FIFTH FIVE-YEAR REVIEW REPORT
CHEMICAL INSECTICIDE CORPORATION SUPERFUND SITE
MIDDLESEX COUNTY, NEW JERSEY

Prepared by

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Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS 2
I. INTRODUCTION 3
FIVE-YEAR REVIEW SUMMARY FORM 5
II. RESPONSE ACTION SUMMARY 5
Basis for Taking Action 5
Remaining Response Action 6
Status of Implementation 6
IC Summary 7
Systems Operations/Operation & Maintenance 7
III. PROGRESS SINCE THE LAST REVIEW 8
IV. FIVE-YEAR REVIEW PROCESS 8
Community Notification, Involvement & Site Interviews 8
Data Review 9
Site Inspection 9
V. TECHNICAL ASSESSMENT 10
QUESTION A: Is the remedy functioning as intended by the decision documents? 10
QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid? 10
QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy? 12
VI. ISSUES/RECOMMENDATIONS 12
VII. PROTECTIVNESS STATEMENT 12
VIII. NEXT REVIEW 12

APPENDIX A Figures
APPENDIX B Tables

LIST OF ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CEA	Classification Exception Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIC	Community Involvement Coordinator
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FYR	Five-Year Review
NJGWQS	New Jersey Ground Water Quality Standards
NJDEP	New Jersey Department of Environmental Protection
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PCB	Polycyclic biphenyls
PCE	tetrachloroethylene
POTW	Publicly Owned Treatment Works
ppb	parts per billion
ppm	parts per million
PRP	Potentially Responsible Party
RAO	Remedial Action Objectives
RI/FS	Remedial Investigation/Feasibility Study
RD/RA	Remedial Design/Remedial Action
ROD	Record of Decision
RPM	Remedial Project Manager
SVI	soil vapor intrusion
TCE	trichloroethylene
UU/UE	Unlimited use/unrestricted exposure
VOCs	Volatile Organic Compounds
WRA	Well Restriction Area

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fifth FYR for the Chemical Insecticide Corporation Superfund site (site). The triggering action for this statutory review is the September 23, 2014, approval date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants or contaminants remain at the site within the groundwater aquifers above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The site consists of four (4) Operable Units (OUs): OU1 was an interim remedy to control contaminated runoff from the site; OU2 addressed surface and subsurface soils at the site; OU3 addressed soil and sediment in off-site creek areas; and OU4 continues to address contaminated groundwater associated with the site. Since OU1 was an interim remedy and both OU2 and OU3 have remediated the soils and sediments to residential standards, OU4 remains to be evaluated in this five-year review.

The site's fifth FYR began on November 28, 2018. The review team included Mark Austin - EPA Remedial Project Manager (RPM), Sharissa Singh - EPA hydrogeologist, Lora Smith-Staines, Ph.D. - EPA human-health risk assessor, Mindy Pensak - EPA ecological risk assessor and Pat Seppi - EPA community involvement coordinator. This is a Fund-lead site.

Site Background

The site (see Figure 1) is a fenced 5.7 acre property located at 135 Whitman Avenue in Edison Township, Middlesex County, New Jersey. It is bound by an active interstate (Route 287), a utility easement (Public Service Electric and Gas route), a few active commercial properties and by a vacant industrial property (formerly owned by Mueller Machinery). The site is currently covered with grass and also contains a rip rap channel and grass-lined swale to manage surface water runoff and drainage. The nearest residential properties are located approximately 300 yards away and are separated from the site by either Route 287 or the nearby Mueller commercial property. There are no permanent surface water bodies on the site. After heavy precipitation, the surface water runoff drains toward the northeast corner of the site where it discharges into an underground conduit eventually flowing into an unnamed tributary of Mill Brook. Mill Brook, in turn, discharges into the Raritan River approximately four miles downstream of the site. Both the unnamed tributary and Mill Brook run through residential areas. The residents near these tributaries and the residents directly surrounding the site all obtain potable water from a public water supply system located approximately eight miles from the site.

Hydrogeologically, the subsurface consists of two water-bearing units – an unconfined overburden zone and a partially confined, fractured bedrock water-bearing zone – separated by a leaky confining layer (the saprolite). Generally, the overall groundwater flow in the overburden aquifer, Figure 2, is to the southeast.

Groundwater flow within the shallow bedrock, Figure 3, mimics the flow direction of the overburden aquifer. Groundwater flow within the deeper bedrock is also generally to the southeast. The groundwater aquifers are classified as Class IIA groundwater aquifers (potable water sources) by the State of New Jersey; however, are not used as such.

Chemical Insecticide Corporation owned and operated the site from 1954 to 1970. Operations involved formulating and manufacturing insecticides, fungicides, rodenticides, and herbicides. These activities led to widespread chemical contamination at the site, as well as migration of contaminants to off-site areas. At one time, the property consisted of seven buildings. Additionally, lagoons existed along the eastern property boundary where they were used to hold the facility's wastewater. Refer to Appendix B-Table 1 for additional detailed events.

The following OUs were performed and completed by EPA as part of the overall cleanup for the site:

OU1 (1989) - EPA issued a Record of Decision (ROD) for OU1 selecting an interim remedial action to control runoff from the site. The primary objective was to stabilize the site until final remedies could be implemented.

OU3 (1995) - The OU3 remedy addressed arsenic-contaminated soil and sediment identified in off-site creek areas. The remedial action objectives were to eliminate the potential for exposure to contaminated soils and sediment in residential areas and areas in and immediately adjacent to the unnamed tributary and Mill Brook.

OU2 (2000) **-** This OU addressed contaminated surface and subsurface soils on the site and neighboring properties through excavation and disposal, followed by restoration. The main objectives were to reduce or eliminate the direct contact threat to levels protective of a commercial/industrial use, and minimize or eliminate contaminant migration to the groundwater and surface waters. Remedial Goals are found in Appendix B-Table 2.

