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RAC II

FINAL HUMAN HEALTH RISK ASSESSMENT
OLD ROOSEVELT FIELD
CONTAMINATED GROUNDWATER SITE
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
GARDEN CITY, NEW YORK
Work Assignment No.: 146-RICO-02PE
July 24, 2007

Remedial Response, Enforcement Oversight and Non-time Critical Removal Activities at Sites of Release or Threatened Release of Hazardous Substances in EPA Region II

CDM

301930

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PROJECT: RAC II Contract No.: 68-W-98-210
Work Assignment No.: 146-RICO-02PE

DOC CONTROL NO.: 3223-146-RA-HHRA-06753

SUBJECT: Final Baseline Human Health Risk Assessment
Old Roosevelt Field Contaminated Groundwater Area Site
Remedial Investigation/Feasibility Study
Garden City, New York

Dear Ms. Kwan:

CDM Federal Programs Corporation (CDM) is pleased to submit the Final Baseline Human Health Risk Assessment for the Old Roosevelt Field Contaminated Groundwater Area Site located in Garden City, New York, as fulfillment of Subtask No. 7.1 of the Statement of Work.

If you have any questions regarding this submittal, please contact Ms. Susan Schofield at (203) 262-6633 or me at (212) 785-9123.

Very truly yours,

Jeanne Litwin, REM
RAC II Program Manager

Enclosure

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Acronyms and Abbreviations

bgs	below ground surface
CDM	CDM Federal Programs Corporation
cm^2	square centimeter
CLP	Contract Laboratory Program
COPC	chemical of potential concern
CRQL	contract-required quantitation limit
CTE	central tendency exposure
1,2-DCE	1,2-dichloroethene
EPA	United States Environmental Protection Agency
EPC	exposure point concentration
FS	feasibility study
HEAST	Health Effects Assessment Summary Tables
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
HVAC	heating, ventilation or air-conditioning
IRIS	Integrated Risk Information System
kg	kilogram
L	liter
LDL	low detection limit
m^3	cubic meter
MCL	maximum contaminant level
mg	milligram
mgd	million gallon per day
mi^2	square mile
mL	milliliter
MS/MSD	matrix spike/matrix spike duplicate
MTBE	methyl-tert butyl ether
NAF	Naval Air Facility
NAS	National Academy of Sciences
NCEA	National Center for Environmental Assessment
NOAEL	no observed adverse effect level
NRC	National Research Council
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSWER	Office of Solid Waste and Emergency Response
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PPRTV	Provisional Peer Reviewed Toxicity Value
PRG	Preliminary Remediation Goal
QAPP	Quality Assurance Project Plan
RAC	Response Action Contract

RAGS	Risk Assessment Guidance for Superfund
RfC	reference concentration
RfD	reference dose
RI/FS	remedial investigation/feasibility study
RME	reasonable maximum exposure
SF	slope factor
STSC	Superfund Health Risk Technical Support Center
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TCE	trichloroethene
the site	Old Roosevelt Field Contaminated Groundwater Area Site
UCL	upper confidence limit
U.S.	United States
VOC	volatile organic compound
µg/L	micrograms per liter

Section 1
Introduction

CDM Federal Programs Corporation (CDM) received Work Assignment Number 146-RICO-02PE under the Response Action Contract (RAC) II to perform a remedial investigation/feasibility study (RI/FS), including a human health risk assessment (HHRA), for the United States Environmental Protection Agency (EPA), Region II, at the Old Roosevelt Field Contaminated Groundwater Area Site (the site) located in Garden City, Nassau County, New York (shown in Figures 1-1 and 1-2).

This baseline HHRA has been developed to characterize the potential human health risks associated with the groundwater at the site in the absence of any remedial action. This HHRA identifies the potential exposure pathways by which populations may be exposed. Exposure pathways were identified based on the sources and locations of contaminants on the site, the likely environmental fate of contaminants, and the locations and activities of potentially exposed populations. The HHRA describes exposure points and routes of exposure for each exposure pathway, as well as underlying assumptions regarding receptor characteristics and behavior (e.g., body weight, ingestion rate, exposure frequency). The HHRA also identifies chemicals of potential concern (COPCs) in groundwater, exposure point concentrations (EPCs), and toxicity values of COPCs. Finally, the HHRA characterizes potential carcinogenic risks and noncarcinogenic health hazards associated with each complete exposure pathway.

1.1 Overview of the Human Health Risk Assessment

In preparation of this HHRA, CDM has reviewed the available information obtained from the EPA pertaining to the site. In this report, present and future-use exposure pathways and receptors are identified. Subsequent sections present the exposure variables used for the calculation of daily intakes, carcinogenic and noncarcinogenic toxicity values for COPCs, and risk estimates. The exposure pathways and receptors, exposure variables, toxicity values, and risk estimates are presented in tabular form in accordance with the standard tables of *Risk Assessment Guidance for Superfund (RAGS) Part D* (EPA 2001a).

This HHRA is developed in accordance with EPA guidance set forth in the following documents:

- *Risk Assessment Guidance for Superfund: Human Health Evaluation Manual, Part A* (EPA 1989)
- *Risk Assessment Guidance for Superfund: Human Health Evaluation Manual, Part D* (EPA 2001a)

- *Risk Assessment Guidance for Superfund: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment* (EPA 2004a)
- *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (EPA 2002a)
- *Exposure Factors Handbook, Vols. I, II, and III* (EPA 1997)
- *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors* (EPA 1991)
- *ProUCL User's Guide* (EPA 2004b)
- *Integrated Risk Information System* (IRIS) (on-line database of toxicity information) (EPA 2006)
- *Provisional Peer Reviewed Toxicity Value* (PPRTV)
- *National Center for Environmental Assessment* (NCEA) (EPA agency providing additional toxicity information not found in IRIS and PPRTV.)

1.2 Report Organization

This HHRA is composed of eight sections, with tables and figures presented at the end of the text. The organization of the report and the contents of each section are described below.

Section 1 Introduction
Section 2 Site Background and Setting—briefly describes the site background, site history, demography, and land use
Section 3 Exposure Pathways—identifies receptors and presents potential exposure pathways under the current and future land-use scenarios
Section 4 Exposure Assessment—presents the approach for the exposure assessment, including potential exposure parameters and means of calculating the EPCs from site data
Section 5 Toxicity Assessment—discusses the relevant toxicity information for the identified COPCs
Section 6 Risk Characterization—integrates the toxicity and exposure assessments into quantitative and qualitative expressions of risk
Section 7 Summary and Conclusions—summarizes the results of the risk assessment and presents conclusions based on the results
Section 8 References—lists references cited in the report

The following seven appendices are also included in this report:

Appendix A	Contains tables summarizing the samples collected and analyses conducted and figures showing the sample locations
Appendix B	Includes the results of the risk calculations using reasonable maximum exposure (RME) assumptions
Appendix C	Presents ProUCL output for identified COPCs
Appendix D	Lists assumptions used in the Schaum *et al.* (1994) model to estimate indoor air concentrations of volatile organic compounds (VOCs) from groundwater while showering
Appendix E	Presents the soil gas concentrations and screening for vapor intrusion investigation
Appendix F	Presents the results of the risk calculations using central tendency exposure (CTE) assumptions
Appendix G	Includes analytical results of samples used in this report

Section 2
Site Background and Setting

2.1 Site Location and Description

The Roosevelt site is an area of groundwater contamination within the Village of Garden City, in central Nassau County, New York. The site is located on the eastern side of Clinton Road, at the intersection with Old Country Road. Figures 1-1 and 1-2 provide a site location and a site map, respectively. The site consists of a thin strip of open space along Clinton Road (known as Hazelhurst Park), a large retail shopping mall with a number of restaurants, and a movie theater. Several office buildings (including Garden City Plaza) are on the perimeter, sharing parking space with the shopping mall.

Municipal supply wells 10 and 11 are located in the vicinity. Two recharge basins are directly east and south of the shopping mall area. The eastern basin, Pembrook, is on the property owned by the shopping mall. The basin to the south is Nassau County Storm Water Basin number 124.

2.2 Site History

The Old Roosevelt Field Contaminated Groundwater Area Site was used for aviation activities from 1911 to 1951. The original airfield was known as the Hempstead Plains Aerodrome and encompassed 900 to 1,000 acres east of Clinton Road and south of Old Country Road. By the time the field opened in July 1912, there were 5 cement and 30 wooden hangars along Old Country Road, 4 grandstands along Clinton Road, and several flying schools. At least two aviators built aircraft at the field in 1912, including the first all-metal monoplane in America. During its first three years, activities at the airfield included civilian flight training, equipment testing, and aerial stunt shows.

The United States (U.S.) military began using the Hempstead Plains field prior to World War I. The New York National Guard First Aero Company began training at the airfield in 1915, and in 1916 the U.S. Army used the field to train Army and Navy officers. When the U.S. entered the war in April 1917, the airfield was taken over as a training center for military pilots and renamed Hazelhurst Field. The U.S. Army removed the grandstands, built barracks along Clinton Road, and built larger hangars along Old Country Road. In 1918, the U.S. Army changed the name of the airfield to Roosevelt Field in honor of Quentin Roosevelt, a son of Theodore Roosevelt who had trained there and was killed during the war. Roosevelt Field was used throughout the war to train aviators.

After the war, the U. S. Air Service authorized aviation-related companies to operate from Roosevelt Field, but maintained control until July 1, 1920, at which time the

Government sold its buildings and relinquished control of the field. Subsequently, the property owners sold portions along the southern edge of the field and split the remainder of the property into two flying fields with an incline between them. The eastern half, with sod runways and only two hangars, continued as Roosevelt Field. The western half, which had many hangars, flying schools, and aviation maintenance shops, became known as Curtiss Field.

By 1929, the eastern field (Roosevelt) had served as the starting point or terminus of many notable flights, including Lindbergh's takeoff for his historic trans-Atlantic flight in May 1927. The western field (Curtiss) was used for flying circuses, a flying school, aircraft sales and service, and flight tests. Both fields were bought in 1929 by Roosevelt Field, Inc., and the property was once again called Roosevelt Field. Improvements were quickly made, including the installation of several large steel and concrete buildings for hangars, shop, and office space along Old Country Road. As of November 1929, numerous aviation-related businesses operated in the hangars and other buildings surrounding the western field. By 1932, paved runways and 50 buildings made Roosevelt Field the country's largest and busiest civil airfield. While the western field developed into the large aviation center that continued to operate throughout the 1930s, the eastern field remained unpaved, with few buildings, until it was leased in 1935 and became a racetrack.

Roosevelt Field was used by the Navy and Army during World War II. In July 1939, the Army Air Corps contracted Roosevelt Field, Inc. to provide airplane and engine mechanics training to Army personnel at their school. In early 1941, there were more than 200 Army students and approximately 600 other students at the Roosevelt Aviation School. At the beginning of 1942, after the U.S. had entered the war, civilian flying and private hangar rental had ceased at Roosevelt Field due to a ban on private flying in defense areas.

As of March 1942, there were 6 steel/concrete hangars, 14 wooden hangars, and several other buildings at Roosevelt Field. The Army training school was concentrated in the buildings located along Clinton Road. In addition to the training activities, the Roosevelt Field facilities were used to receive, refuel, crate, and ship Army aircraft.

The Navy also used Roosevelt Field during World War II. In November 1942, the Navy Bureau of Aeronautics established a modification center at Roosevelt Field to install British equipment into U.S. aircraft for the British Royal Navy. The Navy leased five steel/concrete hangars along Old Country Road; built a barracks, mess hall, and sick bay; and commissioned U.S. Naval Air Facility (NAF) Roosevelt Field by February 1943. By September 1943, the Navy had built wooden buildings between four of the hangars, and in October 1943 leased six additional hangars. NAF Roosevelt Field was responsible for aircraft repair and maintenance, equipment

installation, preparation and flight delivery of lend-lease aircraft, and metal work required for the installation of British modifications. The metal work constituted a substantial portion of the facility's work load. The facility also performed salvage work of crashed Royal Navy planes. The Navy vacated all but six hangars shortly after the war ended, and removed their temporary buildings by the time their lease expired on June 30, 1946. Restoration of buildings and grounds was completed by August 1946, and Roosevelt Field operated as a commercial airport until it closed in May 1951.

Soon after the airfield closed, construction at Roosevelt Field and further development was planned. The large Roosevelt Field Shopping Center was constructed at the site and opened in 1957. The old field is currently the site of the shopping mall and office building complexes and is surrounded by commercial areas and light industry. Three of the old Navy hangars remained standing until sometime after June 1971, with various occupants, including a moving/storage firm, discotheque, amusement center, and bus garage.

It is possible that chlorinated solvents were used at Roosevelt Field during and after World War II. Chlorinated solvents such as tetrachloroethene (PCE) and trichloroethene (TCE) have been widely used for aircraft manufacturing, maintenance, and repair operations since about the 1940s. By May 1938, the Bureau of Aeronautics had a specification covering TCE and had approved at least one company to supply TCE. The finish specifications for at least one type of plane that the Navy modified at Roosevelt (eight of which were on site in April 1943) calls for aluminum alloy to be cleaned with TCE. An aircraft engine overhaul manual issued in January 1945 specified TCE as a degreasing agent.

Municipal supply wells 10 and 11 were installed in 1952, at what had been the southwest corner of the airfield and were put into service in 1953. Well 10 is screened from 377 to 417 feet below the ground surface (bgs) and well 11 is screened from 370 to 410 feet bgs. Both wells have shown the presence of PCE and TCE since they were first sampled in the late 1970s and early 1980s, and concentrations increased until 1987, when an air-stripping treatment system was installed. Sampling results of treated well water from May 1993, September 1995, and June/July 1999 indicated that breakthrough of the treatment system had occurred. The highest levels of VOC contamination were noted during the mid- to late-1990s, but have steadily declined since then.

2.3 Demography and Land Use

The former Roosevelt Field is characterized by commercial office development on the west (Garden City Plaza); a large regional shopping mall complex on the east (Roosevelt Field Shopping Center); an area occupied by undeveloped woodland, recharge basins, and Stewart Avenue School immediately south of the office park; and mixed retail/commercial businesses immediately south of the shopping mall. Immediately beyond Stewart Avenue is an area of retail strip, commercial, and light industrial development. This area includes several state and federal hazardous waste sites that formerly released solvents to groundwater (the Pasley and Purex sites). Beyond that, to the south and southwest, land use is predominantly single family residential. Homes in this area of Garden City and Hempstead use the municipal water supply for potable drinking water and the municipal sewer system for sanitary waste water disposal.

Current land use for the area surrounding the site is mixed commercial and residential. The site is in East Garden City (area = 3.0 square mile [mi^2]) within the Town of Hempstead. East Garden City supports 979 residents, 275 households and 243 families (2000 census data). Of the 275 households, 47.6% have children under the age of 18 living with them. The Village of Garden City (area = 5.3 mi^2) lies south and west of the site. Garden City supports approximately 21,672 residents, 7,386 households and 5,857 families (2000 census data). Of the 7,386 households, 36.1% have children under the age of 18 living with them. The Roosevelt Field Mall is the largest mall in New York State and the 11th largest in the United States, with an area of 2,146,000 square feet. The mall provides employment for several thousand people and receives millions of visitors each year.

2.4 Nature and Extent of Contamination

Groundwater and soil gas contamination was investigated as part of the RI conducted by CDM. The Final Remediation Investigation Report (CDM 2007) determined that site-related VOCs in groundwater include PCE, TCE, 1,1-dichloroethene (DCE), *cis*-1,2-DCE, and carbon tetrachloride (Figures 2-1, 2-2, 2-3, and 2-4). The site-related VOCs for soil gas are the same as those for groundwater. Site-related VOCs were detected in 6 of 36 (including duplicates) soil gas samples. Most of the VOCs detected in the soil gas samples are gasoline related. The nature and extent of contamination in groundwater and soil gas are discussed below.

2.4.1 Groundwater Contamination

Based on data collected during the RI hydrogeological investigation, the following conclusions regarding groundwater contamination at the Roosevelt site are presented.

- The main VOCs associated with the Roosevelt site groundwater contamination are: PCE, TCE, 1,1-DCE, *cis*-1,2-DCE, and carbon tetrachloride.

- The TCE/PCE contaminant plume has migrated south from the area used as an airfield prior to 1951. The natural southerly flow of groundwater has been interrupted by large scale pumping at two wells south of the mall complex. These municipal supply wells have, in effect, reduced the migration of the plume and prevented significant migration further south.

- At the SVP/GWM-4 area, the core of the plume is located at approximately 250 to 310 feet bgs. This area was formerly used as a drain field/distilling well for subsurface disposal of cooling water that was contaminated with the site-related VOCs.

- South of the two active municipal supply wells, VOC contamination is shallower, and may be related to two contaminant sources (Pasley and Purex) south of the Roosevelt site.

2.4.2 Soil Gas Contamination

Based on data collected during the RI source area soil gas investigation, the following conclusions regarding soil gas at the Roosevelt site are presented.

- One small soil gas hot spot was noted from soil gas samples analyzed via method TO-15 in an area of Hazelhurst Park, along Clinton Road, west of the office building at 100 Ring Road.

- No residual sources remain within the unsaturated zone that would act as a continuing source of groundwater contamination at the Roosevelt site.

- Most detected VOC compounds are associated with gasoline and are not the site-related VOCs.

The best location to compare detections in groundwater and soil gas canister samples in or near Hazelhurst Park is at existing well 9953 (screened at 35-40 feet bgs) and SVP-4 port 10 (at 45-50 feet bgs). No site-related VOCs were detected in well 9953; only methyl-tert butyl ether (MTBE) was detected at a low level. In SVP-4 port 10, a very limited number of VOCs were detected, most at levels below 1 microgram per liter (µg/L), including PCE, TCE, *cis*-1,2-DCE, acetone, MTBE, methylene chloride, and dibromochloromethane.

Numerous VOCs were detected in the soil gas analytical samples collected in Hazelhurst Park, most of which are gasoline related: PCE, TCE, *cis*-1,2-DCE, ethanol,

isopropyl alcohol, 1,3 butadiene, carbon disulfide, 1,1,2-trichloro-1,2,2-trifluoroethane, acetone, methylene chloride, hexane, 1,1-dichloroethane, 2-butanone, chloroform, 1,1,1-trichloroethane, cyclohexane, 2,2,4-trimethylpentane, benzene, *n*-heptane, toluene, ethylbenzene, xylene, *o*-xylene, 1,2,4-trimethylbenzene.

Three VOCs were detected in both the groundwater at the top of the water table and the soil gas samples in Hazelhurst Park: PCE, TCE, and *cis*-1,2-DCE. The majority of VOC compounds detected in the soil gas samples are related to gasoline and are, therefore, considered non-site related. The source of the chlorinated VOCs (e.g., TCE, PCE, and *cis*-1,2-DCE) in the soil gas is unknown. A review of historical aerial photos from the 1930s and 1940s indicates that the location of Clinton Road has not changed over the years. The airfield buildings faced the street, with lawns and occasional shrubs fronting the buildings on the street side. There is no evidence of airplane use in the area that is now Hazelhurst Park. All airplanes were parked (and presumably maintained) on the sides of the buildings that faced away from the street, closer to the runways. It is highly unlikely spent solvents were disposed of in the landscaped areas in the front of the buildings along Clinton Road.

Section 3
Exposure Pathways

Potential human exposure pathways for the site were defined based on current and potential future land uses of the site. Each potential pathway was then evaluated considering site-specific conditions to determine if the pathway could be present. The area demography and land-use characteristics were taken into consideration when the pathways were developed. If a pathway between the source of contamination and a human receptor could potentially be complete, it was retained for further evaluation.

3.1 Identification of Exposure Pathways

As defined in the RAGS Part A (EPA 1989), an exposure pathway is composed of the following elements:

- A source and mechanism of chemical release to the environment
- An environmental transport medium (e.g., groundwater) for the released chemical and/or mechanism of transfer of the chemical from one medium to another
- A point of potential contact by humans with the contaminated medium
- A route of exposure (i.e., ingestion, inhalation, or dermal contact)

In this risk assessment, pathways are identified for the No Action alternative to evaluate risk if no site remediation occurs. This assessment also assumes that no additional restrictions to site access or use exist. The goal of this evaluation is to establish whether it is feasible for individuals to engage in activities resulting in exposure to site-related contaminants.

There are three general routes through which individuals could potentially be exposed to chemical contamination: ingestion, inhalation, and dermal contact. The following sections describe the possible sources, receptors, and exposure pathways considering both current and potential future land use. An identified pathway does not imply that exposures are actually occurring, only that the potential exists for the pathway to be complete.

3.2 Potential Source Areas and Release Mechanisms

Eckhardt and Pearsall (1989) identified three plumes of VOC contamination at the Roosevelt site: a plume in the Magothy aquifer and two plumes in the Upper Glacial aquifer. No contaminated soil source areas are associated with these plumes. The original source of the contamination in the Magothy aquifer has not been identified, but it is possible that the contamination occurred from surface disposal of chemicals when the air field was in operation. However, subsequent demolition and construction activities at the property over the past 50 years have involved significant

earth movement, and any historical hot spots of surface contamination that might have existed are not likely to still be present.

The Upper Glacial aquifer plumes were formed when contaminated Magothy aquifer water was used as cooling water by the mall and office buildings. The used cooling water, contaminated with VOCs, was discharged to the surface in the Pembrook recharge basin and the drain field west of Garden City Plaza buildings 100 and 200. This discharge stopped in the mid-1980s. While some soil contamination may have occurred during water discharge at these points, any VOCs that might have bound to the soil are likely to have volatilized by now.

3.2.1 Groundwater Pathways

Historical soil contamination and waste disposal practices have impacted groundwater. Liquid chlorinated solvents discharged directly to the ground surface would be expected to migrate downward through the unsaturated zone in a relatively linear pattern, with minimal dispersion from the discharge location. The unsaturated zone at the Roosevelt site is primarily sandy material, so complex migration pathways along lower permeability zones is not expected.

At the Roosevelt site, groundwater generally flows toward the south/southwest. However, movement of PCE, TCE, and 1,2-DCE in the saturated zone at the Roosevelt site has been complicated by the extensive groundwater extraction that has occurred in the area from several types of wells. Garden City municipal supply wells 10 and 11 were put on line in the early 1950s, just after the Roosevelt Field airfield closed. Records for these wells indicate that at peak demand each well pumps about one million gallons per day (mgd), with average demand about 0.65 mgd. The municipal supply wells 10 and 11 are screened from 377-417 feet bgs and 370-410 feet bgs, respectively, in the Magothy Formation. In addition to the Garden City municipal supply wells, seven cooling water wells pumped groundwater from the Magothy for use in building air conditioning systems. Cooling water wells pumped variable amounts of water, with greater extraction rates during the hot summer months. These wells operated from about 1960 to about 1985. After extracted groundwater was used in building air conditioning systems, the untreated water was returned to the aquifer system via surface recharge in the Pembrook recharge basin at the southern end of the Roosevelt Field mall/office complex or, after minimal treatment, a drain field west of Garden City Plaza buildings 100 and 200. Surface discharge of contaminated groundwater spread contamination through the Upper Glacial and Magothy aquifers. The recharge basin and drain field also created localized groundwater mounding, which further spread contamination at the water table in the Upper Glacial aquifer.

The discharge of contaminated water into the recharge basin and leaching field ceased in about 1985 when the cooling water wells were taken out of service. The Pembrook recharge basin currently only receives surficial stormwater runoff from parking lots surrounding the mall and the office buildings. The leaching field near Building 100 is under the paved parking lot west of Building 100 and 200 and is not currently identifiable in the field.

Pumping of the Garden City municipal supply wells 10 and 11 and the air conditioning cooling wells probably changed the movement of contaminants by altering the natural movement of groundwater. Because of the sandy soil and changes in groundwater movement and because there are as many as 82 public supply wells located within a four-mile radius of the site, exposure to site-derived groundwater contamination is possible. Available analytical data indicate that several VOCs, including TCE, PCE, and 1,2-DCE, are present in groundwater at concentrations above New York State and federal maximum contaminant levels (MCLs).

Exposure to contaminants in groundwater could occur through direct use of the groundwater. Nassau County does not permit installation of private wells for areas supplied by public water (Article 4, Public Health Ordinance), but the area is served by municipal water supplies that draw on the contaminated portion of the Magothy aquifer. Together, the two municipal supply wells serve about 7,000 people. In addition, the Village of Hempstead well field is located approximately 4,000 feet downgradient of the former air field property and also draws water from the Magothy aquifer. VOCs have been detected in two of the seven wells in the Village of Hempstead well field. Water pumped for the Village of Garden City wells is treated with air strippers before distribution. The Village of Hempstead aerates the water before distribution.

Pumped water from the Village of Garden City wells is treated before reaching potential receptors; therefore, no complete exposure pathways currently exist. However, if the municipalities removed the treatment systems or if those systems failed, the most likely future receptors for site-related contamination are users of municipal water drawn from the contaminated zone of the aquifer. Such users could include the local residents, workers, and visitors. Of these potential receptors, residents who use the water for drinking, washing/bathing, and other household uses would have the greatest exposure. The risk assessment evaluated potential future exposures to groundwater used as drinking water by residents, assuming that residents may be exposed to contaminants in groundwater via ingestion, dermal contact, and inhalation of volatile contaminants during showering and bathing.

3.2.2 Air Pathways

VOC contamination in groundwater can result in the phenomenon of vapor intrusion. Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in contaminated groundwater can emit vapors that may migrate through subsurface soils and into indoor air spaces of overlying buildings. Primarily because of a difference between interior and exterior pressures, soil vapor can enter a building through cracks or perforations in slabs or basement floors and walls, and through openings around sump pumps or where pipes and electrical wires go through the foundation. For example, heating, ventilation or air-conditioning (HVAC) systems and/or the operation of large mechanical appliances (e.g., exhaust fans, dryers, etc.) may create a negative pressure that can draw soil vapor into the building. When contaminated vapors are present in the zone directly next to or under the foundation of a building, vapor intrusion is possible. Because contaminant concentrations in the soil gas at the Roosevelt site indicate that buildings on and around the area of the former air field could be impacted (Table E-1), subslab soil gas, and in some cases indoor air, was collected from several of these buildings to evaluate exposure to current site workers and residents. More information about the vapor intrusion investigation can be found in a separate report in the administrative record for the site.

Exposure by current residents to groundwater contamination through vapor intrusion is not expected. Residential homes are located on the opposite side of Clinton Road and are more than 100 feet horizontally from detected soil gas concentrations. The majority of the groundwater contamination is in the deep portion of the aquifer and the groundwater plume is migrating south, parallel to Clinton Road. Therefore, a fate and transport mechanism for vapors to impact residential homes currently located on the opposite side of Clinton Road is unlikely to exist. However, several homes along Clinton Road were sampled to further investigate this pathway. Future residents could be impacted by subsurface vapors in the unlikely event that homes are located on-site. Please refer to the administrative record for the site for information on the vapor intrusion investigation. Residents could also be exposed to volatile chemicals via inhalation from household use (e.g., showering or bathing) of contaminated groundwater.

3.3 Characterization of Potentially Exposed Populations

The Magothy and Upper Glacial aquifers are the most productive and heavily utilized aquifers on Long Island, and are important sources of drinking water in Nassau County. Wells supplied by the Magothy aquifer include the Village of Garden City municipal supply wells 10 and 11 near the site. The two Garden City wells serve approximately 7,000 people. As many as 82 municipal supply wells serving 300,000 people occur within a four-mile radius of the site.

Garden City municipal supply wells 10 and 11 were installed in 1953. The wells have shown the presence of TCE and PCE in late 1970s and the early 1980s. An air-stripping treatment system was installed at the wells to remove VOCs from the raw water. Sample results of treated well water from May 1993, September 1995, and

June/July 1999 indicated that breakthrough of the treatment system had occurred on those occasions (Weston 2000). Each well serves an estimated 3,428 people. The treatment system on the wells has been upgraded, with each well treated by a dedicated air stripper. Nassau County conducts regular well sampling and no breakthrough has taken place since the air stripper upgrades. Because private wells are not permitted in the area, there is no exposure risk from unmonitored water supplies.

The former air field is currently the site of a large shopping mall/office complex and is surrounded by residential and commercial areas and light industry. Based on this land use, the populations that could be exposed to site-related contamination (i.e., the potential receptors) include residents, workers, and visitors to the mall and commercial areas.

3.3.1 Current Receptors

3.3.1.1 Site Workers

Current site workers were not evaluated in this HHRA because soil is not an environmental medium of concern. Site workers are not currently engaged in excavation activities, and would not expected to be in the future since the area is fully developed.

Workers could be exposed via inhalation of organic vapors from subsurface soil into indoor air. The vapor intrusion pathway was not evaluated quantitatively or qualitatively in the risk assessment; however, vapor intrusion was investigated at the site and is being evaluated separately by EPA. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

3.3.2 Future Receptors

3.3.2.1 Residents

Future residents are evaluated as receptors, even though development of the shopping mall and office complex as a residential area is highly unlikely. In the unlikely event that a water supply well were installed on the site that draws from the contaminated portion of the aquifer or if the municipality were to remove the treatment systems from the public supply system or if those systems failed, potential future on-site residents and nearby residents may come into contact with contaminants in on-site groundwater through ingestion, dermal contact, and inhalation of VOCs in groundwater.

Additionally, residents could also be exposed to volatile contaminants through vapor intrusion from the subsurface into indoor air. The vapor intrusion pathway was not evaluated quantitatively or qualitatively in the risk assessment; however, vapor intrusion was investigated at the site and is being evaluated separately by EPA. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

For the risk assessment, exposure to adults and young children (0 to 6 years) was examined as the most conservative potential exposure pathways using default parameters recommended by EPA (1989, 1991, 1997, 2001b, 2002b, 2002c, 2004a) as described in Section 4.

3.3.2.2 Site Workers

If a well is installed at the site in the future, on-site workers also could be exposed to contaminants in groundwater through ingestion of that water as tap water while they are at work. Future workers will be examined using default parameters recommended by EPA (1989, 1991, 1997, 2002a) as described in Section 4.

Utility and construction worker receptors were not evaluated in this HHRA because soil is not a medium of concern and contaminated groundwater is approximately 40 feet bgs. Typical excavation activities are not expected to exceed 10 feet bgs.

Workers could be exposed via inhalation of organic vapors from subsurface soil into indoor air. The vapor intrusion pathway was not evaluated quantitatively or qualitatively in the risk assessment; however, vapor intrusion was investigated at the site and is being evaluated separately by EPA. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

3.4 Summary of Exposure Pathways

The following exposure pathways were considered to be complete and were evaluated as part of the assessment of exposure to contaminants at the site. A summary of these exposure pathways is also presented in Table 3-1.

FUTURE USE

- Residents *(Adults and Children, ages 0 to 6 years)*
  - Groundwater – Ingestion
  - Dermal contact during showering and bathing
  - Inhalation of volatile chemicals during showering and bathing

- Site Workers
  - Groundwater – Ingestion

Section 4
Exposure Assessment

This section discusses exposure factors chosen for use in the exposure scenarios and the basis for their selection. Assumptions are discussed for both receptor parameters and EPCs. RMEs are estimated; CTEs are calculated only if RME risks exceed EPA's threshold risks [i.e., cancer risk range of 10^{-6} to 10^{-4} or hazard index (HI) of 1.0]. The RME risk descriptor is a plausible estimate of the individual risk for those persons at the upper end of the risk distribution. CTE parameters are also developed to provide estimates representing average exposures.

4.1 Estimation of Exposure Point Concentrations

The concentration term in the risk equation is the arithmetic average of the concentration that is contacted at the exposure point or points over the exposure period (EPA 1989). EPCs may be estimated by (1) using monitoring data alone, or (2) using a combination of monitoring data and environmental fate and transport models. In this assessment, ingestion and dermal contact exposures were estimated using monitoring data. The groundwater monitoring data were also used in a shower model to estimate indoor air concentrations from household water use.

Soil gas samples adjacent to the buildings were used for screening against the EPA's deep soil gas screening concentrations (EPA 2002d) to assess potential for migration of vapors into on-site building. This evaluation is being evaluated separately by EPA. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

4.1.1 Data Evaluation and Selection of Chemicals of Potential Concern

CDM conducted field investigations at the site to acquire data for the RI, including this HHRA. The investigations included collection and analysis of samples from groundwater and soil gas. All vapor evaluations will be conducted in a separate document that is included in the Administrative Record for the site. Soil investigations were not included in the RI but EPA, at the request of NYSDEC, will collect soil samples at all soil gas screening locations that exceeded 100 parts per billion by volume. Soil sample results will be evaluated in a separate document and included in the Administrative Record.

Groundwater samples were analyzed for Target Compound List (TCL) VOCs, semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals. Soil gas samples were analyzed for VOCs. Details of the investigation and sample analyses are provided in the Final Quality Assurance Project Plan (QAPP) and QAPP Addendum (CDM 2005a and 2005b). Appendix A provides tables summarizing the samples collected.

4.1.1.1 Groundwater

Two rounds of groundwater samples were collected from the eight multi-port monitoring wells. Round 1 occurred from March 23, 2006 through April 14, 2006 and Round 2 occurred from July 10, 2006 through July 20, 2006. The locations of the eight multi-port monitoring wells (SVP-01 through SVP-08) are shown on Figure 4-1. Multi-port well samples are listed in Table A-1. These samples are noted by the GWM prefix.

The samples were collected using Westbay sampling equipment, which included a tripod with a manual reel, an electronic sampling probe with interface unit that monitored and controlled pressure, a manual vacuum pump, and a series of four 250 milliliter (mL) stainless steel samplers to collect water samples.

Each port in each multi-port well was sampled and analyzed for low detection limit (LDL) VOCs. In addition, one port from each well was sampled and analyzed for TCL SVOCs, pesticides/PCBs, and TAL metals. Eight multi-port wells were sampled, from a total of 64 ports. A total of 134 samples were collected from eight multi-port wells during the two rounds of sampling, including duplicate samples.

In addition, two rounds of existing monitoring well and municipal supply well sampling were conducted to delineate the vertical and lateral extent of groundwater contamination. The location of the nine existing monitoring wells (GWX-10019, GWX-9398, GWX-10020, GWX-9973, GWX-9966, GWX-10035, GWX-8475, GWX-8474, and GWX-8068) and two municipal supply wells (GWP-10 and GWP-11). GWX-8068 was only sampled during round two because the well was not accessible during the first round. Twenty-three groundwater samples (2 rounds) were collected (including duplicates samples). The samples were analyzed for LDL VOCs, TCL SVOCs, pesticides/PCBs, and TAL inorganics, including cyanide, through the EPA Contract Laboratory Program (CLP), and total organic compounds, mercury, sulfide, sulfate, nitrate, chloride, methane, ethane, and ethene through CDM's subcontract laboratory.

4.1.1.2 Soil Gas

A total of 36 boreholes were advanced at Hazelhurst Park and around the perimeter of office buildings 100 and 200 in Garden City Plaza and 100 Ring Road to obtain data to assess VOCs that potentially could result in indoor air exposures. EPA complied with a request from New York State Department of Environmental Conservation (NYSDEC)/New York State Department of Health (NYSDOH) to collect soil gas canister samples around the three buildings (100 and 200 Garden City Plaza and 100 Ring Road). Thirty-two boreholes were advanced according to specifications in the Final QAPP Addendum approved by EPA (CDM 2005b). One soil gas sample was collected from each boring at 15 feet bgs.

Samples in Hazelhurst Park (the grassy strip along Clinton Road) were also collected in accordance with the QAPP Addendum (CDM 2005b). The Hazelhurst Park sample locations were based on elevated detections observed during the soil gas screening. Four boreholes were advanced, and four samples and two duplicates at 15 feet bgs were collected in Hazelhurst Park.

A total of 38 soil gas samples were collected, including duplicates, and analyzed for VOCs by EPA Method TO-15 in 1-liter Summa canisters for offsite laboratory analysis through EPA's headquarters air analytical program. Soil gas sample locations are shown in Figure 4-2.

4.1.1.3 Quality Control

As part of the RI/FS sampling program, field duplicates, matrix spike/matrix spike duplicates (MS/MSDs), and trip and rinsate blanks were submitted for analysis. These samples provide important information on analytical variability and error, the overall performance of the field sampling effort, and the uncertainty surrounding the analytical results. Field duplicate samples provide an indication of analytical variability and error. Rinsate blanks are indicators of equipment cleanliness and the effectiveness of equipment decontamination procedures. Trip blanks are used to assess whether cross contamination of samples has occurred during container shipment and storage. Rejected data are not used in any evaluation; however, qualified data are incorporated into the data analysis and the uncertainty around the use of this data are discussed in the risk assessment uncertainty section.

Data Usability Assessment Report was completed by CDM and included in the Final RI Report as Appendix M (CDM 2007). The completeness of the environmental data is as follows: Of the data planned to be collected, 98 percent was actually collected. In Round 1, 99 percent of the data collected was judged valid, and 96 percent of the data collected in Round 2 was judged valid (97 percent overall). The goal was to generate a complete data set for at least 90 percent of the samples planned to be collected and 90 percent valid data of the samples analyzed. No field samples were lost due to shipping. The data rejected during data validation represens 2.6 percent of all data. Rejected data were in the VOC and SVOC fractions. Several VOCs were estimated ("J" qualifier) for surrogates recovered outside criteria and some were rejected or estimated for deuterated monitoring compound outliers (e.g, acetone and 2-butanone). Non-detect results were rejected and detected results were estimated for calibration results for 2,4-dinitrophenol and methyl acetate. Sample results for several other organic compounds were qualified as estimated but none was rejected due to calibration criteria being exceeded.

4.1.1.4 Selection of Chemicals of Potential Concern

Table B-2.1 in Appendix B summarizes the analytical data and identifies COPCs for the risk assessment. The tables include only those chemicals that were detected at least once. The range of detected concentrations, the detection frequency, and the

range of detection limits presented in Table B-2.1 were determined after excluding rejected data from the data set and after averaging results of duplicate samples. The following rules were applied to averaged data from a sample and its duplicate:

- If an analyte was detected in both the sample and the duplicate, the two detected concentrations were averaged.
- If an analyte was detected in either the duplicate or the sample but was not detected in both, only the detected concentration was used.
- If an analyte was not detected in either the sample or the duplicate, the two reporting limits were averaged and one-half the averaged reporting limits was used in subsequent statistics.

Maximum detected concentrations were compared to risk-based screening levels to identify COPCs for groundwater. The screening levels are based on the EPA Region 9 Preliminary Remediation Goals (PRGs) for tap water (EPA 2004c), using a target cancer risk of 10^{-6} (one in one million) and a target hazard quotient (HQ) of 0.1. Chemicals were considered COPCs if the maximum detected concentration exceeded the screening level.

Maximum detected soil gas concentrations were screened against the values for deep soil gas in Table 2c of EPA's *Draft Vapor Intrusion Guidance*, using a target cancer risk of 10^{-6} (one in one million) and a target hazard quotient (HQ) of 0.1. Such a quantitative screen indicates that currently there is a potential for migration of vapors into on-ste buildings (Table E-1). Vapor intrusion was investigated at the site; however, it is being evaluated separately by EPA. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

Risk-based screening levels were not available for the following analytes: calcium, magnesium, potassium, and sodium. These analytes were not selected as COPCs because they are considered essential nutrients.

In the absence of a PRG for lead, groundwater concentrations were compared to the New York drinking water standard and EPA's MCL for lead of 15 µg/L. The maximum detected concentration of lead in groundwater, 27 µg/L, was above 15 µg/L, so lead was selected as a COPC. Table 4-1 summarizes the comparison of lead concentrations to its screening level.

The detection frequency, chemical toxicity, and history of detected chemical concentrations also were considered in the identification of COPCs. If a chemical was detected in less than five percent of the samples, then the chemical was only considered a COPC if it is also a Group A carcinogen (i.e., known human carcinogen).

Table B-2.1 lists every detected chemical with the basis for selecting or excluding the chemical from the list of COPCs. The COPCs are summarized in Table 4-2.

4.1.2 Calculation of Exposure Point Concentrations

This section presents the methodology that was employed to calculate the EPCs for the COPCs for groundwater. For each chemical in groundwater with 10 or more samples, a 95 percent upper confidence limit (UCL) on the arithmetic mean concentration was calculated and compared to the maximum detected concentration for that chemical. The lower value of the UCL and the maximum detected value is the EPC, as recommended by EPA (EPA 1992).

Several different statistical methods can be used to estimate the 95 percent UCL of a data set, depending upon the data distribution. Therefore, two key steps are required to estimate the 95 percent UCL of a data set:

- Determine the distribution of the data (i.e., normal, lognormal, gamma or other)
- Compute the 95 percent UCL using the appropriate procedure for the data distribution

In this assessment, both steps were performed with the ProUCL statistical software developed for EPA (2004b). Based on EPA guidance (1989) and EPA Region 2 direction, these steps were performed with the analytical data assuming that nondetect data have a concentration equal to one-half the laboratory-reported contract-required quantitation limit (CRQL) (i.e., one-half the value reported with a "U" qualifier).

The ProUCL program tests the normal, lognormal, gamma, and non-parametric distributions of each data set and the 95 percent UCLs were calculated with the statistical procedures recommended by EPA, based on the findings of Singh, Singh, and Engelhardt (1997, 1999) (EPA 2004b). ProUCL computes the 95%UCL using 5 parametric and 10 non-parametric methods, depending on the distribution.

- For normal distributions, the Student's t-statistic is used to calculate the UCL.
- For lognormal distributions, one of four different computation methods is used depending on the skewness of the data (as indicated by the standard deviation of the log-transformed data) and the sample size.
- For gamma distributions, one of the two following computation methods is used based on a k value, the shape parameter of a gamma distribution.
  - For data sets (of all sizes), the EPC term is computed using an adjusted gamma UCL of the mean (when $0.1 \leq k \leq 0.5$) or an approximate gamma UCL of the mean (when $k > 0.5$).
  - For values of $k<0.1$, a 95% UCL may be obtained using either the bootstrap-t method or Hall's bootstrap method when the sample size is small (less than 15), or the approximate gamma for larger data sets.
- For data sets that do not fit a normal, a lognormal, or gamma distribution, the ProUCL program calculates and recommends a 95% UCL from 1 of the 10 non-parametric methods (EPA 2004b).

Table B-3.1 presents the EPCs for each COPC in groundwater. As noted previously, the EPC is the lower value of the UCL or the maximum detected value. ProUCL output for COPCs are included in Appendix C.

4.1.3 Calculation of Indoor Air Exposure Point Concentrations

4.1.3.1 Shower Volatilization

Modeling is required to estimate the indoor air concentrations of VOCs from groundwater while showering. In this scenario, receptors were assumed to inhale VOCs while showering and during time spent in the bathroom after showering. The dermal absorption of volatilized VOCs was assumed to be negligible due to low dermal permeabilities. A chapter entitled "Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water" by J. Schaum *et al.* (1994), which appears as Chapter 13 in the book entitled *Water Contamination and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment* was utilized to perform the shower modeling. This chapter presents a methodology for estimating exposure to VOCs in domestic water supplies for the inhalation exposure route. The procedure for estimation of VOC inhalation exposure was based on research performed by Julian Andelman.

This model treats the bathroom as one compartment and yields an air concentration averaged over the time of the actual shower and the time spent in the bathroom after the shower. The model was derived by assuming that the chemical contaminant volatilizes at a constant rate, instantly mixes uniformly with the bathroom air, and that ventilation with clean air does not occur. This implies that the chemical concentration in the air increases linearly from zero to a maximum at the end of the shower, and then remains constant during the time an individual spends in the bathroom immediately after showering. The air concentration is estimated as follows:

$$C_a = \frac{\left(\frac{C_{aMax}}{2}\right)t_1 + (C_{aMax})t_2}{t_1 + t_2}$$

where:

C_a	=	concentration of a chemical contaminant in air, milligrams per cubic meter (mg/m^3)
C_{aMax}	=	maximum concentration of a chemical contaminant in air (mg/m^3)
t_1	=	time of shower (hour)
t_2	=	time after shower (hour)

C_{aMax} is estimated as follows:

$$C_{aMax} = \frac{C_W f F_W t_1}{V_a}$$

where:

C_{aMax}	=	maximum concentration of a chemical contaminant in air (mg/m^3)
C_w	=	water concentration, milligrams per liter (mg/L)
f	=	fraction volatilized (unitless)
F_w	=	water flow rate, liters per hour (L/hour)
V_a	=	bathroom volume, cubic meters (m^3)

The water concentration, C_w, is a site-specific value that refers to the concentration of a chemical in water as it enters the shower. The 95 percent UCL value or the maximum detected value was utilized as the water concentration (i.e., the EPC listed in Table B-3.1).

The fraction volatilized, f, is a chemical-specific value that refers to the mass fraction of chemical in water that volatilizes over the course of the shower. Volatilization rates depend on properties such as Henry's Law constants and molecular weights. Chemical-specific fraction volatilized values were calculated from these chemical properties using the equation provided by Schaum *et al.* (1994) (see Tables D-1 and D-2).

The water flow rate, F_w, refers to the rate at which water flows into the shower. A value of 1,000 L/hour was assumed in the model for the RME scenario and 500 L/hour for the CTE scenario (Schaum *et al.* 1994).

The bathroom volume, V_a, refers to the volume of the bathroom including the shower stall. A value of 6 cubic meters (m^3) was assumed in the model for the RME scenario and 16 m^3 for the CTE scenario (Schaum *et al.* 1994). The shower time, t_1, refers to the actual time of the shower. Values of 15 and 27 minutes for adults and young children, respectively, for the RME and 6 and 8.4 minutes for adults and young children (0–6 years), respectively, for the CTE (EPA 2001b) were assumed in the model.

The time spent in the bathroom after showering, t_2, was assumed to be 20 and 33 minutes for adults and young children (0–6 years), respectively, for the RME and 9 and 11.5 minutes for adults and young children, respectively, for the CTE (EPA 2001b).

The model is conservative in nature due to the combination of the following assumptions:

- Volatilization is constant.
- There is no ventilation.
- The exchange rate between air in the shower chamber and bathroom air is so

rapid that the combined volume can be treated as a single chamber with a single concentration of volatilized chemical (i.e., same chemical concentration throughout shower and bathroom).

Exposure point air concentrations from the shower model are presented in Tables D-3 and D-4 in Appendix D.

4.2 Exposure Pathway Variables

Exposure assumptions were primarily taken from EPA documents (EPA 1989, 1991, 1997, 2001b, 2002b, 2002c, 2004a) and EPA Region 2's approach. EPA's standard default assumptions (EPA 1991) were used, where available. Otherwise values from the most recent guidance were used unless EPA Region 2 has a known preference for a specific value. RME and CTE parameters that were used in the risk assessment are provided in RAGS Part D Table B-4.1.

