20/2012	470	11	< 0.11 U
MW-56	MW-56-101713	10/17/2013	590	17	< 0.11 U
MW-56	MW-56-201403	3/7/2014	618	15.3	0.15 J
MW-56	MW-56-201405	6/11/2014	307	17.6	0.16 J
MW-56	MW-56-201407	7/29/2014	516	19.3	< 0.50 U
MW-56	MW-56-201410	10/15/2014	408	12.1	< 0.50 U
MW-56	MW-56-201501	1/13/2015	326	10	< 0.50 U
MW-56	MW-56-201504	4/16/2015	495	8.2	< 0.13 U
MW-56R	MW-56R-201507	7/20/2015	156	8.0	0.31 J
MW-56R	MW-56R-201510	10/6/2015	278	18.1	0.42 J
MW-57	MW-57-20041210	12/10/2004	207	6.72	< 10 U
MW-57	MW-57-20050408	4/8/2005	282	6.83	< 10 U
MW-57	MW-57-20050928	9/28/2005	96	< 5 U	< 10 U
MW-57	MW-57-20060316	3/16/2006	254	7.56	< 10 U
MW-57	MW-57-20061013	10/13/2006	64	< 5 U	< 10 UJ
MW-57	MW-57-20070419	4/19/2007	201	3.77 J	< 10 U
MW-57	MW-57-20070920	9/20/2007	250	5 J	< 10 U
MW-57	MW-57-20080430	4/30/2008	14	< 5 U	< 10 U
MW-57	MW-57-20081210	12/10/2008	130	7.4	< 5 U
MW-57	MW-57-20090424	4/24/2009	96	4.2 J	< 5 U
MW-57	MW-57-20091027	10/27/2009	100	2.6 J	< 5 U
MW-57	MW-57-20100512	5/12/2010	210	6	< 5 U
MW-57	MW-57-20110323	3/23/2011	110	2.3 J	< 5 U
MW-57	MW-57-20111025	10/25/2011	59	2 J	< 5 U
MW-57	MW-57-20121020	10/20/2012	120	5.1	< 0.11 U
MW-57	MW-57-101713	10/17/2013	210	7.4	< 0.11 U
MW-57	MW-57-201403	3/7/2014	134	3.0 J	0.14 J

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-57	MW-57-201405	6/11/2014	167	4.4 J	< 0.13 U
MW-57	MW-57-201407	7/29/2014	308	8.2	< 0.50 U
MW-57	MW-57-201410	10/15/2014	172	4.2 J	< 0.50 U
MW-57	MW-57-201501	1/13/2015	177	5.4	< 0.50 U
MW-57	MW-57-201504	4/16/2015	194	4.8	< 0.50 U
MW-57R	MW-57R-201507	7/20/2015	409	10.6	0.53 J
MW-57R	MW-57R-201510	10/6/2015	400	13.0	0.42 J
MW-58	MW-58-20041209	12/9/2004	526	14.5	< 10 U
MW-58	MW-58-20050407	4/7/2005	809	18.8	< 10 U
MW-58	MW-58-20050928	9/28/2005	486	10.9	< 10 U
MW-58	MW-58-20060316	3/16/2006	421	8.66	< 10 U
MW-58	MW-58-20061013	10/13/2006	620	14	< 10 UJ
MW-58	MW-58-20070419	4/19/2007	784	30.7	< 25 U
MW-58	MW-58-20070419-FD	4/19/2007	717	9.54 J	< 25 U
MW-58	MW-58-20070919	9/19/2007	650	17	< 10 U
MW-58	MW-58-20070919-FD	9/19/2007	640	16	< 10 U
MW-58	MW-58-20080430	4/30/2008	630	15	< 10 U
MW-58	MW-58-20080430-FD	4/30/2008	580	14	< 10 U
MW-58	MW-58-20081211	12/11/2008	530	12	< 5 U
MW-58	MW-58-20081211-FD	12/11/2008	510	13	< 5 U
MW-58	MW-58-20090425	4/25/2009	590	14	< 5 U
MW-58	MW-58-20090425-FD	4/25/2009	580	15	< 5 U
MW-58	MW-58-20091028	10/28/2009	480	11	< 5 U
MW-58	MW-58-20091028-FD	10/28/2009	480	11	< 5 U
MW-58	MW-58-20100512	5/12/2010	660	14	< 5 U
MW-58	MW-58-20101106-FD	11/6/2010	560	11	< 5 U
MW-58	MW-58-20101106	11/6/2010	580	12	< 5 U
MW-58	MW-58-20110324	3/24/2011	710	12	< 5 U
MW-58	MW-58-20110324-FD	3/24/2011	700	14	1.1 J
MW-58	MW-58-20121020	10/20/2012	440	18	0.84 J
MW-58	MW-58-101713	10/17/2013	410	13	1.5 J
MW-58	MW-58-20131017-FD	10/17/2013	420	12	1.1 J
MW-58	MW-58-201403	3/7/2014	293	22.3	0.93 J
MW-58	MW-58-201405	5/12/2014	397	12.1	0.72 J
MW-58	MW-58-201407	7/29/2014	399	12.7	0.76 J
MW-58	MW-58-201410	10/15/2014	360	10.8	0.68 J
MW-58	MW-58-201501	1/14/2015	385	14.7	0.71 J
MW-58	MW-58-201504	4/16/2015	356	19.7	1.5
MW-58R	MW-58R-201507	7/21/2015	337	9.5	0.57 J
MW-58R	MW-58R-201510	10/8/2015	299	10.5	0.55 J
MW-60	MW-60-20050401	4/1/2005	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20101104	11/4/2010	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-60	MW-60-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-60	MW-60-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-60	MW-60-201405	5/13/2014	0.21 J	< 0.080 U	< 0.13 U
MW-60	MW-60-201407	7/28/2014	1.0 J	< 0.50 U	< 0.50 U
MW-60	MW-60-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-60	MW-60-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-60	MW-60-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-60R	MW-60R-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-61	MW-61-20050401	4/1/2005	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20050401-FD	4/1/2005	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20090424	4/24/2009	4 J	< 5 U	< 5 U
MW-61	MW-61-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20100511	5/11/2010	< 5 U	< 5 U	< 5 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-61	MW-61-20101104	11/4/2010	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20110323	3/23/2011	1.8 J	< 5 U	< 5 U
MW-61	MW-61-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20121017	10/17/2012	2.4 J	< 0.56 U	< 0.11 U
MW-61	MW-61-101613	10/16/2013	4.0 J	< 0.56 U	< 0.11 U
MW-61	MW-61-201403	3/6/2014	4.7 J	< 0.080 U	< 0.13 U
MW-61	MW-61-201405	5/13/2014	6.6	< 0.080 U	< 0.13 U
MW-61	MW-61-201407	7/28/2014	8.1	< 0.50 U	< 0.50 U
MW-61	MW-61-201410	10/14/2014	7.9	< 0.50 U	< 0.50 U
MW-61	MW-61-201501	1/13/2015	10.2	< 0.50 U	< 0.50 U
MW-61	MW-61-201504	4/14/2015	10.9	< 0.50 U	< 0.50 U
MW-61R	MW-61R-201507	7/21/2015	14.7	< 0.080 U	< 0.13 U
MW-61R	DUP-02-201510	10/8/2015	13.3	< 0.080 U	< 0.13 U
MW-61R	MW-61R-201510	10/8/2015	11.7	< 0.080 U	< 0.13 U
MW-61R	MW-61R-201512	12/2/2015	5	4.6	< 0.13 U
MW-62	MW-62-20050401	4/1/2005	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20060316	3/16/2006	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20111025	10/25/2011	1.9 J	< 5 U	< 5 U
MW-62	MW-62-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-62	MW-62-101713	10/17/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-62	MW-62-201403	3/7/2014	0.18 J	< 0.080 U	< 0.13 U
MW-62	MW-62-201405	5/14/2014	0.62 J	< 0.080 U	< 0.13 U
MW-62	MW-62-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-62	MW-62-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-62	MW-62-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-62	MW-62-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-62R	MW-62R-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-63	MW-63-20050401	4/1/2005	8.14	< 5 U	< 10 U
MW-63	MW-63-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-63	MW-63-20060316	3/16/2006	9.76	< 5 U	< 10 U
MW-63	MW-63-20060406	4/6/2006	11.6	< 5 U	< 10 U
MW-63	MW-63-20061012	10/12/2006	4 J	< 5 U	< 10 U
MW-63	MW-63-20070419	4/19/2007	4.08 J	< 5 U	< 10 U
MW-63	MW-63-20070919	9/19/2007	8	< 5 U	< 10 U
MW-63	MW-63-20080430	4/30/2008	3 J	< 5 U	< 10 U
MW-63	MW-63-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-63	MW-63-20090424	4/24/2009	4.3 J	< 5 U	< 5 U
MW-63	MW-63-20091027	10/27/2009	7.7	< 5 U	< 5 U
MW-63	MW-63-20100511	5/11/2010	7.6	< 5 U	< 5 U
MW-63	MW-63-20101106	11/6/2010	11	< 5 U	< 5 U
MW-63	MW-63-20110323	3/23/2011	12	< 5 U	< 5 U
MW-63	MW-63-20111025	10/25/2011	9.8	< 5 U	< 5 U
MW-63	MW-63-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-63	MW-63-101713	10/17/2013	7.5	< 0.56 U	< 0.11 U
MW-63	MW-63-201403	3/7/2014	9.4	1.3 J	< 0.13 U
MW-63	MW-63-201405	5/14/2014	12.2	0.61 J	0.13 J
MW-63	MW-63-201407	7/28/2014	8.3	0.99 J	< 0.50 U
MW-63	MW-63-201410	10/14/2014	9.4	0.98 J	< 0.50 U
MW-63	MW-63-201501	1/13/2015	8.2	1.0	< 0.50 U
MW-63	MW-63-201504	4/14/2015	9.2	0.99 J	< 0.50 U
MW-63R	MW-63R-201507	7/21/2015	5.6	0.70 J	< 0.13 U
MW-63R	MW-63R-201510	10/8/2015	3.9	0.70 J	< 0.13 U
MW-65	MW-65-20061011	10/11/2006	470	19	< 10 U
MW-65	MW-65-20061011-FD	10/11/2006	560	18	< 10 U
MW-65	MW-65-20070419	4/19/2007	1350	23.4	< 10 U
MW-65	MW-65-20070920	9/20/2007	580	17	< 10 U
MW-65	MW-65-20080430	4/30/2008	570	16	< 10 U
MW-65	MW-65-20081211	12/11/2008	460	11	< 5 U
MW-65	MW-65-20090424	4/24/2009	620	19	< 5 U
MW-65	MW-65-20101107	11/7/2010	400	11	< 5 U
MW-65	MW-65-20110304-FS	3/4/2011	370	13	< 0.85 U
MW-65	MW-65-20111025	10/25/2011	310	10	< 5 U
MW-65	MW-65-20121020	10/20/2012	280	8.9	< 0.11 U
MW-65	MW-65-101713	10/17/2013	220	8.6	< 0.11 U
MW-65	MW-65-201403	3/8/2014	199	6.6	< 0.13 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-65	MW-65-201405	5/14/2014	195	6.9	< 0.13 U
MW-65	MW-65-201407	7/30/2014	17.1	< 0.50 U	< 0.50 U
MW-65	MW-65-201410	10/14/2014	30.8	0.54 J	< 0.50 U
MW-65	MW-65-201501	1/13/2015	19.2	< 0.50 U	< 0.50 U
MW-65	MW-65-201504	4/15/2015	16.0	< 0.50 U	< 0.50 U
MW-65	MW-65-201507	7/20/2015	26.3	0.38 J	< 0.13 U
MW-65	MW-65-201510	10/7/2015	0.28 J	< 0.080 U	< 0.13 U
MW-65	MW-65-201512	12/2/2015	6.6	< 0.080 U	< 0.13 U
MW-66	MW-66-20060406	4/6/2006	< 5 U	< 5 U	< 10 U
MW-66	MW-66-20061012	10/12/2006	2 J	< 5 U	< 10 U
MW-66	MW-66-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-66	MW-66-20070919	9/19/2007	4 J	< 5 U	< 10 U
MW-66	MW-66-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-66	MW-66-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20090425	4/25/2009	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20110324	3/24/2011	1.6 J	< 5 U	< 5 U
MW-66	MW-66-20111026	10/26/2011	1.8 J	< 5 U	< 5 U
MW-66	MW-66-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-66	MW-66-101713	10/17/2013	2.1 J	< 0.56 U	< 0.11 U
MW-66	MW-66-201403	3/7/2014	3.5 J	< 0.080 U	< 0.13 U
MW-66	MW-66-201405	5/13/2014	3.1 J	< 0.080 U	< 0.13 U
MW-66	MW-66-201407	7/28/2014	2.6 J	< 0.50 U	< 0.50 U
MW-66	MW-66-201410	10/13/2014	2.3 J	< 0.50 U	< 0.50 U
MW-66	MW-66-201501	1/14/2015	2.4	< 0.50 U	< 0.50 U
MW-66	MW-66-201504	4/15/2015	2.6	< 0.50 U	< 0.50 U
MW-66	MW-66-201507	7/20/2015	3.3	0.22 J	< 0.13 U
MW-66	MW-66-201510	10/6/2015	2.3	0.18 J	< 0.13 U
MW-67	MW-67-20060406	4/6/2006	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20061012	10/12/2006	1 J	< 5 U	< 10 U
MW-67	MW-67-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20070918	9/18/2007	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20090425	4/25/2009	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20110324	3/24/2011	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-67	MW-67-101713	10/17/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-67	MW-67-201403	3/7/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-67	MW-67-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-67	MW-67-201407	7/28/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-67	MW-67-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-67	MW-67-201501	1/12/2015	1.3	< 0.50 U	< 0.50 U
MW-67	MW-67-201504	4/15/2015	0.77 J	< 0.50 U	< 0.50 U
MW-67R	MW-67R-201507	7/20/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-67R	MW-67R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-20090115	1/15/2009	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20100513	5/13/2010	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20101106	11/6/2010	9.5	< 5 U	< 5 U
MW-68	MW-68-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-68	MW-68-101613	10/16/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-68	MW-68-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201405	5/14/2014	0.49 J	< 0.080 U	< 0.13 U
MW-68	MW-68-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-68	MW-68-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-68	MW-68-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-68	MW-68-201504	4/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-68	MW-68-201507	7/20/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-70	MW-70-20101104	11/4/2010	540	14	< 5 U
MW-70	MW-70-20110322	3/22/2011	170	9.2	1.2 J
MW-70	MW-70-20111026	10/26/2011	320	7.7	< 5 U
MW-70	MW-70-20120418	4/18/2012	330	11	< 5 U
MW-70	MW-70-20121018	10/18/2012	200	11	< 0.11 U
MW-70	MW-70-20130423	4/23/2013	180	3.6 J	0.32 J
MW-70	MW-70-101613	10/16/2013	270	7.2	0.30 J
MW-71	MW-71-20091028	10/28/2009	190	6.3	< 5 U

RAMBOLL ENVIRON

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-71	MW-71-20100513	5/13/2010	160	7.4	< 5 U
MW-71	MW-71-20101104	11/4/2010	250	7.2	< 5 U
MW-71	MW-71-20110322	3/22/2011	76	1.6 J	< 5 U
MW-71	MW-71-20111026	10/26/2011	130	2.7 J	< 5 U
MW-71	MW-71-20120418	4/18/2012	160	5.3	< 5 U
MW-71	MW-71-20121020	10/20/2012	210	7.3	< 0.11 U
MW-71	MW-71-20130423	4/23/2013	220	4.8 J	0.23 J
MW-71	MW-71-101613	10/16/2013	160	6.1	0.57 J
MW-71	MW-71-201403	3/7/2014	166	5.8	0.19 J
MW-71	MW-71-201405	5/13/2014	164	5.3	0.33 J
MW-71	MW-71-201407	7/29/2014	181	6.4	< 0.50 U
MW-71	MW-71-201410	10/14/2014	185	6.0	< 0.50 U
MW-71	MW-71-201501	1/14/2015	170	6.0	< 0.50 U
MW-71	MW-71-201504	4/14/2015	156	5.7	< 0.50 U
MW-71	MW-71-201507	7/20/2015	165	5.3	0.48 J
MW-71	MW-71-201510	10/6/2015	179	6.5	0.43 J
MW-81	MW-81-201405	5/29/2014	512	14.3	0.21 J
MW-81	20140708-GW-MW-81	7/9/2014	518	11.4	< 0.50 U
MW-81	MW-81-201409	9/11/2014	463	13.5	< 0.50 U
MW-81	MW-81-201501	1/13/2015	385	9.9	< 0.50 U
MW-81	MW-81-201504	4/15/2015	198	4.2	< 0.50 U
MW-81	MW-81-201507	7/22/2015	275	7.7	< 0.13 U
MW-81	MW-81-201510	10/8/2015	160	3.8	< 0.13 U
MW-81	MW-81-201512	12/2/2015	56.1	0.35 J	< 0.13 U
MW-82	MW-82-201405	5/28/2014	285	4.8 J	0.14 J
MW-82	20140708-GW-MW-82	7/9/2014	48.2	1.2 J	< 0.50 U
MW-82	MW-82-201409	9/11/2014	50.0	1.1 J	< 0.50 U
MW-82	MW-82-201501	1/13/2015	66.0	1.2	< 0.50 U
MW-82	MW-82-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-82	MW-82-201507	7/22/2015	5.3	< 0.080 U	< 0.13 U
MW-82	MW-82-201510	10/6/2015	4.2	< 0.080 U	< 0.13 U
MW-83	MW-83-20140523	5/23/2014	470	8.3	< 0.13 U
MW-83	MW-83-201409	9/12/2014	213	4.9 J	< 0.50 U
MW-83	MW-83-20141023	10/23/2014	210	5.2	< 0.50 U
MW-83	MW-83-201501	1/15/2015	101	1.8	< 0.50 U
MW-83	MW-83-201504	4/16/2015	151	2.8	< 0.50 U
MW-83	MW-83-201507	7/22/2015	27.9	0.49 J	< 0.13 U
MW-83	MW-83-201510	10/8/2015	9.8	0.25 J	< 0.13 U
MW-83	MW-83-201512	12/2/2015	1.3	<0.08 U	< 0.13 U
MW-84	MW-84-201405	5/27/2014	214	4.6 J	0.16 J
MW-84	MW-84-201409A	9/12/2014	0.93 J	< 0.50 U	< 0.50 U
MW-84	MW-84-20141023	10/23/2014	0.68 J	< 0.50 U	< 0.50 U
MW-84	MW-84-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-84	MW-84-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-84	MW-84-201507	7/23/2015	0.29 J	< 0.080 U	< 0.13 U
MW-84	MW-84-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-85	MW-85-201405	5/29/2014	1970	99.4	23.1
MW-85	20140708-GW-MW-85	7/8/2014	3780	133	3.9
MW-85	MW-85-201409	9/11/2014	5820	226 J	35.3
MW-85	MW-85-20141205	12/5/2014	27700	280	7.7
MW-85	MW-85-201501	1/15/2015	5940	167	1.1
MW-85	MW-85-201504	4/16/2015	256	16.8	< 0.50 U
MW-85	MW-85-201507	7/23/2015	132	6.3	< 0.13 U
MW-85	MW-85-201510	10/8/2015	12000	52.6	1.8
MW-86	MW-86-201405	5/29/2014	533000	1220 J	341 J
MW-86	MW-86-201409	9/11/2014	129000	91.6	4.1
MW-86	MW-86-20141205	12/5/2014	169000	290 E	24.7
MW-86	MW-86-201501	1/15/2015	81200	128	4.5
MW-86	MW-86-201504	4/16/2015	46700	128	5.8
MW-86	MW-86-201507	7/23/2015	65100	292 J	46.7
MW-86	MW-86-201510	10/8/2015	131000	1020	127
MW-87	20140625-GW-MW-87	6/25/2014	564	41.8	< 0.50 U
MW-87	MW-87-201410	10/16/2014	594	47.8	< 0.50 U
MW-87	MW-87-201501	1/14/2015	661	51.3	< 0.50 U
MW-87	MW-87-201504	4/16/2015	758	58.6	0.33 J
MW-87	MW-87-201507	7/23/2015	758	56.5	0.34 J
MW-87	MW-87-201510	10/7/2015	708	54.5	0.31 J
MW-88	20140624-GW-MW-88	6/24/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-88	MW-88-201410	10/16/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-88	MW-88-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-88	MW-88-201504	4/16/2015	0.58 J	< 0.50 U	< 0.50 U
MW-88	MW-88-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-88	MW-88-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-89	20140624-GW-MW-89	6/24/2014	19.5	< 0.50 U	< 0.50 U
MW-89	MW-89-201410	10/15/2014	11.3	< 0.50 U	< 0.50 U
MW-89	MW-89-201501	1/13/2015	11.4	< 0.50 U	< 0.50 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS
FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-89	MW-89-201504	4/16/2015	15.9	< 0.50 U	< 0.50 U
MW-89	MW-89-201507	7/23/2015	14.5	0.18 J	< 0.13 U
MW-89	MW-89-201510	10/7/2015	12.7	0.24 J	< 0.13 U
MW-90	20140625-GW-MW-90	6/25/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-90	MW-90-201410	10/16/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-90	MW-90-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-90	MW-90-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-90	MW-90-201507	7/22/2015	0.38 J	< 0.080 U	< 0.13 U
MW-90	MW-90-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-91	20140625-GW-MW-91	6/25/2014	234	21.7	< 0.50 U
MW-91	MW-91-201410	10/16/2014	319	28.8	< 0.50 U
MW-91	DUP-07-201501	1/13/2015	317	31.0	< 0.50 U
MW-91	MW-91-201501	1/13/2015	354	31.5	< 0.50 U
MW-91	MW-91-201504	4/16/2015	438	36.6	0.18 J
MW-91	MW-91-201507	7/23/2015	411	34.8	0.23 J
MW-91	DUP-08-201510	10/7/2015	442	35.7	0.19 J
MW-91	MW-91-201510	10/7/2015	405	35.2	0.17 J
MW-92	MW-92-20141022	10/22/2014	2160	16.0	7.2
MW-92	MW-92-20141204	12/4/2014	2200	23.4	10.3
MW-92	MW-92-201501	1/15/2015	1410	10.4	4.6
MW-92	MW-92-201504	4/16/2015	736	5.4	2.1
MW-92	MW-92-201507	7/23/2015	617	6.7	1.0
MW-92	MW-92-201510	10/8/2015	1400	10.8	1.4
MW-93	MW-93-20141022	10/22/2014	18200	145	5.0
MW-93	MW-93-20141204	12/4/2014	14600	85.7	2.5
MW-93	MW-93-201501	1/15/2015	18000	131	3.4
MW-93	MW-93-201504	4/16/2015	21500	160	3.9
MW-93	MW-93-201507	7/23/2015	20800	164	3.4
MW-93	MW-93-201510	10/8/2015	21100	120	3.3
MW-94	MW-94-20141022	10/22/2014	11100	309 J	2.5
MW-94	MW-94-20141204	12/4/2014	9570	250 J	3.0
MW-94	MW-94-201501	1/15/2015	9530	297	2.4
MW-94	MW-94-201504	4/16/2015	11800	325	1.3
MW-94	MW-94-201507	7/23/2015	3890	119	0.61 J
MW-94	MW-94-201510	10/8/2015	1990	59.5	0.25 J
MW-95	MW-95-20141022	10/22/2014	22300	151	25.7
MW-95	MW-95-20141204	12/4/2014	20900	159	29.9
MW-95	MW-95-201501	1/15/2015	21100	177	25.6
MW-95	MW-95-201504	4/16/2015	26700	184	14.9
MW-95	MW-95-201507	7/23/2015	25200	181	17.1
MW-95	MW-95-201510	10/8/2015	26300	161	32.0
MW-96	MW-96-20141022	10/22/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-96	MW-96-201501	1/15/2015	0.59 J	< 0.50 U	< 0.50 U
MW-96	DUP-06-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-96	MW-96-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-96	DUP-06-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-20141022	10/22/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-97	MW-97-201501	1/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-97	MW-97-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-97	MW-97-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-GW-2014 1029	10/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-98	MW-98-201501	1/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-98	MW-98-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-98	MW-98-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-99	MW-99-20141022	10/22/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-99	MW-99-201501	1/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-99	MW-99-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-99	MW-99-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-99	MW-99-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-172	MW-172-20141022	10/22/2014	3010	21.4	2.4
MW-172	MW-172-20141205	12/5/2014	1810	15.6	1.3 J
MW-172	MW-172-201501	1/15/2015	3600	22.4	1.2
MW-172	MW-172-201504	4/16/2015	1740	11.9	0.92 J
MW-172	MW-172-201507	7/23/2015	2140	12.4	0.69 J
MW-172	MW-172-201510	10/8/2015	2110	12.4	0.51 J
MW-173	MW-173-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-173	MW-173-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-173	MW-173-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-174	MW-174-GW-20150120	1/20/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-174	MW-174-201504	4/14/2015	0.68 J	< 0.50 U	< 0.50 U
MW-174	MW-174-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-174	MW-174-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U

TABLE 3-2
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene (ug/L)	cis-1,2-Dichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-175	MW-175-GW-20150120	1/20/2015	123	2.0	< 0.50 U
MW-175	MW-175-201504	4/15/2015	98.8	1.5	< 0.50 U
MW-175	MW-175-201507	7/21/2015	20.3	0.32 J	< 0.13 U
MW-175	MW-175-201510	10/7/2015	78.6	1.6	0.19 J
MW-176	MW-176-GW-20150120	1/20/2015	720	16.8	0.57 J
MW-176	MW-176-201504	4/14/2015	528	16.7	0.69 J
MW-176	MW-176-201507	7/21/2015	575	21.5	0.79 J
MW-176	MW-176-201510	10/6/2015	420	111	1.2
MW-177	MW-177-GW-20150121	1/21/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-177	MW-177-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-177	MW-177-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-178	MW-178-GW-20150118	1/18/2015	5.2	0.99 J	< 0.50 U
MW-178	MW-178-201504	4/16/2015	5.0	1.3	< 0.50 U
MW-178	MW-178-201507	7/22/2015	4.6	1.1	< 0.13 U
MW-178	MW-178-201510	10/7/2015	5.8	1.4	< 0.13 U
MW-179	MW-179-201504	4/16/2015	41.2	1.6	< 0.50 U
MW-179	MW-179-201507	7/22/2015	27.3	1.1	< 0.13 U
MW-180	MW-180-GW-20150119	1/19/2015	23.7	3.4	< 0.50 U
MW-180	MW-180-201504	4/16/2015	21.4	3.8	< 0.50 U
MW-180	MW-180-201507	7/22/2015	22.1	3.0	< 0.13 U
MW-180	MW-180-201510	10/7/2015	18.5	3.0	< 0.13 U
MW-181	MW-181-GW-20150121	1/21/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-181	MW-181-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-181	MW-181-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-182	MW-182-201507	7/23/2015	193	17.8	0.28 J
MW-182	MW-182-201510	10/5/2015	196	17.2	0.25 J
RW-69	RW-69-20090115	1/15/2009	170	7.1	< 5 U
RW-69	RW-69-20090424	4/24/2009	62	< 5 U	< 5 U
RW-69	RW-69-20090527	5/27/2009	290	10	< 5 U
RW-69	RW-69-20091221-FS	12/21/2009	200	6.3	< 1.6 U
RW-69	RW-69-20100513	5/13/2010	170	8.2	< 5 U
RW-69	RW-69-20101104	11/4/2010	320	9	< 5 U
RW-69	RW-69-20110303-FS	3/3/2011	200	7.1	< 0.85 U
RW-69	RW-69-20110523-FS	5/23/2011	130	3.0 J	NT
RW-69	RW-69-20111026	10/26/2011	210	5.7	< 5 U
RW-69	RW-69-20120418	4/18/2012	150	3.6 J	< 5 U
RW-69	RW-69-20121018	10/18/2012	180	5.0	< 0.11 U
RW-69	RW-69-20130423	4/23/2013	190	2.8 J	< 0.11 U
RW-69	RW-69-101613	10/16/2013	190	7.7	< 0.11 U
RW-69	RW-69-201403	3/7/2014	105	3.5 J	0.41 J
RW-69	RW-69-201405	5/13/2014	110	3.3 J	0.30 J
RW-69	RW-69-201407	7/29/2014	164	5.6	0.50 J
RW-69	RW-69-201410	10/14/2014	173	6.9	< 0.50 U
RW-69	RW-69-201501	1/14/2015	115	4.7	< 0.50 U
RW-69	RW-69-201504	4/14/2015	113	4.5	< 0.50 U
RW-69	RW-69-201507	7/21/2015	135	5.5	0.31 J
RW-69	RW-69-201510	10/6/2015	184	6.7	0.24 J

Notes:
E,J = Estimated Concentration
ND = Result is not detected at the associated method quantitation limit
NT = Analyte not tested
U = Not Detected (MDL included where available, RDL included for older analyses)
M1 = Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

TABLE 3-3
THICKNESS OF SATURATED SOILS
Whirlpool Facility - Fort Smith, Arkansas

Plume	Well ID	Ground Elevation	Top of Saturated Soils	Bottom of Saturated Soils	Saturated Soil Interval
North	IW-72	472.2	450.2	446.4	3.8
North	IW-73	472.1	NA[2]	NA[2]	NA[2]
North	IW-74	472.3	454.3	446.3	8.0
North	IW-75	472.8	NA[2]	NA[2]	NA[2]
North	IW-76	473.2	NA[2]	NA[2]	NA[2]
North	IW-77	473.8	454.8	445.8	9.0
North	IW-78	474.2	NA[2]	NA[2]	NA[2]
North	IW-79	474.1	NA[2]	NA[2]	NA[2]
North	IW-80	473.7	454.7	446.7	8.0
North	MW-23	475.8	453.8	447.8	6.0
North	MW-24	476.6	453.6	447.1	6.5
North	MW-27	475.7	451.7	447.4	4.3
North	MW-28	470.6	447.1	445.9	1.2
North	MW-31	476.1	448.1	447.1	1.0
North	MW-32	475.7	NA[2]	NA[2]	NA[2]
North	MW-33	474.9	NA[2]	NA[2]	NA[2]
North	MW-35R	474.0	NA[2]	NA[2]	NA[2]
North	MW-36	473.4	NA[2]	NA[2]	NA[2]
North	MW-39	475.6	450.1	447.6	2.5
North	MW-40	473.4	450.1	447.1	3.0
North	MW-41	472.3	453.3	445.8	7.5
North	MW-42B	471.8	449.8	446.3	3.5
North	MW-43	471.0	451.0	446.3	4.7
North	MW-46R	466.5	450.5	445.8	4.7
North	MW-50	463.2	451.2	445.6	5.6
North	MW-55	465.5	447.5	446.8	0.7
North	MW-56	463.4	445.4	444.9	0.5
North	MW-57	463.1	447.1	446.5	0.6
North	MW-58	462.9	446.3	445.9	0.4
North	MW-60	461.0	447.2	445.6	1.6 [3]
North	MW-61	459.8	445.5	444.7	0.8 [3]
North	MW-62	464.5	446.0	444.2	1.8
North	MW-63	464.0	444.7	444.5	0.2 [3]
North	MW-65	474.1	453.6	445.7	7.9
North	MW-66	462.7	450.7	446.5	4.2 [3]
North	MW-67	459.4	448.4	445.2	3.2 [3]
North	MW-68	470.0	448.0	446.5	1.5
North	MW-70	471.7	NA[2]	NA[2]	NA[2]
North	MW-71	471.5	NA[2]	NA[2]	NA[2]
North	RW-69	471.5	449.5	445.5	4.0
				Average Thickness (feet)	**3.7**

Notes:
1. Saturated thickness calculated from soil description in boring log.
2. NA - Boring log not available
3. No saturated soil observation recorded in boring log during drilling. Interval inferred based on soil description.

TABLE 3-3
THICKNESS OF SATURATED SOILS
Whirlpool Facility - Fort Smith, Arkansas

Plume	Well ID	Ground Elevation	Top of Saturated Soils	Bottom of Saturated Soils	Saturated Soil Interval
South	ITMW-1	474.6	450.6	444.1	6.5
South	ITMW-10	478.6	451.6	446.1	5.5
South	ITMW-11	474.0	457.5	444.5	13.0
South	ITMW-12	474.7	456.7	444.7	12.0
South	ITMW-13	475.4	450.4	446.4	4.0
South	ITMW-14	475.7	455.7	445.7	10.0
South	ITMW-15	474.8	454.0	444.8	9.2
South	ITMW-16	476.5	458.5	445.3	13.2
South	ITMW-17	476.1	454.1	447.1	7.0
South	ITMW-18	473.9	457.9	444.9	13.0
South	ITMW-19	474.3	457.8	445.3	12.5
South	ITMW-2	475.1	457.1	445.6	11.5
South	ITMW-20	475.7	453.2	447.4	5.8
South	ITMW-21	474.4	449.4	446.4	3.0
South	ITMW-3	472.8	451.6	444.6	7.0
South	ITMW-4	477.6	458.1	447.1	11.0
South	ITMW-5	476.6	452.1	446.1	6.0
South	ITMW-6	481.1	455.4	445.6	9.8
South	ITMW-7	479.7	NA[2]	NA[2]	NA[2]
South	ITMW-9	479.5	460.2	446.3	13.9
South	MW-22	473.9	450.9	449.9	1.0
South	MW-25	474.7	446.7	445.0	1.8
South	MW-26	476.1	451.1	446.9	4.2
South	MW-29	475.1	452.1	447.1	5.0
South	MW-30	479.2	446.7	443.7	3.0
South	MW-37	474.0	457.0	445.5	11.5
South	MW-38	474.9	NA[2]	NA[2]	NA[2]
South	MW-92	473.9	451.9	444.9	7.0
South	MW-93	478.0	456.0	443.5	12.5
South	MW-94	478.0	455.0	445.0	10.0
South	MW-95	478.0	452.0	445.0	7.0
South	MW-172	473.4	459.4	445.8	13.6
				Average Thickness (feet)	**8.3**

Notes:
1. Saturated thickness calculated from soil description in boring log.
2. NA - Boring log not available
3. No saturated soil observation recorded in boring log during drilling. Interval inferred based on soil description.

TABLE 3-3
THICKNESS OF SATURATED SOILS
Whirlpool Facility - Fort Smith, Arkansas

Plume	Well ID	Ground Elevation	Top of Saturated Soils	Bottom of Saturated Soils	Saturated Soil Interval
NE Corner	MW-87	471.0	451.0	447.8	3.2
NE Corner	MW-88	469.1	453.6	449.1	4.5
NE Corner	MW-89	467.1	451.6	449.5	2.1
NE Corner	MW-90	467.0	452.0	447.0	5.0
NE Corner	MW-91	469.2	451.7	449.2	2.5
NE Corner	MW-96	458.3	449.8	444.0	5.8
NE Corner	MW-97	459.9	451.9	445.9	6.0
NE Corner	MW-98	462.0	451.0	444.4	6.6
NE Corner	MW-99	467.1	449.3	445.1	4.2
				Average Thickness (feet)	**4.4**

Notes:
1. Saturated thickness calculated from soil description in boring log.
2. NA - Boring log not available
3. No saturated soil observation recorded in boring log during drilling. Interval inferred based on soil description.

TABLE 3-4
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER				Volume of Water			TCE Concentration		Mass of TCE		Volume of TCE	
Date	**Plume Area (Square Feet)**	**Saturated Thickness (Feet)**	**Total Porosity[2]**	**Plume Area (Cubic Feet)**	**Gallons**	**Liters**	**Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)**	**Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)**	**Min. Kg.**	**Max. Kg.**	**Min. Vol. (Gallons)**	**Max. Vol. (Gallons)**
North Plume												
March 2014 - 5 to 100 µg/L	*246,800*	3.7[1]	0.4	366,251	2,739,559	10,369,231	5	100	0.1	1.0	0.0	0.2
March 2014 - 100 to 1,000 µg/L	*184,500*	3.7[1]	0.4	273,798	2,048,009	7,751,714	100	1,000	0.8	7.8	0.1	1.4
March 2014 - > 1,000 µg/L	*100*	3.7[1]	0.4	148	1,110	4,201	1,000	1,500	0.0	0.0	0.0	0.0
March 2014 Subtotal	431,400								0.8	8.8	0.2	1.6
May 2014 - 5 to 100 µg/L	*279,000*	3.7[1]	0.4	414,036	3,096,989	11,722,104	5	100	0.1	1.2	0.0	0.2
May 2014 - 100 to 1,000 µg/L	*185,110*	3.7[1]	0.4	274,703	2,054,780	7,777,343	100	1,000	0.8	7.8	0.1	1.4
May 2014 - > 1,000 µg/L	*100*	3.7[1]	0.4	148	1,110	4,201	1,000	1,500	0.0	0.0	0.0	0.0
May 2014 Subtotal	464,210								0.8	9.0	0.2	1.6
July 2014 - 5 to 100 µg/L	*294,300*	3.7[1]	0.4	436,741	3,266,824	12,364,930	5	100	0.1	1.2	0.0	0.2
July 2014 - 100 to 1,000 µg/L	*192,500*	3.7[1]	0.4	285,670	2,136,812	8,087,832	100	1,000	0.8	8.1	0.1	1.5
July 2014 - > 1,000 µg/L	*200*	3.7[1]	0.4	297	2,220	8,403	1,000	1,500	0.0	0.0	0.0	0.0
July 2014 Subtotal	487,000								0.9	9.3	0.2	1.7
October 2014 - 5 to 100 µg/L	*299,500*	3.7[1]	0.4	444,458	3,324,546	12,583,406	5	100	0.1	1.3	0.0	0.2
October 2014 - 100 to 1,000 µg/L	*199,900*	3.7[1]	0.4	296,652	2,218,954	8,398,741	100	1,000	0.8	8.4	0.2	1.5
October 2014 - > 1,000 µg/L	*400*	3.7[1]	0.4	594	4,440	16,806	1,000	1,500	0.0	0.0	0.0	0.0
October 2014 Subtotal	499,800								0.9	9.7	0.2	1.8
January 2015 - 5 to 100 µg/L	*296,000*	3.7[1]	0.4	439,264	3,285,695	12,436,355	5	100	0.1	1.2	0.0	0.2
January 2015 - 100 to 1,000 µg/L	*180,466*	3.7[1]	0.4	267,812	2,003,230	7,582,227	100	1,000	0.8	7.6	0.1	1.4
January 2015 - > 1,000 µg/L	*0*	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
January 2015 Subtotal	476,466								0.8	8.8	0.1	1.6

TABLE 3-4
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
April 2015 - 5 to 100 µg/L	308,950	3.7[1]	0.4	458,482	3,429,444	12,980,445	5	100	0.1	1.3	0.0	0.2
April 2015 - 100 to 1,000 µg/L	177,037	3.7[1]	0.4	262,723	1,965,167	7,438,158	100	1,000	0.7	7.4	0.1	1.3
April 2015 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2015 Subtotal	485,987								0.8	8.7	0.1	1.6
July 2015 - 5 to 100 µg/L	334,058	3.7[1]	0.4	495,742	3,708,151	14,035,350	5	100	0.1	1.4	0.0	0.3
July 2015 - 100 to 1,000 µg/L	165,146	3.7[1]	0.4	245,077	1,833,173	6,938,561	100	1,000	0.7	6.9	0.1	1.3
July 2015 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
July 2015 Subtotal	499,204								0.8	8.3	0.1	1.5
October 2015 - 5 to 100 µg/L	303,199	3.7[1]	0.4	449,947	3,365,606	12,738,818	5	100	0.1	1.3	0.0	0.2
October 2015 - 100 to 1,000 µg/L	152,180	3.7[1]	0.4	225,835	1,689,247	6,393,799	100	1,000	0.6	6.4	0.1	1.2
October 2015 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2015 Subtotal	455,379								0.7	7.7	0.1	1.4
South Plume												
October 2014 - 5 to 100 µg/L	*519,800*	8.3[1]	0.4	1,727,815	12,924,058	48,917,558	5	100	0.2	4.9	0.0	0.9
October 2014 - 100 to 1,000 µg/L	*261,500*	8.3[1]	0.4	869,226	6,501,810	24,609,353	100	1,000	2.5	24.6	0.4	4.5
October 2014 - > 1,000 µg/L	*119,000*	8.3[1]	0.4	395,556	2,958,759	11,198,902	1,000	1,500	11.2	16.8	2.0	3.0
October 2014 Subtotal	900,300								13.9	46.3	2.5	8.4
January 2015 - 5 to 100 µg/L	*442,344*	8.3[1]	0.4	1,470,351	10,998,229	41,628,296	5	100	0.2	4.2	0.0	0.8
January 2015 - 100 to 1,000 µg/L	*324,537*	8.3[1]	0.4	1,078,761	8,069,132	30,541,665	100	1,000	3.1	30.5	0.6	5.5
January 2015 - 1,000 to 10,000 µg/L	*86,311*	8.3[1]	0.4	286,898	2,145,995	8,122,592	1,000	1,500	8.1	12.2	1.5	2.2
January 2015 - > 10,000 µg/L	*16,637*	8.3[1]	0.4	55,301	413,654	1,565,682	10,000	40,000	15.7	62.6	2.8	11.3
January 2015 Subtotal	869,829								27.0	109.5	4.9	19.8

TABLE 3-4
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
April 2015 - 5 to 100 µg/L	446,025	8.3[1]	0.4	1,482,587	11,089,752	41,974,709	5	100	0.2	4.2	0.0	0.8
April 2015 - 100 to 1,000 µg/L	320,887	8.3[1]	0.4	1,066,628	7,978,380	30,198,170	100	1,000	3.0	30.2	0.5	5.5
April 2015 - 1,000 to 10,000 µg/L	82,635	8.3[1]	0.4	274,679	2,054,597	7,776,650	1,000	1,500	7.8	11.7	1.4	2.1
April 2015 - > 10,000 µg/L	19,906	8.3[1]	0.4	66,168	494,933	1,873,322	10,000	40,000	18.7	74.9	3.4	13.6
April 2015 Subtotal	869,453								29.7	121.0	5.4	21.9
July 2015 - 5 to 100 µg/L	366,826	8.3[1]	0.4	1,219,330	9,120,586	34,521,416	5	100	0.2	3.5	0.0	0.6
July 2015 - 100 to 1,000 µg/L	439,964	8.3[1]	0.4	1,462,440	10,939,054	41,404,318	100	1,000	4.1	41.4	0.7	7.5
July 2015 - 1,000 to 10,000 µg/L	158,420	8.3[1]	0.4	526,588	3,938,879	14,908,656	1,000	1,500	14.9	22.4	2.7	4.0
July 2015 - > 10,000 µg/L	17,739	8.3[1]	0.4	58,964	441,054	1,669,389	10,000	40,000	16.7	66.8	3.0	12.1
July 2015 Subtotal	982,949								35.9	134.0	6.5	24.3
October 2015 - 5 to 100 µg/L	452,019	8.3[1]	0.4	1,502,511	11,238,783	42,538,795	5	100	0.2	4.3	0.0	0.8
October 2015 - 100 to 1,000 µg/L	410,850	8.3[1]	0.4	1,365,665	10,215,177	38,664,446	100	1,000	3.9	38.7	0.7	7.0
October 2015 - 1,000 to 10,000 µg/L	178,334	8.3[1]	0.4	592,782	4,434,011	16,782,732	1,000	1,500	16.8	25.2	3.0	4.6
October 2015 - > 10,000 µg/L	26,442	8.3[1]	0.4	87,893	657,441	2,488,415	10,000	40,000	24.9	99.5	4.5	18.0
October 2015 Subtotal	1,067,645								45.7	167.6	8.3	30.4
Northeast Plume												
October 2014 - 5 to 100 µg/L	*187,600*	4.4[1]	0.4	330,926	2,475,329	9,369,122	5	100	0.0	0.9	0.0	0.2
October 2014 - 100 to 1,000 µg/L	*69,200*	4.4[1]	0.4	122,069	913,075	3,455,987	100	1,000	0.3	3.5	0.1	0.6
October 2014 - > 1,000 µg/L	*0*	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2014 Subtotal	256,800								0.4	4.4	0.1	0.8
January 2015 - 5 to 100 µg/L	*166,439*	4.4[1]	0.4	293,598	2,196,116	8,312,299	5	100	0.0	0.8	0.0	0.2
January 2015 - 100 to 1,000 µg/L	*74,000*	4.4[1]	0.4	130,536	976,409	3,695,709	100	1,000	0.4	3.7	0.1	0.7
January 2015 - > 1,000 µg/L	*0*	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
January 2015 Subtotal	240,439								0.4	4.5	0.1	0.8

TABLE 3-4
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
April 2015 - 5 to 100 µg/L	183,000	4.4[1]	0.4	322,812	2,414,634	9,139,389	5	100	0.0	0.9	0.0	0.2
April 2015 - 100 to 1,000 µg/L	70,500	4.4[1]	0.4	124,362	930,228	3,520,912	100	1,000	0.4	3.5	0.1	0.6
April 2015 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2015 Subtotal	253,500								0.4	4.4	0.1	0.8
July 2015 - 5 to 100 µg/L	176,731	4.4[1]	0.4	311,753	2,331,916	8,826,302	5	100	0.0	0.9	0.0	0.2
July 2015 - 100 to 1,000 µg/L	76,915	4.4[1]	0.4	135,678	1,014,872	3,841,290	100	1,000	0.4	3.8	0.1	0.7
July 2015 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
July 2015 Subtotal	253,646								0.4	4.7	0.1	0.9
October 2015 - 5 to 100 µg/L	160,153	4.4[1]	0.4	282,510	2,113,174	7,998,364	5	100	0.0	0.8	0.0	0.1
October 2015 - 100 to 1,000 µg/L	77,178	4.4[1]	0.4	136,142	1,018,342	3,854,425	100	1,000	0.4	3.9	0.1	0.7
October 2015 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2015 Subtotal	237,331								0.4	4.7	0.1	0.8

Notes:
1 - Saturated Thickness estimated from 4th Quarter 2014 RADD sampled wells and new 4th Quarter well completions (see Table 1).
2 - Total Porosity estimated from Freeze and Cherry (1979).
TCE - Trichloroethylene
µg/L - Micrograms per liter

TABLE 4-1
SUMMARY OF AVERAGE DETECTED CONCENTRATIONS IN GROUNDWATER (2009-2015)
Whirlpool Facility - Fort Smith, Arkansas

Date	TCE			c-1,2-DCE			VC		
	Concentration (µg/L)	# of Detects	# of Samples	Concentration (µg/L)	# of Detects	# of Samples	Concentration (µg/L)	# of Detects	# of Samples
All Wells (excluding Northeast Wells)									
4/24/2009	2,570	35	46	266	25	46	287	5	46
10/28/2009	8,560	22	38	559	17	38	695	4	38
5/13/2010	5,600	29	43	433	23	43	494	5	43
11/4/2010	10,825	33	41	632	19	41	1,300	2	41
3/22/2011	4,889	26	34	555	17	34	281	9	34
10/26/2011	4,918	46	65	394	36	65	604	6	65
4/18/2012	2,790	30	39	275	25	39	531	4	39
10/18/2012	2,348	43	66	191	39	66	129	19	66
4/23/2013	1,561	26	38	89	23	38	16	16	38
10/16/2013	1,895	46	65	177	39	65	189	17	66
3/7/2014	1,184	43	55	71	35	55	6	25	55
5/15/2014	1,159	46	55	62	31	55	7	23	55
7/30/2014	2,764	41	55	121	33	55	18	14	55
10/16/2014	2,174	37	55	135	33	55	80	11	55
1/12/2015	437	39	55	81	30	55	16	9	55
4/16/2015	472	40	57	94	30	57	5.8	8	57
7/22/2015	1,187	45	57	63	37	57	10.3	19	57
10/6/2015	1,818	44	57	69	39	57	10.1	20	57
North Wells									
4/24/2009	384	23	34	19	13	34		0	34
10/28/2009	228	14	25	8	9	25		0	25
5/13/2010	255	17	28	11	10	28		0	28
11/4/2010	333	21	27	16	10	27		0	27
3/22/2011	144	15	23	6	8	23	1	2	23
10/26/2011	262	25	38	10	17	38	2	1	38
4/18/2012	197	17	18	7	12	18		0	18
10/18/2012	328	24	39	11	20	39	1	5	39
4/23/2013	228	13	17	8	10	17	0	5	17
10/16/2013	268	26	38	13	20	38	2	5	38
3/7/2014	214	23	32	10	18	32	1	11	32
5/15/2014	209	25	31	10	15	31	0.5	10	31
7/29/2014	281	23	31	11	16	31	4.9	6	31
10/14/2014	251	19	31	8	16	31	0.9	2	31
1/12/2015	186	21	31	7	15	31	1.8	3	31
4/16/2015	173	21	31	8	14	31	1.0	4	31
7/22/2015	139	22	31	5	18	31	0.7	8	31
10/6/2015	121	23	31	7	19	31	0.4	10	31
South Wells									
4/24/2009	6,760	12	12	535	12	12	287	5	12
10/28/2009	23,140	8	13	1,178	8	13	695	4	13
5/13/2010	13,173	12	15	757	13	15	494	5	15
11/4/2010	29,188	12	14	1,316	9	14	1,300	2	14
3/22/2011	11,360	11	11	944	10	11	361	7	11
10/26/2011	10,461	21	27	739	19	27	724	5	27
4/18/2012	6,181	13	21	523	13	21	531	4	21
10/18/2012	4,899	19	27	380	19	27	175	14	27
4/23/2013	2,893	13	21	151	13	21	22	11	21
10/16/2013	4,010	20	27	350	19	27	291	11	27
3/7/2014	2,300	20	23	135	17	23	10	14	23
5/15/2014	2,404	20	23	111	16	23	12	13	23
7/30/2014	6,280	17	23	237	16	23	28	8	23
10/15/2014	4,449	17	23	270	16	23	110	8	23
1/12/2015	770	17	23	155	15	23	23	6	23
4/16/2015	947	16	23	180	15	23	11	4	23
7/22/2015	2,507	20	23	132	17	23	17	11	23
10/6/2015	4,287	18	23	144	18	23	20	10	23
Source Wells									
4/24/2009	11,600	6	6	883	7	7	358	4	7
10/28/2009	73,900	2	2	3,087	3	3	1,385	2	3
5/13/2010	20,750	6	6	1,375	7	7	617	4	7
11/4/2010	98,133	3	3	2,940	4	4	1,300	2	4
3/22/2011	22,000	4	4	1,826	5	5	616	4	5
10/26/2011	20,260	8	8	1,532	9	9	904	4	9
4/18/2012	12,625	4	4	1,314	5	5	707	3	5
10/18/2012	10,905	8	8	752	9	9	271	9	9
4/23/2013	8,825	4	4	358	5	5	49	5	5
10/16/2013	9,798	8	8	714	9	9	455	7	9
3/7/2014	5,696	8	8	268	8	8	18	8	8
5/15/2014	5,955	8	8	203	8	8	22	7	8
7/31/2014	13,281	8	8	456	8	8	37	6	8
10/16/2014	9,401	8	8	524	8	8	146	6	8
1/12/2015	1,560	8	8	311	7	8	35	4	8
4/16/2015	2,090	7	8	243	14	15	20	2	8
7/22/2015	6,175	8	8	302	7	8	38	5	8
10/6/2015	9,573	8	8	309	8	8	24	8	8

Notes:
µg/L: Micrograms per liter

TABLE 5-1
SUMMARY OF TCE CONCENTRATIONS (SUPPLEMENTAL NECK AREA)
MAY 2014 - DECEMBER 2015
Whirlpool Facility - Fort Smith, Arkansas

	TCE Concentrations (µg/L)						
Date(s)	**IW-101**	**MW-23**	**MW-24**	**MW-83**	**MW-84**	**Total TCE Reduction (All Wells)**	
5/22 & 23/2014	509	22.8	79.7	470	214	1296	
7/8/2014	150	27.8	102	nm	nm		
9/12/2014	139	62.1	55.7	213	0.93	572	
10/23/2014	nm	189	33.1	210	0.68		
1/14-15/2015	nm	115	26.9	101	0.5 U	382	
4/14-16/2015	nm	57.5	18.8	151	0.5 U	367	
7/20/2015	nm	37.8	178	27.9	0.29 J	383	
10/7-8/2015	nm	0.65 J	44.1	9.8	0.17 U	194	
12/1-2/2015	nm	0.17 J	84.1	1.3	nm	225	
Percent Reduction	72.7%	-728.9%	58.5%	55.3%	99.7%	55.9%	**4th Quarter 2014**
	-	-404.4%	66.2%	78.5%	99.8%	70.5%	**1st Quarter 2015**
	-	-152.2%	76.4%	67.9%	99.8%	71.7%	**2nd Quarter 2015**
	-	-65.8%	-123.3%	94.1%	99.9%	70.4%	**3rd Quarter 2015**
	-	99.3%	-5.5%	99.7%	99.9%	82.7%	**4th Quarter 2015**