The site is currently zoned for light industrial/recreational use. In evaluating potential risks posed by the site, EPA considered the possibility of future light-industrial/ recreational development.

On September 22, 2008, the remediated Chemical Insecticide Corporation property portion of the site was purchased and redeveloped by the Township of Edison. This part of the Superfund site has been remediated of all soil contamination and is currently redeveloped into recreational/open space. The Township has since installed two large dog runs and a child's playground for the surrounding public's use. There is also an asphalt paved driveway with a large parking lot.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Chemical Insecticide Corporation		
EPA ID: NJD980484653		
Region: 2	**State:** NJ	**City/County: :Edison/Middlesex**
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Mark Austin		
Author affiliation: US EPA		
Review period: 11/28/2018- 4/24/2019		
Date of site inspection: 3/19/2019		
Type of review: Statutory		
Review number: 5		
Triggering action date: 9/23/2014		
Due date *(five years after triggering action date)*: 9/23/2019		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

When the Remedial Investigation and Feasibility Study (RI/FS) was being conducted at the site in 1987, EPA performed several removal actions to mitigate risks associated with contaminated soil and surface water runoff. In 1989, a ROD for OU1 was issued as an interim remedial action to control surface water runoff, install fencing for security and temporarily cover the site with a high-density polyethylene surficial cap to prevent site-related contaminants from being transported to off-site areas.

The 1987 RI/FS found soils on site to consist of arsenic, pesticides, herbicides and trace amounts of Volatile Organic Compounds (VOCs). Soils and sediments off-site on a few adjacent properies and in an unnamed tributary and Mill Brook were found to have been impacted with arsenic. The 1987 investigation also found that the groundwater was contaminated with -arsenic but also thallium, herbicides specifically dinoseb, methoxone (MCPA), mecoprop (MCPP), pesticides included a-BHC and g-BHC (Lindane), VOCs specifically 1,2-dichloroethane, trichloroethylene (TCE) and vinyl

chloride. It was concluded that these contaminants, particularly arsenic in soils and sediments, if not addressed under both an industrial/commercial and residential exposure scenario, posed an unacceptable risk to current and future occupants. Impacted groundwater also posed an unacceptable risk to future users. With regard to ecological risks associated with contamination in surface soils, it was concluded there was an unacceptable risk to various ecological receptors found at the site.

In August 1990, EPA included the site on the National Priorities List (NPL).

Remaining Response Action

OU4 (2003) - For OU4, the remedy addresses site-related contamination impacting the surrounding groundwater. The remedial action objectives are to:

- Prevent exposure to the public of contaminated groundwater that presents a significant risk to human health and the environment;
- Minimize migration of contaminated groundwater;
- Restore contaminated groundwater to drinking water standards within a reasonable time frame; and,
- Protect uncontaminated groundwater.

To address the remedy objectives, a long-term groundwater monitoring plan continues to be carried out. The sampling and analysis plan is designed to monitor the nature and extent of groundwater contamination in the overburden and bedrock aquifers below and nearby the site.

In addition, the OU4 ROD concluded that both aquifers contaminated by the site could not be restored and therefore no practicable remedial alternatives could be implemented. Therefore, an Applicable or Relevant and Appropriate Requirement (ARAR) waiver for the groundwater due to technical impracticability was invoked. The waiver, referred to as a technically impracticable (TI) waiver encompasses a surface area of approximately 50 acres in size.

Status of Implementation

Construction of OU1 (interim remedy) which consisted of fencing, temporary capping and creating a surface water drainage system was completed in 1994. The OU1 remedy was replaced by work completed under the OU2 remedy.

Under the OU3 action, which addressed arsenic-contaminated soil and sediment identified in off-site creek areas, 13,800 cubic yards of contaminated soil and sediment was excavated and sent off-site for disposal. Restoration of affected areas, including stream beds, and wetlands followed. Subsequent post-remediation monitoring found that the remedy cleaned the off-site creek areas to a level that allows for unrestricted use/unlimited exposure (UU/UE).

At the conclusion of the OU2 remediation in 2005, which addressed site-wide surface and subsurface soils, approximately 241,000 cubic yards of contaminated soil had been excavated and transported off-site. Excavation depths reached approximately 20 feet below ground surface in some areas. These deeper excavations removed contaminated soils considered to be sources of groundwater contamination. After completion, the site was backfilled to grade with clean soil and restored with natural vegetation. A review of the post-excavation sampling results confirmed that all identified site-related contaminants

had been entirely removed. Since no site-related contaminants had been left behind, no further limits on future site uses were required on the Chemical Insecticide Corporation property.

Although the OU2 remedy addressed soil contamination (arsenic and pesticides) derived from Chemical Insecticide's past operations on the nearby Muller Machinery property, both EPA and NJDEP determined that the Muller Machinery operations independently contaminated portions of their own property with lead and as such, the remediation of lead on the Muller Machinery property was not addressed under the OU2 remedy. Upon completing OU2, the remnant lead contamination was documented by EPA and jurisdiction for the Muller Machinery cleanup work was transferred back to NJDEP. The property is not occupied and has been abandoned. NJDEP plans to work with a future owner to address the remaining contamination.

As noted previously, the groundwater remedy (OU4) is currently being implemented. A groundwater monitoring program is in place along with the technical impracticability (TI) waiver.

Institutional Controls Summary

A Classification Exception Area and Well Restriction Area (CEA/WRA) was established for the site in 2009 to provide notice that applicable constituent standards for portions of an aquifer are not met and use in localized areas should be restricted unless special precautions or treatment is employed prior to water use.