4.2.1 Residential Exposure Assumptions

The residential future use scenario assumes residential development in the mall and office complex, which is very unlikely to occur. Future residents would be exposed to groundwater from residential wells if residential wells are installed. The residents are assumed to be exposed to groundwater via ingestion, dermal contact, and inhalation during showering and bathing.

For groundwater ingestion exposure parameters, adult residents are assumed to consume 2 L of water per day (L/day) for the RME scenario (EPA 1991). Adult residents are assumed to consume 1.4 L/day for the CTE scenario, based on the mean ingestion rate for adults (EPA 1997). The 95th percentile of the drinking water intake rate for children ages 1–10 years is 1 L/day (EPA 1991, 2002b); therefore, the RME water ingestion rate for child residents is assumed to be 1 L/day. The CTE drinking water intake rate for children is assumed to be 0.4 L/day, based on a mean drinking water intake rate for children 1–10 years (EPA 2002b).

Inhalation and dermal exposure of residents to groundwater may occur through showering and other household activities. For the RME scenario, shower duration for adults is assumed to be 15 minutes, with an additional 20 minutes for drying off, brushing teeth, combing hair, etc., for a total of 0.58 hour (EPA 2001b). For the CTE scenario, shower duration for adults is assumed to be 6 minutes, with an additional 9 minutes spent in the bathroom afterwards, for a total of 0.25 hour (EPA 2001b). For the RME scenario, children (0–6 years) are assumed to spend 27 minutes in the bath, with an additional 33 minutes spent in the bathroom afterwards, for a total of 1 hour (EPA 2001b). For the CTE scenario, children are assumed to spend 8.5 minutes in the bath, with an additional 11.5 minutes spent in the bathroom afterwards, 0.33 hour (EPA 2001b). Showering inhalation rates are assumed to be 1.0 cubic meters per hour (m^3/hour) for adults and 0.42 m^3/hour children for the RME scenario, 0.5 m^3/hour for the adult CTE scenario and 0.4 m^3/hour for the child (0–6 years) CTE scenario.

Inhalation rates for the RME scenario for adults are based on the mean short-term rate for light activities (e.g., walking at 1.5–3 miles per hour). For a child (0-6 years), the inhalation rate is based on the time-weighted average of the mean inhalation rate for children ages 0 to 6 (EPA 2007a). For the CTE scenario, inhalation rates are based on the mean short-term rate for sedentary activities (e.g., lying, sitting, and standing) (EPA 1997). For surface area exposed, estimates of total body surface areas for adults and children, respectively, are: 18,000 square centimeters (cm^2) and 6,600 cm^2 (EPA 2004a); these values are based on the 50th percentiles for males and females. The chemical-specific dermal permeability coefficients for COPCs are presented in Table 4-3 (EPA 2004a).

All residents are assumed to be exposed for 350 days per year for both the RME and CTE scenarios (EPA 1991, 2002c). The total RME duration for residents is assumed to be 30 years (EPA 1991): 24 years as an adult and 6 years as a young child. The total CTE duration for residents is 9 years, based on the 50th percentile value for years living in a home (EPA 1997). The CTE duration is assumed to be 9 years for adults and 6 years for children.

A life expectancy of 70 years (EPA 1989) was used for all residents as the averaging time for exposure to carcinogenic contaminants. The averaging time for noncarcinogenic effects is equal to the exposure duration, or 24 years for adults under the RME scenario, 9 years for adults under the CTE scenario, and 6 years for children under both scenarios. A body weight of 70 kilograms (kg) was used for all adult residents and 15 kg for children (0 to 6 years) under both scenarios (EPA 1991).

4.2.2 Site Worker Exposure Assumptions

In the future use scenario, workers would be exposed to groundwater if private wells were installed at the site. The workers are assumed to be exposed to groundwater via ingestion. Future site workers are assumed to consume 1 L of water per day for the RME and CTE scenarios (EPA 1991).

Site workers are assumed to be exposed for 250 days per year for the RME scenario, (EPA 1991) and 225 days per year for the CTE scenario (EPA 2002a). The exposure duration for site workers is 25 years for the RME scenario, based on the 95th percentile value for job tenure for men in the manufacturing sector (EPA 1991, 1997, 2002a). The CTE duration is 7 years, based on the median occupation tenure of the working population (EPA 1997).

A life expectancy of 70 years (EPA 1989) was used for the site worker as the averaging time for exposure to carcinogenic contaminants. The averaging time for noncarcinogenic effects is equal to the exposure duration, or 25 years for site workers under the RME scenario, and 7 years for the CTE scenario (EPA 1989). A body weight of 70 kg was used for site workers for both the RME and the CTE analysis (EPA 1991).

Section 5
Toxicity Assessment

Health criteria used in this risk assessment were obtained from a variety of toxicological sources according to a hierarchy established in the Office of Solid Waste and Emergency Response (OSWER) Directive 9285.7-53 (EPA 2003). The toxicity value hierarchy is as follows:

- Tier 1 – EPA's IRIS.
- Tier 2 – EPA's Provisional Peer Reviewed Toxicity Values (PPRTVs): The Office of Research and Development/NCEA/Superfund Health Risk Technical Support Center (STSC) develops PPRTVs on a chemical-specific basis when requested by EPA's Superfund program.
- Tier 3 – Other Toxicity Values: Tier 3 includes additional EPA and non-EPA sources of toxicity information. Priority should be given to those sources of information that are the most current, the basis for which is transparent and publicly available, and which have been peer-reviewed.

5.1 Health Effects Criteria for Noncarcinogens

For chemicals that exhibit noncarcinogenic (e.g., systemic) effects, organisms have repair and detoxification capabilities that must be exceeded by some critical concentration (threshold) before the health effect is manifested. This threshold view holds that a range of exposures from just above zero to some finite value can be tolerated by the organism without an appreciable hazard of adverse effects.

Health criteria for chemicals exhibiting noncarcinogenic effects for use in risk assessment are generally EPA-derived reference doses (RfDs) and reference concentrations (RfCs). The RfD or RfC is an estimate of average daily exposure to an individual (including sensitive individuals) that is likely to be without appreciable risk of deleterious effects during a lifetime. The RfD is expressed in units of milligram (mg) chemical per kg body weight per day (mg/kg-day), while the RfC is expressed in unit of mg chemical per cubic meter of air (mg/m^3).

RfDs and RfCs are usually derived either from human studies involving workplace exposures or from animal studies, and are adjusted using uncertainty factors to ensure that they are unlikely to underestimate the potential for adverse

noncarcinogenic effects to occur. The uncertainty factors reflect scientific judgment regarding the various types of data used to estimate the RfD/RfC and generally consist of multiples of factors ranging from 1 to 10. For example, a factor of 10 may be introduced to account for possible differences in response between humans and animals in prolonged exposure studies. Other factors may be used to account for

variation in susceptibility among individuals in the human population, use of data from a study with less-than-lifetime exposure, and/or use of data from a study that did not identify a no observed adverse effect level (NOAEL).

RfDs and RfCs provide benchmarks against which estimated doses (i.e., those projected from human exposures to various environmental conditions) might be compared. Doses that are significantly higher than the RfD/RfC may indicate an increased potential of hazard from the exposure, while doses that are less than the RfD/RfC are not likely to be associated with adverse health effects. It should be noted that an exceedance of the RfD/RfC does not predict a specific disease, just an increased potential hazard for non-cancer health effects.

5.2 Health Effects Criteria for Potential Carcinogens

For chemicals that exhibit carcinogenic effects, EPA as well as other scientific authorities recognizes that one or more molecular events can evoke changes in a single cell or a small number of cells that can lead to malignancy. This non-threshold theory of carcinogenesis purports that any level of exposure to a carcinogen can result in some finite possibility of causing cancer. Generally, regulatory agencies assume the non-threshold hypothesis for carcinogens in the absence of information concerning the mechanisms of carcinogenic action for the chemical.

The slope factor (SF) [in units of $(\text{mg/kg body weight-day})^{-1}$] is a number which, when multiplied by the lifetime average daily dose of a potential carcinogen (in mg/kg body weight-day), yields the upper-bound lifetime excess cancer risk associated with exposure at that dose. SFs are developed for a specific route of exposure, either oral or inhalation. Upper-bound is a term used by EPA to reflect the conservative nature of the SFs—risks estimated using SFs are considered unlikely to underestimate actual risks and may overestimate risks for a given exposure. Excess lifetime cancer risks are generally expressed in scientific notation and are probabilities. An excess lifetime cancer risk of 1×10^{-6} (one in one million), for example, represents the incremental probability that an individual will develop cancer as a result of exposure to a carcinogenic chemical over a 70-year lifetime under specified exposure conditions.

In practice, SFs estimates are derived from the results of human epidemiology studies or chronic animal bioassays. The animal studies are conducted for a range of doses, including a high dose, in order to detect possible adverse effects. Since humans are expected to be exposed at lower doses than those used in animal studies, the data are adjusted via mathematical models. The data from animal studies are typically fitted to the linearized multistage model to obtain a dose-response curve. EPA evaluates a range of possible models based on the available data before conducting the extrapolation. The most appropriate model to reflect the data is selected based on an analysis of the data set.

The 95 percent UCL slope of the dose-response curve, subject to various adjustments and an inter-species scaling factor, is applied to derive the health protective SF estimate for humans. Dose-response data from human epidemiological studies are fitted to dose-time-response curves. These models provide rough, but reasonable, estimates of the upper limits on lifetime risk. SF estimates based on human epidemiological data are also derived using health protective assumptions and, as such, they too are considered unlikely to underestimate risks. Therefore, while the actual risks associated with exposures to potential carcinogens are unlikely to be higher than the risks calculated using an SF estimate, they could be considerably lower.

In addition, there are varying degrees of confidence in the weight-of-evidence for carcinogenicity of a given chemical. EPA (1986) has proposed a system for characterizing the overall weight of evidence based on the availability of animal, human, and other supportive data. The weight-of-evidence classification is an attempt to determine the likelihood that an agent is a human carcinogen and thus qualitatively affects the estimation of potential health risks.

Under EPA's risk assessment guidelines (EPA 1999, 1996, 1986), classification of the overall weight of evidence has the following five categories:

- Group A - Human Carcinogen: There is at least sufficient evidence from human epidemiological studies to support a causal association between an agent and cancer.
- Group B - Probable Human Carcinogen: There is at least limited evidence from epidemiological studies of carcinogenicity in humans (Group B1), or, in the absence of adequate data in humans, there is sufficient evidence of carcinogenicity in animals (Group B2).
- Group C - Possible Human Carcinogen: There is inadequate evidence of carcinogenicity in humans.
- Group D - Not Classified: There is inadequate data or no existing data for the chemical.
- Group E - No Evidence of Carcinogenicity in Humans: There is no evidence for carcinogenicity in at least two adequate animal tests in different species, or in both epidemiological and animal studies.

The EPA 2005 Cancer Guidelines provide an update to the Cancer Guidelines (EPA 1999, 1996, 1986) and subsequent updates (EPA 2005). In summary, the 2005 Cancer Guidelines emphasize the value of understanding the biological changes that a chemical can cause and how these changes might lead to the development of cancer. They also discuss methods to evaluate and use such information, including information about an agent's postulated *mode-of-action*, or the series of steps and processes that lead to cancer formation. Mode-of-action data, when available and of sufficient quality, may be useful in drawing conclusions about the potency of an agent, its potential effects at low doses, whether findings in animals are relevant to humans, and which populations or life stages may be particularly susceptible. In the

absence of mode-of-action information, default options are available to allow the risk assessment to proceed.

The 2005 Guidelines recommend that an agent's human carcinogenic potential be described in a *weight-of-evidence narrative* rather than the previously identified letter categories (A = known; B = probable, C = possible, D = not classifiable, and E = non-human carcinogen). The narrative summarizes the full range of available evidence and describes any conditions associated with conclusions about an agent's hazard potential. For example, the narrative may explain that an agent appears to be carcinogenic by some routes of exposure but not others (e.g., by inhalation but not ingestion). Similarly, a hazard may be attributed to exposures during sensitive life stages of development but not at other times. The narrative also summarizes uncertainties and key default options that have been invoked.

The following are the five recommended standard hazard descriptors:

- Carcinogenic to human
- Likely to be carcinogenic to humans
- Suggestive evidence of carcinogenic potential
- Inadequate information to assess carcinogenic potential
- Not likely to be carcinogenic to humans

EPA is evaluating the carcinogenic weight of evidence of chemicals through the IRIS chemical process. In this process, chemicals are nominated, and all chemicals are evaluated consistent with the 2005 Guidelines and a narrative developed describing the Weight of Evidence. The IRIS chemical file is then reviewed, first through internal EPA consensus review and then external peer-review. The requirements for in-depth analysis of "mode-of-action data" and the review process does not allow the equating of a chemical evaluated under the old system with the letter classification using the 2005 Classification narrative; rather, a full analysis of the data is required.

The 2005 Cancer Guidelines also include Supplemental Guidance on the evaluation of early lifetime exposures. For example, where data are available on the mutagenic mode of action for carcinogenesis, the Supplemental Guidance provides procedures for evaluating chemicals that are carcinogens and either using the data in the development of the potency factors or using age dependent adjustment factors. The Supplemental Guidance also provides for the evaluation of data on early lifetime exposures where children may be more susceptible. The application of these adjustments for specific chemicals are noted in the text of this risk assessment and, where appropriate, in the presentation of calculated risks.

5.3 Toxicological Assessment

Tables 5-1 through 5-4 summarize the chronic oral, dermal, and inhalation RfDs and SFs used to estimate noncarcinogenic effects and cancer risks for the COPCs. These criteria were the most current data, obtained from the November 2006 on-line version of IRIS, PPRTV, and NCEA recommendations.

The use of surrogate toxicity values may be seen in Tables 5-1 through 5-4. Chromium VI toxicity values were applied to total chromium. Even though chromium exists in groundwater primarily in both the trivalent (Cr+3) and hexavalent (Cr+6) valence forms, to be conservative, chromium VI toxicity values were applied to total chromium. Chromium VI is a group A carcinogen by the inhalation route, but a group D carcinogen by the oral route. Chlordane toxicity values were applied to alpha- and gamma-chlordane. The RfD for nickel (soluble salt) has been applied to nickel.

The IRIS program is currently reassessing the toxicity of TCE based on recommendations from the National Academy of Sciences and EPA's Science Advisory Board. In the absence of a final IRIS file for TCE, EPA Region 2 recommends using the toxicity values found in the draft *Trichloroethylene Health Risk Assessment: Synthesis and Characterization* released in 2001 (EPA 2001) to quantitatively evaluate risk and hazard for this compound. The toxicity of TCE was evaluated previously under the IRIS program and has also been evaluated by California EPA. The range of toxicity values available for this compound can be used to characterize the uncertainty associated with using the 2001 draft values to calculate risk and hazard. The impact on the estimates of risk and hazard in the HHRA for the site is discussed in the uncertainty section (Section 6.2.3).

Section 6
Risk Characterization

In this section of the risk assessment, the human health risks potentially associated with the complete human exposure pathways identified in Section 3 were assessed. Potential risks due to exposures to contaminants in groundwater from the site via ingestion, dermal contact, and inhalation were quantitatively evaluated. Toxicity and exposure assessments were integrated into quantitative expressions of carcinogenic risk and noncarcinogenic health hazards.

Carcinogenic risk and noncarcinogenic health hazard calculations for all COPCs are presented in RAGS Part D Tables B-7.1 through B-7.3 and then summarized in RAGS Part D Tables B-9.1 through B-9.3 and B-10.1 through B-10.3 included in Appendix B.[1] Total carcinogenic risks and noncarcinogenic HIs for each area and receptor are summarized in Tables 6-1 and 6-2 for the RME and CTE scenarios, respectively.

The potential for non-cancer health effects was evaluated by comparing an exposure level over a specified time period with an RfD derived for a similar exposure period. This ratio of exposure to toxicity is referred to as an HQ. The HI is the sum of the HQs from individual chemicals. This HI assumes that there is a level of exposure below which it is unlikely even for sensitive populations to experience adverse health effects. If the HI exceeds unity (one), there may be concern for potential non-cancer effects; however, this value should not be interpreted as a probability. Generally, the greater the HI above unity, the greater the level of concern.

Cancer risks are estimated as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a potential carcinogen. The upper-bound excess lifetime cancer risk is estimated by multiplying the lifetime exposure by the cancer SF. Excess lifetime cancer risks are generally expressed in scientific notation and are probabilities. An excess lifetime cancer risk of 1×10^{-6} (one in one million), for example, represents the incremental probability that an individual will develop cancer as a result of exposure to a carcinogenic chemical over a 70-year lifetime under specified exposure conditions.

In general, EPA recommends a target HI value or a target cancer risk range (i.e., HI = 1 or risk = 1×10^{-6} to 1×10^{-4}) as threshold values for potential human health impacts. The results presented in the spreadsheet calculations were compared to these target values. These values aid in determining whether additional response action is necessary at the site.

Carcinogenic risks and non-cancer HIs are summarized for the site in RAGS Part D Tables B-9.1 through B-9.3 and B-10.1 through B-10.3 in Appendix B.

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1 RAGS Part D Standard Table 8 is for calculation of radiation cancer risks and does not apply to this site.

6.1 Results of Risk Calculations

Potential risks were estimated for the following receptors:

- Future Site Workers
- Future Residents

EPA guidance currently recommends a target range for carcinogenic risk of 1×10^{-6} to 1×10^{-4}, and a target organ value of unity (1) for noncarcinogenic health hazard as the threshold range of value for potential human health impact. Risks for all receptors were estimated using RME assumptions. Risks were also estimated using CTE assumptions in cases where the RME assumptions resulted in risk estimates above EPA thresholds. Using RME assumptions, the total excess lifetime cancer risks for several receptors, as well as some of the individual excess lifetime cancer risks, exceeded the EPA threshold of 10^{-4} for cancer risks.

In addition, the total HIs for most receptors also were equal to or exceeded the EPA threshold of one for non-cancer effects. Therefore, CTE assumptions were applied to all exposure scenarios. The comparison of RME risks and CTE risks provides information about the degree to which variability in and uncertainty about receptor behavior (e.g., amount of water an individual ingests per day) influence the risk estimates. CTE risks represent typical exposure patterns rather than RMEs.

Cancer and non-cancer risk estimates for each receptor are summarized in Tables 6-1 and 6-2 for RME and CTE scenarios, respectively.

6.1.1 Future Site Workers

In the future, if a water supply well is installed at the property, site workers may come into contact with contaminants in groundwater through incidental ingestion. The total estimated cancer risk for on-site workers (2×10^{-4}) for RME is slightly above the EPA target cancer risk range of 1×10^{-6} to 1×10^{-4} (Table 6-1), due to ingestion of PCE (1×10^{-4}) and TCE (1×10^{-4}) in groundwater. When more typical exposures are considered under the CTE scenario, the cancer risk for the worker (6×10^{-5}) is within EPA's target range of 1×10^{-6} to 1×10^{-4} (Table 6-2). PCE accounts for 47 percent of the total cancer risk, and TCE accounts for 45 percent of the total excess cancer risk.

The total HI for future site workers is above the EPA threshold of unity for both RME

(3) (Table 6-1) and CTE (3) (Table 6-2). Exposure to TCE in groundwater, which causes toxic effects on the liver, kidney, fetus, and central nervous system, accounts for the majority of the non-cancer health hazard. This indicates that non-cancer adverse health effects would likely occur from future site worker exposures to TCE in groundwater at the site.

6.1.2 Future On-site Residents

Exposure to adults and young children (0 to 6 years) was examined as the most conservative potential exposure pathway. This scenario envisions the construction of a private well in the contaminant plume where residents would come into contact with contaminants in groundwater through ingestion, dermal contact, and by inhalation of VOCs from groundwater during washing, bathing, showering, laundering, and cooking.

Screening of deep soil gas samples against values in EPA's 2002 *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway* indicates that the potential for vapor intrusion exists on-site. Therefore, any structures constructed there in the future should be evaluated for soil vapor intrusion until groundwater and soil gas concentrations reach levels that would no longer be of concern. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

6.1.2.1 Adult

The total estimated cancer risk for adult on-site residents is above the EPA target range of 1×10^{-6} to 1×10^{-4} for RME (2×10^{-3}) (Table 6-1) and CTE (3×10^{-4}) (Table 6-2). Ingestion of TCE in groundwater accounts for 77 percent of the total excess cancer risk.

The total HI for adults is above the EPA threshold of unity (1) for RME (10) (Table 6-1) and CTE (6) (Table 6-2). Ingestion of TCE in groundwater, which can cause toxic effects on the liver, kidney, fetus, and central nervous system, accounts for the 84 percent of the non-cancer health hazard. This indicates that non-cancer adverse health effects would likely occur from future adult resident exposures at the site.

6.1.2.2 Child

The total estimated cancer risk for child on-site residents (6×10^{-3}) is above the EPA target range of 1×10^{-6} to 1×10^{-4} for RME (Table 6-1), due to ingestion of TCE from contaminated groundwater. TCE accounts for 87 percent of the total excess cancer risk. When more typical exposures are considered under the CTE scenario, the cancer risk for child residents (8×10^{-4}) is also above the range of 1×10^{-6} to 1×10^{-4} (Table 6-2), due to ingestion of TCE in contaminated groundwater.

The total HI for child residents is above the EPA threshold of unity for the RME (35) (Table 6-1) scenario. Exposure to TCE in contaminated groundwater, which can cause toxic effects on the liver (32), kidney (29), fetus (29), and central nervous system (29), accounts for the majority of the non-cancer hazard. When more typical exposures are considered under the CTE scenario (10) (Table 6-2), the HI is also above the threshold of unity. This indicates that non-cancer adverse health effects are possible from future child resident exposures to contaminated groundwater.

6.2 Uncertainty in the Risk Assessment

As in any risk assessment, the estimates of potential health threats (cancer risks and non-cancer health effects) have numerous associated uncertainties. The primary areas of uncertainty and limitations are qualitatively discussed here. In general, the main areas of uncertainty include the following:

- Environmental data
- Exposure parameter assumptions
- Toxicological data, and
- Risk characterization.

6.2.1 Environmental Data

Uncertainty is introduced in the estimation of chemical concentrations. Errors in the analytical data may stem from errors inherent in sampling and/or laboratory procedures. One of the most effective methods of minimizing procedural or systematic error is to subject the data to a strict quality control review. This quality control review procedure helps to eliminate many laboratory errors. However, even with all data vigorously validated, it must be realized that error is inherent in all laboratory procedures.

Samples were collected from known and suspected areas of contamination (biased sampling) to delineate the nature and extent of contamination. Although this sampling methodology provided a reasonable estimation of the level of confidence at known or suspected contaminated areas of concern within the site, the possibility exists that the data sets formed by these samples do not accurately represent the level of overall contamination at the site.

Additional uncertainty is associated with chemical concentrations reported below quantitation limits, but still included in the analyses. On the other hand, the analyses might eliminate contaminants with concentrations below the reported quantitation limits. These values are estimated and may result in over- or under-estimating risk.

The groundwater data used in this assessment contribute a significant degree of uncertainty to the overall assessment. Among the factors that should be considered is our ability to estimate risk in the future. The presumption that contaminant concentrations will remain the same over time may overestimate the potential risk because dispersion and other natural processes are not accounted for.

6.2.2 Exposure Parameter Estimation

There are two major areas of uncertainty affecting exposure parameter estimation. The first relates to estimation of EPCs. The second relates to parameter values used to estimate chemical intake (e.g., ingestion rate, exposure frequency).

The approach used to calculate exposure point concentrations in groundwater may overestimate potential exposures and risks. In accordance with EPA guidance (1989),

when at least 10 samples were collected, the EPC for a specific chemical in a particular medium was based on the 95 percent UCL of the mean or the maximum detected concentration, whichever was less. Since the 95 percent UCL is strongly influenced by sample size and the variability of the chemical concentrations, the approach to estimating EPCs can result in the default use of the maximum detected concentration. In this HHRA, some of the 95 percent UCLs were more than the maximum detected concentration, necessitating the use of the maximum concentration as the EPC, thereby overestimating risks.

When calculating EPCs from sampling data, one-half the reported detection limits for nondetect samples were included in the calculation of the 95 percent UCL. Any approach dealing with nondetected chemical concentrations is associated with some uncertainty. This is because the nondetect result does not indicate whether the chemical is absent from the medium, present at a concentration just above zero, or present at a concentration just below the detection limit. For chemicals that were infrequently detected, many of the values used to estimate the EPCs were based on detection limits. High detection limits for nondetects can lead to an overestimation of risk if the actual concentrations are well below the detection limit. However, detection limits for the COPCs were generally toward the lower end of detected concentrations, so the 95 percent UCLs were minimally influenced by the detection limits.

The exposure parameter values used are also a source of uncertainty. For example, assumptions were made regarding the exposure time, frequency, and duration of potential chemical exposures, as well as for the quantity of material ingested, inhaled, or absorbed. In general, assumptions were made based on reasonable maximum exposures and, in most cases, values were specified by either EPA Region 2 or EPA guidance documents. For dermal absorption factors, chemical-specific values based on EPA guidance are not available for VOCs and most inorganic chemicals. Dermal risk associated with these chemicals cannot be quantitatively evaluated in the risk assessment, introducing some uncertainty to the total risk and hazard estimates. Additionally, the potential exists for an adult to spend additional time in the bathroom to supervise a young child taking a bath. This additional time was not included in the risk calculation because supervising a young child is not a universal task for all adults. Thus, this may underestimate the risk.

For the current and future site workers and future resident, the estimated cancer risks and noncancer health hazard are most likely underestimated. The reason is that the exposure to vapor from subsurface intrusion is not included. More detail about the vapor intrusion investigation of the buildings on and around this site can be found in a separate report in the administrative record.

6.2.3 Toxicological Data

Toxicological data is a source of considerable uncertainty in this risk assessment. One aspect of this uncertainty includes using dose-response information from effects observed at high doses in animals to predict adverse health effects of low-level

exposures for humans exposed to the chemical in the environment. Another source is the use of dose-response information from short-term exposure studies to predict the effects of long-term exposure. Uncertainties also arise from using dose-response information from animals to predict human health effects, and from using results from homogeneous animal and healthy human populations to predict effects likely to be observed in the general population, which consists of individuals with varying sensitivities.

Toxicity values are not available for some COPCs. Therefore, carcinogenic risks or noncarcinogenic health hazards could not be quantitatively assessed for all contaminants. The total cumulative carcinogenic risk or noncarcinogenic health hazard for the site may be underestimated in such circumstances.

For TCE, a range of cancer slope factors (2×10^{-2} to 0.4 [mg/kg-day]$^{-1}$) was reported in the 2001 EPA document entitled *Trichloroethylene Health Risk Assessment: Synthesis and Characterization*. Table 6-3 presents the risk comparison based on different cancer slope factors. Using the EPA Region 2's recommended cancer slope factor of 0.4 (mg/kg-day)$^{-1}$, which is the high end of the range, resulted in risks within or above the EPA acceptable risk range (1×10^{-6} - 1×10^{-4}) for all receptors. Using the previous IRIS oral slope factor of 1.1×10^{-2} (mg/kg-day)$^{-1}$ and inhalation slope factor of 6×10^{-3} (mg/kg-day)$^{-1}$ (EPA 2007b) also resulted in risks within or above the EPA acceptable risk range for all receptors. Thus, the risks from exposure to TCE in groundwater are likely to exceed EPA acceptable level throughout the range of cancer slope factors.

The TCE toxicity values recommended by EPA Region 2 and used in this HHRA are from the 2001 EPA document entitled *Trichloroethylene Health Risk Assessment: Synthesis and Characterization*. Under the IRIS program, EPA is currently reassessing the toxicity of TCE based on the recommendations of the National Academy of Sciences and EPA's Scientific Advisory Board. The toxicity values used in the HHRA for this compound may change in the future.

Chromium in groundwater exists primarily in the trivalent (Cr+3) and hexavalent (Cr+6) forms. Cr+3 is the most common form of naturally occurring chromium but is largely immobile in the environment, while Cr+6 is the most oxidized, mobile, reactive, and toxic chromium state. Cr+6 predominates under highly oxidizing conditions while Cr+3 predominates under reducing conditions. Oxidizing conditions are generally found in shallow aquifers and reducing conditions generally exist in deeper groundwater. Depth to water at the site is generally deep. Thus, Cr+3 is likely to be the predominant valence form at the site. However, to be health protective, Cr+6 toxicity values were used to calculate the risks and health hazards. Hence, the risk and health hazard for the site may be overestimated.

6.2.4 Risk Characterization

There is also uncertainty in assessing the risks associated with a mixture of chemicals. In this assessment, the effects of exposure to each contaminant present has initially been considered separately; however, these substances occur together at the site, and

individuals may be exposed to mixtures of the chemicals. Predicting how mixtures of chemicals will interact must be based on an understanding of the mechanisms of such interactions. Individual compounds may interact chemically in the body, yielding a new toxic component or causing different effects at different target organs. Suitable data are not currently available to rigorously characterize the effects of chemical mixtures. Consequently, as recommended by EPA (1989), chemicals present at the site were assumed to act additively, and potential health risks were evaluated by summing excess lifetime carcinogenic risks and hazard indices for noncarcinogenic health effects. This approach to assessing risk associated with mixtures of chemicals assumes that there are no synergistic or antagonistic interactions among the chemicals. To the extent that these assumptions are incorrect, the actual risks could be under- or over-estimated.

As a result of the uncertainties described above, this risk assessment should not be construed as presenting absolute risks or hazards. Rather, it is a conservative analysis intended to indicate the potential for adverse impacts to occur based on RME and CTE.

Section 7
Summary of the Risk Assessment

7.1 Summary of Approach

In the HHRA, contaminants in various media at the site were evaluated for potential health threats to the following receptors:

- Future Site Workers
- Future Residents

The estimates of cancer risk and non-cancer health hazards, and the greatest chemical contributors to these estimates, were identified.

COPCs were selected based on criteria outlined in the RAGS Part A (EPA 1989), primarily through comparison to risk-based screening levels. The COPCs evaluated in the risk assessment were VOCs, SVOCs, pesticides, and inorganics. Calcium, magnesium, potassium, and sodium were not selected as COPCs because they are considered essential nutrients.

Exposure routes and human receptor groups were identified and quantitative estimates of the magnitude, frequency, and duration of exposure were made. Exposure points were estimated using the minimum of the 95 percent UCL and the maximum detected concentration. Chronic daily intakes were calculated based on the RME scenario (the highest exposure reasonably expected to occur at a site). The intent is to estimate a conservative exposure case that is still within the range of possible exposures. CTE assumptions were also developed, which reflect more typical exposures.

In the toxicity assessment, current toxicological human health data (i.e., RfDs and SFs) were obtained from various sources and were utilized in the order as specified by EPA (2003).

Risk characterization involved integrating the exposure and toxicity assessments into quantitative expressions of risks/health effects. Specifically, chronic daily intakes were compared with concentrations known or suspected to present health risks or hazards.

In general, EPA recommends target values or ranges (i.e., cancer risk of 10^{-6} to 10^{-4} or HI of one) as threshold values for potential human health impacts (EPA 1989). These target values aid in determining whether additional response action is necessary at the site.

7.2 Summary of Site Risks

This section presents a summary of the carcinogenic risks and noncarcinogenic hazards for exposures to contaminants in groundwater at the site that were quantitatively evaluated for potential health threats.

7.2.1 Future Site Workers

Risks and hazards were evaluated for incidental ingestion of groundwater. The total incremental lifetime cancer risk estimates are:

- RME cancer risk: 2×10^{-4}
- CTE cancer risk: 6×10^{-5}

The RME cancer risk is slightly above the EPA's target range of 1×10^{-6} to 1×10^{-4}.

HIs greater than 1 indicate the potential for non-cancer hazards. The calculated HIs are:

- RME HI: 3
- CTE HI: 3

The total HI based on individual health endpoints for the RME and CTE scenario is above EPA's acceptable threshold of 1 and could possibly have adverse effects on the central nervous system. TCE contributes most of the potential non-cancer hazard.

7.2.2 Future Residents

Risks and hazards were evaluated for incidental ingestion, inhalation and dermal contact with contaminated groundwater. The total incremental lifetime cancer risk estimates are:

- Adult: RME cancer risk: 2×10^{-3} and CTE cancer risk: 3×10^{-4}
- Child: RME cancer risk: 6×10^{-3} and CTE cancer risk: 8×10^{-4}

These estimates are above EPA's target range of 1×10^{-6} to 1×10^{-4}. Exposure to PCE and TCE in groundwater account for the majority of the risk.

HIs greater than 1 indicate the potential for non-cancer hazards. The calculated HIs are:

- Adult: RME HI: 10 and CTE HI: 6
- Child: RME HI: 35 and CTE HI: 10

The total HI based on individual health endpoints is above EPA's acceptable threshold of unity (1). Target organ HIs for the liver, kidney, fetus, and central nervous system are also above EPA's threshold of unity due to TCE in the groundwater.

Screening of deep soil gas samples against values in EPA's 2002 *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway* indicates that the potential for vapor intrusion exists on-site. Therefore, any structures constructed there in the future should be evaluated for soil vapor intrusion until groundwater and soil gas concentrations reach levels that would no longer be of concern. More information

about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

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Tables

TABLE 3-1

SELECTION OF EXPOSURE PATHWAYS

Old Roosevelt Field Contaminated Groundwater Site

Garden City, New York

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Groundwater	Groundwater	Tap Water	Residents	Adult	Dermal	Off-Site	None	Current nearby residents are connected to the public water supply.
						Ingestion	Off-Site	None	Current nearby residents are connected to the public water supply.
					Child (0-6yrs)	Dermal	Off-Site	None	Current nearby residents are connected to the public water supply.
						Ingestion	Off-Site	None	Current nearby residents are connected to the public water supply.
				Site Workers	Adult	Ingestion	On-Site	None	Current onsite buildings are connected to the public water supply.
		Air	Water Vapors at Showerhead	Residents	Adult	Inhalation	Off-Site	None	Current nearby residents are connected to the public water supply.
					Child (0-6yrs)	Inhalation	Off-Site	None	Current nearby residents are connected to the public water supply.
	Air	Vapors	Indoor Air - Vapors from Subsurface	Residents	Adult	Inhalation	Off-Site	None	Nearby residents could be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.
					Child (0-6yrs)	Inhalation	Off-Site	None	
				Site Workers	Adult	Inhalation	On-Site	None	Site workers may be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.
Future	Groundwater	Groundwater	Tap Water	Resident	Adult	Dermal	On-Site	Quant	Private wells could be installed in the future for residents.
						Ingestion	On-Site	Quant	Private wells could be installed in the future for residents.
					Child (0-6yrs)	Dermal	On-Site	Quant	Private wells could be installed in the future for residents.
						Ingestion	On-Site	Quant	Private wells could be installed in the future for residents.
				Site Worker	Adult	Ingestion	On-Site	Quant	Private wells could be installed in the future for site workers.
		Air	Water Vapors at Showerhead	Resident	Adult	Inhalation	On-Site	Quant	Private wells could be installed in the future for residents.
					Child (0-6yrs)	Inhalation	On-Site	Quant	Private wells could be installed in the future for residents.
	Air	Vapors	Indoor Air - Vapors from Subsurface	Resident	Adult	Inhalation	On-Site	None	Residential homes could be located on the site in the future and residents could be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.
					Child (0-6yrs)	Inhalation	On-Site	None	
				Site Worker	Adult	Ingestion	On-Site	None	Site workers may be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

Quant = Quantitative risk analysis performed.

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TABLE 4-1
LEAD WORKSHEET

Site Name: Old Roosevelt Field Contaminated Groundwater Site, Garden City, New York
Receptor: Resident (includes child and adult)

A. EXPOSURE SCENARIO: RESIDENTIAL

1. Lead Screening Questions

For each medium for which Screening Level Analysis was performed, complete the following:

Medium	Lead Concentration Used for Screening		Basis for Lead Concentration Used For Screening	Lead Screening Level		Basis for Lead Screening Level
	Value	Unit		Value	Unit	
Groundwater (Monitoring wells)	27	µg/L	Maximum detected concentration	15 15	µg/L µg/L	New York Drinking Water Standard Federal Maximum Contaminant Level

2.. Lead Model Questions

Question	Response for Residential Lead Model
Was a lead model used? (If "no"explain rationale)	No. Lead is a chemical of concern, based on the screening, and will be considered in the remedy for the site
Which lead model and what version/date was used?	
Where are the input values located in the risk assessment report?	
Where are the output values located in the risk assessment report?	
Was the model run using default values only?	
If non-default values were used, where are the rationale for the values located in the risk assessment report?	

3. Final Result

Medium	Result	Comment

Note: If the Adult Lead Model is used, designate the baseline blood lead level and geometric standard deviation used to calculate the screening level.

TABLE 4-1
LEAD WORKSHEET

Site Name: Old Roosevelt Field Contaminated Groundwater Site, Garden City, New York
Receptor: Site Worker (adult)

B. EXPOSURE SCENARIO: NON-RESIDENTIAL

1. Lead Screening Questions

For each medium for which Screening Level Analysis was performed, complete the following:

Medium	Lead Concentration Used for Screening		Basis for Lead Concentration Used For Screening	Lead Screening Level		Basis for Lead Screening Level
	Value	Unit		Value	Unit	
Groundwater (Monitoring wells)	27	µg/L	Maximum detected concentration	15 15	µg/L µg/L	New York Drinking Water Standard Federal Maximum Contaminant Level

2.. Lead Model Questions

Question	Response for Residential Lead Model
Was a lead model used? (If "no"explain rationale)	No. Lead is a chemical of concern, based on the screening, and will be considered in the remedy for the site
Which lead model and what version/date was used?	
Where are the input values located in the risk assessment report?	
Where are the output values located in the risk assessment report?	
Was the model run using default values only?	
If non-default values were used, where are the rationale for the values located in the risk assessment report?	

3. Final Result

Medium	Result	Comment

Note: If the Adult Lead Model is used, designate the baseline blood lead level and geometric standard deviation used to calculate the screening level.

TABLE 4-2
SUMMARY OF CHEMICAL OF POTENTIAL CONCERNS SELECTED FOR EVALUATION
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Chemicals	Monitoring Wells Water
VOCs	
Benzene	YES
Carbon Tetrachloride	YES
Chloroform	YES
cis-1,2-Dichloroethene	YES
Dichlorodifluoromethane	YES
Methyl tert-Butyl Ether	YES
Tetrachloroethene	YES
Toluene	YES
Trichloroethene	YES
SVOCs	
Benzo(a)pyrene	YES
Pesticides	
alpha-Chlordane	YES
Dieldrin	YES
gamma-Chlordane	YES
Heptachlor epoxide	YES
INORGs	
Arsenic	YES
Barium	YES
Chromium	YES
Copper	YES
Iron	YES
Lead	YES
Manganese	YES
Nickel	YES

Notes:
COPC = Chemical of Potential Concern. See Appendix B, Table 2.1 for a full list of detected chemicals and basis for selection as COPC
VOCs = Volatile organic compounds
SVOCs = Semi-volatile organic compounds
INORGs = Inorganics
YES = Detected and selected as COPC

TABLE 4-3
CHEMICAL-SPECIFIC INFORMATION USED FOR DAILY INTAKE CALCULATIONS
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Chemical of Potential Concern	Permeability Coefficient (1) (cm/hr) (water)	Henry's Law Constant (atm-m^3/mol)	Diffusion Coefficient in Air (cm^2/s)	Diffusion Coefficient in Water (cm^2/s)	Chemical-Specific Fraction Volatilized (2)
VOCs					
Benzene	1.5E-02	5.6E-03	8.8E-02	9.8E-06	5.1E-01
Carbon Tetrachloride	1.6E-02	3.0E-02	7.8E-02	8.8E-06	4.8E-01
Chloroform	6.8E-03	3.7E-03	1.0E-01	1.0E-05	5.2E-01
cis-1,2-Dichloroethene	NA	4.1E-03	7.4E-02	1.1E-05	5.6E-01
Dichlorodifluoromethane	9.0E-03	1.0E-01	8.0E-02	1.1E-05	5.4E-01
Methyl tert-Butyl Ether	NA	5.9E-04	8.0E-02	1.0E-05	5.2E-01
Tetrachloroethene	3.3E-02	1.8E-02	7.2E-02	8.2E-06	4.5E-01
Toluene	3.1E-02	6.6E-03	8.7E-02	8.6E-06	4.7E-01
Trichloroethene	1.2E-02	1.0E-02	7.9E-02	9.1E-06	4.9E-01
SVOCs					
Benzo(a)pyrene	7.0E-01	4.6E-07	4.3E-02	9.0E-06	4.8E-01
Pesticides					
alpha-Chlordane	3.4E-02	4.9E-05	1.2E-02	4.4E-06	3.0E-01
Dieldrin	1.2E-02	1.0E-05	1.3E-02	4.7E-06	3.1E-01
gamma-Chlordane	3.4E-02	4.9E-05	1.2E-02	4.4E-06	3.0E-01
Heptachlor epoxide	NA	2.1E-05	1.3E-02	4.2E-06	2.9E-01
INORGs					
Arsenic	1.0E-03	NA	NA	NA	NA
Barium	1.0E-03	NA	NA	NA	NA
Chromium	2.0E-03	NA	NA	NA	NA
Copper	1.0E-03	NA	NA	NA	NA
Iron	1.0E-03	NA	NA	NA	NA
Lead	1.0E-04	NA	NA	NA	NA
Manganese	1.0E-03	NA	NA	NA	NA
Nickel	2.0E-04	NA	NA	NA	NA

(1) Source: EPA. 2004c. Risk Assessment Guidance for Superfund. Part E.

(2) Estimated for volatile chemicals using Eqn. 5 from Schaum et al (1994) (p. 308), with radon as the reference chemical (j):

$$f_i = f_j \times \frac{(2.5/D_w^{0.67} + RT/D_a^{0.67}H)_j}{(2.5/D_w^{0.67} + RT/D_a^{0.67}H)_i}$$

Where:

fi = volatilization fraction for chemical i

fj = volatilization fraction for chemical j = Radon

Da = diffusion coefficient in air, m^2/s

Dw = diffusion coefficient in water, m^2/s

R = gas constant, atm-m^3/mol-K = 8.21 x 10-5

H = Henry's law constant, atm-m^3/mol

T = temperature, K = 293

For radon:

fj = 0.65

Da = 2.0 E-5 m^2/s

Dw = 1.4 e-9 m^2/s

H = 70 torr-m^3/mol

TABLE 5-1
NON-CANCER TOXICITY DATA - ORAL/DERMAL
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Absorbed RfD for Dermal (1)		Primary Target Organ(s)	Combined Uncertainty/Modifying Factor	RfD / Target Organ(s)	
		Value	Unit		Value	Unit			Source	Date (2) (MM/DD/YYYY)
VOCs										
Benzene	Chronic	4.0E-03	mg/kg/day	–	4.0E-03	mg/kg/day	Blood	300	IRIS	11/01/2006
Carbon Tetrachloride	Chronic	7.0E-04	mg/kg/day	–	7.0E-04	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Chloroform	Chronic	1.0E-02	mg/kg/day	–	1.0E-02	mg/kg/day	Liver	100	IRIS	11/01/2006
cis-1,2-Dichloroethene (3)	Chronic	1.0E-02	mg/kg/day	–	1.0E-02	mg/kg/day	Blood	3,000	PPRTV	01/17/2007
Dichlorodifluoromethane	Chronic	2.0E-01	mg/kg/day	–	2.0E-01	mg/kg/day	Whole body	100	IRIS	11/01/2006
Methyl tert-Butyl Ether	NA	NA	NA	–	NA	NA	NA	NA	IRIS	11/01/2006
Tetrachloroethene	Chronic	1.0E-02	mg/kg/day	–	1.0E-02	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Toluene	Chronic	8.0E-02	mg/kg/day	–	8.0E-02	mg/kg/day	Kidney	3,000	IRIS	11/01/2006
Trichloroethene	Chronic	3.0E-04	mg/kg/day	–	3.0E-04	mg/kg/day	Liver/Kidney/Fetus	3,000	NCEA	04/15/2003
SVOCs										
Benzo(a)pyrene	NA	NA	NA	89%	NA	NA	NA	NA	IRIS	11/01/2006
Pesticides										
alpha-Chlordane (4)	Chronic	5.0E-04	mg/kg/day	80%	4.0E-04	mg/kg/day	Liver	300	IRIS	11/01/2006
Dieldrin	Chronic	5.0E-05	mg/kg/day	–	5.0E-05	mg/kg/day	Liver	100	IRIS	11/01/2006
gamma-Chlordane (4)	Chronic	5.0E-04	mg/kg/day	80%	4.0E-04	mg/kg/day	Liver	300	IRIS	11/01/2006
Heptachlor epoxide	Chronic	1.3E-05	mg/kg/day	–	1.3E-05	mg/kg/day	Liver	1,000	IRIS	11/01/2006
INORGs										
Arsenic	Chronic	3.0E-04	mg/kg/day	95%	2.9E-04	mg/kg/day	Skin	3	IRIS	11/01/2006
Barium	Chronic	2.0E-01	mg/kg/day	7%	1.4E-02	mg/kg/day	Kidney	300	IRIS	11/01/2006
Chromium (5)	Chronic	3.0E-03	mg/kg/day	2.5%	7.5E-05	mg/kg/day	NA	900	IRIS	11/01/2006
Copper	Chronic	4.0E-02	mg/kg/day	–	4.0E-02	mg/kg/day	GI Tract	–	HEAST	07/01/1997
Iron (3)	Chronic	7.0E-01	mg/kg/day	–	7.0E-01	mg/kg/day	NA	NA	PPRTV	01/17/2007
Lead	NA	NA	NA	–	NA	NA	NA	NA	IRIS	11/01/2006
Manganese	Chronic	1.4E-01	mg/kg/day	4%	5.6E-03	mg/kg/day	CNS	1	IRIS	11/01/2006
Nickel (6)	Chronic	2.0E-02	mg/kg/day	4%	8.0E-04	mg/kg/day	Whole body	300	IRIS	11/01/2006

NA = Not Available
NCEA = National Center for Environmental Assessment
IRIS = Integrated Risk Information System
RfD = Reference dose
HEAST = Health Effect Assessment Summary Tables
PPRTV = Provisional Peer Reviewed Toxicity Values

(1) The dermal RfD was assumed to equal the oral RfD, unless an adjustment factor was found in Exhibit 4.1 of Risk Assessment Guidance for Superfund Part E (EPA 2004).
(2) IRIS values were confirmed against the EPA's online database, November 2006.
NCEA values were provided by EPA.
(3) Comments from C. Metz of EPA Region 2, January 17, 2007
(4) The RfD for chlordane has been applied to alpha- and gamma-chlordane.
(5) The RfD for chromium VI has been applied to total chromium.
(6) The RfD for nickel (soluble salts) has been applied to nickel.