Notes:
TCE = Trichloroethylene
nm = Not measured
µg/L = Micrograms per liter
U = Not detected above noted method detection limit

RAMBOLL ENVIRON

TABLE 5-2
SUMMARY OF TCE CONCENTRATIONS (AREAS 2 AND 3)
MAY 2014 - DECEMBER 2015
Whirlpool Facility - Fort Smith, Arkansas

	TCE Concentrations (µg/L)												
Date(s)	**IW-115**	**MW-81**	**MW-82**	**IW-77**	**IW-78**	**IW-79**	**MW-34**	**MW-35R**	**MW-36**	**MW-65**	**IW-80**	**Total TCE Reduction (all wells)**	
5/13-14 & 5/28-30/2014	504	512	285	1460	255	426	19.9	183	0.5 U	195	24.2	3865	
7/29-30/2014	nm	nm	nm	1540	nm	nm	78.2	64.7	0.61	17.1	25.6	3027	
9/11 & 10/14-23/2014	355	463	50	554	39.6	105	47.7	79.2	0.5 U	30.8	11.8	1737	
1/12-14/2015	nm	385	66	201	nm	nm	22	10.9	0.5 U	19.2	7.1	1211	
4/14-15/2015	nm	198	0.5 U	153	nm	nm	13.8	39.5	0.5 U	16	9.2	930	
7/20/2015	nm	275	5.3	130	nm	nm	3.5	33.7	0.22 J	26.3	12.5	986	
10/6-8/2015	nm	160	4.2	24.3	nm	nm	4.5	15.4	0.17 U	0.28 J	10.6	719	
12/1-2/2015	nm	56.1	nm	87.8	nm	nm	nm	0.89 J	nm	6.6	9	669	
Percent Reduction	29.6%	9.6%	82.5%	62.1%	84.5%	75.4%	-139.7%	56.7%	-	84.2%	51.2%	55.1%	**4th Quarter 2014**
	-	73.6%	95.5%	86.2%	-	-	-10.6%	94.0%	-	90.2%	70.7%	68.7%	**1st Quarter 2015**
	-	86.4%	100.0%	89.5%	-	-	30.7%	78.4%	-	91.8%	62.0%	75.9%	**2nd Quarter 2015**
	-	81.2%	99.6%	91.1%	-	-	82.4%	81.6%	-	86.5%	48.3%	74.5%	**3rd Quarter 2015**
	-	96.2%	98.5%	94.0%	-	-	77.4%	99.5%	-	96.6%	62.8%	82.7%	**4th Quarter 2015**

Notes:
TCE = Trichloroethylene
nm = Not measured
µg/L = Micrograms per liter
U = Not detected above noted method detection limit

TABLE 5-3
SUMMARY OF TCE CONCENTRATIONS (AREA 1)
SEPTEMBER 2014 - OCTOBER 2015
Whirlpool Facility - Fort Smith, Arkansas

	TCE Concentrations (µg/L)												
Date(s)	**IW-127**	**IW-141**	**IW-147**	**IW-152**	**IW-153**	**IW-157**	**MW-25**	**MW-38**	**MW-85**	**MW-86**	**MW-92**	**MW-93**	
9/11/2014	1020	nm	nm	nm	nm	nm	nm	nm	5820	129000	nm	nm	
10/15/2014	nm	nm	nm	nm	nm	nm	nm	6750	nm	nm	nm	nm	
10/23/2014	nm	368000	199000	17600	293	74200	59800	nm	nm	nm	2160	18200	
12/4/2014	182	46300	91600	5	1.6	31700	2620	3190	27700	169000	2200	14600	
1/15/2015	nm	nm	nm	nm	nm	nm	2510	5440	5940	81200	1410	18000	
4/15-16/2015	nm	nm	nm	nm	nm	nm	4650	3060	256	46700	736	21500	
7/20/2015	nm	nm	nm	nm	nm	nm	39800	3420	132	65100	617	20800	
10/8/2015	nm	nm	nm	nm	nm	nm	68700	2740	12000	131000	1400	21100	
Percent Reduction	82.2%	87%	54%	100%	99%	57%	96%	52.7%	-375.9%	-31.0%	-2%	20%	**4th Quarter 2014**
	-	-	-	-	-	-	96%	19.4%	-2.1%	37.1%	35%	1%	**1st Quarter 2015**
	-	-	-	-	-	-	92%	54.7%	95.6%	63.8%	66%	-18%	**2nd Quarter 2015**
	-	-	-	-	-	-	33%	49.3%	97.7%	49.5%	71%	-14%	**3rd Quarter 2015**
	-	-	-	-	-	-	-15%	59.4%	-106.2%	-1.6%	35%	-16%	**4th Quarter 2015**

Notes:
nd = Not detected
nm = Not measured
µg/L = Micrograms per liter
U = Not detected above noted method detection limit

TABLE 5-3
SUMMARY OF TCE CONCENTRATIONS (AREA 1)
SEPTEMBER 2014 - OCTOBER 2015
Whirlpool Facility - Fort Smith, Arkansas

	TCE Concentrations (µg/L)										
Date(s)	**MW-94**	**MW-95**	**MW-172**	**ITMW-11**	**ITMW-12**	**ITMW-15**	**ITMW-17**	**ITMW-18**	**ITMW-19**	**Total TCE Reduction (all wells)**	
9/11/2014	nm	nm	nm	nm	nm	nm	nm	nm	nm	944213	
10/15/2014	nm	nm	nm	2050	2570	1490	3510	3540	12800		
10/23/2014	11100	22300	3010	nm	nm	nm	nm	nm	nm		
12/4/2014	9570	20900	1810	1530	468	63	4630	3690	33.5	431793	
1/15/2015	9530	21100	3600	68.3	57.1	56.5	3840	488	17.4	323046	
4/15-16/2015	11800	26700	1740	0.5 U	2260	101	3920	43.5	594	293849	
7/20/2015	3890	25200	2140	33.2	652	110	5350	22.9	15.2	337071	
10/7/2015-10/8/2015	1990	26300	2110	721	314	38.9	3970	12.9	87.1	442273	
Percent Reduction	14%	6%	40%	25.4%	81.8%	95.8%	-31.9%	-4.2%	99.7%	54.3%	**4th Quarter 2014**
	14%	5%	-20%	96.7%	97.8%	96.2%	-9.4%	86.2%	99.9%	65.8%	**1st Quarter 2015**
	-6%	-20%	42%	100.0%	12.1%	93.2%	-11.7%	98.8%	95.4%	68.9%	**2nd Quarter 2015**
	65%	-13%	29%	98.4%	74.6%	92.6%	-52.4%	99.4%	99.9%	64.3%	**3rd Quarter 2015**
	82%	-18%	30%	64.8%	87.8%	97.4%	-13.1%	99.6%	99.3%	53.2%	**4th Quarter 2015**

Notes:
nd = Not detected
nm = Not measured
µg/L = Micrograms per liter
U = Not detected above noted method detection limit

TABLE 5-4
SUMMARY OF TCE CONCENTRATIONS (MW-25, MW-85 and MW-86)
MAY 2014 - OCTOBER 2015
Whirlpool Facility - Fort Smith, Arkansas

	TCE Concentrations (µg/L)				
Date(s)	**MW-25**	**MW-85**	**MW-86**	**Total TCE Reduction (All Wells)**	
5/15 & 29/2014	18500	1970	533000	553470	
7/8/2014	49900	3780	nm		
7/31/2014	71700	nm	nm		
9/11/2014	nm	5820	129000		
10/24/2014	59800	nm	nm		
12/5/2014	2620	27700	169000	199320	
1/15/2015	2510	5940	81200	89650	
4/16/2015	4650	256	46700	51606	
7/20/2015	39800	132	65100	105032	
10/8/2015	68700	12000	131000	211700	
Percent Reduction	85.8%	-1306.1%	68.3%	64.0%	**4th Quarter 2014**
	86.4%	-201.5%	84.8%	83.8%	**1st Quarter 2015**
	74.9%	87.0%	91.2%	90.7%	**2nd Quarter 2015**
	-115.1%	93.3%	87.8%	81.0%	**3rd Quarter 2015**
	-271.4%	-509.1%	75.4%	61.8%	**4th Quarter 2015**

Notes:

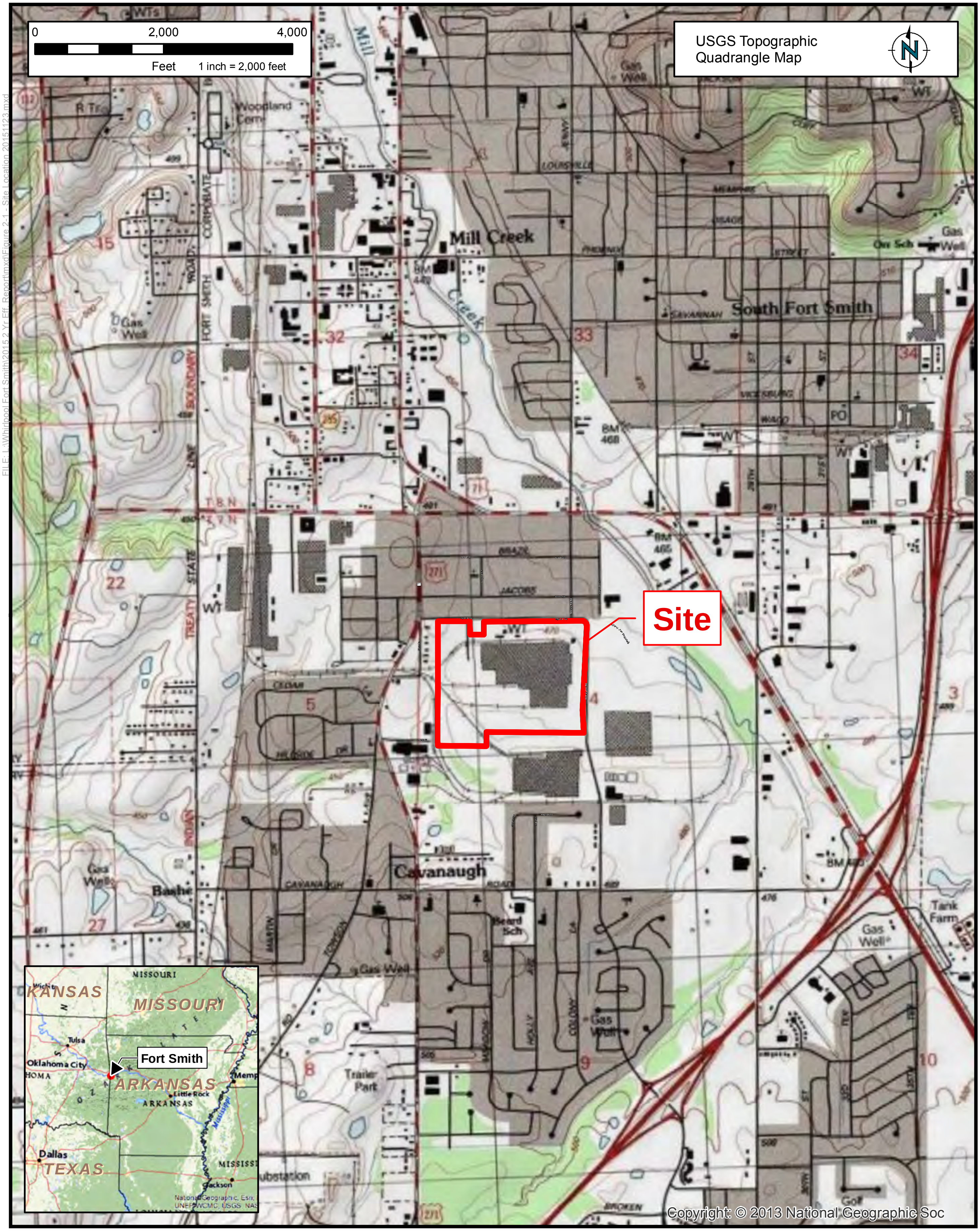
TCE = Trichloroethylene

nm = Not measured

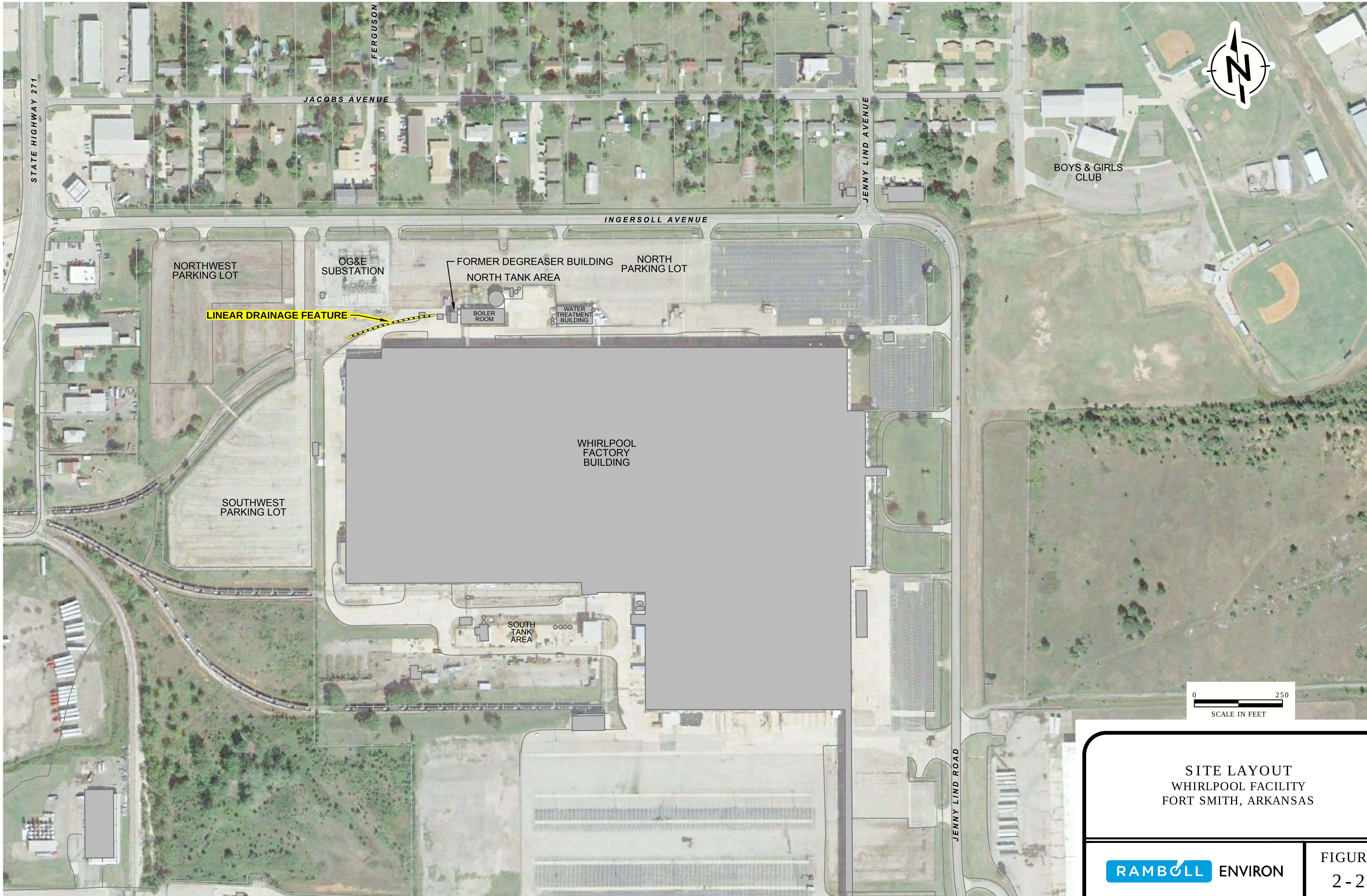
µg/L = Micrograms per liter

RAMBOLL ENVIRON

FIGURES



RAMBOLL ENVIRON		**SITE LOCATION** Whirlpool Facility - Fort Smith, Arkansas	Figure 2-1
DRAFTED BY: FK	DATE: 11/23/2015		PROJECT: 3437500L



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SOURCE: GOOGLE EARTH PRO (OCTOBER 2013).

SITE LAYOUT
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL ENVIRON

FIGURE 2-2

DRAFTED BY: ELS | DATE: 12/23/15 | 3437500L

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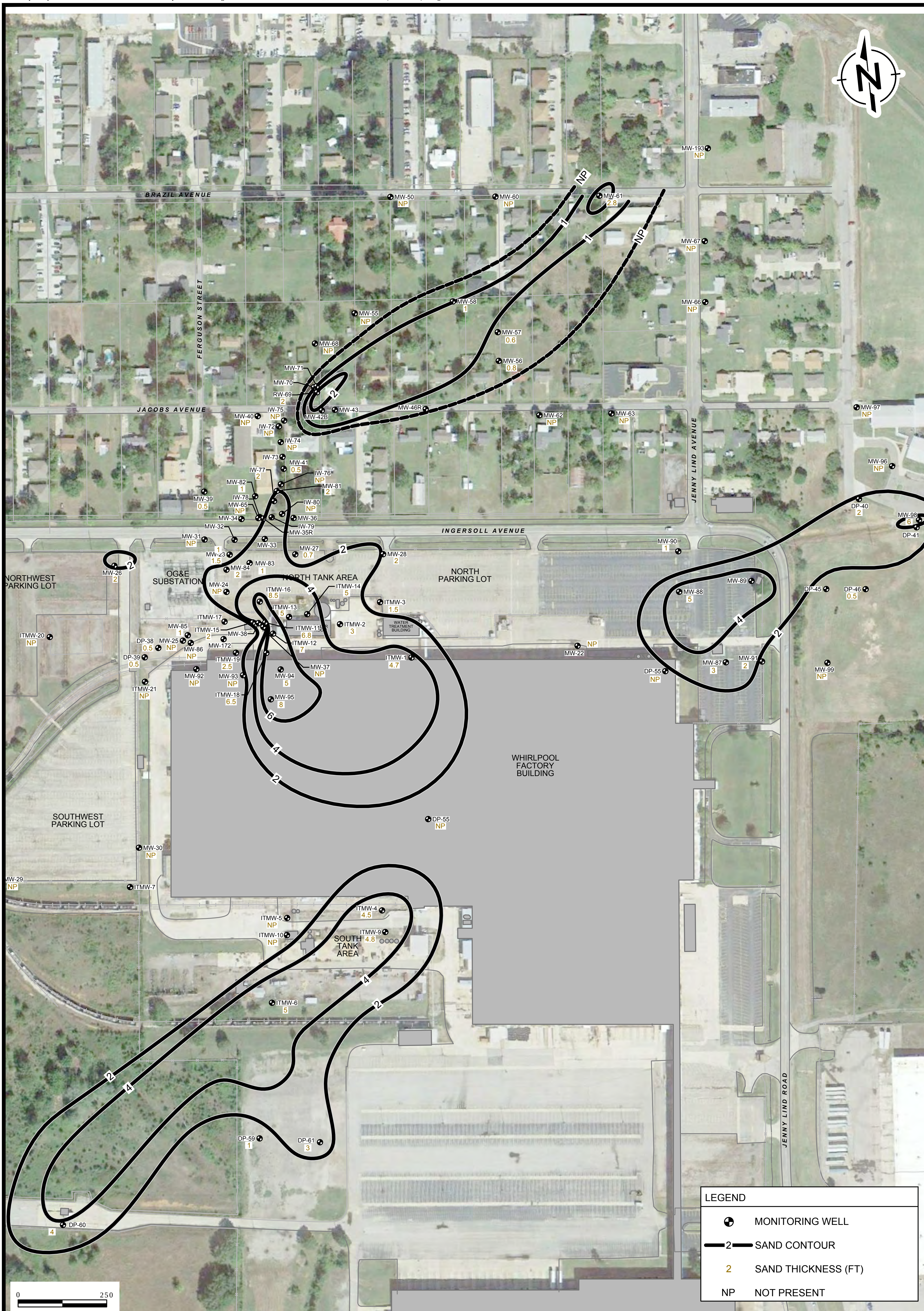


SOURCE: GOOGLE EARTH PRO (OCTOBER 2013).

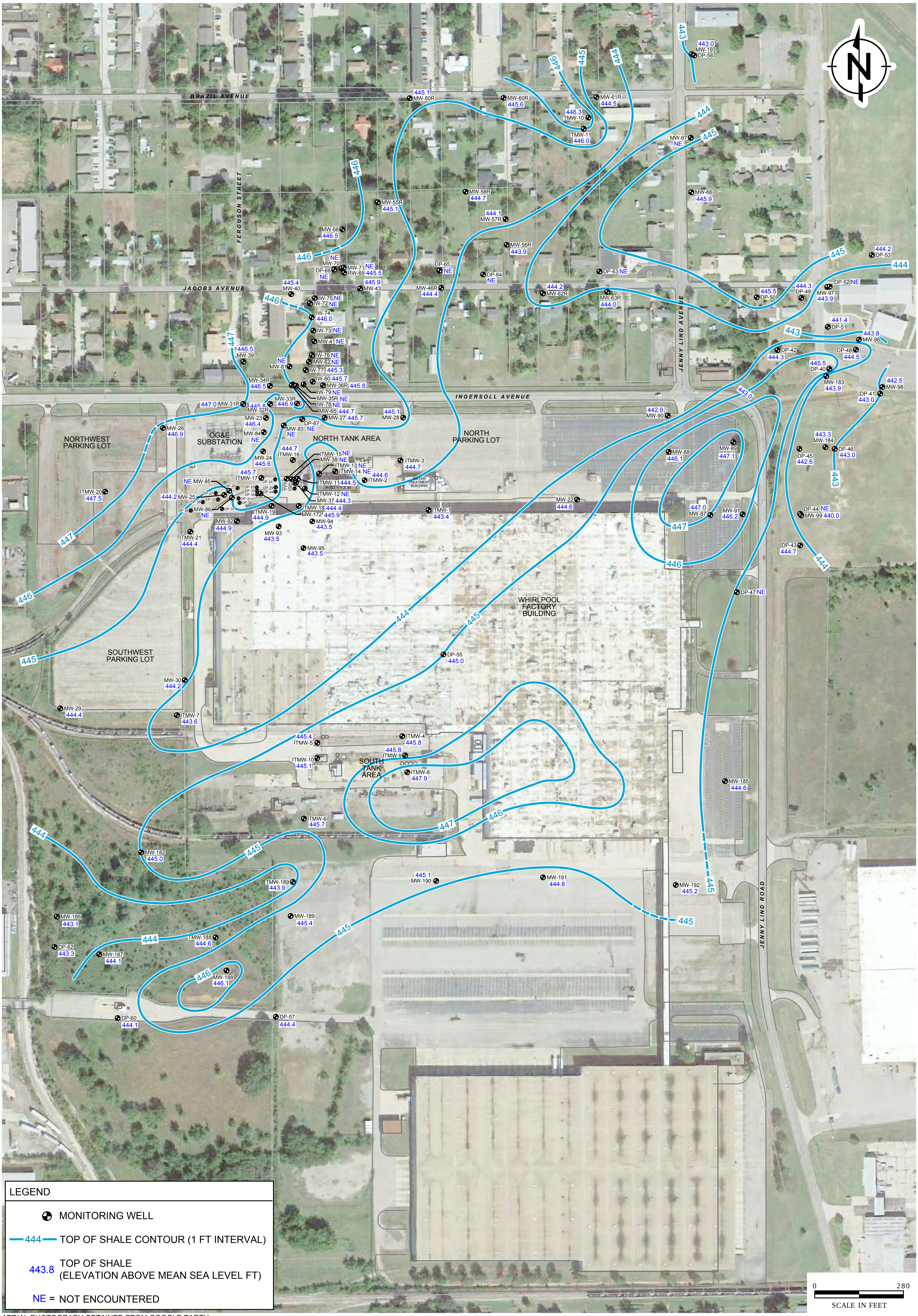
RAMBOLL ENVIRON

DRAFTED BY: ELS | DATE: 1/22/16

SAND THICKNESS
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

FIGURE 2-3

3433253A



RAMBOLL ENVIRON

TOP OF COMPETENT SHALE

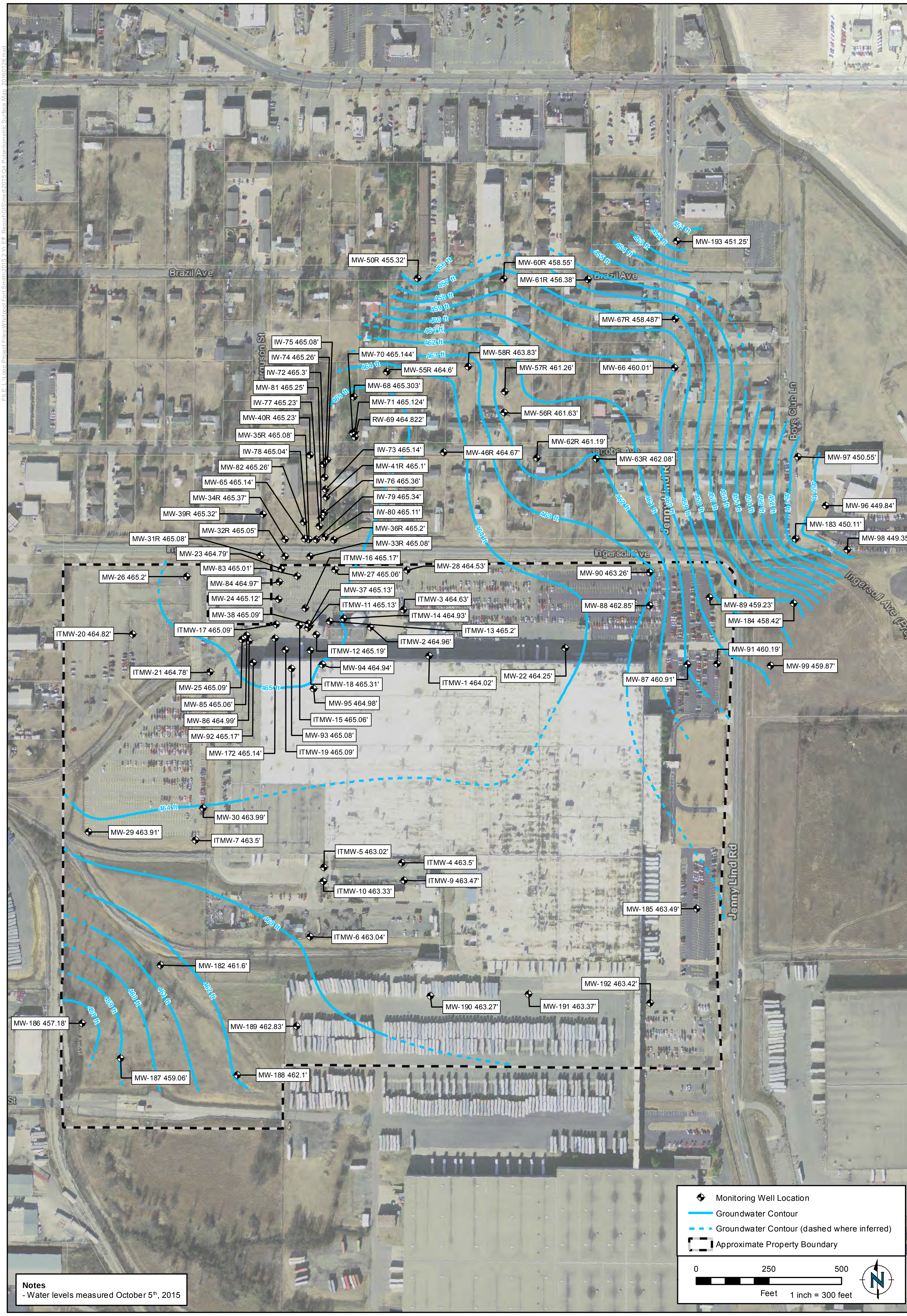
WHIRLPOOL FACILITY

FORT SMITH, ARKANSAS

FIGURE

2-4

DRAFTED BY: ELS/CKL | DATE: 1/26/16 | 3437500L



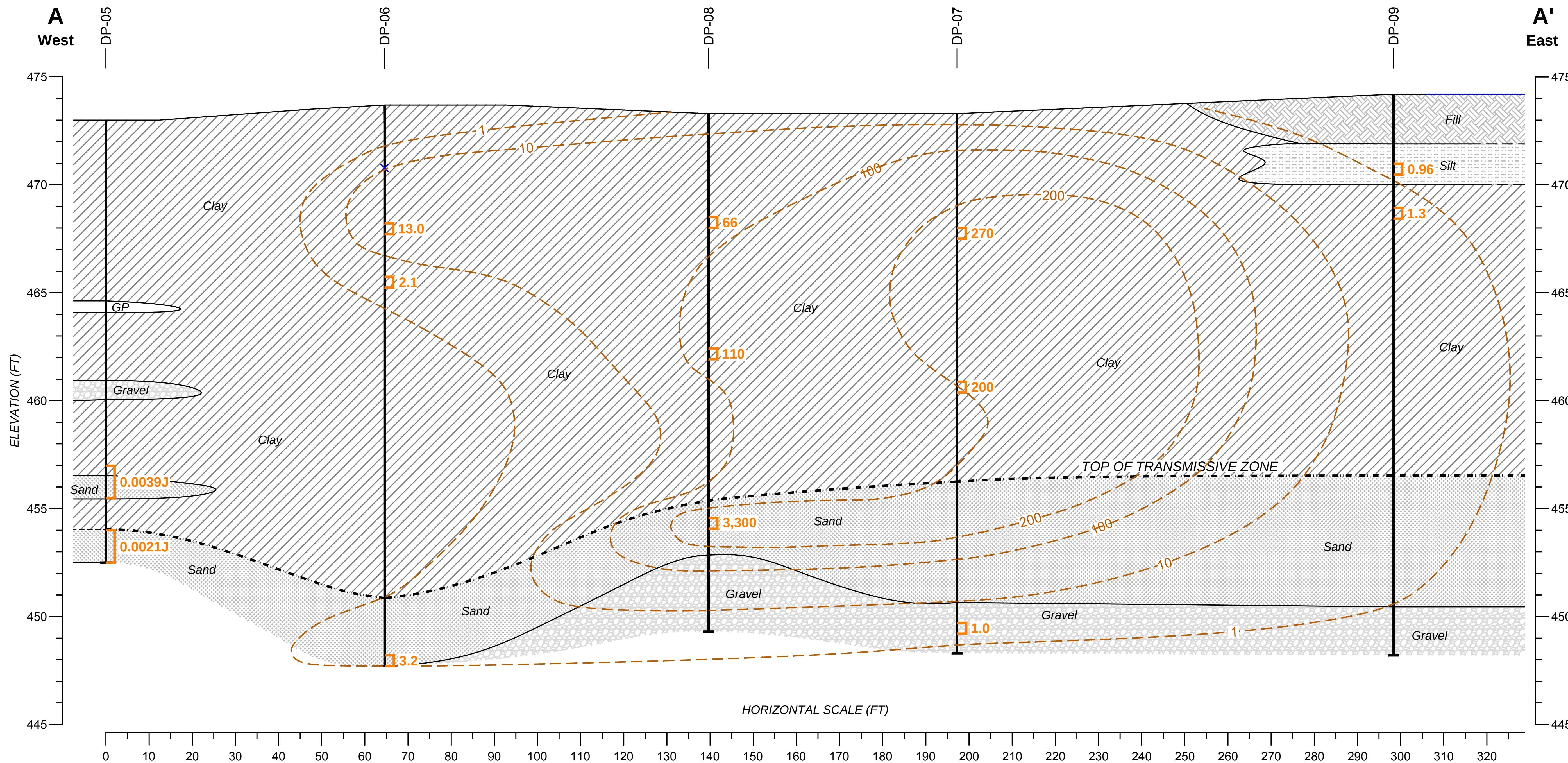
RAMBOLL ENVIRON

FOURTH QUARTER 2015 POTENTIOMETRIC SURFACE

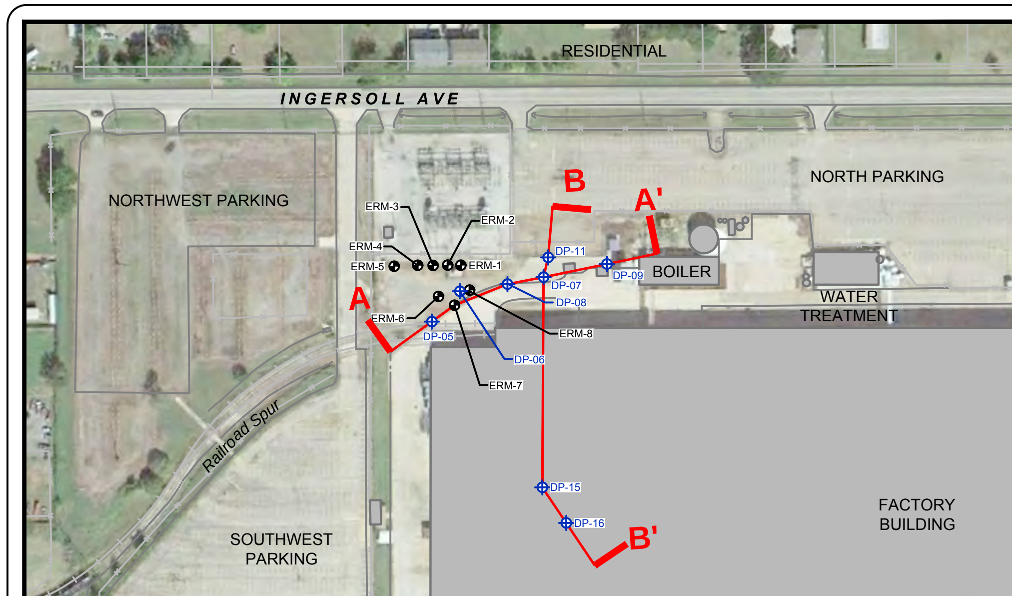
Whirlpool Facility - Fort Smith, Arkansas

Figure 2-5

DRAFTED BY: FK | DATE: 01/26/2016 | PROJECT: 3437500L



CROSS-SECTION A-A'



N

CROSS-SECTION OVERVIEW

APPROX. SCALE (ft.)
0 300

LITHOLOGY	
FILL	SAND
CLAY	GRAVEL
SILT	

LEGEND
- BORING
- 66 TCE CONCENTRATION (mg/kg)

CROSS-SECTION A-A'
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL ENVIRON

FIGURE 3-1

DRAFTED BY: ELS | DATE: 12/23/15 | 3437500L

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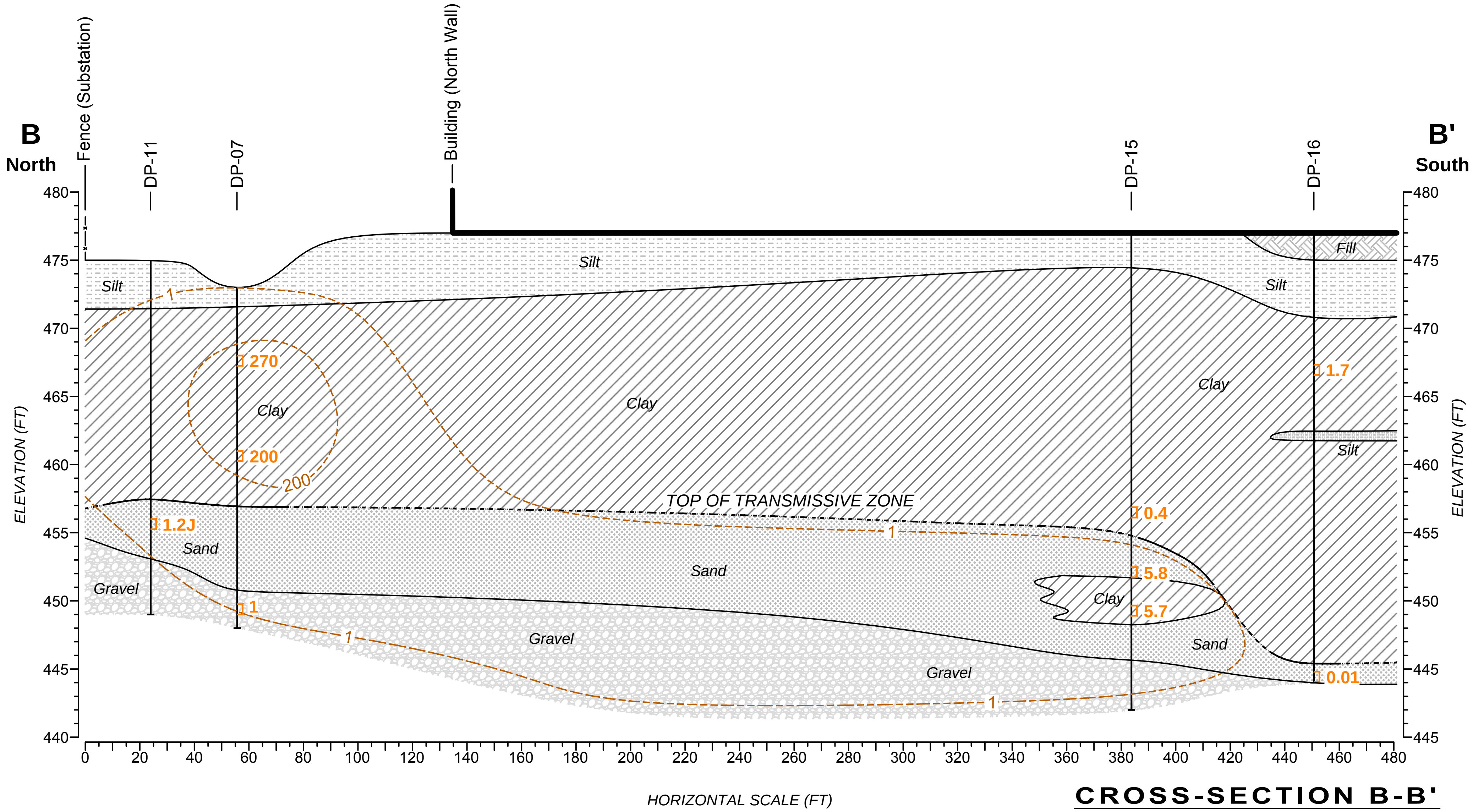
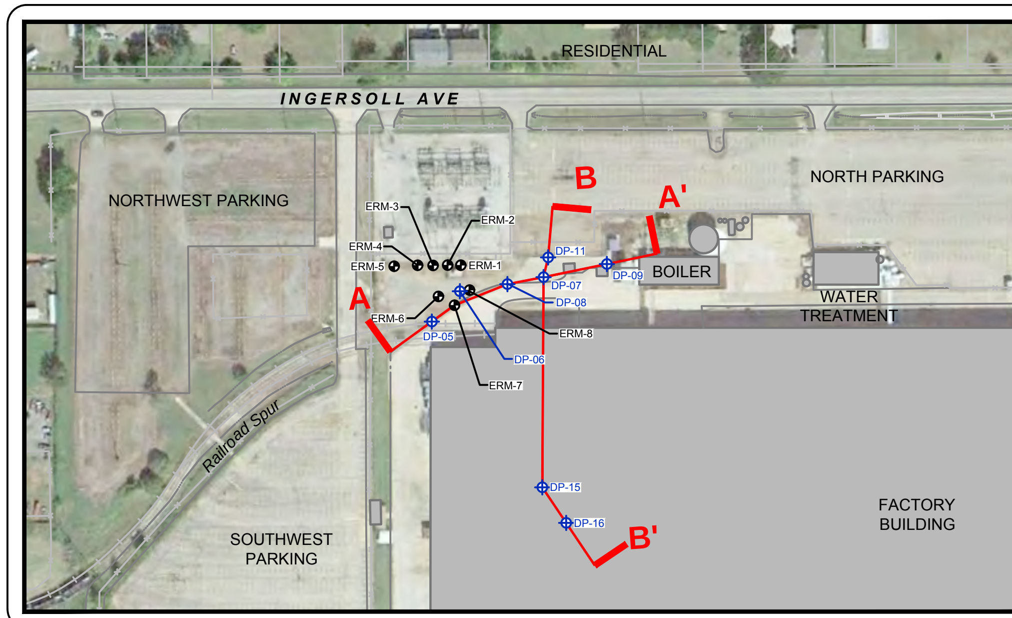


CROSS-SECTION B-B'



CROSS-SECTION OVERVIEW

APPROX. SCALE (ft.)

0 300

LITHOLOGY	
FILL	SAND
CLAY	GRAVEL
SILT	

LEGEND	
⊥	BORING
200	TCE CONCENTRATION (mg/kg)

CROSS-SECTION B-B'
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL ENVIRON

FIGURE 3-2

DRAFTED BY: ELS | DATE: 12/23/15 | 3437500L

L:\Loop Project Files\00_CAD FILES\34\Whirlpool_Annual-2YR TERR 3437500L\3-2_Cross-Section B-B'.dwg

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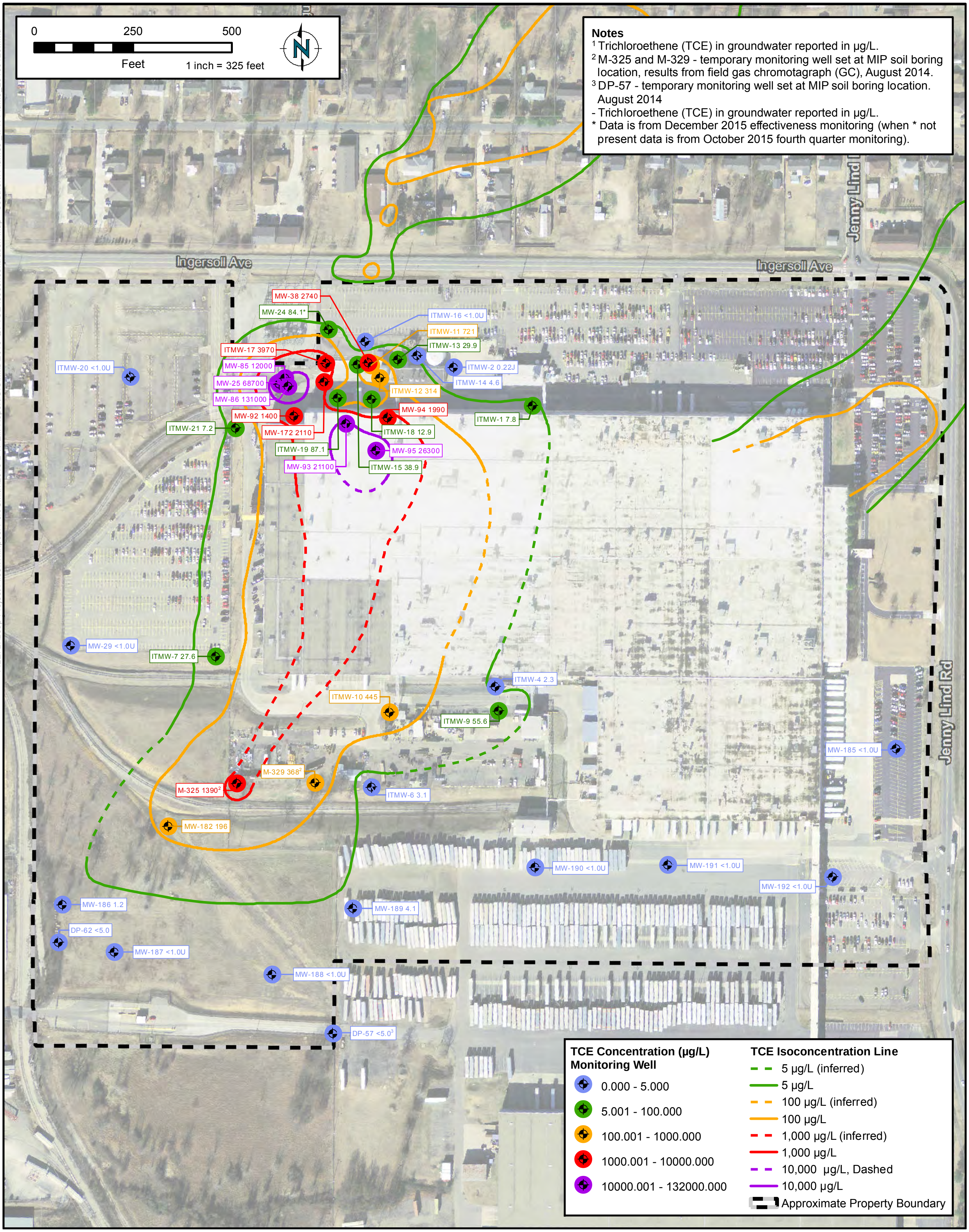