The site's specific designation is a result of site-related contaminants of concern (COCs) detected in groundwater at concentrations that exceed the remediation goals defined in the OU4 ROD. The site-noted goals are the most conservative value (i.e., the lowest) of the following sets of standards: (1) USEPA's Maximum Contaminant Levels (MCLs); (2) NJDEP's Safe Drinking Water Standards (or MCLs); and (3) NJDEP's Class IIA Ground Water Quality Standards (GWQS). Contaminants noted in the CEA are benzene, tetrachloroethylene (PCE) and its degradation byproducts, BHC compounds, dinoseb, and arsenic.

The CEA/WRA also addresses the OU4 ROD requirement to restrict the installation of wells and the use of groundwater in the area of groundwater contamination.

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Site-wide Groundwater	Yes	Yes	Entire Site	To establish an institutional control for groundwater by restricting installation of groundwater wells and groundwater use	CEA is in place since 2009

Systems Operations/Operation & Maintenance

The site is bordered by a chain-linked fence to deter potential trespassers although not required. The property is now owned and maintained by the Township of Edison.

Long term groundwater monitoring is being conducted at the site to monitor the nature and extent of contamination and assess the migration and potential attenuation of the plume over time. The sampling frequency of the monitoring program is currently scheduled to occur every 15 months. Groundwater samples are collected from 22 monitoring wells and analyzed for pesticides, herbicides, metals, VOCs and SVOCs. See Table 2 for a complete lists of contaminants of concern.

Potential site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site.

III. PROGRESS SINCE THE LAST REVIEW

Protectiveness Determinations/Statements from the 2014 FYR

Protectiveness Determination	Protectiveness Statement
Protective	The remedies implemented at the site are protective of human health and the environment

Other findings: The previous FYR suggested the installation of a deeper bedrock well. As part of assessing the site COCs in groundwater within the bedrock formation below the source area, one additional bedrock monitoring well was installed in 2018. Prior to this new well installation, the deepest well in the monitoring program was set at 90 feet below groundsurface. The new well, set at 130 feet below ground surface, will assess potential COC migration within the bedrock aquifer. It will also provide valuable information that will aid in the analysis of whether the NJDEP issued CEA limit of 100 feet below ground surface remains protective.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On October 2, 2018, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at 42 Superfund sites in New York and New Jersey, including the Chemical Insecticide Corporation site. The announcement can be found at the following web address: https://www.epa.gov/aboutepa/fiscal-year-2019-five-year-reviews. The results of the review and the report will be made available at the Site information repository located at the Edison Library located on 340 Plainfield Avenue in Edison, New Jersey. A second repository is located at the EPA Region 2 office, 290 Broadway, New York, New York 10007-1866. In addition, a public notice was made available to the township by posting it on their webpage on June 19, 2019 stating that there was a FYR and inviting the public to submit any comments to the U.S. EPA.

There are occasional updates provided by EPA to the Township of Edison. These discussions are usually informal updates of site related activities such as the notifying of scheduled groundwater monitoring events on the property and in the surrounding community. There were no interviews with local officials or community representatives directly related to this FYR.

Data Review

Since OU1, OU2 and OU3 are completed and no new data exists for these actions, the OU4 (groundwater) sampling data was reviewed to support this FYR. Three (3) monitoring events were conducted in the past five years. See Table 3 for Contaminant Trend analysis graphing. The results of these events indicate the following:

- Upgradient monitoring wells are identified as MW-4S and MW-4BR. In the past five (5) years COC concentrations have been either non detect or below their respective remediation goals, except for arsenic, which was detected just slightly above its remediation goal of 3.0 at a concentration of 3.1 ug/L in MW-4BR.
- Source area monitoring wells are identified as MW-BF2, MW-BF2D, MW-5BR and MW-6BR. COC concentration trends appear to be decreasing in the source wells but still remain above their respective remediation goals. In addition to the site COCs, benzene, 1,2 dichlorobenzene and vinyl chloride were detected above regulatory standards in the most recent sampling event (April 2018). Trend analysis indicates that vinyl chloride concentrations appear to be increasing in MW-BF2D. In an effort to further evaluate groundwater in the deeper bedrock, monitoring well MW-BF2BR was installed in 2018 to a depth of 130 feet. Groundwater samples collected from this well indicates that only arsenic was detected slightly above its remediation goal of 3.0 at concentration of 3.9 ug/L, which is also near background levels observed in the upgradient wells. No other site related COCs were detected above regulatory standards in this well.
- Mid-plume monitoring wells are identified as MW-GU, MW-QD, MW-FU, MW-NU3S, MW-NUS2D, MW-BF-4 and MW-7BR. Trend analysis was reviewed for MW-QD, MW-BF4 and MW-7BR. COC concentrations within these wells appear to be decreasing and/or non detect or stable. No COC were detected above regulatory standards in monitoring wells MW-GU, MW-FU, MW-NU3S and MW-NU2SD in the most recent sampling data from April 2018.
- Cross gradient monitoring wells are identified as MW-2S and MW-2BR. Arsenic was only detected slightly above its remediation goal of 3.0 ug/L at a concentration of 3.2 ug/L in the Spring of 2015. No other COCs were detected above their respective remediation goals in any of the other wells sampled during remaining the two (2) sampling events conducted during this 5YR period.
- Sentinel monitoring wells MW-3S and MW-3BR do not exhibit COC concentrations above their respective remediation goals.

A review of groundwater data indicates that for all monitoring well locations where alpha-BHC, arsenic, and TCE were detected above the remediation goal, concentrations are decreasing and/or stable. For monitoring well locations where vinyl chloride was detected greater than the remediation goal, concentrations are stable and/or potentially increasing. Further evaluation of these trends will continue into the next FYR. Additionally, no concentrations of contaminant above the remediation goals were detected in wells along the boundary of the CEA. Based on the existing LTM (Long-Term Monitoring) network, the horizontal extent of the plume is stable.

Site Inspection

The inspection of the site was conducted on March 14, 2019. In attendance were Mark Austin and Sharissa Singh from EPA. The purpose of the inspection was to assess the performance of the remedy.