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TABLE 5-2

NON-CANCER TOXICITY DATA - INHALATION

Old Roosevelt Field Contaminated Groundwater Site

Garden City, New York

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD (1)		Primary Target Organ(s)	Combined Uncertainty/ Modifying Factor	RfC / Target Organ(s)	
		Value	Unit	Value	Unit			Source	Date (2) (MM/DD/YYYY)
VOCs									
Benzene	Chronic	3.0E-02	mg/m^3	8.6E-03	mg/kg/day	Blood	300	IRIS	11/01/2006
Carbon Tetrachloride (3)	Chronic	4.0E-02	mg/m^3	1.1E-02	mg/kg/day	NA	NA	NCEA	01/17/2007
Chloroform (3)	NA	NA	NA	NA	NA	NA	NA	NCEA	01/17/2007
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Dichlorodifluoromethane (3)	Chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day	NA	NA	NCEA	01/17/2007
Methyl tert-Butyl Ether	Chronic	3.0E+00	mg/m^3	8.6E-01	mg/kg/day	Liver/Kidney	100	IRIS	11/01/2006
Tetrachloroethene (3)	NA	NA	NA	NA	NA	NA	NA	NCEA	01/17/2007
Toluene	Chronic	5.0E+00	mg/m^3	1.4E+00	mg/kg/day	CNS	10	IRIS	11/01/2006
Trichloroethene	Chronic	4.0E-02	mg/m^3	1.1E-02	mg/kg/day	CNS	1,000	NCEA	04/15/2003
SVOCs									
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Pesticides									
alpha-Chlordane (4)	Chronic	7.0E-04	mg/m^3	2.0E-04	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Dieldrin	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
gamma-Chlordane (4)	Chronic	7.0E-04	mg/m^3	2.0E-04	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
INORGs									
Arsenic	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Barium (3)	Chronic	5.0E-04	mg/m^3	1.4E-04	mg/kg/day	NA	NA	NCEA	01/17/2007
Chromium (5)	Chronic	8.0E-06	mg/m^3	2.3E-06	mg/kg/day	Nasal septum atrophy	90	IRIS	11/01/2006
Copper	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Iron	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Lead	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Manganese	Chronic	5.0E-05	mg/m^3	1.4E-05	mg/kg/day	CNS	1,000	IRIS	11/01/2006
Nickel (3)	Chronic	9.0E-05	mg/m^3	2.6E-05	mg/kg/day	NA	NA	NCEA	01/17/2007

NA = Not Available

NCEA = National Center for Environmental Assessment

IRIS = Integrated Risk Information System

RfC = Reference concentration

RfD = Reference dose

ASTDR = Agencey for Toxic Substance and Disease Regristry

(1) Inhalation RfDs were calculated from Inhalation RfCs assuming a 70 kg individual has an inhalation rate of 20 m^3/day. (USEPA Risk Assessment Guidance for Superfund, Part A; December 1989).

(2) IRIS values were confirmed against the EPA's online database, November 2006. NCEA values were provided by EPA.

(3) Comments from C. Metz of EPA Region 2, January 17, 2007

(4) The RfC for chlordane has been applied to alpha- and gamma-chlordane.

(5) The RfC for chromium VI has been applied to total chromium.

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TABLE 5-3

CANCER TOXICITY DATA - ORAL/DERMAL

Old Roosevelt Field Contaminated Groundwater Site

Garden City, New York

Chemical of Potential Concern	Oral Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Slope Factor for Dermal (1)		Weight of Evidence/ Cancer Guideline Description	Oral Slope Factor	
	Value	Unit		Value	Unit		Source	Date (2) (MM/DD/YYYY)
VOCs								
Benzene	5.5E-02	$(mg/kg/day)^{-1}$	–	5.5E-02	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Carbon Tetrachloride	1.3E-01	$(mg/kg/day)^{-1}$	–	1.3E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Chloroform (3)	NA	NA	–	NA	NA	B2	IRIS	11/01/2006
cis-1,2-Dichloroethene	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Dichlorodifluoromethane	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Methyl tert-Butyl Ether	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Tetrochloroethene (3)	5.4E-01	$(mg/kg/day)^{-1}$	–	5.4E-01	$(mg/kg/day)^{-1}$	B2-C	CalEPA	01/22/2003
Toluene	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Trichloroethene	4.0E-01	$(mg/kg/day)^{-1}$	–	4.0E-01	$(mg/kg/day)^{-1}$	B2-C	NCEA	01/22/2003
SVOCs								
Benzo(a)pyrene	7.3E+00	$(mg/kg/day)^{-1}$	–	7.3E+00	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Pesticides								
alpha-Chlordane (4)	3.5E-01	$(mg/kg/day)^{-1}$	–	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Dieldrin	1.6E+01	$(mg/kg/day)^{-1}$	–	1.6E+01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
gamma-Chlordane (4)	3.5E-01	$(mg/kg/day)^{-1}$	–	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Heptachlor epoxide	9.1E+00	$(mg/kg/day)^{-1}$	–	9.1E+00	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
INORGs								
Arsenic	1.5E+00	$(mg/kg/day)^{-1}$	–	1.5E+00	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Barium	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Chromium (5)	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Copper	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Iron	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Lead	NA	NA	–	NA	NA	B2	IRIS	11/01/2006
Manganese	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Nickel	NA	NA	–	NA	NA	NA	IRIS	11/01/2006

NA = Not Available

NCEA = National Center for Environmental Assessment

IRIS = Integrated Risk Information System

CalEPA = California EPA

(1) The dermal Slope Factor was assumed to equal the oral Slope Factor. No adjustment factor was applied.

(2) IRIS values were confirmed against the EPA's online database, November 2006. NCEA values were provided by EPA.

(3) Comments from C. Metz of EPA Region 2, January 17, 2007

(4) Oral cancer slope factor for chlordane has been applied to alpha- and gamma-chlordane.

(5) Chromium VI is an A carcinogen by the inhalation route, but a D carcinogen by the oral route.

EPA Weight of Evidence (EPA 1986, EPA 1996):

A - Human Carcinogen

B1 - Probable human carcinogen - indicates limited evidence in humans

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans.

C - Possible human carcinogen

D - Not classifiable as human carcinogen

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TABLE 5-4

CANCER TOXICITY DATA - INHALATION

Old Roosevelt Field Contaminated Groundwater Site

Garden City, New York

Chemical of Potential Concern	Unit Risk		Inhalation Slope Factor (1)		Weight of Evidence/ Cancer Guideline Description	Unit Risk / Inhalation Slope Factor	
	Value	Unit	Value	Unit		Source	Date (2) (MM/DD/YYYY)
VOCs							
Benzene	7.8E-06	$(\mu g/m^3)^{-1}$	2.7E-02	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Carbon Tetrachloride	1.5E-05	$(\mu g/m^3)^{-1}$	5.3E-02	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Chloroform	2.3E-05	$(\mu g/m^3)^{-1}$	8.1E-02	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
cis-1,2-Dichloroethene	NA	NA	NA	NA	D	IRIS	11/01/2006
Dichlorodifluoromethane	NA	NA	NA	NA	NA	IRIS	11/01/2006
Methyl tert-Butyl Ether	NA	NA	NA	NA	NA	IRIS	11/01/2006
Tetrachloroethene (4)	5.9E-06	$(\mu g/m^3)^{-1}$	2.1E-02	$(mg/kg/day)^{-1}$	NA	EPA	12/13/2004
Toluene	NA	NA	NA	NA	NA	IRIS	11/01/2006
Trichloroethene (3)	1.1E-04	$(\mu g/m^3)^{-1}$	4.0E-01	$(mg/kg/day)^{-1}$	B2-C	EPA	01/17/2007
SVOCs							
Benzo(a)pyrene (3)	NA	NA	NA	NA	NA	NCEA	01/17/2007
Pesticides							
alpha-Chlordane (5)	1.0E-04	$(\mu g/m^3)^{-1}$	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Dieldrin	4.6E-03	$(\mu g/m^3)^{-1}$	1.6E+01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
gamma-Chlordane (5)	1.0E-04	$(\mu g/m^3)^{-1}$	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Heptachlor epoxide	2.6E-03	$(\mu g/m^3)^{-1}$	9.1E+00	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
INORGs							
Arsenic	4.3E-03	$(\mu g/m^3)^{-1}$	1.5E+01	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Barium	NA	NA	NA	NA	D	IRIS	11/01/2006
Chromium (6)	1.2E-02	$(\mu g/m^3)^{-1}$	4.2E+01	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Copper	NA	NA	NA	NA	D	IRIS	11/01/2006
Iron	NA	NA	NA	NA	NA	IRIS	11/01/2006
Lead	NA	NA	NA	NA	B2	IRIS	11/01/2006
Manganese	NA	NA	NA	NA	D	IRIS	11/01/2006
Nickel (3)	2.6E-04	$(\mu g/m^3)^{-1}$	9.1E-01	$(mg/kg/day)^{-1}$	NA	NCEA	01/17/2007

NA = Not Available

IRIS = Integrated Risk Information System

NCEA = National Center for Environmental Assessment

(1) Inhalation CSFs were calculated from unit risks assuming a 70 kg individual has an inhalation rate of 20 m^3/day.

(2) IRIS values were confirmed against the EPA's online database, November 2006. NCEA values were provided by EPA.

(3) Comments from C. Metz of EPA Region 2, January 17, 2007

(4) The Inhalation CSF for tetrachloroethene is 5.9×10^{-6} ($\mu g/m^3$). In the absence of relevant values from IRIS or NCEA, the Office of Emergency Response (OERR) supports the use of the Cal EPA Air Toxics Hot Spots Program Inhalation unit risk.

(5) The inhalation unit risk for chlordane has been applied to alpha- and gamma-chlordane.

(6) The inhalation unit risk for chromium VI has been applied to total chromium.

EPA Weight of Evidence (EPA 1986, EPA 1996):

A - Human Carcinogen

B1 - Probable human carcinogen - indicates limited evidence in humans

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans.

C - Possible human carcinogen

D - Not classifiable as human carcinogen

301989

TABLE 6-1
SUMMARY OF CARCINOGENIC RISKS AND NON-CARCINOGENIC HEALTH HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Receptor	Cancer Risk	Cancer Risk Note	Noncancer Hazard Index (HI)	Noncancer HI Note
Future				
Site Worker	2×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. PCE (1×10^{-4}) and TCE (1×10^{-4}) in groundwater contributes to 92% of the total risk.	3	Liver - HI of 2.6 from ingestion of TCE in groundwater. Kidney - HI of 2.5 from ingestion of TCE in groundwater. Fetus - HI of 2.5 from ingestion of TCE in groundwater. CNS - HI of 2.5 from ingestion of TCE in groundwater.
Resident - Adult	2×10^{-3}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (1.6×10^{-3}) contributes to 77% of the total risk.	10	Liver - HI of 9 from ingestion of TCE in groundwater. Kidney - HI of 8 from ingestion of TCE in groundwater. Fetus - HI of 8 from ingestion of TCE in groundwater. CNS - HI of 8 from ingestion of TCE in groundwater.
Resident - Child	6×10^{-3}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (5×10^{-3}) contributes to 87% of the total risk.	35	Liver - HI of 32 from ingestion of TCE in groundwater. Kidney - HI of 29 from ingestion of TCE in groundwater. Fetus - HI of 29 from ingestion of TCE in groundwater. CNS - HI of 29 from ingestion of TCE in groundwater.

Cancer risks: An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes. EPA's generally acceptable risk range for site-related exposures is 1×10^{-6} to 1×10^{-4} (one in million to one in ten thousand).

Noncancer hazards: EPA Risk Assessment Guidance for Superfund (EPA 1989) states that, generally, a hazard index (HI) greater than unity (1) indicates the potential for adverse noncancer effects.

301990

TABLE 6-2
SUMMARY OF CARCINOGENIC RISKS AND NON-CARCINOGENIC HEALTH HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Receptor	Cancer Risk	Cancer Risk Note	Noncancer Hazard Index (HI)	Noncancer HI Note
Future				
Site Worker	6×10^{-5}	Cancer risk is within EPA target range of 1×10^{-4} and 1×10^{-6}.	3	Liver - HI of 2.4 from ingestion of TCE in groundwater. Kidney - HI of 2.3 from ingestion of TCE in groundwater. Fetus - HI of 2.3 from ingestion of TCE in groundwater. CNS - HI of 2.3 from ingestion of TCE in groundwater.
Resident - Adult	3×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (2×10^{-4}) contributes to 64% of the total risk.	6	Liver - HI of 5 from ingestion of TCE in groundwater. Kidney - HI of 5 from ingestion of TCE in groundwater. Fetus - HI of 5 from ingestion of TCE in groundwater. CNS - HI of 5 from ingestion of TCE in groundwater.
Resident - Child	8×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (7×10^{-4}) contributes to 84% of the total risk.	10	Liver - HI of 9 from ingestion of TCE in groundwater. Kidney - HI of 8 from ingestion of TCE in groundwater. Fetus - HI of 8 from ingestion of TCE in groundwater. CNS - HI of 8 from ingestion of TCE in groundwater.

Cancer risks: An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes. EPA's generally acceptable risk range for site-related exposures is 1×10^{-6} to 1×10^{-4} (one in million to one in ten thousand).

Noncancer hazards: EPA Risk Assessment Guidance for Superfund (EPA 1989) states that, generally, a hazard index (HI) greater than unity (1) indicates the potential for adverse noncancer effects.

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TABLE 6-3
RISK COMPARISON BASED ON DIFFERENT TRICHLOROETHENE SLOPE FACTORS
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

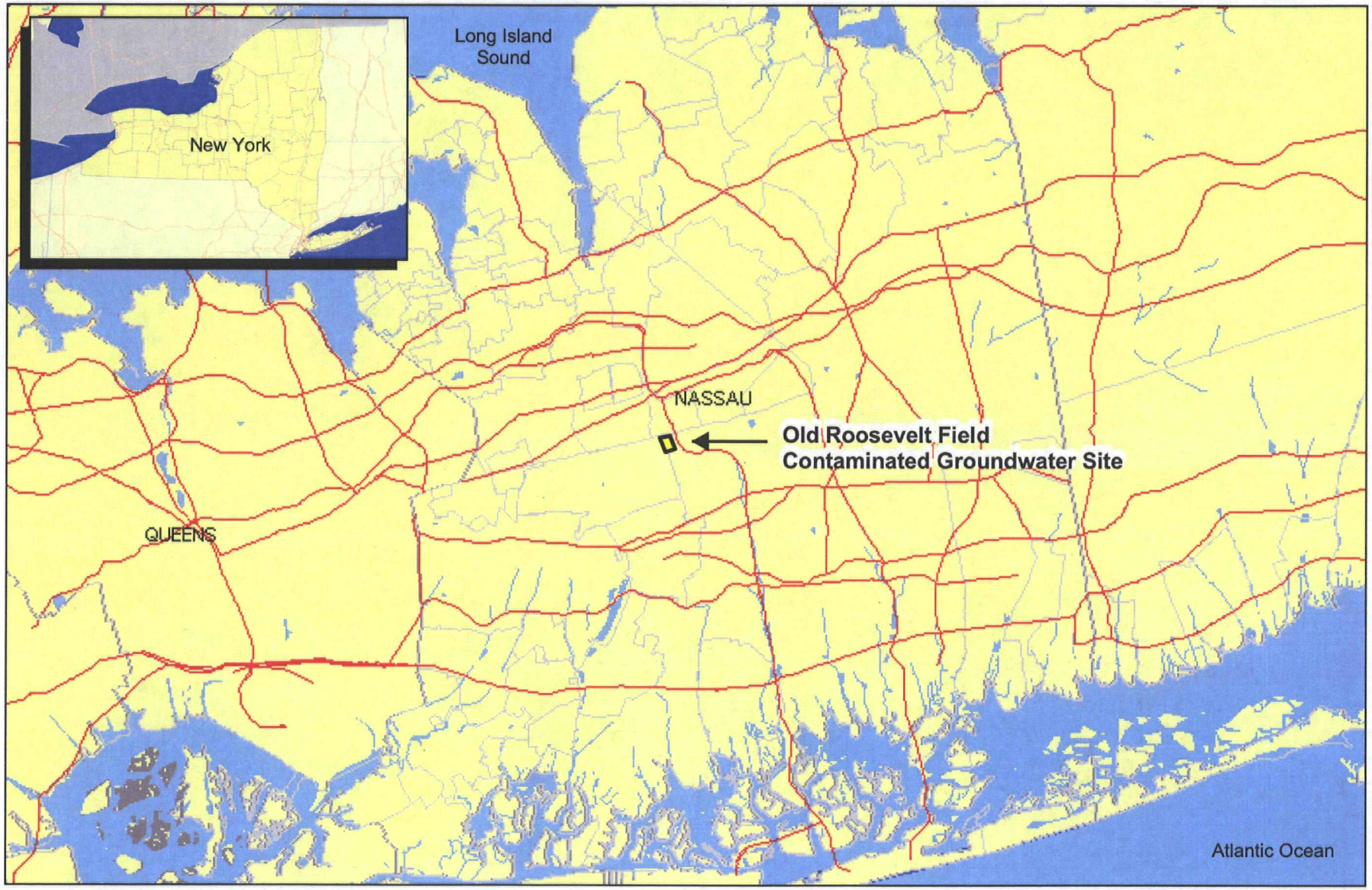
Receptor	Slope Factor of 0.4 $(mg/kg/day)^{-1}$ *		Inhalation Slope Factor of 0.006 $(mg/kg/day)^{-1}$ Oral Slope Factor of 0.011 $(mg/kg\text{-}day)^{-1}$ **	
	Cancer Risk	Cancer Risk Note	Cancer Risk	Cancer Risk Note
REASONABLE MAXIMUM EXPOSURE				
Future				
Site Worker	2×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. PCE (1×10^{-4}) and TCE (1×10^{-4}) in groundwater contributes to 92% of the total risk.	1×10^{-4}	Cancer risk is at the high end of EPA target range of 1×10^{-4} and 1×10^{-6}.
Resident - Adult	2×10^{-3}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (1.6×10^{-3}) contributes to 77% of the total risk.	5×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. PCE in groundwater (3.8×10^{-4}) contributes to 74% of the total risk.
Resident - Child	6×10^{-3}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (5×10^{-3}) contributes to 87% of the total risk.	6×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. PCE in groundwater (3.8×10^{-4}) contributes to 59% of the total risk.
CENTRAL TENDENCY EXPOSURE				
Future				
Site Worker	6×10^{-5}	Cancer risk is within EPA target range of 1×10^{-4} and 1×10^{-6}.	3×10^{-5}	Cancer risk is within EPA target range of 1×10^{-4} and 1×10^{-6}.
Resident - Adult	3×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (2×10^{-4}) contributes to 64% of the total risk.	1×10^{-4}	Cancer risk is at the high end of EPA target range of 1×10^{-4} and 1×10^{-6}.
Resident - Child	8×10^{-4}	Cancer risk is above EPA target range of 1×10^{-4} and 1×10^{-6}. TCE in groundwater (7×10^{-4}) contributes to 84% of the total risk.	1×10^{-4}	Cancer risk is at the high end of EPA target range of 1×10^{-4} and 1×10^{-6}.

Sources:
* EPA 2001. Trichloroethylene Health Risk Assessment: Synthesis and Characterization. EPA/600/P-01/002A
** EPA 2007. Oral and inhalation slope factors previously published by IRIS were provided by EPA Region 2 on July 5, 2007.

301992

Figures

301993



adapted from NYSDEC Interactive Mapping Gateway: http://www.nygis.state.ny.us/gateway/index.html

CDM

Figure 1-1
Site Location Map
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

301994

adapted from NYSDEC Interactive Mapping Gateway: http://www.nygis.state.ny.us/gateway/index.html

CDM

0.25 0.125 0 0.25 Miles

Figure 1-2
Site Map
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

301995

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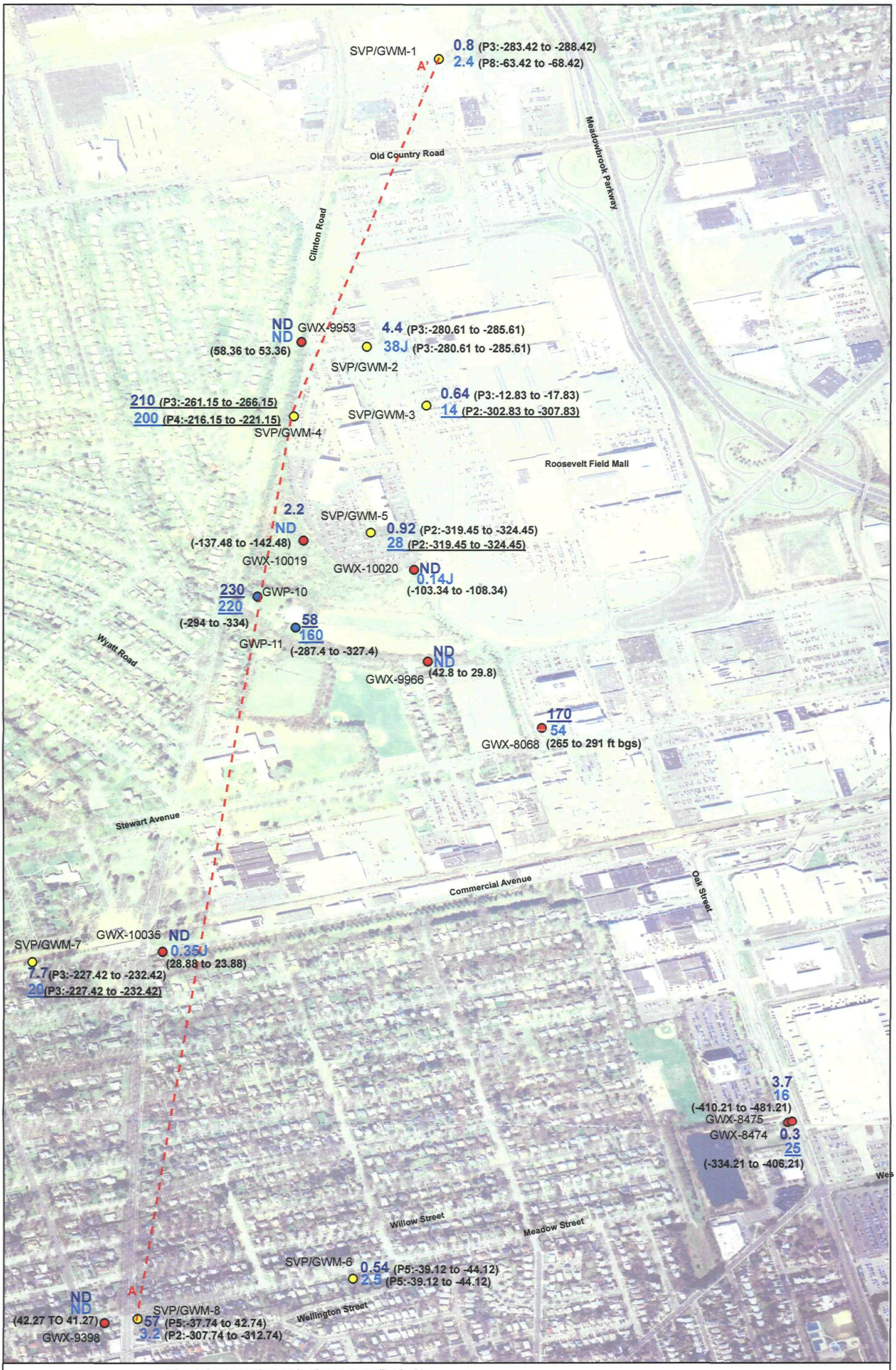

Existing Monitoring Wells
Multi-port Wells
Active Pumping Wells
A---A' Cross-Section Location

PCE concentration
TCE concentration } underlined concentrations exceed MCL

All posted concentrations are in micrograms per liter (ug/L)
PCE = Tetrachloroethene
TCE = Trichloroethene
PCE and TCE MCL is 5 ug/L
P# = Port numbers of highest concentration
(-37 to -57) = screen interval in feet AMSL
bgs = below ground surface

N

0 290 580 1,160 Feet

Figure 2-1
Round 2 PCE/TCE Highest Concentrations by Well Location, and Cross-Section Location
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

CDM

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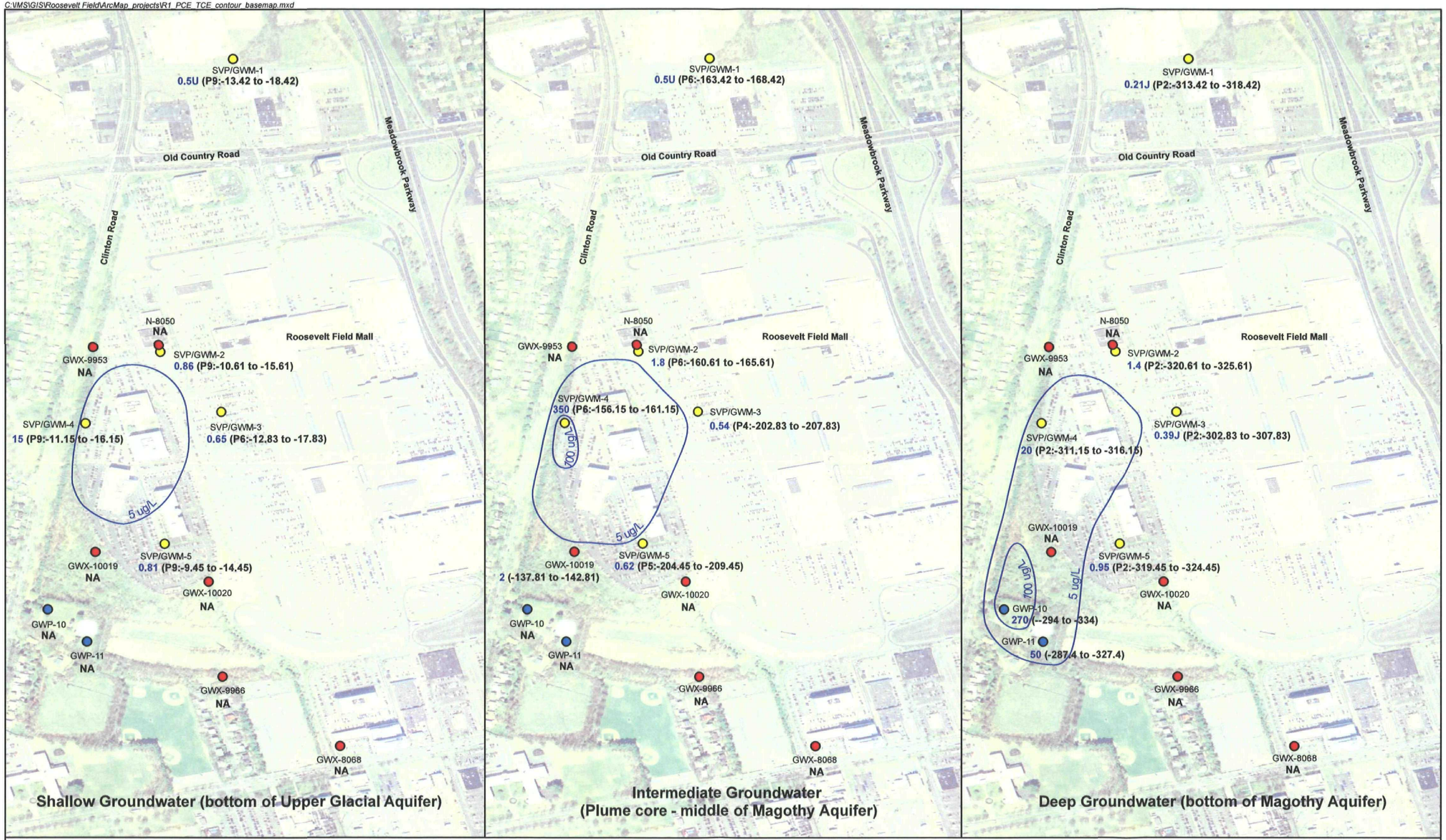
C:\MS\GIS\Roosevelt Field\ArcMap_projects\R1_PCE_TCE_contour_basemap.mxd



Existing Wells
Multiport Wells
Supply Wells
PCE Contour (ug/L)

PCE value (Port #: screen interval in feet AMSL)

All posted values are in micrograms per liter (ug/L)
PCE = Tetrachloroethene
NA = Not applicable - no data exists at elevation range
MCL = 5 ug/L

N

0 500 1,000 2,000 Feet

Figure 2-2
Round 1 PCE Isocontours at Select Elevations
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

CDM

301997

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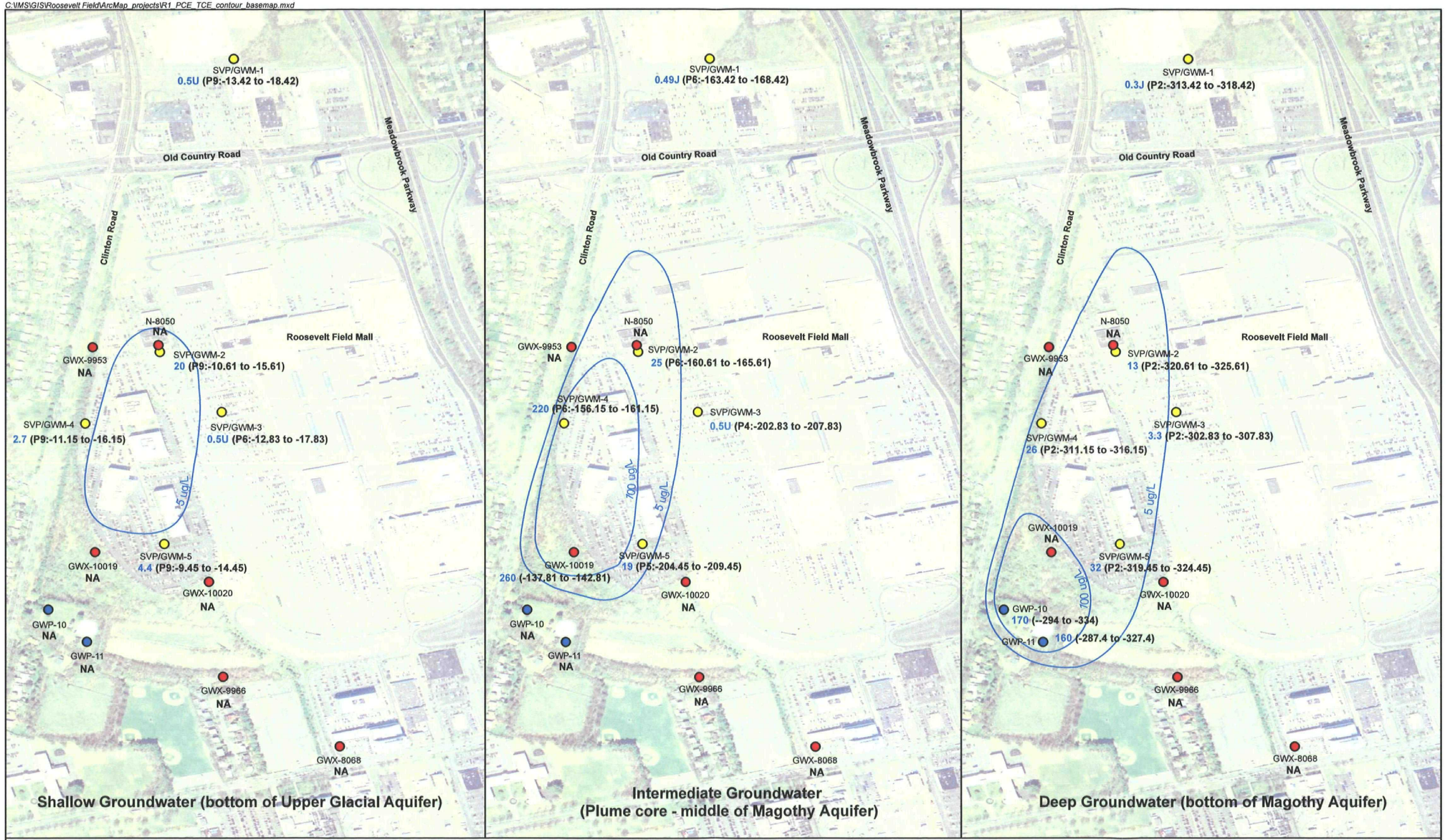

Existing Wells
Multiport Wells
Supply Wells
PCE Contour (ug/L)

TCE value (Port #: screen interval in feet AMSL)

All posted values are in micrograms per liter (ug/L)
PCE = Tetrachloroethene
NA = Not applicable - no data exists at elevation range
MCL = 5 ug/L

N

0 500 1,000 2,000 Feet

Figure 2-3
Round 1 TCE Isocontours at Select Elevations
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

CDM

301998

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- Soil gas screening point with grid point number and screening reading in parts per billion per volume (ppbv)
- Soil gas screening point with outdoor building boring location number
- Screening results at location exceed 10 ppbv
- Existing Wells and Multi-port Wells included for Spatial Reference

Notes: H19 and H18 were combined at location H-19
bgs = below ground surface
All soil gas measurements were made with a ppbRAE

N

0 125 250 500 Feet

Figure 2-4
Soil Gas Total VOC Screening Results - 15 feet bgs

Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

CDM

301999

Existing Monitoring Wells
Multi-port Wells
Municipal Supply Wells

N

0 250 500 1,000 Feet

Figure 4-1
Multi-port Well, Existing Monitoring Well, and Municipal Supply Well Location
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York
CDM

302000

Soil Gas Boring Location, collected at 15 feet bgs,for VOC Analysis via method TO-15

N

Note: SGRF10 and SGRF11 were not collected due to underground utilities.

0 25 50 100 150 200 Feet

Figure 4-2
Soil Gas Outdoor Building Boring Locations
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

CDM

302001

Appendix A

302002

Appendix A

Remedial Investigation Samples

List of Tables and Figures Included in Appendix A
Old Roosevelt Field Contaminated Groundwater Site, Garden City, New York

TABLES

1 Groundwater Sample Information
2 Soil Gas Sample Information

TABLE A-1
GROUNDWATER SAMPLE INFORMATION
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Exposure Area	Location	Sample ID	Sample Depth (feet)	Date	Comment	Use in Risk Assessment
Old Roosevelt Field Site and surrounding area	GWM-01	GWM-01-2-R1	400 to 405 ft	4/12/06		Y
		GWM-01-2-R2		7/12/06		Y
		GWM-01-3-R1	370 to 375 ft	4/13/06		Y
		GWM-01-3-R2		7/14/06		Y
		GWM-01-4-R1	315 to 320 ft	4/12/06		Y
		GWM-01-4-R2		4/12/06		Y
		GWM-01-5-R1	290 to 295 ft	4/12/06		Y
		GWM-01-5-R2		7/13/06		Y
		GWM-01-6-R1	250 to 255 ft	4/12/06		Y
		GWM-01-6-R2		7/13/06		Y
		GWM-01-7-R1	200 to 205 ft	4/12/06		Y
		GWM-01-7-R2		7/13/06		Y
		GWM-01-8-R1	150 to 155 ft	4/12/06		Y
		GWM-01-8-R2		7/13/06		Y
		GWM-01-9-R1	100 to 105 ft	4/12/06		Y
		GWM-01-9-R2		7/13/06		Y
		GWM-01-10-R1	50 to 55 ft	4/12/06		Y
		GWM-01-10-R2		7/13/06		Y
	GWM-02	GWM-02-1-R1	450 to 455 ft	4/7/06		Y
		GWM-02-1-R2		7/13/06		Y
		GWM-02-2-R1	410 to 415 ft	4/7/06		Y
		GWM-02-2-R2		7/13/06		Y
		GWM-02-3-R1	370 to 375 ft	4/7/06		Y
		GWM-02-3-R2		7/13/06		Y
		GWM-02-4-R1	330 to 335 ft	4/7/06		Y
		GWM-02-4-R2		7/13/06		Y
		GWM-02-5-R1	290 to 295 ft	4/7/06		Y
		GWM-02-5-R2		7/13/06		Y
		GWM-02-6-R1	250 to 255 ft	4/10/06		Y
		GWM-02-6-R1-Dup		4/10/06	Duplicate of GWM-02-6-R1	Y (1)
		GWM-02-6-R1-2		4/11/06	Resample of GWM-02-6-R1	Y (1)
		GWM-02-6-R1-2-Dup		4/11/06	Duplicate of GWM-02-R1-2	Y (1)
		GWM-02-6-R2		7/14/06		Y
		GWM-02-7-R1	190 to 195 ft	4/7/06		Y
		GWM-02-7-R2		7/13/06		Y
		GWM-02-8-R1	150 to 155 ft	4/7/06		Y
		GWM-02-8-R2		7/13/06		Y
		GWM-02-9-R1	100 to 105 ft	4/7/06		Y
		GWM-02-9-R2		7/13/06		Y
		GWM-02-10-R1	50 to 55 ft	4/7/06		Y
		GWM-02-10-R2		7/13/06		Y
	GWM-03	GWM-03-1-R1	450 to 455 ft	3/27/06		Y
		GWM-03-1-R2		7/17/06		Y
		GWM-03-2-R1	390 to 395 ft	3/28/06		Y
		GWM-03-2-R2		7/17/06		Y
		GWM-03-3-R1	370 to 375 ft	3/28/06		Y
		GWM-03-3-R2		7/17/06		Y
		GWM-03-4-R1	290 to 295 ft	3/28/06		Y
		GWM-03-4-R2		7/17/06		Y
		GWM-03-5-R1	170 to 175 ft	3/28/06		Y
		GWM-03-5-R2		7/17/06		Y
		GWM-03-6-R1	100 to 105 ft	3/28/06		Y
		GWM-03-6-R2		7/17/06		Y
		GWM-03-7-R1	50 to 55 ft	3/28/06		Y
		GWM-03-7-R2		7/17/06		Y

TABLE A-1
GROUNDWATER SAMPLE INFORMATION
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Exposure Area	Location	Sample ID	Sample Depth (feet)	Date	Comment	Use in Risk Assessment
Old Roosevelt Field Site and surrounding area	GWM-04	GWM-04-1-R1	420 to 425 ft	4/11/06		Y
		GWM-04-1-R2		7/14/06		Y
		GWM-04-2-R1	400 to 405 ft	4/11/06		Y
		GWM-04-2-R2		7/14/06		Y
		GWM-04-3-R1	350 to 355 ft	4/11/06		Y
		GWM-04-3-R2		7/14/06		Y
		GWM-04-4-R1	305 to 310 ft	4/11/06		Y
		GWM-04-4-R2		7/14/06		Y
		GWM-04-5-R1	285 to 290 ft	4/11/06		Y
		GWM-04-5-R2		7/14/06		Y
		GWM-04-6-R1	245 to 250 ft	4/11/06		Y
		GWM-04-6-R2		7/17/06		Y
		GWM-04-7-R1	185 to 190 ft	4/11/06		Y
		GWM-04-7-R2		7/17/06		Y
		GWM-04-8-R1	145 to 150 ft	4/11/06		Y
		GWM-04-8-R2		7/17/06		Y
		GWM-04-9-R1	100 to 105 ft	4/11/06		Y
		GWM-04-9-R2		7/17/06		Y
		GWM-04-10-R1	45 to 50 ft	4/11/06		Y
		GWM-04-10-R2		7/17/06		Y
	GWM-05	GWM-05-1-R1	430 to 435 ft	4/14/06		Y
		GWM-05-1-R2		7/19/06		Y
		GWM-05-2-R1	405 to 410 ft	4/14/06		Y
		GWM-05-2-R2		7/19/06		Y
		GWM-05-3-R1	355 to 360 ft	4/14/06		Y
		GWM-05-3-R2		7/19/06		Y
		GWM-05-4-R1	310 to 315 ft	4/14/06		Y
		GWM-05-4-R2		7/19/06		Y
		GWM-05-5-R1	290 to 295 ft	4/14/06		Y
		GWM-05-5-R2		7/19/06		Y
		GWM-05-6-R1	250 to 255 ft	4/14/06		Y
		GWM-05-6-R2		7/18/06		Y
		GWM-05-7-R1	190 to 195 ft	4/14/06		Y
		GWM-05-7-R2		7/19/06		Y
		GWM-05-8-R1	150 to 155 ft	4/14/06		Y
		GWM-05-8-R2		7/19/06		Y
		GWM-05-9-R1	95 to 100 ft	4/14/06		Y
		GWM-05-9-R2		7/19/06		Y
		GWM-05-10-R1	45 to 50 ft	4/14/06		Y
		GWM-05-10-R2		7/19/06		Y
	GWM-06	GWM-06-1-R1	445 to 450 ft	3/31/06		Y
		GWM-06-1-R2		7/19/06		Y
		GWM-06-2-R1	365 to 370 ft	3/31/06		Y
		GWM-06-2-R2		7/19/06		Y
		GWM-06-3-R1	245 to 250 ft	3/31/06		Y
		GWM-06-3-R2		7/19/06		Y
		GWM-06-4-R1	175 to 180 ft	3/31/06		Y
		GWM-06-4-R2		7/19/06		Y
		GWM-06-5-R1	100 to 105 ft	3/30/06		Y
		GWM-06-5-R2		7/20/06		Y
		GWM-06-6-R1	45 to 50 ft	3/31/06		Y
		GWM-06-6-R1-DUP		3/31/06	Duplicate of GWM-06-6-R1	Y (1)
		GWM-06-6-R2		7/19/06		Y

TABLE A-1
GROUNDWATER SAMPLE INFORMATION
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Exposure Area	Location	Sample ID	Sample Depth (feet)	Date	Comment	Use in Risk Assessment
Old Roosevelt Field Site and surrounding area	GWM-07	GWM-07-1-R1	445 to 450 ft	4/3/06		Y
		GWM-07-1-R2		7/11/06		Y
		GWM-07-2-R1	425 to 430 ft	4/4/06		Y
		GWM-07-2-R2		7/12/06		Y
		GWM-07-3-R1	310 to 315 ft	4/3/06		Y
		GWM-07-3-R2		7/11/06		Y
		GWM-07-4-R1	205 to 210 ft	4/3/06		Y
		GWM-07-4-R2		7/11/06		Y
		GWM-07-5-R1	100 to 105 ft	4/3/06		Y
		GWM-07-5-R1-DUP		4/3/06	Duplicate of GWM-07-5-R1	Y (1)
		GWM-07-5-R2		7/11/06		Y
		GWM-07-6-R1	45 to 50 ft	4/3/06		Y
		GWM-07-6-R2		7/11/06		Y
	GWM-08	GWM-08-1-R1	435 to 440 ft	4/5/06		Y
		GWM-08-1-R2		7/18/06		Y
		GWM-08-2-R1	370 to 375 ft	4/5/06		Y
		GWM-08-2-R2		7/18/06		Y
		GWM-08-3-R1	235 to 240 ft	4/5/06		Y
		GWM-08-3-R2		7/18/06		Y
		GWM-08-4-R1	155 to 160 ft	4/6/06		Y
		GWM-08-4-R2		7/18/06		Y
		GWM-08-4-R2-DUP		7/18/06	Duplicate of GWM-8-4-R2	Y (1)
		GWM-08-5-R1	100 to 105 ft	4/5/06		Y
		GWM-08-5-R2		7/18/06		Y
		GWM-08-6-R1	45 to 50 ft	4/5/06		Y
		GWM-08-6-R2		7/18/06		Y
	GWP-10	GWP-10-R1		3/23/06	Municipal Supply Well 10	N (2)
		GWP-10-R2		7/10/06	Municipal Supply Well 10	N (2)
	GWP-11	GWP-11-R1		3/23/06	Municipal Supply Well 11	N (2)
		GWP-11-R1-DUP		3/23/06	Duplicate of GWP-11-R1	N (2)
		GWP-11-R2		7/10/06	Municipal Supply Well 11	N (2)
		GWP-11-R2-DUP		7/10/06	Duplicate of GWP-11-R1	N (2)
	GWX-10019	GWX-10019-R1		3/22/06		Y
		GWX-10019-R2		7/11/06		Y
	GWX-10020	GWX-10020-R1		3/23/06		Y
		GWX-10020-R2		7/10/06		Y
	GWX-10035	GWX-10035-R1		3/24/06		Y
		GWX-10035-R2		7/11/06		Y
	GWX-8068	GWX-8068-R2		7/10/06		Y
	GWX-8474	GWX-8474-R1		3/27/06		Y
		GWX-8474-R2		7/10/06		Y
	GWX-8475	GWX-8475-R1		3/27/06		Y
		GWX-8475-R2		7/10/06		Y
	GWX-9398	GWX-9398-R1		3/23/06		Y
		GWX-9398-R2		7/12/06		Y
	GWX-9966	GWX-9966-R1		3/24/06		Y
		GWX-9966-R2		7/11/06		Y
	GWX-9973	GWX-9973-R1		3/24/06		Y
		GWX-9973-R2		7/12/06		Y
					Total Groundwater Sample	145

N = No. Not used in risk assessment.
Y = Yes. Used in risk assessment.
(1) Duplicate sample results are averaged with their original samples prior to use in risk calculations.
(2) Municipal Supply Well sample results are not included in risk calculations since they are treated groundwater samples.