RAMBOLL ENVIRON

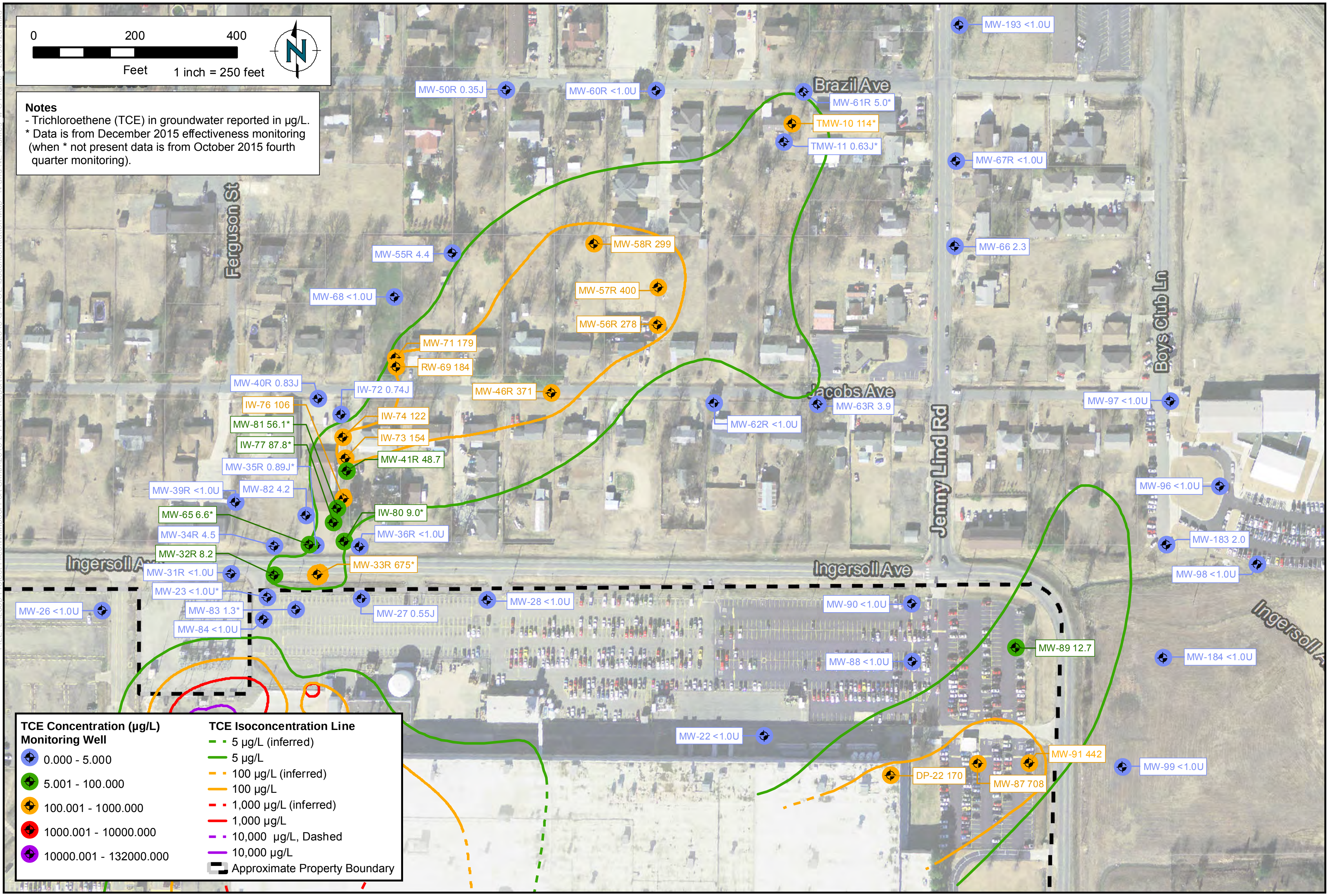
DRAFTED BY: FK | DATE: 01/26/2016

2015 FOURTH QUARTER TCE ISOCONCENTRATION MAP SOUTHERN PLUME

Whirlpool Facility - Fort Smith, Arkansas

Figure 3-3

PROJECT: 3437500L



RAMBOLL ENVIRON

2015 FOURTH QUARTER TCE ISOCONCENTRATION MAP
NORTHERN AND NORTHEASTERN PLUMES

Whirlpool Facility - Fort Smith, Arkansas

Figure 3-4

DRAFTED BY: FK | DATE: 01/26/2016 | PROJECT: 3437500L

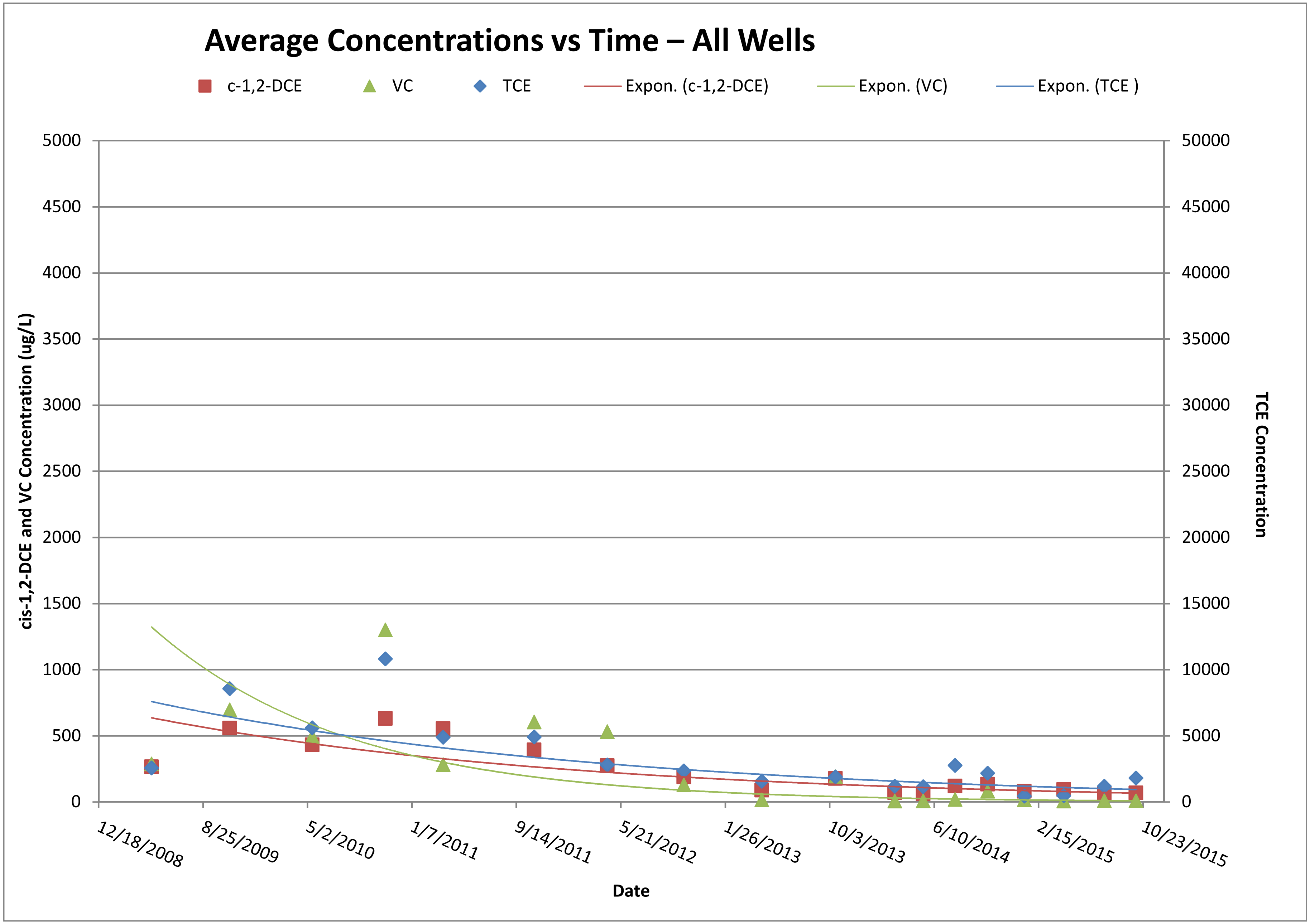


Figure 4-1
Whirlpool Facility
Fort Smith, Arkansas

RAMBOLL ENVIRON

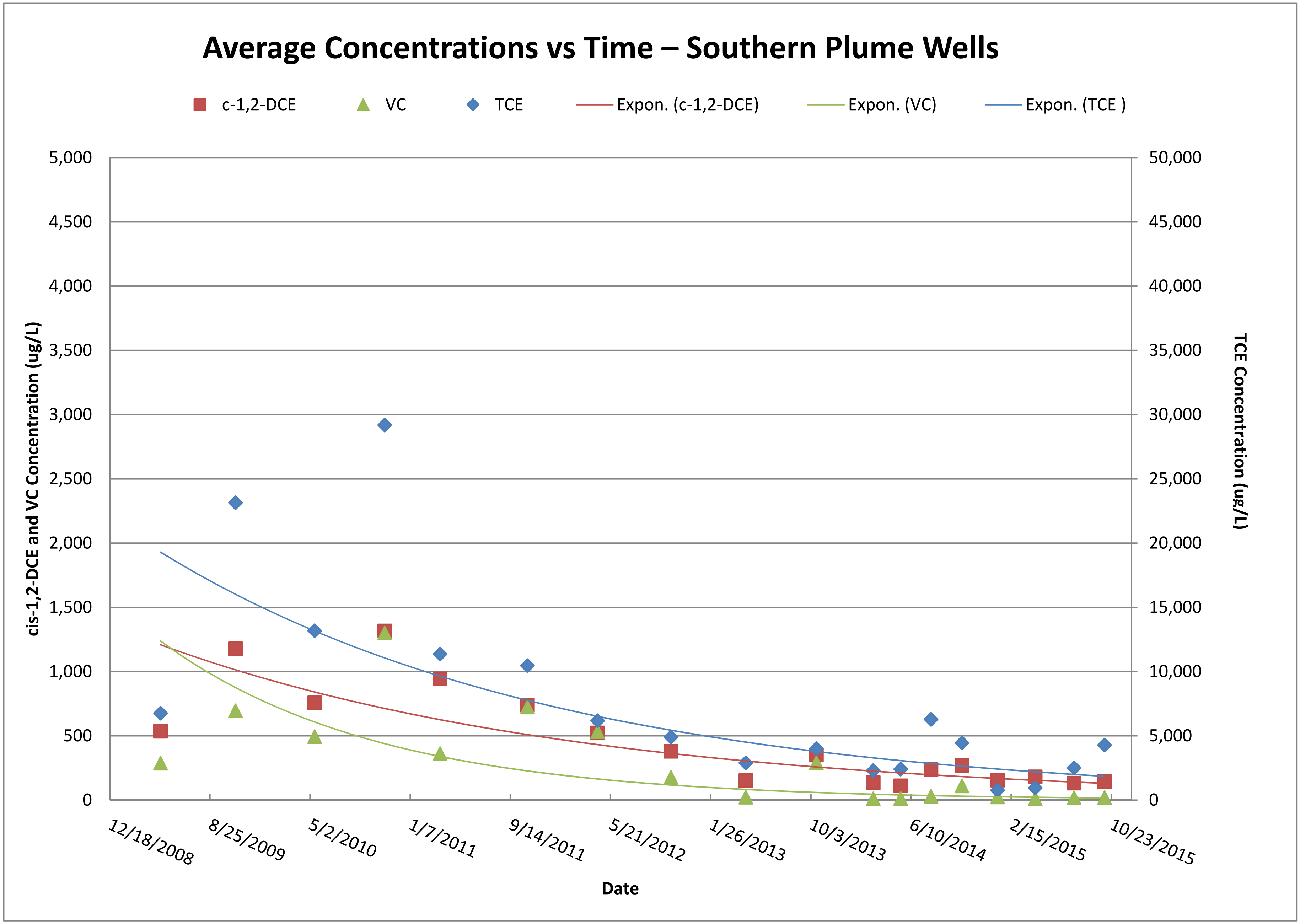
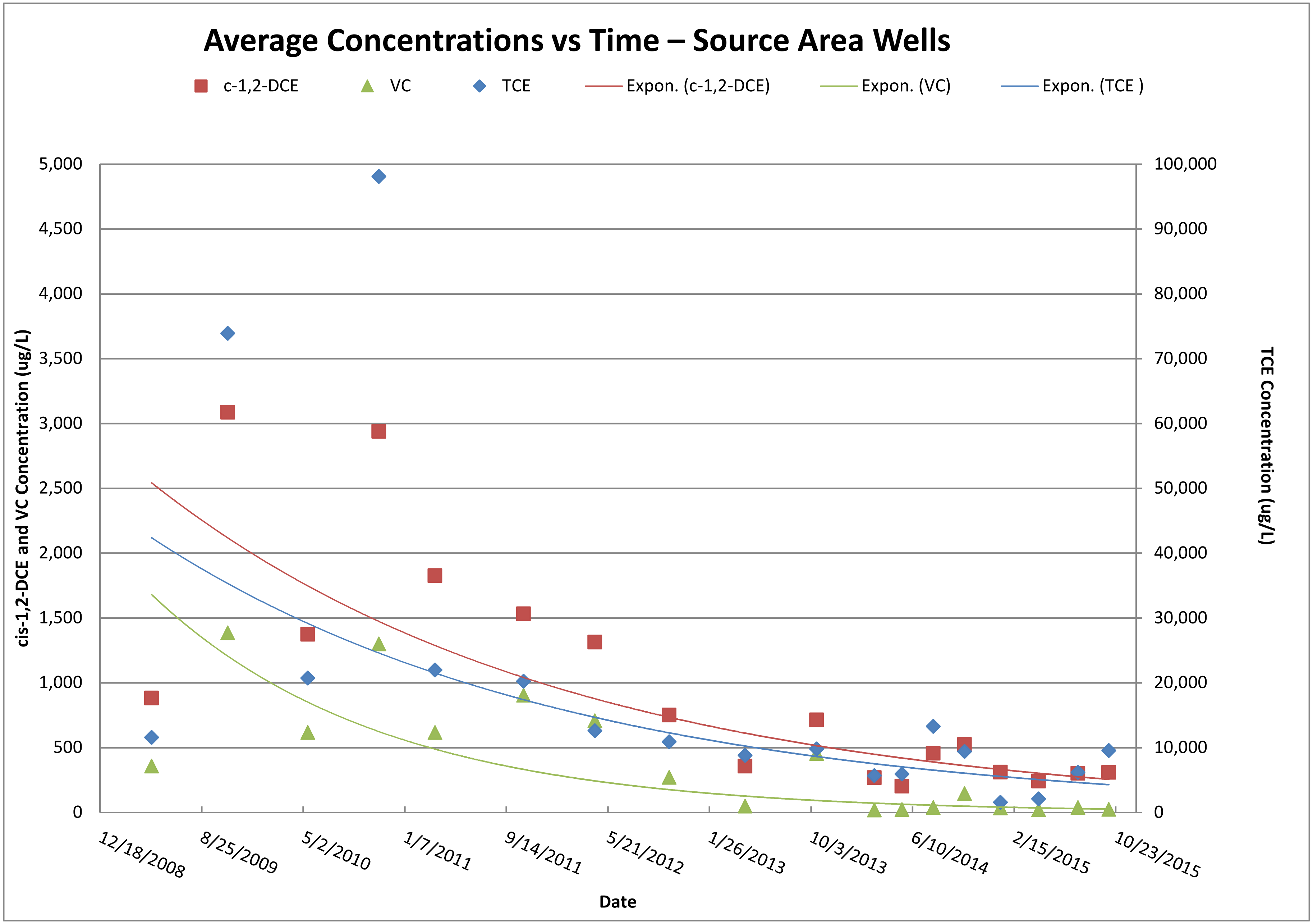


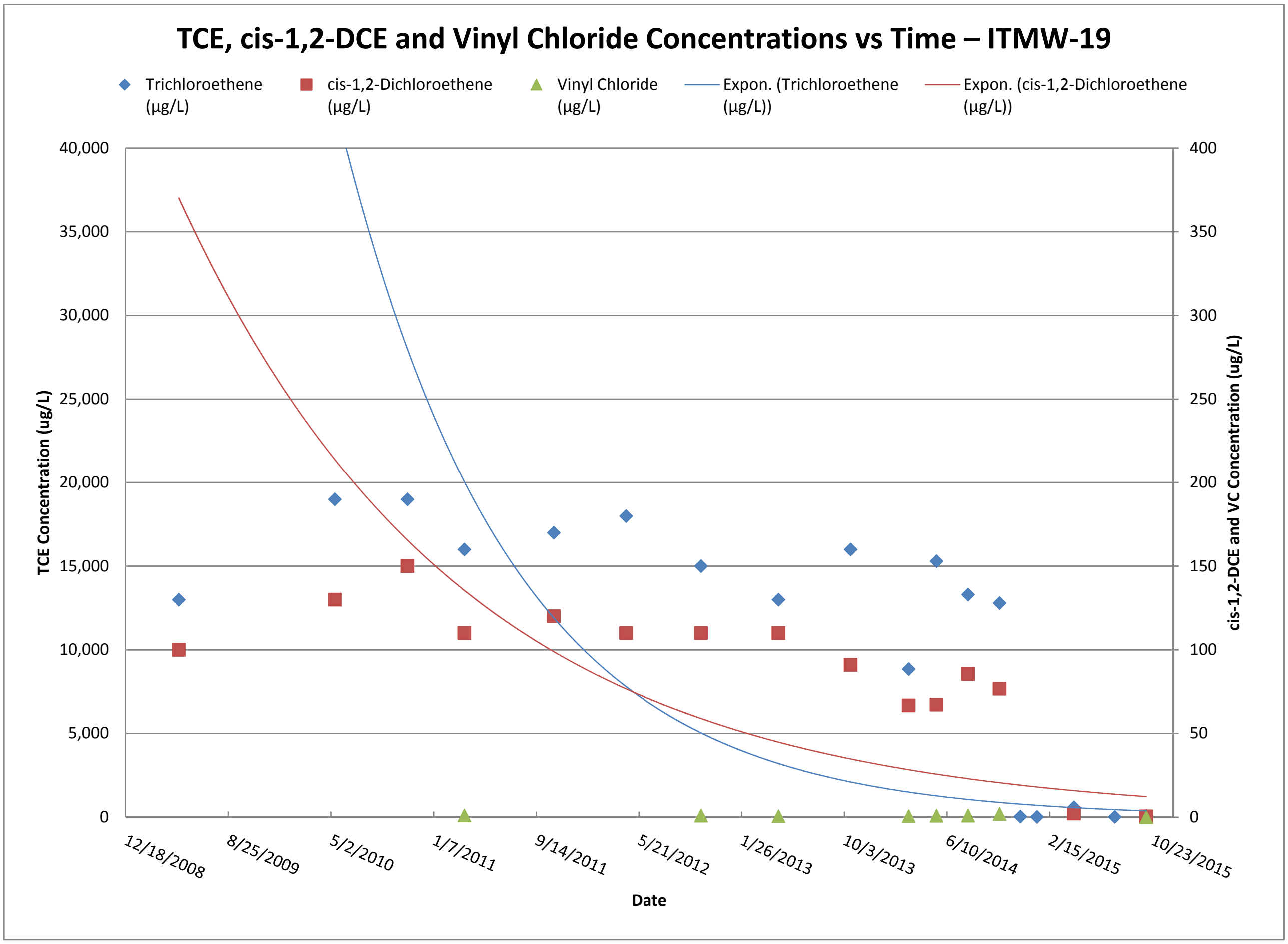
Figure 4-2
Whirlpool Facility
Fort Smith, Arkansas

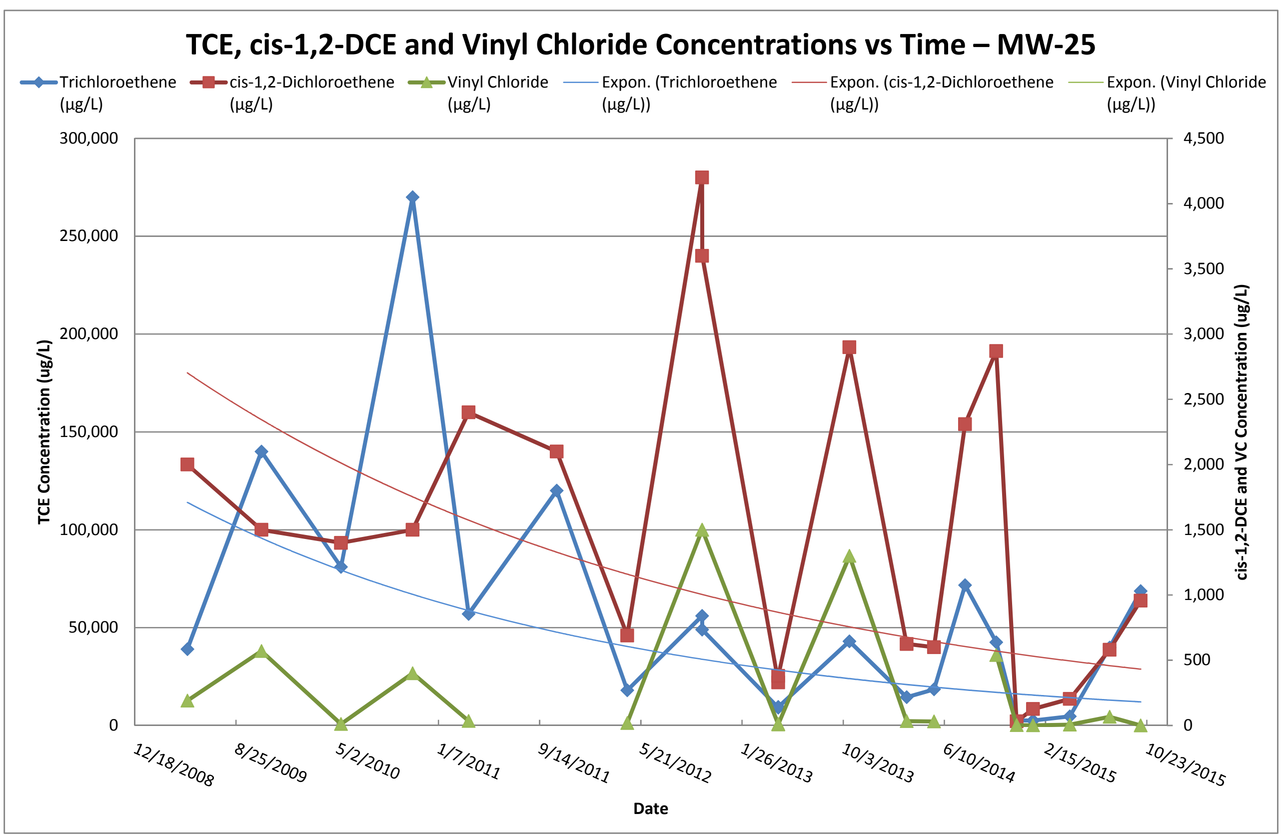
RAMBOLL ENVIRON



RAMBOLL ENVIRON

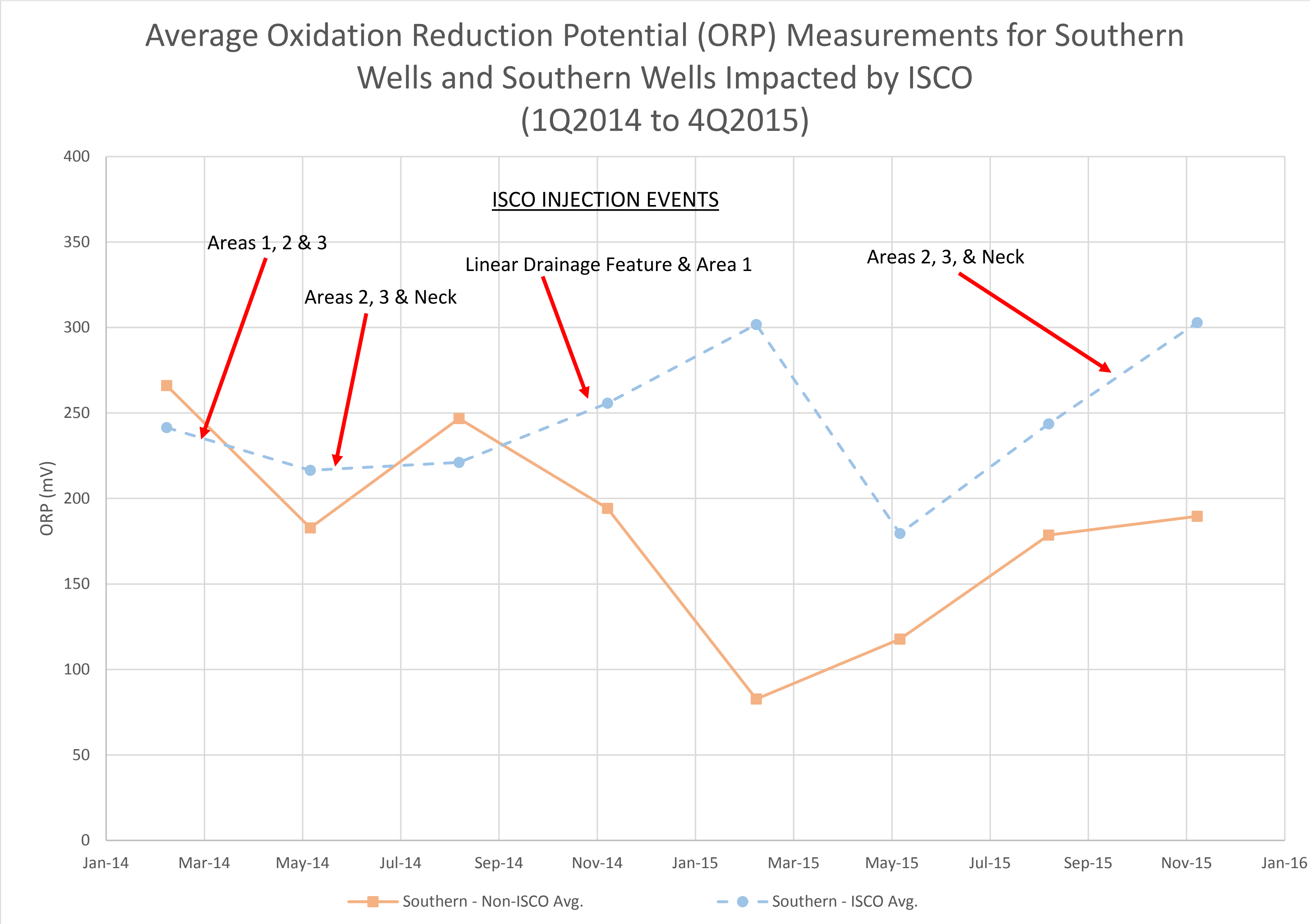
Figure 4-3
Whirlpool Facility
Fort Smith, Arkansas





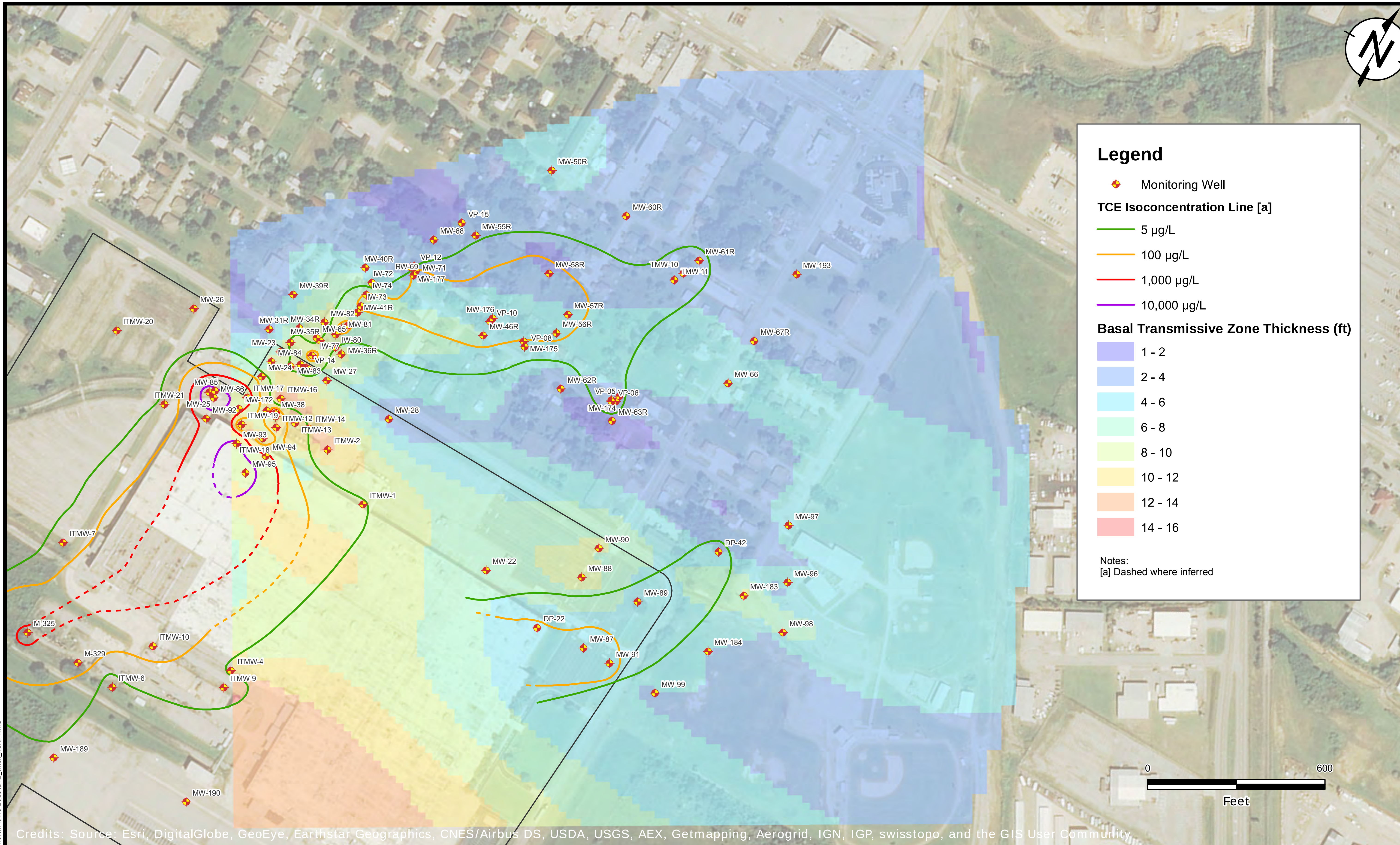
RAMBOLL ENVIRON

Figure 4-4
Whirlpool Facility
Fort Smith, Arkansas



RAMBOLL ENVIRON

Figure 4-5
Whirlpool Facility
Fort Smith, Arkansas



H:\Whirlpool\GW Model\GIS\NorthPlume 2015\BTZ_thick_north.mxd

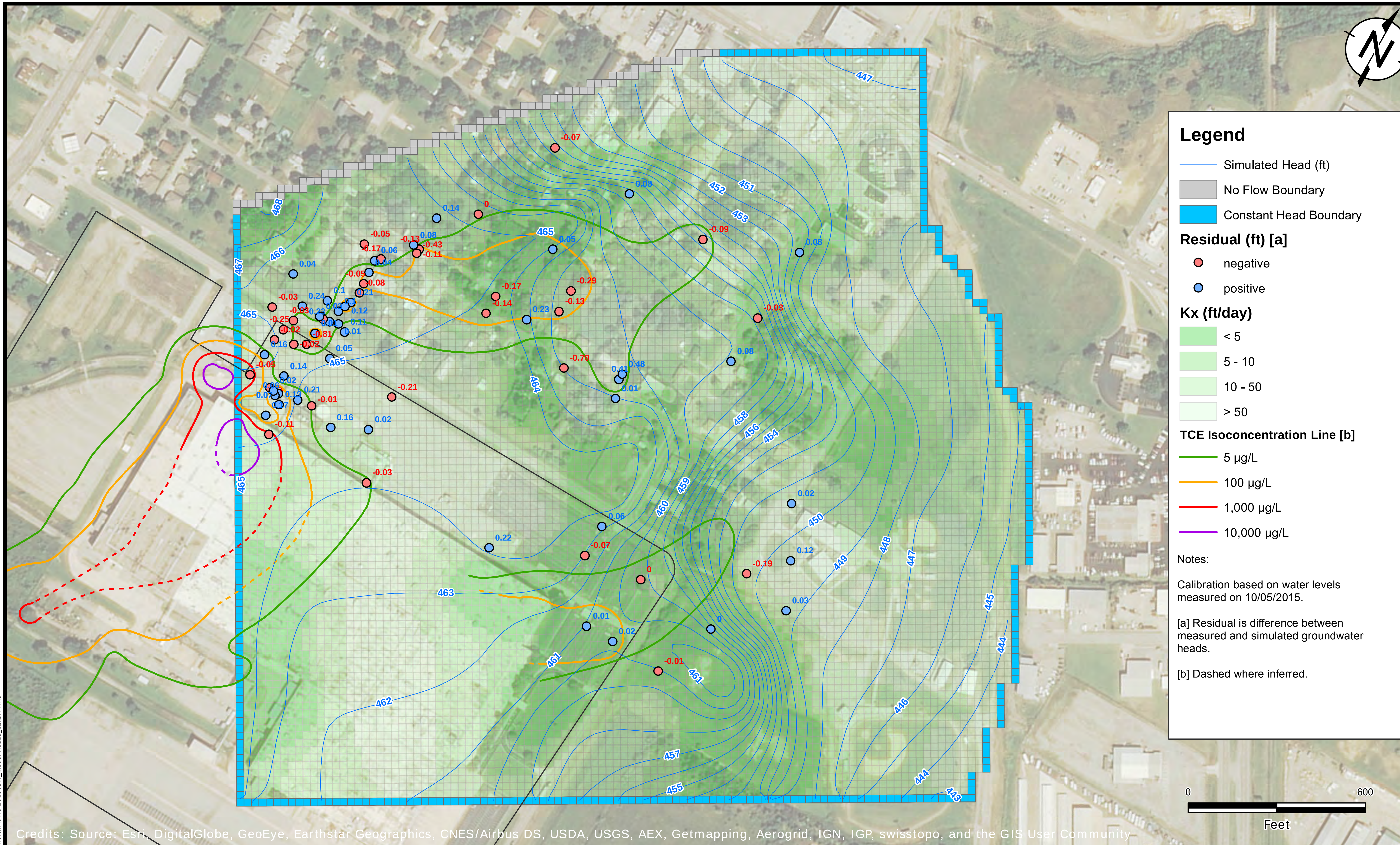
RAMBOLL ENVIRON

DRAFTED BY: | DATE: 1/4/2016

North Plume Groundwater Model - Basal Transmissive Zone Layer Thickness
Whirlpool Facility
Fort Smith, Arkansas

FIGURE
4-6

PROJECT: 34-37500L



H:\Whirlpool\GW Model\GIS\NorthPlume 2015\GW_Model Heads_calibK.mxd

RAMBOLL ENVIRON

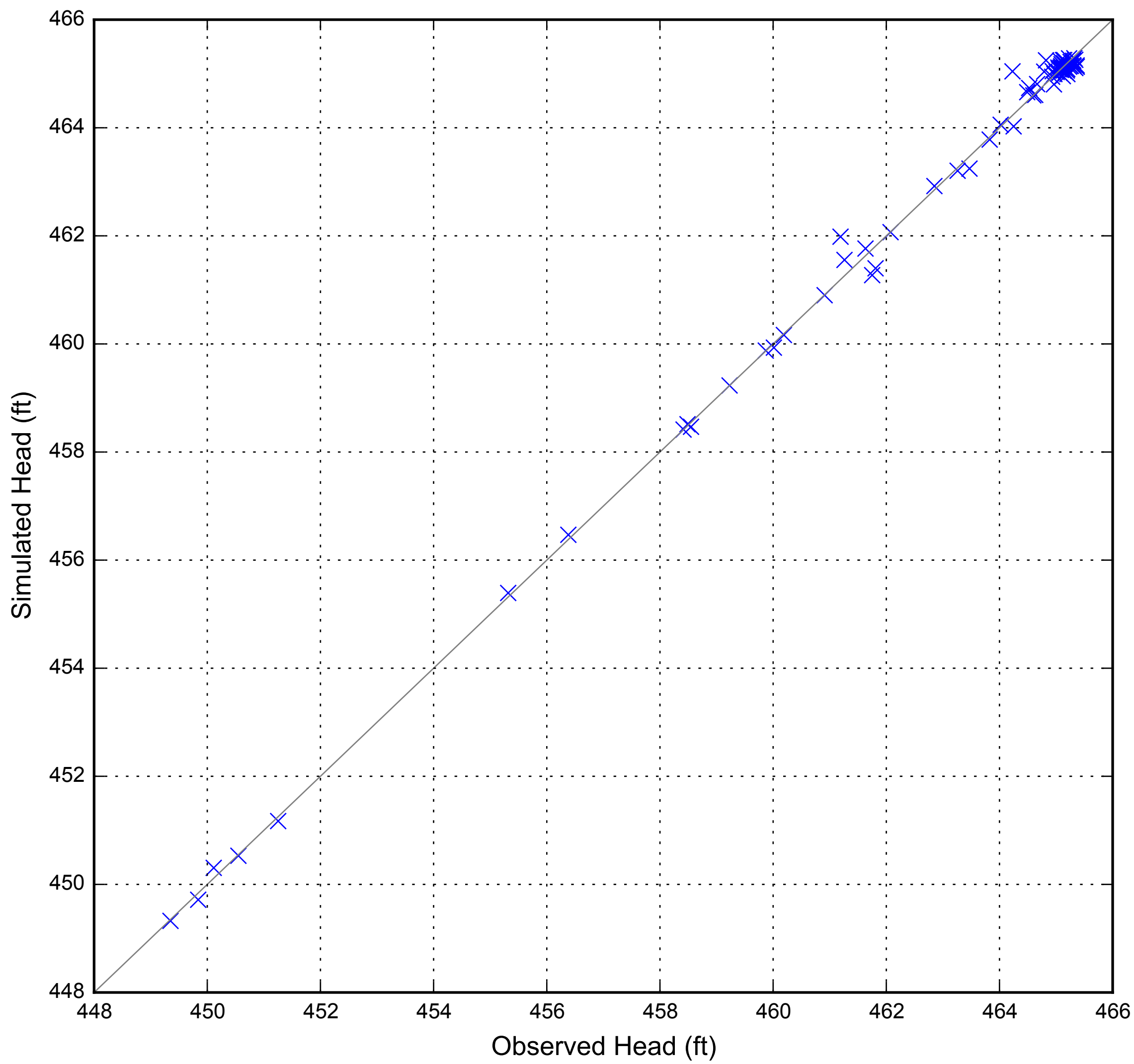
DRAFTED BY: | DATE: 1/4/2016

North Plume Groundwater Flow Model Calibration and Boundary Conditions
Whirlpool Facility
Fort Smith, Arkansas

FIGURE 4-7

PROJECT: 34-37500L

H:\Whirlpool\GW Model\Python\plotcalibration.py



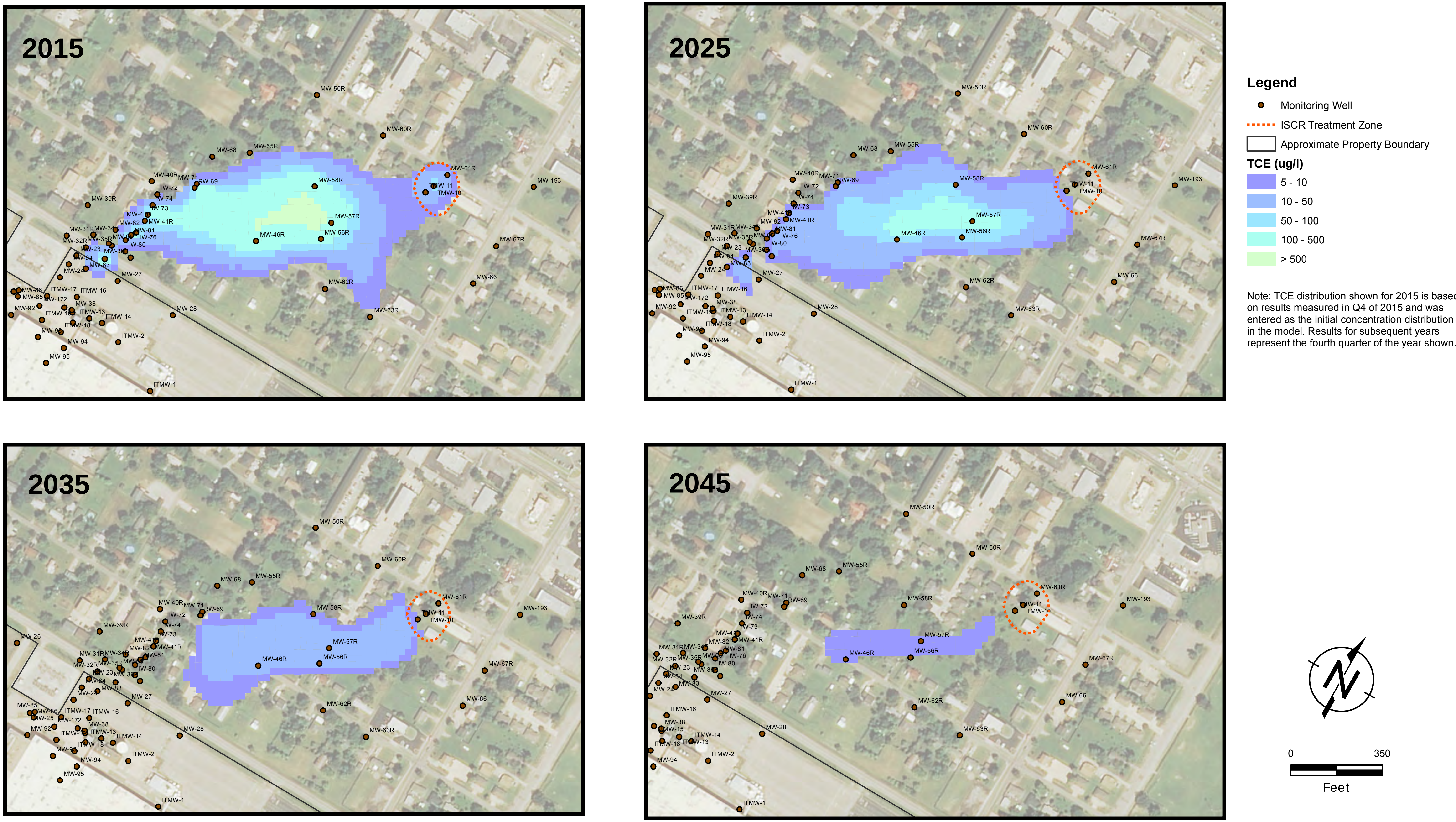
Residual Mean	-0.001488
Absolute Residual Mean	0.122838
Residual Std. Deviation	0.193017
Sum of Squares	2.831604
RMS Error	0.193023
Min. Residual	-0.813462
Max. Residual	0.477241
Number of Observations	76.0
Range in Observations	16.015
Scaled Residual Std. Deviation	0.012052
Scaled Absolute Residual Mean	0.00767
Scaled RMS Error	0.012053
Scaled Residual Mean	-9.3e-05

RAMBOLL ENVIRON

Calibration Plot: Observed vs Simulated Heads
North Plume Groundwater Model
Whirlpool Site, Fort Smith, Arkansas

Figure
4-8

Drafter: LAT | Date: 12/2/2015 | Contract Number: 34-37500L | Approved: | Revised:



H:\Whirlpool\GW Model\GIS\NorthPlume 2015\GW_Model_Transport_2015_4frame_hl110_rech.mxd

RAMBOLL ENVIRON

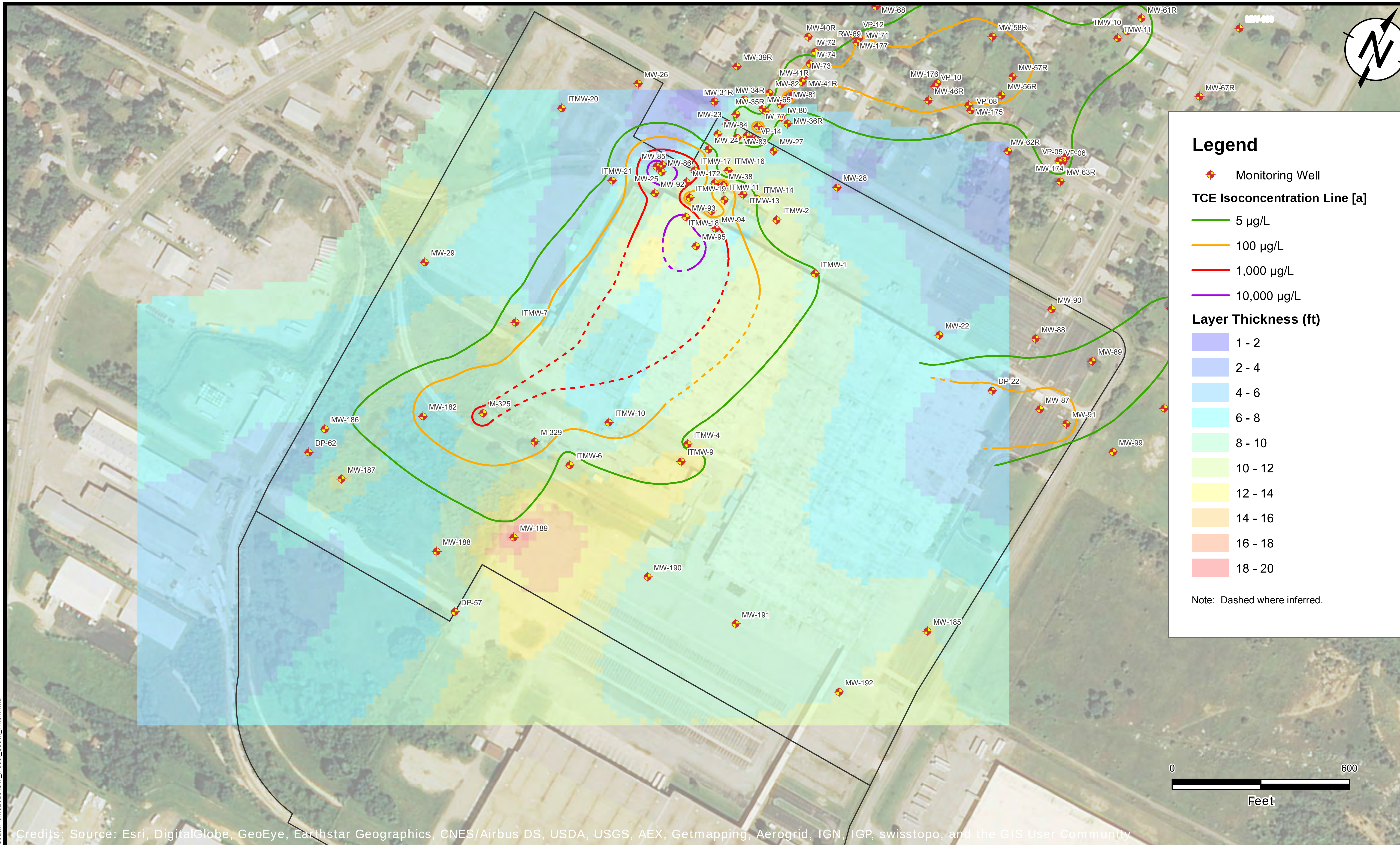
DRAFTED BY:

DATE: 1/4/2016

North Plume Transport Model Results
Whirlpool Facility
Fort Smith, Arkansas

FIGURE
4-9

PROJECT: 34-37500L



H:\Whirlpool\GW Model\GIS\SouthPlume2015\GW_Model_South_Thick.mxd

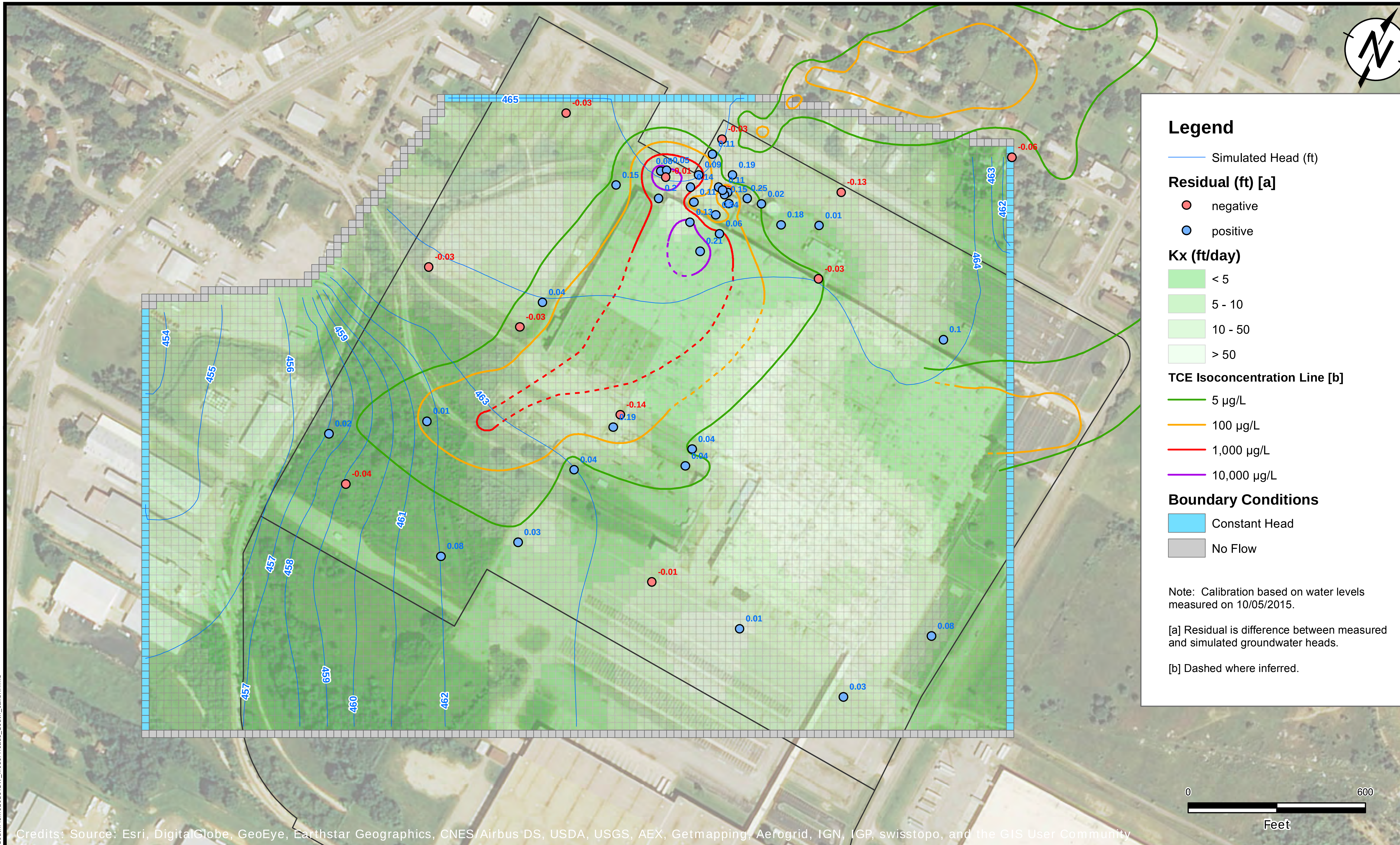
RAMBOLL ENVIRON

DRAFTED BY: | DATE: 1/4/2016

South Plume Groundwater Model - Basal Transmissive Zone Layer Thickness
Whirlpool Facility
Fort Smith, Arkansas

FIGURE
4-10

PROJECT: 34-37500L



RAMBOLL ENVIRON

DRAFTED BY:

DATE: 1/4/2016

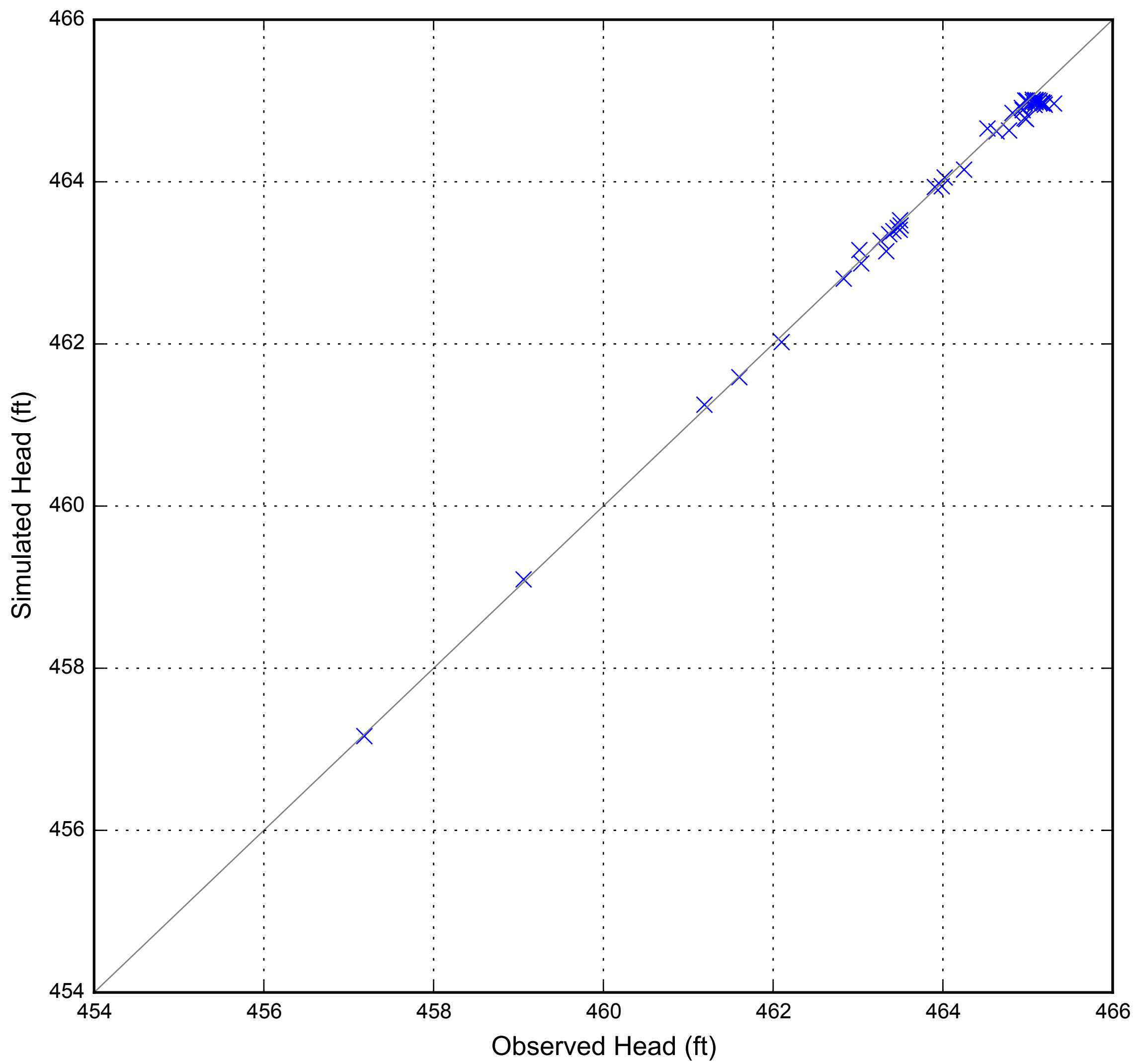
South Plume Groundwater Flow Model Calibration and Boundary Conditions
Whirlpool Facility
Fort Smith, Arkansas

FIGURE
4-11

PROJECT: 34-37500L

H:\Whirlpool\GW Model\GIS\SouthPlume2015\GW_Model Heads_South_calibK.mxd

H:\Whirlpool\GW Model\Python\plotcalibration.py



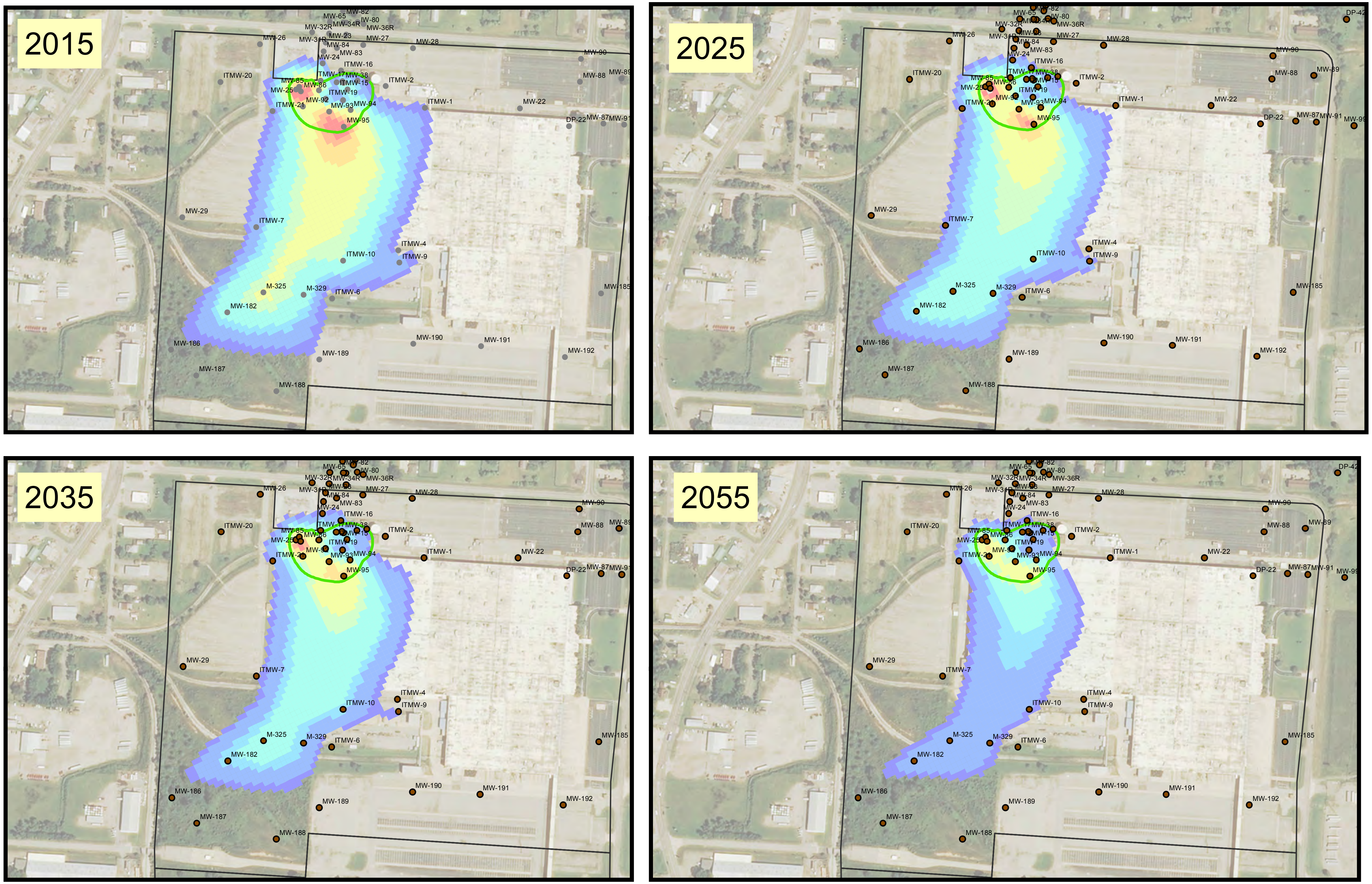
Residual Mean	0.069482
Absolute Residual Mean	0.093093
Residual Std. Deviation	0.09795
Sum of Squares	0.663409
RMS Error	0.120091
Min. Residual	-0.141656
Max. Residual	0.344509
Number of Observations	46.0
Range in Observations	8.126
Scaled Residual Std. Deviation	0.012054
Scaled Absolute Residual Mean	0.011456
Scaled RMS Error	0.014779
Scaled Residual Mean	0.008551

RAMBOLL ENVIRON

Calibration Plot: Observed vs Simulated Heads
South Plume Groundwater Model
Whirlpool Site, Fort Smith, Arkansas

Figure
4-12

Drafter: LAT | Date: 12/2/2015 | Contract Number: 34-37500L | Approved: | Revised:



Legend

- Monitoring Well
- Source Area Reaction Zone
- Approximate Property Boundary

TCE (ug/l)

- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- > 15,000

Note: TCE distribution shown for 2015 is based on results measured in Q4 of 2015 and was entered as the initial concentration distribution in the model. Results for subsequent years represent the fourth quarter of the year shown.