The site inspection consisted of a physical inspection of the entire property, monitoring wells, on-site drainage systems and, surrounding off-site areas. Overall, the Township of Edison has maintained the property in good order. The site itself remains free of refuse and the grass and foliage continues to be maintained. All groundwater monitoring wells were determined to be in good working order.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

The site groundwater remedy (OU4) is comprised of institutional controls designed to prohibit the installation of wells and restricts the use of groundwater at the site and the surrounding 50-acre area. To evaluate any changes to the groundwater contamination plumes, in both the overburden and bedrock aquifers over time, a long-term groundwater monitoring program continues to be implemented. As noted previously, the ROD concluded that both aquifers contaminated by the site could not be restored and therefore no practicable remedial alternatives could be implemented. Consequently, an Applicable or Relevant and Appropriate Requirement (ARAR) waiver for the groundwater due to technical impracticability was invoked for a surface area of approximately 50 acres in size, see Figure 3. The monitoring program is expected to continue and will be evaluated in the following FYR.

The results of the groundwater data evaluation indicates that OU2 source control activities have eliminated the contaminant load into the overburden and reduced the contaminant load into the shallow bedrock aquifer. Additionally, the groundwater in the deeper bedrock does not appear to be impacted by COCs. The CEA size and extent remains adequate to prevent unacceptable use of contaminated groundwater. Based on the information reviewed for this FYR period, the remedy under OU4 continues to operate and function as designed.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

The 2004 OU4 ROD followed the Risk Assessment Guidance for Superfund used currently by EPA. This process remains valid.

COCs in the OU4 ROD include: primarily arsenic, but also: 1,2-dichloroethane, trichloroethylene (TCE), vinyl chloride, pentachlorophenol, alpha-BHC, 2,4-dichlorophenol, 2,4-dinitrophenol, dinoseb, methoxone (MCPA), mecoprop (MCPP), iron, manganese, and thallium.

There have been no changes in toxicity values for the identified COCs in the last five years.
The OU4 remedy evaluated future residential (adult and child) exposure to groundwater as drinking water and via direct contact and inhalation of volatiles while showering/bathing scenarios.

Exposure pathways that resulted in unacceptable cancer risk or noncancer hazard included future on-site residents (adult and child) via ingestion of contaminated groundwater (OU4).

The soil vapor intrusion (SVI) pathway was evaluated using the Johnson & Ettinger model as part of the OU4 risk assessment. SVI is evaluated when soils and/or groundwater are known or suspected to contain VOCs. The model made conservative assumptions regarding groundwater contamination and concluded that health risks associated with potential VOC migration into indoor air would be minimal. No buildings currently exist on the site, but because the site may be redeveloped in the future, any

construction there would need to be done with consideration of the potential for vapor intrusion, based on the most recent groundwater data.

In the most recent round of sampling (2018), VOC concentrations appear to be decreasing or stable. TCE in groundwater was detected in one well above the cleanup goal of 1 ug/L at 1.7 ug/L. While identified as a COC, TCE did not likely originate from site-related activities. PCE is no longer detected above its cleanup goal of 1 ug/L. Vinyl chloride concentrations were detected at 10, 17 and 63 ug/L in wells: BF-2, MW-5BR and BF-2D in 2018 (cleanup goal of 1 ug/L). These wells are just downgradient of former disposal areas on the property. Benzene was detected in three wells above its cleanup goal of 1.0 ug/L: 4.8 ug/L in BF-2, 11 ug/L in BF-2D, and 14 ug/L in MW-5BR. Methylene chloride and 1,2-dichloropropane were each detected once above their respective cleanup goals of 3.0 ug/L and 1.0 ug/L in transition well QD at 5.0 ug/L and 2.4 ug/L).

Remediation goals defined in the OU4 ROD are the most conservative value (i.e., the lowest) of the following sets of standards: (1) USEPA's Maximum Contaminant Levels (MCLs); (2) NJDEP's Safe Drinking Water Standards (or MCLs); and (3) NJDEP's Class IIA Ground Water Quality Standards (GWQS) which remain appropriate.

The 2003 OU4 ROD selected the following remedial action objectives:
- Prevent public exposure to contaminated groundwater that presents a significant risk to human health and the environment;
- Minimize migration of contaminated groundwater;
- Restore contaminated groundwater to ARAR-based levels or technically feasible levels for the protection of human health and the environment; and
- Protect uncontaminated groundwater.

The OU2 (2000 ROD) remedy for on-site soils involved excavation of contaminated soils, off-site disposal or treatment and backfilling with clean soil. These measures interrupted the direct contact exposures to site soils. The excavation or treatment of contaminated on-site and off-site soils and sediments has decreased the amount of contamination reaching groundwater and surface water over time. Wells MW-2S, MW-2I, MW-2BR, GU, and BF-4 act as sentinel wells for direct flow of groundwater into the surface water creek. All contain low or non-detect levels of site contaminants, suggesting that migration to the creek is not occurring. Currently, only a few contaminants in a handful of wells continue to exceed cleanup goals in the last five years. Continued monitoring of groundwater will confirm protectiveness of the remedy.

For OU4, arsenic remains the most significant Site-related contaminant, elevated above the site cleanup goal of 3.0 ug/L in five wells: BF-2 (332 ug/L), BF-2D (4.9 ug/L), BF-2BR (3.9 ug/L), MW-4BR (3.1 ug/L) and MW-5BR (118 ug/L). Even though there is a history of arsenic use at CIC, bedrock wells BF-2D, BF-2BR and MW-4BR are at background concentrations. The 2005 OU2 removal of 240,00 cubic yards of contaminated soil ranging from 2 to 20 feet below ground surface has resulted in drastic decreases of arsenic in shallow groundwater at the source areas. The shallow and transitional wells are now all below cleanup levels. Monitoring wells BF-2 and MW-5BR which are located nearest to the former source area still have concentrations above 100 ug/L and are not considered to be near background concentrations. However, both wells are showing a decreasing trend. Continued monitoring of groundwater will confirm protectiveness of the remedy.