TABLE A-2
SOIL GAS SAMPLE INFORMATION
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Exposure Area	Location	Sample ID	Sampling Date	Comment	Use in Risk Assessment
Old Roosevelt Field Site and surrounding area	SGHP1	SGHP-1a	12/22/05		Y
	SGHP1	SGHP-1b	1/12/06		Y
	SGHP2	SGHP-2	1/12/06		Y
	SGHP3	SGHP-3a	12/22/05		Y
	SGHP3	SGHP-3b	1/12/06		Y
	SGHP4	SGHP-4	1/12/06		Y
	SGRF1	SGRF-01	12/20/05		Y
	SGRF2	SGRF-02	12/20/05		Y
	SGRF3	SGRF-03	12/20/05		Y
	SGRF4	SGRF-04	12/21/05		Y
	SGRF5	SGRF-05	12/21/05		Y
	SGRF6	SGRF-06	12/21/05		Y
	SGRF7	SGRF-07	12/22/05		Y
	SGRF8	SGRF-08	12/22/05		Y
	SGRF8	SGRF-08-Dup	12/22/05	Duplicate of SGRF-08	Y (1)
	SGRF12	SGRF-12	12/23/05		Y
	SGRF13	SGRF-13	12/23/05		Y
	SGRF14	SGRF-14	12/23/05		Y
	SGRF15	SGRF-15	12/23/05		Y
	SGRF16	SGRF-16	1/5/06		Y
	SGRF17	SGRF-17	1/5/06		Y
	SGRF18	SGRF-18	1/5/06		Y
	SGRF19	SGRF-19	1/5/06		Y
	SGRF20	SGRF-20	1/5/06		Y
	SGRF21	SGRF-21	1/5/06		Y
	SGRF22	SGRF-22	1/5/06		Y
	SGRF23	SGRF-23	1/5/06		Y
	SGRF24	SGRF-24	1/6/06		Y
	SGRF25	SGRF-25	1/6/06		Y
	SGRF26	SGRF-26	1/6/06		Y
	SGRF27	SGRF-27	1/6/06		Y
	SGRF28	SGRF-28	1/6/06		Y
	SGRF29	SGRF-29	1/6/06		Y
	SGRF30	SGRF-30	1/6/06		Y
	SGRF31	SGRF-31	1/6/06		Y
	SGRF32	SGRF-32	1/6/06		Y
	SGRF33	SGRF-33	1/6/06		Y
	SGRF33	SGRF-33-Dup	1/6/06	Duplicate of SGRF-33	Y (1)
				Total Soil Gas Sample	36

N = No. Not used in risk assessment.
Y = Yes. Used in risk assessment.
(1) Duplicate sample results are averaged with their original samples prior to use in risk calculations.

Appendix B

Appendix B

RAGS D Tables for Reasonable Maximum Exposure

List of Tables Included in Appendix B
Old Roosevelt Field Contaminated Groundwater Site - Garden City, New York

TABLES

1 Selection of Exposure Pathways

2 Occurrence, Distribution and Selection of Chemicals of Potential Concern

2.1 Groundwater - Monitoring Wells

3 *Medium-Specific Exposure Point Concentration Summary*

3.1 Groundwater - Monitoring Wells

4 Values and Equations Used for Intake Calculations

4.1 Groundwater - Monitoring Wells

5 Non-Cancer Toxicity Data

5.1 Non-Cancer Toxicity Data -- Oral/Dermal

5.2 Non-Cancer Toxicity Data -- Inhalation

6 Cancer Toxicity Data

6.1 Cancer Toxicity Data -- Oral/Dermal

6.2 Cancer Toxicity Data -- Inhalation

7 Calculation of Chemical Cancer Risks and Non-Cancer Hazards - Reasonable Maximum Exposure

7.1 Future - Worker

7.2 Future - Resident - Adult

7.3 Future - Resident - Child

8 Calculation of Radiation Cancer Risks - NOT APPLICABLE TO THIS SITE

9 Summary of Receptor Risks and Hazards for COPCs - Reasonable Maximum Exposure

9.1 Future - Worker

9.2 Future - Resident - Adult

9.3 Future - Resident - Child

10 Risk Assessment Summary - Reasonable Maximum Exposure

10.1 Future - Worker

10.2 Future - Resident - Adult

10.3 Future - Resident - Child

TABLE B-1

SELECTION OF EXPOSURE PATHWAYS

Old Roosevelt Field Contaminated Groundwater Site

Garden City, New York

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Groundwater	Groundwater	Tap Water	Residents	Adult	Dermal	Off-Site	None	Current nearby residents are connected to the public water supply.
						Ingestion	Off-Site	None	Current nearby residents are connected to the public water supply.
					Child (0-6yrs)	Dermal	Off-Site	None	Current nearby residents are connected to the public water supply.
						Ingestion	Off-Site	None	Current nearby residents are connected to the public water supply.
				Site Workers	Adult	Ingestion	On-Site	None	Current onsite buildings are connected to the public water supply.
		Air	Water Vapors at Showerhead	Residents	Adult	Inhalation	Off-Site	None	Current nearby residents are connected to the public water supply.
					Child (0-6yrs)	Inhalation	Off-Site	None	Current nearby residents are connected to the public water supply.
	Air	Vapors	Indoor Air - Vapors from Subsurface	Residents	Adult	Inhalation	Off-Site	None	Nearby residents could be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.
					Child (0-6yrs)	Inhalation	Off-Site	None	
				Site Workers	Adult	Inhalation	On-Site	None	Site workers may be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.
Future	Groundwater	Groundwater	Tap Water	Resident	Adult	Dermal	On-Site	Quant	Private wells could be installed in the future for residents.
						Ingestion	On-Site	Quant	Private wells could be installed in the future for residents.
					Child (0-6yrs)	Dermal	On-Site	Quant	Private wells could be installed in the future for residents.
						Ingestion	On-Site	Quant	Private wells could be installed in the future for residents.
				Site Worker	Adult	Ingestion	On-Site	Quant	Private wells could be installed in the future for site workers.
		Air	Water Vapors at Showerhead	Resident	Adult	Inhalation	On-Site	Quant	Private wells could be installed in the future for residents.
					Child (0-6yrs)	Inhalation	On-Site	Quant	Private wells could be installed in the future for residents.
	Air	Vapors	Indoor Air - Vapors from Subsurface	Resident	Adult	Inhalation	On-Site	None	Residential homes could be located on the site in the future and residents could be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.
					Child (0-6yrs)	Inhalation	On-Site	None	
				Site Worker	Adult	Ingestion	On-Site	None	Site workers may be exposed via inhalation of vapors from subsurface intrusion. More information about the vapor intrusion investigation at the site can be found in a separate report in the administrative record.

Quant = Quantitative risk analysis performed.

302012

TABLE B-2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Monitoring Well Water

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Unit	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (na/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Tap Water		**VOCs**													
	71-55-6	1,1,1-Trichloroethane	0.05 J	21	µg/L	GWM-06-5-R1	62 / 127	0.5 - 13	2.1E+01	3.7E+00	3.2E+02 nc	5.0E+00	NYSDEC	NO	BSL
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.08 J	5.5	µg/L	GWX-8068-R2	10 / 127	0.5 - 13	5.5E+00	3.6E+00	5.9E+03 nc	5.0E+00	NYSDEC	NO	BSL
	79-00-5	1,1,2-Trichloroethane	0.18 J	0.18 J	µg/L	GWX-8068-R2	1 / 127	0.5 - 13	1.8E-01	5.0E-02	2.0E-01 ca	1.0E+00	NYSDEC	NO	IFD
	75-34-3	1,1-Dichloroethane	0.12 J	25 J	µg/L	GWM-06-5-R2	65 / 127	0.5 - 13	2.5E+01	9.4E+00	8.1E+01 nc	5.0E+00	NYSDEC	NO	BSL
	75-35-4	1,1-Dichloroethene	0.11 J	22	µg/L	GWM-06-5-R1	48 / 127	0.5 - 13	2.2E+01	4.0E+00	3.4E+01 nc	5.0E+00	NYSDEC	NO	BSL
	95-50-1	1,2-Dichlorobenzene	0.042 J	0.042 J	µg/L	GWM-06-6-R2	1 / 127	0.5 - 13	4.2E-02	ND	3.7E+01 nc	3.0E+00	NYSDEC	NO	IFD
	107-06-2	1,2-Dichloroethane	0.96	1.3	µg/L	GWX-10019-R1	2 / 127	0.5 - 13	1.3E+00	ND	1.2E-01 ca	6.0E-01	NYSDEC	NO	IFD
	541-73-1	1,3-Dichlorobenzene	0.02 J	0.026 J	µg/L	GWM-06-6-R2	2 / 127	0.5 - 0.5	2.6E-02	ND	1.8E+01 nc	3.0E+00	NYSDEC	NO	IFD
	106-46-7	1,4-Dichlorobenzene	0.02 J	1.7	µg/L	GWM-06-6-R2	5 / 127	0.5 - 0.5	1.7E+00	ND	5.0E-01 ca	3.0E+00	NYSDEC	NO	IFD
	123-91-1	1,4-Dioxane	2.4	6	µg/L	GWM-06-5-R2	3 / 31	2 - 2	6.0E+00	ND	6.1E+00 ca	NA	NA	NO	BSL
	78-93-3	2-Butanone	2.1 J	68	µg/L	GWM-02-7-R2	5 / 127	5 - 130	6.8E+01	ND	7.0E+02 nc	NA	NA	NO	IFD
	591-78-6	2-Hexanone	2.8 J	3.2 J	µg/L	GWM-02-4-R2	3 / 127	5 - 130	3.2E+00	2.2E+00	NA	NA	NA	NO	IFD
	67-64-1	Acetone	2 J	130	µg/L	GWM-06-6-R2	14 / 127	5 - 160	1.3E+02	1.6E+00	5.5E+02 nc	NA	NA	NO	BSL
	71-43-2	Benzene	0.03 J	0.7	µg/L	GWM-04-3-R2	15 / 127	0.5 - 13	7.0E-01	ND	3.5E-01 ca	1.0E+00	NYSDEC	YES	ASL/TOX
	75-25-2	Bromoform	0.27 J	0.27 J	µg/L	GWM-05-7-R2	1 / 127	0.5 - 13	2.7E-01	ND	8.5E+00 ca	NA	NA	NO	IFD
	75-15-0	Carbon Disulfide	0.25 J	1.5	µg/L	GWM-06-1-R1	10 / 127	0.5 - 13	1.5E+00	ND	1.0E+02 nc	NA	NA	NO	BSL
	56-23-5	Carbon Tetrachloride	0.03 J	2.9	µg/L	GWM-04-2-R2	39 / 127	0.5 - 13	2.9E+00	4.9E-01	1.7E-01 ca	5.0E+00	NYSDEC/EPA	YES	ASL
	75-00-3	Chloroethane	0.5	3.3	µg/L	GWM-06-5-R1	2 / 127	0.5 - 13	3.3E+00	ND	4.6E+00 ca	5.0E+00	NYSDEC	NO	IFD
	67-66-3	Chloroform	0.11 J	3.8	µg/L	GWX-8068-R2	19 / 127	0.5 - 13	3.8E+00	ND	1.7E-01 ca	7.0E+00	NYSDEC	YES	ASL
	74-87-3	Chloromethane	0.14 J	2.5	µg/L	GWM-06-3-R1	10 / 127	0.5 - 13	2.5E+00	ND	1.6E+01 nc	5.0E+00	NYSDEC	NO	BSL
	156-59-2	cis-1,2-Dichloroethene	0.1 J	23	µg/L	GWX-10019-R2	90 / 127	0.5 - 13	2.3E+01	2.2E-01	6.1E+00 nc	5.0E+00	NYSDEC	YES	ASL
	10061-01-5	cis-1,3-Dichloropropene	0.1 J	0.17 J	µg/L	GWM-06-3-R2	4 / 127	0.5 - 13	1.7E-01	ND	4.0E-01 ca	4.0E-01	NYSDEC	NO	IFD
	124-48-1	Dibromochloromethane	0.06 J	0.47 J	µg/L	GWM-04-10-R2	3 / 127	0.5 - 13	4.7E-01	ND	1.3E-01 ca	5.0E+00	NYSDEC	NO	IFD
	75-71-8	Dichlorodifluoromethane	0.14 J	97 J	µg/L	GWM-04-4-R1	37 / 127	0.5 - 13	9.7E+01	ND	3.9E+01 nc	5.0E+00	NYSDEC	YES	ASL
	100-41-4	Ethylbenzene	0.02 J	0.53	µg/L	GWM-06-6-R1-Avg	7 / 127	0.5 - 13	5.3E-01	ND	1.3E+02 nc	5.0E+00	NYSDEC	NO	BSL
	179601-23-1	m,p-Xylenes	0.21 J	0.21 J	µg/L	GWM-04-6-R2	1 / 64	0.5 - 0.5	2.1E-01	ND	2.1E+01 nc	5.0E+00	NYSDEC	NO	IFD
	79-20-9	Methyl Acetate	6.7	6.7	µg/L	GWM-06-6-R2	1 / 94	0.5 - 1.6	6.7E+00	ND	6.1E+02 nc	NA	NA	NO	IFD
	1634-04-4	Methyl tert-Butyl Ether	0.17 J	45	µg/L	GWM-04-7-R1	63 / 127	0.5 - 13	4.5E+01	9.9E+00	1.1E+01 ca	NA	NA	YES	ASL
	75-09-2	Methylene Chloride	0.1 J	4.1	µg/L	GWM-02-10-R2	24 / 127	0.5 - 13	4.1E+00	1.0E+00	4.3E+00 ca	5.0E+00	NYSDEC	NO	BSL
	95-47-6	o-Xylene	0.08 J	0.2 J	µg/L	GWX-9966-R2	2 / 64	0.5 - 0.5	2.0E-01	ND	2.1E+01 nc	5.0E+00	NYSDEC	NO	IFD
	127-18-4	Tetrachloroethene	0.087 J	350	µg/L	GWM-04-6-R1	108 / 127	0.5 - 13	3.5E+02	8.0E-01	1.0E-01 ca	5.0E+00	NYSDEC/EPA	YES	ASL
	108-88-3	Toluene	0.04 J	800	µg/L	GWM-06-6-R1-Avg	15 / 127	0.5 - 13	8.0E+02	ND	7.2E+01 nc	5.0E+00	NYSDEC	YES	ASL
	156-60-5	trans-1,2-Dichloroethene	0.07 J	0.905 J	µg/L	GWM-02-6-R1-Avg	15 / 127	0.5 - 13	9.1E-01	ND	1.2E+01 nc	5.0E+00	NYSDEC	NO	BSL
	79-01-6	Trichloroethene	0.11 J	280	µg/L	GWM-04-4-R1	110 / 127	0.5 - 13	2.8E+02	2.4E+00	2.8E-02 ca	5.0E+00	NYSDEC/EPA	YES	ASL
	75-69-4	Trichlorofluoromethane	0.1 J	58	µg/L	GWM-02-2-R1	39 / 127	0.5 - 13	5.8E+01	1.4E+02	1.3E+02 nc	5.0E+00	NYSDEC	NO	BSL

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TABLE B-2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Monitoring Well Water

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Unit	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (na/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
		SVOCs													
	91-57-6	2-Methylnaphthalene	0.06 J	0.06 J	µg/L	GWM-06-5-R2	1 / 31	0.1 - 11	6.0E-02	ND	NA	NA	NA	NO	IFD
	106-44-5	4-Methylphenol	56	56	µg/L	GWM-06-5-R1	1 / 31	5 - 11	5.6E+01	ND	1.8E+01 nc	1.0E+00	NYSDEC	NO	IFD
	50-32-8	Benzo(a)pyrene	0.05 J	0.12	µg/L	GWX-8068-R2	4 / 31	0.1 - 11	1.2E-01	8.0E-02	9.2E-03 ca	NA	NA	YES	ASL
	117-81-7	bis(2-Ethylhexyl) phthalate	14	14	µg/L	GWX-9973-R2	1 / 31	5 - 11	1.4E+01	ND	4.8E+00 ca	5.0E+00	NYSDEC	NO	IFD
	53-70-3	Dibenz(a,h)anthracene	0.33 J	0.33 J	µg/L	GWM-02-6-R2	1 / 31	5 - 11	3.3E-01	ND	9.2E-03 ca	NA	NA	NO	IFD
	84-66-2	Diethylphthalate	0.22 J	0.22 J	µg/L	GWX-10020-R2	1 / 31	5 - 11	2.2E-01	ND	2.9E+03 nc	NA	NA	NO	IFD
	91-20-3	Naphthalene	0.16	0.36	µg/L	GWM-03-3-R2	11 / 31	0.1 - 11	3.6E-01	1.9E-01	6.2E-01 nc	1.0E+01	NYSDEC	NO	BSL
	108-95-2	Phenol	6	6	µg/L	GWM-06-5-R1	1 / 31	5 - 11	6.0E+00	ND	1.1E+03 nc	1.0E+00	NYSDEC	NO	IFD
		Pesticides													
	5103-71-9	alpha-Chlordane	0.043 J	0.56 JN	µg/L	GWX-9398-R2	2 / 31	0.05 - 0.054	5.6E-01	ND	1.9E-01 ca	2.0E+00	EPA	YES	ASL
	60-57-1	Dieldrin	0.038 J	0.073 J	µg/L	GWM-07-2-R1	2 / 31	0.1 - 0.11	7.3E-02	ND	4.2E-03 ca	4.0E-03	NYSDEC	YES	ASL
	5103-74-2	gamma-Chlordane	0.022 J	0.99	µg/L	GWX-9398-R2	4 / 31	0.05 - 0.054	9.9E-01	ND	1.9E-01 ca	2.0E+00	EPA	YES	ASL
	1024-57-3	Heptachlor epoxide	0.026 J	0.13 JN	µg/L	GWX-9398-R1	2 / 31	0.05 - 0.054	1.3E-01	ND	7.4E-03 ca	3.0E-02	NYSDEC	YES	ASL
		INORGs													
	7429-90-5	Aluminum	156 J	156 J	µg/L	GWX-9398-R2	1 / 31	200 - 200	1.6E+02	3.2E+02	3.6E+03 nc	NA	NA	NO	IFD
	7440-38-2	Arsenic	2.1	2.1	µg/L	GWM-06-5-R2	1 / 31	1 - 8	2.1E+00	ND	4.5E-02 ca	1.0E+01	EPA	YES	TOX
	7440-39-3	Barium	13	297	µg/L	GWX-10035-R2	15 / 31	6 - 200	3.0E+02	3.1E+01	2.6E+02 nc	1.0E+03	NYSDEC	YES	ASL
	7440-41-7	Beryllium	0.02 J	0.04 J	µg/L	GWM-02-6-R2	3 / 31	1 - 5	4.0E-02	ND	7.3E+00 nc	4.0E+00	EPA	NO	BSL
	7440-43-9	Cadmium	0.04 J	0.12 J	µg/L	GWM-03-3-R2	5 / 31	1 - 4	1.2E-01	ND	1.8E+00 nc	5.0E+00	NYSDEC/EPA	NO	BSL
	7440-70-2	Calcium	2.9	33	mg/L	GWM-03-3-R1	31 / 31	1 - 1	3.3E+01	1.6E+01	NA	NA	NA	NO	NUT
	7440-47-3	Chromium	0.6 J	34.3	µg/L	GWM-05-6-R2	19 / 31	6 - 10	3.4E+01	4.6E+01	1.1E+01 nc	5.0E+01	NYSDEC	YES	ASL/TOX
	7440-48-4	Cobalt	0.44 J	12	µg/L	GWX-10019-R1	12 / 31	8 - 50	1.2E+01	1.6E+00	7.3E+01 nc	NA	NA	NO	BSL
	7440-50-8	Copper	30	249	µg/L	GWX-8068-R2	3 / 31	10 - 25	2.5E+02	2.9E+01	1.5E+02 nc	2.0E+02	NYSDEC	YES	ASL
	57-12-5	Cyanide	5.5	5.5	µg/L	GWM-06-5-R1	1 / 31	5 - 10	5.5E+00	ND	7.3E+01 nc	2.0E+02	NYSDEC/EPA	NO	IFD
	7439-89-6	Iron	45.9 J	26000	µg/L	GWX-9966-R1	23 / 31	100 - 100	2.6E+04	4.9E+02	1.1E+03 nc	3.0E+02	NYSDEC	YES	ASL
	7439-92-1	Lead	10	27	µg/L	GWX-10020-R1	6 / 31	7 - 10	2.7E+01	ND	1.5E+01 (6)	1.5E+01	EPA	YES	ASL
	7439-95-4	Magnesium	1.27 J	11.4	mg/L	GWM-05-6-R2	30 / 31	1 - 1	1.1E+01	6.1E+00	NA	3.5E+04	NYSDEC	NO	NUT
	7439-96-5	Manganese	19	462	µg/L	GWM-04-7-R2	24 / 31	5 - 15	4.6E+02	1.8E+02	8.8E+01 nc	3.0E+02	NYSDEC	YES	ASL
	7439-97-6	Mercury	0.042 J	0.042 J	µg/L	GWX-8068-R2	1 / 31	0.2 - 0.2	4.2E-02	ND	1.1E+00 nc	7.0E-01	NYSDEC	NO	IFD
	7440-02-0	Nickel	5.4	93	µg/L	GWM-03-3-R2	13 / 31	5 - 40	9.3E+01	4.6E+01	7.3E+01 nc	1.0E+02	NYSDEC	YES	ASL/TOX
	7440-09-7	Potassium	2.1	6.2	mg/L	GWM-03-3-R1	13 / 31	1 - 5	6.2E+00	1.5E+00	NA	NA	NA	NO	NUT
	7782-49-2	Selenium	0.34 J	2.2 J	µg/L	GWM-07-2-R2	11 / 31	5 - 7	2.2E+00	1.5E+00	1.8E+01 nc	1.0E+01	NYSDEC	NO	BSL
	7440-22-4	Silver	10 J	10 J	µg/L	GWX-9966-R2	1 / 31	6 - 35	1.0E+01	ND	1.8E+01 nc	5.0E+01	NYSDEC	NO	IFD
	7440-23-5	Sodium	8.55	125	mg/L	GWX-10035-R2	30 / 31	1 - 5	1.3E+02	3.2E+01	NA	2.0E+04	NYSDEC	NO	NUT
	7440-28-0	Thallium	0.02 J	0.16 J	µg/L	GWM-05-6-R2	4 / 31	1 - 20	1.6E-01	ND	2.4E-01 nc	2.0E+00	EPA	NO	BSL

302014

TABLE B-2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Monitoring Well Water

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Unit	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (na/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	7440-62-2	Vanadium	0.4 J	0.81 J	µg/L	GWX-9398-R2	2 / 31	10 - 50	8.1E-01	ND	3.6E+00 nc	NA	NA	NO	BSL
	7440-66-6	Zinc	8.9	619	µg/L	GWM-03-3-R2	22 / 31	8 - 60	6.2E+02	3.6E+01	1.1E+03 nc	NA	NA	NO	BSL

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against EPA Region 9 Preliminary Remediation Goals (PRGs), October 2004, for tap water, adjusted to cancer benchmark of 1E-6 and hazard quotient of 0.1. http://www.epa.gov/region09/waste/sfund/prg/index.html
(4) The site specific screening criterion for groundwater is the lowest value among EPA National Primary Drinking Water Standards (http://www.epa.gov/safewater/mcl.html) and the New York Ambient Water Quality Standards and Guidance Values, August 4, 1999 (http://www.dec.state.ny.us/website/regs/part703.html).
EPA = Environmental Protection Agency (µg/L)
NYSDEC = New York State Department of Environmental Conservation (µg/L)
(5) Rationale Codes: Selection Reason: ASL = Above Screening Level
TOX = Toxicity: chemical is an A carcinogen
Deletion Reason: BSL = Below Screening Level
IFD = Infrequent Detection
NUT = Essential Nutrient
(6) New York State Department of Health Drinking Water Standard for lead (µg/L).

Definitions:
NA = Not Available
nc = Screening Toxicity Value is based on noncancer effects
ca = Screening Toxicity Value is based on cancer effects
COPC = Chemical of Potential Concern
ND = Not detected
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
VOCs = Volatile organic compounds
SVOCs = Semi-volatile organic compounds
INORGs = Inorganic chemicals
Avg = Maximum value presented is based the average of duplicate samples collected from this location.
J = Estimated Value
N = Tentatively Identified

Toxicity value surrogates:
Screening toxicity value for 1,3-dichloropropene applied to *cis*-1,3-dichloropropene
Screening toxicity value for xylene applied to m,p- and o-xylene
Screening toxicity value for chlordane applied to alpha- and gamma-chlordane
Screening toxicity value for chromium VI applied to chromium

302015

TABLE B-3.1
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Baseline Human Health Risk Assessment
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Monitoring Well Water

Exposure Point	Chemical of Potential Concern	Unit	Arithmetic Mean	95% UCL of Distribution	Maximum Concentration (Qualifier)	Exposure Point Concentrations			
						Value	Unit	Statistic	Rationale (1)
Tap Water	**VOCs**								
	Benzene	µg/L	0.4	0.7	0.7	0.7	µg/L	UCL-NP	95% Chebyshev (Mean, Sd) UCL
	Carbon Tetrachloride	µg/L	0.4	0.7	2.9	0.7	µg/L	UCL-NP	95% Chebyshev (Mean, Sd) UCL
	Chloroform	µg/L	0.5	0.8	3.8	0.8	µg/L	UCL-NP	95% Chebyshev (Mean, Sd) UCL
	cis-1,2-Dichloroethene	µg/L	2	4	23	4	µg/L	UCL-NP	97.5% Chebyshev (Mean, Sd) UCL
	Dichlorodifluoromethane	µg/L	3	9	97 J	9	µg/L	UCL-NP	97.5% Chebyshev (Mean, Sd) UCL
	Methyl tert-Butyl Ether	µg/L	3	6	45	6	µg/L	UCL-NP	97.5% Chebyshev (Mean, Sd) UCL
	Tetrachloroethene	µg/L	16	60	350	60	µg/L	UCL-NP	99% Chebyshev (Mean, Sd) UCL
	Toluene	µg/L	17	74	800	74	µg/L	UCL-NP	97.5% Chebyshev (Mean, Sd) UCL
	Trichloroethene	µg/L	26	77	280	77	µg/L	UCL-NP	99% Chebyshev (Mean, Sd) UCL
	SVOCs								
	Benzo(a)pyrene	µg/L	2.48	7.03	0.12	0.12	µg/L	Max	95% UCL greater than the maximum
	Pesticides								
	alpha-Chlordane	µg/L	0.04	0.12	0.56 JN	0.12	µg/L	UCL-NP	95% Chebyshev (Mean, Sd) UCL
	Dieldrin	µg/L	0.051	0.052	0.073 J	0.052	µg/L	UCL-NP	Modified-t UCL
	gamma-Chlordane	µg/L	0.08	0.26	0.99	0.26	µg/L	UCL-NP	95% Chebyshev (Mean, Sd) UCL
	Heptachlor epoxide	µg/L	0.03	0.03	0.13 JN	0.03	µg/L	UCL-NP	Modified-t UCL
	INORGs								
	Arsenic	µg/L	2.2	3.6	2.1	2.1	µg/L	Max	95% UCL greater than the maximum
	Barium	µg/L	85	190	297	190	µg/L	UCL-NP	99% Chebyshev (Mean, Sd) UCL
	Chromium	µg/L	7.5	12.3	34.3	12.3	µg/L	UCL-T	H-UCL
	Copper	µg/L	18	52	249	52	µg/L	UCL-NP	95% Chebyshev (Mean, Sd) UCL
	Iron	µg/L	3,168	13,200	26,000	13,200	µg/L	UCL-NP	99% Chebyshev (Mean, Sd) UCL
	Lead	µg/L	7	12	27	12	µg/L	UCL-NP	95% Chebyshev (Mean, Sd) UCL
	Manganese	µg/L	134	206	462	206	µg/L	UCL-G	Approximate Gamma UCL
	Nickel	µg/L	21	62	93	62	µg/L	UCL-NP	99% Chebyshev (Mean, Sd) UCL

Statistics: Maximum Detected Value (Max); Normal Distribution (UCL-N); Lognormal Distribution (UCL-T); Gamma Distribution (UCL-G); Non-parametric UCL (UCL-NP).

(1) The Shapiro-Wilk and Lilliefors test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations in the ProUCL User's Guide and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

302016

TABLE B-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Monitoring Wells Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Unit	RME Value	RME Reference	CTE Value	CTE Reference	Intake Equation/ Model Name
Ingestion	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	µg/L	See Table B-3.1	See Table B-3.1	See Table B-3.1	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	CW x CF1 x IR-W x EF x ED x 1/BW x 1/AT
				IR-W	Ingestion Rate of Water	L/day	2	EPA 1991	1.4	EPA 1997	
				EF	Exposure Frequency	days/year	350	EPA 1991	350	EPA 1991	
				ED	Exposure Duration	years	24	EPA 1991	9	EPA 1997	
				BW	Body Weight	kg	70	EPA 1991	70	EPA 1991	
				AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989	25,550	EPA 1989	
				AT-N	Averaging Time (Noncancer)	days	8,760	EPA 1989	3,285	EPA 1989	
		Child (0-6 yrs)	Tap Water	CW	Chemical Concentration in Water	µg/L	See Table B-3.1	See Table B-3.1	See Table B-3.1	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	CW x CF1 x IR-W x EF x ED x 1/BW x 1/AT
				IR-W	Ingestion Rate of Water	L/day	1	EPA 2002b (2)	0.4	EPA 2002b (2)	
				EF	Exposure Frequency	days/year	350	EPA 1991	350	EPA 1991	
				ED	Exposure Duration	years	6	EPA 1991 (1)	6	EPA 1991 (1)	
				BW	Body Weight	kg	15	EPA 1991	15	EPA 1991	
				AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989	25,550	EPA 1989	
				AT-N	Averaging Time (Noncancer)	days	2,190	EPA 1989	2,190	EPA 1989	
	Site Worker	Adult	Tap Water	CW	Chemical Concentration in Water	µg/L	See Table B-3.1	See Table B-3.1	See Table B-3.1	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	CW x CF1 x IR-W x EF x ED x 1/BW x 1/AT
				IR-W	Ingestion Rate of Water	L/day	1	EPA 1991	1	EPA 1991	
				EF	Exposure Frequency	days/year	250	EPA 1991	225	EPA 1991	
				ED	Exposure Duration	years	25	EPA 1991	7	EPA 1991	
				BW	Body Weight	kg	70	EPA 1991	70	EPA 1991	
				AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989	25,550	EPA 1989	
				AT-N	Averaging Time (Noncancer)	days	9,125	EPA 1989	2,555	EPA 1989	

302017

TABLE B-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Monitoring Wells Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Unit	RME Value	RME Reference	CTE Value	CTE Reference	Intake Equation/ Model Name
Dermal	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	µg/L	See Table B-3.1	See Table B-3.1	See Table B-3.1	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	CW x CF1 x SA x PC x CF2 x ET x EF x ED x
				SA	Skin Surface Area Available for Contact	cm^2	18,000	EPA 2004a (3)	18,000	EPA 2004a (3)	1/BW x 1/AT
				PC	Permeability Coefficient	cm/hr	See Table 4-3	See Table 4-3	See Table 4-3	See Table 4-3	
				CF2	Conversion Factor 2	L/cm^3	0.001	--	0.001	--	
				ET	Exposure Time	hr/day	0.25	EPA 2001b	0.1	EPA 2001b	
				EF	Exposure Frequency	days/year	350	EPA 1991	350	EPA 1991	
				ED	Exposure Duration	years	24	EPA 1991	9	EPA 1997	
				BW	Body Weight	kg	70	EPA 1991	70	EPA 1991	
				AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989	25,550	EPA 1989	
				AT-N	Averaging Time (Noncancer)	days	8,760	EPA 1989	3,285	EPA 1989	
		Child	Tap Water	CW	Chemical Concentration in Water	µg/L	See Table B-3.1	See Table B-3.1	See Table B-3.1	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
		(0-6 yrs)		CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	CW x CF1 x SA x PC x CF2 x ET x EF x ED x
				SA	Skin Surface Area Available for Contact	cm^2	6,600	EPA 2004a (3)	6,600	EPA 2004a (3)	1/BW x 1/AT
				PC	Permeability Coefficient	cm/hr	See Table 4-3	See Table 4-3	See Table 4-3	See Table 4-3	
				CF2	Conversion Factor 2	L/cm^3	0.001	--	0.001	--	
				ET	Exposure Time	hr/day	0.45	EPA 2001b	0.14	EPA 2001b	
				EF	Exposure Frequency	days/year	350	EPA 1991	350	EPA 1991	
				ED	Exposure Duration	years	6	EPA 1991 (1)	6	EPA 1991 (1)	
				BW	Body Weight	kg	15	EPA 1991	15	EPA 1991	
				AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989	25,550	EPA 1989	
				AT-N	Averaging Time (Noncancer)	days	2,190	EPA 1989	2,190	EPA 1989	

302018

TABLE B-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Monitoring Wells Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Unit	RME Value	RME Reference	CTE Value	CTE Reference	Intake Equation/ Model Name
Inhalation	Resident	Adult	Water Vapors at Showerhead	CA	Chemical Concentration in Air	$\mu g/m^3$	See Table D-3	See Table D-3	See Table D-3	See Table D-3	Chronic Daily Intake (CDI) (mg/kg-day) = CA x CF1 x IR-A x ET x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	
				IR-A	Inhalation Rate of Air	m^3/hr	1	EPA 1997 (4)	0.5	EPA 1997 (4)	
				ET	Exposure Time	hr/day	0.58	EPA 2001b (5)	0.25	EPA 2001b (5)	
				EF	Exposure Frequency	days/year	350	EPA 1991	350	EPA 1991	
				ED	Exposure Duration	years	24	EPA 1991	9	EPA 1997	
				BW	Body Weight	kg	70	EPA 1991	70	EPA 1991	
				AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989	25,550	EPA 1989	
				AT-N	Averaging Time (Noncancer)	days	8,760	EPA 1989	3,285	EPA 1989	
		Child (0-6 yrs)	Water Vapors at Showerhead	CA	Chemical Concentration in Air	$\mu g/m^3$	See Table D-4	See Table D-4	See Table D-4	See Table D-4	Chronic Daily Intake (CDI) (mg/kg-day) = CA x CF1 x IR-A x ET x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	
				IR-A	Inhalation Rate of Air	m^3/hr	1	EPA 1997 (4)	0.4	EPA 1997 (4)	
				ET	Exposure Time	hr/day	1.0	EPA 2001b (5)	0.33	EPA 2001b (5)	
				EF	Exposure Frequency	days/year	350	EPA 1991	350	EPA 1991	
				ED	Exposure Duration	years	6	EPA 1991 (1)	6	EPA 1991 (1)	
				BW	Body Weight	kg	15	EPA 1991	15	EPA 1991	
				AT-C	Averaging Time (Cancer)	days	25,550	EPA 1989	25,550	EPA 1989	
				AT-N	Averaging Time (Noncancer)	days	2,190	EPA 1989	2,190	EPA 1989	

RME = Reasonable Maximum Exposure.

CTE = Central Tendency Exposure

(1) Number of years in age group for child (ages 0-6).

(2) Based on data for the age group 1-10 years.

(3) Based on the 50th percentile values for males and females. Since body weight and surface area are dependent variables, all surface areas used 50th percentiles.

(4) RME IR-A is based on the mean short-term rate for light activities (e.g., walking at 1.5-3 mph). CTE IR-A is based on the mean short-term rate for sedentary activities.

(5) Inhalation exposure time is based on time in the shower/bath plus time in the bathroom after shower/bath.

Sources:

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA 1991: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.

EPA 2001b: Personal communication with M. Olsen of EPA Region 2, July 13, 2001. Based on EPA Region 2 and the Andelman model as modified by Schaum et al.

EPA 2002b: Child-Specific Exposure Factors Handbook. NCEA-W, EPA/600/P-00/002B

EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

302019

TABLE B-5.1
NON-CANCER TOXICITY DATA - ORAL/DERMAL
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Absorbed RfD for Dermal (1)		Primary Target Organ(s)	Combined Uncertainty/Modifying Factor	RfD / Target Organ(s)	
		Value	Unit		Value	Unit			Source	Date (2) (MM/DD/YYYY)
VOCs										
Benzene	Chronic	4.0E-03	mg/kg/day	–	4.0E-03	mg/kg/day	Blood	300	IRIS	11/01/2006
Carbon Tetrachloride	Chronic	7.0E-04	mg/kg/day	–	7.0E-04	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Chloroform	Chronic	1.0E-02	mg/kg/day	–	1.0E-02	mg/kg/day	Liver	100	IRIS	11/01/2006
cis-1,2-Dichloroethene (3)	Chronic	1.0E-02	mg/kg/day	–	1.0E-02	mg/kg/day	Blood	3,000	PPRTV	01/17/2007
Dichlorodifluoromethane	Chronic	2.0E-01	mg/kg/day	–	2.0E-01	mg/kg/day	Whole body	100	IRIS	11/01/2006
Methyl tert-Butyl Ether	NA	NA	NA	–	NA	NA	NA	NA	IRIS	11/01/2006
Tetrachloroethene	Chronic	1.0E-02	mg/kg/day	–	1.0E-02	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Toluene	Chronic	8.0E-02	mg/kg/day	–	8.0E-02	mg/kg/day	Kidney	3,000	IRIS	11/01/2006
Trichloroethene	Chronic	3.0E-04	mg/kg/day	–	3.0E-04	mg/kg/day	Liver/Kidney/Fetus	3,000	NCEA	04/15/2003
SVOCs										
Benzo(a)pyrene	NA	NA	NA	89%	NA	NA	NA	NA	IRIS	11/01/2006
Pesticides										
alpha-Chlordane (4)	Chronic	5.0E-04	mg/kg/day	80%	4.0E-04	mg/kg/day	Liver	300	IRIS	11/01/2006
Dieldrin	Chronic	5.0E-05	mg/kg/day	–	5.0E-05	mg/kg/day	Liver	100	IRIS	11/01/2006
gamma-Chlordane (4)	Chronic	5.0E-04	mg/kg/day	80%	4.0E-04	mg/kg/day	Liver	300	IRIS	11/01/2006
Heptachlor epoxide	Chronic	1.3E-05	mg/kg/day	–	1.3E-05	mg/kg/day	Liver	1,000	IRIS	11/01/2006
INORGs										
Arsenic	Chronic	3.0E-04	mg/kg/day	95%	2.9E-04	mg/kg/day	Skin	3	IRIS	11/01/2006
Barium	Chronic	2.0E-01	mg/kg/day	7%	1.4E-02	mg/kg/day	Kidney	300	IRIS	11/01/2006
Chromium (5)	Chronic	3.0E-03	mg/kg/day	2.5%	7.5E-05	mg/kg/day	NA	900	IRIS	11/01/2006
Copper	Chronic	4.0E-02	mg/kg/day	–	4.0E-02	mg/kg/day	GI Tract	–	HEAST	07/01/1997
Iron (3)	Chronic	7.0E-01	mg/kg/day	–	7.0E-01	mg/kg/day	NA	NA	PPRTV	01/17/2007
Lead	NA	NA	NA	–	NA	NA	NA	NA	IRIS	11/01/2006
Manganese	Chronic	1.4E-01	mg/kg/day	4%	5.6E-03	mg/kg/day	CNS	1	IRIS	11/01/2006
Nickel (6)	Chronic	2.0E-02	mg/kg/day	4%	8.0E-04	mg/kg/day	Whole body	300	IRIS	11/01/2006

NA = Not Available
NCEA = National Center for Environmental Assessment
IRIS = Integrated Risk Information System
RfD = Reference dose
HEAST = Health Effect Assessment Summary Tables
PPRTV = Provisional Peer Reviewed Toxicity Values

(1) The dermal RfD was assumed to equal the oral RfD, unless an adjustment factor was found in Exhibit 4.1 of Risk Assessment Guidance for Superfund Part E (EPA 2004).
(2) IRIS values were confirmed against the EPA's online database, November 2006.
NCEA values were provided by EPA.
(3) Comments from C. Metz of EPA Region 2, January 17, 2007
(4) The RfD for chlordane has been applied to alpha- and gamma-chlordane.
(5) The RfD for chromium VI has been applied to total chromium.
(6) The RfD for nickel (soluble salts) has been applied to nickel.

302020

TABLE B-5.2
NON-CANCER TOXICITY DATA - INHALATION
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD (1)		Primary Target Organ(s)	Combined Uncertainty/ Modifying Factor	RfC / Target Organ(s)	
		Value	Unit	Value	Unit			Source	Date (2) (MM/DD/YYYY)
VOCs									
Benzene	Chronic	3.0E-02	mg/m^3	8.6E-03	mg/kg/day	Blood	300	IRIS	11/01/2006
Carbon Tetrachloride (3)	Chronic	4.0E-02	mg/m^3	1.1E-02	mg/kg/day	NA	NA	NCEA	01/17/2007
Chloroform (3)	NA	NA	NA	NA	NA	NA	NA	NCEA	01/17/2007
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Dichlorodifluoromethane (3)	Chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day	NA	NA	NCEA	01/17/2007
Methyl tert-Butyl Ether	Chronic	3.0E+00	mg/m^3	8.6E-01	mg/kg/day	Liver/Kidney	100	IRIS	11/01/2006
Tetrachloroethene (3)	NA	NA	NA	NA	NA	NA	NA	NCEA	01/17/2007
Toluene	Chronic	5.0E+00	mg/m^3	1.4E+00	mg/kg/day	CNS	10	IRIS	11/01/2006
Trichloroethene	Chronic	4.0E-02	mg/m^3	1.1E-02	mg/kg/day	CNS	1,000	NCEA	04/15/2003
SVOCs									
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Pesticides									
alpha-Chlordane (4)	Chronic	7.0E-04	mg/m^3	2.0E-04	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Dieldrin	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
gamma-Chlordane (4)	Chronic	7.0E-04	mg/m^3	2.0E-04	mg/kg/day	Liver	1,000	IRIS	11/01/2006
Heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
INORGs									
Arsenic	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Barium (3)	Chronic	5.0E-04	mg/m^3	1.4E-04	mg/kg/day	NA	NA	NCEA	01/17/2007
Chromium (5)	Chronic	8.0E-06	mg/m^3	2.3E-06	mg/kg/day	Nasal septum atrophy	90	IRIS	11/01/2006
Copper	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Iron	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Lead	NA	NA	NA	NA	NA	NA	NA	IRIS	11/01/2006
Manganese	Chronic	5.0E-05	mg/m^3	1.4E-05	mg/kg/day	CNS	1,000	IRIS	11/01/2006
Nickel (3)	Chronic	9.0E-05	mg/m^3	2.6E-05	mg/kg/day	NA	NA	NCEA	01/17/2007

NA = Not Available
NCEA = National Center for Environmental Assessment
IRIS = Integrated Risk Information System
RfC = Reference concentration
RfD = Reference dose
ASTDR = Agencey for Toxic Substance and Disease Regristry

(1) Inhalation RfDs were calculated from Inhalation RfCs assuming a 70 kg individual has an inhalation rate of 20 m^3/day.
(USEPA Risk Assessment Guidance for Superfund, Part A; December 1989).
(2) IRIS values were confirmed against the EPA's online database, November 2006.
NCEA values were provided by EPA.
(3) Comments from C. Metz of EPA Region 2, January 17, 2007
(4) The RfC for chlordane has been applied to alpha- and gamma-chlordane.
(5) The RfC for chromium VI has been applied to total chromium.

302021

TABLE B-6.1

CANCER TOXICITY DATA - ORAL/DERMAL

Old Roosevelt Field Contaminated Groundwater Site

Garden City, New York

Chemical of Potential Concern	Oral Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Slope Factor for Dermal (1)		Weight of Evidence/ Cancer Guideline Description	Oral Slope Factor	
	Value	Unit		Value	Unit		Source	Date (2) (MM/DD/YYYY)
VOCs								
Benzene	5.5E-02	$(mg/kg/day)^{-1}$	–	5.5E-02	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Carbon Tetrachloride	1.3E-01	$(mg/kg/day)^{-1}$	–	1.3E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Chloroform (3)	NA	NA	–	NA	NA	B2	IRIS	11/01/2006
cis-1,2-Dichloroethene	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Dichlorodifluoromethane	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Methyl tert-Butyl Ether	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Tetrochloroethene (3)	5.4E-01	$(mg/kg/day)^{-1}$	–	5.4E-01	$(mg/kg/day)^{-1}$	B2-C	CalEPA	01/22/2003
Toluene	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Trichloroethene	4.0E-01	$(mg/kg/day)^{-1}$	–	4.0E-01	$(mg/kg/day)^{-1}$	B2-C	NCEA	01/22/2003
SVOCs								
Benzo(a)pyrene	7.3E+00	$(mg/kg/day)^{-1}$	–	7.3E+00	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Pesticides								
alpha-Chlordane (4)	3.5E-01	$(mg/kg/day)^{-1}$	–	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Dieldrin	1.6E+01	$(mg/kg/day)^{-1}$	–	1.6E+01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
gamma-Chlordane (4)	3.5E-01	$(mg/kg/day)^{-1}$	–	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Heptachlor epoxide	9.1E+00	$(mg/kg/day)^{-1}$	–	9.1E+00	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
INORGs								
Arsenic	1.5E+00	$(mg/kg/day)^{-1}$	–	1.5E+00	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Barium	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Chromium (5)	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Copper	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Iron	NA	NA	–	NA	NA	NA	IRIS	11/01/2006
Lead	NA	NA	–	NA	NA	B2	IRIS	11/01/2006
Manganese	NA	NA	–	NA	NA	D	IRIS	11/01/2006
Nickel	NA	NA	–	NA	NA	NA	IRIS	11/01/2006

NA = Not Available

NCEA = National Center for Environmental Assessment

IRIS = Integrated Risk Information System

CalEPA = California EPA

(1) The dermal Slope Factor was assumed to equal the oral Slope Factor. No adjustment factor was applied.

(2) IRIS values were confirmed against the EPA's online database, November 2006. NCEA values were provided by EPA.

(3) Comments from C. Metz of EPA Region 2, January 17, 2007

(4) Oral cancer slope factor for chlordane has been applied to alpha- and gamma-chlordane.

(5) Chromium VI is an A carcinogen by the inhalation route, but a D carcinogen by the oral route.

EPA Weight of Evidence (EPA 1986, EPA 1996):

A - Human Carcinogen

B1 - Probable human carcinogen - indicates limited evidence in humans

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans.