RAMBOLL ENVIRON

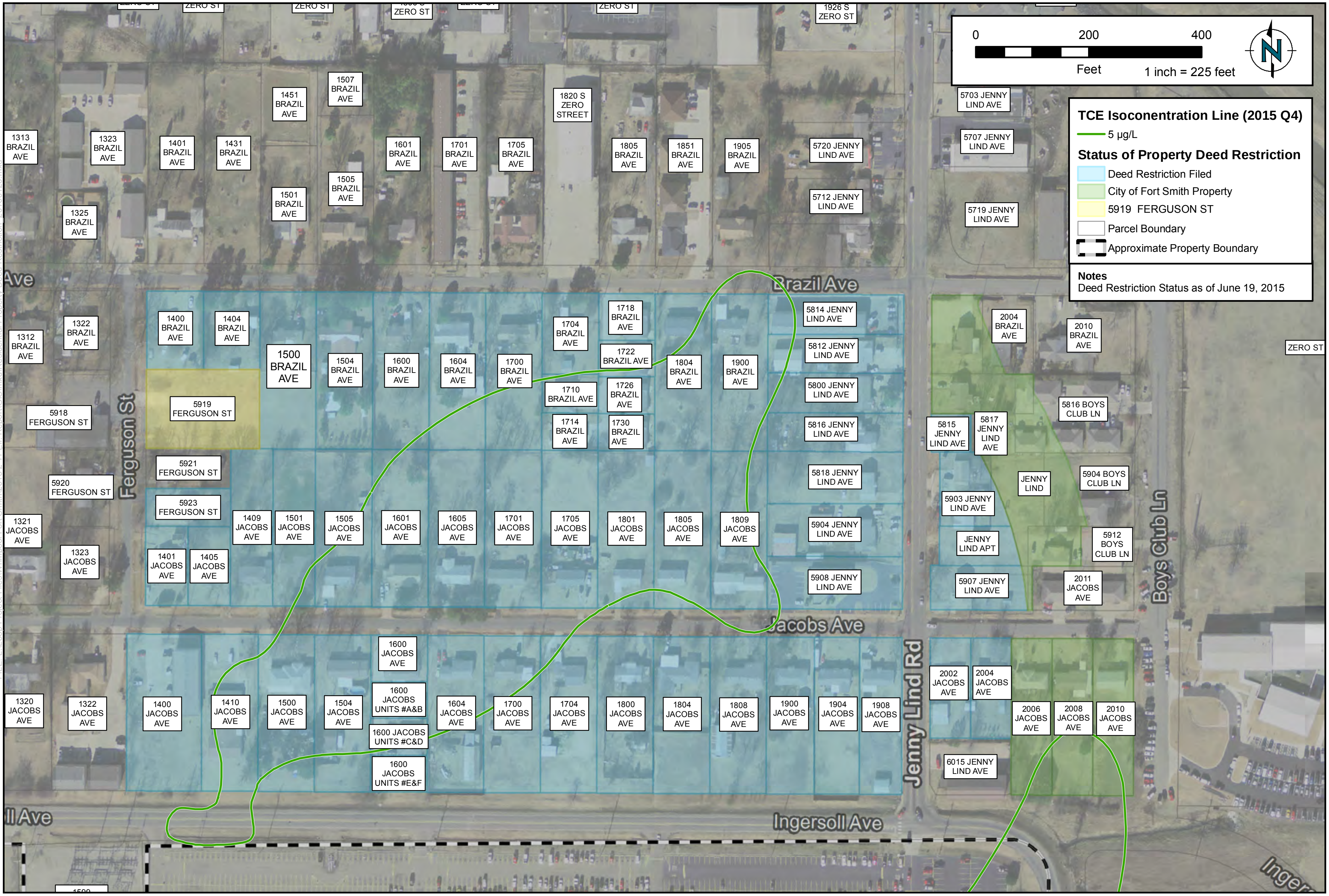
DRAFTED BY: DATE:

South Plume Transport Model Results
Whirlpool Facility
Fort Smith, Arkansas

FIGURE
4-13

PROJECT: 34-37500L

H:\Whirlpool\GW Model\GIS\SouthPlume2015\MT3D_output\South_GW_Model_Transport_q415_4frame.mxd



RAMBOLL ENVIRON

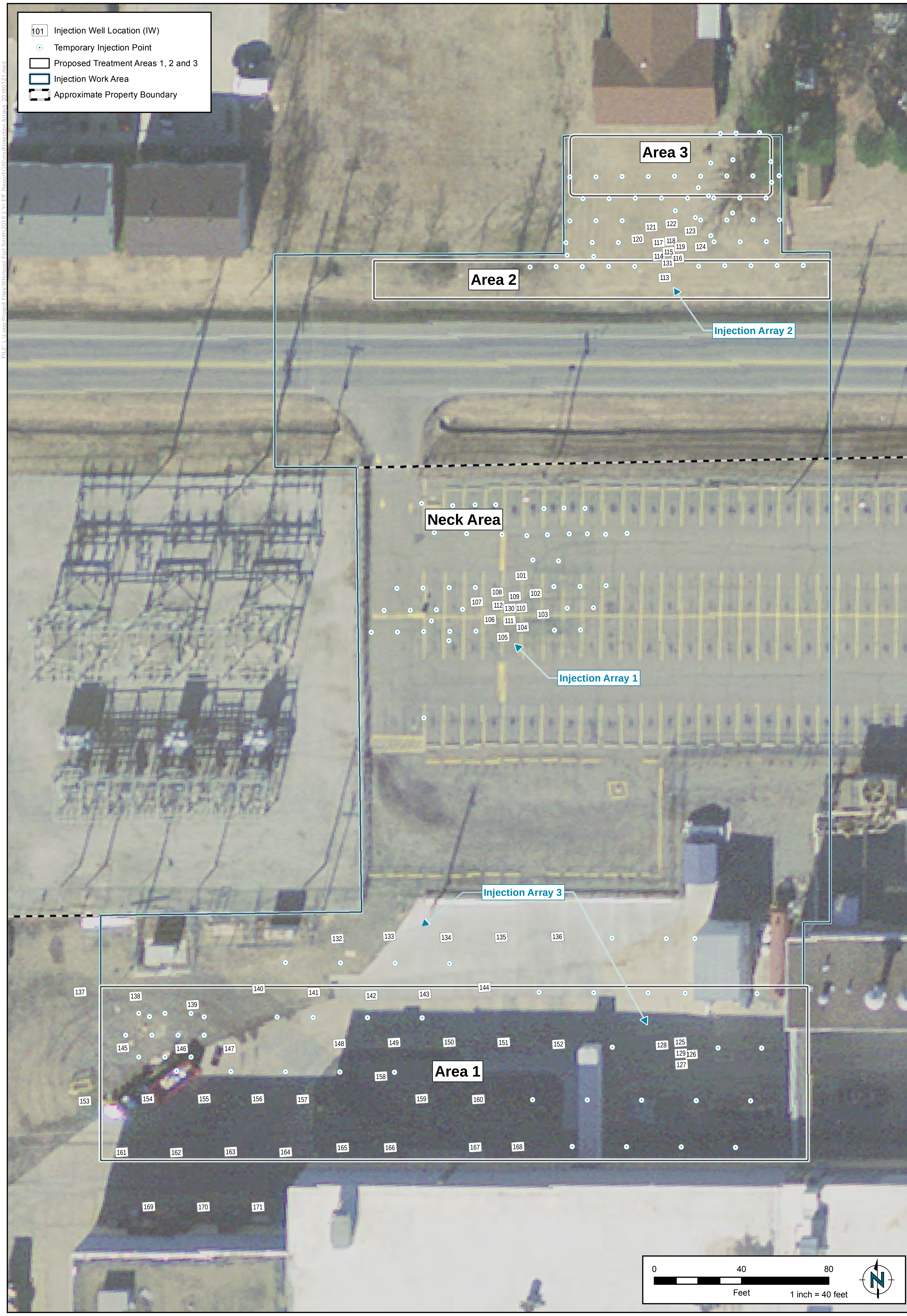
DRAFTED BY: FK | DATE: 01/20/2016

STATUS OF RESIDENTIAL PROPERTY DEED RESTRICTION

Whirlpool Facility - Fort Smith, Arkansas

Figure 5-1

PROJECT: 3437500L



RAMBOLL ENVIRON

DRAFTED BY: FK

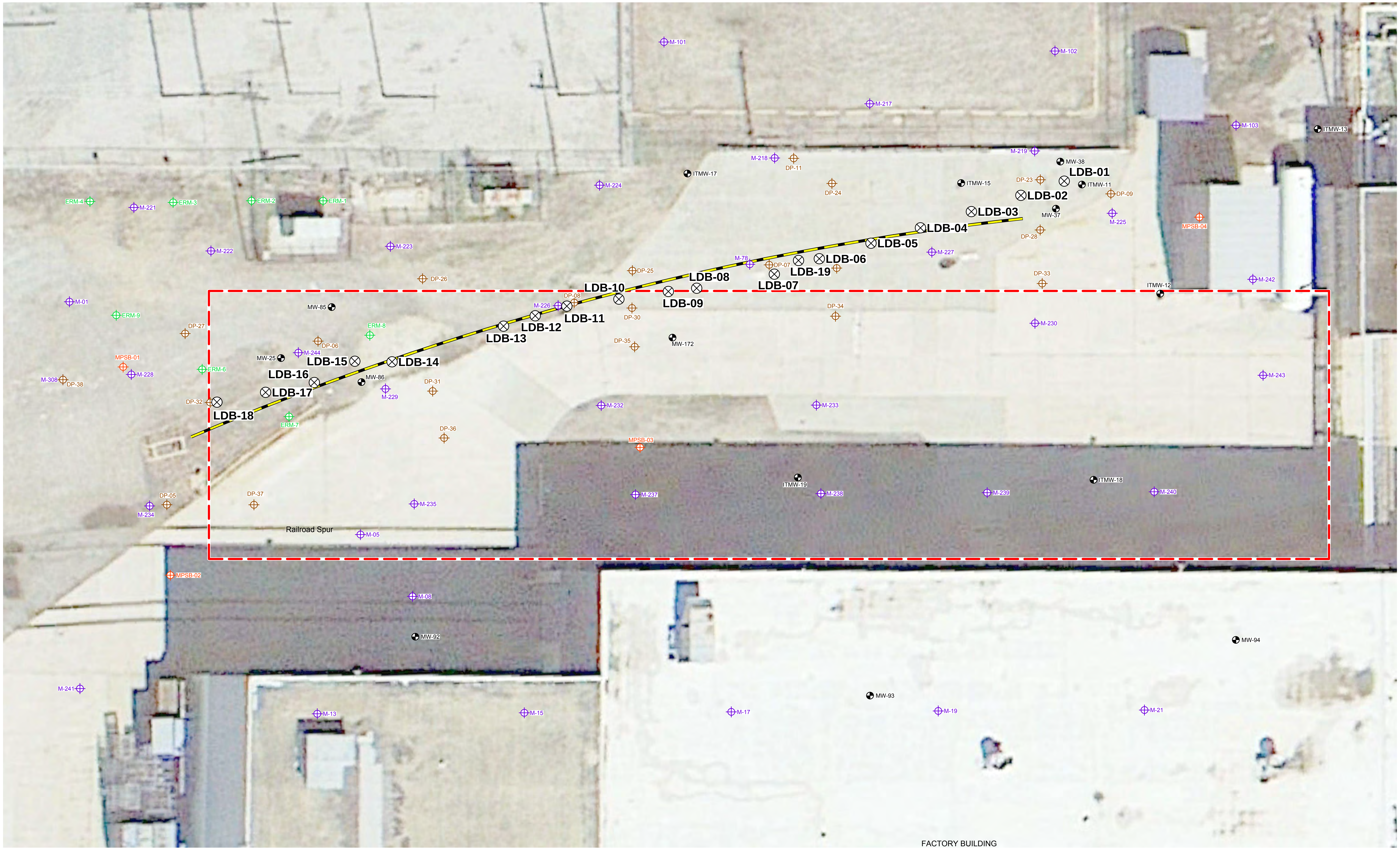
DATE: 01/21/2016

INJECTION ARRAYS 1, 2 AND 3 (ISCO PHASES I THROUGH IV)

Whirlpool Facility - Fort Smith, Arkansas

Figure 5-2

PROJECT: 3437500L



AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO. PHOTO TAKEN MAY 6, 2014.

LEGEND

- EXTENT OF AREA 1
- FORMER LINEAR DRAINAGE FEATURE
- MIP BORINGS
- ERM BORINGS
- DP BORINGS
- MPSB BORINGS
- MONITORING WELLS
- LARGE DIAMETER BORINGS

N

0 10 20 40

APPROXIMATE SCALE (FT)

LARGE DIAMETER BORINGS

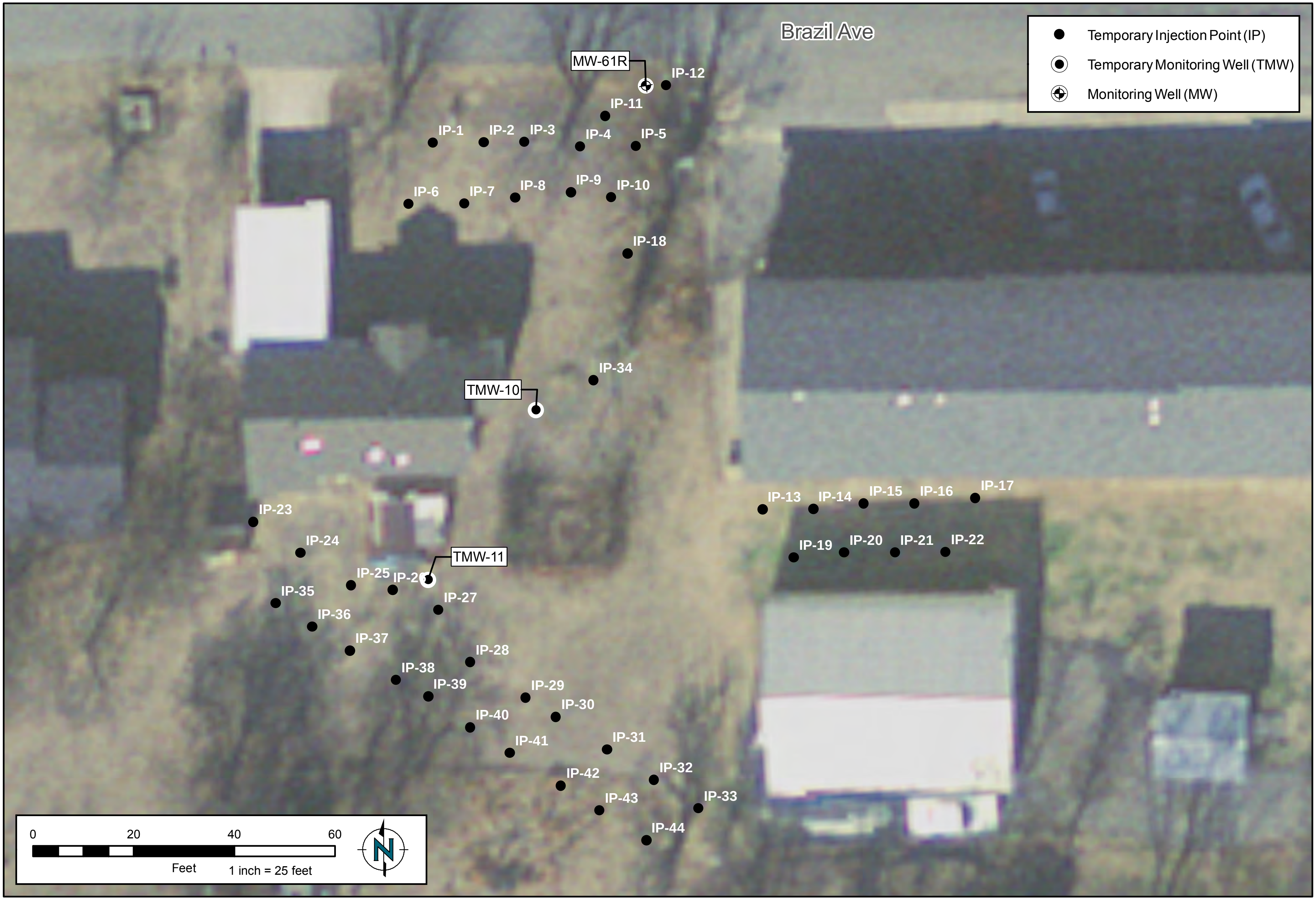
AREA 1 DETAIL
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL ENVIRON

FIGURE 5-3

DRAFTED BY: CKL/ELS | DATE: 1/21/16 | 3437500L

L:\Loop Project Files\00_CAD FILES\34\Whirlpool_Annual-2YR TERR 3437500L\5-3_Large Diameter Borings_012116.dwg



RAMBOLL ENVIRON

DRAFTED BY: FK

DATE: 01/07/2016

ISCR PILOT
PRB TREATMENT ZONES

Whirlpool Facility - Fort Smith, Arkansas

Figure 5-4

PROJECT: 3437500L

APPENDIX A
Site Characterization

APPENDIX A
SITE CHARACTERIZATION

A series of soil and groundwater investigations have been implemented over the years to characterize conditions at the Site. The identified constituents in the soil and groundwater are the result of historical practices associated with the use of trichloroethylene (TCE) for degreasing primarily within the former degreaser building located near the northwestern corner of the Whirlpool building. Degreasing activities commenced in approximately 1967 and were discontinued in the mid-1980s.

HISTORICAL INVESTIGATIONS

Soil and groundwater studies were initiated in the late 1980's at the Site as part of an underground fuel storage tank (UST) removal project. The UST work did not find evidence of a petroleum hydrocarbon release from the UST; however, the analytical data did show the presence of TCE and other solvents in shallow groundwater not related to the UST. Several subsequent investigations have been conducted to characterize the nature and extent of TCE in soil and groundwater. The major investigations conducted over time at the facility are briefly described below:

- **1989:** Chlorinated volatile organic compounds (CVOCs) were discovered during the closure of USTs at the Whirlpool facility.
- **1989 to 1991:** Stratigraphic borings, hand auger sampling, installation of 21 monitoring wells (ITMW-1 through ITMW-21), slug testing at certain monitoring wells, completion of a pilot groundwater recovery test at ITMW-15 and periodic sampling of groundwater monitoring wells. The majority of these monitoring wells were located in the area of the former degreaser building near the northwest corner of the former manufacturing building.
- **1993 to 1997:** Electromagnetic offset logging (EOL) near the northwestern corner of the former manufacturing building, direct push soil borings, installation of MW-22 and MW-23, abandonment of ITMW-8 and periodic sampling of groundwater monitoring wells.
- **1999 to 2002:** Cone penetration testing (CPT), direct push soil borings, installation of 15 monitoring wells (MW-24 to MW-38) including three located immediately north of Ingersoll Avenue (MW-34, 35 and 36), in-situ chemical oxidation (ISCO) bench scale treatability study and pilot study in the immediate vicinity of MW-37, MW-38, ITMW-12 and ITMW-15 and semiannual groundwater monitoring well sampling.

  In September 2001, a field pilot test of ISCO was conducted that included the injection of approximately 394 gallons of a 4% potassium permanganate solution into seven small diameter (0.5 inch) temporary injection wells and one 2 inch diameter monitoring well in a 20 by 20 foot area around ITMW-11. This pilot test was located approximately 30 feet west of the former degreaser building near the northwestern corner of the former manufacturing building. Immediately prior to the field pilot test, two monitoring wells (MW-37 and MW-38) were installed within the 20 feet by 20 feet test area approximately 10 feet to the northwest and southwest of ITMW-11, respectively. Monitoring well MW-38 was used as an injection point (IP-8) during the pilot test.

The permanganate solution was injected at a flow rate that ranged from 0.15 to 1.5 gallons per minute (gpm) and an average pressure of 9 pounds per square inch (psi). The results of monitoring indicated that there was a temporary reduction in TCE concentrations but significant rebound was observed within approximately six months. MW-37 and MW-38 located within the treatment zone consistently exhibited high concentrations of TCE daughter products cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride (VC) following the pilot test.

- **2003 to 2009:** A series of investigations north of Ingersoll Avenue were completed using direct push and membrane interface probe (MIP) technologies, installation of 21 monitoring wells (MW-39 to MW-43, MW-46, MW-50, MW-55 to MW-58, MW-60 to MW-63, MW-65 to MW-68, MW-70 and MW-71), installation of one large diameter remediation well (RW-69), installation of nine injection wells (IW-72 to IW-80), abandonment of MW-35 and MW-46 and installation of replacement wells MW-35R and MW-46R, ISCO pilot study north of Ingersoll Road with injection in April and July 2009 and semiannual groundwater monitoring well sampling.

In 2009, as part of interim measures activities, two ISCO injection events were conducted and a pilot groundwater extraction system was operated in areas north of Ingersoll Avenue. These activities began with the installation of three monitoring wells (MW-68, MW-70 and MW-71), one 4 inch diameter extraction well (RW-69) and nine injection wells (IW-72 through IW-80). The newly installed monitoring wells and the extraction well were located north of Jacobs Avenue approximately 300 feet east of Ferguson Street. The injection wells were installed in a line approximately 300 feet in length extending from Ingersoll Avenue to the south to Jacobs Avenue to the north approximately 200 feet east of Ferguson Street.

The initial injection completed in April 2009 consisted of the injection of 445 gallons of a sodium permanganate solution into five of the nine newly installed injection wells (IW-73, IW-74, IW-75, IW-78 and IW-79). This was followed by the second injection event in July 2009 when 720 gallons of sodium permanganate solution were injected into eight of the nine injection wells (no injection into IW-77). The permanganate solution was injected at pressures less than 5 psi. The results of monitoring indicated that the permanganate concentrations in the area of the injection wells persisted and did not migrate a significant distance from the injection points over the initial ten month monitoring period.

Increased oxidation reduction potential (ORP) values between the injection events in 2009 were cited as evidence of a radius of influence for ISCO treatment in the range of 5 to 45 feet; that variation was consistent with lithological characterizations of the aquifer (i.e. wells in gravel-rich areas have larger radius of influence than wells in clay-rich areas). The ORP values measured in the vicinity of the treatment area in April 2009 were reported as negative in almost all wells monitored at that time; however, similar widespread negative ORP readings have not been measured prior to or following that monitoring event. Permanganate and relatively lower TCE concentrations have persisted in certain injection wells and concentrations of TCE in nearby monitoring wells are generally lower than pre-injection levels.

- **2010 to 2012:** Pilot groundwater recovery test at RW-69 and semiannual groundwater monitoring well sampling. The pilot groundwater extraction test was conducted from November 2010 through February 2011. During this approximate four month period the extraction pump operated in RW-69 for approximately 45 days at an average rate of 0.5 gpm. Based on monitoring results, the effective radius of the pumping was limited to 40 to 50 feet from the extraction well which was consistent with results of pumping tests conducted in May 2009 at RW-69. The monitoring results indicated that very limited drawdown was induced by the pumping activities and this was attributed to the relatively low transmissivity and limited saturated thickness of the aquifer in the area of the pilot test. Given the limited ability to induce a change in potentiometric gradient and logistical issues associated with operation of the extraction system, its future use in offsite residential areas was deemed impractical.
- **2013 to January 2014:** Investigation and characterization activities at the Site were conducted as described in the following bullets:
  - **June 2013**: Five temporary monitoring wells (TW-01 to TW-05) were installed on Whirlpool property south of the former manufacturing building near the eastern, southern and western property boundaries (Figure A-1). This investigation included the collection of soil and groundwater samples for volatile organic compounds (VOCs) analysis. The temporary wells were abandoned immediately following sampling.
  - **September 2013 – January 2014:** Beneath the former manufacturing building and in the vicinity of its northwest corner, MIPs were advanced using direct push technology (DPT) to screen and log the relative concentration of VOCs with increasing depth in soil. MIP profiling was conducted in September 2013, December 2013 and January 2014 (Figure A-2).
  - **December 2013 and January 2014:** Using DPT, soil and groundwater sampling was conducted during the December 2013 and January 2014 events to refine the understanding of the extent of COCs and confirm the results of MIP screening (Figure A-3).

2014 INVESTIGATION AND REMEDIATION ACTIVITIES

As discussed below, Ramboll Environ conducted investigation, characterization and remediation activities at the Site throughout 2014. The major activities are broken out generally by quarter and described in the bullets below:

First Quarter 2014

- Groundwater and saturated soil samples were collected during the January 2014 event and submitted for bench scale treatability testing to aid in oxidant selection and determination of oxidant demand (Figure A-3).
- Using DPT, a hydraulic profiling tool (HPT) was advanced during the January 2014 event. HPT logs the pressure and flow of water into the soil to estimate the formation permeability (Figure A-3).
- A Pneumatic Slug Test (PST) was used to conduct slug testing using temporary DPT well screens. These slug tests were conducted during the January 2014 event (Figure A-3).
- In February and March 2014, 31 two-inch diameter injection wells (IW-101 through IW-131) were installed in three arrays in preparation for the tracer and initial ISCO site work.
- During March 2014, baseline bromide sampling was completed at wells IW-101, IW-103, IW-105, IW-107, IW-109 and IW-111. A bromide tracer application of approximately 600 gallons was completed on March 12, 2014 and post application monitoring was performed through March 23, 2014.
- The first ISCO injection event (Phase I) occurred during the week of March 23, 2014 (Figure A-4). Approximately 800 gallons of base activated sodium persulfate (BASP) were injected into the Neck Area, 600 gallons of BASP were injected into Area 2 and south of Area 3, and 200 gallons of BASP were injected into Area 1.
- In March 2014, the quarterly groundwater sampling event took place per the 2013 Remedial Action Decision Document (RADD).
- In March 2014, VOC groundwater samples were collected from injection wells (IW-101 through IW-131) for baseline monitoring of the initial ISCO injection. (Figure A-4).

Second Quarter 2014

- In April 2014, a subset of the injection wells that were sampled in March were sampled for 30 day ISCO effectiveness monitoring.
- During the week of May 12, 2014, the quarterly groundwater sampling event took place per the 2013 RADD.
- During the week of May 19, 2014, six monitoring wells (MW-81 through MW-86) were installed in and around the targeted second ISCO injection areas (Figure A-4). During installation of the wells, soil samples were collected and submitted for VOC analysis.
- During the week of May 19, ISCO monitoring was completed with the collection of 15 VOC groundwater samples from IW-101, 106, 108, 109, 115, 118 and 125 through 131). Seventy temporary injection points were installed to facilitate injection of chemical oxidant for the second ISCO event. Twenty of the points were installed within the Neck Area, 40 within Areas 2 and 3, and ten within Area 1. Baseline ISCO monitoring prior to the second injection was completed at newly installed monitoring wells MW-81 through

MW-86 as well as MW-23, MW-24, IW-78 and IW-79. Groundwater samples were collected for VOCs as well as field parameters.

- The second ISCO injection event (Phase II ISCO) was conducted during the weeks of May 25 and June 1, 2014 and included the injection of 14,000 gallons of BASP into Area 2 and Area 3, 8,200 gallons of BASP into the Neck Area,/+ and 3,000 gallons of Modified Fenton's reagent activated sodium persulfate (MASP) in the vicinity of MW-25 (Area 1)
- During June 2014, 15 additional soil borings (DP-23 through DP-37) were completed along a former linear drainage feature identified in a 1971 historical aerial photograph (Figure A-5). The drainage feature extends from the former degreaser building to the west-southwest toward the former rail spur on the north side of the former Whirlpool manufacturing building. The eastern portions of the former linear drainage feature are located north of Area 1 and the western portions are located within the northwestern corner of Area 1. The borings, completed to approximately 30 feet below ground surface (bgs), were positioned at the eastern extent of the drainage feature near MW-37 and continued along the feature at approximately 60 foot intervals moving to the west. This investigation included the collection of soil samples at various depths for VOC analysis and the borings were abandoned immediately following sampling activities.
- During June 2014, five monitoring wells (MW-87 through MW-91) were installed near the northeast corner of the former manufacturing building (Figure A-6). Soil samples were collected during the installation of the wells and results indicated that TCE was not detected at these locations. These wells were installed to supplement the data from interior MIPs and soil probes previously performed. Groundwater samples for VOC analysis were also collected from these wells after well development was completed.

Third Quarter 2014

- During the week of July 28, 2014, the quarterly groundwater sampling event took place per the 2013 RADD.
- In July 2014, post injection monitoring (30 day sampling event) of the second 2014 ISCO event occurred including collection of nine VOC groundwater samples from IW-77, IW-101, IW-115, MW-23 through MW-25, MW-81, MW-82 and MW-85 for ISCO monitoring.
- During August 2014, MIPs for screening soil and groundwater were completed to investigate the Whirlpool property boundary and areas north and east of the Whirlpool property, including the Boys and Girls club property. Soil and groundwater samples were collected for laboratory analysis. During this investigation 58 MIPs (M-300 through M-357) and 24 soil probes (DP-38 through DP-62) were completed facilitating collection of 72 soil samples and 21 groundwater samples (Figure A-7). Twenty-two additional groundwater samples were also field analyzed for VOCs. The investigation identified groundwater concentrations slightly above MCLs at several offsite locations to the northeast of the Whirlpool property, including the Boys and Girls Club property. TCE was not detected in soil at offsite locations during this investigation.

- Sediment and surface water samples were collected at the request of the Arkansas Department of Environmental Quality (ADEQ) in August 2014 from the permitted outfalls at the Whirlpool property. Surface water samples were collected from the manhole located near the northeast boundary (Outfall 001) and near west central site boundary (Outfall 002). Eight sediment samples (SED-01 through SED-08) consisting of three sediment samples from the ditch immediately south of the Boys and Girls Club draining towards Mill Creek and five sediment samples from the drainage features on the west side of the Site were collected and analyzed for VOCs. TCE or other chlorinated solvents were not detected in the surface water or sediment samples.
- Performance monitoring for the Phase II ISCO (90 days following injection) took place September 11-12, 2014.

Fourth Quarter 2014

- In late September and early October 2014, five additional monitoring wells (MW-92 through MW-95 and MW-172) were installed to support monitoring efforts for the third ISCO injection. During the same timeframe 40 additional permanent injection wells (IW-132 through IW-171) and 31 temporary injection points were installed on an approximate 25 foot grid spacing through Area 1 and the linear drainage feature.
- During the week of October 13, 2014, the quarterly groundwater sampling event took place per the 2013 RADD.
- In October 2014, permanent wells (MW-96 through MW-99) were installed on the Boys and Girls Club property. These wells were sampled for VOCs for inclusion in the Fourth Quarter Groundwater Monitoring Report.
- During October 2014, 16 monitoring and injection wells in Area 1 were sampled for VOC analysis of groundwater for baseline monitoring prior to the third ISCO injection event.
- An interim corrective action measure was completed between October 1 and October 10, 2014, with the drilling of 19 large diameter borings along the Area 1 linear drainage feature to remove TCE contaminated Vadose Zone and Transmissive Zone soils. The borings were completed to the top of shale and were backfilled with crushed limestone gravel and lean cement.
- The third ISCO injection event occurred during October 28 through November 3, 2014. The oxidants injected in 2014 included BASP, Modified Fenton's reagent (hydrogen peroxide and chelated iron) (MFR) and MASP. The BASP, MFR and MASP process generates sulfate radicals, hydroxyl radicals and superoxide radicals that promote enhanced desorption and degradation of the constituents of concern (COCs), primarily TCE and its degradation products. The end products of the reaction are carbon dioxide, sulfate, oxygen and water. During this event 3,200 gallons of MFR solution were injected in and near the northwest portion of Area 1, and 12,200 gallons of BASP solution injection in and around Area 1.
- During December 2014, 21 groundwater samples were collected and analyzed for VOCs to evaluate the third ISCO injection efforts.

- In December 2014, five investigative borings (DP-63 through DP-67) were completed for soil lithology according to USGS classification in preparation for placement of soil vapor points and shallow groundwater wells in January 2015. Four borings were placed at offsite locations north of the Site and one boring was placed onsite.
- In December 2014, soil vapor points SV-03S and SV-04D were abandoned.

2015 INVESTIGATION AND REMEDIATION ACTIVITIES

As discussed below, Ramboll Environ conducted investigation, characterization and remediation activities at the Site throughout 2015. The major activities are broken out generally by quarter and described in the bullets below:

First Quarter 2015

- A shallow offsite groundwater investigation was completed in January 2015 in accordance with the ADEQ approved Work Plan. The overall field investigations facilitated installation of eight new soil vapor monitoring points (VP-5 through VP-10, VP-12 and VP-14), nine shallow groundwater monitoring wells (MW-173 through MW-181) and all historical soil vapor monitoring points were abandoned including SV-01S, SV-02D, SV-03S, SV-04D, VP-1S/D and VP-2S/D. The investigation was completed to continue the vapor intrusion investigation and support the characterization of the shallow subsurface geology and further delineation of the shallow groundwater TCE impact extending north and east from the Whirlpool property to the residential area. Figure A-8 presents the locations of the wells and soil vapor points installed during this investigation.
- During the week of January 12, 2015, 78 groundwater wells were sampled during the first quarter groundwater monitoring event to assist in evaluation of the northeast corner of the Site, Boys and Girls Club property, ISCO monitoring and plume definition. Soil vapor samples were collected from four soil vapor point locations and groundwater samples were collected from three soil vapor point locations that filled with water after installation. Soil vapor point VP-08 filled with water but not of a volume sufficient for sample collection.
- A total of seventeen 0.75 inch diameter wells were replaced with 2 inch diameter wells in accordance with the ADEQ approved work plan (ADEQ correspondence, January 14, 2015). MW-31R, MW-32R and MW-33R were replaced in January 2015 during the Shallow Offsite Groundwater Investigation field effort and the remaining fourteen 0.75 inch diameter wells were replaced during the field effort completed between June 22 and July 2, 2015. In addition, MW-67, a 2 inch diameter well, was also replaced (MW-67R) at this time due to a faulty well screen and filter pack. Figure A-9 presents the locations of the replacement wells.

Second Quarter 2015

- During the week of April 13 the second quarter groundwater monitoring event was performed which included the collection of groundwater samples from 86 wells, two vapor point samples and 5 perched water samples.
- In June 2015, one new groundwater monitoring well (MW-182) was installed south of the location of MIP point M-325 to monitor the south plume in this area. During the installation of this well two soil samples were collected in order to assess the lithology. MW-182 was constructed with a 2 inch diameter schedule 40 PVC casing and a 10 feet long 0.010 inch slotted 2 inch diameter schedule 40 PVC well screen to a total depth of approximately 31 feet bgs. The location of MW-182 is provided in Figure A-10.

Third Quarter 2015

- During the week of July 20, 2015, the third quarter groundwater monitoring event was held. Groundwater samples were collected from 86 wells during this event, one soil vapor sample was collected and 8 perched water samples were collected.
- In September 2015, eight new groundwater monitoring wells were installed to serve as sentinel wells located along the south and east boundaries of the Whirlpool facility. These wells were installed to provide early detection of migration of the southern plume. Figure A-10 presents the locations of the sentinel wells. The sentinel wells were sampled during the fourth quarter groundwater monitoring event in October 2015.
- Two new monitoring wells (MW-183 and MW-184) were installed in September 2015 on Boys and Girls Club property. The placement of these two wells was based upon the interpretation of the TCE isoconcentration lines and the groundwater flow direction at the northeast corner of the north plume (Figure A-6). The new wells were included in the fourth quarter groundwater sampling event in October 2015.
- One new down-gradient monitoring well (MW-193) was installed in September 2015 in response to ADEQ comments on the First Quarter Progress Report 2015 regarding the need for further delineation down-gradient from MW-61. The new well MW-193 was included in the fourth quarter groundwater sampling event in October 2015. The location of MW-193 is provided in Figure A-11.

Fourth Quarter 2015

- The fourth injection event for ISCO occurred on September 28, 2015, through October 2, 2015. During this event base activated sodium persulfate (BASP) was introduced into groundwater at the Supplemental Neck Area (onsite in the northern parking lot) and Areas 2 and 3 (offsite adjacent to the north across Ingersoll Avenue). A total of 9,000 gallons of BASP was injected into nine permanent injection wells and 36 temporary direct push injection points in the Supplemental Neck Area and Areas 2 and 3. Post injection monitoring events were completed in November 2015 (30 day post ISCO) and December 2015 (60 day post ISCO).
- An in-situ chemical reduction (ISCR) pilot study was conducted between September 28 and October 2, 2015. The ISCR technology combined abiotic chemical reduction and

anaerobic bioremediation for treatment of chlorinated solvents. A total of 4,844 gallons of ISCR reagents were injected including 7,400 pounds of Provect IR-40, 660 pounds MgO and 13 liters of dehalococcoides (DHC) inoculum across three permeable reactive barrier (PRB) treatment zones in 44 temporary direct push injections. Post injection monitoring events were completed in November 2015 (30 day post ISCR) and December 2015 (60 day post ISCR).

- The fourth quarter groundwater monitoring event was completed during the week of October 5, 2015, where groundwater samples were collected from 99 wells, vapor samples from two points and perched water from seven wells.
- Slug testing was completed in October 2015 at eight wells including; MW-188, MW-189, TMW-10, TMW-11, MW-67R, MW-184, MW-186 and MW-193.

GROUNDWATER MONITORING PROGRAM

Periodic groundwater monitoring activities at the Site began in 1989. Semiannual groundwater monitoring was started in March 2000 and continued through 2013. Prior to 2013 Whirlpool implemented the voluntary semi-annual groundwater sampling program to monitor groundwater conditions at the Site as part of its groundwater management program. The semi-annual monitoring events have expanded over time to incorporate additional monitoring wells installed during various investigation activities.

The groundwater monitoring program frequency was revised to quarterly sampling during the first quarter of 2014 in accordance with the 2013 RADD. The quarterly groundwater monitoring program at the Site included sampling of a minimum of 33 onsite monitoring wells and 23 offsite monitoring wells. Additional wells were sampled in specific quarters to monitor the effects of ISCO, ISCR, the northeast plume, source area wells, plume boundary and shallow groundwater wells. Starting the fourth quarter of 2015, the groundwater monitoring program was expanded to include 76 wells as defined in the November 2015 revised Remedial Action Decision Document (2015 RADD). Of these 76 wells, 27 are defined as plume boundary wells, 35 as onsite wells and 14 as offsite wells. Due to inclusion of additional wells to monitor ISCO, ISCR, the northeast plume and shallow groundwater, a total of 99 wells were sampled during the fourth quarter of 2015. During each monitoring event, the water levels in all monitoring wells are gauged to provide data for evaluating groundwater flow conditions.

SOIL GAS SAMPLING/VAPOR INTRUSION EVALUATION

In accordance with the RADD, Ramboll Environ evaluated the potential for vapor intrusion into buildings in the neighborhood north of Ingersoll Avenue on a quarterly basis using data collected from groundwater monitoring wells, soil vapor monitoring points and at one parcel a crawl space, outdoor air and indoor air. These data were used to provide multiple lines of evidence to assess whether a vapor intrusion pathway from groundwater exists at residential properties. This section summarizes the historical monitoring of soil vapor points, installation of new soil vapor monitoring points in 2015, as well as the sample collection methods and procedures used.

Prior Installation of Soil Vapor Monitoring Points

Whirlpool installed four soil vapor monitoring points in May 2012 (SV-01S, SV-02D, SV-03S and SV-04D) and collected soil vapor data from them as an additional line of evidence to complement a modeling analysis of the potential for vapor intrusion from groundwater. These soil vapor data and the vapor intrusion modeling results were presented in the RRMP and the 2013 RADD. Soil gas sampling locations SV-01S and SV-02D were located south of Ingersoll Avenue (near MW-33) and soil gas sampling locations SV-03S and SV-04D were located in the neighborhood (adjacent to MW-70).

The screens for the 2012 soil vapor monitoring points (SV-01S, SV-02D, SV-03S and SV-04D) filled with water prior to the Fourth Quarter 2013 monitoring event. Whirlpool replaced these monitoring points with VP-2S/D and VP-1S/D during the first quarter 2014 monitoring event, as described in the First Quarter 2014 Soil Vapor Monitoring/Vapor Intrusion Report (ENVIRON 2014x).

The Final Remedy Work Plan (ENVIRON, 2014b) included a soil vapor monitoring point at 1410 Jacobs Avenue. During the First Quarter 2014 monitoring event, Whirlpool attempted to install monitoring points VP-3 and VP-4 at this address. As explained in the First Quarter 2014 Soil Vapor Monitoring/Vapor Intrusion Report, the attempt at VP-3 encountered very moist soil at 3 feet bgs and water entered the borehole at 4 feet bgs. At VP-4, very moist to wet soil was encountered starting at 2.5 feet bgs. Because of the wet shallow soil, no vapor monitoring point was installed at either VP-3 or VP-4.

The Final Remedial Work Plan also called for vapor monitoring points near MW-46R and MW-56 (VP-5 and VP-6, respectively). VP-5 could not be installed at the planned location because multiple underground utilities were encountered in the road right-of-way.VP-6 could not be installed because the identified property owner did not grant permission. In trying to avoid underground utilities along the road right-of-way, Whirlpool requested permission from owners of nearby properties to install VP-5 and VP-6.

In December 2014, onsite locations SV-03S and SV-04D were abandoned. All other soil vapor points (SV-01S, SV-02D, VP-1S/D and VP-2S/D) were abandoned in January 2015. The abandonment consisted of over-drilling the vapor points to total depths (ranging from 12 to 13 feet bgs), sealing the borehole with cement/bentonite grout to approximately 2 feet bgs and then filling with top soil.

In January 2015 Whirlpool completed the installation of additional soil vapor points on offsite properties in support of ongoing soil vapor monitoring. This effort included the installation of eight new soil vapor monitoring points [VP-5 through VP-10, VP-12 and VP-14 (note: VP-11 and VP-13 were installed as monitoring wells MW-181 and MW-180 due to the presence of water in the borings during installation)]; and collection of water samples in three of the eight new vapor points (VP-6, VP-10 and VP-12) where water was present (neither a water sample nor a soil vapor sample could be collected from VP-8 due to field conditions). On July 1, 2015, a vapor monitoring point was installed on Parcel #6. The vapor point filled with water after installation and water could not be purged from the sampling train. Existing vapor point locations that are currently monitored are presented in Figure A-8.

Quarterly Sampling Events

In 2014 and 2015, soil vapor sampling was attempted during each of the quarterly sampling events. A summary of the soil vapor sampling completed is presented in Table A-1. Outdoor, crawl space and indoor air samples were also collected at Parcel 3 to further evaluate the potential for groundwater vapor intrusion. These data were used as additional lines of evidence to evaluate the potential for vapor intrusion from groundwater.

The field procedures used during the soil vapor sampling events were consistent with the methodology described in the First Quarter 2014 Soil Vapor Monitoring/Vapor Intrusion Report (ENVIRON 2014d) and the modifications discussed in the Second Quarter Soil Vapor Monitoring/Vapor Intrusion Report (ENVIRON 2014e), except as noted in individual quarterly reports.

Vapor Intrusion Assessment

The quarterly reports and human health risk assessment (HHRA) (Ramboll Environ 2016) update evaluated the potential for vapor intrusion based on the data collected from groundwater monitoring wells, vapor monitoring points and outdoor, crawl space and indoor air during 2014 and 2015. The evaluation of multiple lines of evidence in these reports is consistent with United States Environmental Protection Agency's (USEPA's) recommendations in its final vapor intrusion guidance documents (USEPA 2015a and 2015b).

The evaluation of the potential for significant vapor intrusion from groundwater followed the approach in Section 6.5.2 of the ADEQ-approved RRMP and the risk estimates were compared to ADEQ's and USEPA's risk management limits of 10^{-4} and 1 for cumulative cancer risk and non-cancer HI, respectively (ADEQ 2005, 61 FR 19432, May 1, 1996; USEPA 1991b).

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TABLE A-1
SUMMARY OF MATRICES ENCOUNTERED AND SAMPLED AT SOIL VAPOR MONITORING POINTS
Whirlpool Facility - Fort Smith, Arkansas

Quarter of Collection	Date of Collection	In Neighborhood										South of Neighborhood	
		Parcel 1		Parcel 2		Parcel 3			Parcel 4		Parcel 6	Parcel 5	
		VP-5	VP-6	VP-7	VP-8	OA/CS/IA	VP-9	VP-10	VP-1S^{+}	VP-1D / VP-12$^{\#}$	VP-15	VP-2S^{+}	VP-2D / VP-14$^{\#}$
4th Q 2015	10/2015	**Water**	**Water**	**Air**	**Water**	**Air**	**Air**	**Water**	--	**Water**	**Water**	--	**Water**
3rd Q 2015	7/2015	**Water**	**Water**	**Air**	**Water**	--	**Water**	**Water**	--	**Water**	**Water**	--	**Water**
2nd Q 2015	4/2015	**Water**	**Water**	**Air**	**Water**	**Air**	**Air**	**Water**	--	**Water**	--	--	*Water*
1st Q 2015	1/2015	**Air**	**Water**	**Air**	*Water*	--	**Air**	**Water**	--	**Water**	--	--	**Air**
4th Q 2014	10/2014	--	--	--	--	--	--	--	**Water**	*Air*	--	**Water**	**Water**
3rd Q 2014	9/2014	--	--	--	--	--	--	--	**Water**	*Air**	--	**Water**	**Water**
3rd Q 2014	7/2014	--	--	--	--	--	--	--	*Water*	*Water*	--	**Water**	**Water**
2nd Q 2014	5/2014	--	--	--	--	--	--	--	Water	**Air**	--	Water	Water
1st Q 2014	3/2014	--	--	--	--	--	--	--	**Air**	**Air**	--	Water	**Air**

Notes:

Shaded and **bolded** cells indicate that a sample was collected.

Italicized cells indicate that insufficient volume was available for sample collection.

Dashes (indicate) indicate the location was not installed or was abandoned during this sampling event.

Prior to the Third Quarter 2014, water encountered in the soil vapor monitoring points was not sampled per the quarterly sampling plan.

* During the September 2014 sampling event, no air or water sample could be collected at VP-1D; a water sample was collected at the nearby port SV-04D to characterize VOC concentrations in the area.

+ During the First Quarter 2015, VP-1S and VP-2S were abandoned and installation of VP-11 and VP-13 was attempted in Parcels 4 and 5, respectively. However, because of water in the borings for VP-11 and VP-13, monitoring wells MW-181 and MW-180, respectively, were installed.

[#] During the First Quarter 2015, locations VP-1D and VP-2D were replaced by VP-12 and VP-14, respectively.

RAMBOLL ENVIRON

FIGURES

RAMBOLL ENVIRON

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DIRECT PUSH SOIL BORING AND TEMPORARY WELL LOCATIONS
JUNE 2013 LIMITED PHASE II INVESTIGATION

Whirlpool Facility - Fort Smith, Arkansas

Figure
A-1

PROJECT: 3437500L

0 150 300

Feet

1 inch = 150 feet 1:1,800

N

Membrane Interface Probe (MIP)

Approximate Property Boundary

MIP SCREENING LOCATIONS
SEPTEMBER 2013 to JANUARY 2014
(2006 Orthophoto)

Whirlpool Facility - Fort Smith, Arkansas

RAMBOLL ENVIRON

Figure
A-2

DRAFTED BY: FK | DATE: 01/21/2016 | PROJECT: 3437500L

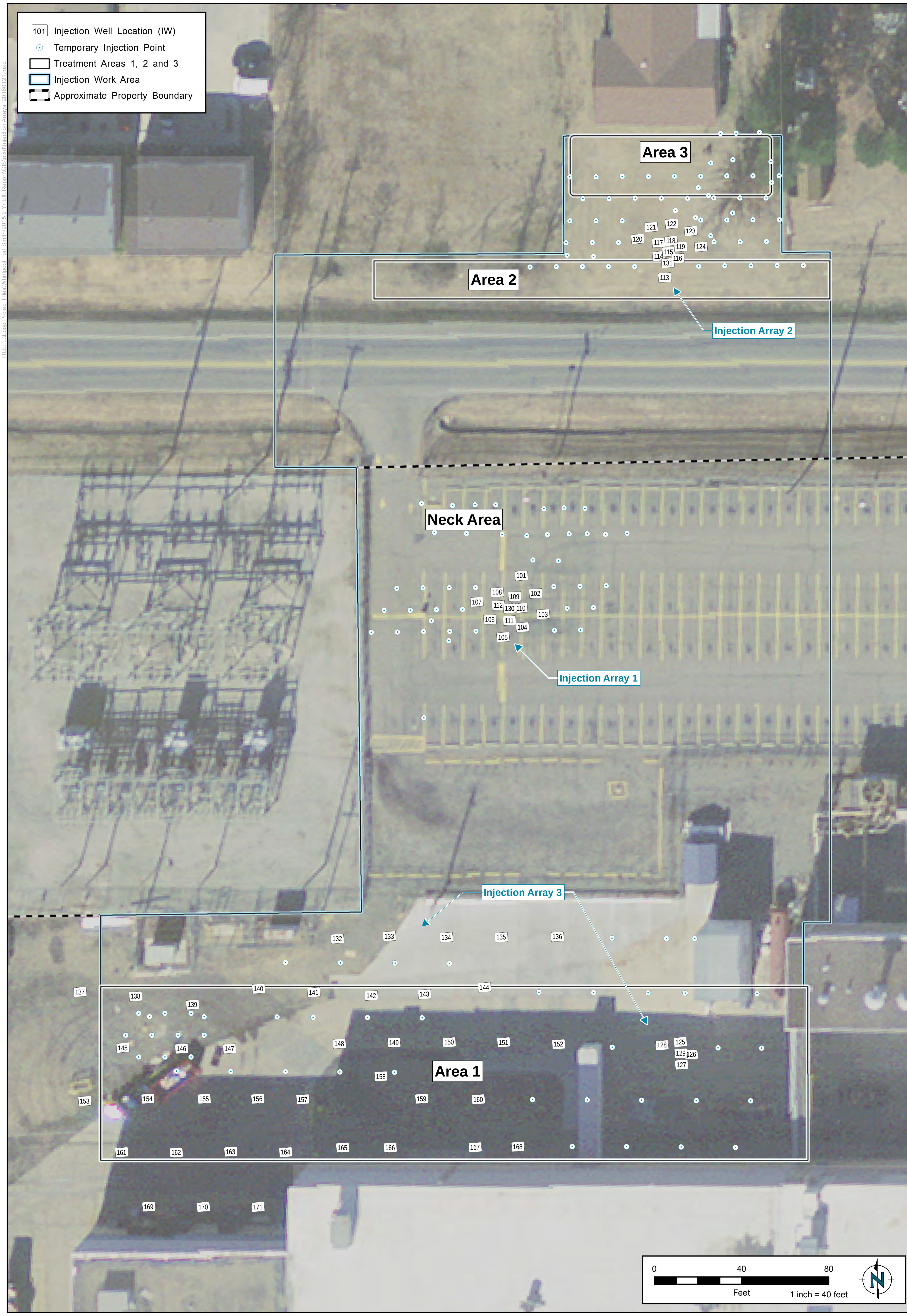
HPT, SLUG TESTING, BENCH TEST SAMPLE AND DPT LOCATIONS DECEMBER 2013 to JANUARY 2014 (2006 Orthophoto)

Whirlpool Facility - Fort Smith, Arkansas

RAMBOLL ENVIRON

Figure A-3

DRAFTED BY: FK	DATE: 01/21/2016	PROJECT: 3437500L



RAMBOLL ENVIRON

DRAFTED BY: FK | DATE: 01/21/2016

INJECTION ARRAYS 1, 2 AND 3
(ISCO PHASES I THROUGH IV)

Whirlpool Facility - Fort Smith, Arkansas

Figure
A-4

PROJECT: 3437500L

AERIAL PHOTOGRAPH SOURCE: GOOGLE EARTH, 2015.