Residents and businesses surrounding the site obtain potable water from a public water supply system so this pathway remains incomplete. Further, a Classification Exemption Area (CEA)/ Well Restriction

Area (WRA) designation was instituted due to site-related COCs detected in groundwater at concentrations that exceed the remediation goals defined in the OU4 ROD. Contaminants noted in the CEA are benzene, PCE and its degradation byproducts, BHC compounds, dinoseb, and arsenic. The CEA/WRA also addresses the OU4 ROD requirement to restrict the installation of wells and the use of groundwater in the area of groundwater contamination. Continued monitoring of sentinel wells will ensure that contamination does not migrate beyond the extent of the CEA/WRA.

In evaluating potential risks posed by the site, EPA considered the possibility of future light-industrial/recreational development. While part of the remediated site has been converted to a recreational/open space area, there is no longer a direct contact concern as a result of the remediation to date. No additional sources of contamination, COCs, exposed populations or exposure pathways have been identified since the last five-year review. There have been no other changes in site conditions that could affect the protectiveness of the remedy.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No new information has called into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

There are no issues/recommendations resulting from this FYR.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)		
Operable Unit: OU4	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedy under OU4 is protective of human health and the environment.		

Sitewide Protectiveness Statement	
Protectiveness Determination: Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedies at the Chemical Insecticide Corporation site are protective of human health and the environment.	

VIII. NEXT REVIEW

The next FYR report for the Chemical Insecticide Corporation Superfund Site is required five years from the completion date of this review.