C - Possible human carcinogen

D - Not classifiable as human carcinogen

302022

TABLE B-6.2
CANCER TOXICITY DATA - INHALATION
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Chemical of Potential Concern	Unit Risk		Inhalation Slope Factor (1)		Weight of Evidence/ Cancer Guideline Description	Unit Risk / Inhalation Slope Factor	
	Value	Unit	Value	Unit		Source	Date (2) (MM/DD/YYYY)
VOCs							
Benzene	7.8E-06	$(\mu g/m^3)^{-1}$	2.7E-02	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Carbon Tetrachloride	1.5E-05	$(\mu g/m^3)^{-1}$	5.3E-02	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Chloroform	2.3E-05	$(\mu g/m^3)^{-1}$	8.1E-02	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
cis-1,2-Dichloroethene	NA	NA	NA	NA	D	IRIS	11/01/2006
Dichlorodifluoromethane	NA	NA	NA	NA	NA	IRIS	11/01/2006
Methyl tert-Butyl Ether	NA	NA	NA	NA	NA	IRIS	11/01/2006
Tetrachloroethene (4)	5.9E-06	$(\mu g/m^3)^{-1}$	2.1E-02	$(mg/kg/day)^{-1}$	NA	EPA	12/13/2004
Toluene	NA	NA	NA	NA	NA	IRIS	11/01/2006
Trichloroethene (3)	1.1E-04	$(\mu g/m^3)^{-1}$	4.0E-01	$(mg/kg/day)^{-1}$	B2-C	EPA	01/17/2007
SVOCs							
Benzo(a)pyrene (3)	NA	NA	NA	NA	NA	NCEA	01/17/2007
Pesticides							
alpha-Chlordane (5)	1.0E-04	$(\mu g/m^3)^{-1}$	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Dieldrin	4.6E-03	$(\mu g/m^3)^{-1}$	1.6E+01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
gamma-Chlordane (5)	1.0E-04	$(\mu g/m^3)^{-1}$	3.5E-01	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
Heptachlor epoxide	2.6E-03	$(\mu g/m^3)^{-1}$	9.1E+00	$(mg/kg/day)^{-1}$	B2	IRIS	11/01/2006
INORGs							
Arsenic	4.3E-03	$(\mu g/m^3)^{-1}$	1.5E+01	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Barium	NA	NA	NA	NA	D	IRIS	11/01/2006
Chromium (6)	1.2E-02	$(\mu g/m^3)^{-1}$	4.2E+01	$(mg/kg/day)^{-1}$	A	IRIS	11/01/2006
Copper	NA	NA	NA	NA	D	IRIS	11/01/2006
Iron	NA	NA	NA	NA	NA	IRIS	11/01/2006
Lead	NA	NA	NA	NA	B2	IRIS	11/01/2006
Manganese	NA	NA	NA	NA	D	IRIS	11/01/2006
Nickel (3)	2.6E-04	$(\mu g/m^3)^{-1}$	9.1E-01	$(mg/kg/day)^{-1}$	NA	NCEA	01/17/2007

NA = Not Available
IRIS = Integrated Risk Information System
NCEA = National Center for Environmental Assessment

(1) Inhalation CSFs were calculated from unit risks assuming a 70 kg individual has an inhalation rate of 20 m^3/day.
(2) IRIS values were confirmed against the EPA's online database, November 2006. NCEA values were provided by EPA.
(3) Comments from C. Metz of EPA Region 2, January 17, 2007
(4) The Inhalation CSF for tetrachloroethene is 5.9×10^{-6} $(\mu g/m^3)$. In the absence of relevant values from IRIS or NCEA, the Office of Emergency Response (OERR) supports the use of the Cal EPA Air Toxics Hot Spots Program Inhalation unit risk.
(5) The inhalation unit risk for chlordane has been applied to alpha- and gamma-chlordane.
(6) The inhalation unit risk for chromium VI has been applied to total chromium.

EPA Weight of Evidence (EPA 1986, EPA 1996):
A - Human Carcinogen
B1 - Probable human carcinogen - indicates limited evidence in humans
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans.
C - Possible human carcinogen
D - Not classifiable as human carcinogen

302023

TABLE B-7.1
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Site Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Ingestion	**VOCs**												
				Benzene	6.8E-01	µg/L	2.4E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.3E-07	6.6E-06	mg/kg/day	4.0E-03	mg/kg/day	1.7E-03
				Carbon Tetrachloride	7.3E-01	µg/L	2.5E-06	mg/kg/day	1.3E-01	(mg/kg/day)-1	3.3E-07	7.1E-06	mg/kg/day	7.0E-04	mg/kg/day	1.0E-02
				Chloroform	8.4E-01	µg/L	2.9E-06	mg/kg/day	NA	NA	NA	8.3E-06	mg/kg/day	1.0E-02	mg/kg/day	8.3E-04
				cis-1,2-Dichloroethene	4.4E+00	µg/L	1.5E-05	mg/kg/day	NA	NA	NA	4.3E-05	mg/kg/day	1.0E-02	mg/kg/day	4.3E-03
				Dichlorodifluoromethane	8.8E+00	µg/L	3.1E-05	mg/kg/day	NA	NA	NA	8.6E-05	mg/kg/day	2.0E-01	mg/kg/day	4.3E-04
				Methyl tert-Butyl Ether	6.3E+00	µg/L	2.2E-05	mg/kg/day	NA	NA	NA	6.2E-05	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	2.1E-04	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.1E-04	5.9E-04	mg/kg/day	1.0E-02	mg/kg/day	5.9E-02
				Toluene	7.4E+01	µg/L	2.6E-04	mg/kg/day	NA	NA	NA	7.2E-04	mg/kg/day	8.0E-02	mg/kg/day	9.0E-03
				Trichloroethene	7.7E+01	µg/L	2.7E-04	mg/kg/day	4.0E-01	(mg/kg/day)-1	1.1E-04	7.5E-04	mg/kg/day	3.0E-04	mg/kg/day	2.5E+00
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	4.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.1E-06	1.2E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.5E-07	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.4E-03
				Dieldrin	5.2E-02	µg/L	1.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.9E-06	5.1E-07	mg/kg/day	5.0E-05	mg/kg/day	1.0E-02
				gamma-Chlordane	2.6E-01	µg/L	9.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.2E-07	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.1E-03
				Heptachlor epoxide	3.5E-02	µg/L	1.2E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.1E-06	3.4E-07	mg/kg/day	1.3E-05	mg/kg/day	2.6E-02
				INORGs												
				Arsenic	2.1E+00	µg/L	7.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.1E-05	2.1E-05	mg/kg/day	3.0E-04	mg/kg/day	6.8E-02
				Barium	1.9E+02	µg/L	6.6E-04	mg/kg/day	NA	NA	NA	1.9E-03	mg/kg/day	2.0E-01	mg/kg/day	9.3E-03
				Chromium	1.2E+01	µg/L	4.3E-05	mg/kg/day	NA	NA	NA	1.2E-04	mg/kg/day	3.0E-03	mg/kg/day	4.0E-02
				Copper	5.2E+01	µg/L	1.8E-04	mg/kg/day	NA	NA	NA	5.1E-04	mg/kg/day	4.0E-02	mg/kg/day	1.3E-02
				Iron	1.3E+04	µg/L	4.6E-02	mg/kg/day	NA	NA	NA	1.3E-01	mg/kg/day	7.0E-01	mg/kg/day	1.8E-01
				Lead	1.2E+01	µg/L	4.1E-05	mg/kg/day	NA	NA	NA	1.1E-04	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	7.2E-04	mg/kg/day	NA	NA	NA	2.0E-03	mg/kg/day	1.4E-01	mg/kg/day	1.4E-02
				Nickel	6.2E+01	µg/L	2.2E-04	mg/kg/day	NA	NA	NA	6.1E-04	mg/kg/day	2.0E-02	mg/kg/day	3.0E-02
			Exp. Route Total								2.4E-04					3.0E+00
		Exposure Point Total									2E-04					3E+00

302024

TABLE B-7.2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/ Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Unit	Value	Unit	Value	Unit		Value	Unit	Value	Unit	
Groundwater	Groundwater	Tap	Ingestion	**VOCs**												
				Benzene	6.8E-01	µg/L	6.4E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.5E-07	1.9E-05	mg/kg/day	4.0E-03	mg/kg/day	4.7E-03
				Carbon Tetrachloride	7.3E-01	µg/L	6.8E-06	mg/kg/day	1.3E-01	(mg/kg/day)-1	8.9E-07	2.0E-05	mg/kg/day	7.0E-04	mg/kg/day	2.9E-02
				Chloroform	8.4E-01	µg/L	7.9E-06	mg/kg/day	NA	NA	NA	2.3E-05	mg/kg/day	1.0E-02	mg/kg/day	2.3E-03
				cis-1,2-Dichloroethene	4.4E+00	µg/L	4.2E-05	mg/kg/day	NA	NA	NA	1.2E-04	mg/kg/day	1.0E-02	mg/kg/day	1.2E-02
				Dichlorodifluoromethane	8.8E+00	µg/L	8.3E-05	mg/kg/day	NA	NA	NA	2.4E-04	mg/kg/day	2.0E-01	mg/kg/day	1.2E-03
				Methyl tert-Butyl Ether	6.3E+00	µg/L	5.9E-05	mg/kg/day	NA	NA	NA	1.7E-04	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	5.7E-04	mg/kg/day	5.4E-01	(mg/kg/day)-1	3.1E-04	1.7E-03	mg/kg/day	1.0E-02	mg/kg/day	1.7E-01
				Toluene	7.4E+01	µg/L	6.9E-04	mg/kg/day	NA	NA	NA	2.0E-03	mg/kg/day	8.0E-02	mg/kg/day	2.5E-02
				Trichloroethene	7.7E+01	µg/L	7.2E-04	mg/kg/day	4.0E-01	(mg/kg/day)-1	2.9E-04	2.1E-03	mg/kg/day	3.0E-04	mg/kg/day	7.0E+00
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.2E-06	3.3E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.0E-07	3.3E-06	mg/kg/day	5.0E-04	mg/kg/day	6.6E-03
				Dieldrin	5.2E-02	µg/L	4.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.9E-06	1.4E-06	mg/kg/day	5.0E-05	mg/kg/day	2.9E-02
				gamma-Chlordane	2.6E-01	µg/L	2.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.5E-07	7.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.4E-02
				Heptachlor epoxide	3.5E-02	µg/L	3.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.0E-06	9.5E-07	mg/kg/day	1.3E-05	mg/kg/day	7.3E-02
				INORGs												
				Arsenic	2.1E+00	µg/L	2.0E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.0E-05	5.8E-05	mg/kg/day	3.0E-04	mg/kg/day	1.9E-01
				Barium	1.9E+02	µg/L	1.8E-03	mg/kg/day	NA	NA	NA	5.2E-03	mg/kg/day	2.0E-01	mg/kg/day	2.6E-02
				Chromium	1.2E+01	µg/L	1.2E-04	mg/kg/day	NA	NA	NA	3.4E-04	mg/kg/day	3.0E-03	mg/kg/day	1.1E-01
				Copper	5.2E+01	µg/L	4.9E-04	mg/kg/day	NA	NA	NA	1.4E-03	mg/kg/day	4.0E-02	mg/kg/day	3.6E-02
				Iron	1.3E+04	µg/L	1.2E-01	mg/kg/day	NA	NA	NA	3.6E-01	mg/kg/day	7.0E-01	mg/kg/day	5.2E-01
				Lead	1.2E+01	µg/L	1.1E-04	mg/kg/day	NA	NA	NA	3.2E-04	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	1.9E-03	mg/kg/day	NA	NA	NA	5.6E-03	mg/kg/day	1.4E-01	mg/kg/day	4.0E-02
				Nickel	6.2E+01	µg/L	5.8E-04	mg/kg/day	NA	NA	NA	1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	8.5E-02
			Exp. Route Total								6.5E-04					8.4E+00

302025

TABLE B-7.2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Dermal Contact	**VOCs**												
				Benzene	6.8E-01	µg/L	2.2E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.2E-08	6.3E-07	mg/kg/day	4.0E-03	mg/kg/day	1.6E-04
				Carbon Tetrachloride	7.3E-01	µg/L	2.5E-07	mg/kg/day	1.3E-01	(mg/kg/day)-1	3.2E-08	7.2E-07	mg/kg/day	7.0E-04	mg/kg/day	1.0E-03
				Chloroform	8.4E-01	µg/L	1.2E-07	mg/kg/day	NA	NA	NA	3.5E-07	mg/kg/day	1.0E-02	mg/kg/day	3.5E-05
				cis-1,2-Dichloroethene	4.4E+00	µg/L	NA	NA	NA	NA	NA	NA	NA	1.0E-02	mg/kg/day	NA
				Dichlorodifluoromethane	8.8E+00	µg/L	1.7E-06	mg/kg/day	NA	NA	NA	4.9E-06	mg/kg/day	2.0E-01	mg/kg/day	2.4E-05
				Methyl tert-Butyl Ether	6.3E+00	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	4.2E-05	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.3E-05	1.2E-04	mg/kg/day	1.0E-02	mg/kg/day	1.2E-02
				Toluene	7.4E+01	µg/L	4.8E-05	mg/kg/day	NA	NA	NA	1.4E-04	mg/kg/day	8.0E-02	mg/kg/day	1.8E-03
				Trichloroethene	7.7E+01	µg/L	2.0E-05	mg/kg/day	4.0E-01	(mg/kg/day)-1	7.8E-06	5.7E-05	mg/kg/day	3.0E-04	mg/kg/day	1.9E-01
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	1.8E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.3E-05	5.2E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	8.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.0E-08	2.5E-07	mg/kg/day	4.0E-04	mg/kg/day	6.4E-04
				Dieldrin	5.2E-02	µg/L	1.3E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.1E-07	3.9E-08	mg/kg/day	5.0E-05	mg/kg/day	7.7E-04
				gamma-Chlordane	2.6E-01	µg/L	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.5E-08	5.4E-07	mg/kg/day	4.0E-04	mg/kg/day	1.4E-03
				Heptachlor epoxide	3.5E-02	µg/L	NA	NA	9.1E+00	(mg/kg/day)-1	NA	NA	NA	1.3E-05	mg/kg/day	NA
				INORGs												
				Arsenic	2.1E+00	µg/L	4.4E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.7E-08	1.3E-07	mg/kg/day	2.9E-04	mg/kg/day	4.5E-04
				Barium	1.9E+02	µg/L	4.0E-06	mg/kg/day	NA	NA	NA	1.2E-05	mg/kg/day	1.4E-02	mg/kg/day	8.4E-04
				Chromium	1.2E+01	µg/L	5.2E-07	mg/kg/day	NA	NA	NA	1.5E-06	mg/kg/day	7.5E-05	mg/kg/day	2.0E-02
				Copper	5.2E+01	µg/L	1.1E-06	mg/kg/day	NA	NA	NA	3.2E-06	mg/kg/day	4.0E-02	mg/kg/day	8.1E-05
				Iron	1.3E+04	µg/L	2.8E-04	mg/kg/day	NA	NA	NA	8.1E-04	mg/kg/day	7.0E-01	mg/kg/day	1.2E-03
				Lead	1.2E+01	µg/L	2.5E-08	mg/kg/day	NA	NA	NA	7.2E-08	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	4.4E-06	mg/kg/day	NA	NA	NA	1.3E-05	mg/kg/day	5.6E-03	mg/kg/day	2.3E-03
				Nickel	6.2E+01	µg/L	2.6E-07	mg/kg/day	NA	NA	NA	7.6E-07	mg/kg/day	8.0E-04	mg/kg/day	9.5E-04
			Exp. Route Total								4.4E-05					2.3E-01

302026

TABLE B-7.2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Air	Water Vapor	Inhalation	**VOCs**												
				Benzene	1.1E+01	µg/m3	3.1E-05	mg/kg/day	2.7E-02	(mg/kg/day)-1	8.5E-07	9.0E-05	mg/kg/day	8.6E-03	mg/kg/day	1.1E-02
				Carbon Tetrachloride	1.1E+01	µg/m3	3.1E-05	mg/kg/day	5.3E-02	(mg/kg/day)-1	1.6E-06	9.0E-05	mg/kg/day	1.1E-02	mg/kg/day	7.9E-03
				Chloroform	1.4E+01	µg/m3	3.9E-05	mg/kg/day	8.1E-02	(mg/kg/day)-1	3.1E-06	1.1E-04	mg/kg/day	NA	NA	NA
				cis-1,2-Dichloroethene	8.2E+01	µg/m3	2.2E-04	mg/kg/day	NA	NA	NA	6.5E-04	mg/kg/day	NA	NA	NA
				Dichlorodifluoromethane	1.5E+02	µg/m3	4.2E-04	mg/kg/day	NA	NA	NA	1.2E-03	mg/kg/day	5.7E-02	mg/kg/day	2.1E-02
				Methyl tert-Butyl Ether	1.1E+02	µg/m3	2.9E-04	mg/kg/day	NA	NA	NA	8.5E-04	mg/kg/day	8.6E-01	mg/kg/day	9.9E-04
				Tetrachloroethene	9.0E+02	µg/m3	2.4E-03	mg/kg/day	2.1E-02	(mg/kg/day)-1	5.0E-05	7.1E-03	mg/kg/day	NA	NA	NA
				Toluene	1.1E+03	µg/m3	3.1E-03	mg/kg/day	NA	NA	NA	9.0E-03	mg/kg/day	1.4E+00	mg/kg/day	6.3E-03
				Trichloroethene	1.2E+03	µg/m3	3.3E-03	mg/kg/day	4.0E-01	(mg/kg/day)-1	1.3E-03	9.7E-03	mg/kg/day	1.1E-02	mg/kg/day	8.5E-01
				SVOCs												
				Benzo(a)pyrene	1.9E+00	µg/m3	5.2E-06	mg/kg/day	NA	NA	NA	1.5E-05	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E+00	µg/m3	3.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.1E-06	9.4E-06	mg/kg/day	2.0E-04	mg/kg/day	4.7E-02
				Dieldrin	5.4E-01	µg/m3	1.5E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.4E-05	4.3E-06	mg/kg/day	NA	NA	NA
				gamma-Chlordane	2.5E+00	µg/m3	6.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.4E-06	2.0E-05	mg/kg/day	2.0E-04	mg/kg/day	1.0E-01
				Heptachlor epoxide	3.3E-01	µg/m3	9.0E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.2E-06	2.6E-06	mg/kg/day	NA	NA	NA
				INORGs												
				Arsenic	NA	NA	NA	NA	1.5E+01	(mg/kg/day)-1	NA	NA	NA	NA	NA	NA
				Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4E-04	mg/kg/day	NA
				Chromium	NA	NA	NA	NA	4.2E+01	(mg/kg/day)-1	NA	NA	NA	2.3E-06	mg/kg/day	NA
				Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4E-05	mg/kg/day	NA
				Nickel	NA	NA	NA	NA	9.1E-01	(mg/kg/day)-1	NA	NA	NA	2.6E-05	mg/kg/day	NA
			Exp. Route Total								1.4E-03					1.0E+00
		Exposure Point Total									2E-03					1E+01

302027

TABLE B-7.3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Ingestion	**VOCs**												
				Benzene	6.8E-01	µg/L	3.7E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.0E-07	4.3E-05	mg/kg/day	4.0E-03	mg/kg/day	1.1E-02
				Carbon Tetrachloride	7.3E-01	µg/L	4.0E-06	mg/kg/day	1.3E-01	(mg/kg/day)-1	5.2E-07	4.7E-05	mg/kg/day	7.0E-04	mg/kg/day	6.7E-02
				Chloroform	8.4E-01	µg/L	4.6E-06	mg/kg/day	NA	NA	NA	5.4E-05	mg/kg/day	1.0E-02	mg/kg/day	5.4E-03
				cis-1,2-Dichloroethene	4.4E+00	µg/L	2.4E-05	mg/kg/day	NA	NA	NA	2.8E-04	mg/kg/day	1.0E-02	mg/kg/day	2.8E-02
				Dichlorodifluoromethane	8.8E+00	µg/L	4.8E-05	mg/kg/day	NA	NA	NA	5.6E-04	mg/kg/day	2.0E-01	mg/kg/day	2.8E-03
				Methyl tert-Butyl Ether	6.3E+00	µg/L	3.5E-05	mg/kg/day	NA	NA	NA	4.0E-04	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	3.3E-04	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.8E-04	3.9E-03	mg/kg/day	1.0E-02	mg/kg/day	3.9E-01
				Toluene	7.4E+01	µg/L	4.0E-04	mg/kg/day	NA	NA	NA	4.7E-03	mg/kg/day	8.0E-02	mg/kg/day	5.9E-02
				Trichloroethene	7.7E+01	µg/L	4.2E-04	mg/kg/day	4.0E-01	(mg/kg/day)-1	1.7E-04	4.9E-03	mg/kg/day	3.0E-04	mg/kg/day	1.6E+01
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	6.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.8E-06	7.7E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	6.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.3E-07	7.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.5E-02
				Dieldrin	5.2E-02	µg/L	2.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.6E-06	3.3E-06	mg/kg/day	5.0E-05	mg/kg/day	6.7E-02
				gamma-Chlordane	2.6E-01	µg/L	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.0E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.3E-02
				Heptachlor epoxide	3.5E-02	µg/L	1.9E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.7E-06	2.2E-06	mg/kg/day	1.3E-05	mg/kg/day	1.7E-01
				INORGs												
				Arsenic	2.1E+00	µg/L	1.2E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.7E-05	1.3E-04	mg/kg/day	3.0E-04	mg/kg/day	4.5E-01
				Barium	1.9E+02	µg/L	1.0E-03	mg/kg/day	NA	NA	NA	1.2E-02	mg/kg/day	2.0E-01	mg/kg/day	6.1E-02
				Chromium	1.2E+01	µg/L	6.7E-05	mg/kg/day	NA	NA	NA	7.8E-04	mg/kg/day	3.0E-03	mg/kg/day	2.6E-01
				Copper	5.2E+01	µg/L	2.9E-04	mg/kg/day	NA	NA	NA	3.3E-03	mg/kg/day	4.0E-02	mg/kg/day	8.3E-02
				Iron	1.3E+04	µg/L	7.2E-02	mg/kg/day	NA	NA	NA	8.4E-01	mg/kg/day	7.0E-01	mg/kg/day	1.2E+00
				Lead	1.2E+01	µg/L	6.4E-05	mg/kg/day	NA	NA	NA	7.5E-04	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	1.1E-03	mg/kg/day	NA	NA	NA	1.3E-02	mg/kg/day	1.4E-01	mg/kg/day	9.4E-02
				Nickel	6.2E+01	µg/L	3.4E-04	mg/kg/day	NA	NA	NA	4.0E-03	mg/kg/day	2.0E-02	mg/kg/day	2.0E-01
			Exp. Route Total								3.8E-04					2.0E+01

302028

TABLE B-7.3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Dermal Contact	**VOCs**												
				Benzene	6.8E-01	µg/L	1.7E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	9.1E-09	1.9E-06	mg/kg/day	4.0E-03	mg/kg/day	4.8E-04
				Carbon Tetrachloride	7.3E-01	µg/L	1.9E-07	mg/kg/day	1.3E-01	(mg/kg/day)-1	2.5E-08	2.2E-06	mg/kg/day	7.0E-04	mg/kg/day	3.2E-03
				Chloroform	8.4E-01	µg/L	9.3E-08	mg/kg/day	NA	NA	NA	1.1E-06	mg/kg/day	1.0E-02	mg/kg/day	1.1E-04
				cis-1,2-Dichloroethene	4.4E+00	µg/L	NA	NA	NA	NA	NA	NA	mg/kg/day	1.0E-02	mg/kg/day	NA
				Dichlorodifluoromethane	8.8E+00	µg/L	1.3E-06	mg/kg/day	NA	NA	NA	1.5E-05	mg/kg/day	2.0E-01	mg/kg/day	7.5E-05
				Methyl tert-Butyl Ether	6.3E+00	µg/L	NA	NA	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	3.2E-05	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.7E-05	3.8E-04	mg/kg/day	1.0E-02	mg/kg/day	3.8E-02
				Toluene	7.4E+01	µg/L	3.7E-05	mg/kg/day	NA	NA	NA	4.3E-04	mg/kg/day	8.0E-02	mg/kg/day	5.4E-03
				Trichloroethene	7.7E+01	µg/L	1.5E-05	mg/kg/day	4.0E-01	(mg/kg/day)-1	6.0E-06	1.8E-04	mg/kg/day	3.0E-04	mg/kg/day	5.8E-01
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	1.4E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.0E-05	1.6E-05	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	6.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.3E-08	7.8E-07	mg/kg/day	4.0E-04	mg/kg/day	2.0E-03
				Dieldrin	5.2E-02	µg/L	1.0E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.6E-07	1.2E-07	mg/kg/day	5.0E-05	mg/kg/day	2.4E-03
				gamma-Chlordane	2.6E-01	µg/L	1.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.0E-08	1.7E-06	mg/kg/day	4.0E-04	mg/kg/day	4.2E-03
				Heptachlor epoxide	3.5E-02	µg/L	NA	NA	9.1E+00	(mg/kg/day)-1	NA	NA	mg/kg/day	1.3E-05	mg/kg/day	NA
				INORGs												
				Arsenic	2.1E+00	µg/L	3.4E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.1E-08	4.0E-07	mg/kg/day	2.9E-04	mg/kg/day	1.4E-03
				Barium	1.9E+02	µg/L	3.1E-06	mg/kg/day	NA	NA	NA	3.6E-05	mg/kg/day	1.4E-02	mg/kg/day	2.6E-03
				Chromium	1.2E+01	µg/L	4.0E-07	mg/kg/day	NA	NA	NA	4.7E-06	mg/kg/day	7.5E-05	mg/kg/day	6.2E-02
				Copper	5.2E+01	µg/L	8.5E-07	mg/kg/day	NA	NA	NA	9.9E-06	mg/kg/day	4.0E-02	mg/kg/day	2.5E-04
				Iron	1.3E+04	µg/L	2.1E-04	mg/kg/day	NA	NA	NA	2.5E-03	mg/kg/day	7.0E-01	mg/kg/day	3.6E-03
				Lead	1.2E+01	µg/L	1.9E-08	mg/kg/day	NA	NA	NA	2.2E-07	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	3.4E-06	mg/kg/day	NA	NA	NA	3.9E-05	mg/kg/day	5.6E-03	mg/kg/day	7.0E-03
				Nickel	6.2E+01	µg/L	2.0E-07	mg/kg/day	NA	NA	NA	2.4E-06	mg/kg/day	8.0E-04	mg/kg/day	2.9E-03
			Exp. Route Total								3.4E-05					7.2E-01

302029

TABLE B-7.3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Air	Water Vapor	Inhalation	**VOCs**												
				Benzene	2.0E+01	µg/m3	1.1E-04	mg/kg/day	2.7E-02	(mg/kg/day)-1	3.0E-06	1.3E-03	mg/kg/day	8.6E-03	mg/kg/day	1.5E-01
				Carbon Tetrachloride	2.0E+01	µg/m3	1.1E-04	mg/kg/day	5.3E-02	(mg/kg/day)-1	5.8E-06	1.3E-03	mg/kg/day	1.1E-02	mg/kg/day	1.1E-01
				Chloroform	2.5E+01	µg/m3	1.4E-04	mg/kg/day	8.1E-02	(mg/kg/day)-1	1.1E-05	1.6E-03	mg/kg/day	NA	NA	NA
				cis-1,2-Dichloroethene	1.5E+02	µg/m3	7.9E-04	mg/kg/day	NA	NA	NA	9.3E-03	mg/kg/day	NA	NA	NA
				Dichlorodifluoromethane	2.7E+02	µg/m3	1.5E-03	mg/kg/day	NA	NA	NA	1.8E-02	mg/kg/day	5.7E-02	mg/kg/day	3.1E-01
				Methyl tert-Butyl Ether	1.9E+02	µg/m3	1.0E-03	mg/kg/day	NA	NA	NA	1.2E-02	mg/kg/day	8.6E-01	mg/kg/day	1.4E-02
				Tetrachloroethene	1.6E+03	µg/m3	8.7E-03	mg/kg/day	2.1E-02	(mg/kg/day)-1	1.8E-04	1.0E-01	mg/kg/day	NA	NA	NA
				Toluene	2.0E+03	µg/m3	1.1E-02	mg/kg/day	NA	NA	NA	1.3E-01	mg/kg/day	1.4E+00	mg/kg/day	9.0E-02
				Trichloroethene	2.2E+03	µg/m3	1.2E-02	mg/kg/day	4.0E-01	(mg/kg/day)-1	4.8E-03	1.4E-01	mg/kg/day	1.1E-02	mg/kg/day	1.2E+01
				SVOCs												
				Benzo(a)pyrene	3.4E+00	µg/m3	1.8E-05	mg/kg/day	NA	NA	NA	2.2E-04	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	2.1E+00	µg/m3	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.0E-06	1.3E-04	mg/kg/day	2.0E-04	mg/kg/day	6.7E-01
				Dieldrin	9.6E-01	µg/m3	5.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.4E-05	6.1E-05	mg/kg/day	NA	NA	NA
				gamma-Chlordane	4.5E+00	µg/m3	2.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.6E-06	2.9E-04	mg/kg/day	2.0E-04	mg/kg/day	1.4E+00
				Heptachlor epoxide	5.9E-01	µg/m3	3.2E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.9E-05	3.8E-05	mg/kg/day	NA	NA	NA
				INORGs												
				Arsenic	NA	NA	NA	NA	1.5E+01	(mg/kg/day)-1	NA	NA	NA	NA	NA	NA
				Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4E-04	mg/kg/day	NA
				Chromium	NA	NA	NA	NA	4.2E+01	(mg/kg/day)-1	NA	NA	NA	2.3E-06	mg/kg/day	NA
				Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4E-05	mg/kg/day	NA
				Nickel	NA	NA	NA	NA	9.1E-01	(mg/kg/day)-1	NA	NA	NA	2.6E-05	mg/kg/day	NA
			Exp. Route Total								5.1E-03					1.5E+01
		Exposure Point Total									6E-03					4E+01

302030

TABLE B-8.1
CALCULATION OF RADIATION CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	NA
Receptor Population:	NA
Receptor Age:	NA

Medium	Exposure Medium	Exposure Point	Exposure Route	Radionuclide of Potential Concern	EPC		Risk Calculation Approach	Cancer Risk Calculations				
								Intake/Activity		CSF		Cancer Risk
					Value	Unit		Value	Unit	Value	Unit	
			Exp. Route Total									
		Exposure Point Total										
Total of Receptor Risks Across All Media												

NOT APPLICABLE TO THIS SITE

There are no radionucleotides in this risk assessment. As a result, this table is blank

302031

TABLE B-9.1
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Site Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Benzene	1.3E-07	NA	NA	1.3E-07	Blood	1.7E-03	NA	NA	1.7E-03
			Carbon Tetrachloride	3.3E-07	NA	NA	3.3E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Chloroform	NA	NA	NA	NA	Liver	8.3E-04	NA	NA	8.3E-04
			cis-1,2-Dichloroethene	NA	NA	NA	NA	Blood	4.3E-03	NA	NA	4.3E-03
			Dichlorodifluoromethane	NA	NA	NA	NA	Whole Body	4.3E-04	NA	NA	4.3E-04
			Methyl tert-Butyl Ether	NA	NA	NA	NA	Liver/Kidney	NA	NA	NA	NA
			Tetrachloroethene	1.1E-04	NA	NA	1.1E-04	Liver	5.9E-02	NA	NA	5.9E-02
			Toluene	NA	NA	NA	NA	Kidney/CNS	9.0E-03	NA	NA	9.0E-03
			Trichloroethene	1.1E-04	NA	NA	1.1E-04	Liver/Kidney/Fetus/CNS	2.5E+00	NA	NA	2.5E+00
			SVOCs									
			Benzo(a)pyrene	3.1E-06	NA	NA	3.1E-06	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	1.5E-07	NA	NA	1.5E-07	Liver	2.4E-03	NA	NA	2.4E-03
			Dieldrin	2.9E-06	NA	NA	2.9E-06	Liver	1.0E-02	NA	NA	1.0E-02
			gamma-Chlordane	3.2E-07	NA	NA	3.2E-07	Liver	5.1E-03	NA	NA	5.1E-03
			Heptachlor epoxide	1.1E-06	NA	NA	1.1E-06	Liver	2.6E-02	NA	NA	2.6E-02
			INORGs									
			Arsenic	1.1E-05	NA	NA	1.1E-05	Skin	6.8E-02	NA	NA	6.8E-02
			Barium	NA	NA	NA	NA	Kidney	9.3E-03	NA	NA	9.3E-03
			Chromium	NA	NA	NA	NA	Nasal septum atrophy	4.0E-02	NA	NA	4.0E-02
			Copper	NA	NA	NA	NA	GI Tract	1.3E-02	NA	NA	1.3E-02
			Iron	NA	NA	NA	NA	NA	1.8E-01	NA	NA	1.8E-01
			Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Manganese	NA	NA	NA	NA	CNS	1.4E-02	NA	NA	1.4E-02
			Nickel	NA	NA	NA	NA	Whole Body	3.0E-02	NA	NA	3.0E-02
			Chemical Total	2.4E-04	NA	NA	2.4E-04		3.0E+00	NA	NA	3.0E+00
		Exposure Point Total					2.4E-04					3.0E+00
	Exposure Medium Total						2.4E-04					3.0E+00
Groundwater Total							2.4E-04					3.0E+00

Total Risk Across All Media = 2E-04

Total Hazard Across All Media = 3

Total Liver HI Across All Media =	3
Total Kidney HI Across All Media =	3
Total Fetus HI Across All Media =	3
Total Nasal Epithelium HI Across All Media =	0.04
Total GI Tract HI Across All Media =	0.01
Total Central Nervous System HI Across All Media =	3
Total Blood HI Across All Media =	0.006
Total Whole Body HI Across All Media =	0.03
Total Skin HI Across All Media =	0.07

302032

TABLE B-9.2
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Benzene	3.5E-07	8.5E-07	1.2E-08	1.2E-06	Blood	4.7E-03	1.1E-02	1.6E-04	1.5E-02
			Carbon Tetrachloride	8.9E-07	1.6E-06	3.2E-08	2.5E-06	Liver	2.9E-02	7.9E-03	1.0E-03	3.7E-02
			Chloroform	NA	3.1E-06	NA	3.1E-06	Liver	2.3E-03	NA	3.5E-05	2.3E-03
			cis-1,2-Dichloroethene	NA	NA	NA	NA	Blood	1.2E-02	NA	NA	1.2E-02
			Dichlorodifluoromethane	NA	NA	NA	NA	Whole Body	1.2E-03	2.1E-02	2.4E-05	2.3E-02
			Methyl tert-Butyl Ether	NA	NA	NA	NA	Liver/Kidney	NA	9.9E-04	NA	9.9E-04
			Tetrachloroethene	3.1E-04	5.0E-05	2.3E-05	3.8E-04	Liver	1.7E-01	NA	1.2E-02	1.8E-01
			Toluene	NA	NA	NA	NA	Kidney/CNS	2.5E-02	6.3E-03	1.8E-03	3.3E-02
			Trichloroethene	2.9E-04	1.3E-03	7.8E-06	1.6E-03	Liver/Kidney/Fetus/CNS	7.0E+00	8.5E-01	1.9E-01	8.1E+00
			SVOCs									
			Benzo(a)pyrene	8.2E-06	NA	1.3E-05	2.1E-05	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	4.0E-07	1.1E-06	3.0E-08	1.6E-06	Liver	6.6E-03	4.7E-02	6.4E-04	5.4E-02
			Dieldrin	7.9E-06	2.4E-05	2.1E-07	3.2E-05	Liver	2.9E-02	NA	7.7E-04	2.9E-02
			gamma-Chlordane	8.5E-07	2.4E-06	6.5E-08	3.3E-06	Liver	1.4E-02	1.0E-01	1.4E-03	1.2E-01
			Heptachlor epoxide	3.0E-06	8.2E-06	NA	1.1E-05	Liver	7.3E-02	NA	NA	7.3E-02
			INORGs									
			Arsenic	3.0E-05	NA	6.7E-08	3.0E-05	Skin	1.9E-01	NA	4.5E-04	1.9E-01
			Barium	NA	NA	NA	NA	Kidney	2.6E-02	NA	8.4E-04	2.7E-02
			Chromium	NA	NA	NA	NA	Nasal septum atrophy	1.1E-01	NA	2.0E-02	1.3E-01
			Copper	NA	NA	NA	NA	GI Tract	3.6E-02	NA	8.1E-05	3.6E-02
			Iron	NA	NA	NA	NA	NA	5.2E-01	NA	1.2E-03	5.2E-01
			Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Manganese	NA	NA	NA	NA	CNS	4.0E-02	NA	2.3E-03	4.3E-02
			Nickel	NA	NA	NA	NA	Whole Body	8.5E-02	NA	9.5E-04	8.6E-02
			Chemical Total	6.5E-04	1.4E-03	4.4E-05	2.1E-03		8.4E+00	1.0E+00	2.3E-01	9.7E+00
		Exposure Point Total					2.1E-03					9.7E+00
	Exposure Medium Total						2.1E-03					9.7E+00
Groundwater Total							2.1E-03					9.7E+00

Total Risk Across All Media = 2E-03

Total Hazard Across All Media = 10

Total Liver HI Across All Media =	9
Total Kidney HI Across All Media =	8
Total Fetus HI Across All Media =	8
Total Nasal Epithelium HI Across All Media =	0.1
Total GI Tract HI Across All Media =	0.04
Total Central Nervous System HI Across All Media =	8
Total Blood HI Across All Media =	0.03
Total Whole Body HI Across All Media =	0.1
Total Skin HI Across All Media =	0.2

302033

TABLE B-9.3
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Benzene	2.0E-07	3.0E-06	9.1E-09	3.2E-06	Blood	1.1E-02	1.5E-01	4.8E-04	1.6E-01
			Carbon Tetrachloride	5.2E-07	5.8E-06	2.5E-08	6.4E-06	Liver	6.7E-02	1.1E-01	3.2E-03	1.8E-01
			Chloroform	NA	1.1E-05	NA	1.1E-05	Liver	5.4E-03	NA	1.1E-04	5.5E-03
			cis-1,2-Dichloroethene	NA	NA	NA	NA	Blood	2.8E-02	NA	NA	2.8E-02
			Dichlorodifluoromethane	NA	NA	NA	NA	Whole Body	2.8E-03	3.1E-01	7.5E-05	3.1E-01
			Methyl tert-Butyl Ether	NA	NA	NA	NA	Liver/Kidney	NA	1.4E-02	NA	1.4E-02
			Tetrachloroethene	1.8E-04	1.8E-04	1.7E-05	3.8E-04	Liver	3.9E-01	NA	3.8E-02	4.2E-01
			Toluene	NA	NA	NA	NA	Kidney/CNS	5.9E-02	9.0E-02	5.4E-03	1.5E-01
			Trichloroethene	1.7E-04	4.8E-03	6.0E-06	5.0E-03	Liver/Kidney/Fetus/CNS	1.6E+01	1.2E+01	5.8E-01	2.9E+01
			SVOCs									
			Benzo(a)pyrene	4.8E-06	NA	1.0E-05	1.5E-05	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	2.3E-07	4.0E-06	2.3E-08	4.3E-06	Liver	1.5E-02	6.7E-01	2.0E-03	6.9E-01
			Dieldrin	4.6E-06	8.4E-05	1.6E-07	8.9E-05	Liver	6.7E-02	NA	2.4E-03	6.9E-02
			gamma-Chlordane	5.0E-07	8.6E-06	5.0E-08	9.2E-06	Liver	3.3E-02	1.4E+00	4.2E-03	1.5E+00
			Heptachlor epoxide	1.7E-06	2.9E-05	NA	3.1E-05	Liver	1.7E-01	NA	NA	1.7E-01
			INORGs									
			Arsenic	1.7E-05	NA	5.1E-08	1.7E-05	Skin	4.5E-01	NA	1.4E-03	4.5E-01
			Barium	NA	NA	NA	NA	Kidney	6.1E-02	NA	2.6E-03	6.3E-02
			Chromium	NA	NA	NA	NA	Nasal septum atrophy	2.6E-01	NA	6.2E-02	3.2E-01
			Copper	NA	NA	NA	NA	GI Tract	8.3E-02	NA	2.5E-04	8.4E-02
			Iron	NA	NA	NA	NA	NA	1.2E+00	NA	3.6E-03	1.2E+00
			Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Manganese	NA	NA	NA	NA	CNS	9.4E-02	NA	7.0E-03	1.0E-01
			Nickel	NA	NA	NA	NA	Whole Body	2.0E-01	NA	2.9E-03	2.0E-01
			Chemical Total	3.8E-04	5.1E-03	3.4E-05	5.5E-03		2.0E+01	1.5E+01	7.2E-01	3.5E+01
		Exposure Point Total					5.5E-03					3.5E+01
	Exposure Medium Total						5.5E-03					3.5E+01
Groundwater Total							5.5E-03					3.5E+01

Total Risk Across All Media = 6E-03

Total Hazard Across All Media = 35

Total Liver HI Across All Media =	32
Total Kidney HI Across All Media =	29
Total Fetus HI Across All Media =	29
Total Nasal Epithelium HI Across All Media =	0.3
Total GI Tract HI Across All Media =	0.08
Total Central Nervous System HI Across All Media =	29
Total Blood HI Across All Media =	0.2
Total Whole Body HI Across All Media =	0.5
Total Skin HI Across All Media =	0.4

302034

TABLE B-10.1
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Site Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Tetrachloroethene	1.1E-04	NA	NA	1.1E-04	Liver	5.9E-02	NA	NA	5.9E-02
			Trichloroethene	1.1E-04	NA	NA	1.1E-04	Liver/Kidney/Fetus/CNS	2.5E+00	NA	NA	2.5E+00
			SVOCs									
			Benzo(a)pyrene	3.1E-06	NA	NA	3.1E-06	NA	NA	NA	NA	NA
			Pesticides									
			Dieldrin	2.9E-06	NA	NA	2.9E-06	Liver	1.0E-02	NA	NA	1.0E-02
			Heptachlor epoxide	1.1E-06	NA	NA	1.1E-06	Liver	2.6E-02	NA	NA	2.6E-02
			INORGs									
			Arsenic	1.1E-05	NA	NA	1.1E-05	Skin	6.8E-02	NA	NA	6.8E-02
			Chemical Total	2.4E-04	NA	NA	2.4E-04		3.0E+00	NA	NA	3.0E+00
		Exposure Point Total					2.4E-04					3.0E+00
	Exposure Medium Total						2.4E-04					3.0E+00
Groundwater Total							2.4E-04					3.0E+00

Total Risk Across All Media = 2E-04

Total Hazard Across All Media = 3

Total Liver HI Across All Media =	3
Total Kidney HI Across All Media =	3
Total Fetus HI Across All Media =	3
Total Nasal Epithelium HI Across All Media =	0.04
Total GI Tract HI Across All Media =	0.01
Total Central Nervous System HI Across All Media =	3
Total Blood HI Across All Media =	0.006
Total Whole Body HI Across All Media =	0.03
Total Skin HI Across All Media =	0.07

302035

TABLE B-10.2
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Benzene	3.5E-07	8.5E-07	1.2E-08	1.2E-06	Blood	4.7E-03	1.1E-02	1.6E-04	1.5E-02
			Carbon Tetrachloride	8.9E-07	1.6E-06	3.2E-08	2.5E-06	Liver	2.9E-02	7.9E-03	1.0E-03	3.7E-02
			Chloroform	NA	3.1E-06	NA	3.1E-06	Liver	2.3E-03	NA	3.5E-05	2.3E-03
			Tetrachloroethene	3.1E-04	5.0E-05	2.3E-05	3.8E-04	Liver	1.7E-01	NA	1.2E-02	1.8E-01
			Trichloroethene	2.9E-04	1.3E-03	7.8E-06	1.6E-03	Liver/Kidney/Fetus/CNS	7.0E+00	8.5E-01	1.9E-01	8.1E+00
			SVOCs									
			Benzo(a)pyrene	8.2E-06	NA	1.3E-05	2.1E-05	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	4.0E-07	1.1E-06	3.0E-08	1.6E-06	Liver	6.6E-03	4.7E-02	6.4E-04	5.4E-02
			Dieldrin	7.9E-06	2.4E-05	2.1E-07	3.2E-05	Liver	2.9E-02	NA	7.7E-04	2.9E-02
			gamma-Chlordane	8.5E-07	2.4E-06	6.5E-08	3.3E-06	Liver	1.4E-02	1.0E-01	1.4E-03	1.2E-01
			Heptachlor epoxide	3.0E-06	8.2E-06	NA	1.1E-05	Liver	7.3E-02	NA	NA	7.3E-02
			INORGs									
			Arsenic	3.0E-05	NA	6.7E-08	3.0E-05	Skin	1.9E-01	NA	4.5E-04	1.9E-01
			Chemical Total	6.5E-04	1.4E-03	4.4E-05	2.1E-03		8.4E+00	1.0E+00	2.3E-01	9.7E+00
		Exposure Point Total					2.1E-03					9.7E+00
	Exposure Medium Total						2.1E-03					9.7E+00
Groundwater Total							2.1E-03					9.7E+00

Total Risk Across All Media = 2E-03

Total Hazard Across All Media = 10

Total Liver HI Across All Media =	9
Total Kidney HI Across All Media =	8
Total Fetus HI Across All Media =	8
Total Nasal Epithelium HI Across All Media =	0.1
Total GI Tract HI Across All Media =	0.04
Total Central Nervous System HI Across All Media =	8
Total Blood HI Across All Media =	0.03
Total Whole Body HI Across All Media =	0.1
Total Skin HI Across All Media =	0.2

302036

TABLE B-10.3
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Benzene	2.0E-07	3.0E-06	9.1E-09	3.2E-06	Blood	1.1E-02	1.5E-01	4.8E-04	1.6E-01
			Carbon Tetrachloride	5.2E-07	5.8E-06	2.5E-08	6.4E-06	Liver	6.7E-02	1.1E-01	3.2E-03	1.8E-01
			Chloroform	NA	1.1E-05	NA	1.1E-05	Liver	5.4E-03	NA	1.1E-04	5.5E-03
			Tetrachloroethene	1.8E-04	1.8E-04	1.7E-05	3.8E-04	Liver	3.9E-01	NA	3.8E-02	4.2E-01
			Trichloroethene	1.7E-04	4.8E-03	6.0E-06	5.0E-03	Liver/Kidney/Fetus/CNS	1.6E+01	1.2E+01	5.8E-01	2.9E+01
			SVOCs									
			Benzo(a)pyrene	4.8E-06	NA	1.0E-05	1.5E-05	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	2.3E-07	4.0E-06	2.3E-08	4.3E-06	Liver	1.5E-02	6.7E-01	2.0E-03	6.9E-01
			Dieldrin	4.6E-06	8.4E-05	1.6E-07	8.9E-05	Liver	6.7E-02	NA	2.4E-03	6.9E-02
			gamma-Chlordane	5.0E-07	8.6E-06	5.0E-08	9.2E-06	Liver	3.3E-02	1.4E+00	4.2E-03	1.5E+00
			Heptachlor epoxide	1.7E-06	2.9E-05	NA	3.1E-05	Liver	1.7E-01	NA	NA	1.7E-01
			INORGs									
			Arsenic	1.7E-05	NA	5.1E-08	1.7E-05	Skin	4.5E-01	NA	1.4E-03	4.5E-01
			Iron	NA	NA	NA	NA	NA	1.2E+00	NA	3.6E-03	1.2E+00
			Chemical Total	3.8E-04	5.1E-03	3.4E-05	5.5E-03		2.0E+01	1.5E+01	7.2E-01	3.5E+01
		Exposure Point Total					5.5E-03					3.5E+01
	Exposure Medium Total						5.5E-03					3.5E+01
Groundwater Total							5.5E-03					3.5E+01