N

LEGEND

- FORMER LINEAR DRAINAGE FEATURE
- DP BORINGS (DECEMBER 2013 - JUNE 2014)
- MONITORING WELLS
- ERM BORINGS (DECEMBER 1999)
- MPSB BORINGS (DECEMBER 1996)

0 30
SCALE IN FEET

SOIL BORING LOCATIONS
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

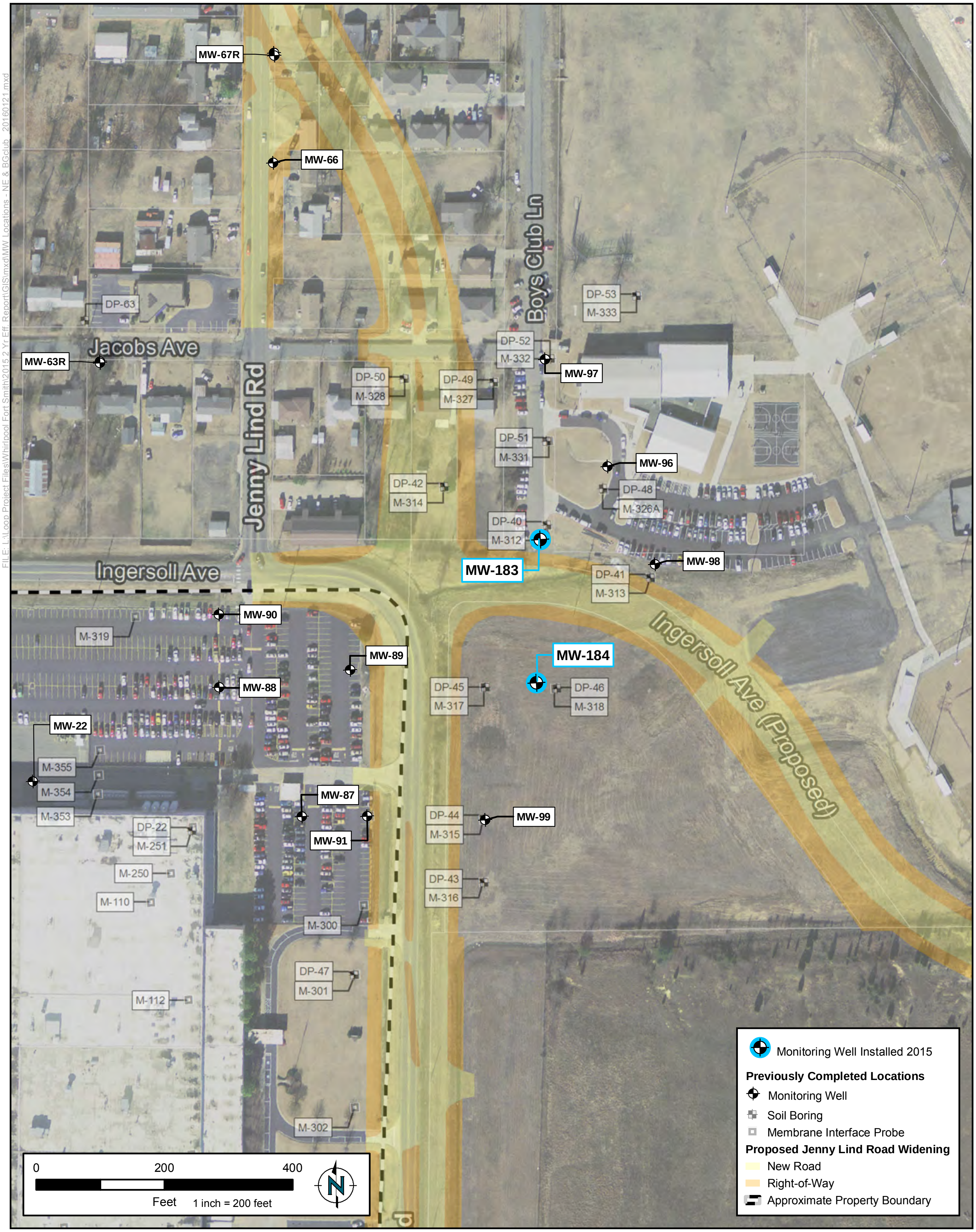
RAMBOLL ENVIRON

FIGURE
A-5

DRAFTED BY: APR	DATE: 1/5/16	3437500L

L:\Loop Project Files\00_CAD FILES\34\Whirlpool_Annual-2YR TERR 3437500L\A-5_SB Locations.dwg

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2015 2 Yr Eff. Report\GIS\mxd\MW Locations - NE & BGclub_20160121.mxd



RAMBOLL ENVIRON

MONITORING WELL LOCATIONS
NORTHEAST CORNER AND BOYS & GIRLS CLUB

Whirlpool Facility - Fort Smith, Arkansas

Figure A-6

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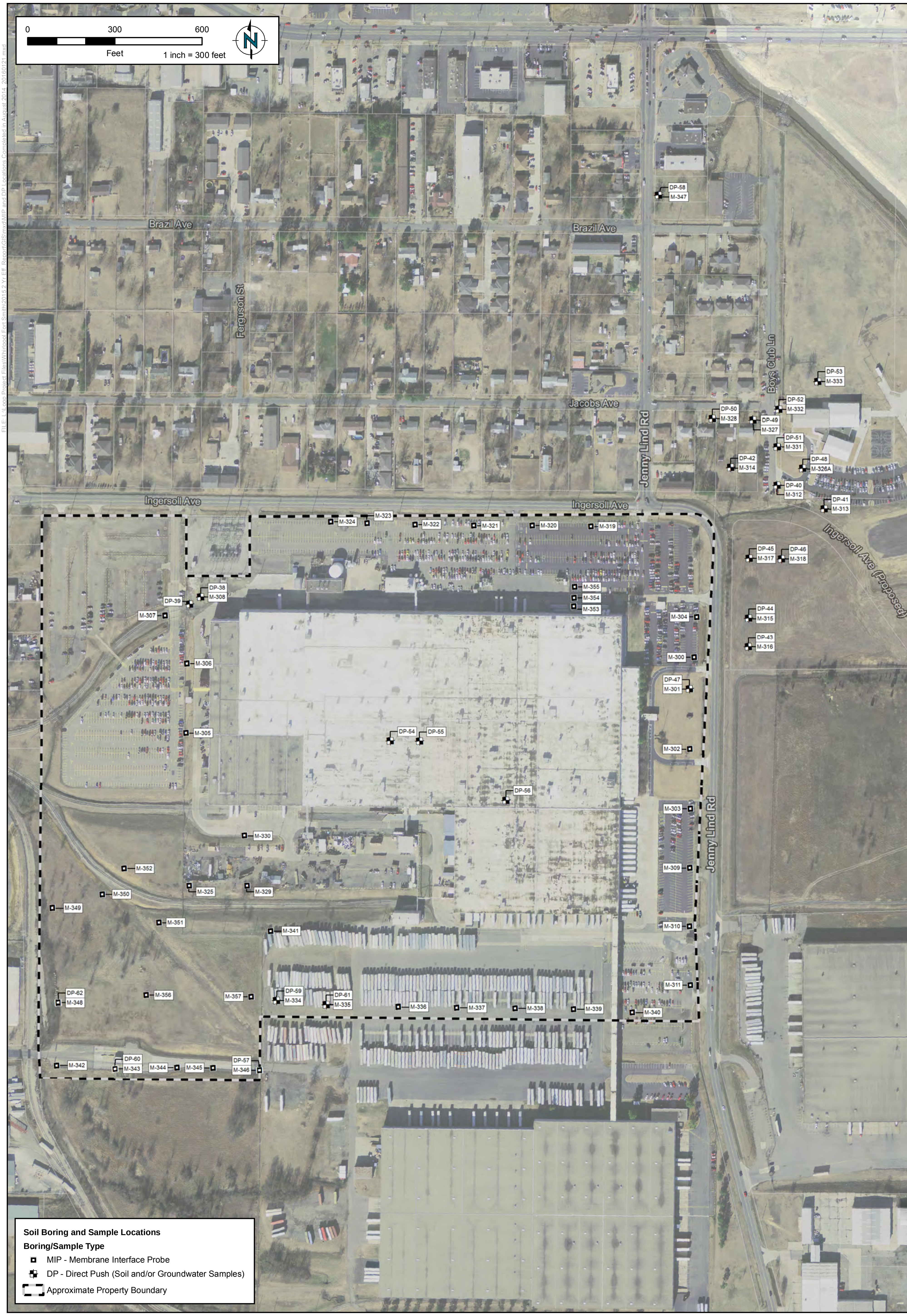


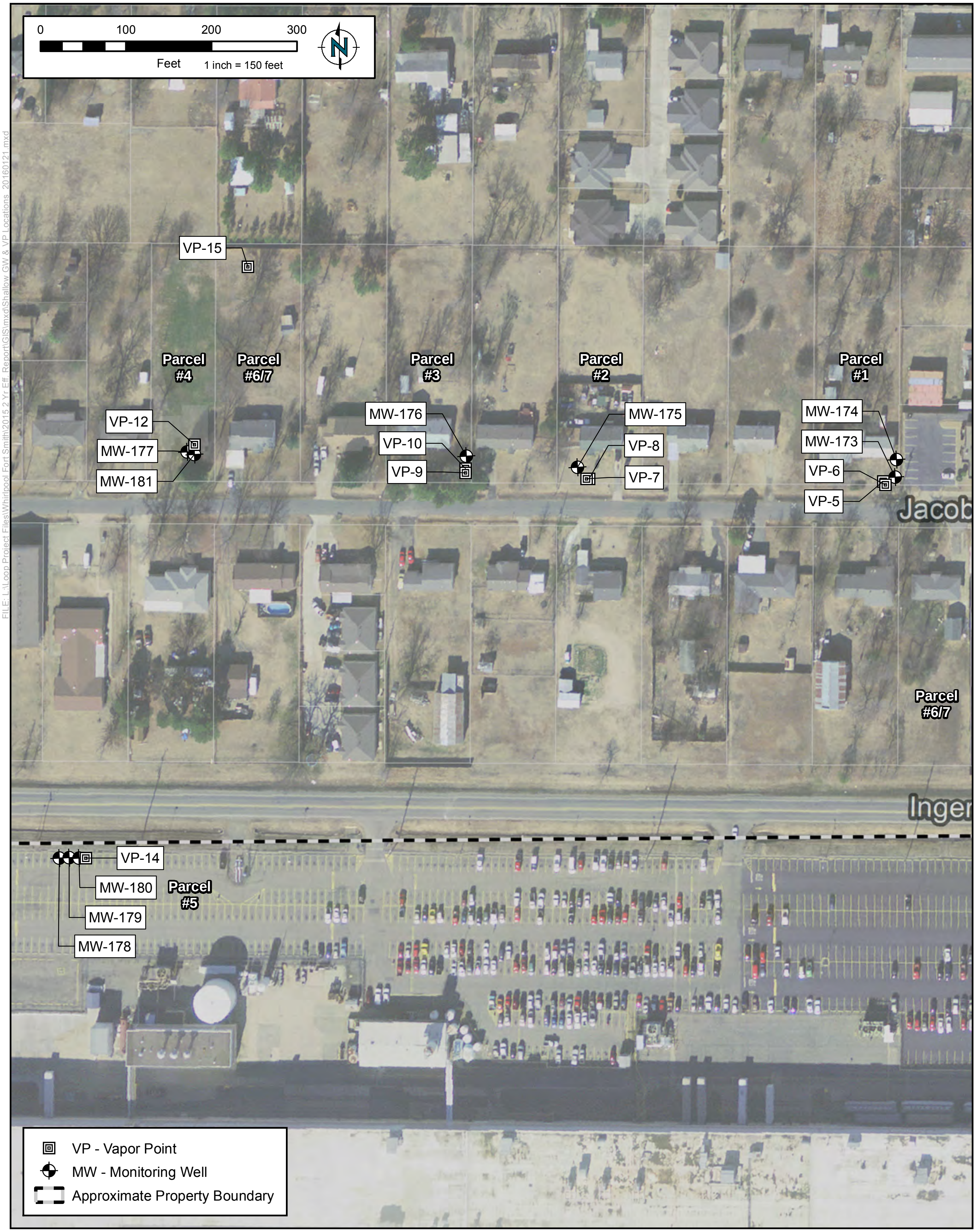
RAMBOLL ENVIRON

MIP SCREENING AND DP LOCATIONS - AUGUST 2014

Whirlpool Facility - Fort Smith, Arkansas

Figure
A-7

DRAFTED BY: FK | DATE: 01/21/2016 | PROJECT: 3437500L



FILE: L:\Loop Project Files\Whirlpool Fort Smith\2015 2 Yr Eff. Report\GIS\mxd\Shallow GW & VP Locations_20160121.mxd

RAMBOLL ENVIRON

SHALLOW MONITORING WELL AND VAPOR POINT LOCATIONS

Whirlpool Facility - Fort Smith, Arkansas

Figure A-8

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RAMBOLL ENVIRON

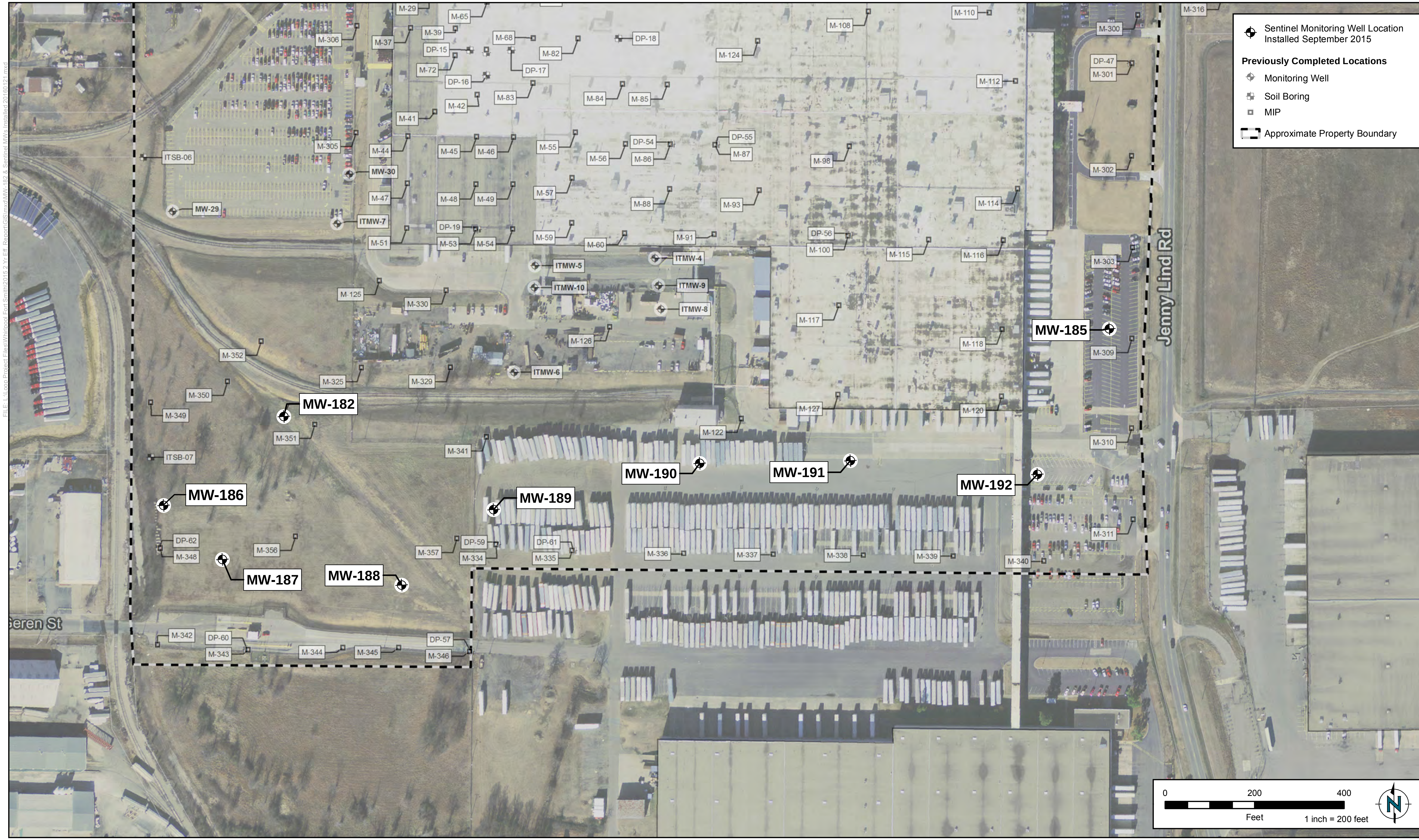
DRAFTED BY: FK | DATE: 01/21/2016

LOCATION OF REPLACEMENT MONITORING WELLS

Whirlpool Facility - Fort Smith, Arkansas

Figure A-9

PROJECT: 3437500L



RAMBOLL ENVIRON

DRAFTED BY: FK

DATE: 01/21/2016

MW-182 AND SENTINEL MONITORING WELL LOCATIONS

Whirlpool Facility - Fort Smith, Arkansas

Figure

A-10

PROJECT: 3437500L

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2015 2 Yr Eff. Report\GIS\mxd\Location of MW-193 20160121.mxd

RAMBOLL ENVIRON

LOCATION OF DOWNGRADIENT MONITORING WELL

Whirlpool Facility - Fort Smith, Arkansas

Figure A-11

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APPENDIX B
Nature and Distribution of Impact

APPENDIX B
NATURE AND DISTRIBUTION OF CONTAMINANT IMPACT IN SOUTH PLUME SOIL & ANCILLARY AREAS

The primary source of TCE identified in the Vadose Zone appears to be related to the former linear drainage feature that began near the former degreaser building. The eastern portions of the former linear drainage feature are located north of Area 1 identified in the RADD and the western portions are located within the northwestern corner of Area 1 while the western terminus of the former linear drainage feature is located west of Area 1. The MIP screening data and results of subsequent soil sampling conducted during the Area 1 Investigation and installation of injection wells suggest the contaminated soils are present in a linear manner associated with the former drainage feature and the vertical profile of impact extends throughout the Vadose Zone soil profile and into the underlying saturated Basal Transmissive Zone (Figures B-1 and B-2). Soil boring logs from the area indicate that Vadose Zone soils encountered from approximately 5 to 15 feet at wells ITMW-11, MW-37 and MW-25 and soil borings ERM-7 and ERM-8 located along the alignment of the former linear drainage feature (see Figure A-5 in Appendix A) exhibited indications of VOC contamination.

Additional Area 1 soil investigation field activities were completed during the week of June 23, 2014. During this investigation, 15 soil borings were completed to further characterize Vadose Zone and saturated soil conditions in the Basal Transmissive Zone as discussed in the Area 1 Soil Investigation Summary Report[1]. The borings were located along the former linear drainage feature described above.

Analytical results for soil samples collected from DPT borings advanced in the area confirm the presence of elevated concentrations of TCE in the clay of the Upper Fine-Grained Unit. The highest TCE concentrations in the Upper Fine-Grained Unit were identified in DP-07 located approximately 100 feet west of the former degreaser building. TCE was present at 270 milligrams per kilograms (mg/kg) at 5.5 to 6 feet bgs and 200 mg/kg at 12.5 to 13 feet bgs in DP-07. All TCE data from the soil samples collected by Ramboll Environ in 2013 through 2015 is summarized on Table 3-1. East to west and north to south cross-sections across this area that show the distribution of contaminants in the soil are provided in Figures 3-1 and 3-2 (Two Year Technical Review Report). Additional cross sections showing the MIP data are included as Figures B-3 and B-4 in this appendix.

Soil analytical results for TCE at Area 1 and along the linear drainage feature are mapped on Figures B-5 through B-7. TCE concentrations and lithologic profiles are illustrated in three cross-sections that are roughly parallel to the former linear drainage feature with cross-section D-D' to the north (Figure B-5), cross-section E-E' along the centerline (Figure B-6) and cross-section F-F' to the south (Figure B-7). Similar to the MIP ECD results, the TCE concentrations in Vadose Zone soils are highest near the centerline of the former linear drainage feature (each of the borings along the centerline cross-section has at least two samples with TCE concentrations greater than 10 mg/kg) and decrease to the north and south with the lowest concentrations along the southern cross-section. TCE concentrations in both the Vadose Zone soils and saturated soil in the Basal Transmissive Zone were lower in borings located near the western end of the former linear drainage feature and west of Area 1. TCE concentrations in soil exhibit

[1] ENVIRON, Second Quarter 2014 Progress Report, Appendix E – Area 1 Soil Investigation Summary Report, August 15, 2014.

slightly increasing trends with depth in borings to the north and south of the former linear drainage feature. TCE concentrations generally decrease with depth in the borings along the centerline of the former linear drainage feature except at MW-86 and DP-08 where TCE concentrations are higher in saturated soil in the Basal Transmissive Zone. The TCE concentration in a saturated soil sample at MW-86 was 137 mg/kg at a depth of 26.25 feet and the concentration in a saturated soil sample at DP-08 was 3,300 mg/kg at a depth of 18.75 feet.

Isolated Areas within Building Footprint

Based on MIP data taken from areas underneath the former manufacturing building, two isolated areas of elevated TCE (based on the ECD response – Figures B-2 and B-3) were identified in the Vadose Zone soil. In two of the three areas an offset DPT was advanced to collect soil samples for laboratory analysis. The results are briefly discussed below:

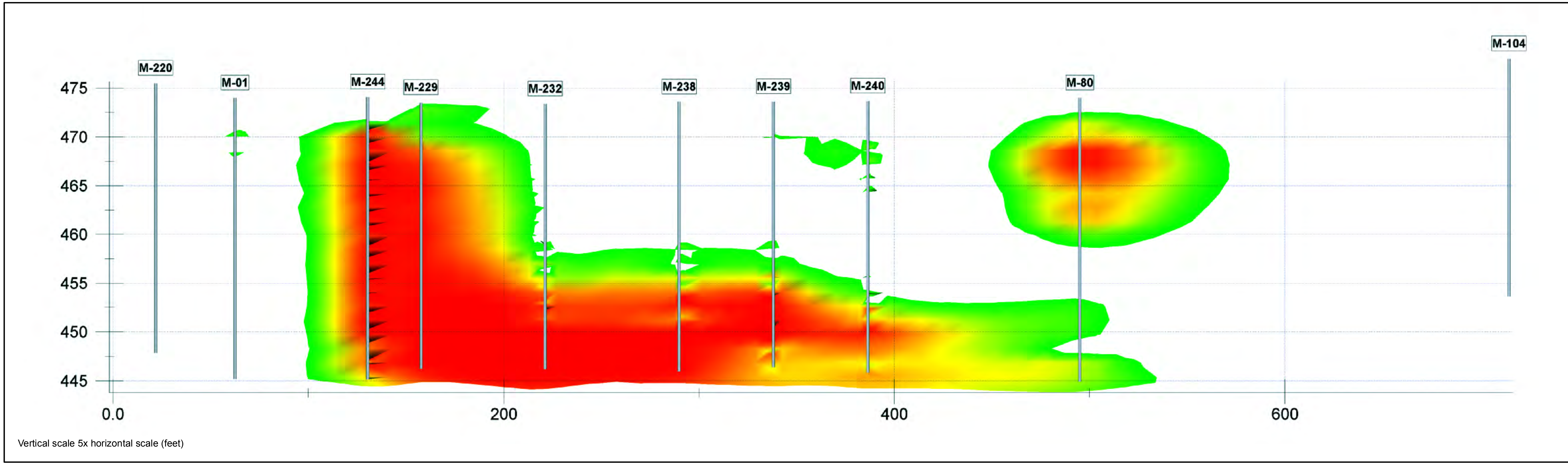
- M-69 is located beneath the floor of the former manufacturing building in the northwest portion (1975 addition) of the plant where steel storage activities were previously conducted. An offset DPT (DP-14) was advanced and a sample was collected from the depths with the greatest ECD responses (15.5 to 16 feet). The analytical result for TCE was 0.63 mg/kg.
- M-48 is located beneath the floor of the former manufacturing building in the southwest portion (1984 addition) of the plant. Former activities in this area are not known and no DPT boring was advanced in this area. However, based upon the ECD response it is likely that the analytical result would be similar to those obtained at DP-12 (0.84 mg/kg at 11.5 to 12 feet) and DP-14.

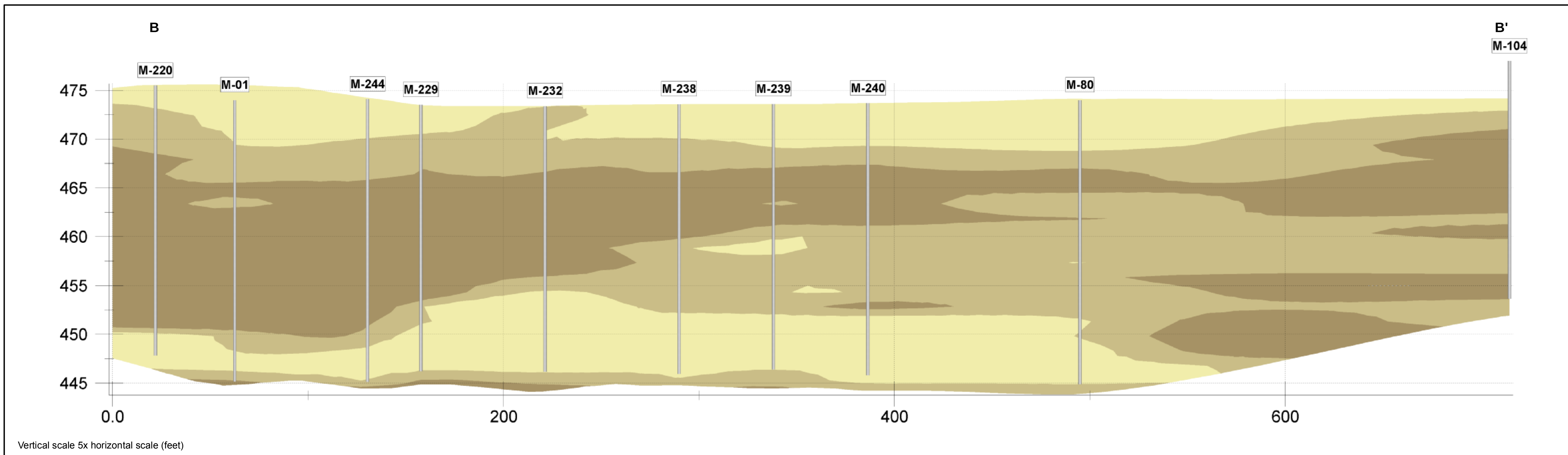
In August 2014, three additional DP borings DP-54, DP-55 and DP-56 were completed within the former manufacturing building footprint to investigate shallow ECD responses detected at M-86, M-87 and M-100 respectively, further information regarding this investigation can be found in the 2014 Property Boundary Report[2]. At sample location DP-55 TCE exceeded the RAL (from the Remedial Action Decision Documents) of 0.129 mg/kg[3] in samples collected at 4 feet bgs (0.6 mg/kg), 8 feet bgs (0.973 mg/kg) and 13 feet bgs (0.388 mg/kg). TCE concentrations in soil samples collected at 27 and 31 feet bgs in DP-55 were less than the RAL as were all TCE concentrations in soil samples from DP-54 and DP-56.

LIST OF FIGURES

[2] ENVIRON, Third Quarter 2014 Progress Report, Attachment D – Property Boundary Report, November 14, 2014.
[3] The RAL may be too low based upon the value used for the length of the source area parallel to the groundwater flow direction. ERM used a value of 379 meters when the length of the source are is closer to 3 meters. The resulting RAL is ranges from 1 mg/kg to 10 mg/kg depending upon the hydraulic conductivity used for the calculation.

FIGURES





Legend

Decreasing Fines - - - - - - Increasing Fines

0 | 35 | 70 | 140 | 200

Electrical Conductivity - EC (mS/m)

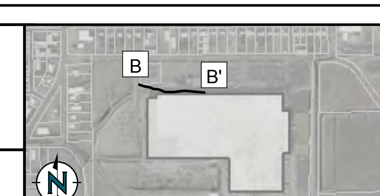
Decreasing CVOCs - - - - - - Increasing CVOCs

$1.0x10^{-6}$ | $2.0x10^{-6}$ | $5.0x10^{-6}$ | $1.0x10^{-7}$ | $1.5x10^{-7}$

Electron Capture Detector - ECD (uV)

Notes

- EC and ECD response data kriged using C Tech's MVS application
- Electron Capture Device (ECD) results reported in microvolts (μV)
- Electrical Conductivity (EC) results reported in milli-siemens/Meter



RAMBOLL ENVIRON

MEMBRANE INTERFACE PROBE CROSS SECTION B - B'

Figure B-1

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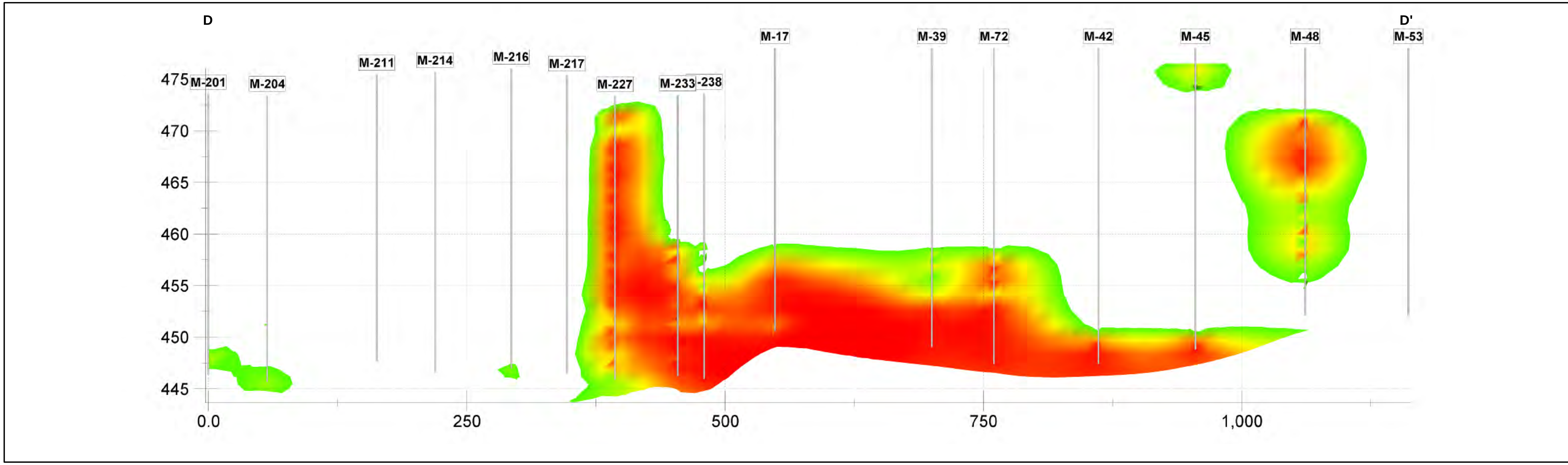
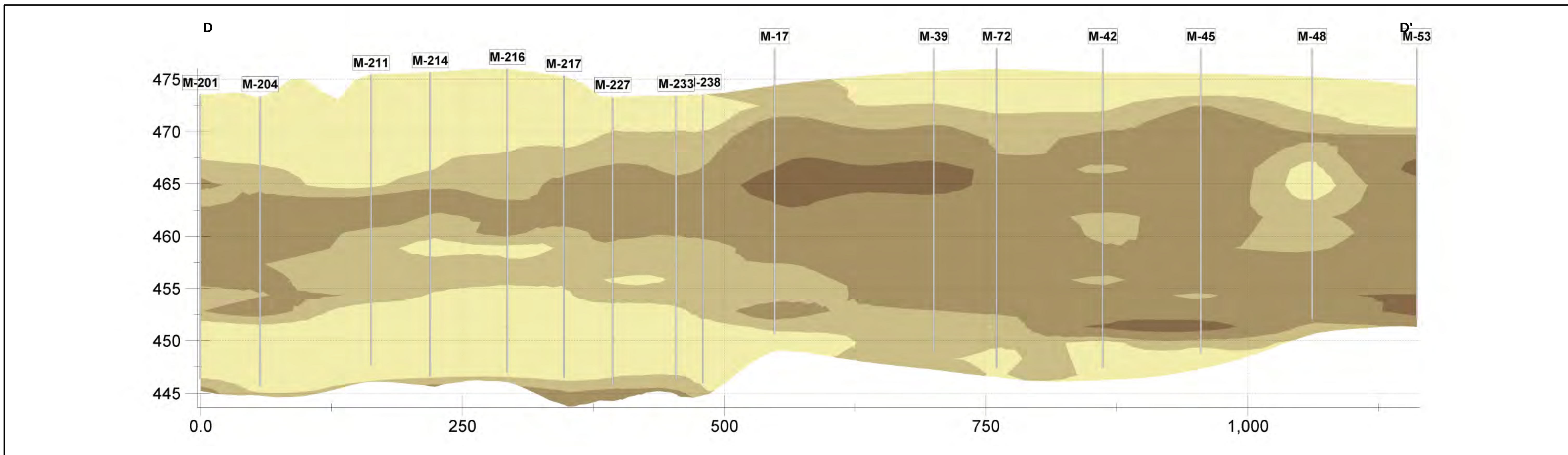




Legend

Decreasing Fines - - - - - - Increasing Fines

0	35	70	140	200

Electrical Conductivity - EC (mS/m)

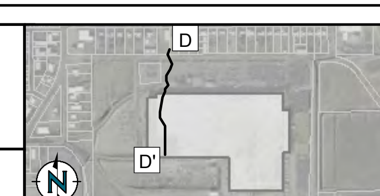
Decreasing CVOCs - - - - - - Increasing CVOCs

$1.0x10^{-6}$	$2.0x10^{-6}$	$5.0x10^{-6}$	$1.0x10^{-7}$	$1.5x10^{-7}$

Electron Capture Detector - ECD (uV)

Notes

- EC and ECD response data kriged using C Tech's MVS application
- Electron Capture Device (ECD) results reported in microvolts (μV)
- Electrical Conductivity (EC) results reported in milli-siemens/Meter

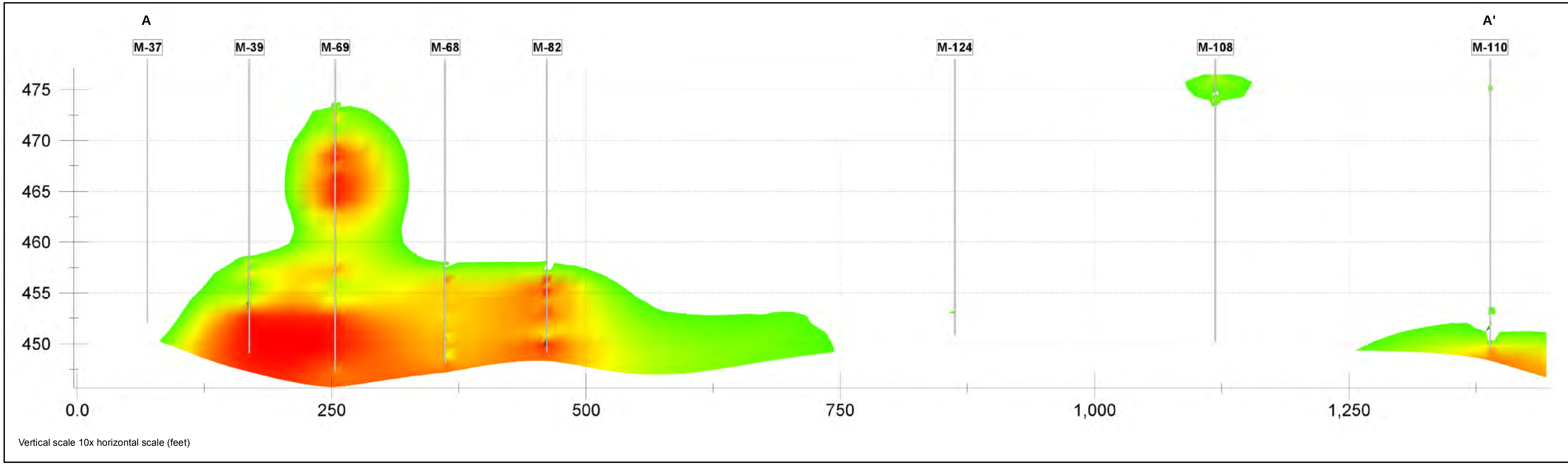


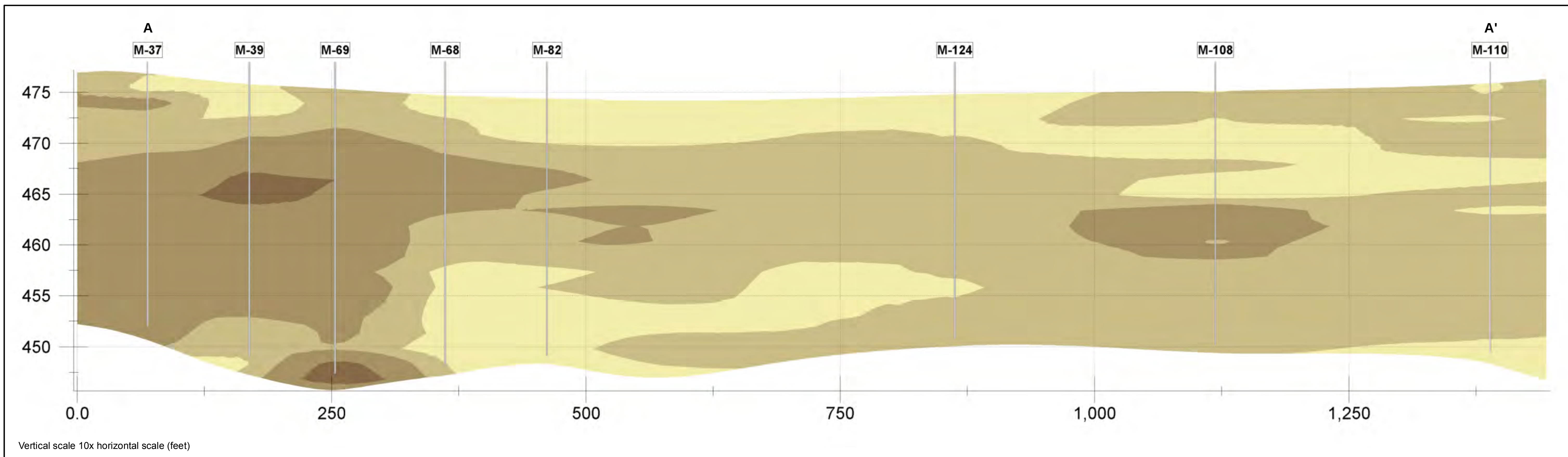
RAMBOLL ENVIRON

MEMBRANE INTERFACE PROBE CROSS SECTION D - D'

Figure B-2

DRAFTED BY: KTS | DATE: 12/03/2015 | Whirlpool Facility - Fort Smith, Arkansas | PROJECT: 3437500L





Legend

Decreasing Fines - - - - - - Increasing Fines

0 | 35 | 70 | 140 | 200

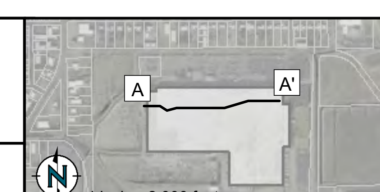
Electrical Conductivity - EC (mS/m)

Decreasing CVOCs - - - - - - Increasing CVOCs

1.0×10^{-6} | 2.0×10^{-6} | 5.0×10^{-6} | 1.0×10^{-7} | 1.5×10^{-7}

Electron Capture Detector - ECD (uV)

Notes
- EC and ECD response data kriged using C Tech's MVS application
- Electron Capture Device (ECD) results reported in microvolts (μV)
- Electrical Conductivity (EC) results reported in milli-siemens/Meter

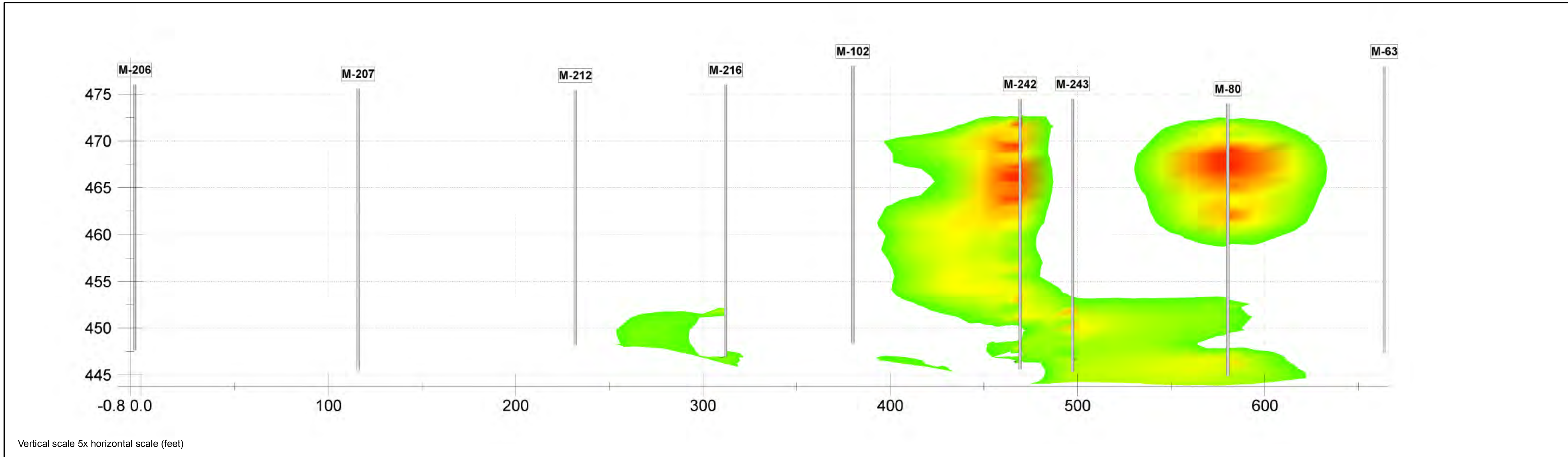


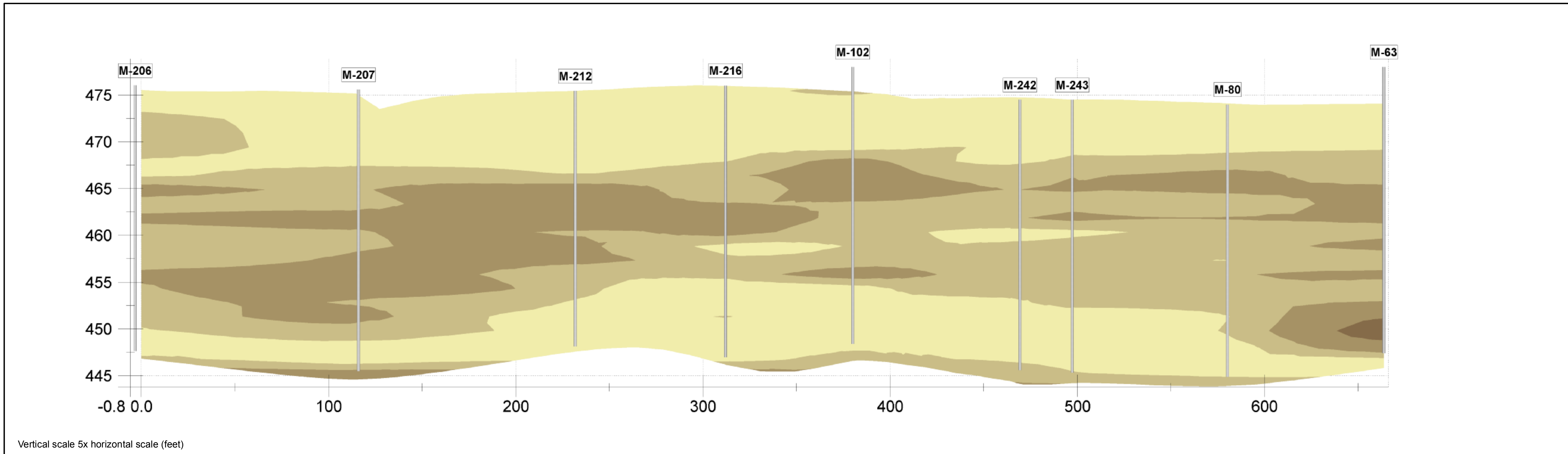
RAMBOLL ENVIRON

MEMBRANE INTERFACE PROBE CROSS SECTION A - A'

Figure B-3

DRAFTED BY: KTS	DATE: 12/03/2015	Whirlpool Facility - Fort Smith, Arkansas	PROJECT: 3437500L





Legend

Decreasing Fines - - - - - - Increasing Fines

0 | 35 | 70 | 140 | 200

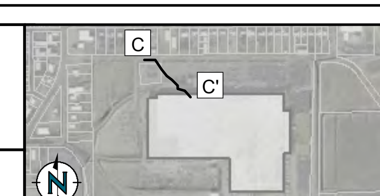
Electrical Conductivity - EC (mS/m)

Decreasing CVOCs - - - - - - Increasing CVOCs

$1.0x10^{-6}$ | $2.0x10^{-6}$ | $5.0x10^{-6}$ | $1.0x10^{-7}$ | $1.5x10^{-7}$

Electron Capture Detector - ECD (uV)

Notes
- EC and ECD response data kriged using C Tech's MVS application
- Electron Capture Device (ECD) results reported in microvolts (µV)
- Electrical Conductivity (EC) results reported in milli-siemens/Meter

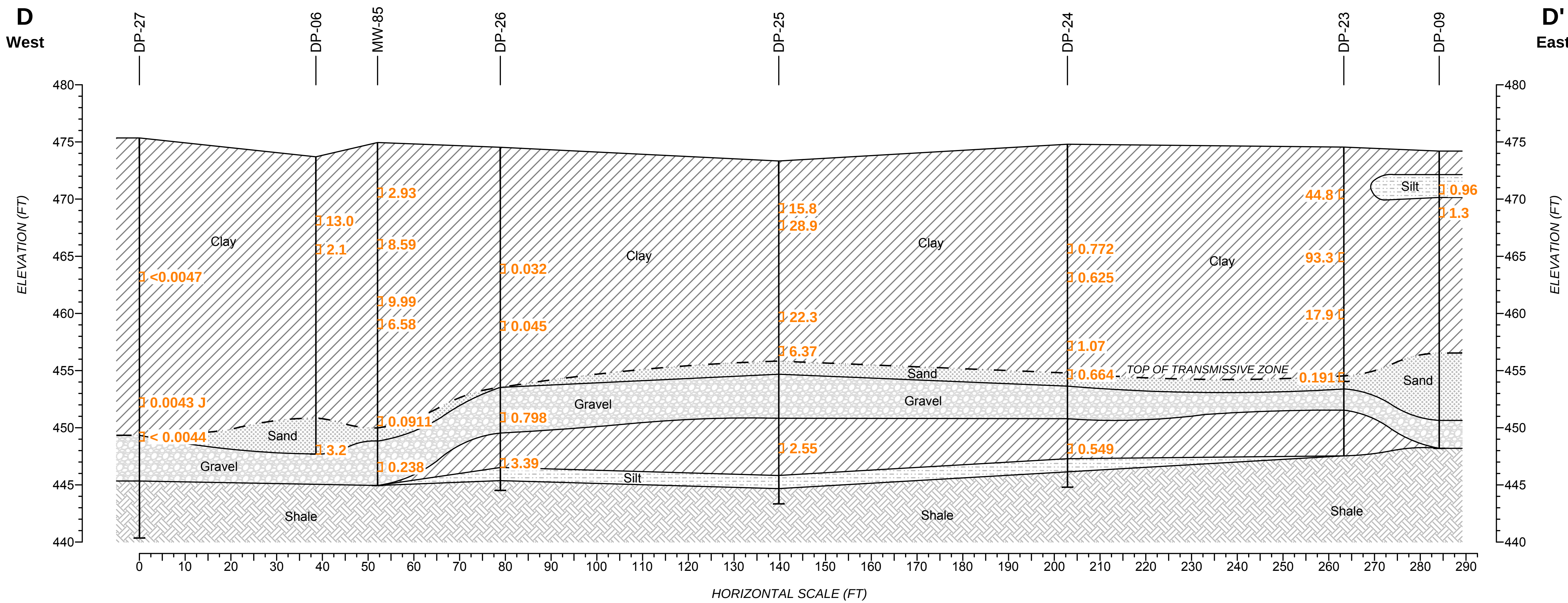


RAMBOLL ENVIRON

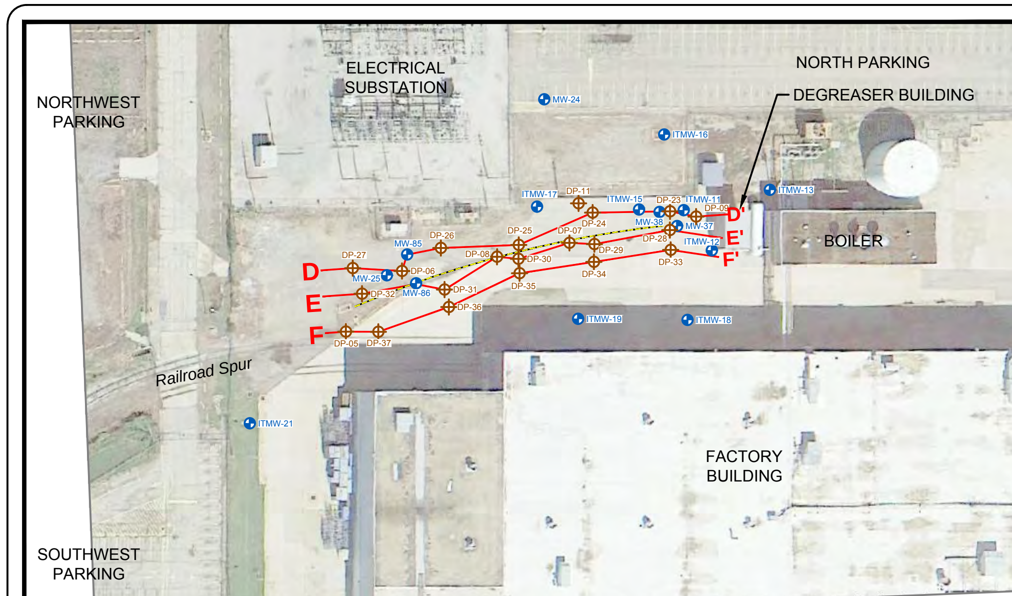
MEMBRANE INTERFACE PROBE CROSS SECTION C - C'

Figure B-4

DRAFTED BY: KTS | DATE: 12/03/2015 | Whirlpool Facility - Fort Smith, Arkansas | PROJECT: 3437500L



CROSS-SECTION D-D'



CROSS-SECTION OVERVIEW

APPROX. SCALE (ft.)
0 150

LITHOLOGY	
SHALE	SAND
CLAY	GRAVEL
SILT	

LEGEND

- DP BORINGS
- MONITORING WELLS
- BORING
- 200 TCE CONCENTRATION (mg/kg)

NOTE:
Vertical Exaggeration is 2.5x.