Appendix A - Figures

FIGURE 1: Site Map

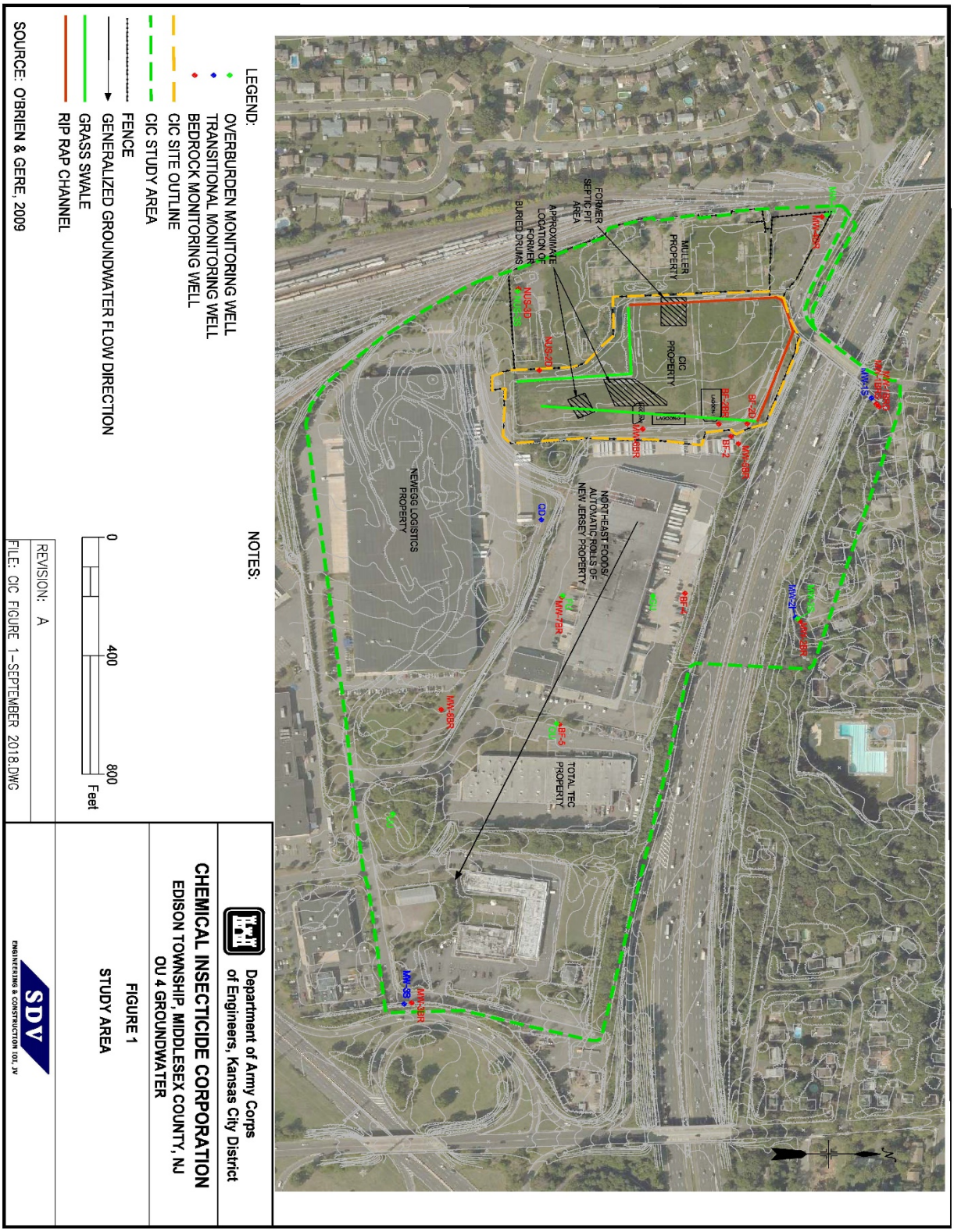


FIGURE 2: Site Overburden Groundwater Contour Map

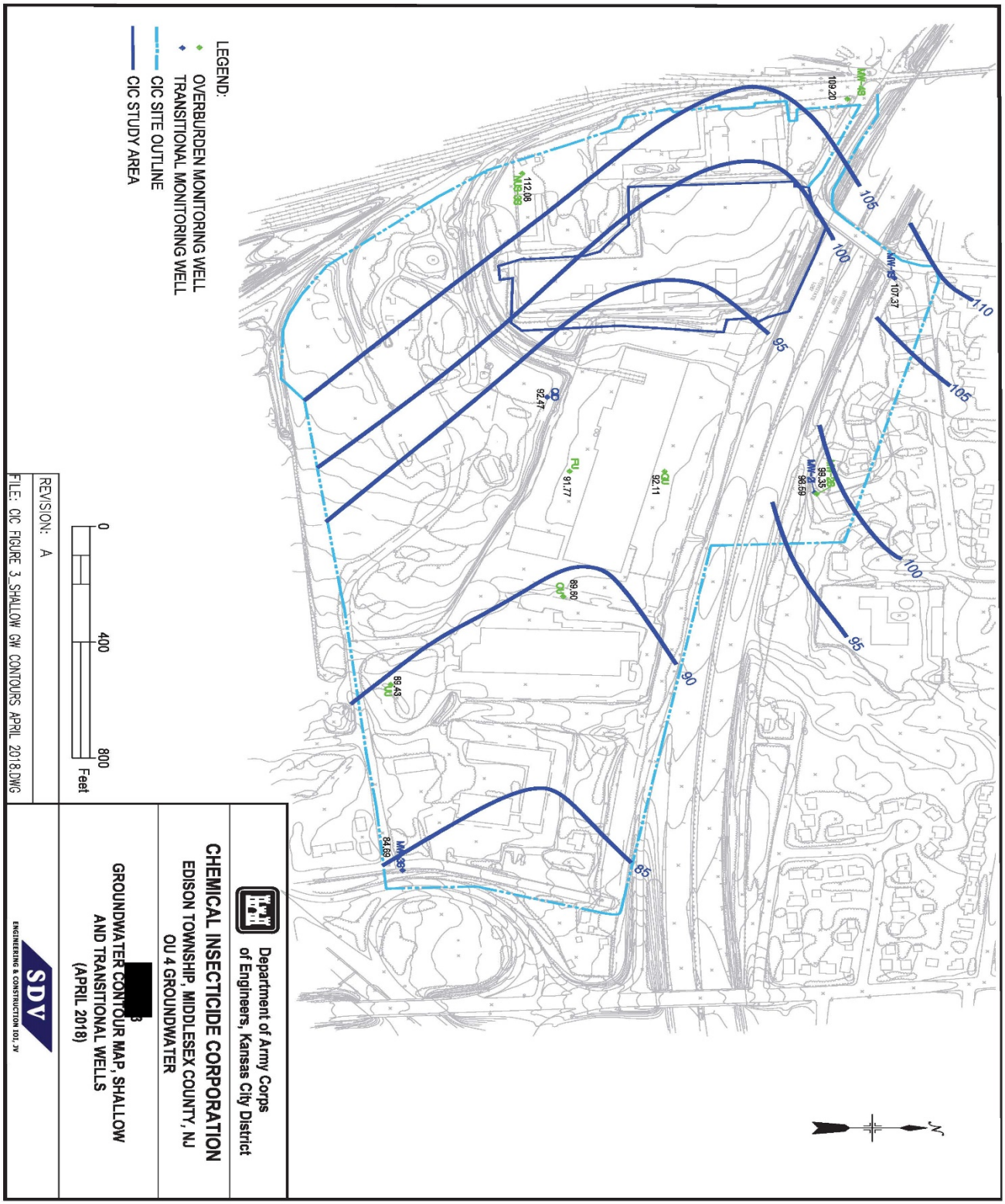
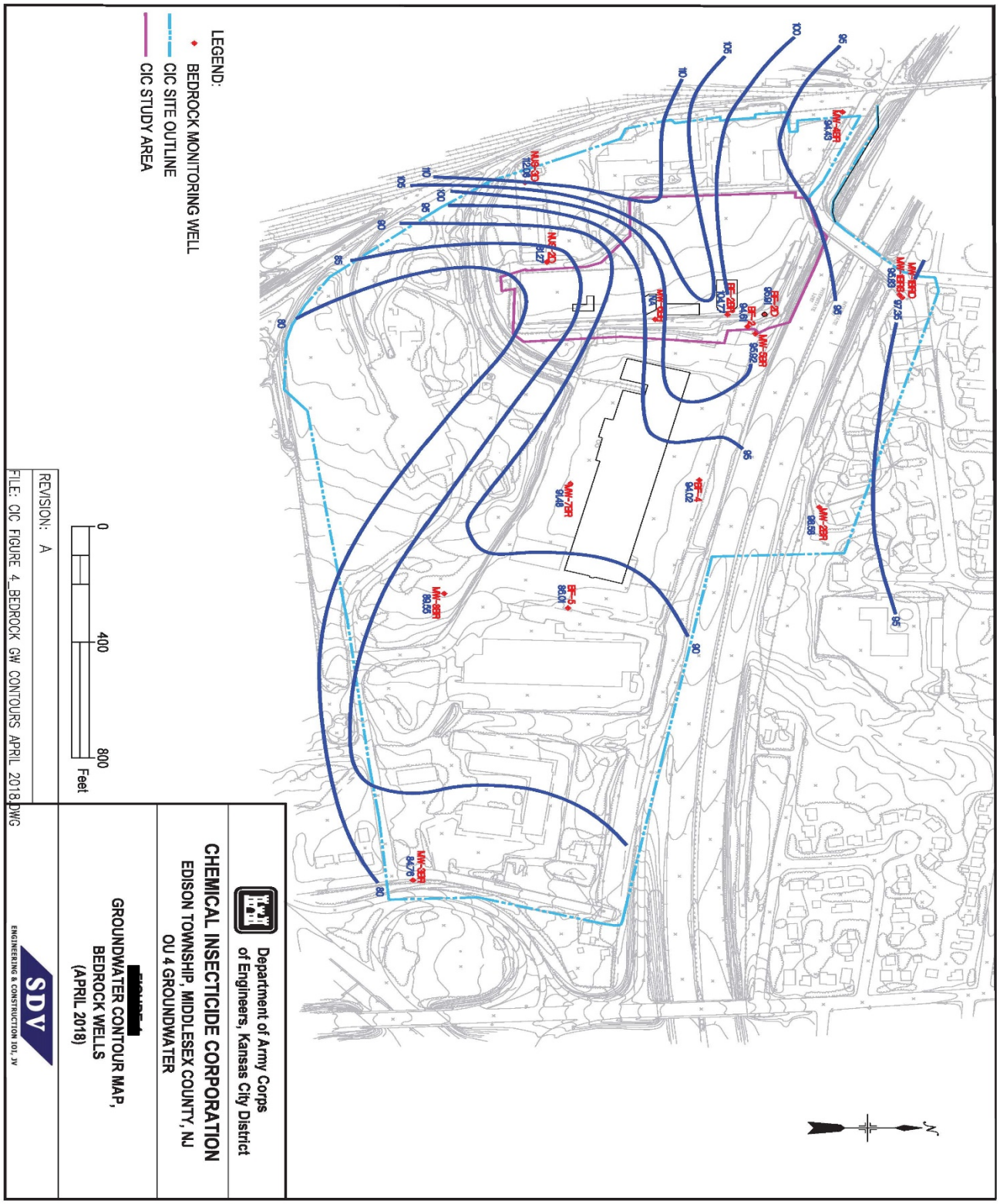