Total Risk Across All Media = 6E-03

Total Hazard Across All Media = 35

Total Liver HI Across All Media =	32
Total Kidney HI Across All Media =	29
Total Fetus HI Across All Media =	29
Total Nasal Epithelium HI Across All Media =	0.3
Total GI Tract HI Across All Media =	0.08
Total Central Nervous System HI Across All Media =	29
Total Blood HI Across All Media =	0.2
Total Whole Body HI Across All Media =	0.5
Total Skin HI Across All Media =	0.4

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Appendix C

Appendix C

ProUCL Output for Chemicals of Potential Concern

ProUCL Output – Groundwater

List of ProUCL Output Included in Appendix C
Old Roosevelt Field Contaminated Groundwater Site - Garden City, New York

Groundwater

- Benzene
- Carbon Tetrachloride
- Chloroform
- cis-1,2-Dichloroethene
- Dichlorodifluoromethane
- Methyl tert-Butyl Ether
- Tetrachloroethene
- Toluene
- Trichloroethene
- Benzo(a)pyrene
- alpha-Chlordane
- Dieldrin
- gamma-Chlordane
- Heptachlor epoxide
- Arsenic
- Barium
- Chromium
- Copper
- Iron
- Lead
- Manganese
- Nickel

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Benzene**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	21
Minimum	0.03
Maximum	6.5
Mean	0.389472
Median	0.25
Standard Deviation	0.749941
Variance	0.562412
Coefficient of Variation	1.925531
Skewness	6.227657

Gamma Statistics	
k hat	1.495727
k star (bias corrected)	1.465644
Theta hat	0.26039
Theta star	0.265735
nu hat	379.9147
nu star	372.2737
Approx.Chi Square Value (.05)	328.548
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	328.0811

Log-transformed Statistics	
Minimum of log data	-3.506558
Maximum of log data	1.871802
Mean of log data	-1.313087
Standard Deviation of log data	0.618566
Variance of log data	0.382624

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.471407
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.499742

Gamma Distribution Test	
A-D Test Statistic	33.11522
A-D 5% Critical Value	0.770315
K-S Test Statistic	0.485173
K-S 5% Critical Value	0.084025
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.441306
Adjusted Gamma UCL	0.441934

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.444743
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.361461
95% Chebyshev (MVUE) UCL	0.409501
97.5% Chebyshev (MVUE) UCL	0.446013
99% Chebyshev (MVUE) UCL	0.517734

95% Non-parametric UCLs	
CLT UCL	0.498932
Adj-CLT UCL (Adjusted for skewness)	0.538226
Mod-t UCL (Adjusted for skewness)	0.505872
Jackknife UCL	0.499742
Standard Bootstrap UCL	0.498297
Bootstrap-t UCL	0.622526
Hall's Bootstrap UCL	0.52667
Percentile Bootstrap UCL	0.501882
BCA Bootstrap UCL	0.560882
95% Chebyshev (Mean, Sd) UCL	**0.679542**
97.5% Chebyshev (Mean, Sd) UCL	0.805055
99% Chebyshev (Mean, Sd) UCL	1.051602

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Carbon Tetrachloride**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	32
Minimum	0.03
Maximum	6.5
Mean	0.41874
Median	0.25
Standard Deviation	0.802404
Variance	0.643852
Coefficient of Variation	1.916234
Skewness	5.275902

Gamma Statistics	
k hat	1.161309
k star (bias corrected)	1.139126
Theta hat	0.360576
Theta star	0.367598
nu hat	294.9725
nu star	289.338
Approx.Chi Square Value (.05)	250.9313
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	250.5245

Log-transformed Statistics	
Minimum of log data	-3.506558
Maximum of log data	1.871802
Mean of log data	-1.359267
Standard Deviation of log data	0.772124
Variance of log data	0.596176

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.445624
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.536724

Gamma Distribution Test	
A-D Test Statistic	23.35289
A-D 5% Critical Value	0.779019
K-S Test Statistic	0.433066
K-S 5% Critical Value	0.084648
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.482831
Adjusted Gamma UCL	0.483615

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.372229
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.39698
95% Chebyshev (MVUE) UCL	0.461256
97.5% Chebyshev (MVUE) UCL	0.511559
99% Chebyshev (MVUE) UCL	0.61037

95% Non-parametric UCLs	
CLT UCL	0.535857
Adj-CLT UCL (Adjusted for skewness)	0.571475
Mod-t UCL (Adjusted for skewness)	0.54228
Jackknife UCL	0.536724
Standard Bootstrap UCL	0.540498
Bootstrap-t UCL	0.62119
Hall's Bootstrap UCL	0.589252
Percentile Bootstrap UCL	0.545827
BCA Bootstrap UCL	0.580866
95% Chebyshev (Mean, Sd) UCL	**0.729102**
97.5% Chebyshev (Mean, Sd) UCL	0.863396
99% Chebyshev (Mean, Sd) UCL	1.12719

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Chloroform**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	23
Minimum	0.11
Maximum	6.5
Mean	0.500236
Median	0.25
Standard Deviation	0.887816
Variance	0.788217
Coefficient of Variation	1.774793
Skewness	4.432877

Gamma Statistics	
k hat	1.251673
k star (bias corrected)	1.227355
Theta hat	0.399654
Theta star	0.407573
nu hat	317.9249
nu star	311.7482
Approx.Chi Square Value (.05)	271.8363
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	271.4125

Log-transformed Statistics	
Minimum of log data	-2.207275
Maximum of log data	1.871802
Mean of log data	-1.142608
Standard Deviation of log data	0.689953
Variance of log data	0.476035

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.429881
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.630779

Gamma Distribution Test	
A-D Test Statistic	34.49104
A-D 5% Critical Value	0.776667
K-S Test Statistic	0.45961
K-S 5% Critical Value	0.08448
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.573683
Adjusted Gamma UCL	0.574578

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.449051
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.455892
95% Chebyshev (MVUE) UCL	0.522748
97.5% Chebyshev (MVUE) UCL	0.574228
99% Chebyshev (MVUE) UCL	0.675351

95% Non-parametric UCLs	
CLT UCL	0.629819
Adj-CLT UCL (Adjusted for skewness)	0.662931
Mod-t UCL (Adjusted for skewness)	0.635944
Jackknife UCL	0.630779
Standard Bootstrap UCL	0.626438
Bootstrap-t UCL	0.685549
Hall's Bootstrap UCL	0.662106
Percentile Bootstrap UCL	0.639921
BCA Bootstrap UCL	0.652362
95% Chebyshev (Mean, Sd) UCL	**0.843634**
97.5% Chebyshev (Mean, Sd) UCL	0.992223
99% Chebyshev (Mean, Sd) UCL	1.284096

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **cis-1,2-Dichloroethene**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	65
Minimum	0.1
Maximum	23
Mean	2.178661
Median	0.58
Standard Deviation	4.0643
Variance	16.51853
Coefficient of Variation	1.865503
Skewness	3.460823

Gamma Statistics	
k hat	0.594158
k star (bias corrected)	0.585372
Theta hat	3.666807
Theta star	3.721843
nu hat	150.916
nu star	148.6844
Approx.Chi Square Value (.05)	121.4962
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	121.2161

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	3.135494
Mean of log data	-0.262714
Standard Deviation of log data	1.361785
Variance of log data	1.854458

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.30452
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2.776269

Gamma Distribution Test	
A-D Test Statistic	8.582897
A-D 5% Critical Value	0.810151
K-S Test Statistic	0.187515
K-S 5% Critical Value	0.08667
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2.666198
Adjusted Gamma UCL	2.672359

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.196912
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2.641266
95% Chebyshev (MVUE) UCL	3.273782
97.5% Chebyshev (MVUE) UCL	3.860894
99% Chebyshev (MVUE) UCL	5.014161

95% Non-parametric UCLs	
CLT UCL	2.771875
Adj-CLT UCL (Adjusted for skewness)	2.890218
Mod-t UCL (Adjusted for skewness)	2.794728
Jackknife UCL	2.776269
Standard Bootstrap UCL	2.76788
Bootstrap-t UCL	2.970153
Hall's Bootstrap UCL	2.874369
Percentile Bootstrap UCL	2.784173
BCA Bootstrap UCL	2.884331
95% Chebyshev (Mean, Sd) UCL	3.750691
97.5% Chebyshev (Mean, Sd) UCL	**4.430909**
99% Chebyshev (Mean, Sd) UCL	5.767067

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Dichlorodifluoromethane**

Raw Statistics	
Number of Valid Samples	126
Number of Unique Samples	39
Minimum	0.14
Maximum	97
Mean	2.822421
Median	0.25
Standard Deviation	10.71744
Variance	114.8635
Coefficient of Variation	3.797251
Skewness	7.113964

Gamma Statistics	
k hat	0.389303
k star (bias corrected)	0.385325
Theta hat	7.249933
Theta star	7.324781
nu hat	98.10436
nu star	97.10187
Approx.Chi Square Value (.05)	75.36748
Adjusted Level of Significance	0.048095
Adjusted Chi Square Value	75.14715

Log-transformed Statistics	
Minimum of log data	-1.966113
Maximum of log data	4.574711
Mean of log data	-0.660111
Standard Deviation of log data	1.393686
Variance of log data	1.942361

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.401183
Lilliefors 5% Critical Value	0.078931
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.404629

Gamma Distribution Test	
A-D Test Statistic	26.25025
A-D 5% Critical Value	0.846165
K-S Test Statistic	0.397703
K-S 5% Critical Value	0.088787
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	3.636347
Adjusted Gamma UCL	3.647009

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.397248
Lilliefors 5% Critical Value	0.078931
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.878533
95% Chebyshev (MVUE) UCL	2.331899
97.5% Chebyshev (MVUE) UCL	2.759047
99% Chebyshev (MVUE) UCL	3.598097

95% Non-parametric UCLs	
CLT UCL	4.392903
Adj-CLT UCL (Adjusted for skewness)	5.039469
Mod-t UCL (Adjusted for skewness)	4.50548
Jackknife UCL	4.404629
Standard Bootstrap UCL	4.404377
Bootstrap-t UCL	7.257021
Hall's Bootstrap UCL	11.33476
Percentile Bootstrap UCL	4.581032
BCA Bootstrap UCL	5.245198
95% Chebyshev (Mean, Sd) UCL	6.984234
97.5% Chebyshev (Mean, Sd) UCL	**8.785054**
99% Chebyshev (Mean, Sd) UCL	12.32242

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Methyl tert-Butyl Ether**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	53
Minimum	0.075
Maximum	45
Mean	2.692677
Median	0.25
Standard Deviation	6.529307
Variance	42.63185
Coefficient of Variation	2.424838
Skewness	3.805853

Gamma Statistics	
k hat	0.454432
k star (bias corrected)	0.448947
Theta hat	5.925367
Theta star	5.997764
nu hat	115.4258
nu star	114.0325
Approx.Chi Square Value (.05)	90.37545
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	90.1352

Log-transformed Statistics	
Minimum of log data	-2.590267
Maximum of log data	3.806662
Mean of log data	-0.428296
Standard Deviation of log data	1.416
Variance of log data	2.005056

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.381145
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	3.652735

Gamma Distribution Test	
A-D Test Statistic	18.72608
A-D 5% Critical Value	0.830246
K-S Test Statistic	0.267337
K-S 5% Critical Value	0.087764
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	3.397523
Adjusted Gamma UCL	3.406579

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.278214
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2.460331
95% Chebyshev (MVUE) UCL	3.05654
97.5% Chebyshev (MVUE) UCL	3.622527
99% Chebyshev (MVUE) UCL	4.734299

95% Non-parametric UCLs	
CLT UCL	3.645676
Adj-CLT UCL (Adjusted for skewness)	3.854748
Mod-t UCL (Adjusted for skewness)	3.685346
Jackknife UCL	3.652735
Standard Bootstrap UCL	3.646192
Bootstrap-t UCL	4.051114
Hall's Bootstrap UCL	3.948326
Percentile Bootstrap UCL	3.652795
BCA Bootstrap UCL	3.911181
95% Chebyshev (Mean, Sd) UCL	5.218146
97.5% Chebyshev (Mean, Sd) UCL	**6.310918**
99% Chebyshev (Mean, Sd) UCL	8.457458

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Tetrachloroethene**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	86
Minimum	0.055
Maximum	350
Mean	16.22415
Median	0.72
Standard Deviation	49.92674
Variance	2492.679
Coefficient of Variation	3.07731
Skewness	4.403257

Gamma Statistics	
k hat	0.289701
k star (bias corrected)	0.288107
Theta hat	56.00307
Theta star	56.31291
nu hat	73.58407
nu star	73.1792
Approx.Chi Square Value (.05)	54.47653
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	54.29211

Log-transformed Statistics	
Minimum of log data	-2.900422
Maximum of log data	5.857933
Mean of log data	0.392636
Standard Deviation of log data	2.007462
Variance of log data	4.029902

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.373023
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	23.56529

Gamma Distribution Test	
A-D Test Statistic	13.55066
A-D 5% Critical Value	0.872651
K-S Test Statistic	0.254746
K-S 5% Critical Value	0.089722
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	21.79416
Adjusted Gamma UCL	21.86819

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.165274
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	19.86036
95% Chebyshev (MVUE) UCL	23.85611
97.5% Chebyshev (MVUE) UCL	29.5881
99% Chebyshev (MVUE) UCL	40.84749

95% Non-parametric UCLs	
CLT UCL	23.51131
Adj-CLT UCL (Adjusted for skewness)	25.36094
Mod-t UCL (Adjusted for skewness)	23.85379
Jackknife UCL	23.56529
Standard Bootstrap UCL	23.35232
Bootstrap-t UCL	27.43249
Hall's Bootstrap UCL	25.67289
Percentile Bootstrap UCL	23.84356
BCA Bootstrap UCL	25.97268
95% Chebyshev (Mean, Sd) UCL	35.5353
97.5% Chebyshev (Mean, Sd) UCL	43.89125
99% Chebyshev (Mean, Sd) UCL	**60.30489**

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Toluene**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	19
Minimum	0.04
Maximum	800
Mean	16.59858
Median	0.25
Standard Deviation	102.8371
Variance	10575.47
Coefficient of Variation	6.195534
Skewness	7.252491

Gamma Statistics	
k hat	0.196551
k star (bias corrected)	0.197157
Theta hat	84.44944
Theta star	84.18969
nu hat	49.92384
nu star	50.07787
Approx.Chi Square Value (.05)	34.8265
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	34.68089

Log-transformed Statistics	
Minimum of log data	-3.218876
Maximum of log data	6.684612
Mean of log data	-0.945017
Standard Deviation of log data	1.576183
Variance of log data	2.484353

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.484141
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	31.71957

Gamma Distribution Test	
A-D Test Statistic	41.75003
A-D 5% Critical Value	0.917279
K-S Test Statistic	0.496339
K-S 5% Critical Value	0.091508
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	23.8675
Adjusted Gamma UCL	23.96772

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.452768
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.982257
95% Chebyshev (MVUE) UCL	2.467726
97.5% Chebyshev (MVUE) UCL	2.965392
99% Chebyshev (MVUE) UCL	3.94296

95% Non-parametric UCLs	
CLT UCL	31.60839
Adj-CLT UCL (Adjusted for skewness)	37.88339
Mod-t UCL (Adjusted for skewness)	32.69834
Jackknife UCL	31.71957
Standard Bootstrap UCL	31.76815
Bootstrap-t UCL	75.42766
Hall's Bootstrap UCL	89.93378
Percentile Bootstrap UCL	33.56433
BCA Bootstrap UCL	41.17772
95% Chebyshev (Mean, Sd) UCL	56.37491
97.5% Chebyshev (Mean, Sd) UCL	**73.58616**
99% Chebyshev (Mean, Sd) UCL	107.3943

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Trichloroethene**

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	78
Minimum	0.11
Maximum	280
Mean	26.1102
Median	4.3
Standard Deviation	57.58792
Variance	3316.368
Coefficient of Variation	2.205572
Skewness	3.184149

Gamma Statistics	
k hat	0.367268
k star (bias corrected)	0.363842
Theta hat	71.09295
Theta star	71.76243
nu hat	93.28619
nu star	92.41591
Approx.Chi Square Value (.05)	71.24291
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	71.03066

Log-transformed Statistics	
Minimum of log data	-2.207275
Maximum of log data	5.63479
Mean of log data	1.445697
Standard Deviation of log data	2.07896
Variance of log data	4.322076

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.343283
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	34.57782

Gamma Distribution Test	
A-D Test Statistic	4.926847
A-D 5% Critical Value	0.851577
K-S Test Statistic	0.137678
K-S 5% Critical Value	0.088763
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	33.87
Adjusted Gamma UCL	33.97121

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.108739
Lilliefors 5% Critical Value	0.07862
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	68.32555
95% Chebyshev (MVUE) UCL	81.04725
97.5% Chebyshev (MVUE) UCL	100.9727
99% Chebyshev (MVUE) UCL	140.1125

95% Non-parametric UCLs	
CLT UCL	34.51557
Adj-CLT UCL (Adjusted for skewness)	36.05834
Mod-t UCL (Adjusted for skewness)	34.81846
Jackknife UCL	34.57782
Standard Bootstrap UCL	34.26027
Bootstrap-t UCL	37.15589
Hall's Bootstrap UCL	35.66431
Percentile Bootstrap UCL	34.42252
BCA Bootstrap UCL	36.45858
95% Chebyshev (Mean, Sd) UCL	48.38461
97.5% Chebyshev (Mean, Sd) UCL	58.02277
99% Chebyshev (Mean, Sd) UCL	**76.95506**

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Benzo(a)pyrene**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	6
Minimum	0.05
Maximum	5.5
Mean	2.48129
Median	0.12
Standard Deviation	2.54753
Variance	6.489912
Coefficient of Variation	1.026696
Skewness	0.075154

Gamma Statistics	
k hat	0.406239
k star (bias corrected)	0.388431
Theta hat	6.107955
Theta star	6.387982
nu hat	25.18682
nu star	24.08272
Approx.Chi Square Value (.05)	13.90986
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	13.47953

Log-transformed Statistics	
Minimum of log data	-2.995732
Maximum of log data	1.704748
Mean of log data	-0.707019
Standard Deviation of log data	2.299303
Variance of log data	5.286793

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.655838
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	3.257872

Gamma Distribution Test	
A-D Test Statistic	5.042724
A-D 5% Critical Value	0.830659
K-S Test Statistic	0.326532
K-S 5% Critical Value	0.168829
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	4.295961
Adjusted Gamma UCL	4.43311

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.660244
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	41.67425
95% Chebyshev (MVUE) UCL	18.67328
97.5% Chebyshev (MVUE) UCL	24.43351
99% Chebyshev (MVUE) UCL	35.74836

95% Non-parametric UCLs	
CLT UCL	3.233893
Adj-CLT UCL (Adjusted for skewness)	3.240492
Mod-t UCL (Adjusted for skewness)	3.258901
Jackknife UCL	3.257872
Standard Bootstrap UCL	3.216572
Bootstrap-t UCL	3.192126
Hall's Bootstrap UCL	3.227321
Percentile Bootstrap UCL	3.167419
BCA Bootstrap UCL	3.280323
95% Chebyshev (Mean, Sd) UCL	4.475704
97.5% Chebyshev (Mean, Sd) UCL	5.338689
99% Chebyshev (Mean, Sd) UCL	**7.033855**

Recommended UCL exceeds the maximum observation

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **alpha-Chlordane**

Raw Statistics	
Number of Valid Samples	30
Number of Unique Samples	5
Minimum	0.025
Maximum	0.56
Mean	0.04355
Median	0.025
Standard Deviation	0.097597
Variance	9.53E-03
Coefficient of Variation	2.241042
Skewness	5.467416

Gamma Statistics	
k hat	1.307558
k star (bias corrected)	1.199025
Theta hat	0.033306
Theta star	0.036321
nu hat	78.45351
nu star	71.94149
Approx.Chi Square Value (.05)	53.40838
Adjusted Level of Significance	0.041
Adjusted Chi Square Value	52.48734

Log-transformed Statistics	
Minimum of log data	-3.688879
Maximum of log data	-0.579818
Mean of log data	-3.562659
Standard Deviation of log data	0.572103
Variance of log data	0.327302

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.19773
Shapiro-Wilk 5% Critical Value	0.927
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.073826

Gamma Distribution Test	
A-D Test Statistic	10.69802
A-D 5% Critical Value	0.767822
K-S Test Statistic	0.513489
K-S 5% Critical Value	0.163609
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.058662
Adjusted Gamma UCL	0.059692

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.241465
Shapiro-Wilk 5% Critical Value	0.927
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.041285
95% Chebyshev (MVUE) UCL	0.049168
97.5% Chebyshev (MVUE) UCL	0.056078
99% Chebyshev (MVUE) UCL	0.069652

95% Non-parametric UCLs	
CLT UCL	0.072859
Adj-CLT UCL (Adjusted for skewness)	0.091865
Mod-t UCL (Adjusted for skewness)	0.076791
Jackknife UCL	0.073826
Standard Bootstrap UCL	0.072602
Bootstrap-t UCL	4.775159
Hall's Bootstrap UCL	3.178143
Percentile Bootstrap UCL	0.0791
BCA Bootstrap UCL	0.09735
95% Chebyshev (Mean, Sd) UCL	**0.12122**
97.5% Chebyshev (Mean, Sd) UCL	0.154828
99% Chebyshev (Mean, Sd) UCL	0.220844

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Dieldrin**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	4
Minimum	0.038
Maximum	0.073
Mean	0.050677
Median	0.05
Standard Deviation	0.004861
Variance	2.36E-05
Coefficient of Variation	0.095913
Skewness	2.866719

Gamma Statistics	
k hat	126.6348
k star (bias corrected)	114.4013
Theta hat	0.0004
Theta star	0.000443
nu hat	7851.356
nu star	7092.881
Approx.Chi Square Value (.05)	6898.074
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	6887.444

Log-transformed Statistics	
Minimum of log data	-3.270169
Maximum of log data	-2.617296
Mean of log data	-2.986228
Standard Deviation of log data	0.088298
Variance of log data	0.007797

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.430505
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.052159

Gamma Distribution Test	
A-D Test Statistic	8.106583
A-D 5% Critical Value	0.745272
K-S Test Statistic	0.451555
K-S 5% Critical Value	0.157296
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.052109
Adjusted Gamma UCL	0.052189

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.456999
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	N/A
95% Chebyshev (MVUE) UCL	0.054176
97.5% Chebyshev (MVUE) UCL	0.055694
99% Chebyshev (MVUE) UCL	0.058675

95% Non-parametric UCLs	
CLT UCL	0.052113
Adj-CLT UCL (Adjusted for skewness)	0.052594
Mod-t UCL (Adjusted for skewness)	**0.052234**
Jackknife UCL	0.052159
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.054483
97.5% Chebyshev (Mean, Sd) UCL	0.056129
99% Chebyshev (Mean, Sd) UCL	0.059364

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **gamma-Chlordane**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	7
Minimum	0.022
Maximum	0.99
Mean	0.083113
Median	0.025
Standard Deviation	0.225372
Variance	0.050793
Coefficient of Variation	2.711636
Skewness	3.763544

Gamma Statistics	
k hat	0.633845
k star (bias corrected)	0.59401
Theta hat	0.131125
Theta star	0.139918
nu hat	39.29836
nu star	36.82863
Approx.Chi Square Value (.05)	23.93436
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	23.35571

Log-transformed Statistics	
Minimum of log data	-3.816713
Maximum of log data	-0.01005
Mean of log data	-3.454573
Standard Deviation of log data	0.901424
Variance of log data	0.812565

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.280183
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.151815

Gamma Distribution Test	
A-D Test Statistic	11.21267
A-D 5% Critical Value	0.79799
K-S Test Statistic	0.557091
K-S 5% Critical Value	0.165257
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.127889
Adjusted Gamma UCL	0.131057

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.29437
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.069401
95% Chebyshev (MVUE) UCL	0.083688
97.5% Chebyshev (MVUE) UCL	0.099734
99% Chebyshev (MVUE) UCL	0.131255

95% Non-parametric UCLs	
CLT UCL	0.149693
Adj-CLT UCL (Adjusted for skewness)	0.178929
Mod-t UCL (Adjusted for skewness)	0.156375
Jackknife UCL	0.151815
Standard Bootstrap UCL	0.148928
Bootstrap-t UCL	21.20209
Hall's Bootstrap UCL	16.07242
Percentile Bootstrap UCL	0.145516
BCA Bootstrap UCL	0.194839
95% Chebyshev (Mean, Sd) UCL	**0.259552**
97.5% Chebyshev (Mean, Sd) UCL	0.335898
99% Chebyshev (Mean, Sd) UCL	0.485864

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Heptachlor epoxide**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	5
Minimum	0.025
Maximum	0.13
Mean	0.028532
Median	0.025
Standard Deviation	0.018837
Variance	0.000355
Coefficient of Variation	0.660215
Skewness	5.562301

Gamma Statistics	
k hat	6.979134
k star (bias corrected)	6.32524
Theta hat	0.004088
Theta star	0.004511
nu hat	432.7063
nu star	392.1649
Approx.Chi Square Value (.05)	347.2548
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	344.9115

Log-transformed Statistics	
Minimum of log data	-3.688879
Maximum of log data	-2.040221
Mean of log data	-3.630069
Standard Deviation of log data	0.295619
Variance of log data	0.08739

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.194301
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.034275

Gamma Distribution Test	
A-D Test Statistic	11.01094
A-D 5% Critical Value	0.746705
K-S Test Statistic	0.474663
K-S 5% Critical Value	0.157912
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.032222
Adjusted Gamma UCL	0.032441

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.209463
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.030509
95% Chebyshev (MVUE) UCL	0.034163
97.5% Chebyshev (MVUE) UCL	0.036977
99% Chebyshev (MVUE) UCL	0.042506

95% Non-parametric UCLs	
CLT UCL	0.034097
Adj-CLT UCL (Adjusted for skewness)	0.037709
Mod-t UCL (Adjusted for skewness)	**0.034838**
Jackknife UCL	0.034275
Standard Bootstrap UCL	0.034131
Bootstrap-t UCL	0.232504
Hall's Bootstrap UCL	0.227422
Percentile Bootstrap UCL	0.035258
BCA Bootstrap UCL	0.038694
95% Chebyshev (Mean, Sd) UCL	0.04328
97.5% Chebyshev (Mean, Sd) UCL	0.049661
99% Chebyshev (Mean, Sd) UCL	0.062196

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Arsenic**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	3
Minimum	0.5
Maximum	4
Mean	2.245161
Median	2.1
Standard Deviation	1.750207
Variance	3.063226
Coefficient of Variation	0.779546
Skewness	0.008844

Gamma Statistics	
k hat	1.252894
k star (bias corrected)	1.153152
Theta hat	1.79198
Theta star	1.946979
nu hat	77.67943
nu star	71.4954
Approx.Chi Square Value (.05)	53.02376
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	52.13912

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	1.386294
Mean of log data	0.359327
Standard Deviation of log data	1.042143
Variance of log data	1.086062

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.651589
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2.778689

Gamma Distribution Test	
A-D Test Statistic	5.123629
A-D 5% Critical Value	0.769563
K-S Test Statistic	0.330978
K-S 5% Critical Value	0.161501
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	3.027298
Adjusted Gamma UCL	3.078661

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.648718
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3.94658
95% Chebyshev (MVUE) UCL	4.678535
97.5% Chebyshev (MVUE) UCL	5.663338
99% Chebyshev (MVUE) UCL	7.597792

95% Non-parametric UCLs	
CLT UCL	2.762215
Adj-CLT UCL (Adjusted for skewness)	2.762749
Mod-t UCL (Adjusted for skewness)	2.778772
Jackknife UCL	2.778689
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	**3.615366**
97.5% Chebyshev (Mean, Sd) UCL	4.208255
99% Chebyshev (Mean, Sd) UCL	5.37287

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Recommended UCL exceeds the maximum observation
Consider using 95% or 97.5% Chebyshev (Mean, Sd) UCL

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Barium**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	16
Minimum	3
Maximum	297
Mean	84.72581
Median	100
Standard Deviation	58.97116
Variance	3477.597
Coefficient of Variation	0.696024
Skewness	1.660177

Gamma Statistics	
k hat	1.600391
k star (bias corrected)	1.46702
Theta hat	52.94068
Theta star	57.75367
nu hat	99.22427
nu star	90.95525
Approx.Chi Square Value (.05)	69.96015
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	68.93665

Log-transformed Statistics	
Minimum of log data	1.098612
Maximum of log data	5.693732
Mean of log data	4.095555
Standard Deviation of log data	1.052813
Variance of log data	1.108415

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.76832
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	102.7024

Gamma Distribution Test	
A-D Test Statistic	2.614519
A-D 5% Critical Value	0.76273
K-S Test Statistic	0.260838
K-S 5% Critical Value	0.16044
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	110.1521
Adjusted Gamma UCL	111.7875

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.764139
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	168.6007
95% Chebyshev (MVUE) UCL	199.4851
97.5% Chebyshev (MVUE) UCL	241.7428
99% Chebyshev (MVUE) UCL	324.7497

95% Non-parametric UCLs	
CLT UCL	102.1473
Adj-CLT UCL (Adjusted for skewness)	105.5219
Mod-t UCL (Adjusted for skewness)	103.2288
Jackknife UCL	102.7024
Standard Bootstrap UCL	101.9734
Bootstrap-t UCL	106.708
Hall's Bootstrap UCL	120.5786
Percentile Bootstrap UCL	102.4355
BCA Bootstrap UCL	107.871
95% Chebyshev (Mean, Sd) UCL	130.8932
97.5% Chebyshev (Mean, Sd) UCL	150.8699
99% Chebyshev (Mean, Sd) UCL	**190.1102**

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Chromium**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	19
Minimum	0.6
Maximum	34.3
Mean	7.522903
Median	3.8
Standard Deviation	7.924556
Variance	62.79859
Coefficient of Variation	1.053391
Skewness	1.870551

Gamma Statistics	
k hat	1.19425
k star (bias corrected)	1.100183
Theta hat	6.299271
Theta star	6.837867
nu hat	74.04349
nu star	68.21133
Approx.Chi Square Value (.05)	50.1983
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	49.33888

Log-transformed Statistics	
Minimum of log data	-0.510826
Maximum of log data	3.535145
Mean of log data	1.544082
Standard Deviation of log data	1.011619
Variance of log data	1.023373

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.759316
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	9.938601

Gamma Distribution Test	
A-D Test Statistic	0.973432
A-D 5% Critical Value	0.770945
K-S Test Statistic	0.191608
K-S 5% Critical Value	0.161718
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	10.2224
Adjusted Gamma UCL	10.40046

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.953812
Shapiro-Wilk 5% Critical Value	0.929
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	**12.25332**
95% Chebyshev (MVUE) UCL	14.59884
97.5% Chebyshev (MVUE) UCL	17.61494
99% Chebyshev (MVUE) UCL	23.53948

95% Non-parametric UCLs	
CLT UCL	9.864011
Adj-CLT UCL (Adjusted for skewness)	10.37494
Mod-t UCL (Adjusted for skewness)	10.0183
Jackknife UCL	9.938601
Standard Bootstrap UCL	9.819257
Bootstrap-t UCL	10.76839
Hall's Bootstrap UCL	10.88634
Percentile Bootstrap UCL	10.00742
BCA Bootstrap UCL	10.53097
95% Chebyshev (Mean, Sd) UCL	13.72689
97.5% Chebyshev (Mean, Sd) UCL	16.41136
99% Chebyshev (Mean, Sd) UCL	21.68448

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Copper**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	5
Minimum	5
Maximum	249
Mean	18.1871
Median	12.5
Standard Deviation	43.50044
Variance	1892.288
Coefficient of Variation	2.39183
Skewness	5.31289

Gamma Statistics	
k hat	0.929198
k star (bias corrected)	0.860781
Theta hat	19.5729
Theta star	21.1286
nu hat	57.61026
nu star	53.36841
Approx.Chi Square Value (.05)	37.58242
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	36.84534

Log-transformed Statistics	
Minimum of log data	1.609438
Maximum of log data	5.517453
Mean of log data	2.274027
Standard Deviation of log data	0.833635
Variance of log data	0.694948

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.291242
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	31.44764

Gamma Distribution Test	
A-D Test Statistic	4.817222
A-D 5% Critical Value	0.778992
K-S Test Statistic	0.395961
K-S 5% Critical Value	0.162861
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	25.82634
Adjusted Gamma UCL	26.34299

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.703638
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	19.33736
95% Chebyshev (MVUE) UCL	23.39375
97.5% Chebyshev (MVUE) UCL	27.65044
99% Chebyshev (MVUE) UCL	36.01188

95% Non-parametric UCLs	
CLT UCL	31.03819
Adj-CLT UCL (Adjusted for skewness)	39.00424
Mod-t UCL (Adjusted for skewness)	32.69019
Jackknife UCL	31.44764
Standard Bootstrap UCL	30.79245
Bootstrap-t UCL	96.65476
Hall's Bootstrap UCL	75.52112
Percentile Bootstrap UCL	33.35806
BCA Bootstrap UCL	48.30645
95% Chebyshev (Mean, Sd) UCL	**52.24278**
97.5% Chebyshev (Mean, Sd) UCL	66.9787
99% Chebyshev (Mean, Sd) UCL	95.92457

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Iron**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	23
Minimum	45.9
Maximum	26000
Mean	3167.832
Median	178
Standard Deviation	5613.901
Variance	31515884
Coefficient of Variation	1.772159
Skewness	2.572474

Gamma Statistics	
k hat	0.334509
k star (bias corrected)	0.323643
Theta hat	9470.09
Theta star	9788.053
nu hat	20.73957
nu star	20.06585
Approx.Chi Square Value (.05)	10.8982
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	10.52232

Log-transformed Statistics	
Minimum of log data	3.826465
Maximum of log data	10.16585
Mean of log data	6.035693
Standard Deviation of log data	2.235776
Variance of log data	4.998692

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.621497
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4879.157

Gamma Distribution Test	
A-D Test Statistic	2.723438
A-D 5% Critical Value	0.846641
K-S Test Statistic	0.273074
K-S 5% Critical Value	0.170403
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5832.636
Adjusted Gamma UCL	6040.992

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.814053
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	27964.28
95% Chebyshev (MVUE) UCL	13700.89
97.5% Chebyshev (MVUE) UCL	17889.17
99% Chebyshev (MVUE) UCL	26116.23

95% Non-parametric UCLs	
CLT UCL	4826.316
Adj-CLT UCL (Adjusted for skewness)	5324.092
Mod-t UCL (Adjusted for skewness)	4956.8
Jackknife UCL	4879.157
Standard Bootstrap UCL	4771.702
Bootstrap-t UCL	5608.761
Hall's Bootstrap UCL	6500.206
Percentile Bootstrap UCL	4935.91
BCA Bootstrap UCL	5296.016
95% Chebyshev (Mean, Sd) UCL	7562.851
97.5% Chebyshev (Mean, Sd) UCL	9464.579
99% Chebyshev (Mean, Sd) UCL	**13200.16**

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Lead**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	8
Minimum	3.5
Maximum	27
Mean	6.822581
Median	5
Standard Deviation	6.257886
Variance	39.16114
Coefficient of Variation	0.917232
Skewness	2.507541

Gamma Statistics	
k hat	2.366454
k star (bias corrected)	2.158948
Theta hat	2.883039
Theta star	3.160141
nu hat	146.7202
nu star	133.8548
Approx.Chi Square Value (.05)	108.1209
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	106.8363

Log-transformed Statistics	
Minimum of log data	1.252763
Maximum of log data	3.295837
Mean of log data	1.694317
Standard Deviation of log data	0.590036
Variance of log data	0.348143

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.551235
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	8.730216

Gamma Distribution Test	
A-D Test Statistic	4.446812
A-D 5% Critical Value	0.756511
K-S Test Statistic	0.397871
K-S 5% Critical Value	0.15948
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	8.446423
Adjusted Gamma UCL	8.547986

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.702861
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	8.036454
95% Chebyshev (MVUE) UCL	9.588966
97.5% Chebyshev (MVUE) UCL	10.95328
99% Chebyshev (MVUE) UCL	13.63322

95% Non-parametric UCLs	
CLT UCL	8.671313
Adj-CLT UCL (Adjusted for skewness)	9.212185
Mod-t UCL (Adjusted for skewness)	8.814581
Jackknife UCL	8.730216
Standard Bootstrap UCL	8.651983
Bootstrap-t UCL	9.811151
Hall's Bootstrap UCL	8.739483
Percentile Bootstrap UCL	8.832258
BCA Bootstrap UCL	9.429032
95% Chebyshev (Mean, Sd) UCL	**11.72176**
97.5% Chebyshev (Mean, Sd) UCL	13.84164
99% Chebyshev (Mean, Sd) UCL	18.00574

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Manganese**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	25
Minimum	2.5
Maximum	462
Mean	134.3726
Median	60
Standard Deviation	145.1689
Variance	21074.01
Coefficient of Variation	1.080346
Skewness	0.906093

Gamma Statistics	
k hat	0.645976
k star (bias corrected)	0.604968
Theta hat	208.0147
Theta star	222.1153
nu hat	40.05053
nu star	37.508
Approx.Chi Square Value (.05)	24.48334
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	23.89756

Log-transformed Statistics	
Minimum of log data	0.916291
Maximum of log data	6.135565
Mean of log data	3.954353
Standard Deviation of log data	1.678096
Variance of log data	2.816007

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.823396
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	178.6254

Gamma Distribution Test	
A-D Test Statistic	0.749425
A-D 5% Critical Value	0.796922
K-S Test Statistic	0.141145
K-S 5% Critical Value	0.16512
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	**205.8562**
Adjusted Gamma UCL	210.9022

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.905571
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	591.7142
95% Chebyshev (MVUE) UCL	523.9788
97.5% Chebyshev (MVUE) UCL	667.0548
99% Chebyshev (MVUE) UCL	948.0997

95% Non-parametric UCLs	
CLT UCL	177.259
Adj-CLT UCL (Adjusted for skewness)	181.7928
Mod-t UCL (Adjusted for skewness)	179.3326
Jackknife UCL	178.6254
Standard Bootstrap UCL	176.3445
Bootstrap-t UCL	184.0707
Hall's Bootstrap UCL	182.2963
Percentile Bootstrap UCL	177.5161
BCA Bootstrap UCL	182.5452
95% Chebyshev (Mean, Sd) UCL	248.0226
97.5% Chebyshev (Mean, Sd) UCL	297.1991
99% Chebyshev (Mean, Sd) UCL	393.7967

Groundwater ProUCL Output
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Data File **C:\Project\Roosevelt\PAR\Roosevelt_App(** Variable: **Nickel**

Raw Statistics	
Number of Valid Samples	31
Number of Unique Samples	15
Minimum	2.5
Maximum	93
Mean	20.56613
Median	19
Standard Deviation	23.12585
Variance	534.8049
Coefficient of Variation	1.124463
Skewness	2.052007

Gamma Statistics	
k hat	1.027852
k star (bias corrected)	0.949888
Theta hat	20.00885
Theta star	21.65112
nu hat	63.72682
nu star	58.89304
Approx.Chi Square Value (.05)	42.24554
Adjusted Level of Significance	0.0413
Adjusted Chi Square Value	41.46116

Log-transformed Statistics	
Minimum of log data	0.916291
Maximum of log data	4.532599
Mean of log data	2.463864
Standard Deviation of log data	1.128517
Variance of log data	1.27355

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.714676
Shapiro-Wilk 5% Critical Value	0.929
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	27.61574

Gamma Distribution Test	
A-D Test Statistic	1.217042
A-D 5% Critical Value	0.774867
K-S Test Statistic	0.218764
K-S 5% Critical Value	0.162331
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	28.67053
Adjusted Gamma UCL	29.21293

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.886149
Shapiro-Wilk 5% Critical Value	0.929
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	37.78714
95% Chebyshev (MVUE) UCL	43.98059
97.5% Chebyshev (MVUE) UCL	53.7013
99% Chebyshev (MVUE) UCL	72.79574

95% Non-parametric UCLs	
CLT UCL	27.39807
Adj-CLT UCL (Adjusted for skewness)	29.03374
Mod-t UCL (Adjusted for skewness)	27.87088
Jackknife UCL	27.61574
Standard Bootstrap UCL	27.3343
Bootstrap-t UCL	30.45775
Hall's Bootstrap UCL	32.00223
Percentile Bootstrap UCL	28.01613
BCA Bootstrap UCL	28.23226
95% Chebyshev (Mean, Sd) UCL	38.67093
97.5% Chebyshev (Mean, Sd) UCL	46.50489
99% Chebyshev (Mean, Sd) UCL	**61.89318**

Appendix D

Appendix D

Shower Model – Input Assumptions and Estimated Air Concentrations

List of Tables Included in Appendix D
Old Roosevelt Field Contaminated Groundwater Site - Garden City, New York

TABLES

1 Values Used for Shower Model - Adult
2 Values Used for Shower Model - Child
3 Medium-Specific Exposure Point Concentration Summary - Groundwater - Adult
4 Medium-Specific Exposure Point Concentration Summary - Groundwater - Child

TABLE D-1
VALUES USED FOR SHOWER MODEL
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Air
Receptor Population:	Resident
Receptor Age:	Adult

Exposure Route	Parameter Code	Parameter Definition	Unit	RME Value	RME Reference	CTE Value	CTE Reference	Intake Equation/ Model Name
Inhalation	CW	Chemical Concentration in Water	µg/L	See Table 3	See Table 3	See Table 3	See Table 3	Maximum air concentration in bathroom
	f	Fraction volatilized	--	chem-specific	Schaum et al. (1)	chem-specific	Schaum et al. (1)	(Camax) (µg/m^3) =
	Fw	Water flow rate	L/hr	1000	Schaum et al.	500	Schaum et al.	CW x f x Fw x t1 x 1/Va
	t1	Time of shower	hr	0.25	EPA 2001e	0.10	EPA 2001e	
	Va	Bathroom volume	m^3	6	Schaum et al.	16	Schaum et al.	EPC (µg/m^3) =
	t2	Time after shower in bathroom	hr	0.33	EPA 2001	0.15	EPA 2001	(((Camax/2) x t1) + (Camax x t2)) / (t1 + t2)

RME = Reasonable Maximum Exposure.

CTE = Central Tendency Exposure

EPC = Exposure Point Concentration, the average air concentration in the bathroom during and after shower

(1) Applies only to volatile chemicals.

Sources:

EPA 2001b: Personal communication with M. Olsen of EPA Region 2, July 13, 2001. Based on EPA Region 2 and the Andelman model as modified by Schaum et al.

Schaum et al. 1994. Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water. Water Contamination and Health, edited by Rhoda G.M. Wang. New York: Marcel Dekker, Inc.

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TABLE D-2
VALUES USED FOR SHOWER MODEL
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Air
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Exposure Route	Parameter Code	Parameter Definition	Unit	RME Value	RME Reference	CTE Value	CTE Reference	Intake Equation/ Model Name
Inhalation	CW	Chemical Concentration in Water	µg/L	See Table 3	See Table 3	See Table 3	See Table 3	Maximum air concentration in bathroom
	f	Fraction volatilized	--	chem-specific	Schaum et al. (1)	chem-specific	Schaum et al. (1)	(Camax) (µg/m^3) =
	Fw	Water flow rate	L/hr	1000	Schaum et al.	500	Schaum et al.	CW x f x Fw x t1 x 1/Va
	t1	Time of shower	hr	0.45	EPA 2001	0.14	EPA 2001	
	Va	Bathroom volume	m^3	6	Schaum et al.	16	Schaum et al.	EPC (µg/m^3) =
	t2	Time after shower in bathroom	hr	0.55	EPA 2001	0.19	EPA 2001	(((Camax/2) x t1) + (Camax x t2)) / (t1 + t2)

RME = Reasonable Maximum Exposure.

CTE = Central Tendency Exposure

EPC = Exposure Point Concentration, the average air concentration in the bathroom during and after shower

(1) Applies only to volatile chemicals.

Sources:

EPA 2001b: Personal communication with M. Olsen of EPA Region 2, July 13, 2001. Based on EPA Region 2 and the Andelman model as modified by Schaum et al.

Schaum et al. 1994. Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water. Water Contamination and Health, edited by Rhoda G.M. Wang. New York: Marcel Dekker, Inc.