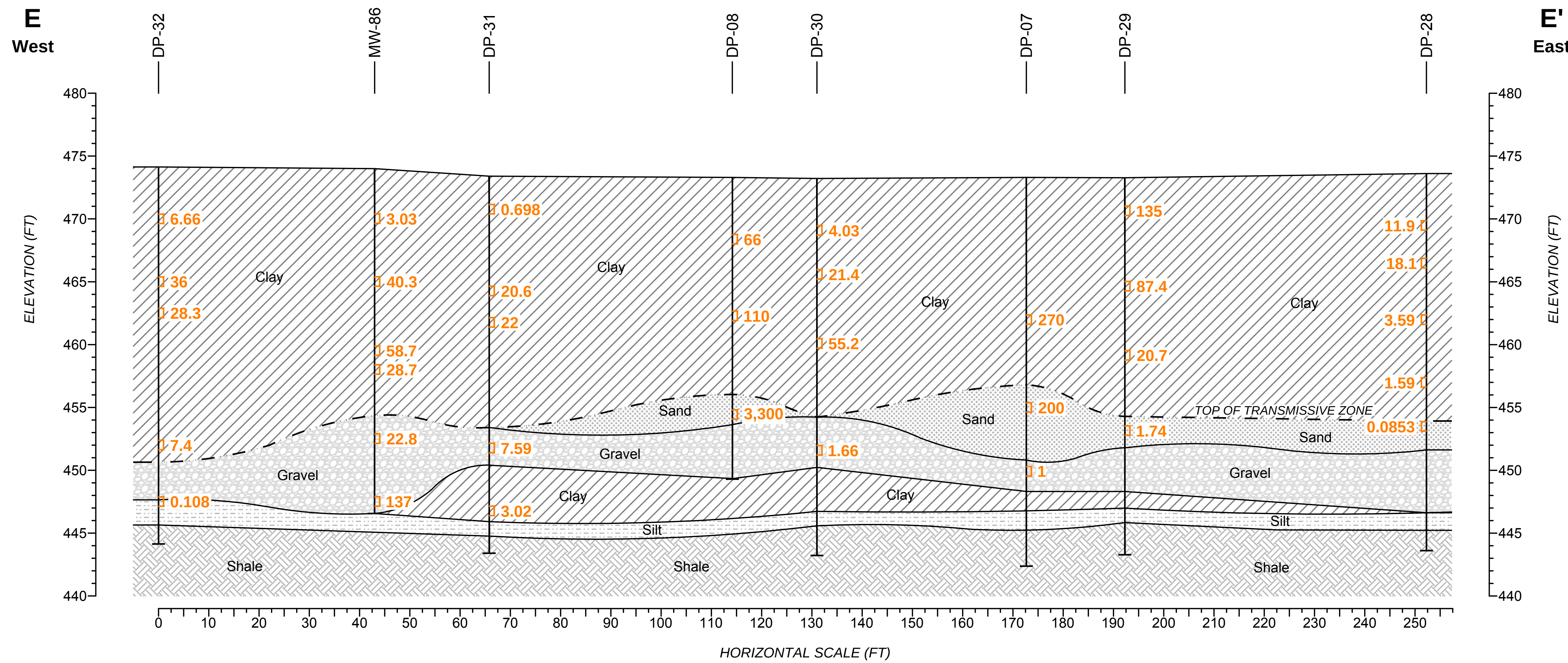
CROSS-SECTION D-D'
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL ENVIRON

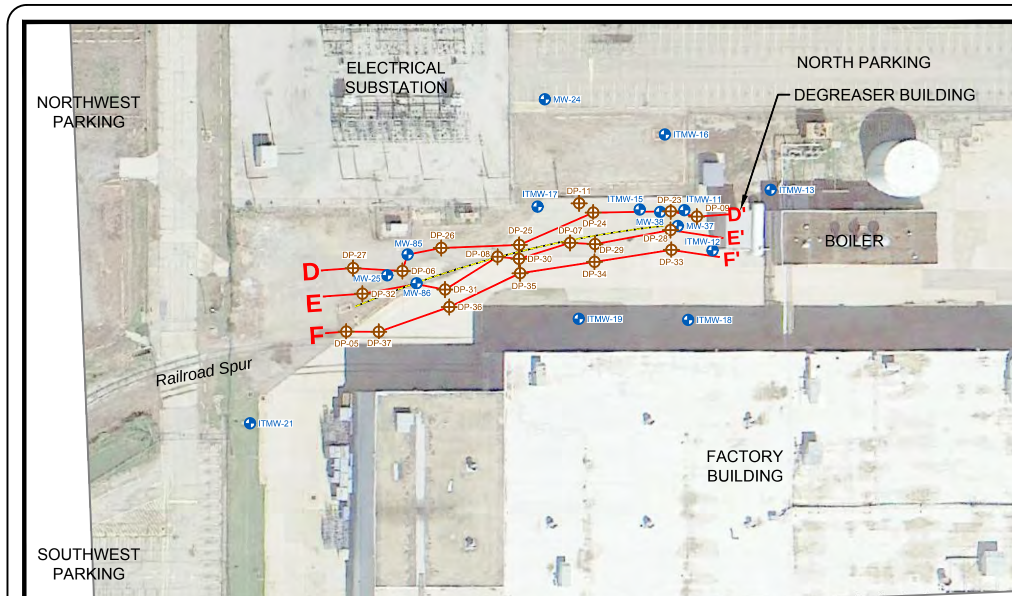
FIGURE
B-5

DRAFTED BY: CKL/ELS | DATE: 1/27/16 | 3437500L

L:\Loop Project Files\00_CAD FILES\34\Whirlpool_Annual-2YR TERR 3437500L\B-5, B-6,B-7_Cross Sections.dwg



CROSS-SECTION E-E'



CROSS-SECTION OVERVIEW

APPROX. SCALE (ft.)
0 150

LITHOLOGY	
SHALE	SAND
CLAY	GRAVEL
SILT	

LEGEND

- DP BORINGS
- MONITORING WELLS
- BORING
- 200 TCE CONCENTRATION (mg/kg)

NOTE:
Vertical Exaggeration is 2.5x.

CROSS-SECTION E-E'
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL ENVIRON

FIGURE
B-6

DRAFTED BY: CKL/ELS | DATE: 1/27/16 | 3437500L

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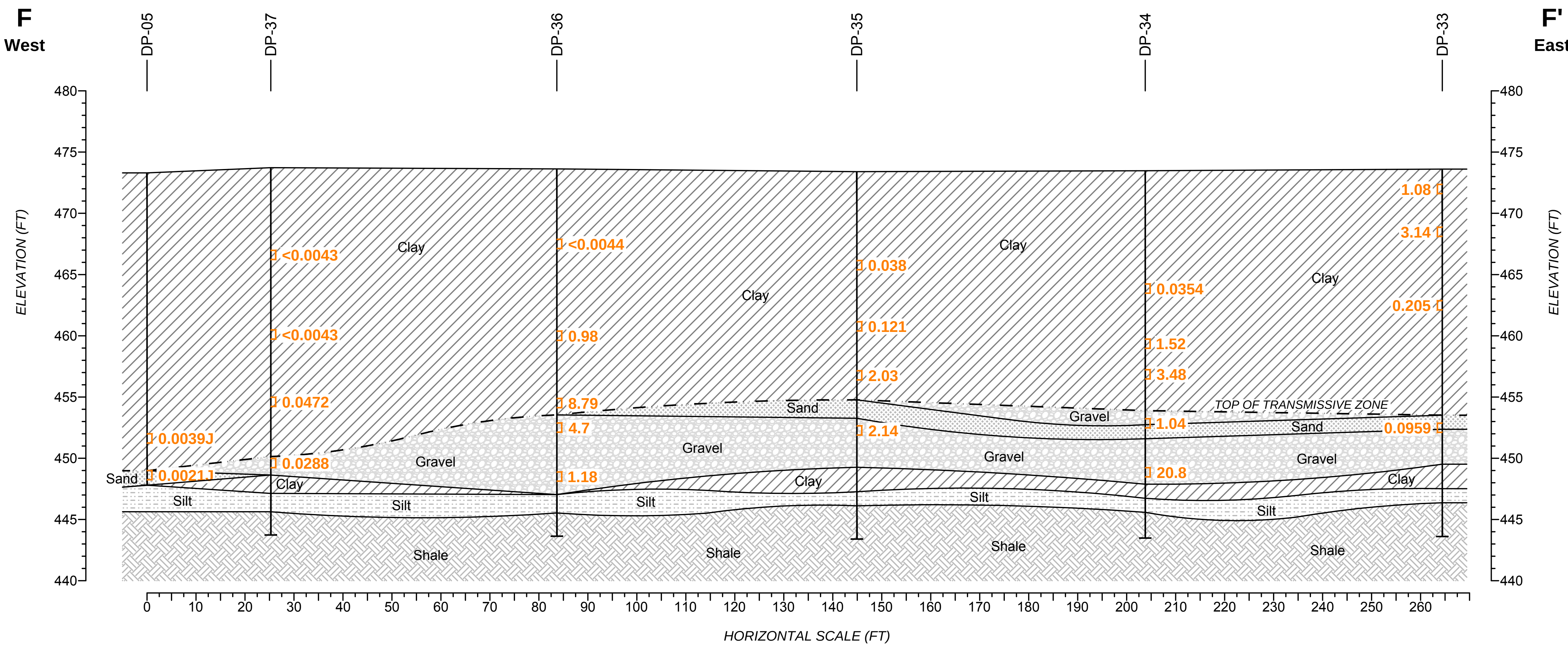
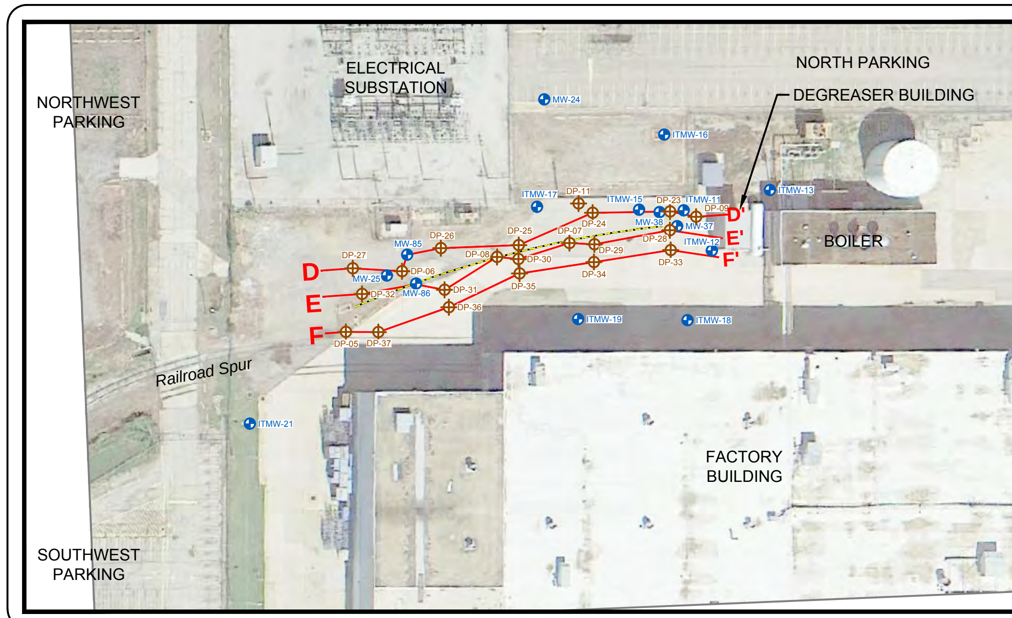


CROSS-SECTION F-F'



N

CROSS-SECTION OVERVIEW

APPROX. SCALE (ft.)
0 150

LITHOLOGY	
SHALE	SAND
CLAY	GRAVEL
SILT	

LEGEND

- DP BORINGS
- MONITORING WELLS
- BORING
- 200 TCE CONCENTRATION (mg/kg)

NOTE:
Vertical Exaggeration is 2.5x.

CROSS-SECTION F-F'
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL ENVIRON

FIGURE
B-7

DRAFTED BY: CKL/ELS | DATE: 1/27/16 | 3437500L

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APPENDIX C
Hydrogeologic and Hydraulic Characteristics

APPENDIX C
HYDROGEOLOGIC AND HYDRAULIC CHARACTERISTICS

This appendix includes a description of the hydrogeologic and hydraulic characteristics associated with fate and transport, as well as a discussion of plume stability and a review of monitored natural attenuation parameters.

HYDROGEOLOGIC AND HYDRAULIC CHARACTERISTICS

The following paragraphs present the hydrogeologic and hydraulic characteristics of the site. The primary groundwater zone at the Site is the Basal Transmissive Zone which is under semi-confined conditions. Groundwater under semi-confined conditions is partially confined by overlying soil layers of low permeability. Though rebound to a state of equilibrium is noted when the groundwater unit is pierced, recharge and discharge can still occur at very low rates through the overlying semi-confining layers. Generally, migration of TCE contamination in groundwater occurs primarily within the more permeable Basal Transmissive Zone and is controlled by the groundwater gradient, lithology and to a more or less extent, depending on the flow regime, the shale surface.

There are discontinuous thin zones of greater permeability within the Upper Fine-Grained Unit. When present the zones of higher sand content are typically logged as moist or wet indicating the presence of perched water. The water present in these zones is defined as perched, as the underlying soil of less permeability impedes the downward migration. It is highly likely that the water content in these zones is seasonal and potentially due to subsurface utilities or other subsurface structures intercepting some of these shallow permeable zones. Due to the discontinuous nature of these zones or lenses of greater permeability, any groundwater movement is minimal and localized.

Basal Transmissive Zone

Evaluation of potentiometric surface maps indicates there are three distinct groundwater flow regimes; the Northern Flow Regime, the Northeastern Flow Regime and Southern Flow Regime. The Northern and Southern Flow Regimes are separated by a groundwater gradient divide (hydraulic divide) that trends east to west just north of the northwestern portion of former manufacturing building and extending to the east. North of this hydraulic divide the groundwater gradient is directed generally to the north/northeast. South of this hydraulic divide the groundwater gradient is directed primarily to the southeast except for a southwestern gradient in the southwestern quadrant of the property. The Northeastern Flow Regime emanates from the northeastern corner of the former manufacturing building and trends northeasterly.

The range of hydraulic conductivities in the Basal Transmissive Zone have been relatively consistent Independent of the testing method used (i.e. slug or pump tests),. The historical range is from a maximum of 3.3E-02 centimeters per second (cm/sec) [93 feet/day (ft/day)] calculated for observation well MW-65 during a pump test using MW-35R as the pumping well (immediately north of Ingersoll Avenue) to a minimum of 3.4E-05 cm/sec (0.1 ft/day) at Slug-

HPT-09 adjacent to DP-14 (under the west central portion of the former manufacturing building). These results are typical of hydraulic conductivities associated with silts, sandy silts and clayey sands.

Southern Flow Regime

The Southern Flow Regime extends south from the east-west groundwater divide located across the northern portion of the Whirlpool Facility. Groundwater flow is generally to the southeast with a component of flow to the southwest, south of MW-29 and west of MW-189. The hydraulic gradient is gradual to the south beneath the facility but steepens to the east and southwest more distant from the former manufacturing building. The observed groundwater flow to the southwest, at the southwest portion of the property, appears to be, at least in part, influenced by the gradient of the competent shale surface below the Lower Basal Transmissive Zone.

The gradient in the Southern Flow Regime is relatively flat beneath the building at approximately 0.0009 feet/foot between wells MW-25 and MW-192 based on gauging data from October 2015. The hydraulic gradient increases to the southwest at approximately 0.004 feet/foot between wells ITMW-5 and MW-187 and steepens to 0.013 feet/foot in the southwest corner of the property between MW-182 and MW-186 based on gauging data from October 2015.

Slug tests completed in the south sentinel wells in October 2015 resulted in estimated hydraulic conductivities ranging from 1.4E-03 cm/sec [4 ft/day or 440 meters/year (m/yr)] at MW-188 to 3.0E-04 cm/sec (1 ft/day or 95 m/yr) at MW-186 (within the range of hydraulic conductivities measured at other locations at onsite and offsite locations).

Northern Flow Regime

The Northern Flow Regime extends from the groundwater divide to the north and northeast. In the Northern Flow Regime, groundwater flows consistently toward the north-northeast without significant seasonal variations. The gradient is quite flat at approximately 0.0005 feet/foot (between MW-83 and MW-46R based upon October 2015 gauging data) near the groundwater divide and extending north from the western portion of the north parking lot to just north of Jacobs Avenue. North of Jacobs Avenue the hydraulic gradient is directed generally to the north-northeast. North of Jacobs Avenue the gradient is to the northeast at approximately 0.01 feet/foot between MW-68 and MW-61 based on 2015 fourth quarter groundwater data.

Additional slug tests were conducted in 2015 at wells within the north portion of the northern flow regime using the rising and falling head slug test methodology. The resulting hydraulic conductivities ranged from 2.5E-04 cm/sec (0.7 ft/day) at TMW-11 to 8.9E-05 cm/sec (0.3 ft/day) at MW-193 (near the lower end of the range of hydraulic conductivities measured at other locations at onsite and offsite locations). Hydraulic conductivities on these orders of magnitude are typically associated with silts, sandy silts and clayey sands.

Northeastern Flow Regime

The Northeastern Flow Regime extends from the groundwater divide at the northeast corner of the manufacturing building to the northeast. In the Northeastern Flow Regime, groundwater flows consistently toward the north northeast without significant seasonal variations. In this flow regime, the groundwater flow direction is more easterly than northeasterly. The gradient in this area is a bit steeper than in the other flow regimes. The gradient is to the east at approximately 0.02 feet/foot between MW-90 and MW-98 based on 2015 fourth quarter groundwater data.

A slug test was completed at MW-184 in the northeastern flow regime resulting in a hydraulic conductivity of 1.7E-04 cm/sec (0.5 ft/day). Hydraulic conductivities on this order of magnitude are typically associated with silts, sandy silts and clayey sands.

PLUME STABILITY

In order to analyze the stability of the northern, northeastern, and southern groundwater plumes at the Site, several analytical tools or “lines of evidence” were used to evaluate overall plume stability including:

- **Statistical Methods.** A Mann-Kendall nonparametric test (Gilbert, 1987; USEPA, 2000) to calculate the temporal trend in individual well analyte concentrations over time. The statistical test evaluated individual wells and the results are discussed in four groupings: northern plume wells, northeast corner plume wells, southern plume wells and source area wells (subset of southern plume wells).
- **Isoconcentration Maps.** A qualitative method to evaluate temporal trends by comparing periodic representations of both the extent of the TCE plume and TCE concentrations within the plume over the duration of monitoring.
- **Time vs. Concentration Plots.** A qualitative method to evaluate temporal trends in constituent concentration for both individual wells and for mean representative concentrations in the overall plume. The plots also include exponential regression lines to aid the analysis of temporal trends.

A historical summary of TCE and its degradation products cis-1, 2-DCE and VC concentrations in groundwater is updated based on analytical results from each quarterly sampling event and the latest update is provided in Table 3-2, (Two Year Technical Review Report, January 2016). These values are used for the analysis of trends described in the remainder of this section. For purposes of the following discussion, the wells at the Site that have been categorized as those located in the northern plume, include MW-23 and wells to the north of MW-23 characterized by a groundwater gradient towards the north-northeast. The wells at the site that have been categorized as those located in the northeast corner plume are those wells located generally northeast of MW-22 characterized by hydraulic gradients to the northeast. The wells at the site that have been categorized as those located in the southern plume are those wells located generally south of MW-23, (characterized by groundwater gradient towards the south-southeast) and source area wells. Source area wells are a subset of the southern plume wells, located near the northwestern corner of the Whirlpool manufacturing building characterized by TCE concentrations greater than 1,000 µg/L. The following is the list of wells in each category:

- **Northern Plume Wells (42 wells)**. MW-23, MW-27, MW-28, MW-31/31R, MW-32/32R, MW-33/33R, MW-34/34R, MW-35R, MW-36/36R, MW-39/39R, MW-40/40R, MW-41/41R, MW-46R, MW-50, MW-55/55R, MW-56/56R, MW-57/57R, MW-58/58R, MW-60, MW-61, MW-62/62R, MW-63/63R, MW-65, MW-66, MW-67/67R, MW-68, RW-69, MW-70, MW-71, IW-72, IW-73, IW-74, IW-75, IW-76, IW-77, IW-78, IW-79, IW-80, MW-81, MW-82, MW-83 and MW-84.
- **Northeast Corner Wells (9 wells).** MW-87, MW-88, MW-89, MW-90, MW-91, MW-96, MW-97, MW-98 and MW-99.
- **Southern Plume Wells (35 wells)**. ITMW-1, ITMW-2, ITMW-3, ITMW-4, ITMW-5, ITMW-6, ITMW-7, ITMW-9, ITMW-10, ITMW-11, ITMW-12, ITMW-13, ITMW-14, ITMW-15, ITMW-16, ITMW-17, ITMW-18, ITMW-19, ITMW-20, ITMW-21, MW-22, MW-24, MW-25, MW-26, MW-29, MW-30, MW-37, MW 38, MW-85, MW-86, MW-92, MW-93, MW-94, MW-95 and MW-172.
- **Source Area Wells (16 wells all of which are part of the Southern Plume)**. ITMW-11, ITMW-12, ITMW-15, ITMW-17, ITMW-18, ITMW-19, MW-25, MW-37, MW-38, MW-85, MW-86, MW-92, MW-93, MW-94, MW-95 and MW-172.

Statistical Analysis of Temporal Trends

The possible outcomes of the temporal trend analysis are as follows:

- **Increasing**. Statistically significant increasing trend for concentrations (>90% confidence);
- **Stable.** No statistically significant trend for concentrations along with low variability for results (coefficient of variance <1);
- **No Trend**. No statistically significant trend for concentrations along with high variability for results (coefficient of variance >1);
- **Decreasing**. Statistically significant decreasing trend for concentrations (>90% confidence);
- **<PQL (Practical Quantitation Limit).** All sample results have a “J” qualifier (estimated result greater than the method detection limit but less than the reporting limit) or a mixture of non-detects and results with “J” qualifiers; and
- **Not Detected (ND).** Constituent has not been detected at the well during the time period analyzed.

- The trend analyses performed for groundwater concentrations from 2009 (when installation of the last of the current wells used for monitoring was complete) through the fourth quarter 2015 are summarized in Table C-1 (two wells, MW-42B and MW-43 were properly abandoned in October 2014 and were sampled fewer than four times during this period and no statistical evaluation was performed for these wells). The newly installed monitoring wells (MW-182, MW-185 through MW-192) were sampled fewer than four times and no statistical evaluation has been performed for these wells.

Isoconcentration Maps

Isoconcentration maps are generated for the north plume (including the northeast corner) and the south plume each quarter based on results of the quarterly monitoring events. As new wells were installed throughout 2014 and 2015, analytical results from newly installed and sampled wells were utilized to refine the understanding of the plume characteristics and incorporated into the quarterly plume maps. Figure 3-3 and Figure 3-4, (Two Year Technical Review Report, January 2016), present isoconcentration lines at the southern and northern plumes (respectively) representing the 2015 fourth quarter groundwater monitoring results inclusive of the December performance monitoring event (monitoring for fourth ISCO injection and ISCR pilot study).

The 2014 second quarter groundwater monitoring event was the first time that the TCE concentration at MW-61 (toe of Northern plume) exceeded 5 µg/L, requiring that the isoconcentration line extend to include MW-61. This trend continued through the fourth quarter 2015 event, with a TCE concentration of 11.7 µg/L reported at MW-61R. However, an ISCR pilot test was performed at MW-61R commencing in late September 2015. The TCE concentration in MW-61R has been reduced to 5 µg/L by December 2015.

The reduction in TCE concentrations following ISCO injections has resulted in the following continuing trends:

- The apparent separation of the northern plume from the southern plume (appears to be contained within site boundaries) to the south of Ingersoll Avenue as shown on Figures 3-3 and 3-4;
- The continuing separation of the northern plume with concentrations greater than 100µg/L is evident in Figures 3-3 and 3-4;
- Further reduction in TCE concentrations in the source area have reduced the size of the source area plume as shown on Figure 3-3, and
- The southern plume does not appear to be moving offsite.
- The northeastern plume extends into off-site areas near the site boundary beyond well MW-89 (Figure 3-4)
- All northeastern plume wells with TCE concentrations in excess of 100 µg/L appear to be located on-site with the off-site wells exhibiting maximum TCE concentrations only marginally exceeding the MCL.
- TCE concentrations in MW-96 through MW-99 on the Boys & Girls Club property continue to be below detection limits (i.e. less than 0.17 µg/L).

The reduction in TCE concentrations following ISCO injections has resulted in the following continuing trends:

- The apparent separation of the northwest plume from the southern plume to the south of Ingersoll Avenue,
- The continuing separation of the northwest plume with concentrations greater than 100 µg/L is evident.

Concentration vs. Time Plots

In addition to the concentration versus time plots for the average concentrations of detected TCE, cis-1,2-DCE and VC for each plume (section 4.2), TCE and cis-1, 2-DCE concentration versus time charts are provided for pairs of wells located across the site. In the north plume Figures C-1 and C-2 show that concentrations for TCE and cis-1, 2-DCE continue to show increasing trends at both MW-56/56R and MW-57/57R in the northern plume. As shown on Figure C-3 and C-4, concentrations of TCE and cis-1, 2-DCE exhibit a decreasing trend at IW-76 and IW-77 in the north plume. TCE and cis-1, 2-DCE concentrations in IW-77 also change between spring and fall sampling events. Historically, higher concentrations for TCE and cis-1, 2-DCE at IW-77 occurred in the fall and lower concentrations were reported in the spring. However, these seasonal concentration changes in IW-77 appear to be interrupted by the ISCO events in Area 3 causing TCE and cis-1,2-DCE concentrations to trend downward during sampling events in the third and fourth quarters (see Table 10 of the Fourth Quarter 2014 Groundwater Monitoring Report) of 2015 (VC concentrations are below detection limits at IW-77).

TCE and cis-1,2-DCE concentration versus time charts are also provided for a pair of wells located in the northeast corner plume (Figures C-5 and C-6). These figures show that concentrations for both TCE and cis-1, 2-DCE continue to show increasing trends at both MW-87 and MW-91 in the northeast corner plume.

TCE and cis-1, 2-DCE concentration versus time charts are also provided for pairs of wells located in the south plume and source area (Figures C-7 and C-8). Although TCE concentrations continue to increase in ITMW-10 (primarily during the seven most recent sampling events), concentrations of cis-1, 2-DCE in ITMW-10 and in nearby ITMW-9 have been decreasing. The concentration of TCE at ITMW-9 shows a stable trend.

NATURAL ATTENUATION

Consistent with USEPA guidance three lines of evidence were evaluated to assess the natural attenuation of chlorinated solvents.[1] The three lines of evidence include:

- Historical groundwater and/or soil chemistry data that demonstrate a significant trend of decreasing contaminant mass and/or concentration over time at appropriate monitoring points (USEPA, 1998).

[1] Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater (US EPA 1998) and An Approach for Evaluating the Progress of Natural Attenuation in Groundwater (US EPA 2011)

- Hydrogeologic and geochemical data that can be used to establish indirectly the type(s) of natural attenuation processes occurring at the site and the rate at which the processes will reduce contaminant concentrations to the cleanup goal (USEPA, 1998).
- Data from field or microcosm studies which directly demonstrate the occurrence of a specific natural attenuation process at the site and its capacity to degrade the COCs (USEPA, 1998).

The MNA assessment evaluates predominant electron acceptors, the variability of these electron acceptors, major nutrients, general groundwater quality, key microbial population and enzyme activities, and dissolved gasses. The assessment uses this data to determine the types of organisms that will be able to effectively flourish in the aquifer, how the geochemistry and chemistry of the aquifer impacts MNA processes, how the indigenous microbial population is being supported, the availability of microbial populations, and the presence of reductive dechlorination occurring in the aquifer.

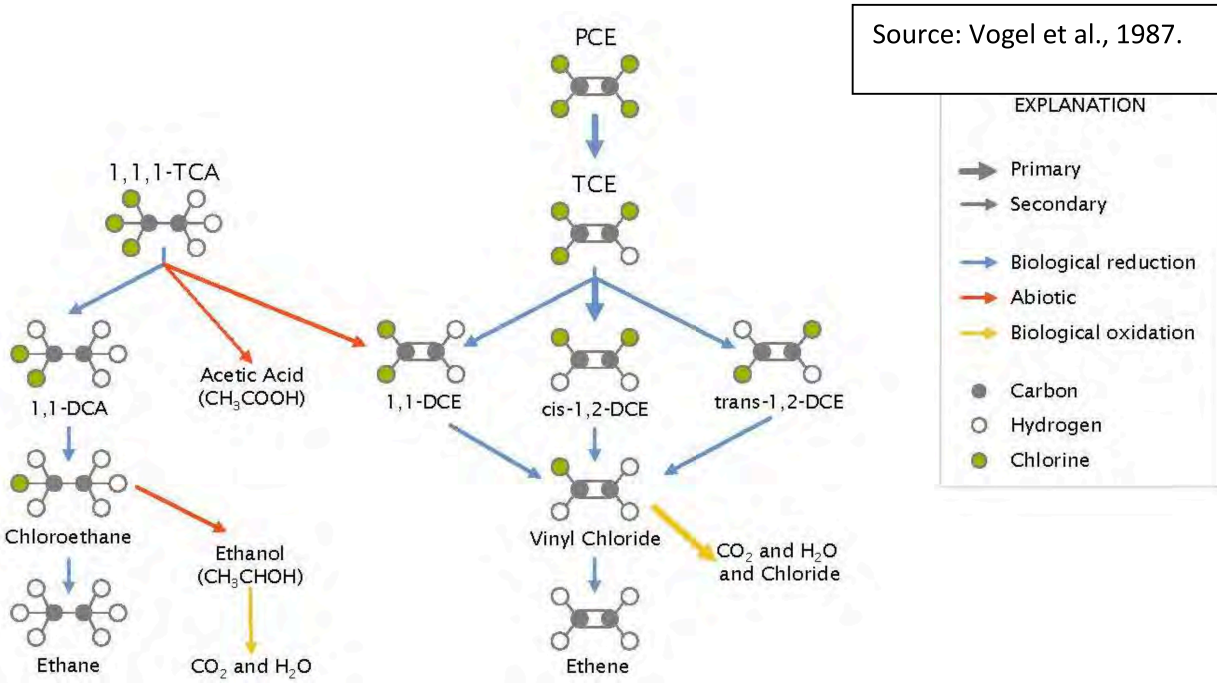
This section presents an evaluation of the natural attenuation data that were collected from the Site commencing with the 2014 first quarter event and continuing through the 2015 fourth quarter event.

Chemical Lines of Evidence

The occurrence and progress of natural attention in reducing COC concentrations is established by evaluating the presence and effectiveness of the transformation pathways for chlorinated ethenes. Chlorinated ethenes are degraded by both biological and abiotic (non-biological) mechanisms. The diagram below shows the biological (anaerobic) and abiotic transformation pathways for chlorinated ethenes. This diagram does not include other chemically induced aerobic (e.g. ISCO) and anaerobic (e.g. zero valent iron) pathways that can promote degradation of chlorinated compounds.

Abiotic and Biotic Pathways for Chlorinated Ethenes and Ethane

Source: Vogel et al., 1987.



Historical COC Groundwater Data

Northern Plume

The analytical results for VOCs in groundwater demonstrate that natural attenuation of TCE is occurring via biological mechanisms in some areas of the Northern plume, which contains significantly lower concentrations of TCE than the Southern plume. Groundwater samples from northern monitoring wells that displayed elevated (>10 µg/L) concentrations of cis-1,2-DCE, a biodegradation daughter product of TCE, on a regular basis included: IW-73, IW-74, MW-33, MW-41, MW-46R, MW-56R, MW-58, MW-87, and MW-91. These results indicate that reductive dechlorination is occurring in various northern wells with elevated TCE concentrations. In addition, vinyl chloride (VC), a biodegradation product of cis-1,2-DCE, has been observed in groundwater samples from the following monitoring wells at low levels: IW-73, IW-74, MW-30, MW-33, MW-41, MW-46R, MW-56R, MW-58, MW-87, and MW-91. Concentrations of cis-1,2-DCE have been increasing in some of the northeastern wells, such as MW-87 and MW-91, which indicates that bioattenuation of TCE is occurring in the northern plume in some areas. Low levels of ethene (>1 ug/L), which is the non-harmful final reductive dechlorination byproduct, were observed in the following monitoring wells during the past two years: IW-73, MW-33R, MW-40R, MW-41R, MW-55R, MW-56R, MW-58R, MW-60R, MW-61R, MW-63R, MW-67R, MW-82 and MW-90.

Southern Plume

The analytical results for VOCs in groundwater demonstrate that natural attenuation of TCE is occurring via biological mechanisms in some areas of the southern plume. Groundwater samples from onsite monitoring wells: ITMW-17, MW-25, MW-38, MW-86, MW-93, MW-94, and MW-95 have displayed elevated (>50 µg/L) concentrations of cis-1,2-DCE, a biodegradation daughter product of TCE on a regular basis. These results indicate that reductive dechlorination is occurring in various onsite wells with elevated TCE concentrations. In addition, vinyl chloride (VC), a biodegradation product of cis-1,2-DCE, has been observed in groundwater samples from onsite monitoring wells ITMW-10, ITMW-17, MW-25 except for fourth quarter 2015, MW-38, MW-86, MW-92, MW-93, MW-94, and MW-95. Concentrations of cis-1,2-DCE have been increasing in some of the onsite wells, such as MW-38, which demonstrates that bioattenuation of TCE is occurring in the southern plume in some areas. Likewise, low levels of ethene, which is the non-harmful final reductive dechlorination byproduct, were observed in the following monitoring wells during the past two years: ITMW-2, ITMW-4, ITMW-6, ITMW-7, ITMW-9, ITMW-15, ITMW-20, and MW-38, which provides further support that complete reductive dechlorination is occurring in some locations.

Geochemical Lines of Evidence

The occurrence and progress of natural attenuation in reducing COC concentrations is provided by evaluating geochemical parameters along with the results of conventional chemical and microbial analyses. The detection of cis-1,2-DCE in groundwater samples from this Site is evidence that conditions likely are favorable for active reductive dechlorination processes. Key parameters used to assess the progress of reductive dechlorination include: temperature, concentration or presence of electron acceptors (dissolved oxygen, nitrate, iron, manganese and sulfate), presence and amount of nutrients (e.g. concentrations of nitrogen and phosphorus), bioavailable carbon source to sustain microbial population, concentrations of COCs and pH.

In conjunction with chemical and microbial analyses, monitoring of geochemical conditions can provide an indirect measure of the predominant microbial processes occurring in the groundwater. The presence of cis-1,2-DCE in groundwater at this site clearly indicates that conditions are favorable for reductive dechlorination in various locations of the northern plume. Other key factors that affect the success of natural attenuation include hydrogeology, temperature, electron acceptors [dissolved oxygen (DO), nitrate, iron, manganese and sulfate], aquifer minerals, nutrients (nitrogen and phosphorus), bioavailability of COCs and pH. These are discussed in the following paragraphs.

Dissolved Oxygen

During the past two years, the groundwater was generally considered to be under bulk aerobic conditions, with the majority of the wells showing DO concentrations greater than 1 mg/L. Figures C-9 and C-10 show the average DO concentrations in the northern and southern plumes over time and the average DO for those wells impacted by the ISCO injection. The results in figures indicate that the ISCO injection significantly increased the DO levels for approximately three quarters. Thereafter, the DO levels returned to approximately native conditions. Although the DO of many groundwater samples showed aerobic conditions, there appears to be anaerobic microniches within the areas around several of the wells, as indicated by the elevated levels of the reductive dechlorination byproduct cis-1,2-DCE. For example, even though the DO levels of MW-33, MW-56, MW-87 and MW-91 were greater than 1 mg/L during the past two years, significant levels of cis-1,2-DCE were detected in these wells. Also even though the DO or ITMW-17 was greater than 8 mg/L in the fourth quarter 2015 sampling event, significant levels of cis-1,2-DCE and VC were both detected in this well. These types of processes have been documented in the literature (Enzien et al., 1994).

ORP

The average ORP of the groundwater ranged from approximately 100 millivolts (mV) to 230 mV in the wells non-impacted by the ISCO injections in the Northern Plume (Figure C-11), and approximately 100 millivolts (mV) to 270 mV in the wells not impacted by the ISCO injections (Figure C-12) for the Southern Plume. Similar to the DO levels, the ISCO injections increased the ORP levels in groundwater impacted by the injections. In general, the ORP levels were less than 350 mV and as low as about negative 150 mV (Northern Plume), and less than 300 mV and as low as negative hundreds of mV (Southern Plume), which indicates that the groundwater is under manganese to sulfate reducing conditions. Reductive dechlorination has been observed under manganese to sulfate reducing conditions (Wiedemeier et al., 1999). Groundwater exhibiting high ORP levels are typically impacted by oxidant from ISCO injection areas.

pH

Figures C-13 and C-14 present the average pH for non-impacted ISCO wells and ISCO-impacted wells in the Northern and Southern Plumes respectively. The results in thes figures indicate that the average pH for the non-impacted ISCO wells was about pH 6. The ISCO injections significantly raised the pH for more than a year. Most microbial enzymatic reactions prefer a relatively neutral pH range from 6 to 8, which is conducive to a wide group of microorganisms, including those microbes that are able to biodegrade TCE and the daughter products. The majority of the wells displayed pH levels between 5 and 6.

In the Northern Plume, the pH of the groundwater typically ranged from a low around 4.3 to a high of about 14; however, the elevated pH levels were only observed on a sporadic basis and are not a general characteristic of the groundwater quality. The majority of the wells displayed pH levels between 5 and 8.

Alkalinity

The alkalinity of the groundwater is relatively low with many of the groundwater samples showing alkalinity concentrations less than 100 mg/L. In the Northern Plume, during the past two years, several wells showed alkalinity equal to or greater than 100 mg/L including IW-72 IW-80, MW-35R, MW 50, MW-60, MW-61, MW-65, MW-66, and MW-67. Several of the Southern plume wells showed total alkalinity equal to or greater than 100 mg/L including , MW-25, MW-38, ITMW-6, ITMW-11, ITMW-15, ITMW-19, MW-86, MW-92, MW-188. The relatively low alkalinity concentrations in some parts of the plume indicate that the groundwater does not have significant natural buffering capacity in these areas. Therefore, a pH adjustment may be needed in some areas of the plume for enhanced in situ bioremediation to be effective.

Nitrate, Manganese, Iron and Sulfate

The major competing electron acceptors for reductive dechlorination include nitrate, manganese, iron and sulfate, which were evaluated in groundwater samples.

Nitrate levels were generally present at less than 1 mg/L in most of the monitoring wells; see Figures C-15 and C-16 for northern and southern plume. Manganese concentrations were relatively low in site groundwater with the most of the wells displaying less than 1 mg/L. Total iron was present in the majority of the groundwater samples at 10 mg/l or less with the exception of MW-184. Figures C-17 and C-18 show the average total iron and ferrous iron levels in the non-ISCO impacted northern and southern plume wells and in the wells impacted by ISCO. The results in these figures indicate that the ISCO injections, which increased the DO levels in the groundwater, likewise oxidized the ferrous iron, thereby reducing the levels of ferrous iron in the groundwater in these areas. These results indicate that iron reducing conditions are not a predominant process in the northern or southern plume. Sulfate concentrations were generally less than 1,000 mg/L with the exception of ITMW-15, ITMW-18, ITMW-19, MW-25, MW-85, MW-86, and MW-182. Figures C-19 and C-20 shows the average sulfate concentrations in the non-ISCO impacted wells and the ISCO impacted wells for the northern and southern plumes respectively. These figures indicate that the wells impacted by the ISCO injections displayed significantly higher sulfate levels in the groundwater. During the past two years of monitoring, nitrate, iron and manganese concentrations have remained fairly stable in the northern plume. However, the sulfate concentrations were significantly impacted by the ISCO injections. It is important to note that after DO levels return to native anaerobic conditions, such as in ITMW-11 and ITMW-12, reductive dechlorination may be able to occur under sulfate reducing conditions if TOC is not limiting to the indigenous or bioaugmented microbes.

Dissolved Gasses

Dissolved gasses methane, ethane, and ethene were present in low or non-detect levels. Ethene levels remained relatively unchanged over the two year period, with ethene levels greater than 1 ug/L observed in the following wells: MW-33R, MW-38, MW-40R, MW-41R, MW-55R, MW-56R, MW-58, MW-61R, MW-63R, MW-67R and MW-82. The levels of ethene in MW-38 and MW-61R corresponded to the higher levels of DHC and BAV1 vinyl chloride reductase present in this well. The results from these wells demonstrate that reductive dechlorination is occurring and the potential exists for enhanced in situ biodegradation in the northern plume.

Total Organic Carbon

TOC levels were generally less than 2 mg/L. The low TOC levels are probably inhibiting bacterial growth, which is likewise inhibiting reductive dechlorination in various areas. The TOC level in MW-61R significantly increased to 1,620 mg/L, which was due to the injection of organic substrates in this area to promote enhanced in situ anaerobic biodegradation of chlorinated VOCs in this area.

Ammonia and Phosphate

Major nutrients, ammonia and phosphate, were evaluated in groundwater and the results indicate that the groundwater contains relatively low levels of ammonia with many wells displaying less than 0.10 mg/L, However, a few wells showed ammonia levels equal or greater than 0.39 mg/L including MW-23, MW-35R, MW-65, MW-82, MW-83, and MW-84, and IW-77 (Northern Plume). In the Southern Plume a few wells showed ammonia levels equal or greater than 0.29 mg/L including ITMW-4, ITMW-7, MW-85, and MW-86. MW-61R recently displayed an ammonia level of 8.1 mg/L, which was the result of the carbon and nutrient amendments injected in the area of MW-61R. These elevated levels of nutrients would readily support the growth of the indigenous and bioaugmented microbial population. Similar to ammonia, phosphate was detected at relatively low concentrations less than 0.5 mg/L in most of the wells with the exception of MW-23 and MW-61R, which displayed 27.1 mg/L and 3.6 mg/L phosphate, respectively. Average nutrient levels, including ammonia, nitrate, nitrite, and total phosphate have shown relatively consistent levels in the Northern and Southern plumes and indicate that inorganic nutrients nitrogen and phosphorous may be present in concentrations that are limiting microbial growth in this plume.

Microbial Lines of Evidence

Quantitative polymerase chain reaction (qPCR) is a molecular biological tool that is used targeted members of the microbial community deemed critical for site remediation. While a number of bacterial cultures have been isolated that are capable of utilizing tetrachloroethylene (PCE) and TCE as growth supporting electron acceptors (Gerritse et al., 1999; and Loffler et al., 1996), Dehalococcoides spp. are the only bacterial group that has been isolated to date which is capable of complete reductive dechlorination of PCE to ethene (Maymó et al., 1999). The presence of Dehalococcoides spp. has been associated with complete reductive dechlorination of PCE to ethene at sites across North America and Europe (Hendrickson et al., 2002). Thus, qPCR quantification of Dehalococcoides can be used to evaluate the likelihood of complete reductive dechlorination of PCE and TCE under MNA conditions.

The DHC microbial population was detected at significant levels in the Northern Plume in the following wells: IW-73, IW-74, MW-60R, MW-61R, MW-67R, MW-88, and MW-90. In addition, elevated levels of BVC were also observed in IW-73 and IW-74, which indicates that complete reductive dechlorination is possible in these locations. Although, several of the wells with significant DHC levels displayed low or non-detect concentrations of chlorinated VOCs, the environmental conditions around these wells would be conducive to biodegradation of chlorinated VOCs. In the Southern Plume the DHC microbial population was consistently detected at elevated levels in MW-38; a location that is relatively close to the source area. Likewise, the BVC gene was also detected at elevated levels in MW-38, which indicates the potential for complete reductive dechlorination in this area. The following wells displayed DHC concentrations greater than 30 cells/mL during the past two years: MW-22, MW-38, ITMW-7, and ITMW-18.

Figures C-21 and C-22 show the DHC levels over time for the non-ISCO and ISCO impacted wells for the northern and southern plume respectively. The results in demonstrate that the ISCO injection had a negative impact on the DHC population, which is to be expected since DHC growth is inhibited by elevated DO levels in groundwater.

The DHC population generally peaked during the monitoring event in August 2014. The bulk of the microbial population is located within the source area and the peak occurred in between the second and third ISCO injection events in June and October 2014. To date the highest population of DHC has been identified at MW-38. Pre-ISCO application the population was approximately 50,000 cells/mL. The population peaked at almost 150,000 cells/mL in August 2014, and has since decreased to approximately 7,700 cells/mL. Although the DHC population has declined since the last ISCO injection, various field studies have shown that DHC populations can rebound to native levels within a relatively short time period after ISCO injections (Sutton et al., 2011).

Summary of Natural Attenuation Results

The chemical, geochemical and microbial results strongly indicate that natural attenuation of VOCs is occurring via various mechanisms in multiple portions of the southern, northern and northeastern plumes. The VOC data attest that reductive dechlorination of TCE is transpiring as indicated by the presence of cis-1,2-DCE and VC, which are daughter products of TCE biodegradation.

The following wells in the northern plume displayed elevated levels of cis-1,2-DCE and VC:

- IW-73, IW-74, MW-33R, MR-46R, MW-56R, MW-57R, MW-58R, MW-71, MW-87 and RW-69.

The following wells in the southern plume displayed elevated levels of cis-1,2-DCE and VC:

- ITMW-17, MW-25, MW-38, MW-86, MW-93, MW-94 and MW-95.

In addition, the following wells showed elevated levels of DHC and BAV1 as well as the presence of ethene:

- IW-73, MW-46R and MW-60R.

It is important to note that MW-61R, the downgradient well of the enhanced in situ biochemical reduction injections, also displayed significant increases in DHC and BAV1 and also observed decreases in VOC concentrations as a result of the ISCR pilot study.

The water quality results for monitoring wells IW-73 and MW-46R demonstrate how natural attenuation is occurring via biological mechanisms in the areas around these well. The combination of increased levels of cis-1,2-DCE and VC, along with the production of the benign end product, ethene, provide data to support natural attenuation of VOCs in groundwater. These data are consistent with the low levels of DO and ORP observed in these wells. Even though the TOC concentration in these well was less than 1 mg/L, reductive dechlorination was able to occur under these conditions, which would indicate that enhanced anaerobic biodegradation of VOCs may require low levels of carbon to enhance this process.

The natural attenuation water quality results for monitoring well MW-38 clearly demonstrate how bioattenuation is actively occurring in the area of this well. The elevated levels of cis-1,2-DCE and VC were observed all eight quarters. Likewise, high levels of the benign end product, ethene, were also observed in this well. These data are consistent with the low levels of DO and ORP observed in this well and most importantly with the elevated levels of DHC and BVC. Even though the TOC of the groundwater in this well was less than 3 mg/L, reductive dechlorination was able to occur under these conditions, which would indicate that enhanced anaerobic biodegradation of chlorinated VOCs may require low levels of carbon to enhance this process. Although the chlorinated VOC results for MW-25, ITMW-11, ITMW-12 and ITMW-18 demonstrate that reductive dechlorination is occurring at these locations, these wells did not display elevated levels of DHC or the genes responsible for VC degradation. Therefore, at these locations the microbes responsible for TCE biodegradation may be attached to the aquifer sediments.

In summary, the combined MNA results provide tangible support that biodegradation processes are contributing to the degradation of VOCs in some areas of the northern plume and southern plume.