FIGURE 3: Site Bedrock Groundwater Contour Map



Appendix B - Tables

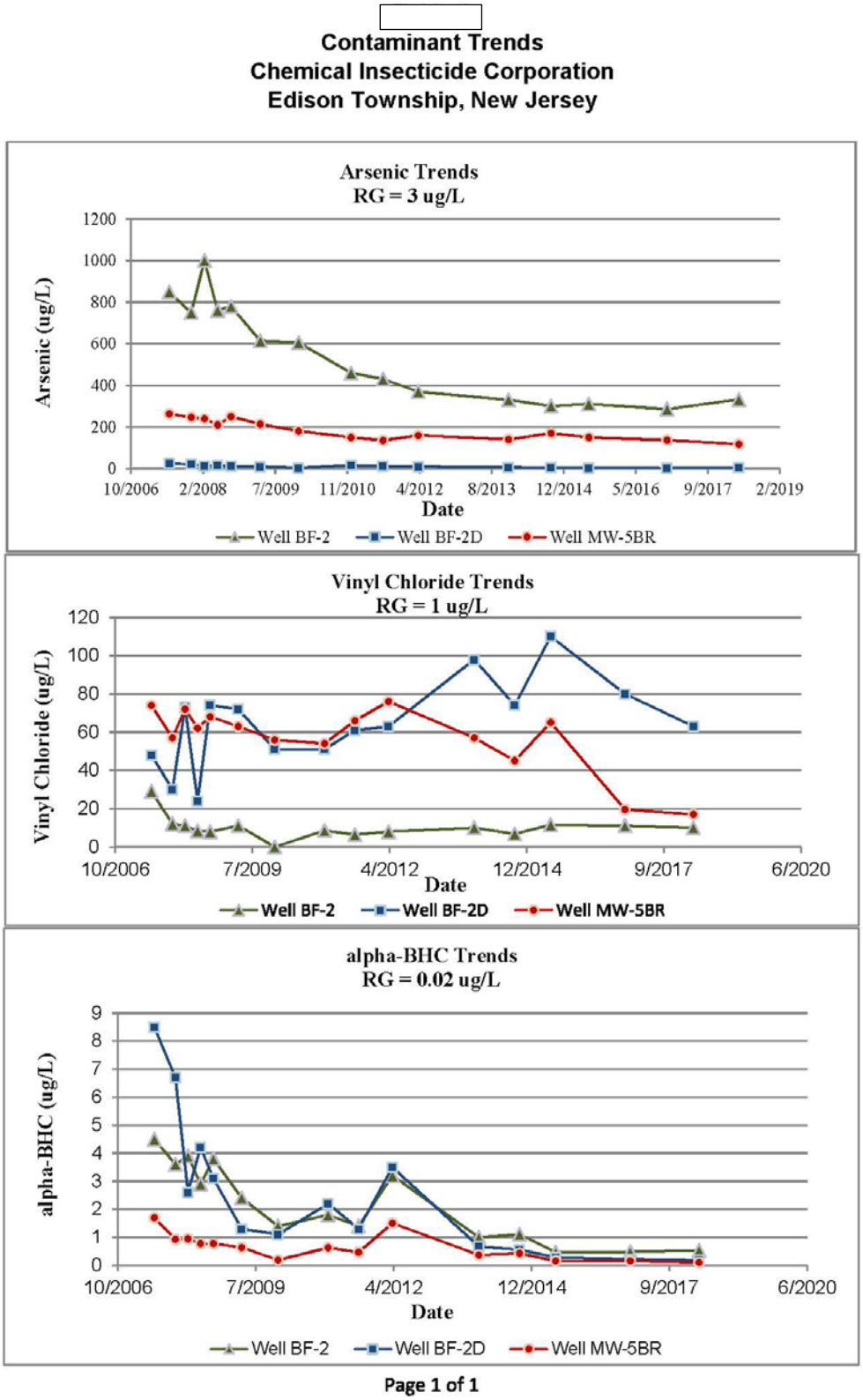
TABLE 1: Chronology of Site Events	
Event	**Date**
CIC owned and operated the site for the formulating of, and possibly the manufacturing of, insecticides, fungicides, rodenticides, and herbicides.	1954-1970
CIC declares bankruptcy. The facility is bought by Piscataway Associates.	1970
EPA found extensive contamination on-site and limited off-site areas.	1983
Remedial investigation (RI) initiated at the site.	1987
Operable Unit One (OU1) ROD issued, an interim remedy that consisted mainly of fence installation, capping the site, and constructing a surface water runoff system.	9/1989
Site listed on EPA's National Priorities List (NPL).	8/1990
Investigations by EPA at off-site locations.	1992-1993
OU1 Remedy completed.	9/1994
Operable Unit Three (OU3) ROD issued addressing soil and sediment contamination on off-site areas.	3/1995
OU3 Remedy initiated and completed.	4/1997
First Five-Year Review completed.	6/1998
Operable Unit Two (OU2) ROD issued consisting of the excavation and off-site disposal of contaminated soil followed by restoration of the all affected areas on site.	9/2000
EPA entered into a Settlement Agreement with Piscataway Associates and Piscataway Corp., landowners and PRP.	6/2001
OU2 remedy commenced and OU2 baseline groundwater sampling event completed by EPA.	2003
Both the Second Five-Year Review and Operable Unit Four (OU4) ROD were issued. OU4 selecting a groundwater remedy consisting of a long-term groundwater monitoring plan and institutional controls.	12/2003
OU2 Remedy completed.	5/2005
OU2 post-remediation groundwater sampling event completed by EPA.	2005
OU4 Remedy initiated with a well inventory/usability survey completion.	2006
OU4 Quarterly groundwater monitoring events being implemented.	2007 to 2009
OU2 Remedial Action Report approved.	9/2007
CIC Property sold to Township of Edison by land owner.	9/2008
Third Five-Year Review completed.	3/2009