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TABLE D-3
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Current
Medium:	Groundwater - Monitoring Wells
Exposure Medium:	Air
Receptor Population:	Resident
Receptor Age:	Adult

Exposure Point	Chemical of Potential Concern	Groundwater EPC Value (µg/L)	Reasonable Maximum Exposure				Central Tendency Exposure			
			Fraction Volatilized	Camax Value (µg/m^3)	Medium EPC Value	Medium EPC Units	Fraction Volatilized	Camax Value (µg/m^3)	Medium EPC Value	Medium EPC Units
Water Vapor at Showerhead	**VOCs**									
	Benzene	6.8E-01	5.1E-01	1.4E+01	1.1E+01	µg/m^3	5.1E-01	1.1E+00	8.7E-01	µg/m^3
	Carbon Tetrachloride	7.3E-01	4.8E-01	1.4E+01	1.1E+01	µg/m^3	4.8E-01	1.1E+00	8.7E-01	µg/m^3
	Chloroform	8.4E-01	5.2E-01	1.8E+01	1.4E+01	µg/m^3	5.2E-01	1.4E+00	1.1E+00	µg/m^3
	cis-1,2-Dichloroethene	4.4E+00	5.6E-01	1.0E+02	8.2E+01	µg/m^3	5.6E-01	7.8E+00	6.2E+00	µg/m^3
	Dichlorodifluoromethane	8.8E+00	5.4E-01	2.0E+02	1.5E+02	µg/m^3	5.4E-01	1.5E+01	1.2E+01	µg/m^3
	Methyl tert-Butyl Ether	6.3E+00	5.2E-01	1.4E+02	1.1E+02	µg/m^3	5.2E-01	1.0E+01	8.2E+00	µg/m^3
	Tetrachloroethene	6.0E+01	4.5E-01	1.1E+03	9.0E+02	µg/m^3	4.5E-01	8.6E+01	6.8E+01	µg/m^3
	Toluene	7.4E+01	4.7E-01	1.4E+03	1.1E+03	µg/m^3	4.7E-01	1.1E+02	8.6E+01	µg/m^3
	Trichloroethene	7.7E+01	4.9E-01	1.6E+03	1.2E+03	µg/m^3	4.9E-01	1.2E+02	9.4E+01	µg/m^3
	SVOCs									
	Benzo(a)pyrene	1.2E-01	4.8E-01	2.4E+00	1.9E+00	µg/m^3	4.8E-01	1.8E-01	1.5E-01	µg/m^3
	Pesticides									
	alpha-Chlordane	1.2E-01	3.0E-01	1.5E+00	1.2E+00	µg/m^3	3.0E-01	1.1E-01	9.0E-02	µg/m^3
	Dieldrin	5.2E-02	3.1E-01	6.8E-01	5.4E-01	µg/m^3	3.1E-01	5.1E-02	4.1E-02	µg/m^3
	gamma-Chlordane	2.6E-01	3.0E-01	3.2E+00	2.5E+00	µg/m^3	3.0E-01	2.4E-01	1.9E-01	µg/m^3
	Heptachlor epoxide	3.5E-02	2.9E-01	4.2E-01	3.3E-01	µg/m^3	2.9E-01	3.2E-02	2.5E-02	µg/m^3
	INORGs									
	Arsenic	2.1E+00	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	1.9E+02	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	1.2E+01	NA	NA	NA	NA	NA	NA	NA	NA
	Copper	5.2E+01	NA	NA	NA	NA	NA	NA	NA	NA
	Iron	1.3E+04	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	1.2E+01	NA	NA	NA	NA	NA	NA	NA	NA
	Manganese	2.1E+02	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	6.2E+01	NA	NA	NA	NA	NA	NA	NA	NA

EPC = Exposure Point Concentration

Camax = Maximum concentration of contaminant in air

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TABLE D-4
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Medium:	Groundwater - Monitoring Wells
Exposure Medium:	Air
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Exposure Point	Chemical of Potential Concern	Groundwater EPC Value (µg/L)	Reasonable Maximum Exposure				Central Tendency Exposure			
			Fraction Volatilized	Camax Value (µg/m³)	Medium EPC Value	Medium EPC Units	Fraction Volatilized	Camax Value (µg/m³)	Medium EPC Value	Medium EPC Units
Water Vapor at	**VOCs**									
	Benzene	6.8E-01	5.1E-01	2.6E+01	2.0E+01	µg/m³	5.1E-01	1.5E+00	1.2E+00	µg/m³
	Carbon Tetrachloride	7.3E-01	4.8E-01	2.6E+01	2.0E+01	µg/m³	4.8E-01	1.5E+00	1.2E+00	µg/m³
	Chloroform	8.4E-01	5.2E-01	3.3E+01	2.5E+01	µg/m³	5.2E-01	1.9E+00	1.5E+00	µg/m³
	cis-1,2-Dichloroethene	4.4E+00	5.6E-01	1.9E+02	1.5E+02	µg/m³	5.6E-01	1.1E+01	8.6E+00	µg/m³
	Dichlorodifluoromethane	8.8E+00	5.4E-01	3.5E+02	2.7E+02	µg/m³	5.4E-01	2.1E+01	1.6E+01	µg/m³
	Methyl tert-Butyl Ether	6.3E+00	5.2E-01	2.5E+02	1.9E+02	µg/m³	5.2E-01	1.4E+01	1.1E+01	µg/m³
	Tetrachloroethene	6.0E+01	4.5E-01	2.1E+03	1.6E+03	µg/m³	4.5E-01	1.2E+02	9.4E+01	µg/m³
	Toluene	7.4E+01	4.7E-01	2.6E+03	2.0E+03	µg/m³	4.7E-01	1.5E+02	1.2E+02	µg/m³
	Trichloroethene	7.7E+01	4.9E-01	2.8E+03	2.2E+03	µg/m³	4.9E-01	1.6E+02	1.3E+02	µg/m³
	SVOCs									
	Benzo(a)pyrene	1.2E-01	4.8E-01	4.4E+00	3.4E+00	µg/m³	4.8E-01	2.5E-01	2.0E-01	µg/m³
	Pesticides									
	alpha-Chlordane	1.2E-01	3.0E-01	2.7E+00	2.1E+00	µg/m³	3.0E-01	1.6E-01	1.2E-01	µg/m³
	Dieldrin	5.2E-02	3.1E-01	1.2E+00	9.6E-01	µg/m³	3.1E-01	7.2E-02	5.7E-02	µg/m³
	gamma-Chlordane	2.6E-01	3.0E-01	5.8E+00	4.5E+00	µg/m³	3.0E-01	3.4E-01	2.7E-01	µg/m³
	Heptachlor epoxide	3.5E-02	2.9E-01	7.6E-01	5.9E-01	µg/m³	2.9E-01	4.4E-02	3.5E-02	µg/m³
	INORGs									
	Arsenic	2.1E+00	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	1.9E+02	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	1.2E+01	NA	NA	NA	NA	NA	NA	NA	NA
	Copper	5.2E+01	NA	NA	NA	NA	NA	NA	NA	NA
	Iron	1.3E+04	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	1.2E+01	NA	NA	NA	NA	NA	NA	NA	NA
	Manganese	2.1E+02	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	6.2E+01	NA	NA	NA	NA	NA	NA	NA	NA

EPC = Exposure Point Concentration

Camax = Maximum concentration of contaminant in air

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Appendix E

Appendix E

Vapor Intrusion Investigation Screening

TABLE E-1
COMPARISON OF MAXIMUM DETECTED CONCENTRATIONS IN SOIL GAS TO VAPOR INTRUSION SCREENING LEVELS
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Medium	CAS Number	Volatile Detected Chemicals	Maximum Concentration (1) ($\mu g/m^3$)	Vapor Intrusion Screening Level (2) ($\mu g/m^3$)	Exceeds screening level?
Air		**Volatile Organic Compounds**			
	71-55-6	1,1,1-Trichloroethane	21	22,000	NO
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	4.3 J	300,000	NO
	75-34-3	1,1-Dichloroethane	6.8	5,000	NO
	95-63-6	1,2,4-Trimethylbenzene	4.7 J	60	NO
	107-06-2	1,2-Dichloroethane	2.4 J	9	NO
	108-67-8	1,3,5-Trimethyl Benzene	18	60	NO
	106-99-0	1,3-Butadiene	9.9 J	1	YES
	123-91-1	1,4-Dioxane	19	NA	NO
	540-84-1	2,2,4-Trimethylpentane	1.2 J	NA	NO
	78-93-3	2-Butanone	7.5	10,000	NO
	591-78-6	2-Hexanone	1.3 J	NA	NO
	622-96-8	4-Ethyltoluene	5.2	NA	NO
	67-64-1	Acetone	36	350	NO
	71-43-2	Benzene	4.2	31	NO
	75-15-0	Carbon Disulfide	19	7,000	NO
	75-00-3	Chloroethane	2 J	100,000	NO
	67-66-3	Chloroform	7.9	11	NO
	74-87-3	Chloromethane	3.6 J	240	NO
	156-59-2	cis-1,2-Dichloroethene	6.5	350	NO
	110-82-7	Cyclohexane	1.7 J	NA	NO
	75-71-8	Dichlorodifluoromethane	2.9 J	2,000	NO
	64-17-5	Ethanol	70	NA	NO
	100-41-4	Ethylbenzene	2 J	220	NO
	110-54-3	Hexane	8.6	2,000	NO
	67-63-0	Isopropyl Alcohol	65	NA	NO
	1634-04-4	Methyl tert-Butyl Ether	1.4 J	30,000	NO
	75-09-2	Methylene Chloride	4.6	520	NO
	108-38-3	m-Xylene	5.7	70,000	NO
	142-82-5	n-Heptane	5.1	NA	NO
	103-65-1	n-Propylbenzene	0.95 J	1,000	NO
	95-47-6	o-Xylene	2.1 J	70,000	NO
	127-18-4	Tetrachloroethene	23	81	NO
	109-99-9	Tetrahydrofuran	3.6	NA	NO
	108-88-3	Toluene	17	4,000	NO
	79-01-6	Trichloroethene	23	2	YES
	75-69-4	Trichlorofluoromethane	1.7 J	7,000	NO

(1) Maximum detected concentration from soil gas samples.

(2) EPA. 2002. Draft Guidance for Evaluating the Vapor Instrusion to Indoor Air Pathway from Groundwater Table 2c: Generic Screening Levels and Summary Sheet. Based on noncancer hazard index of 0.1 and cancer risk of 1E-6 for deep soil gas concentration. http://www.epa.gov/correctiveaction/eis/vapor/tables.pdf

Appendix F

Appendix F

RAGS D Tables for Central Tendency Exposure

List of Tables Included in Appendix F
Old Roosevelt Field Contaminated Groundwater Site - Garden City, New York

TABLES

7 Calculation of Chemical Cancer Risks and Non-Cancer Hazards - Central Tendency Exposure
- 7.1 Future - Worker
- 7.2 Future - Resident - Adult
- 7.3 Future - Resident - Child

8 Calculation of Radiation Cancer Risks - NOT APPLICABLE TO THIS SITE

9 Summary of Receptor Risks and Hazards for COPCs - Central Tendency Exposure
- 9.1 Future - Worker
- 9.2 Future - Resident - Adult
- 9.3 Future - Resident - Child

10 Risk Assessment Summary - Central Tendency Exposure
- 10.1 Future - Worker
- 10.2 Future - Resident - Adult
- 10.3 Future - Resident - Child

TABLE F-7.1
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Site Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Ingestion	**VOCs**												
				Benzene	6.8E-01	µg/L	6.0E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.3E-08	6.0E-06	mg/kg/day	4.0E-03	mg/kg/day	1.5E-03
				Carbon Tetrachloride	7.3E-01	µg/L	6.4E-07	mg/kg/day	1.3E-01	(mg/kg/day)-1	8.3E-08	6.4E-06	mg/kg/day	7.0E-04	mg/kg/day	9.2E-03
				Chloroform	8.4E-01	µg/L	7.4E-07	mg/kg/day	NA	NA	NA	7.4E-06	mg/kg/day	1.0E-02	mg/kg/day	7.4E-04
				cis-1,2-Dichloroethene	4.4E+00	µg/L	3.9E-06	mg/kg/day	NA	NA	NA	3.9E-05	mg/kg/day	1.0E-02	mg/kg/day	3.9E-03
				Dichlorodifluoromethane	8.8E+00	µg/L	7.7E-06	mg/kg/day	NA	NA	NA	7.7E-05	mg/kg/day	2.0E-01	mg/kg/day	3.9E-04
				Methyl tert-Butyl Ether	6.3E+00	µg/L	5.6E-06	mg/kg/day	NA	NA	NA	5.6E-05	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	5.3E-05	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.9E-05	5.3E-04	mg/kg/day	1.0E-02	mg/kg/day	5.3E-02
				Toluene	7.4E+01	µg/L	6.5E-05	mg/kg/day	NA	NA	NA	6.5E-04	mg/kg/day	8.0E-02	mg/kg/day	8.1E-03
				Trichloroethene	7.7E+01	µg/L	6.8E-05	mg/kg/day	4.0E-01	(mg/kg/day)-1	2.7E-05	6.8E-04	mg/kg/day	3.0E-04	mg/kg/day	2.3E+00
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.7E-07	1.1E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.7E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.1E-03
				Dieldrin	5.2E-02	µg/L	4.6E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.4E-07	4.6E-07	mg/kg/day	5.0E-05	mg/kg/day	9.2E-03
				gamma-Chlordane	2.6E-01	µg/L	2.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.0E-08	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	4.6E-03
				Heptachlor epoxide	3.5E-02	µg/L	3.1E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.8E-07	3.1E-07	mg/kg/day	1.3E-05	mg/kg/day	2.4E-02
				INORGs												
				Arsenic	2.1E+00	µg/L	1.8E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.8E-06	1.8E-05	mg/kg/day	3.0E-04	mg/kg/day	6.2E-02
				Barium	1.9E+02	µg/L	1.7E-04	mg/kg/day	NA	NA	NA	1.7E-03	mg/kg/day	2.0E-01	mg/kg/day	8.4E-03
				Chromium	1.2E+01	µg/L	1.1E-05	mg/kg/day	NA	NA	NA	1.1E-04	mg/kg/day	3.0E-03	mg/kg/day	3.6E-02
				Copper	5.2E+01	µg/L	4.6E-05	mg/kg/day	NA	NA	NA	4.6E-04	mg/kg/day	4.0E-02	mg/kg/day	1.2E-02
				Iron	1.3E+04	µg/L	1.2E-02	mg/kg/day	NA	NA	NA	1.2E-01	mg/kg/day	7.0E-01	mg/kg/day	1.7E-01
				Lead	1.2E+01	µg/L	1.0E-05	mg/kg/day	NA	NA	NA	1.0E-04	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	1.8E-04	mg/kg/day	NA	NA	NA	1.8E-03	mg/kg/day	1.4E-01	mg/kg/day	1.3E-02
				Nickel	6.2E+01	µg/L	5.5E-05	mg/kg/day	NA	NA	NA	5.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.7E-02
			Exp. Route Total								6.1E-05					2.7E+00
		Exposure Point Total									6E-05					3E+00

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TABLE F-7.2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Ingestion	**VOCs**												
				Benzene	6.8E-01	µg/L	1.7E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	9.2E-08	1.3E-05	mg/kg/day	4.0E-03	mg/kg/day	3.3E-03
				Carbon Tetrachloride	7.3E-01	µg/L	1.8E-06	mg/kg/day	1.3E-01	(mg/kg/day)-1	2.3E-07	1.4E-05	mg/kg/day	7.0E-04	mg/kg/day	2.0E-02
				Chloroform	8.4E-01	µg/L	2.1E-06	mg/kg/day	NA	NA	NA	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	1.6E-03
				cis-1,2-Dichloroethene	4.4E+00	µg/L	1.1E-05	mg/kg/day	NA	NA	NA	8.5E-05	mg/kg/day	1.0E-02	mg/kg/day	8.5E-03
				Dichlorodifluoromethane	8.8E+00	µg/L	2.2E-05	mg/kg/day	NA	NA	NA	1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	8.4E-04
				Methyl tert-Butyl Ether	6.3E+00	µg/L	1.6E-05	mg/kg/day	NA	NA	NA	1.2E-04	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	1.5E-04	mg/kg/day	5.4E-01	(mg/kg/day)-1	8.0E-05	1.2E-03	mg/kg/day	1.0E-02	mg/kg/day	1.2E-01
				Toluene	7.4E+01	µg/L	1.8E-04	mg/kg/day	NA	NA	NA	1.4E-03	mg/kg/day	8.0E-02	mg/kg/day	1.8E-02
				Trichloroethene	7.7E+01	µg/L	1.9E-04	mg/kg/day	4.0E-01	(mg/kg/day)-1	7.6E-05	1.5E-03	mg/kg/day	3.0E-04	mg/kg/day	4.9E+00
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	3.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.2E-06	2.3E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	3.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.0E-07	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	4.6E-03
				Dieldrin	5.2E-02	µg/L	1.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.1E-06	1.0E-06	mg/kg/day	5.0E-05	mg/kg/day	2.0E-02
				gamma-Chlordane	2.6E-01	µg/L	6.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.2E-07	5.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.0E-02
				Heptachlor epoxide	3.5E-02	µg/L	8.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.8E-07	6.7E-07	mg/kg/day	1.3E-05	mg/kg/day	5.1E-02
				INORGs												
				Arsenic	2.1E+00	µg/L	5.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.8E-06	4.0E-05	mg/kg/day	3.0E-04	mg/kg/day	1.3E-01
				Barium	1.9E+02	µg/L	4.7E-04	mg/kg/day	NA	NA	NA	3.6E-03	mg/kg/day	2.0E-01	mg/kg/day	1.8E-02
				Chromium	1.2E+01	µg/L	3.0E-05	mg/kg/day	NA	NA	NA	2.3E-04	mg/kg/day	3.0E-03	mg/kg/day	7.8E-02
				Copper	5.2E+01	µg/L	1.3E-04	mg/kg/day	NA	NA	NA	1.0E-03	mg/kg/day	4.0E-02	mg/kg/day	2.5E-02
				Iron	1.3E+04	µg/L	3.3E-02	mg/kg/day	NA	NA	NA	2.5E-01	mg/kg/day	7.0E-01	mg/kg/day	3.6E-01
				Lead	1.2E+01	µg/L	2.9E-05	mg/kg/day	NA	NA	NA	2.2E-04	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	5.1E-04	mg/kg/day	NA	NA	NA	3.9E-03	mg/kg/day	1.4E-01	mg/kg/day	2.8E-02
				Nickel	6.2E+01	µg/L	1.5E-04	mg/kg/day	NA	NA	NA	1.2E-03	mg/kg/day	2.0E-02	mg/kg/day	5.9E-02
			Exp. Route Total								1.7E-04					5.9E+00

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TABLE F-7.2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Dermal Contact	**VOCs**												
				Benzene	6.8E-01	µg/L	3.2E-08	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.8E-09	2.5E-07	mg/kg/day	4.0E-03	mg/kg/day	6.3E-05
				Carbon Tetrachloride	7.3E-01	µg/L	3.7E-08	mg/kg/day	1.3E-01	(mg/kg/day)-1	4.8E-09	2.9E-07	mg/kg/day	7.0E-04	mg/kg/day	4.1E-04
				Chloroform	8.4E-01	µg/L	1.8E-08	mg/kg/day	NA	NA	NA	1.4E-07	mg/kg/day	1.0E-02	mg/kg/day	1.4E-05
				cis-1,2-Dichloroethene	4.4E+00	µg/L	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	1.0E-02	mg/kg/day	NA
				Dichlorodifluoromethane	8.8E+00	µg/L	2.5E-07	mg/kg/day	NA	NA	NA	1.9E-06	mg/kg/day	2.0E-01	mg/kg/day	9.7E-06
				Methyl tert-Butyl Ether	6.3E+00	µg/L	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	6.3E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	3.4E-06	4.9E-05	mg/kg/day	1.0E-02	mg/kg/day	4.9E-03
				Toluene	7.4E+01	µg/L	7.2E-06	mg/kg/day	NA	NA	NA	5.6E-05	mg/kg/day	8.0E-02	mg/kg/day	7.0E-04
				Trichloroethene	7.7E+01	µg/L	2.9E-06	mg/kg/day	4.0E-01	(mg/kg/day)-1	1.2E-06	2.3E-05	mg/kg/day	3.0E-04	mg/kg/day	7.6E-02
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	2.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.9E-06	2.1E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	1.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.6E-09	1.0E-07	mg/kg/day	4.0E-04	mg/kg/day	2.5E-04
				Dieldrin	5.2E-02	µg/L	2.0E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.2E-08	1.5E-08	mg/kg/day	5.0E-05	mg/kg/day	3.1E-04
				gamma-Chlordane	2.6E-01	µg/L	2.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.8E-09	2.2E-07	mg/kg/day	4.0E-04	mg/kg/day	5.4E-04
				Heptachlor epoxide	3.5E-02	µg/L	NA	mg/kg/day	9.1E+00	(mg/kg/day)-1	NA	NA	mg/kg/day	1.3E-05	mg/kg/day	NA
				INORGs												
				Arsenic	2.1E+00	µg/L	6.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.0E-08	5.2E-08	mg/kg/day	2.9E-04	mg/kg/day	1.8E-04
				Barium	1.9E+02	µg/L	6.0E-07	mg/kg/day	NA	NA	NA	4.7E-06	mg/kg/day	1.4E-02	mg/kg/day	3.3E-04
				Chromium	1.2E+01	µg/L	7.8E-08	mg/kg/day	NA	NA	NA	6.0E-07	mg/kg/day	7.5E-05	mg/kg/day	8.1E-03
				Copper	5.2E+01	µg/L	1.7E-07	mg/kg/day	NA	NA	NA	1.3E-06	mg/kg/day	4.0E-02	mg/kg/day	3.2E-05
				Iron	1.3E+04	µg/L	4.2E-05	mg/kg/day	NA	NA	NA	3.3E-04	mg/kg/day	NA	NA	NA
				Lead	1.2E+01	µg/L	3.7E-09	mg/kg/day	NA	NA	NA	2.9E-08	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	6.5E-07	mg/kg/day	NA	NA	NA	5.1E-06	mg/kg/day	5.6E-03	mg/kg/day	9.1E-04
				Nickel	6.2E+01	µg/L	3.9E-08	mg/kg/day	NA	NA	NA	3.1E-07	mg/kg/day	8.0E-04	mg/kg/day	3.8E-04
			Exp. Route Total								6.6E-06					9.3E-02

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TABLE F-7.2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Air	Water Vapor	Inhalation	**VOCs**												
				Benzene	1.1E+01	µg/m3	2.5E-06	mg/kg/day	2.7E-02	(mg/kg/day)-1	6.8E-08	1.9E-05	mg/kg/day	8.6E-03	mg/kg/day	2.3E-03
				Carbon Tetrachloride	1.1E+01	µg/m3	2.5E-06	mg/kg/day	5.3E-02	(mg/kg/day)-1	1.3E-07	1.9E-05	mg/kg/day	1.1E-02	mg/kg/day	1.7E-03
				Chloroform	1.4E+01	µg/m3	3.2E-06	mg/kg/day	8.1E-02	(mg/kg/day)-1	2.5E-07	2.5E-05	mg/kg/day	NA	NA	NA
				cis-1,2-Dichloroethene	8.2E+01	µg/m3	1.8E-05	mg/kg/day	NA	NA	NA	1.4E-04	mg/kg/day	NA	NA	NA
				Dichlorodifluoromethane	1.5E+02	µg/m3	3.4E-05	mg/kg/day	NA	NA	NA	2.6E-04	mg/kg/day	5.7E-02	mg/kg/day	4.6E-03
				Methyl tert-Butyl Ether	1.1E+02	µg/m3	2.4E-05	mg/kg/day	NA	NA	NA	1.8E-04	mg/kg/day	8.6E-01	mg/kg/day	2.1E-04
				Tetrachloroethene	9.0E+02	µg/m3	2.0E-04	mg/kg/day	2.1E-02	(mg/kg/day)-1	4.1E-06	1.5E-03	mg/kg/day	NA	NA	NA
				Toluene	1.1E+03	µg/m3	2.5E-04	mg/kg/day	NA	NA	NA	1.9E-03	mg/kg/day	1.4E+00	mg/kg/day	1.4E-03
				Trichloroethene	1.2E+03	µg/m3	2.7E-04	mg/kg/day	4.0E-01	(mg/kg/day)-1	1.1E-04	2.1E-03	mg/kg/day	1.1E-02	mg/kg/day	1.8E-01
				SVOCs												
				Benzo(a)pyrene	1.9E+00	µg/m3	4.2E-07	mg/kg/day	NA	NA	NA	3.2E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E+00	µg/m3	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.1E-08	2.0E-06	mg/kg/day	2.0E-04	mg/kg/day	1.0E-02
				Dieldrin	5.4E-01	µg/m3	1.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.9E-06	9.2E-07	mg/kg/day	NA	NA	NA
				gamma-Chlordane	2.5E+00	µg/m3	5.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.9E-07	4.3E-06	mg/kg/day	2.0E-04	mg/kg/day	2.2E-02
				Heptachlor epoxide	3.3E-01	µg/m3	7.3E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.7E-07	5.7E-07	mg/kg/day	NA	NA	NA
				INORGs												
				Arsenic	NA	NA	NA	mg/kg/day	1.5E+01	(mg/kg/day)-1	NA	NA	mg/kg/day	NA	NA	NA
				Barium	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Chromium	NA	NA	NA	mg/kg/day	4.2E+01	(mg/kg/day)-1	NA	NA	mg/kg/day	2.3E-06	mg/kg/day	NA
				Copper	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Iron	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Lead	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Manganese	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	1.4E-05	mg/kg/day	NA
				Nickel	NA	NA	NA	mg/kg/day	9.1E-01	(mg/kg/day)-1	NA	NA	mg/kg/day	2.6E-05	mg/kg/day	NA
			Exp. Route Total								1.2E-04					2.3E-01
		Exposure Point Total									3E-04					6E+00

302080

TABLE F-7.3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Ingestion	**VOCs**												
				Benzene	6.8E-01	µg/L	1.5E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	8.2E-08	1.7E-05	mg/kg/day	4.0E-03	mg/kg/day	4.3E-03
				Carbon Tetrachloride	7.3E-01	µg/L	1.6E-06	mg/kg/day	1.3E-01	(mg/kg/day)-1	2.1E-07	1.9E-05	mg/kg/day	7.0E-04	mg/kg/day	2.7E-02
				Chloroform	8.4E-01	µg/L	1.8E-06	mg/kg/day	NA	NA	NA	2.2E-05	mg/kg/day	1.0E-02	mg/kg/day	2.2E-03
				cis-1,2-Dichloroethene	4.4E+00	µg/L	9.7E-06	mg/kg/day	NA	NA	NA	1.1E-04	mg/kg/day	1.0E-02	mg/kg/day	1.1E-02
				Dichlorodifluoromethane	8.8E+00	µg/L	1.9E-05	mg/kg/day	NA	NA	NA	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.1E-03
				Methyl tert-Butyl Ether	6.3E+00	µg/L	1.4E-05	mg/kg/day	NA	NA	NA	1.6E-04	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	1.3E-04	mg/kg/day	5.4E-01	(mg/kg/day)-1	7.1E-05	1.5E-03	mg/kg/day	1.0E-02	mg/kg/day	1.5E-01
				Toluene	7.4E+01	µg/L	1.6E-04	mg/kg/day	NA	NA	NA	1.9E-03	mg/kg/day	8.0E-02	mg/kg/day	2.4E-02
				Trichloroethene	7.7E+01	µg/L	1.7E-04	mg/kg/day	4.0E-01	(mg/kg/day)-1	6.7E-05	2.0E-03	mg/kg/day	3.0E-04	mg/kg/day	6.6E+00
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	2.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.9E-06	3.1E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	2.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.3E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.2E-03
				Dieldrin	5.2E-02	µg/L	1.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.8E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	2.7E-02
				gamma-Chlordane	2.6E-01	µg/L	5.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.0E-07	6.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.3E-02
				Heptachlor epoxide	3.5E-02	µg/L	7.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.9E-07	8.9E-07	mg/kg/day	1.3E-05	mg/kg/day	6.9E-02
				INORGs												
				Arsenic	2.1E+00	µg/L	4.6E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.9E-06	5.4E-05	mg/kg/day	3.0E-04	mg/kg/day	1.8E-01
				Barium	1.9E+02	µg/L	4.2E-04	mg/kg/day	NA	NA	NA	4.9E-03	mg/kg/day	2.0E-01	mg/kg/day	2.4E-02
				Chromium	1.2E+01	µg/L	2.7E-05	mg/kg/day	NA	NA	NA	3.1E-04	mg/kg/day	3.0E-03	mg/kg/day	1.0E-01
				Copper	5.2E+01	µg/L	1.1E-04	mg/kg/day	NA	NA	NA	1.3E-03	mg/kg/day	4.0E-02	mg/kg/day	3.3E-02
				Iron	1.3E+04	µg/L	2.9E-02	mg/kg/day	NA	NA	NA	3.4E-01	mg/kg/day	7.0E-01	mg/kg/day	4.8E-01
				Lead	1.2E+01	µg/L	2.6E-05	mg/kg/day	NA	NA	NA	3.0E-04	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	4.5E-04	mg/kg/day	NA	NA	NA	5.3E-03	mg/kg/day	1.4E-01	mg/kg/day	3.8E-02
				Nickel	6.2E+01	µg/L	1.4E-04	mg/kg/day	NA	NA	NA	1.6E-03	mg/kg/day	2.0E-02	mg/kg/day	7.9E-02
			Exp. Route Total								1.5E-04					7.8E+00

302081

TABLE F-7.3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Groundwater	Tap	Dermal Contact	**VOCs**												
				Benzene	6.8E-01	µg/L	5.2E-08	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.8E-09	6.0E-07	mg/kg/day	4.0E-03	mg/kg/day	1.5E-04
				Carbon Tetrachloride	7.3E-01	µg/L	5.9E-08	mg/kg/day	1.3E-01	(mg/kg/day)-1	7.7E-09	6.9E-07	mg/kg/day	7.0E-04	mg/kg/day	9.8E-04
				Chloroform	8.4E-01	µg/L	2.9E-08	mg/kg/day	NA	NA	NA	3.4E-07	mg/kg/day	1.0E-02	mg/kg/day	3.4E-05
				cis-1,2-Dichloroethene	4.4E+00	µg/L	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	1.0E-02	mg/kg/day	NA
				Dichlorodifluoromethane	8.8E+00	µg/L	4.0E-07	mg/kg/day	NA	NA	NA	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.3E-05
				Methyl tert-Butyl Ether	6.3E+00	µg/L	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Tetrachloroethene	6.0E+01	µg/L	1.0E-05	mg/kg/day	5.4E-01	(mg/kg/day)-1	5.4E-06	1.2E-04	mg/kg/day	1.0E-02	mg/kg/day	1.2E-02
				Toluene	7.4E+01	µg/L	1.2E-05	mg/kg/day	NA	NA	NA	1.3E-04	mg/kg/day	8.0E-02	mg/kg/day	1.7E-03
				Trichloroethene	7.7E+01	µg/L	4.7E-06	mg/kg/day	4.0E-01	(mg/kg/day)-1	1.9E-06	5.5E-05	mg/kg/day	3.0E-04	mg/kg/day	1.8E-01
				SVOCs												
				Benzo(a)pyrene	1.2E-01	µg/L	4.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.1E-06	5.0E-06	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	1.2E-01	µg/L	2.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.3E-09	2.4E-07	mg/kg/day	4.0E-04	mg/kg/day	6.1E-04
				Dieldrin	5.2E-02	µg/L	3.2E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.1E-08	3.7E-08	mg/kg/day	5.0E-05	mg/kg/day	7.4E-04
				gamma-Chlordane	2.6E-01	µg/L	4.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.6E-08	5.2E-07	mg/kg/day	4.0E-04	mg/kg/day	1.3E-03
				Heptachlor epoxide	3.5E-02	µg/L	NA	mg/kg/day	9.1E+00	(mg/kg/day)-1	NA	NA	mg/kg/day	1.3E-05	mg/kg/day	NA
				INORGs												
				Arsenic	2.1E+00	µg/L	1.1E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.6E-08	1.2E-07	mg/kg/day	2.9E-04	mg/kg/day	4.4E-04
				Barium	1.9E+02	µg/L	9.6E-07	mg/kg/day	NA	NA	NA	1.1E-05	mg/kg/day	1.4E-02	mg/kg/day	8.0E-04
				Chromium	1.2E+01	µg/L	1.2E-07	mg/kg/day	NA	NA	NA	1.4E-06	mg/kg/day	7.5E-05	mg/kg/day	1.9E-02
				Copper	5.2E+01	µg/L	2.6E-07	mg/kg/day	NA	NA	NA	3.1E-06	mg/kg/day	4.0E-02	mg/kg/day	7.7E-05
				Iron	1.3E+04	µg/L	6.7E-05	mg/kg/day	NA	NA	NA	7.8E-04	mg/kg/day	NA	NA	NA
				Lead	1.2E+01	µg/L	5.9E-09	mg/kg/day	NA	NA	NA	6.9E-08	mg/kg/day	NA	NA	NA
				Manganese	2.1E+02	µg/L	1.0E-06	mg/kg/day	NA	NA	NA	1.2E-05	mg/kg/day	5.6E-03	mg/kg/day	2.2E-03
				Nickel	6.2E+01	µg/L	6.3E-08	mg/kg/day	NA	NA	NA	7.3E-07	mg/kg/day	8.0E-04	mg/kg/day	9.1E-04
			Exp. Route Total								1.1E-05					2.2E-01

302082

TABLE F-7.3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF/Unit Risk		Cancer	Intake/ Exposure Concentration		RfD/RfC		Hazard
					Value	Unit	Value	Unit	Value	Unit	Risk	Value	Unit	Value	Unit	Quotient
Groundwater	Air	Water Vapor	Inhalation	**VOCs**												
				Benzene	2.0E+01	µg/m3	1.5E-05	mg/kg/day	2.7E-02	(mg/kg/day)-1	4.0E-07	1.7E-04	mg/kg/day	8.6E-03	mg/kg/day	2.0E-02
				Carbon Tetrachloride	2.0E+01	µg/m3	1.5E-05	mg/kg/day	5.3E-02	(mg/kg/day)-1	7.7E-07	1.7E-04	mg/kg/day	1.1E-02	mg/kg/day	1.5E-02
				Chloroform	2.5E+01	µg/m3	1.8E-05	mg/kg/day	8.1E-02	(mg/kg/day)-1	1.5E-06	2.1E-04	mg/kg/day	NA	NA	NA
				cis-1,2-Dichloroethene	1.5E+02	µg/m3	1.0E-04	mg/kg/day	NA	NA	NA	1.2E-03	mg/kg/day	NA	NA	NA
				Dichlorodifluoromethane	2.7E+02	µg/m3	2.0E-04	mg/kg/day	NA	NA	NA	2.3E-03	mg/kg/day	5.7E-02	mg/kg/day	4.0E-02
				Methyl tert-Butyl Ether	1.9E+02	µg/m3	1.4E-04	mg/kg/day	NA	NA	NA	1.6E-03	mg/kg/day	8.6E-01	mg/kg/day	1.9E-03
				Tetrachloroethene	1.6E+03	µg/m3	1.2E-03	mg/kg/day	2.1E-02	(mg/kg/day)-1	2.4E-05	1.3E-02	mg/kg/day	NA	NA	NA
				Toluene	2.0E+03	µg/m3	1.5E-03	mg/kg/day	NA	NA	NA	1.7E-02	mg/kg/day	1.4E+00	mg/kg/day	1.2E-02
				Trichloroethene	2.2E+03	µg/m3	1.6E-03	mg/kg/day	4.0E-01	(mg/kg/day)-1	6.3E-04	1.8E-02	mg/kg/day	1.1E-02	mg/kg/day	1.6E+00
				SVOCs												
				Benzo(a)pyrene	3.4E+00	µg/m3	2.4E-06	mg/kg/day	NA	NA	NA	2.8E-05	mg/kg/day	NA	NA	NA
				Pesticides												
				alpha-Chlordane	2.1E+00	µg/m3	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.3E-07	1.8E-05	mg/kg/day	2.0E-04	mg/kg/day	8.9E-02
				Dieldrin	9.6E-01	µg/m3	6.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.1E-05	8.1E-06	mg/kg/day	NA	NA	NA
				gamma-Chlordane	4.5E+00	µg/m3	3.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.1E-06	3.8E-05	mg/kg/day	2.0E-04	mg/kg/day	1.9E-01
				Heptachlor epoxide	5.9E-01	µg/m3	4.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.9E-06	5.0E-06	mg/kg/day	NA	NA	NA
				INORGs												
				Arsenic	NA	NA	NA	mg/kg/day	1.5E+01	(mg/kg/day)-1	NA	NA	mg/kg/day	NA	NA	NA
				Barium	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Chromium	NA	NA	NA	mg/kg/day	4.2E+01	(mg/kg/day)-1	NA	NA	mg/kg/day	2.3E-06	mg/kg/day	NA
				Copper	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Iron	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Lead	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	NA	NA	NA
				Manganese	NA	NA	NA	mg/kg/day	NA	NA	NA	NA	mg/kg/day	1.4E-05	mg/kg/day	NA
				Nickel	NA	NA	NA	mg/kg/day	9.1E-01	(mg/kg/day)-1	NA	NA	mg/kg/day	2.6E-05	mg/kg/day	NA
			Exp. Route Total								6.7E-04					2.0E+00
		Exposure Point Total									8E-04					1E+01

302083

TABLE F-8.1
CALCULATION OF RADIATION CANCER RISKS
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	NA
Receptor Population:	NA
Receptor Age:	NA

Medium	Exposure Medium	Exposure Point	Exposure Route	Radionuclide of Potential Concern	EPC		Risk Calculation Approach	Cancer Risk Calculations				
								Intake/Activity		CSF		Cancer Risk
					Value	Unit		Value	Unit	Value	Unit	
			NOT APPLICABLE TO THIS SITE									
			Exp. Route Total									
		Exposure Point Total										
Total of Receptor Risks Across All Media												

There are no radionucleotides in this risk assessment. As a result, this table is blank

302084

TABLE F-9.1
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Site Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Benzene	3.3E-08	NA	NA	3.3E-08	Blood	1.5E-03	NA	NA	1.5E-03
			Carbon Tetrachloride	8.3E-08	NA	NA	8.3E-08	Liver	9.2E-03	NA	NA	9.2E-03
			Chloroform	NA	NA	NA	NA	Liver	7.4E-04	NA	NA	7.4E-04
			cis-1,2-Dichloroethene	NA	NA	NA	NA	Blood	3.9E-03	NA	NA	3.9E-03
			Dichlorodifluoromethane	NA	NA	NA	NA	Whole Body	3.9E-04	NA	NA	3.9E-04
			Methyl tert-Butyl Ether	NA	NA	NA	NA	Liver/Kidney	NA	NA	NA	NA
			Tetrachloroethene	2.9E-05	NA	NA	2.9E-05	Liver	5.3E-02	NA	NA	5.3E-02
			Toluene	NA	NA	NA	NA	Kidney/CNS	8.1E-03	NA	NA	8.1E-03
			Trichloroethene	2.7E-05	NA	NA	2.7E-05	Liver/Kidney/Fetus/CNS	2.3E+00	NA	NA	2.3E+00
			SVOCs									
			Benzo(a)pyrene	7.7E-07	NA	NA	7.7E-07	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	3.7E-08	NA	NA	3.7E-08	Liver	2.1E-03	NA	NA	2.1E-03
			Dieldrin	7.4E-07	NA	NA	7.4E-07	Liver	9.2E-03	NA	NA	9.2E-03
			gamma-Chlordane	8.0E-08	NA	NA	8.0E-08	Liver	4.6E-03	NA	NA	4.6E-03
			Heptachlor epoxide	2.8E-07	NA	NA	2.8E-07	Liver	2.4E-02	NA	NA	2.4E-02
			INORGs									
			Arsenic	2.8E-06	NA	NA	2.8E-06	Skin	6.2E-02	NA	NA	6.2E-02
			Barium	NA	NA	NA	NA	*Kidney*	8.4E-03	NA	NA	8.4E-03
			Chromium	NA	NA	NA	NA	Nasal septum atrophy	3.6E-02	NA	NA	3.6E-02
			Copper	NA	NA	NA	NA	GI Tract	1.2E-02	NA	NA	1.2E-02
			Iron	NA	NA	NA	NA	NA	1.7E-01	NA	NA	1.7E-01
			Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Manganese	NA	NA	NA	NA	CNS	1.3E-02	NA	NA	1.3E-02
			Nickel	NA	NA	NA	NA	Whole Body	2.7E-02	NA	NA	2.7E-02
			Chemical Total	6.1E-05	NA	NA	6.1E-05		2.7E+00	NA	NA	2.7E+00
		Exposure Point Total					6.1E-05					2.7E+00
	Exposure Medium Total						6.1E-05					2.7E+00
Groundwater Total							6.1E-05					2.7E+00

Total Risk Across All Media (Adult) = 6E-05

Total Hazard Across All Media = 3

Total Liver HI Across All Media =	2
Total Kidney HI Across All Media =	2
Total Fetus HI Across All Media =	2
Total Nasal Epithelium HI Across All Media =	0.04
Total GI Tract HI Across All Media =	0.01
Total Central Nervous System HI Across All Media =	2
Total Blood HI Across All Media =	0.005
Total Whole Body HI Across All Media =	0.03
Total Skin HI Across All Media =	0.06

302085

TABLE F-9.2
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Benzene	9.2E-08	6.8E-08	1.8E-09	1.6E-07	Blood	3.3E-03	2.3E-03	6.3E-05	5.6E-03
			Carbon Tetrachloride	2.3E-07	1.3E-07	4.8E-09	3.7E-07	Liver	2.0E-02	1.7E-03	4.1E-04	2.2E-02
			Chloroform	NA	2.5E-07	NA	2.5E-07	Liver	1.6E-03	NA	1.4E-05	1.6E-03
			cis-1,2-Dichloroethene	NA	NA	NA	NA	Blood	8.5E-03	NA	NA	8.5E-03
			Dichlorodifluoromethane	NA	NA	NA	NA	Whole Body	8.4E-04	4.6E-03	9.7E-06	5.5E-03
			Methyl tert-Butyl Ether	NA	NA	NA	NA	Liver/Kidney	NA	2.1E-04	NA	2.1E-04
			Tetrachloroethene	8.0E-05	4.1E-06	3.4E-06	8.8E-05	Liver	1.2E-01	NA	4.9E-03	1.2E-01
			Toluene	NA	NA	NA	NA	Kidney/CNS	1.8E-02	1.4E-03	7.0E-04	2.0E-02
			Trichloroethene	7.6E-05	1.1E-04	1.2E-06	1.8E-04	Liver/Kidney/Fetus/CNS	4.9E+00	1.8E-01	7.6E-02	5.2E+00
			SVOCs									
			Benzo(a)pyrene	2.2E-06	NA	1.9E-06	4.1E-06	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	1.0E-07	9.1E-08	4.6E-09	2.0E-07	Liver	4.6E-03	1.0E-02	2.5E-04	1.5E-02
			Dieldrin	2.1E-06	1.9E-06	3.2E-08	4.0E-06	Liver	2.0E-02	NA	3.1E-04	2.0E-02
			gamma-Chlordane	2.2E-07	1.9E-07	9.8E-09	4.3E-07	Liver	1.0E-02	2.2E-02	5.4E-04	3.2E-02
			Heptachlor epoxide	7.8E-07	6.7E-07	NA	1.4E-06	Liver	5.1E-02	NA	NA	5.1E-02
			INORGs									
			Arsenic	7.8E-06	NA	1.0E-08	7.8E-06	Skin	1.3E-01	NA	1.8E-04	1.3E-01
			Barium	NA	NA	NA	NA	Kidney	1.8E-02	NA	3.3E-04	1.9E-02
			Chromium	NA	NA	NA	NA	Nasal septum atrophy	7.8E-02	NA	8.1E-03	8.6E-02
			Copper	NA	NA	NA	NA	GI Tract	2.5E-02	NA	3.2E-05	2.5E-02
			Iron	NA	NA	NA	NA	NA	3.6E-01	NA	NA	3.6E-01
			Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Manganese	NA	NA	NA	NA	CNS	2.8E-02	NA	9.1E-04	2.9E-02
			Nickel	NA	NA	NA	NA	Whole Body	5.9E-02	NA	3.8E-04	6.0E-02
			Chemical Total	1.7E-04	1.2E-04	6.6E-06	2.9E-04		5.9E+00	2.3E-01	9.3E-02	6.2E+00
		Exposure Point Total					2.9E-04					6.2E+00
	Exposure Medium Total						2.9E-04					6.2E+00
Groundwater Total							2.9E-04					6.2E+00

Total Risk Across All Media (Adult) =	3E-04
Total Hazard Across All Media =	6
Total Liver HI Across All Media =	5
Total Kidney HI Across All Media =	5
Total Fetus HI Across All Media =	5
Total Nasal Epithelium HI Across All Media =	0.09
Total GI Tract HI Across All Media =	0.03
Total Central Nervous System HI Across All Media =	5
Total Blood HI Across All Media =	0.01
Total Whole Body HI Across All Media =	0.07
Total Skin HI Across All Media =	0.1

302086

TABLE F-9.3
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Benzene	8.2E-08	4.0E-07	2.8E-09	4.8E-07	Blood	4.3E-03	2.0E-02	1.5E-04	2.4E-02
			Carbon Tetrachloride	2.1E-07	7.7E-07	7.7E-09	9.8E-07	Liver	2.7E-02	1.5E-02	9.8E-04	4.3E-02
			Chloroform	NA	1.5E-06	NA	1.5E-06	Liver	2.2E-03	NA	3.4E-05	2.2E-03
			cis-1,2-Dichloroethene	NA	NA	NA	NA	Blood	1.1E-02	NA	NA	1.1E-02
			Dichlorodifluoromethane	NA	NA	NA	NA	Whole Body	1.1E-03	4.0E-02	2.3E-05	4.2E-02
			Methyl tert-Butyl Ether	NA	NA	NA	NA	Liver/Kidney	NA	1.9E-03	NA	1.9E-03
			Tetrachloroethene	7.1E-05	2.4E-05	5.4E-06	1.0E-04	Liver	1.5E-01	NA	1.2E-02	1.7E-01
			Toluene	NA	NA	NA	NA	Kidney/CNS	2.4E-02	1.2E-02	1.7E-03	3.7E-02
			Trichloroethene	6.7E-05	6.3E-04	1.9E-06	7.0E-04	Liver/Kidney/Fetus/CNS	6.6E+00	1.6E+00	1.8E-01	8.3E+00
			SVOCs									
			Benzo(a)pyrene	1.9E-06	NA	3.1E-06	5.0E-06	NA	NA	NA	NA	NA
			Pesticides									
			alpha-Chlordane	9.3E-08	5.3E-07	7.3E-09	6.3E-07	Liver	6.2E-03	8.9E-02	6.1E-04	9.5E-02
			Dieldrin	1.8E-06	1.1E-05	5.1E-08	1.3E-05	Liver	2.7E-02	NA	7.4E-04	2.7E-02
			gamma-Chlordane	2.0E-07	1.1E-06	1.6E-08	1.4E-06	Liver	1.3E-02	1.9E-01	1.3E-03	2.0E-01
			Heptachlor epoxide	6.9E-07	3.9E-06	NA	4.6E-06	Liver	6.9E-02	NA	NA	6.9E-02
			INORGs									
			Arsenic	6.9E-06	NA	1.6E-08	6.9E-06	Skin	1.8E-01	NA	4.4E-04	1.8E-01
			Barium	NA	NA	NA	NA	Kidney	2.4E-02	NA	8.0E-04	2.5E-02
			Chromium	NA	NA	NA	NA	Nasal septum atrophy	1.0E-01	NA	1.9E-02	1.2E-01
			Copper	NA	NA	NA	NA	GI Tract	3.3E-02	NA	7.7E-05	3.3E-02
			Iron	NA	NA	NA	NA	NA	4.8E-01	NA	NA	4.8E-01
			Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Manganese	NA	NA	NA	NA	CNS	3.8E-02	NA	2.2E-03	4.0E-02
			Nickel	NA	NA	NA	NA	Whole Body	7.9E-02	NA	9.1E-04	8.0E-02
			Chemical Total	1.5E-04	6.7E-04	1.1E-05	8.3E-04		7.8E+00	2.0E+00	2.2E-01	1.0E+01
		Exposure Point Total					8.3E-04					1.0E+01
	Exposure Medium Total						8.3E-04					1.0E+01
Groundwater Total							8.3E-04					1.0E+01