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SUMMARY OF STATISTICAL TEMPORAL TREND ANALYSIS (2009 to 2015)
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Start Date	End Date	Number of Samples	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
Northern Plume Wells						
MW-23	4/27/2009	10/8/2015	18	Stable	Increasing	ND
MW-27	5/12/2010	10/7/2015	15	No Trend	<PQL	ND
MW-28	10/29/2009	10/7/2015	17	<PQL	ND	ND
MW-31	4/25/2009	10/6/2015	15	No Trend	ND	ND
MW-32	4/25/2009	10/7/2015	16	Decreasing	<PQL	ND
MW-33	4/25/2009	10/8/2015	18	Decreasing	Decreasing	<PQL
MW-34	4/24/2009	10/8/2015	17	Decreasing	<PQL	ND
MW-35R	4/24/2009	10/7/2015	18	Decreasing	Decreasing	ND
MW-36	4/24/2009	10/6/2015	19	No Trend	ND	ND
MW-39	4/24/2009	10/7/2015	16	No Trend	ND	ND
MW-40	4/24/2009	10/6/2015	19	<PQL	<PQL	ND
MW-41	4/24/2009	10/6/2015	20	Stable	Stable	<PQL
MW-46R	4/25/2009	10/7/2015	22	Stable	Stable	<PQL
MW-50	4/24/2009	10/6/2015	16	<PQL	ND	ND
MW-55	4/24/2009	10/6/2015	10	Increasing	<PQL	<PQL
MW-56	4/24/2009	10/6/2015	15	Increasing	Increasing	<PQL
MW-57	4/24/2009	10/6/2015	15	Increasing	Increasing	<PQL
MW-58	4/25/2009	10/8/2015	17	Decreasing	Stable	Stable
MW-60	4/24/2009	10/6/2015	16	<PQL	ND	ND
MW-61	4/24/2009	10/8/2015	16	Increasing	ND	ND
MW-62	4/24/2009	10/6/2015	15	<PQL	ND	ND
MW-63	4/24/2009	10/8/2015	16	Stable	Increasing	<PQL
MW-65	4/24/2009	10/7/2015	14	Decreasing	Decreasing	ND
MW-66	4/25/2009	10/6/2015	16	Increasing	<PQL	ND
MW-67	4/25/2009	10/6/2015	16	Increasing	ND	ND
MW-68	1/15/2009	10/6/2015	16	No Trend	ND	ND
RW-69	1/15/2009	10/6/2015	21	Decreasing	Stable	<PQL
MW-70	11/4/2010	10/16/2013	7	Stable	Decreasing	<PQL
MW-71	10/28/2009	10/6/2015	17	Stable	Stable	<PQL
IW-72	1/16/2009	10/6/2015	18	Decreasing	ND	ND
IW-73	4/23/2009	10/6/2015	15	Decreasing	No Trend	Increasing
IW-74	4/23/2009	10/7/2015	15	Stable	Stable	Increasing
IW-75	1/16/2009	10/15/2013	5	No Trend	<PQL	ND
IW-76	4/23/2009	10/6/2015	17	Decreasing	Decreasing	No Trend
IW-77	4/23/2009	10/8/2015	24	Stable	Stable	<PQL
IW-78	10/25/2011	9/11/2014	7	Stable	Stable	ND
IW-79	10/25/2011	9/11/2014	7	Decreasing	Stable	<PQL
IW-80	4/23/2009	10/6/2015	16	Decreasing	<PQL	ND
MW-81	5/29/2014	10/8/2015	7	Decreasing	Decreasing	<PQL
MW-82	5/28/2014	10/6/2015	7	Decreasing	Decreasing	<PQL
MW-83	5/23/2014	10/8/2015	7	Decreasing	Decreasing	ND
MW-84	5/27/2014	10/7/2015	7	Decreasing	No Trend	<PQL
Southern Plume Wells (includes Source Area Wells as indicated by bold font well ID)						
ITMW-1	10/27/2011	10/7/2015	13	Decreasing	Decreasing	ND
ITMW-2	11/3/2010	10/6/2015	15	<PQL	<PQL	ND
ITMW-3	11/4/2010	10/15/2013	6	Decreasing	<PQL	ND
ITMW-4	10/25/2011	10/7/2015	11	Decreasing	Stable	No Trend
ITMW-5	4/27/2009	10/16/2013	10	Stable	Decreasing	<PQL
ITMW-6	10/28/2009	10/7/2015	15	Increasing	Increasing	<PQL
ITMW-7	4/27/2009	10/8/2015	17	Decreasing	Decreasing	No Trend
ITMW-9	4/27/2009	10/7/2015	17	Stable	Decreasing	No Trend
ITMW-10	4/27/2009	10/7/2015	15	Increasing	Decreasing	Decreasing
ITMW-11	4/27/2009	10/7/2015	15	Decreasing	Decreasing	Decreasing
ITMW-12	10/26/2011	10/7/2015	13	Decreasing	Decreasing	Decreasing
ITMW-13	4/27/2009	10/7/2015	17	Decreasing	Decreasing	<PQL
ITMW-14	11/4/2010	10/7/2015	14	Decreasing	Decreasing	ND
ITMW-15	4/27/2009	10/8/2015	14	Decreasing	Decreasing	Decreasing
ITMW-16	11/6/2010	10/7/2015	14	No Trend	ND	ND
ITMW-17	4/27/2009	10/8/2015	18	Decreasing	Stable	Increasing
ITMW-18	4/27/2009	10/8/2015	17	Decreasing	Decreasing	<PQL
ITMW-19	4/27/2009	10/8/2015	18	Decreasing	Decreasing	<PQL
ITMW-20	10/29/2009	10/7/2015	16	No Trend	ND	<PQL
ITMW-21	10/27/2009	10/8/2015	16	Decreasing	<PQL	ND
MW-22	10/27/2009	10/7/2015	15	<PQL	ND	ND
MW-24	4/27/2009	10/8/2015	16	Decreasing	Decreasing	<PQL
MW-25	4/27/2009	10/8/2015	19	Decreasing	Decreasing	Decreasing
MW-26	10/29/2009	10/7/2015	16	No Trend	ND	ND
MW-29	10/29/2009	10/7/2015	14	<PQL	ND	ND
MW-30	11/3/2010	10/14/2013	6	Stable	Stable	<PQL
MW-37	4/27/2009	10/17/2013	10	Decreasing	Decreasing	Stable
MW-38	10/26/2011	10/8/2015	12	Increasing	Increasing	Decreasing
MW-85	5/29/2014	10/8/2015	8	No Trend	Stable	Decreasing
MW-86	5/29/2014	10/8/2015	7	No Trend	No Trend	No Trend
MW-92	10/22/2014	10/8/2015	6	Decreasing	Stable	Decreasing
MW-93	10/22/2014	10/8/2015	6	Stable	Stable	Stable
MW-94	10/22/2014	10/8/2015	6	Decreasing	Stable	Decreasing
MW-95	10/22/2014	10/8/2015	6	Stable	Stable	Stable
MW-172	10/22/2014	10/8/2015	6	Stable	Stable	Decreasing
Northeast Corner Wells						
MW-87	6/25/2014	10/7/2015	6	Increasing	Increasing	<PQL
MW-88	6/24/2014	10/7/2015	6	<PQL	ND	ND
MW-89	6/24/2014	10/7/2015	6	Stable	<PQL	ND
MW-90	6/25/2014	10/7/2015	6	<PQL	ND	ND
MW-91	6/25/2014	10/7/2015	6	Increasing	Increasing	<PQL
MW-96	10/22/2014	10/7/2015	5	<PQL	ND	ND
MW-97	10/22/2014	10/7/2015	5	ND	ND	ND
MW-98	10/29/2014	10/6/2015	5	ND	ND	ND
MW-99	10/22/2014	10/6/2015	5	ND	ND	ND

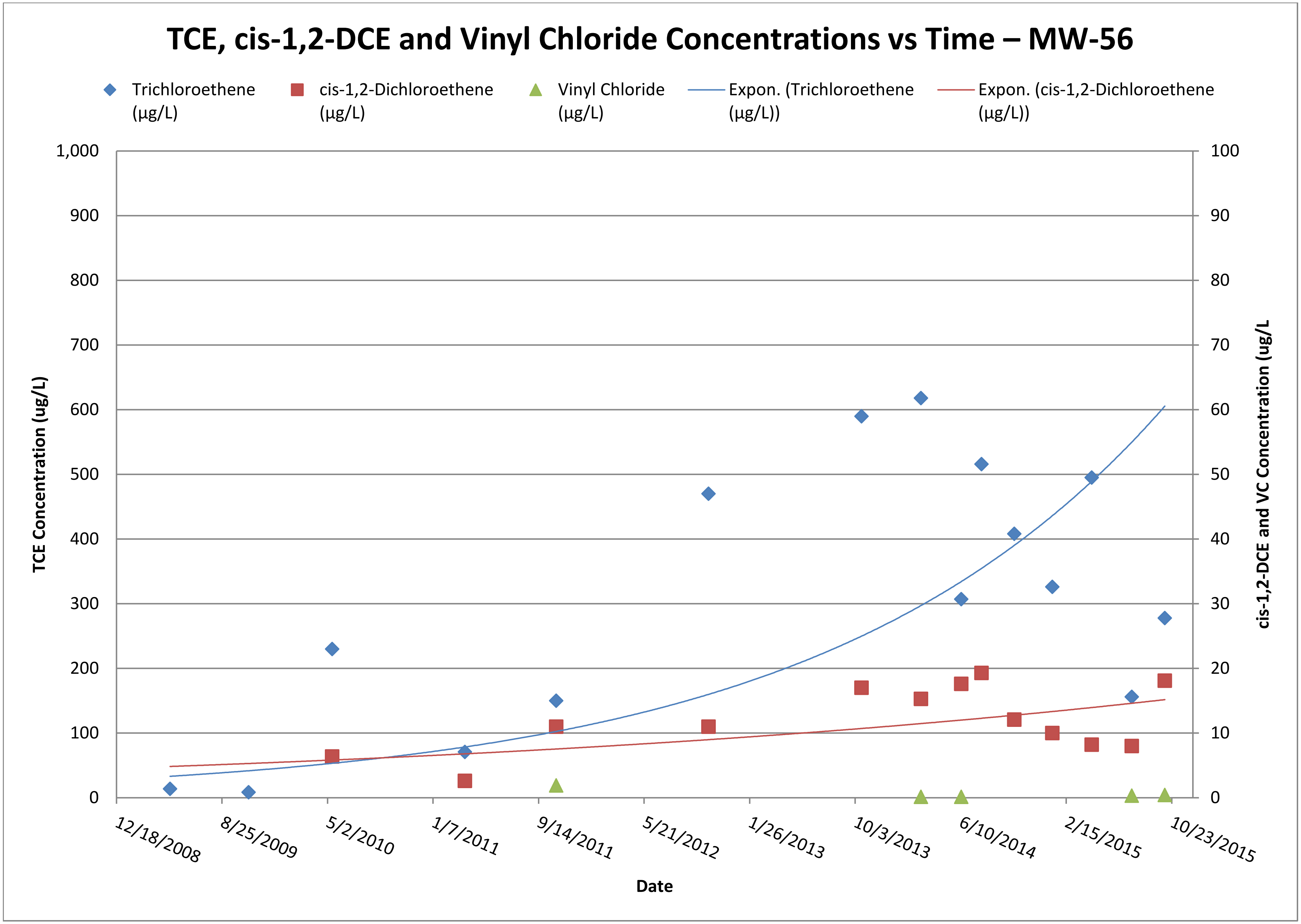
Notes:
ND - Result is Not Detected at the associated method quantitation limit
<PQL - Analyte qualified as estimated because it was detected

TABLE C-2
SUMMARY OF AVERAGE DETECTED CONCENTRATIONS (2009-2015)
Whirlpool Facility - Fort Smith, Arkansas

Date	TCE			c-1,2-DCE			VC		
	Concentration (µg/L)	# of Detects	# of Samples	Concentration (µg/L)	# of Detects	# of Samples	Concentration (µg/L)	# of Detects	# of Samples
All Wells (excluding Northeast Wells)									
4/24/2009	2,570	35	46	266	25	46	287	5	46
10/28/2009	8,560	22	38	559	17	38	695	4	38
5/13/2010	5,600	29	43	433	23	43	494	5	43
11/4/2010	10,825	33	41	632	19	41	1,300	2	41
3/22/2011	4,889	26	34	555	17	34	281	9	34
10/26/2011	4,918	46	65	394	36	65	604	6	65
4/18/2012	2,790	30	39	275	25	39	531	4	39
10/18/2012	2,348	43	66	191	39	66	129	19	66
4/23/2013	1,561	26	38	89	23	38	16	16	38
10/16/2013	1,895	46	65	177	39	65	189	17	66
3/7/2014	1,184	43	55	71	35	55	6	25	55
5/15/2014	1,159	46	55	62	31	55	7	23	55
7/30/2014	2,764	41	55	121	33	55	18	14	55
10/16/2014	2,174	37	55	135	33	55	80	11	55
1/12/2015	437	39	55	81	30	55	16	9	55
4/16/2015	472	40	57	94	30	57	5.8	8	57
7/22/2015	1,187	45	57	63	37	57	10.3	19	57
10/6/2015	1,818	44	57	69	39	57	10.1	20	57
North Wells									
4/24/2009	384	23	34	19	13	34		0	34
10/28/2009	228	14	25	8	9	25		0	25
5/13/2010	255	17	28	11	10	28		0	28
11/4/2010	333	21	27	16	10	27		0	27
3/22/2011	144	15	23	6	8	23	1	2	23
10/26/2011	262	25	38	10	17	38	2	1	38
4/18/2012	197	17	18	7	12	18		0	18
10/18/2012	328	24	39	11	20	39	1	5	39
4/23/2013	228	13	17	8	10	17	0	5	17
10/16/2013	268	26	38	13	20	38	2	5	38
3/7/2014	214	23	32	10	18	32	1	11	32
5/15/2014	209	25	31	10	15	31	0.5	10	31
7/29/2014	281	23	31	11	16	31	4.9	6	31
10/14/2014	251	19	31	8	16	31	0.9	2	31
1/12/2015	186	21	31	7	15	31	1.8	3	31
4/16/2015	173	21	31	8	14	31	1.0	4	31
7/22/2015	139	22	31	5	18	31	0.7	8	31
10/6/2015	121	23	31	7	19	31	0.4	10	31
South Wells									
4/24/2009	6,760	12	12	535	12	12	287	5	12
10/28/2009	23,140	8	13	1,178	8	13	695	4	13
5/13/2010	13,173	12	15	757	13	15	494	5	15
11/4/2010	29,188	12	14	1,316	9	14	1,300	2	14
3/22/2011	11,360	11	11	944	10	11	361	7	11
10/26/2011	10,461	21	27	739	19	27	724	5	27
4/18/2012	6,181	13	21	523	13	21	531	4	21
10/18/2012	4,899	19	27	380	19	27	175	14	27
4/23/2013	2,893	13	21	151	13	21	22	11	21
10/16/2013	4,010	20	27	350	19	27	291	11	27
3/7/2014	2,300	20	23	135	17	23	10	14	23
5/15/2014	2,404	20	23	111	16	23	12	13	23
7/30/2014	6,280	17	23	237	16	23	28	8	23
10/15/2014	4,449	17	23	270	16	23	110	8	23
1/12/2015	770	17	23	155	15	23	23	6	23
4/16/2015	947	16	23	180	15	23	11	4	23
7/22/2015	2,507	20	23	132	17	23	17	11	23
10/6/2015	4,287	18	23	144	18	23	20	10	23
Source Wells									
4/24/2009	11,600	6	6	883	7	7	358	4	7
10/28/2009	73,900	2	2	3,087	3	3	1,385	2	3
5/13/2010	20,750	6	6	1,375	7	7	617	4	7
11/4/2010	98,133	3	3	2,940	4	4	1,300	2	4
3/22/2011	22,000	4	4	1,826	5	5	616	4	5
10/26/2011	20,260	8	8	1,532	9	9	904	4	9
4/18/2012	12,625	4	4	1,314	5	5	707	3	5
10/18/2012	10,905	8	8	752	9	9	271	9	9
4/23/2013	8,825	4	4	358	5	5	49	5	5
10/16/2013	9,798	8	8	714	9	9	455	7	9
3/7/2014	5,696	8	8	268	8	8	18	8	8
5/15/2014	5,955	8	8	203	8	8	22	7	8
7/31/2014	13,281	8	8	456	8	8	37	6	8
10/16/2014	9,401	8	8	524	8	8	146	6	8
1/12/2015	1,560	8	8	311	7	8	35	4	8
4/16/2015	2,090	7	8	243	14	15	20	2	8
7/22/2015	6,175	8	8	302	7	8	38	5	8
10/6/2015	9,573	8	8	309	8	8	24	8	8
Northeast Corner Wells									
7/31/2014	273	3	5	32	2	5	0	0	5
10/16/2014	308	3	9	38	2	9	0	0	9
1/12/2015	257	4	9	41	2	9	0	0	9
4/16/2015	303	4	9	48	2	9	0.3	2	9
7/22/2015	296	4	9	30	3	9	0.3	2	9
10/6/2015	392	3	9	31	3	9	0.2	2	9

Notes:
µg/L: Micrograms per liter

FIGURES



RAMBOLL ENVIRON

Figure C-1
Whirlpool Facility
Fort Smith, Arkansas

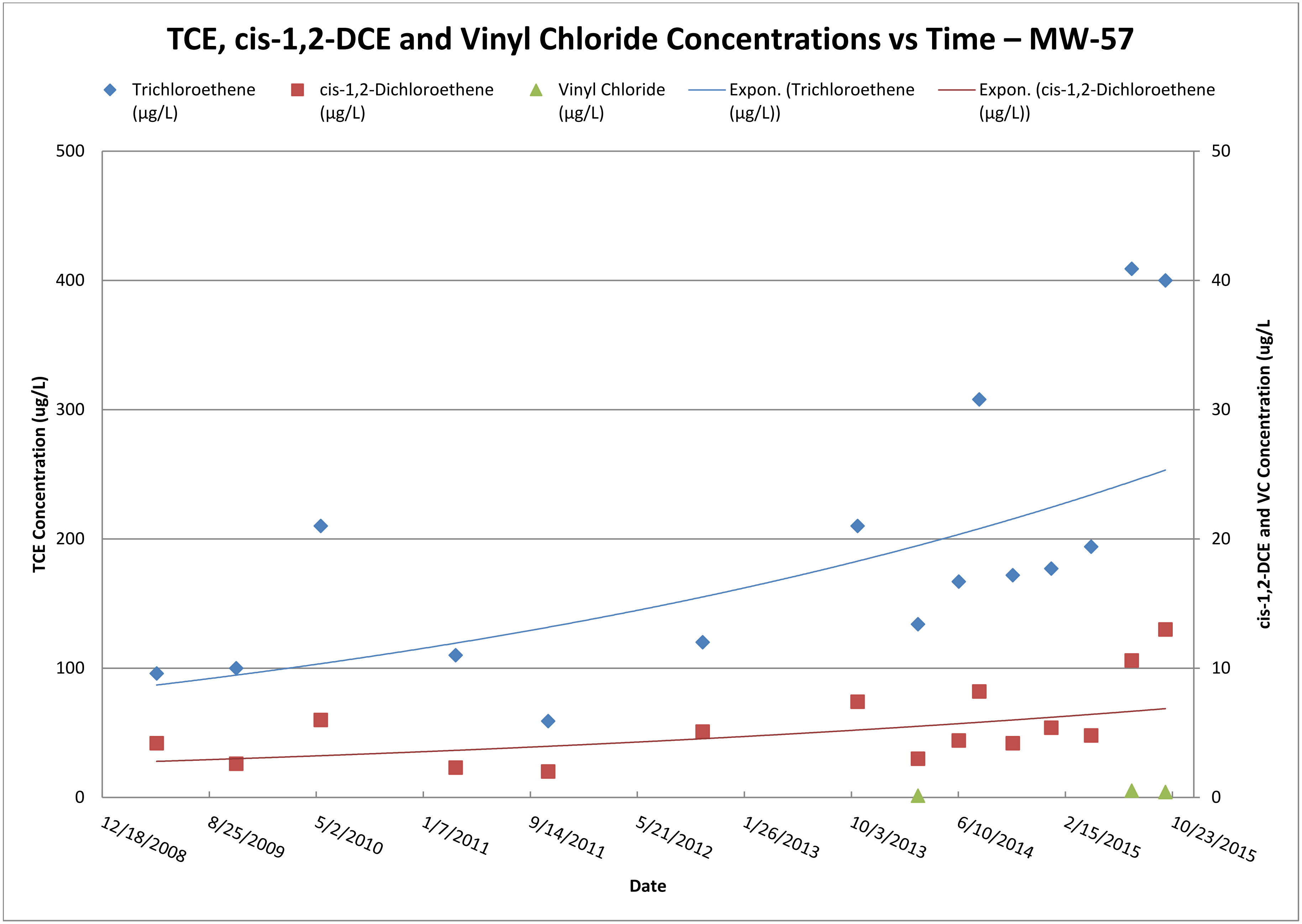


Figure C-2
Whirlpool Facility
Fort Smith, Arkansas

RAMBOLL ENVIRON

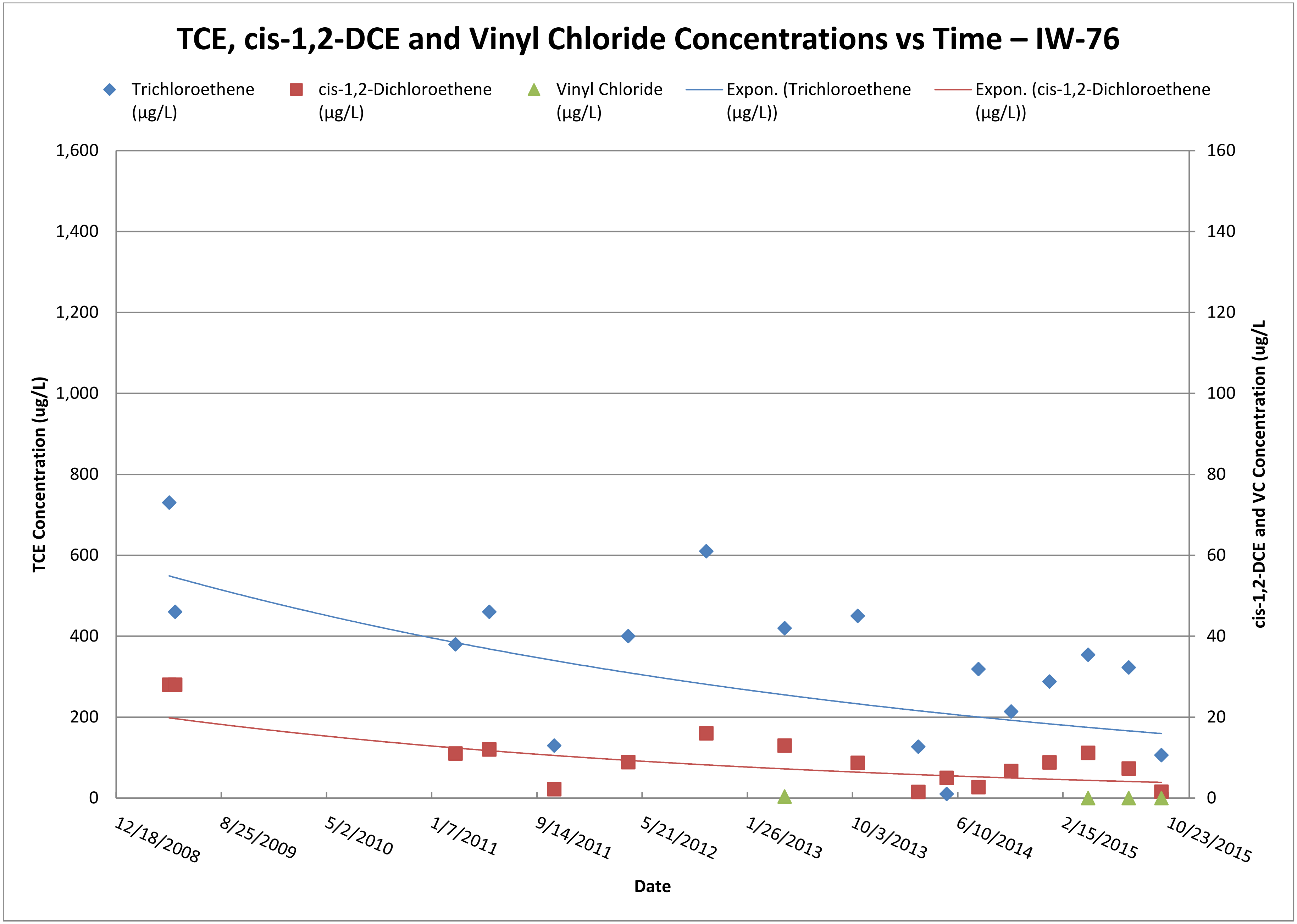


Figure C-3
Whirlpool Facility
Fort Smith, Arkansas

RAMBOLL ENVIRON

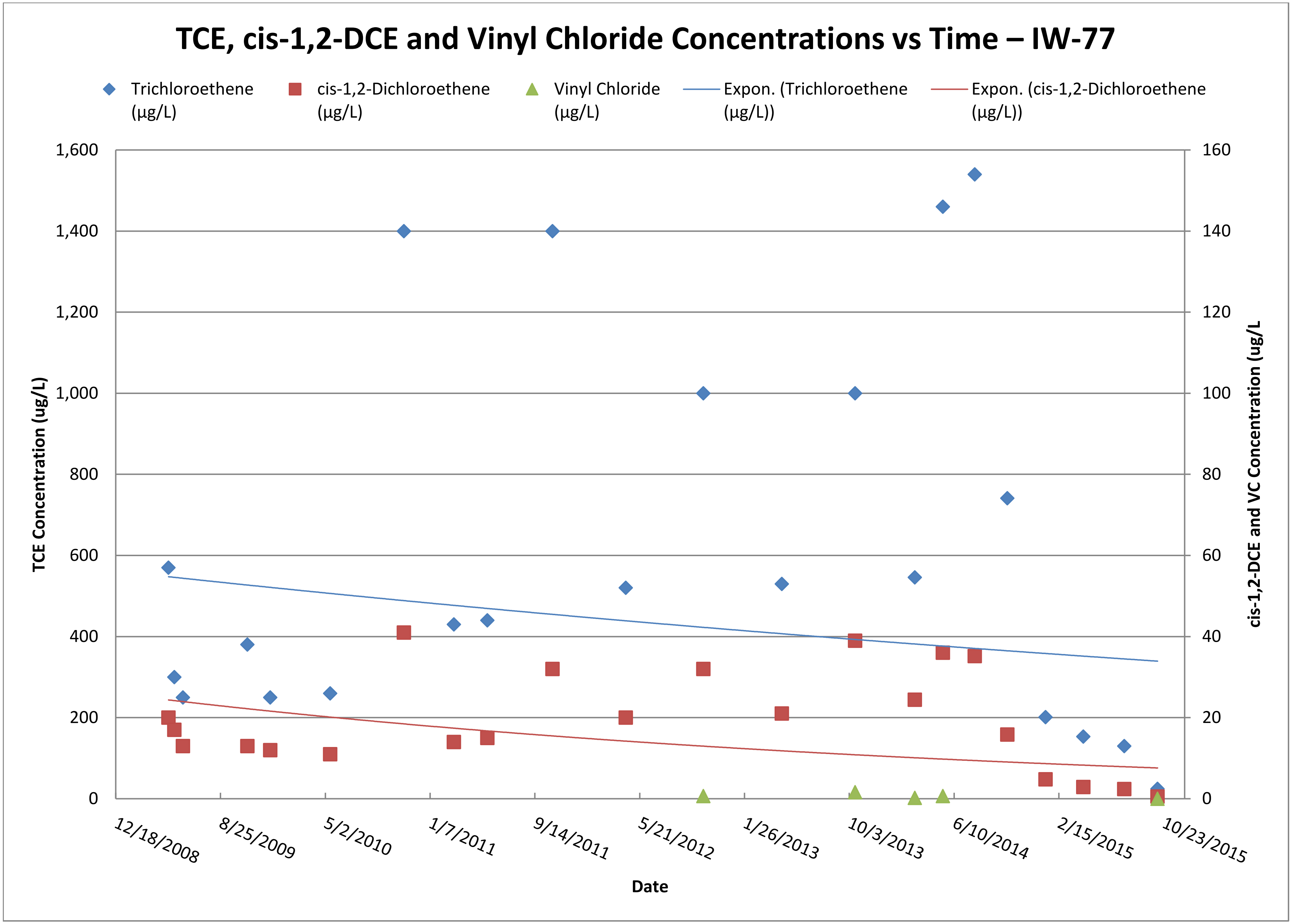


Figure C-4
Whirlpool Facility
Fort Smith, Arkansas

RAMBOLL ENVIRON

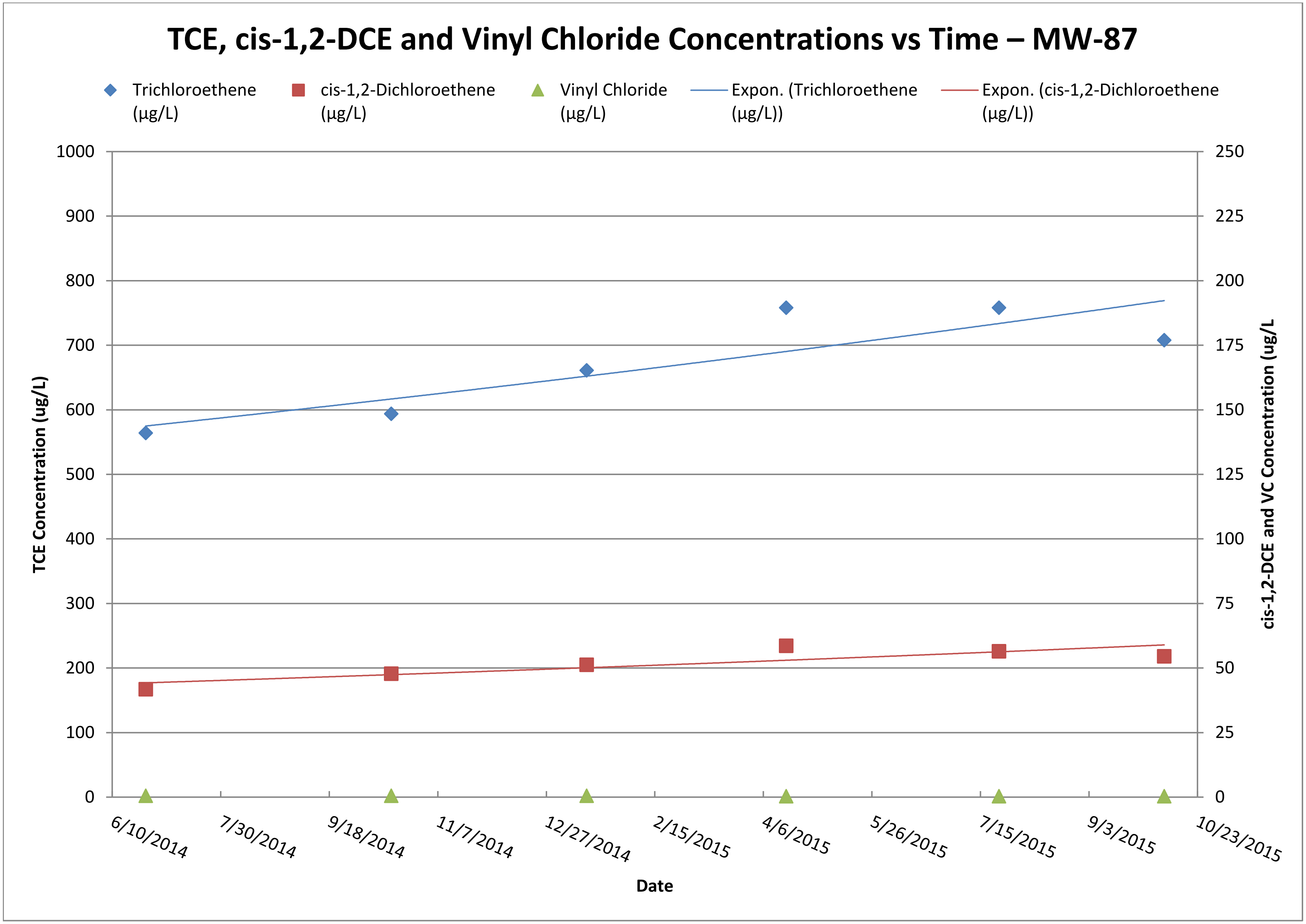
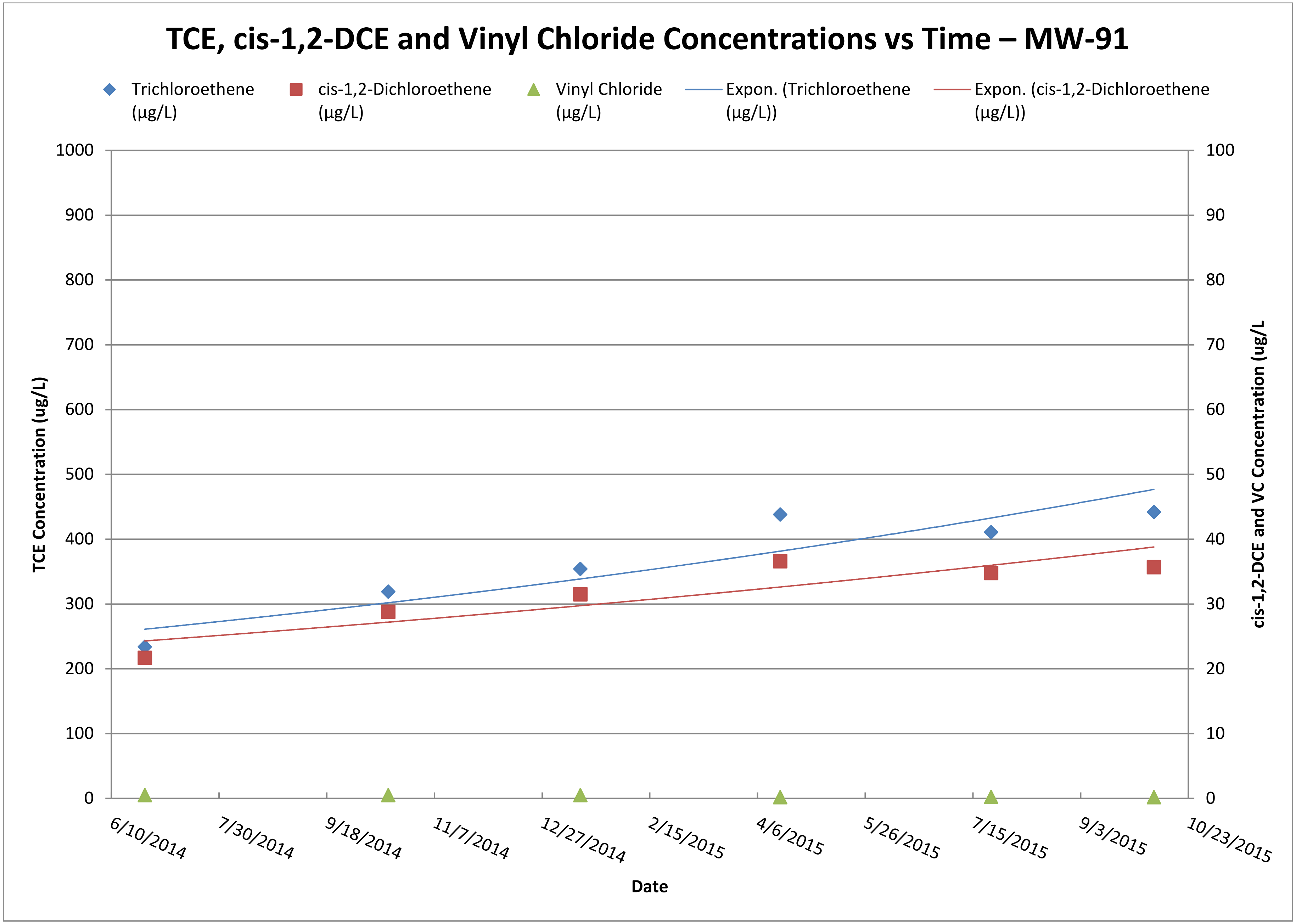


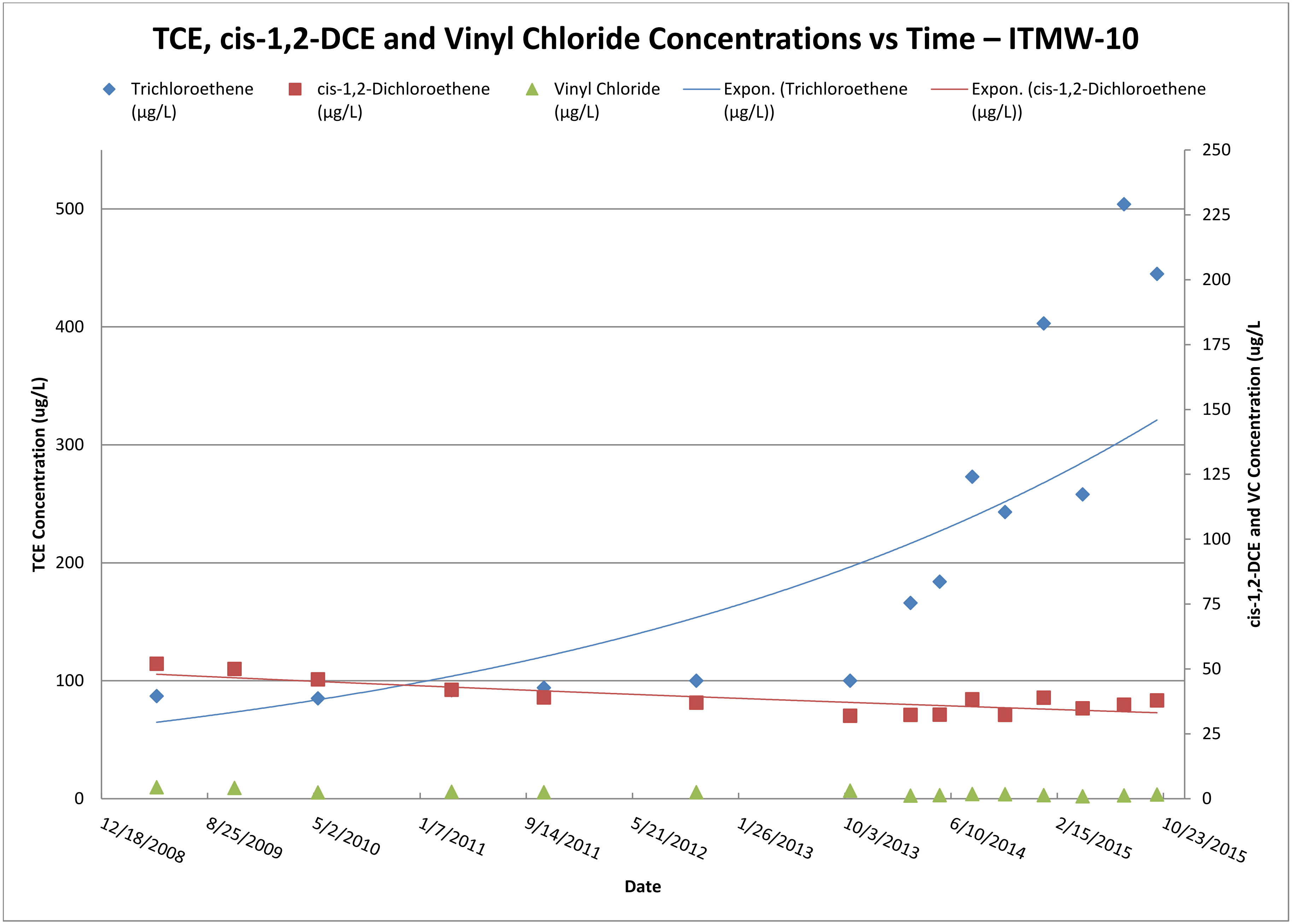
Figure C-5
Whirlpool Facility
Fort Smith, Arkansas

RAMBOLL ENVIRON



RAMBOLL ENVIRON

Figure C-6
Whirlpool Facility
Fort Smith, Arkansas



RAMBOLL ENVIRON

Figure C-7
Whirlpool Facility
Fort Smith, Arkansas

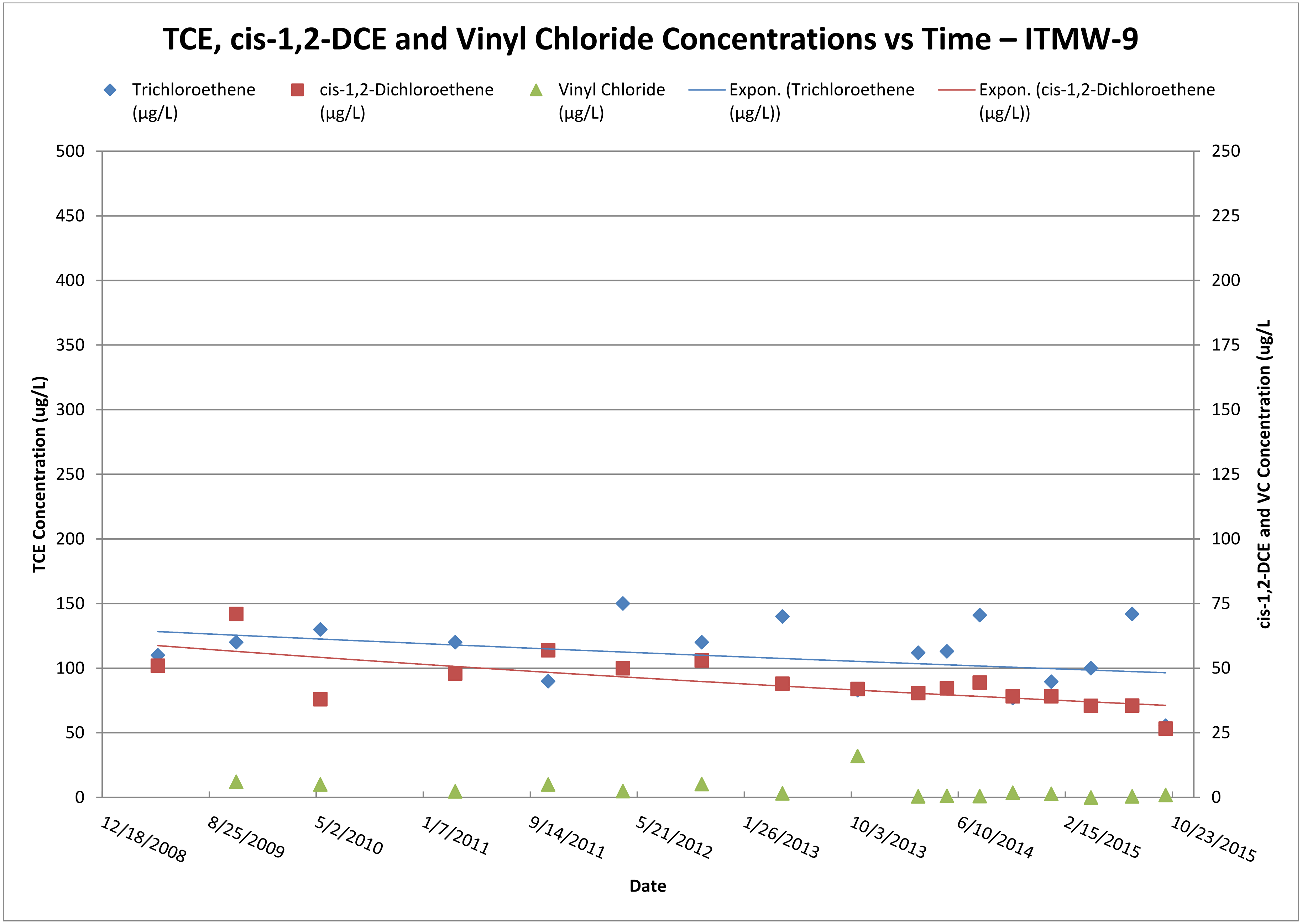
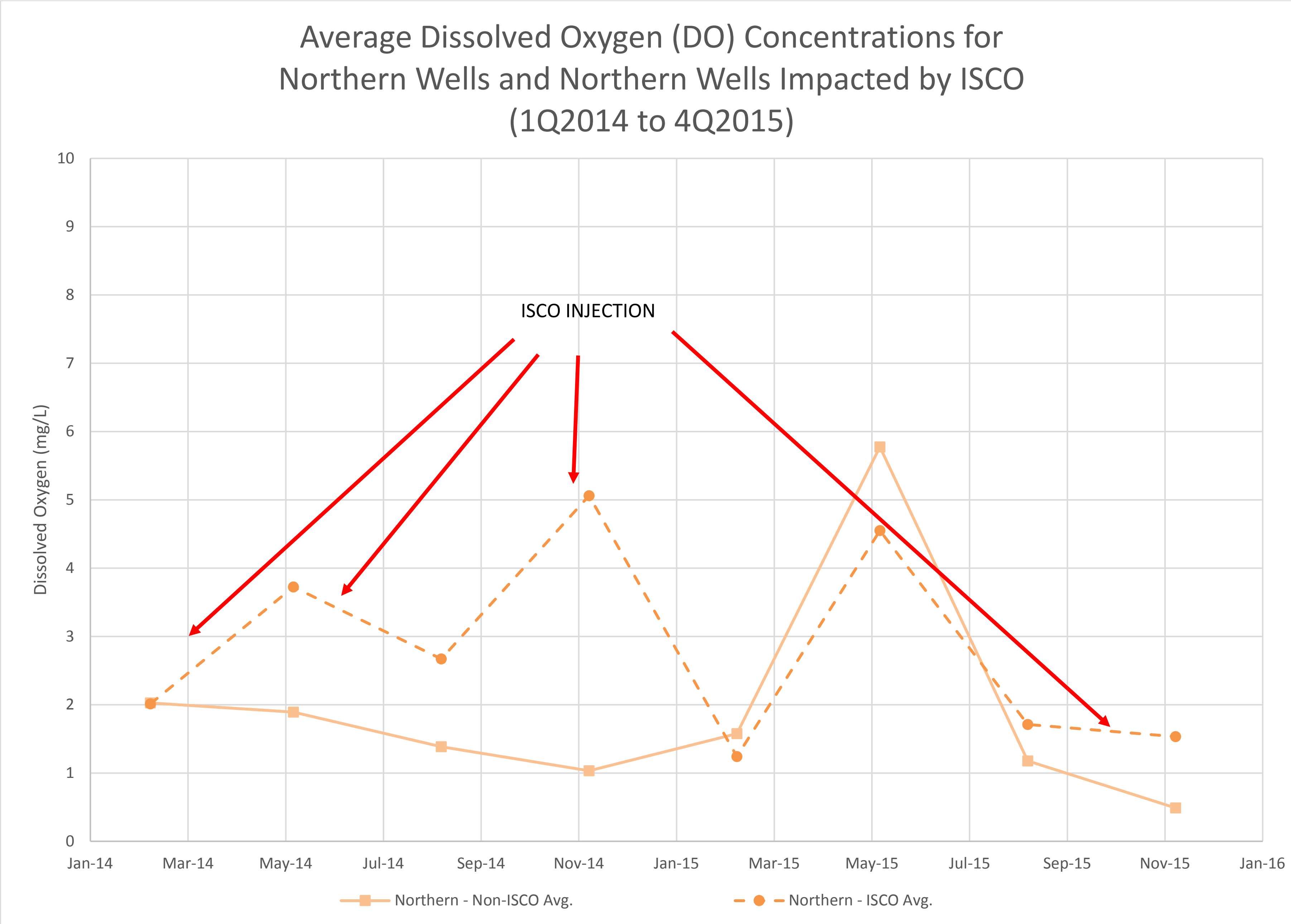


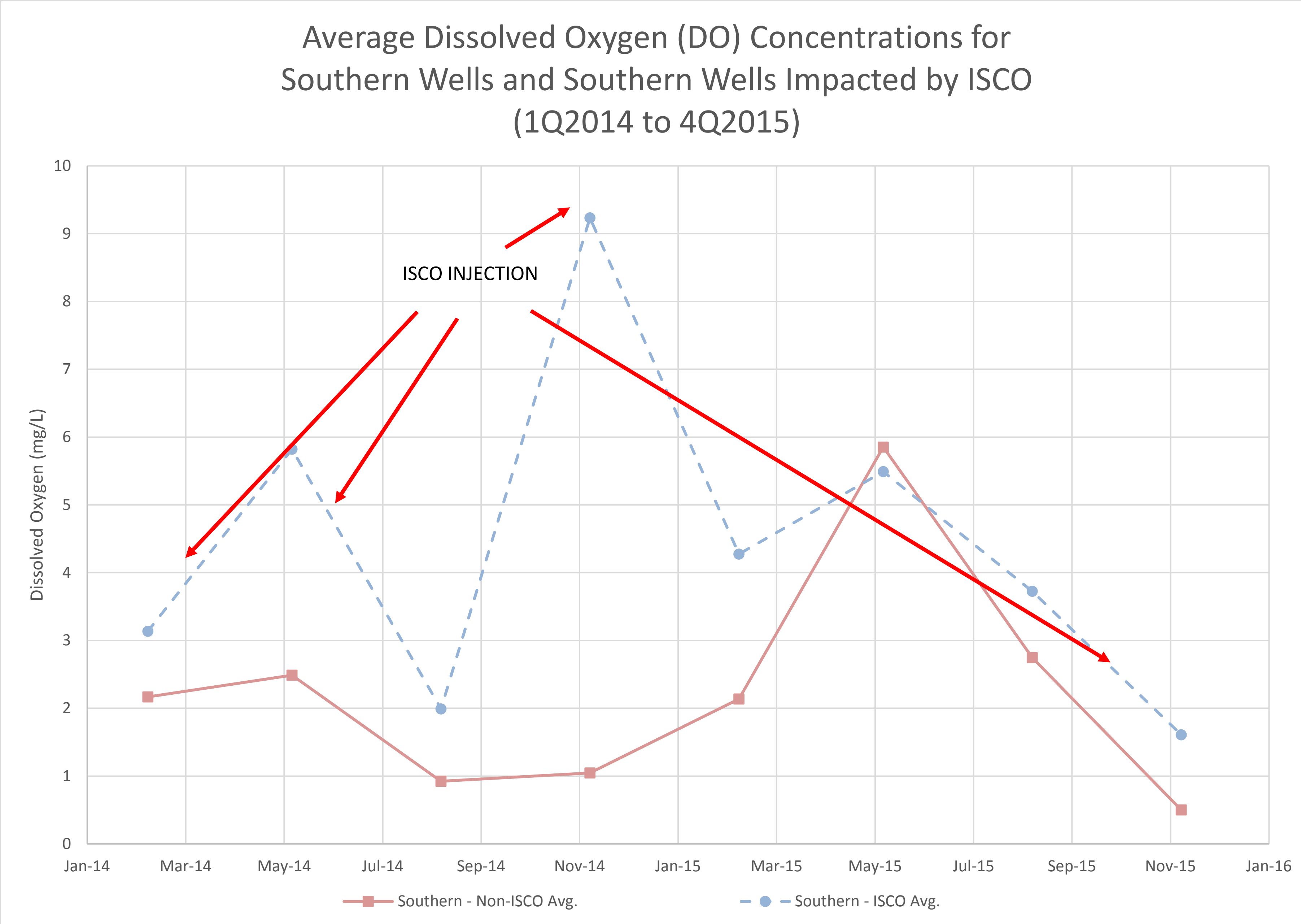
Figure C-8
Whirlpool Facility
Fort Smith, Arkansas