OU4 Seasonally Adjusted (every 9 months) groundwater monitoring events.	2009 to 2014
Fourth Five-Year Review completed	9/2014
OU4 Seasonally Adjusted (every 15 months) groundwater monitoring events.	2014 to present
Fifth Five-Year Review completed.	5/2019

TABLE 2: Remediation Goals for Groundwater (all concentrations in µg/L) From the OU4 ROD

Contaminants of Concern	National Primary Drinking Water Standards (Federal MCLs)	Remediation Goals
Pesticides		
a-BHC	--	0.02
g-BHC (Lindane)	0.2	0.2
Herbicides		
Dinoseb	7	7
Methoxone (MCPA)	--	100
Mecoprop (MCPP)	--	100
Metals		
Arsenic	10	8
Thallium	2	2
VOCs		
Vinyl Chloride	2	2
Trichloroethylene (TCE)	5	1
1,2-Dichloroethane	5	2
SVOCs		
Pentachlorophenol	1	1
4-Chloroaniline	--	100
2,4-Dichlorophenol	--	20
2,4-Dinitrophenol	--	40

TABLE 3: Contaminant Trends



Page 1 of 1

TABLE 4: Documents, Data and Information Reviewed in Completing the Five-Year Review

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- U.S. Environmental Protection Agency, "*EPA Superfund Record of Decision: Operable Unit One, Chemical Insecticide Corporation Site, Edison Township, Middlesex County, NJ,*" Region 2, New York, New York, September 1989.
- U.S. Environmental Protection Agency, "*EPA Superfund Record of Decision: Operable Unit Three, Chemical Insecticide Corporation Site, Edison Township, Middlesex County, NJ,*" Region 2, New York, New York, March 1995.
- U.S. Environmental Protection Agency, "*EPA Superfund Record of Decision: Operable Unit Two, Chemical Insecticide Corporation Site, Edison Township, Middlesex County, NJ,*" Region 2, New York, New York, September 2000.
- U.S. Environmental Protection Agency, "*EPA Superfund Record of Decision: Operable Unit Four, Chemical Insecticide Corporation Site, Edison Township, Middlesex County, NJ,*" Region 2, New York, New York, September 2003.
- U.S. Environmental Protection Agency, "*EPA Five-Year Review: Chemical Insecticide Corporation Site, Edison Township, Middlesex County, NJ,*" Region 2, New York, New York, June 1998.
- U.S. Environmental Protection Agency, "*EPA Five-Year Review: Chemical Insecticide Corporation Site, Edison Township, Middlesex County, NJ,*" Region 2, New York, New York, December 2003.
- U.S. Army Corp. of Engineers, "Remedial Action Report: *Chemical Insecticide Corporation Superfund Site, Operable Unit 2 – Soil Remediation, Edison, NJ,*" September 2007.
- U.S. Army Corp. of Engineers, "Additional Groundwater Investigation Report and 1st/2nd Quarter Long-Term Monitoring Events: *Chemical Insecticide Corporation Superfund Site, Operable Unit 4 – Groundwater, Edison Township, Middlesex County, NJ,*" May 2008.
- U.S. Army Corp. of Engineers, "3rd Quarter Long-Term Monitoring Event Report: *Chemical Insecticide Corporation Superfund Site, Operable Unit 4 – Groundwater, Edison Township, Middlesex County, NJ,*" June 2008.
- U.S. Army Corp. of Engineers, "Annual Report, Long-Term Monitoring Program – Year 1: *Chemical Insecticide Corporation Superfund Site, Operable Unit 4 – Groundwater, Edison Township, Middlesex County, NJ,*" October 2008.
- U.S. Army Corp. of Engineers, Seven (7) "*Final Long-Term Monitoring*" Plans: March 2009; December 2009; December 2010; July 2011; March 2012: Winter 2012/2013; and Fall 2013
- U.S. Environmental Protection Agency, "Fourth Five-Year Review Report", September 2014.
- U.S. Army Corp. of Engineers, "Long-Term Monitoring Event Report, April 2018: *Chemical Insecticide Corporation Superfund Site, Operable Unit 4 – Groundwater, Edison Township, Middlesex County, NJ,*" December 2018.