RAMBOLL ENVIRON



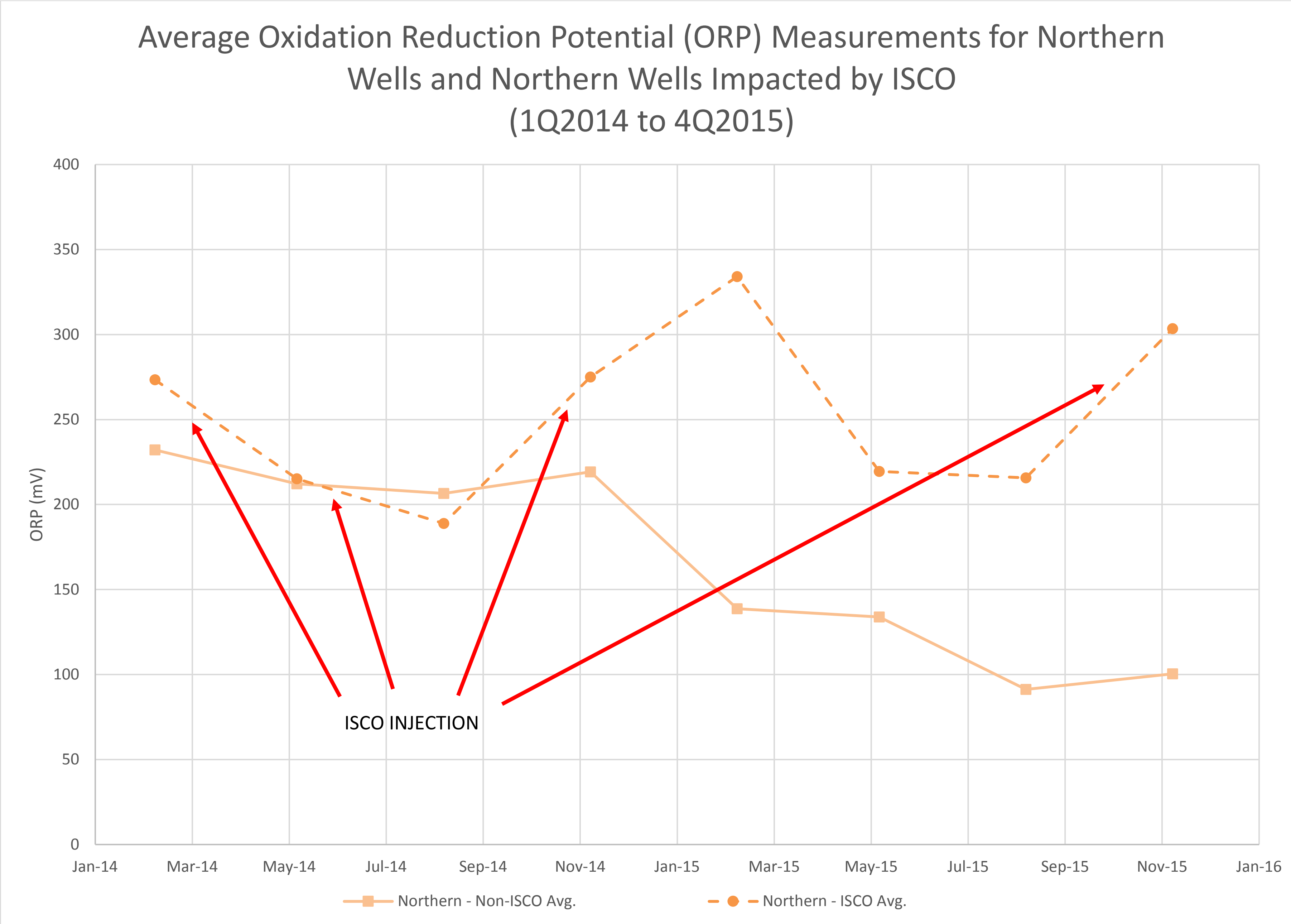
RAMBOLL ENVIRON

Figure C-9
Whirlpool Facility
Fort Smith, Arkansas



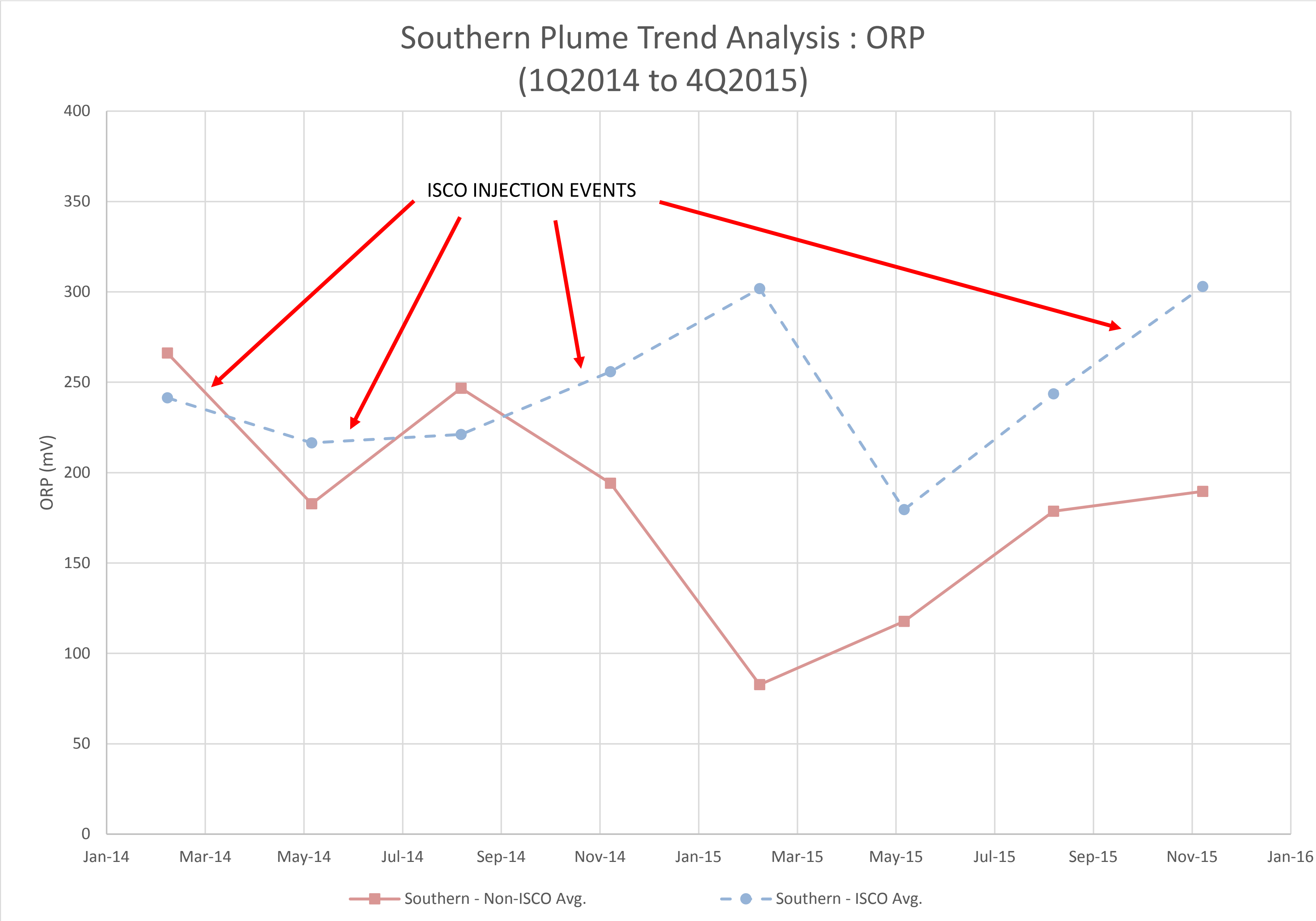
RAMBOLL ENVIRON

Figure C-10
Whirlpool Facility
Fort Smith, Arkansas



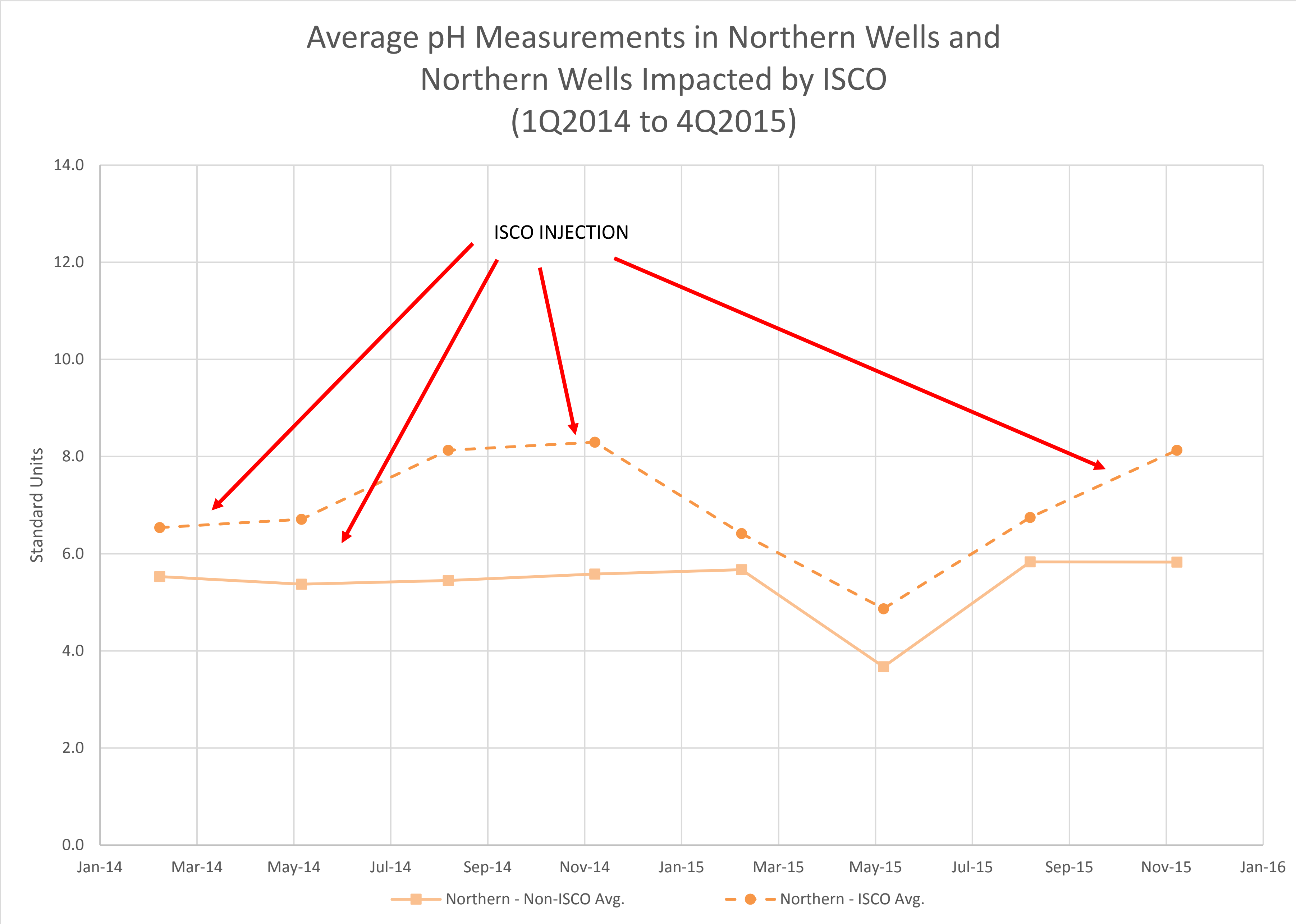
RAMBOLL ENVIRON

Figure C-11
Whirlpool Facility
Fort Smith, Arkansas



RAMBOLL ENVIRON

Figure C-12
Whirlpool Facility
Fort Smith, Arkansas



RAMBOLL ENVIRON

Figure C-13
Whirlpool Facility
Fort Smith, Arkansas

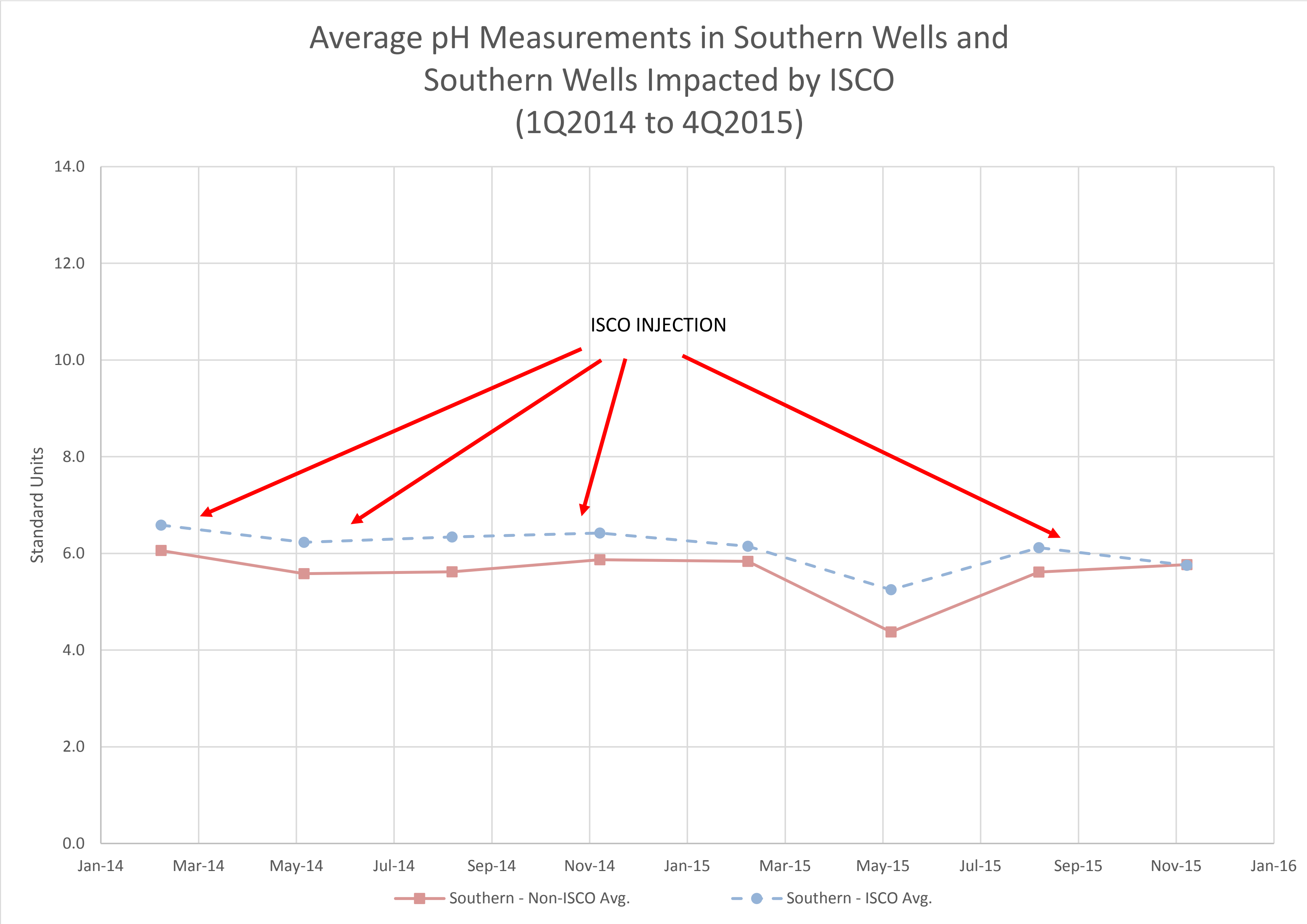


Figure C-14
Whirlpool Facility
Fort Smith, Arkansas

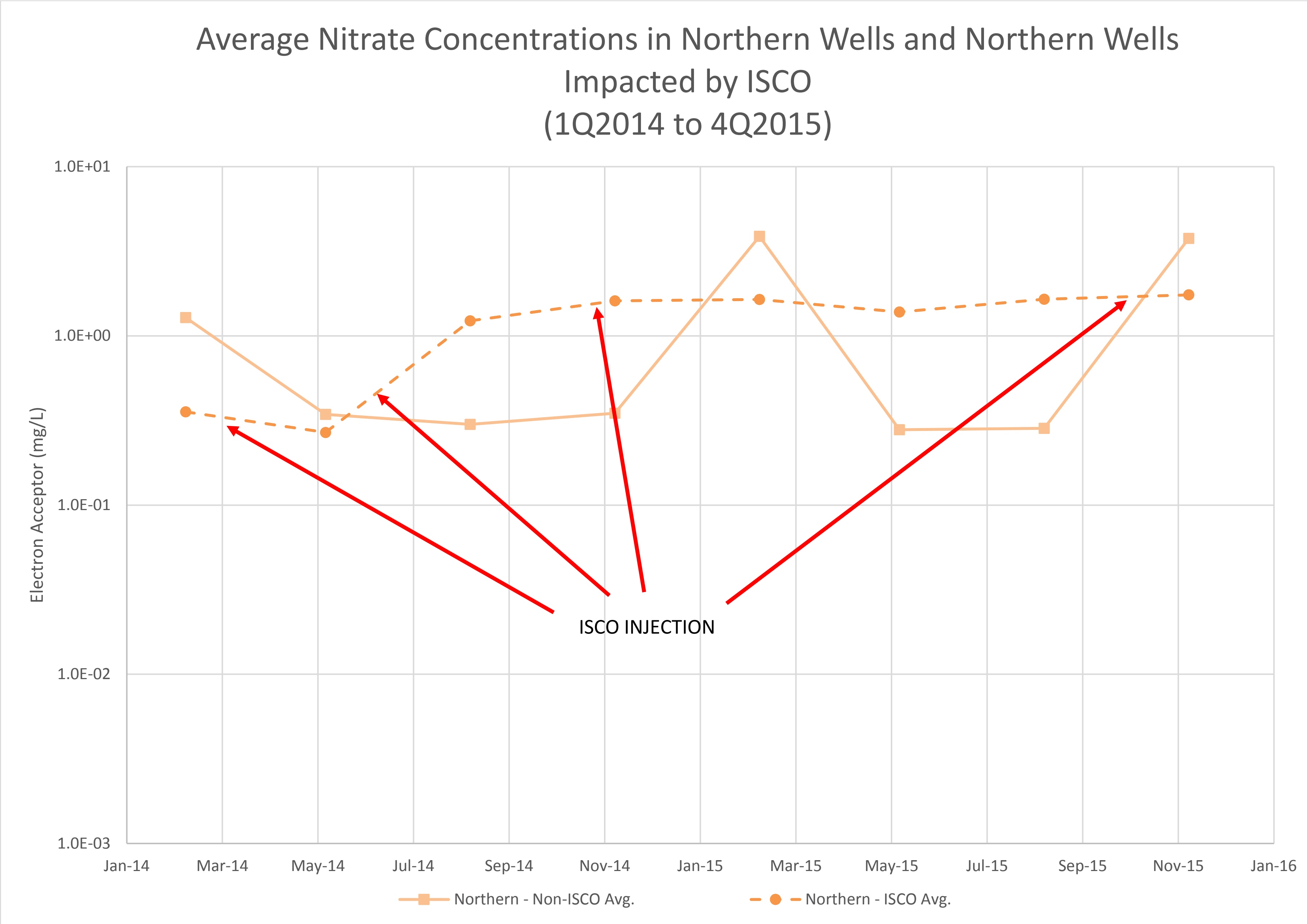
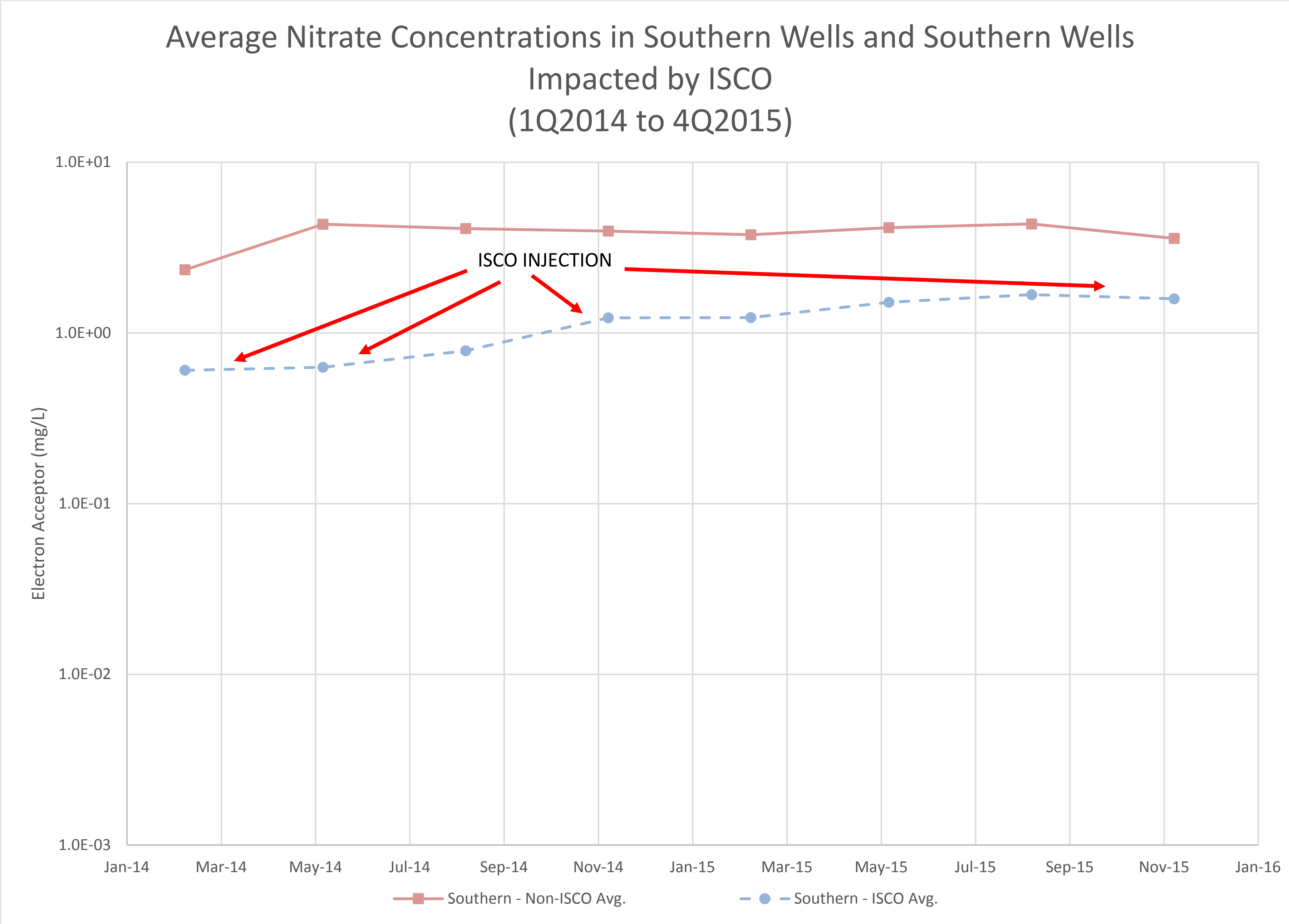


Figure C-15
Whirlpool Facility
Fort Smith, Arkansas

RAMBOLL ENVIRON



RAMBOLL ENVIRON

Figure C-16
Whirlpool Facility
Fort Smith, Arkansas

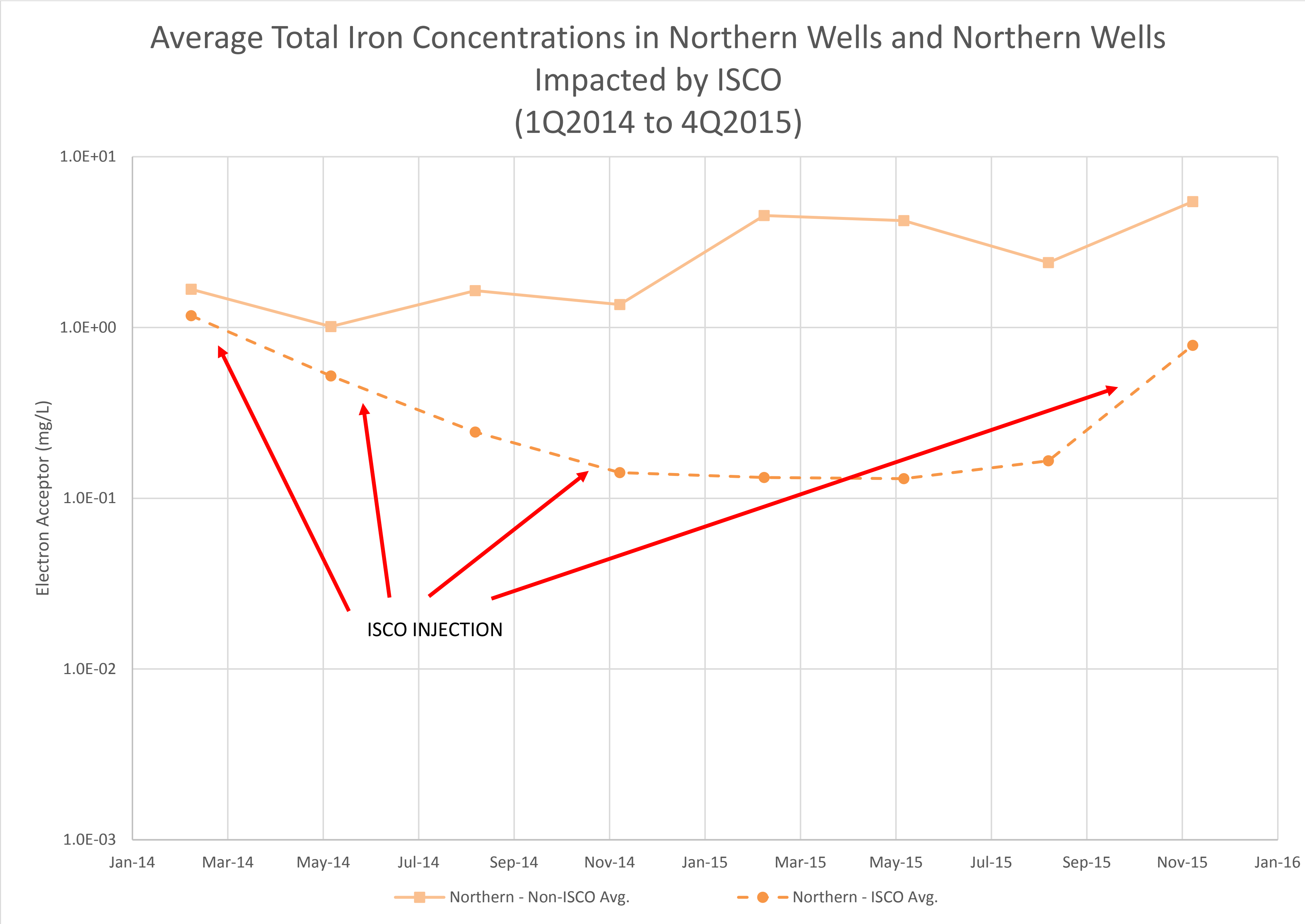
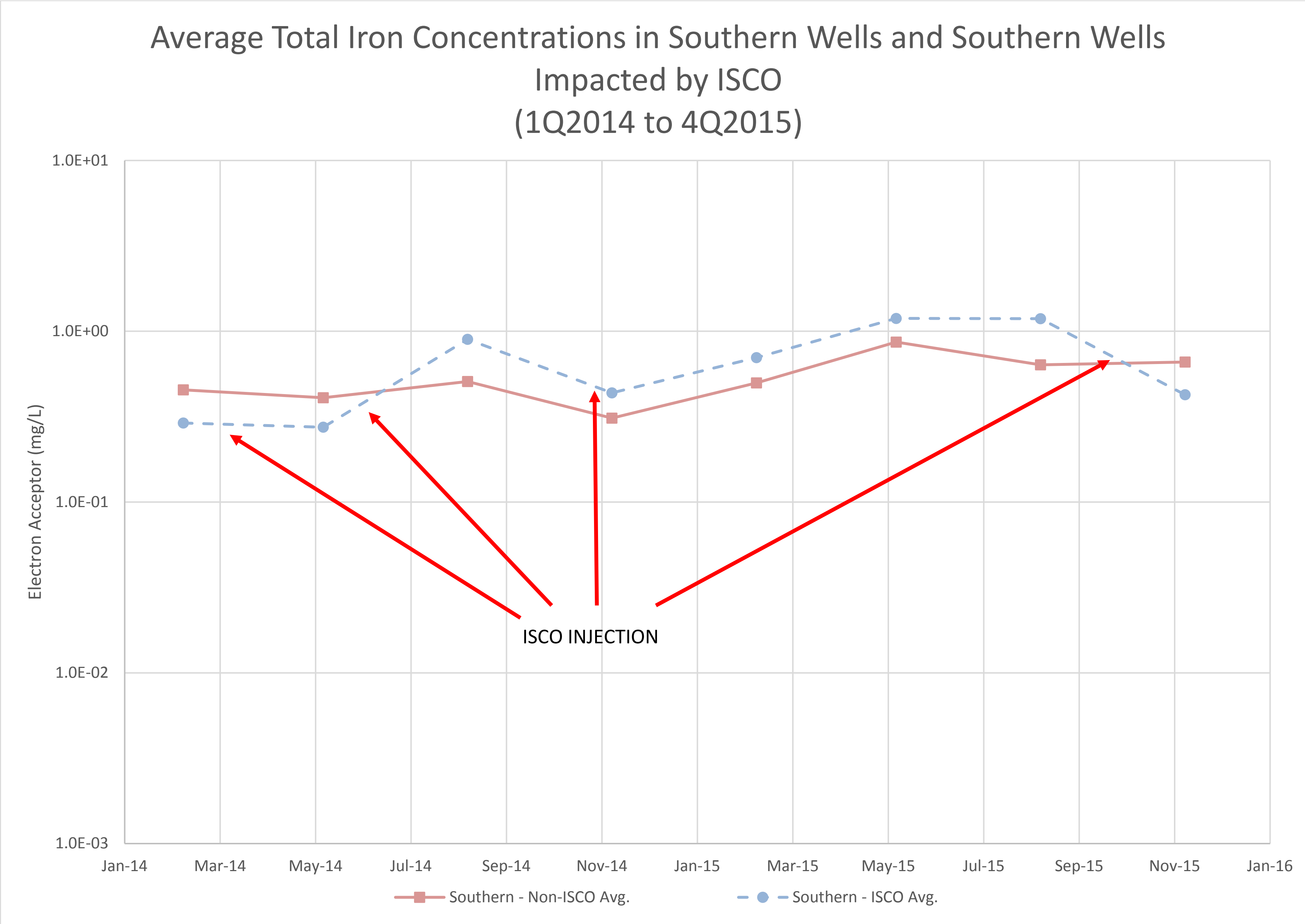
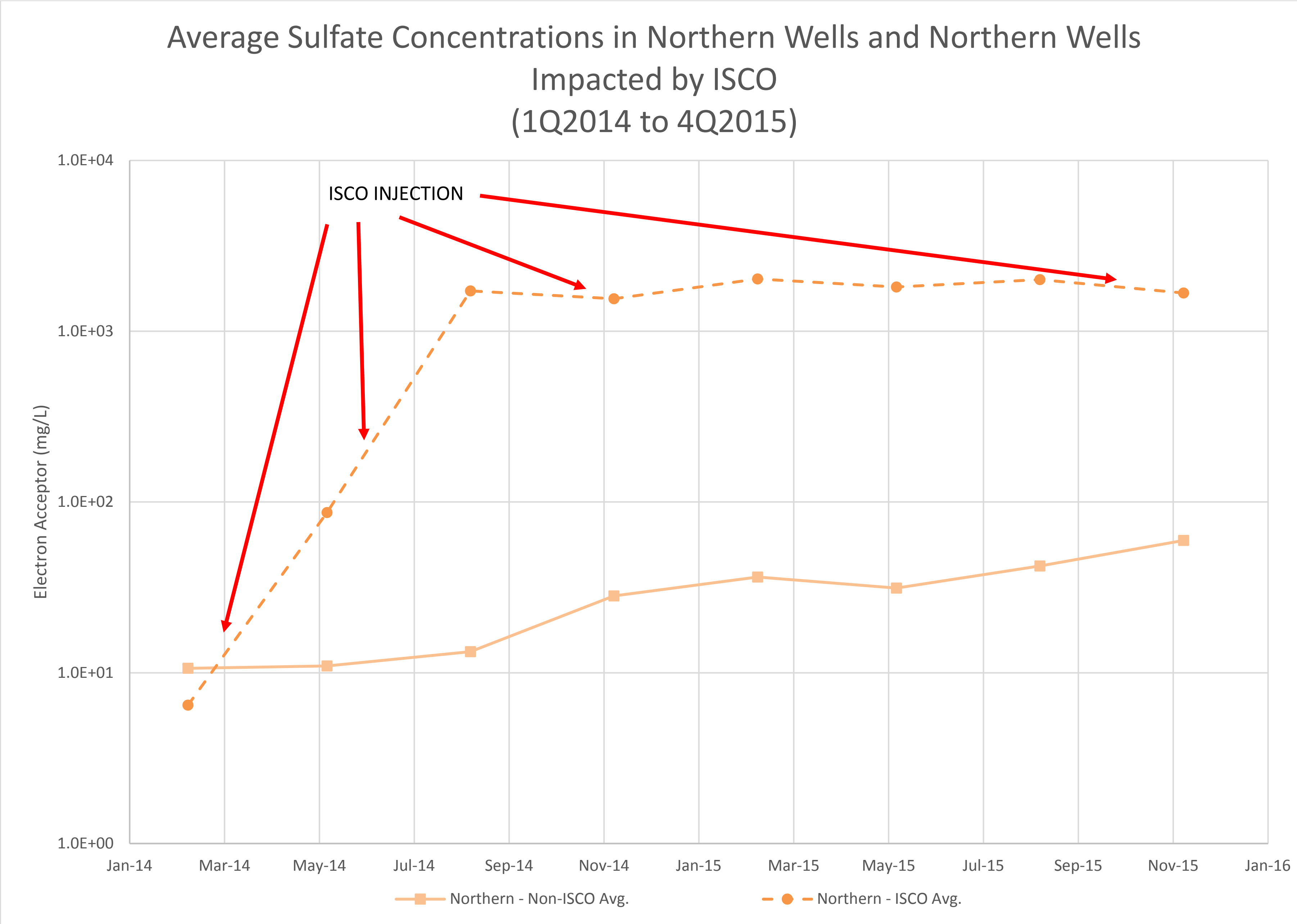


Figure C-17
Whirlpool Facility
Fort Smith, Arkansas



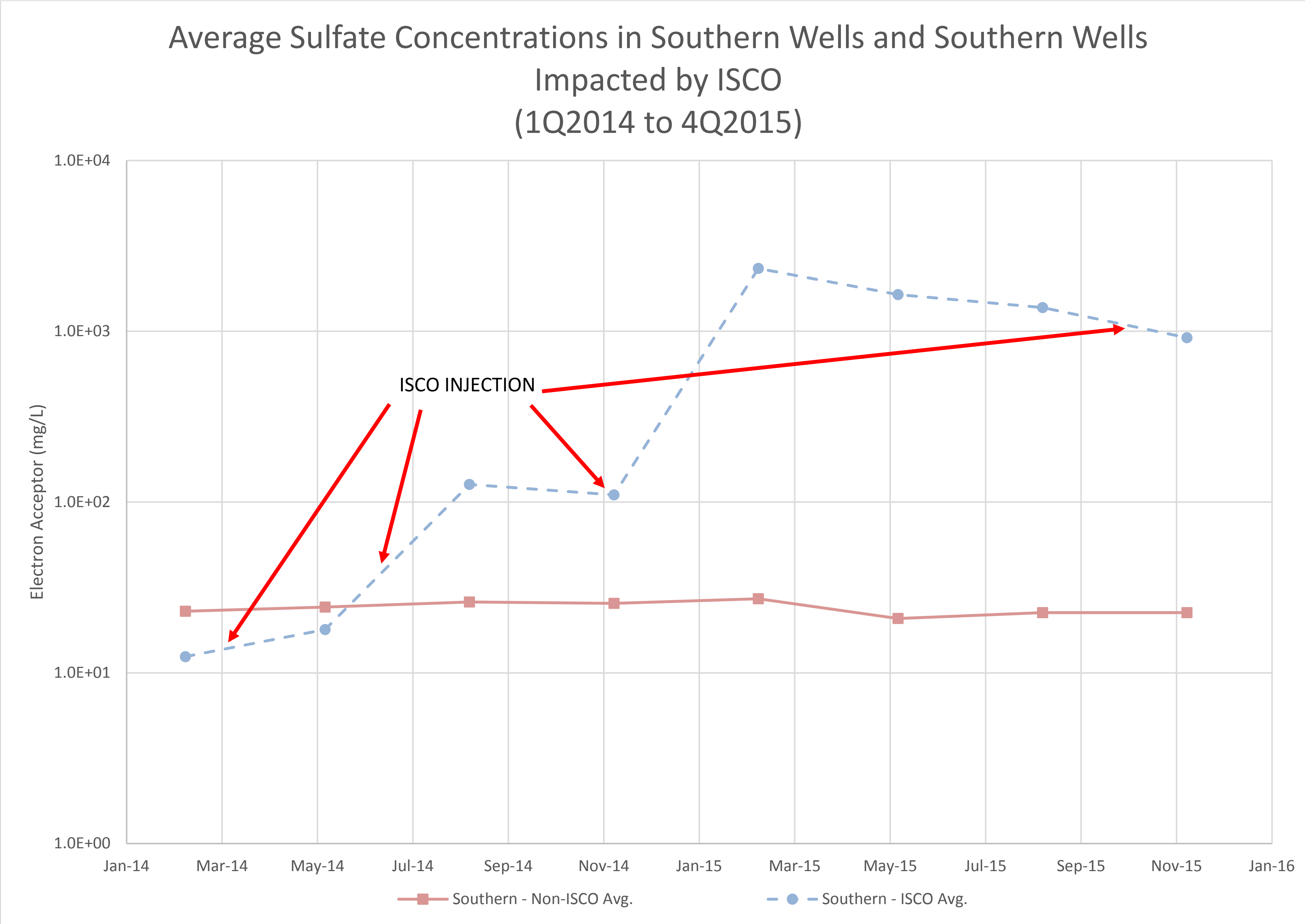
RAMBOLL ENVIRON

Figure C-18
Whirlpool Facility
Fort Smith, Arkansas



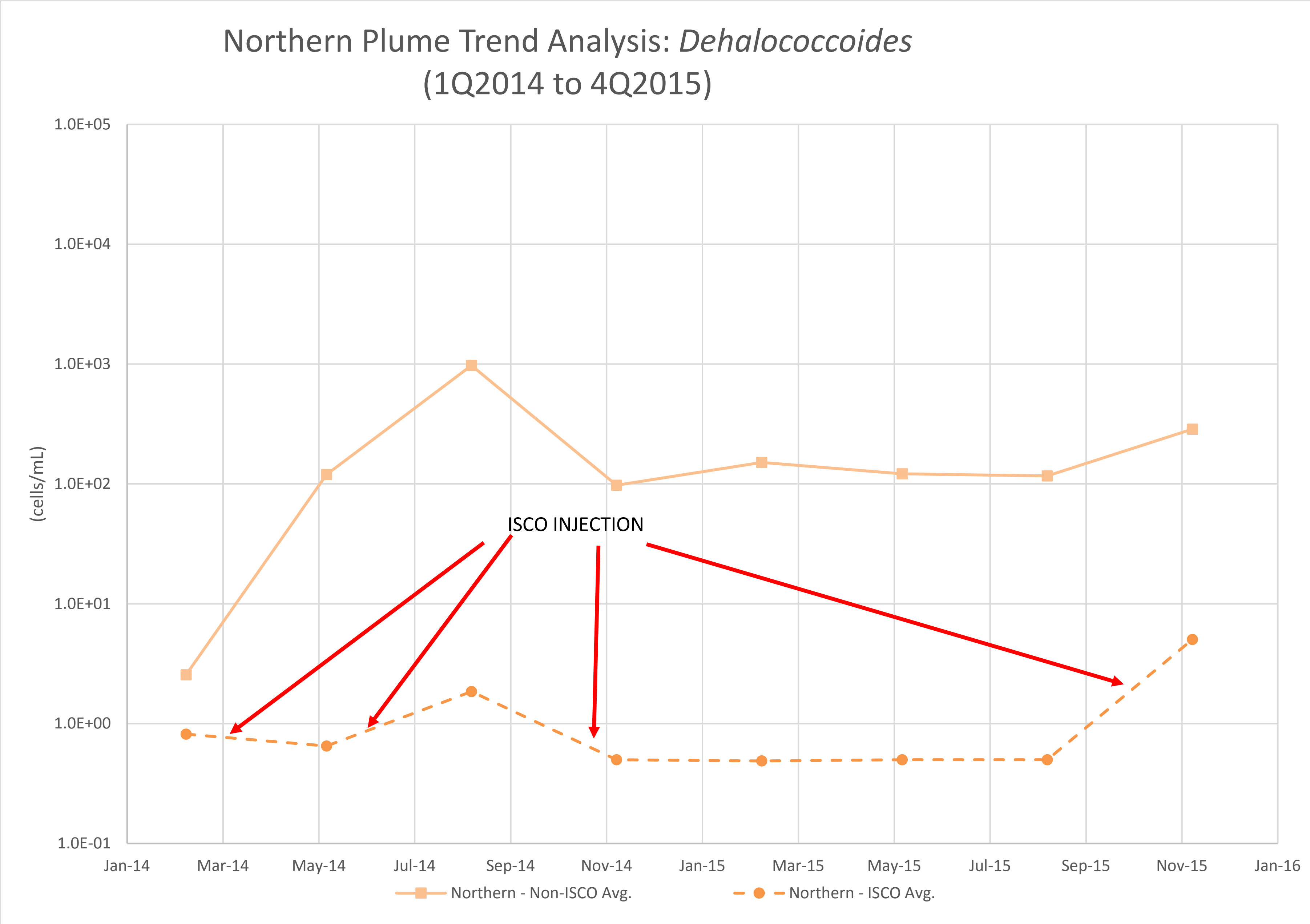
RAMBOLL ENVIRON

Figure C-19
Whirlpool Facility
Fort Smith, Arkansas



RAMBOLL ENVIRON

Figure C-20
Whirlpool Facility
Fort Smith, Arkansas



RAMBOLL ENVIRON

Figure C-21
Whirlpool Facility
Fort Smith, Arkansas

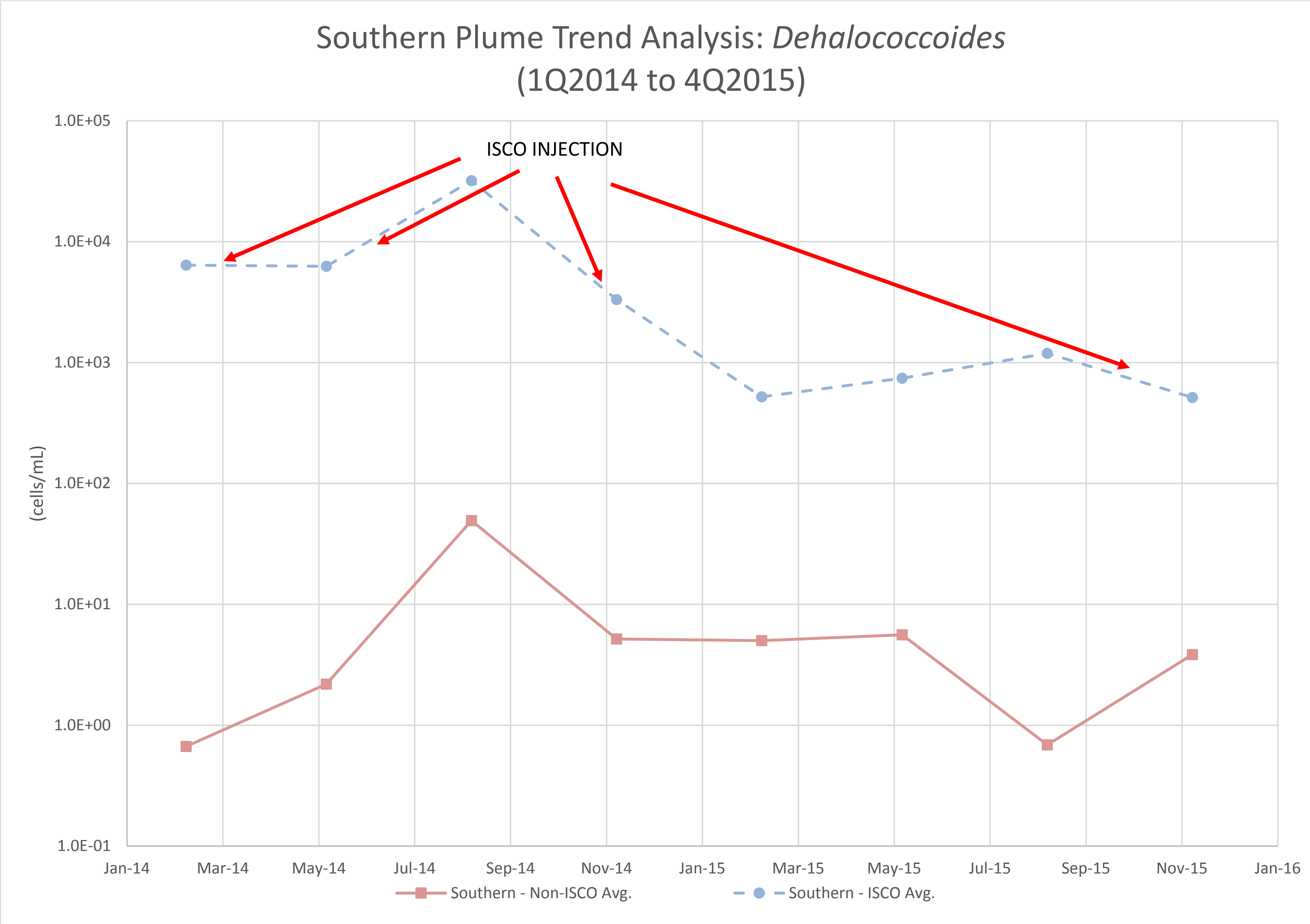


Figure C-22
Whirlpool Facility
Fort Smith, Arkansas

APPENDIX D
Plume Regression for cis-1,2-Dichloroethene and Vinyl Chloride

APPENDIX D
PLUME REGRESSION FOR CIS-1,2-DICHLOROETHENE AND VINYL CHLORIDE

As discussed in Section 4.4 of the text, the use of monitored natural attenuation (MNA) carries with it an expectation of achieving site specific remedial action objectives within a certain timeframe. To examine the time to reach remedial action objectives, trends of contaminant concentrations were reviewed, regression analysis was performed, and this information was used to simulate site specific degradation of the main contaminant [trichloroethylene (TCE)] over time.

The breakdown of TCE daughter projects (cis-1,2-DCE and vinyl chloride) is another line of evidence for the occurrence of natural attenuation. However, it is important to evaluate the rate of cis-1,2-DCE and vinyl chloride creation and degradation over time, especially as the build-up of these constituents can occur if breakdown does not keep pace with the creation of daughter products as TCE degrades.

A discussion of the regression analysis for TCE is included in Section 4.4.1 of the text. Regression analysis was also performed at site specific individual monitoring wells for cis-1,2-DCE and vinyl chloride. Data used for this analysis included historic sampling events beginning in 2000 and ending with the fourth quarter of 2015. Each individual well data set was reviewed and chemical concentrations that were recorded as non-detect or were detected at lower than one-half of the method detection limit were set to one-half the method detection limit value. The frequency of detection (FOD) in lab data was used to initially determine the quality of the data during the MNA evaluations. The regression model for each constituent was considered to be invalid if the FOD for an analyte was below 50%. Estimated concentrations were considered as detected values, which in each instance resulted in a higher or more conservative assumed concentration. The regression of log transformed concentration data was then used to calculate the slopes for each specific well.

The output of this evaluation includes a regression curve, a slope and a graph of the regression residuals for the daughter products present at each well (cis-1,2-DCE and VC). The regression trend line documents whether the trend at the well being evaluated for a particular chemical of interest is increasing, not significant, or decreasing. The residuals graphs from the regression were evaluated to verify if the model fits the measured values at each well and meets the statistical assumptions of linear regression. Valid models produced residuals graphs with random deviations from the measured values, homogenous variances and no temporal trends, while poor models presented systematic or structured regression residuals. The goal of this regression analysis was to estimate slopes that characterize the 'average or representative' rate of reduction in the concentrations. These slopes can then be used to determine the degradation rate constants or half-lives.

The historical contaminant concentration trends at a given location are a function of various factors: groundwater velocity, flow direction, retardation, concentration distribution, reaction rates, etc. For the MNA analysis, the regression lines were fit to measured Site data and the slopes reflect the combined influence of all these Site-specific factors. Additional conservatism was applied to the analysis since wells that show impacts from the ISCO or ISCR injections were analyzed by excluding sampling events that occurred after the injection to address and normalize statistical biases (excluding data which typically indicated significant TCE reductions) and some wells were refined by determining the maximum historic concentration of a respective analyte and only including data from that specific sampling event forward.

To represent the overall TCE degradation rate for the both the North Plume and the South Plume, the regression slope values for wells in the North Plume with declining concentration trends were averaged, resulting in an average value of -0.15. The regression slope values for wells in the South Plume with declining concentration trends were also averaged, resulting in a value of -0.15.

The same averaging process for the regression slope values was completed for cis-1,2-DCE and vinyl chloride in the North Plume and the South Plume. The wells and corresponding slope values are listed in the tables below.

CIS-1,2-DCE

North Plume		South Plume	
Location	**Slope [a]**	**Location**	**Slope [a]**
IW-76	-0.26	ITMW-1	-0.02
MW-81	-0.73	ITMW-13	-0.10
RW-69	-0.13	ITMW-17	-0.05
		ITMW-7	-0.12
Average	-0.37	Average	-0.07

VINYL CHLORIDE

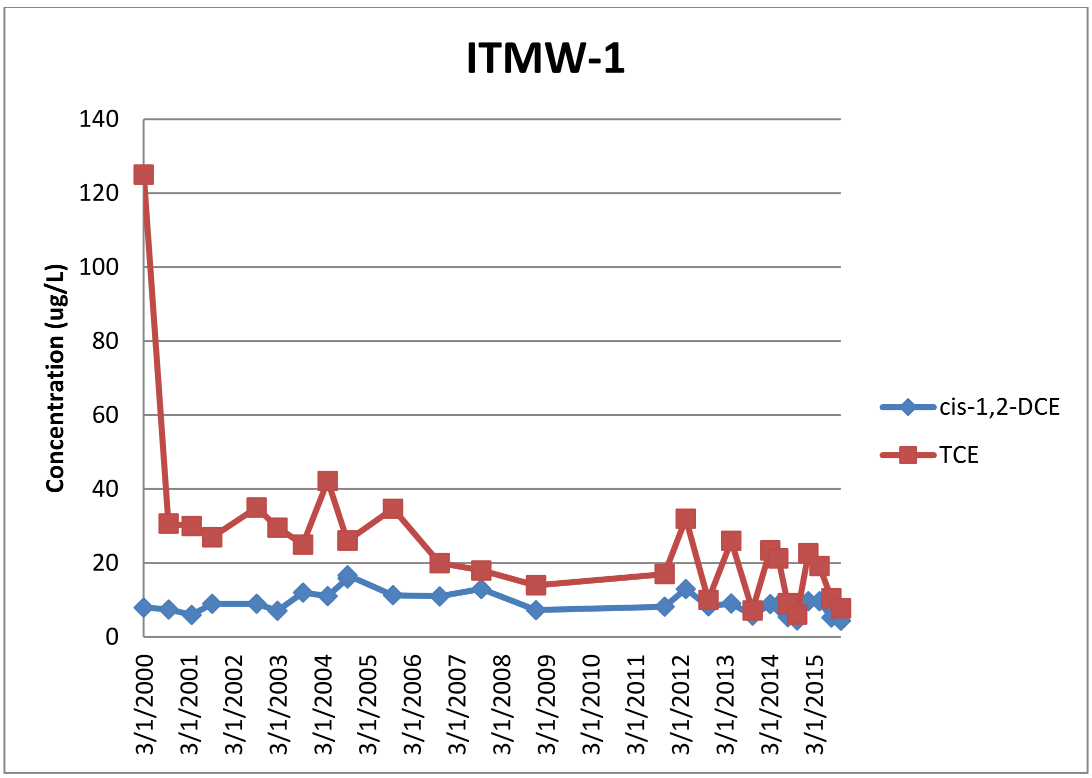
North Plume		South Plume	
Location	**Slope [a]**	**Location**	**Slope [a]**
NA	---	MW-38	-0.33
Average	---	Average	-0.33

[a] Slopes in units of ln(µg/l)/year

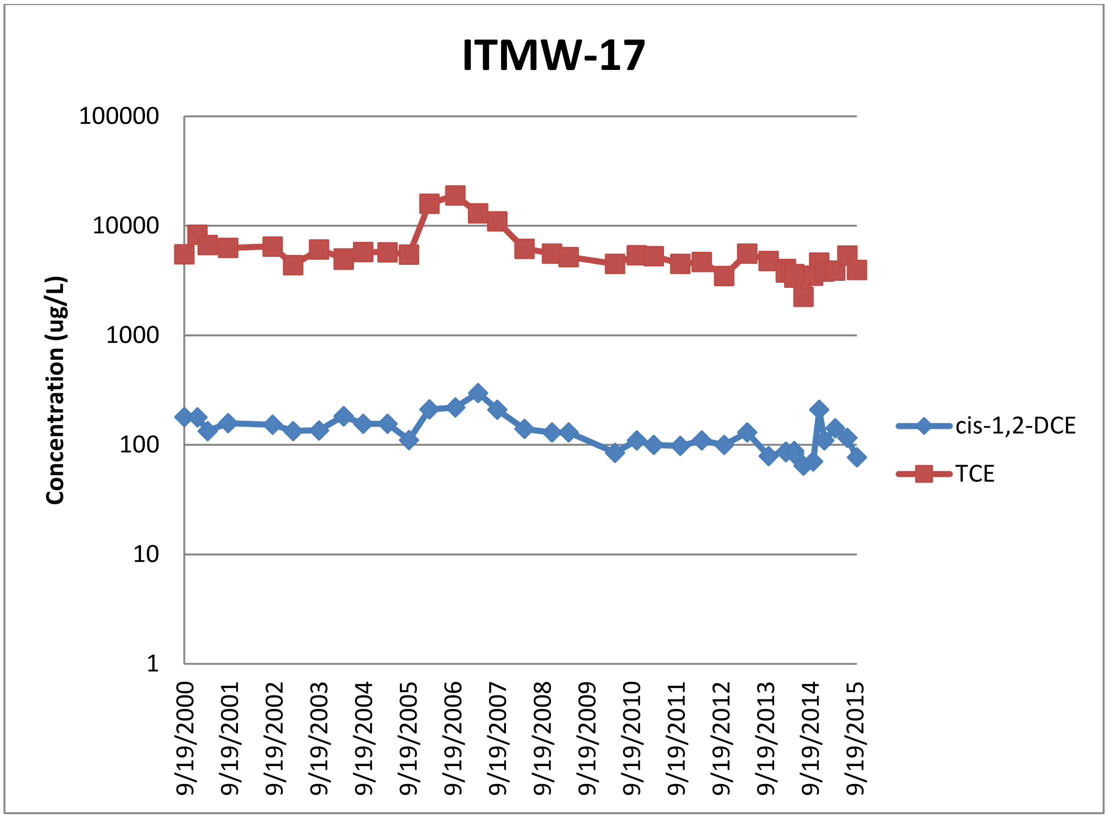
To document the conservative nature of accounting for deviations due to ISCO processes, the average slope of all wells with significant daughter product in both the north and south plumes results include degradation rates of 0.17 ln(µg/l)/year for cis-1,2-DCE and 0.20 ln(µg/l)/year for vinyl chloride. With ISCO processes considered the evaluation yields a value of 0.37 for the northern plume and 0.07 for the southern plume for cis-1,2-DCE. When the ISCO processes were considered for the vinyl chloride data, no wells with valid regression were identified for the northern plume and a value of 0.33 was identified for the southern plume (as shown on the tables above).

The northern plume cis-1,2-DCE and southern plume vinyl chloride degradation rates are much more rapid than the TCE degradation rates for both the north and south plume of 0.15 ln(µg/l)/year. The breakdown products (or daughter products) are degrading faster than the degradation/bioremediation cycle can create them and therefore a "stall" or potential high level of these breakdown products is not likely.

The degradation rate of cis-1,2-DCE in the southern plume is 0.07 ln(µg/l)/year, less than the TCE rate of 0.15 ln(µg/l)/year. However a review of the cis-1,2-DCE concentrations at the locations in the southern plume with the shallowest slopes [ITMW-1 (slope of -0.02) and ITMW-17 (slope of -0.05)], shows an increasing cis-1,2-DCE trend at ITMW-1 until September 2004, at which point the slope (or decreasing trend) steepens. Also fluctuations of cis-1,2-DCE after September 2004 appear to trend fluctuations in TCE, although to a lesser amplitude as shown below.



ITMW-17 also had a fairly shallow regression slope (-0.05) for cis-1,2-DCE. A review of the TCE and cis-1,2-DCE data from this location shows that the cis-1,2-DCE is matching the pattern of TCE concentration fairly well as shown in the chart below. Therefore cis-1,2-DCE is not increasing as a result of a MNA stall.



The northern plume degradation rate for vinyl chloride could not be calculated as only one well (IW-73) contained a sufficient amount of vinyl chloride data necessary for statistical evaluation via regression analysis. However the concentration of vinyl chloride at IW-73 as of October 2015 was 0.59 ug/L (J flagged), therefore vinyl chloride is not being generated at this location in sufficient quantities to affect remedial action levels.

Vinyl chloride is not detected in the north plume at sufficient quantities to be of concern during future degradation of the north plume; however, monitoring will continue to assess vinyl chloride conditions in the north plume. Cis-1,2-DCE concentration trends appear to be mimicking the TCE concentrations trends; therefore, cis-1,2-DCE concentrations are not expected to increase as a result of future degradation of the south plume.