Total Risk Across All Media (Adult) = 8E-04

Total Hazard Across All Media = 10

Total Liver HI Across All Media =	9
Total Kidney HI Across All Media =	8
Total Fetus HI Across All Media =	8
Total Nasal Epithelium HI Across All Media =	0.1
Total GI Tract HI Across All Media =	0.03
Total Central Nervous System HI Across All Media =	8
Total Blood HI Across All Media =	0.04
Total Whole Body HI Across All Media =	0.1
Total Skin HI Across All Media =	0.2

302087

TABLE F-10.1
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Site Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Tetrachloroethene	2.9E-05	NA	NA	2.9E-05	Liver	5.3E-02	NA	NA	5.3E-02
			Trichloroethene	2.7E-05	NA	NA	2.7E-05	Liver/Kidney/Fetus/CNS	2.3E+00	NA	NA	2.3E+00
			INORGs									
			Arsenic	2.8E-06	NA	NA	2.8E-06	Skin	6.2E-02	NA	NA	6.2E-02
			Chemical Total	6.1E-05	NA	NA	6.1E-05		2.7E+00	NA	NA	2.7E+00
		Exposure Point Total					6.1E-05					2.7E+00
	Exposure Medium Total						6.1E-05					2.7E+00
Groundwater Total							6.1E-05					2.7E+00

Total Risk Across All Media (Adult) = 6E-05

Total Hazard Across All Media = 3

Total Liver HI Across All Media =	2
Total Kidney HI Across All Media =	2
Total Fetus HI Across All Media =	2
Total Nasal Epithelium HI Across All Media =	0.04
Total GI Tract HI Across All Media =	0.01
Total Central Nervous System HI Across All Media =	2
Total Blood HI Across All Media =	0.005
Total Whole Body HI Across All Media =	0.03
Total Skin HI Across All Media =	0.06

302088

TABLE F-10.2
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Tetrachloroethene	8.0E-05	4.1E-06	3.4E-06	8.8E-05	Liver	1.2E-01	NA	4.9E-03	1.2E-01
			Trichloroethene	7.6E-05	1.1E-04	1.2E-06	1.8E-04	Liver/Kidney/Fetus/CNS	4.9E+00	1.8E-01	7.6E-02	5.2E+00
			SVOCs									
			Benzo(a)pyrene	2.2E-06	NA	1.9E-06	4.1E-06	NA	NA	NA	NA	NA
			Pesticides									
			Dieldrin	2.1E-06	1.9E-06	3.2E-08	4.0E-06	Liver	2.0E-02	NA	3.1E-04	2.0E-02
			Heptachlor epoxide	7.8E-07	6.7E-07	NA	1.4E-06	Liver	5.1E-02	NA	NA	5.1E-02
			INORGs									
			Arsenic	7.8E-06	NA	1.0E-08	7.8E-06	Skin	1.3E-01	NA	1.8E-04	1.3E-01
			Chemical Total	1.7E-04	1.2E-04	6.6E-06	2.9E-04		5.9E+00	2.3E-01	9.3E-02	6.2E+00
		Exposure Point Total					2.9E-04					6.2E+00
	Exposure Medium Total						2.9E-04					6.2E+00
Groundwater Total							2.9E-04					6.2E+00

Total Risk Across All Media (Adult) = 3E-04

Total Hazard Across All Media = 6

Total Liver HI Across All Media =	5
Total Kidney HI Across All Media =	5
Total Fetus HI Across All Media =	5
Total Nasal Epithelium HI Across All Media =	0.09
Total GI Tract HI Across All Media =	0.03
Total Central Nervous System HI Across All Media =	5
Total Blood HI Across All Media =	0.01
Total Whole Body HI Across All Media =	0.07
Total Skin HI Across All Media =	0.1

302089

TABLE F-10.3
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY EXPOSURE
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child (0-6 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic-Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	**VOCs**									
			Chloroform	NA	1.5E-06	NA	1.5E-06	Liver	2.2E-03	NA	3.4E-05	2.2E-03
			Tetrachloroethene	7.1E-05	2.4E-05	5.4E-06	1.0E-04	Liver	1.5E-01	NA	1.2E-02	1.7E-01
			Trichloroethene	6.7E-05	6.3E-04	1.9E-06	7.0E-04	Liver/Kidney/Fetus/CNS	6.6E+00	1.6E+00	1.8E-01	8.3E+00
			SVOCs									
			Benzo(a)pyrene	1.9E-06	NA	3.1E-06	5.0E-06	NA	NA	NA	NA	NA
			Pesticides									
			Dieldrin	1.8E-06	1.1E-05	5.1E-08	1.3E-05	Liver	2.7E-02	NA	7.4E-04	2.7E-02
			gamma-Chlordane	2.0E-07	1.1E-06	1.6E-08	1.4E-06	Liver	1.3E-02	1.9E-01	1.3E-03	2.0E-01
			Heptachlor epoxide	6.9E-07	3.9E-06	NA	4.6E-06	Liver	6.9E-02	NA	NA	6.9E-02
			INORGs									
			Arsenic	6.9E-06	NA	1.6E-08	6.9E-06	Skin	1.8E-01	NA	4.4E-04	1.8E-01
			Chemical Total	1.5E-04	6.7E-04	1.1E-05	8.3E-04		7.8E+00	2.0E+00	2.2E-01	1.0E+01
		Exposure Point Total					8.3E-04					1.0E+01
	Exposure Medium Total						8.3E-04					1.0E+01
Groundwater Total							8.3E-04					1.0E+01

Total Risk Across All Media (Adult) = 8E-04

Total Hazard Across All Media = 10

Total Liver HI Across All Media =	9
Total Kidney HI Across All Media =	8
Total Fetus HI Across All Media =	8
Total Nasal Epithelium HI Across All Media =	0.1
Total GI Tract HI Across All Media =	0.03
Total Central Nervous System HI Across All Media =	8
Total Blood HI Across All Media =	0.04
Total Whole Body HI Across All Media =	0.1
Total Skin HI Across All Media =	0.2

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Appendix G

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Appendix G

Analytical Results of Samples used in Human Health Risk Assessment

List of Tables and Figures Included in Appendix G
Old Roosevelt Field Contaminated Groundwater Site, Garden City, New York

TABLES

1 Analytical Results of Groundwater Round 1 Samples
2 Analytical Results of Groundwater Round 2 Samples
3 Analytical Results of Soil Gas Samples

TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-01-2-R1 4/12/2006	GWM-01-3-R1 4/13/2006	GWM-01-4-R1 4/12/2006	GWM-01-5-R1 4/12/2006	GWM-01-6-R1 4/12/2006	GWM-01-7-R1 4/12/2006	GWM-01-8-R1 4/12/2006	GWM-01-9-R1 4/12/2006	GWM-01-10-R1 4/12/2006	GWM-02-1-R1 4/7/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	0.38 J	0.93	0.51	0.26 J	0.38 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.19 J	0.5 U	0.13 J	0.77 J	3.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	1.1	2.7	1.8	0.98 J	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.12 J
75-35-4	1,1-Dichloroethene	µg/L	0.32 J	0.32 J	0.64	0.55 J	0.61	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 UJ	0.5 U	0.5 UJ	1.3 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 R	13 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	13 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	13 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 R	13 U	5 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.14 J
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.12 J	0.5 U	0.2 J	1.3 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.45 J
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.31 J
156-59-2	cis-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.97
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 UJ	0.5 U	0.5 UJ	1.3 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	6.6
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 R	0.5 R	0.5 R	1.3 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	1	0.5 U	1.5	8.2	30	0.84	0.5 U	0.5 U	0.5 U	0.96
75-09-2	Methylene Chloride	µg/L	1	0.5 U	0.5 U	1.3 U	0.5 UJ	0.5 UJ	0.92 UJ	0.5 UJ	0.5 UJ	0.14 J
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	0.21 J	0.24 J	0.38 J	0.28 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.4
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	0.3 J	0.77	0.5	0.32 J	0.49 J	0.5 U	0.5 U	0.5 U	0.5 U	22
75-69-4	Trichlorofluoromethane	µg/L	6.5	0.37 J	6.8	24	140	1.8	0.32 J	0.5 U	0.5 U	1.2
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1330-20-7	Xylenes (total)	µg/L	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-01-2-R1 4/12/2006	GWM-01-3-R1 4/13/2006	GWM-01-4-R1 4/12/2006	GWM-01-5-R1 4/12/2006	GWM-01-6-R1 4/12/2006	GWM-01-7-R1 4/12/2006	GWM-01-8-R1 4/12/2006	GWM-01-9-R1 4/12/2006	GWM-01-10-R1 4/12/2006	GWM-02-1-R1 4/7/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L		10 U								
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L		10 U								
95-95-4	2,4,5-Trichlorophenol	µg/L		25 U								
88-06-2	2,4,6-Trichlorophenol	µg/L		10 U								
120-83-2	2,4-Dichlorophenol	µg/L		10 U								
105-67-9	2,4-Dimethylphenol	µg/L		10 U								
51-28-5	2,4-Dinitrophenol	µg/L		25 U								
121-14-2	2,4-Dinitrotoluene	µg/L		10 U								
606-20-2	2,6-Dinitrotoluene	µg/L		10 U								
91-58-7	2-Chloronaphthalene	µg/L		10 U								
95-57-8	2-Chlorophenol	µg/L		10 U								
91-57-6	2-Methylnaphthalene	µg/L		10 U								
95-48-7	2-Methylphenol	µg/L		10 U								
88-74-4	2-Nitroaniline	µg/L		25 U								
88-75-5	2-Nitrophenol	µg/L		10 U								
91-94-1	3,3'-Dichlorobenzidine	µg/L		10 UJ								
99-09-2	3-Nitroaniline	µg/L		25 U								
534-52-1	4,6-Dinitro-2-methylphenol	µg/L		25 U								
101-55-3	4-Bromophenyl-phenylether	µg/L		10 U								
59-50-7	4-Chloro-3-methylphenol	µg/L		10 U								
106-47-8	4-Chloroaniline	µg/L		10 U								
7005-72-3	4-Chlorophenyl-phenylether	µg/L		10 U								
106-44-5	4-Methylphenol	µg/L		10 U								
100-01-6	4-Nitroaniline	µg/L		25 U								
100-02-7	4-Nitrophenol	µg/L		25 U								
83-32-9	Acenaphthene	µg/L		10 U								
208-96-8	Acenaphthylene	µg/L		10 U								
98-86-2	Acetophenone	µg/L		10 U								
120-12-7	Anthracene	µg/L		10 U								
1912-24-9	Atrazine	µg/L		10 U								
100-52-7	Benzaldehyde	µg/L		10 U								
56-55-3	Benzo(a)anthracene	µg/L		10 U								
50-32-8	Benzo(a)pyrene	µg/L		10 U								
205-99-2	Benzo(b)fluoranthene	µg/L		10 U								
191-24-2	Benzo(g,h,i)perylene	µg/L		10 UJ								
207-08-9	Benzo(k)fluoranthene	µg/L		10 U								
111-91-1	bis(2-Chloroethoxy)methane	µg/L		10 U								
111-44-4	bis(2-Chloroethyl) ether	µg/L		10 U								
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L		10 U								
85-68-7	Butylbenzylphthalate	µg/L		10 U								
105-60-2	Caprolactam	µg/L		10 U								
86-74-8	Carbazole	µg/L		10 U								
218-01-9	Chrysene	µg/L		10 U								
53-70-3	Dibenz(a,h)anthracene	µg/L		10 UJ								
132-64-9	Dibenzofuran	µg/L		10 U								
84-66-2	Diethylphthalate	µg/L		10 U								
131-11-3	Dimethylphthalate	µg/L		10 U								
84-74-2	Di-n-butylphthalate	µg/L		10 U								
117-84-0	Di-n-octylphthalate	µg/L		10 U								
206-44-0	Fluoranthene	µg/L		10 U								
86-73-7	Fluorene	µg/L		10 U								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-01-2-R1 4/12/2006	GWM-01-3-R1 4/13/2006	GWM-01-4-R1 4/12/2006	GWM-01-5-R1 4/12/2006	GWM-01-6-R1 4/12/2006	GWM-01-7-R1 4/12/2006	GWM-01-8-R1 4/12/2006	GWM-01-9-R1 4/12/2006	GWM-01-10-R1 4/12/2006	GWM-02-1-R1 4/7/2006
	Semi-Volatile Organic Compounds											
118-74-1	Hexachlorobenzene	µg/L		10 U								
87-68-3	Hexachlorobutadiene	µg/L		10 U								
77-47-4	Hexachlorocyclopentadiene	µg/L		10 U								
67-72-1	Hexachloroethane	µg/L		10 U								
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L		10 UJ								
78-59-1	Isophorone	µg/L		10 U								
91-20-3	Naphthalene	µg/L		10 U								
98-95-3	Nitrobenzene	µg/L		10 U								
621-64-7	n-Nitroso-di-n-propylamine	µg/L		10 U								
86-30-6	n-Nitrosodiphenylamine	µg/L		10 UJ								
87-86-5	Pentachlorophenol	µg/L		25 U								
85-01-8	Phenanthrene	µg/L		10 U								
108-95-2	Phenol	µg/L		10 U								
129-00-0	Pyrene	µg/L		10 U								
	Pesticides/PCBs											
72-54-8	4,4'-DDD	µg/L		0.11 U								
72-55-9	4,4'-DDE	µg/L		0.11 U								
50-29-3	4,4'-DDT	µg/L		0.11 U								
309-00-2	Aldrin	µg/L		0.053 U								
319-84-6	alpha-BHC	µg/L		0.053 U								
5103-71-9	alpha-Chlordane	µg/L		0.053 U								
12674-11-2	Aroclor-1016	µg/L		1.1 U								
11104-28-2	Aroclor-1221	µg/L		2.1 U								
11141-16-5	Aroclor-1232	µg/L		1.1 U								
53469-21-9	Aroclor-1242	µg/L		1.1 U								
12672-29-6	Aroclor-1248	µg/L		1.1 U								
11097-69-1	Aroclor-1254	µg/L		1.1 U								
11096-82-5	Aroclor-1260	µg/L		1.1 U								
319-85-7	beta-BHC	µg/L		0.053 U								
319-86-8	delta-BHC	µg/L		0.053 U								
60-57-1	Dieldrin	µg/L		0.11 U								
959-98-8	Endosulfan I	µg/L		0.053 U								
33213-65-9	Endosulfan II	µg/L		0.11 U								
1031-07-8	Endosulfan sulfate	µg/L		0.11 U								
72-20-8	Endrin	µg/L		0.11 U								
7421-93-4	Endrin aldehyde	µg/L		0.11 U								
53494-70-5	Endrin ketone	µg/L		0.11 U								
58-89-9	gamma-BHC (Lindane)	µg/L		0.053 U								
5103-74-2	gamma-Chlordane	µg/L		0.053 U								
76-44-8	Heptachlor	µg/L		0.053 U								
1024-57-3	Heptachlor epoxide	µg/L		0.053 U								
72-43-5	Methoxychlor	µg/L		0.53 U								
8001-35-2	Toxaphene	µg/L		5.3 U								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-01-2-R1 4/12/2006	GWM-01-3-R1 4/13/2006	GWM-01-4-R1 4/12/2006	GWM-01-5-R1 4/12/2006	GWM-01-6-R1 4/12/2006	GWM-01-7-R1 4/12/2006	GWM-01-8-R1 4/12/2006	GWM-01-9-R1 4/12/2006	GWM-01-10-R1 4/12/2006	GWM-02-1-R1 4/7/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L		320 K								
7440-36-0	Antimony	µg/L		14 U								
7440-38-2	Arsenic	µg/L		8 U								
7440-39-3	Barium	µg/L		31								
7440-41-7	Beryllium	µg/L		5 U								
7440-43-9	Cadmium	µg/L		4 U								
7440-70-2	Calcium	mg/L		7.4								
7440-47-3	Chromium	µg/L		21								
7440-48-4	Cobalt	µg/L		8 U								
7440-50-8	Copper	µg/L		10 U								
57-12-5	Cyanide	µg/L		5 U								
7439-89-6	Iron	µg/L		490 K								
7439-92-1	Lead	µg/L		7 U								
7439-95-4	Magnesium	mg/L		2								
7439-96-5	Manganese	µg/L		110								
7439-97-6	Mercury	µg/L		0.2 U								
7439-98-7	Molybdenum	µg/L		8 U								
7440-02-0	Nickel	µg/L		46								
7440-09-7	Potassium	mg/L		1.5								
7782-49-2	Selenium	µg/L		7 U								
7440-22-4	Silver	µg/L		6 U								
7440-23-5	Sodium	mg/L		55 L								
7440-28-0	Thallium	µg/L		20 U								
7440-62-2	Vanadium	µg/L		10 U								
7440-66-6	Zinc	µg/L		42 J								
	Wet Chemistry Parameters											
CL	Chloride	mg/L		41								
SO4	Sulfate	mg/L		44								
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L		5.6								
TOC	Total Organic Carbon	mg/L		1.9								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-02-2-R1 4/7/2006	GWM-02-3-R1 4/7/2006	GWM-02-4-R1 4/7/2006	GWM-02-5-R1 4/7/2006	GWM-02-6-R1-Avg	GWM-02-7-R1 4/7/2006	GWM-02-8-R1 4/7/2006	GWM-02-9-R1 4/7/2006	GWM-02-10-R1 4/7/2006	GWM-03-1-R1 3/27/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	0.24 J	0.31 J	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.28 J
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	1.2 J	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	1.2	1.1	0.26 J	0.17 J	0.3 J	0.5 U	0.5 U	0.5 U	0.5 U	0.41 J
75-35-4	1,1-Dichloroethene	µg/L	0.46 J	0.41 J	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	13 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	13 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	13 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	13 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.13 J	0.5 U	0.5 U	0.1 J	1.3 U	0.16 J	0.5 U	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.62	0.31 J	0.34 J	0.24 J	1.3 U	0.34 J	0.22 J	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.19 J	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.86	2.7	5.2	4.9	9.7	0.29 J	0.36 J	0.8	0.69	0.5 U
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	4.7	3.5	3.9	10	4.9 J	7.5	6.9	3.2	2.2	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.34 J	0.37 J	0.6	0.43 J	0.775 J	0.44 J	1.4	3	0.24 J	0.5 U
75-09-2	Methylene Chloride	µg/L	0.5 U	0.5 U	0.15 J	0.5 U	1.3 U	0.5 U	0.5 U	0.38 J	0.7	0.5 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	1.4	1.6	2.8	5.8	2.65	3.2	2.8	0.86	0.68	0.2 J
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.19 J	0.26 J	0.24 J	0.905 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	13	16	23	24	31	18	25	20	4.9	1.9
75-69-4	Trichlorofluoromethane	µg/L	58	0.95	0.96	3.1	0.585 J	0.55	0.33 J	0.43 J	0.39 J	20
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1330-20-7	Xylenes (total)	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

302098

TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-02-2-R1 4/7/2006	GWM-02-3-R1 4/7/2006	GWM-02-4-R1 4/7/2006	GWM-02-5-R1 4/7/2006	GWM-02-6-R1-Avg	GWM-02-7-R1 4/7/2006	GWM-02-8-R1 4/7/2006	GWM-02-9-R1 4/7/2006	GWM-02-10-R1 4/7/2006	GWM-03-1-R1 3/27/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L					10 U					
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L					10 U					
95-95-4	2,4,5-Trichlorophenol	µg/L					25 U					
88-06-2	2,4,6-Trichlorophenol	µg/L					10 U					
120-83-2	2,4-Dichlorophenol	µg/L					10 U					
105-67-9	2,4-Dimethylphenol	µg/L					10 U					
51-28-5	2,4-Dinitrophenol	µg/L					25 R					
121-14-2	2,4-Dinitrotoluene	µg/L					10 U					
606-20-2	2,6-Dinitrotoluene	µg/L					10 U					
91-58-7	2-Chloronaphthalene	µg/L					10 U					
95-57-8	2-Chlorophenol	µg/L					10 U					
91-57-6	2-Methylnaphthalene	µg/L					10 U					
95-48-7	2-Methylphenol	µg/L					10 U					
88-74-4	2-Nitroaniline	µg/L					25 U					
88-75-5	2-Nitrophenol	µg/L					10 U					
91-94-1	3,3'-Dichlorobenzidine	µg/L					10 U					
99-09-2	3-Nitroaniline	µg/L					25 U					
534-52-1	4,6-Dinitro-2-methylphenol	µg/L					25 UJ					
101-55-3	4-Bromophenyl-phenylether	µg/L					10 U					
59-50-7	4-Chloro-3-methylphenol	µg/L					10 U					
106-47-8	4-Chloroaniline	µg/L					10 U					
7005-72-3	4-Chlorophenyl-phenylether	µg/L					10 U					
106-44-5	4-Methylphenol	µg/L					10 UJ					
100-01-6	4-Nitroaniline	µg/L					25 U					
100-02-7	4-Nitrophenol	µg/L					25 U					
83-32-9	Acenaphthene	µg/L					10 U					
208-96-8	Acenaphthylene	µg/L					10 U					
98-86-2	Acetophenone	µg/L					10 U					
120-12-7	Anthracene	µg/L					10 U					
1912-24-9	Atrazine	µg/L					10 U					
100-52-7	Benzaldehyde	µg/L					10 U					
56-55-3	Benzo(a)anthracene	µg/L					10 U					
50-32-8	Benzo(a)pyrene	µg/L					10 U					
205-99-2	Benzo(b)fluoranthene	µg/L					10 U					
191-24-2	Benzo(g,h,i)perylene	µg/L					10 U					
207-08-9	Benzo(k)fluoranthene	µg/L					10 U					
111-91-1	bis(2-Chloroethoxy)methane	µg/L					10 U					
111-44-4	bis(2-Chloroethyl) ether	µg/L					10 UJ					
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L					10 UJ					
85-68-7	Butylbenzylphthalate	µg/L					10 U					
105-60-2	Caprolactam	µg/L					10 U					
86-74-8	Carbazole	µg/L					10 U					
218-01-9	Chrysene	µg/L					10 U					
53-70-3	Dibenz(a,h)anthracene	µg/L					10 U					
132-64-9	Dibenzofuran	µg/L					10 U					
84-66-2	Diethylphthalate	µg/L					10 U					
131-11-3	Dimethylphthalate	µg/L					10 U					
84-74-2	Di-n-butylphthalate	µg/L					10 U					
117-84-0	Di-n-octylphthalate	µg/L					10 UJ					
206-44-0	Fluoranthene	µg/L					10 U					
86-73-7	Fluorene	µg/L					10 U					

302099

TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-02-2-R1 4/7/2006	GWM-02-3-R1 4/7/2006	GWM-02-4-R1 4/7/2006	GWM-02-5-R1 4/7/2006	GWM-02-6-R1-Avg	GWM-02-7-R1 4/7/2006	GWM-02-8-R1 4/7/2006	GWM-02-9-R1 4/7/2006	GWM-02-10-R1 4/7/2006	GWM-03-1-R1 3/27/2006
	Semi-Volatile Organic Compounds											
118-74-1	Hexachlorobenzene	µg/L					10 U					
87-68-3	Hexachlorobutadiene	µg/L					10 U					
77-47-4	Hexachlorocyclopentadiene	µg/L					10 UJ					
67-72-1	Hexachloroethane	µg/L					10 U					
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L					10 U					
78-59-1	Isophorone	µg/L					10 U					
91-20-3	Naphthalene	µg/L					10 U					
98-95-3	Nitrobenzene	µg/L					10 U					
621-64-7	n-Nitroso-di-n-propylamine	µg/L					10 U					
86-30-6	n-Nitrosodiphenylamine	µg/L					10 U					
87-86-5	Pentachlorophenol	µg/L					25 U					
85-01-8	Phenanthrene	µg/L					10 U					
108-95-2	Phenol	µg/L					10 U					
129-00-0	Pyrene	µg/L					10 U					
	Pesticides/PCBs											
72-54-8	4,4'-DDD	µg/L					0.1 U					
72-55-9	4,4'-DDE	µg/L					0.1 U					
50-29-3	4,4'-DDT	µg/L					0.1 U					
309-00-2	Aldrin	µg/L					0.05 U					
319-84-6	alpha-BHC	µg/L					0.05 U					
5103-71-9	alpha-Chlordane	µg/L					0.05 U					
12674-11-2	Aroclor-1016	µg/L					1 U					
11104-28-2	Aroclor-1221	µg/L					2 U					
11141-16-5	Aroclor-1232	µg/L					1 U					
53469-21-9	Aroclor-1242	µg/L					1 U					
12672-29-6	Aroclor-1248	µg/L					1 U					
11097-69-1	Aroclor-1254	µg/L					1 U					
11096-82-5	Aroclor-1260	µg/L					1 U					
319-85-7	beta-BHC	µg/L					0.05 U					
319-86-8	delta-BHC	µg/L					0.05 U					
60-57-1	Dieldrin	µg/L					0.1 U					
959-98-8	Endosulfan I	µg/L					0.05 U					
33213-65-9	Endosulfan II	µg/L					0.1 U					
1031-07-8	Endosulfan sulfate	µg/L					0.1 U					
72-20-8	Endrin	µg/L					0.1 U					
7421-93-4	Endrin aldehyde	µg/L					0.1 U					
53494-70-5	Endrin ketone	µg/L					0.1 U					
58-89-9	gamma-BHC (Lindane)	µg/L					0.05 U					
5103-74-2	gamma-Chlordane	µg/L					0.05 U					
76-44-8	Heptachlor	µg/L					0.05 U					
1024-57-3	Heptachlor epoxide	µg/L					0.05 U					
72-43-5	Methoxychlor	µg/L					0.5 U					
8001-35-2	Toxaphene	µg/L					5 U					

302100

TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-02-2-R1 4/7/2006	GWM-02-3-R1 4/7/2006	GWM-02-4-R1 4/7/2006	GWM-02-5-R1 4/7/2006	GWM-02-6-R1-Avg	GWM-02-7-R1 4/7/2006	GWM-02-8-R1 4/7/2006	GWM-02-9-R1 4/7/2006	GWM-02-10-R1 4/7/2006	GWM-03-1-R1 3/27/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L					200 U					
7440-36-0	Antimony	µg/L					14 U					
7440-38-2	Arsenic	µg/L					8 U					
7440-39-3	Barium	µg/L					16.5					
7440-41-7	Beryllium	µg/L					5 U					
7440-43-9	Cadmium	µg/L					4 U					
7440-70-2	Calcium	mg/L					6.65					
7440-47-3	Chromium	µg/L					6 U					
7440-48-4	Cobalt	µg/L					8 U					
7440-50-8	Copper	µg/L					10 U					
57-12-5	Cyanide	µg/L					5 U					
7439-89-6	Iron	µg/L					100 U					
7439-92-1	Lead	µg/L					7 U					
7439-95-4	Magnesium	mg/L					2.25					
7439-96-5	Manganese	µg/L					43					
7439-97-6	Mercury	µg/L					0.2 U					
7439-98-7	Molybdenum	µg/L					8 U					
7440-02-0	Nickel	µg/L					5 U					
7440-09-7	Potassium	mg/L					2.8					
7782-49-2	Selenium	µg/L					7 U					
7440-22-4	Silver	µg/L					6 U					
7440-23-5	Sodium	mg/L					33 L					
7440-28-0	Thallium	µg/L					20 U					
7440-62-2	Vanadium	µg/L					10 U					
7440-66-6	Zinc	µg/L					29.5					
	Wet Chemistry Parameters											
CL	Chloride	mg/L					33					
SO4	Sulfate	mg/L					32.5					
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L					0.5					
TOC	Total Organic Carbon	mg/L					1.5					

302101

TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-03-2-R1 / 3/28/2006	GWM-03-3-R1 / 3/28/2006	GWM-03-4-R1 / 3/28/2006	GWM-03-5-R1 / 3/28/2006	GWM-03-6-R1 / 3/28/2006	GWM-03-7-R1 / 3/28/2006	GWM-04-1-R1 / 4/11/2006	GWM-04-2-R1 / 4/11/2006	GWM-04-3-R1 / 4/11/2006	GWM-04-4-R1 / 4/11/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	0.87	0.89	0.62	0.43 J	0.91	0.95	0.85 J	1.2	2.5 U	2.4 J
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 UJ	1 U	2.5 U	8.4 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
75-34-3	1,1-Dichloroethane	µg/L	3.5	2.6	0.25 J	0.74	0.66	0.18 J	2.7	3.3	2.5 U	8.4 U
75-35-4	1,1-Dichloroethene	µg/L	0.84	0.27 J	0.12 J	0.15 J	0.23 J	0.5 U	1.2	1.7	1.3 J	8.9
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
106-93-4	1,2-Dibromoethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 UJ	1 UJ	2.5 UJ	8.4 UJ
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	25 U	84 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	25 U	84 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	25 U	84 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	10 U	11 U	32 U	120 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 J	1.3	2.5 U	8.4 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.7 UJ	2.4 UJ	2.5 UJ	8.4 UJ
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.25 J	0.39 J	0.5 U	0.5 U	0.5 U	0.5 U	0.41 J	0.82 J	1.4 J	3.9 J
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
75-71-8	Dichlorodifluoromethane	µg/L	0.48 J	0.17 J	0.22 J	1.9	0.5 U	0.5 U	1 UJ	1 UJ	5.2 J	97 J
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
79-20-9	Methyl Acetate	µg/L	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	1 R	1 R	2.5 R	8.4 R
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.5 U	0.5 U	0.5 U	1.6	0.44 J	0.5 U	3.4	1.7	6.5	10
75-09-2	Methylene Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 UJ	1.6 U	2 J	3.8 J
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
127-18-4	Tetrachloroethene	µg/L	0.39 J	0.25 J	0.54	0.39 J	0.65	0.72	7.3	20	21	180
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 UJ	1 UJ	2.5 UJ	8.4 UJ
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
79-01-6	Trichloroethene	µg/L	3.3	8.9	0.5 U	0.4 J	0.5 U	0.5 U	30	26	64	280
75-69-4	Trichlorofluoromethane	µg/L	6.8	7.1	0.5 U	0.5 U	0.5 U	0.5 U	31	16	2.8	8.4 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U
1330-20-7	Xylenes (total)	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.5 U	8.4 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-03-2-R1 3/28/2006	GWM-03-3-R1 3/28/2006	GWM-03-4-R1 3/28/2006	GWM-03-5-R1 3/28/2006	GWM-03-6-R1 3/28/2006	GWM-03-7-R1 3/28/2006	GWM-04-1-R1 4/11/2006	GWM-04-2-R1 4/11/2006	GWM-04-3-R1 4/11/2006	GWM-04-4-R1 4/11/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L		10 U								
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L		10 U								
95-95-4	2,4,5-Trichlorophenol	µg/L		25 U								
88-06-2	2,4,6-Trichlorophenol	µg/L		10 U								
120-83-2	2,4-Dichlorophenol	µg/L		10 U								
105-67-9	2,4-Dimethylphenol	µg/L		10 U								
51-28-5	2,4-Dinitrophenol	µg/L		25 UJ								
121-14-2	2,4-Dinitrotoluene	µg/L		10 U								
606-20-2	2,6-Dinitrotoluene	µg/L		10 U								
91-58-7	2-Chloronaphthalene	µg/L		10 U								
95-57-8	2-Chlorophenol	µg/L		10 U								
91-57-6	2-Methylnaphthalene	µg/L		10 U								
95-48-7	2-Methylphenol	µg/L		10 U								
88-74-4	2-Nitroaniline	µg/L		25 U								
88-75-5	2-Nitrophenol	µg/L		10 U								
91-94-1	3,3'-Dichlorobenzidine	µg/L		10 U								
99-09-2	3-Nitroaniline	µg/L		25 U								
534-52-1	4,6-Dinitro-2-methylphenol	µg/L		25 U								
101-55-3	4-Bromophenyl-phenylether	µg/L		10 U								
59-50-7	4-Chloro-3-methylphenol	µg/L		10 U								
106-47-8	4-Chloroaniline	µg/L		10 U								
7005-72-3	4-Chlorophenyl-phenylether	µg/L		10 U								
106-44-5	4-Methylphenol	µg/L		10 U								
100-01-6	4-Nitroaniline	µg/L		25 UJ								
100-02-7	4-Nitrophenol	µg/L		25 UJ								
83-32-9	Acenaphthene	µg/L		10 U								
208-96-8	Acenaphthylene	µg/L		10 U								
98-86-2	Acetophenone	µg/L		10 U								
120-12-7	Anthracene	µg/L		10 U								
1912-24-9	Atrazine	µg/L		10 U								
100-52-7	Benzaldehyde	µg/L		10 UJ								
56-55-3	Benzo(a)anthracene	µg/L		10 U								
50-32-8	Benzo(a)pyrene	µg/L		10 U								
205-99-2	Benzo(b)fluoranthene	µg/L		10 U								
191-24-2	Benzo(g,h,i)perylene	µg/L		10 U								
207-08-9	Benzo(k)fluoranthene	µg/L		10 UJ								
111-91-1	bis(2-Chloroethoxy)methane	µg/L		10 U								
111-44-4	bis(2-Chloroethyl) ether	µg/L		10 U								
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L		10 U								
85-68-7	Butylbenzylphthalate	µg/L		10 U								
105-60-2	Caprolactam	µg/L		10 UJ								
86-74-8	Carbazole	µg/L		10 U								
218-01-9	Chrysene	µg/L		10 U								
53-70-3	Dibenz(a,h)anthracene	µg/L		10 U								
132-64-9	Dibenzofuran	µg/L		10 U								
84-66-2	Diethylphthalate	µg/L		10 U								
131-11-3	Dimethylphthalate	µg/L		10 U								
84-74-2	Di-n-butylphthalate	µg/L		10 U								
117-84-0	Di-n-octylphthalate	µg/L		10 U								
206-44-0	Fluoranthene	µg/L		10 U								
86-73-7	Fluorene	µg/L		10 U								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-03-2-R1 3/28/2006	GWM-03-3-R1 3/28/2006	GWM-03-4-R1 3/28/2006	GWM-03-5-R1 3/28/2006	GWM-03-6-R1 3/28/2006	GWM-03-7-R1 3/28/2006	GWM-04-1-R1 4/11/2006	GWM-04-2-R1 4/11/2006	GWM-04-3-R1 4/11/2006	GWM-04-4-R1 4/11/2006
	Semi-Volatile Organic Compounds											
118-74-1	Hexachlorobenzene	µg/L		10 U								
87-68-3	Hexachlorobutadiene	µg/L		10 UJ								
77-47-4	Hexachlorocyclopentadiene	µg/L		10 U								
67-72-1	Hexachloroethane	µg/L		10 U								
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L		10 U								
78-59-1	Isophorone	µg/L		10 U								
91-20-3	Naphthalene	µg/L		10 U								
98-95-3	Nitrobenzene	µg/L		10 U								
621-64-7	n-Nitroso-di-n-propylamine	µg/L		10 UJ								
86-30-6	n-Nitrosodiphenylamine	µg/L		10 U								
87-86-5	Pentachlorophenol	µg/L		25 U								
85-01-8	Phenanthrene	µg/L		10 U								
108-95-2	Phenol	µg/L		10 U								
129-00-0	Pyrene	µg/L		10 U								
	Pesticides/PCBs											
72-54-8	4,4'-DDD	µg/L		0.1 U								
72-55-9	4,4'-DDE	µg/L		0.1 U								
50-29-3	4,4'-DDT	µg/L		0.1 U								
309-00-2	Aldrin	µg/L		0.05 U								
319-84-6	alpha-BHC	µg/L		0.05 U								
5103-71-9	alpha-Chlordane	µg/L		0.05 U								
12674-11-2	Aroclor-1016	µg/L		1 U								
11104-28-2	Aroclor-1221	µg/L		2 U								
11141-16-5	Aroclor-1232	µg/L		1 U								
53469-21-9	Aroclor-1242	µg/L		1 U								
12672-29-6	Aroclor-1248	µg/L		1 U								
11097-69-1	Aroclor-1254	µg/L		1 U								
11096-82-5	Aroclor-1260	µg/L		1 U								
319-85-7	beta-BHC	µg/L		0.05 U								
319-86-8	delta-BHC	µg/L		0.05 U								
60-57-1	Dieldrin	µg/L		0.1 U								
959-98-8	Endosulfan I	µg/L		0.05 U								
33213-65-9	Endosulfan II	µg/L		0.1 U								
1031-07-8	Endosulfan sulfate	µg/L		0.1 U								
72-20-8	Endrin	µg/L		0.1 U								
7421-93-4	Endrin aldehyde	µg/L		0.1 U								
53494-70-5	Endrin ketone	µg/L		0.1 U								
58-89-9	gamma-BHC (Lindane)	µg/L		0.05 U								
5103-74-2	gamma-Chlordane	µg/L		0.05 U								
76-44-8	Heptachlor	µg/L		0.05 U								
1024-57-3	Heptachlor epoxide	µg/L		0.05 U								
72-43-5	Methoxychlor	µg/L		0.5 U								
8001-35-2	Toxaphene	µg/L		5 U								

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ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-03-2-R1 3/28/2006	GWM-03-3-R1 3/28/2006	GWM-03-4-R1 3/28/2006	GWM-03-5-R1 3/28/2006	GWM-03-6-R1 3/28/2006	GWM-03-7-R1 3/28/2006	GWM-04-1-R1 4/11/2006	GWM-04-2-R1 4/11/2006	GWM-04-3-R1 4/11/2006	GWM-04-4-R1 4/11/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L		200 U								
7440-36-0	Antimony	µg/L		14 U								
7440-38-2	Arsenic	µg/L		8 U								
7440-39-3	Barium	µg/L		95								
7440-41-7	Beryllium	µg/L		5 U								
7440-43-9	Cadmium	µg/L		4 U								
7440-70-2	Calcium	mg/L		33								
7440-47-3	Chromium	µg/L		20								
7440-48-4	Cobalt	µg/L		8 U								
7440-50-8	Copper	µg/L		10 U								
57-12-5	Cyanide	µg/L		5 U								
7439-89-6	Iron	µg/L		310								
7439-92-1	Lead	µg/L		7 U								
7439-95-4	Magnesium	mg/L		5.4								
7439-96-5	Manganese	µg/L		19								
7439-97-6	Mercury	µg/L		0.2 U								
7439-98-7	Molybdenum	µg/L		8 U								
7440-02-0	Nickel	µg/L		93								
7440-09-7	Potassium	mg/L		6.2								
7782-49-2	Selenium	µg/L		7 U								
7440-22-4	Silver	µg/L		6 U								
7440-23-5	Sodium	mg/L		100 L								
7440-28-0	Thallium	µg/L		20 U								
7440-62-2	Vanadium	µg/L		10 U								
7440-66-6	Zinc	µg/L		28								
	Wet Chemistry Parameters											
CL	Chloride	mg/L		160								
SO4	Sulfate	mg/L		37								
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L		8.9								
TOC	Total Organic Carbon	mg/L		1.5								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-04-5-R1 4/11/2006	GWM-04-6-R1 4/11/2006	GWM-04-7-R1 4/11/2006	GWM-04-8-R1 4/11/2006	GWM-04-9-R1 4/11/2006	GWM-04-10-R1 4/11/2006	GWM-05-1-R1 4/14/2006	GWM-05-2-R1 4/14/2006	GWM-05-3-R1 4/14/2006	GWM-05-4-R1 4/14/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	2.3 J	13 U	6.3 U	0.27 J	0.5 U	0.5 U	0.57	0.57	0.15 J	0.18 J
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	1.6	1.8	2	3
75-35-4	1,1-Dichloroethene	µg/L	7.8	5.5 J	2.2 J	0.57	0.5 U	0.5 U	1	1	0.37 J	0.4 J
87-61-6	1,2,3-Trichlorobenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-50-1	1,2-Dichlorobenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	6.3 UJ	13 UJ	6.3 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-93-3	2-Butanone	µg/L	63 U	130 U	63 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	63 U	130 U	63 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	63 U	130 U	63 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	83 U	160 U	87 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	6.3 U	13 U	6.3 U	0.22 J	0.5 U	0.5 U	0.5 U	0.5 U	0.12 J	0.11 J
75-27-4	Bromodichloromethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	6.3 U	13 U	6.3 U	0.1 J	0.5 U	0.5 U	0.18 J	0.25 J	0.17 J	0.5 U
108-90-7	Chlorobenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	6.3 UJ	13 UJ	6.3 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	3.6 J	5.3 J	2.2 J	2.3	0.89	0.1 J	0.56	1.8	0.97	1.1
10061-01-5	cis-1,3-Dichloropropene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	64 J	15 J	4.3 J	2.7 J	0.67 J	0.5 UJ	1.8	2	22	17
100-41-4	Ethylbenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	6.3 R	13 R	6.3 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1634-04-4	Methyl tert-Butyl Ether	µg/L	12	17	45	27	0.32 J	0.5 U	0.5 U	0.5 U	0.8	1.8
75-09-2	Methylene Chloride	µg/L	2.3 J	13 UJ	1.8 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-87-2	Metylcyclohexane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	220	350	14	41	15	0.37 J	0.5	0.95	0.55	0.72
108-88-3	Toluene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	6.3 UJ	13 UJ	6.3 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	260	220	260	90	2.7	1.3	6.6	32	12	14
75-69-4	Trichlorofluoromethane	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	1.2	0.37 J	0.46 J
75-01-4	Vinyl Chloride	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1330-20-7	Xylenes (total)	µg/L	6.3 U	13 U	6.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L			10 U							
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L			10 U							
95-95-4	2,4,5-Trichlorophenol	µg/L			25 U							
88-06-2	2,4,6-Trichlorophenol	µg/L			10 U							
120-83-2	2,4-Dichlorophenol	µg/L			10 U							
105-67-9	2,4-Dimethylphenol	µg/L			10 U							
51-28-5	2,4-Dinitrophenol	µg/L			25 R							
121-14-2	2,4-Dinitrotoluene	µg/L			10 U							
606-20-2	2,6-Dinitrotoluene	µg/L			10 U							
91-58-7	2-Chloronaphthalene	µg/L			10 U							
95-57-8	2-Chlorophenol	µg/L			10 U							
91-57-6	2-Methylnaphthalene	µg/L			10 U							
95-48-7	2-Methylphenol	µg/L			10 U							
88-74-4	2-Nitroaniline	µg/L			25 U							
88-75-5	2-Nitrophenol	µg/L			10 U							
91-94-1	3,3'-Dichlorobenzidine	µg/L			10 U							
99-09-2	3-Nitroaniline	µg/L			25 U							
534-52-1	4,6-Dinitro-2-methylphenol	µg/L			25 UJ							
101-55-3	4-Bromophenyl-phenylether	µg/L			10 U							
59-50-7	4-Chloro-3-methylphenol	µg/L			10 U							
106-47-8	4-Chloroaniline	µg/L			10 U							
7005-72-3	4-Chlorophenyl-phenylether	µg/L			10 U							
106-44-5	4-Methylphenol	µg/L			10 U							
100-01-6	4-Nitroaniline	µg/L			25 U							
100-02-7	4-Nitrophenol	µg/L			25 UJ							
83-32-9	Acenaphthene	µg/L			10 U							
208-96-8	Acenaphthylene	µg/L			10 U							
98-86-2	Acetophenone	µg/L			10 U							
120-12-7	Anthracene	µg/L			10 U							
1912-24-9	Atrazine	µg/L			10 U							
100-52-7	Benzaldehyde	µg/L			10 U							
56-55-3	Benzo(a)anthracene	µg/L			10 U							
50-32-8	Benzo(a)pyrene	µg/L			10 U							
205-99-2	Benzo(b)fluoranthene	µg/L			10 U							
191-24-2	Benzo(g,h,i)perylene	µg/L			10 U							
207-08-9	Benzo(k)fluoranthene	µg/L			10 U							
111-91-1	bis(2-Chloroethoxy)methane	µg/L			10 U							
111-44-4	bis(2-Chloroethyl) ether	µg/L			10 U							
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L			10 UJ							
85-68-7	Butylbenzylphthalate	µg/L			10 UJ							
105-60-2	Caprolactam	µg/L			10 U							
86-74-8	Carbazole	µg/L			10 U							
218-01-9	Chrysene	µg/L			10 U							
53-70-3	Dibenz(a,h)anthracene	µg/L			10 U							
132-64-9	Dibenzofuran	µg/L			10 U							
84-66-2	Diethylphthalate	µg/L			10 U							
131-11-3	Dimethylphthalate	µg/L			10 U							
84-74-2	Di-n-butylphthalate	µg/L			10 U							
117-84-0	Di-n-octylphthalate	µg/L			10 UJ							
206-44-0	Fluoranthene	µg/L			10 U							
86-73-7	Fluorene	µg/L			10 U							

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-04-5-R1 4/11/2006	GWM-04-6-R1 4/11/2006	GWM-04-7-R1 4/11/2006	GWM-04-8-R1 4/11/2006	GWM-04-9-R1 4/11/2006	GWM-04-10-R1 4/11/2006	GWM-05-1-R1 4/14/2006	GWM-05-2-R1 4/14/2006	GWM-05-3-R1 4/14/2006	GWM-05-4-R1 4/14/2006
	Semi-Volatile Organic Compounds											
118-74-1	Hexachlorobenzene	µg/L			10 U							
87-68-3	Hexachlorobutadiene	µg/L			10 U							
77-47-4	Hexachlorocyclopentadiene	µg/L			10 UJ							
67-72-1	Hexachloroethane	µg/L			10 U							
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L			10 U							
78-59-1	Isophorone	µg/L			10 U							
91-20-3	Naphthalene	µg/L			10 U							
98-95-3	Nitrobenzene	µg/L			10 U							
621-64-7	n-Nitroso-di-n-propylamine	µg/L			10 U							
86-30-6	n-Nitrosodiphenylamine	µg/L			10 U							
87-86-5	Pentachlorophenol	µg/L			25 U							
85-01-8	Phenanthrene	µg/L			10 U							
108-95-2	Phenol	µg/L			10 U							
129-00-0	Pyrene	µg/L			10 U							
	Pesticides/PCBs											
72-54-8	4,4'-DDD	µg/L			0.1 U							
72-55-9	4,4'-DDE	µg/L			0.1 U							
50-29-3	4,4'-DDT	µg/L			0.1 U							
309-00-2	Aldrin	µg/L			0.05 U							
319-84-6	alpha-BHC	µg/L			0.05 U							
5103-71-9	alpha-Chlordane	µg/L			0.05 U							
12674-11-2	Aroclor-1016	µg/L			1 U							
11104-28-2	Aroclor-1221	µg/L			2 U							
11141-16-5	Aroclor-1232	µg/L			1 U							
53469-21-9	Aroclor-1242	µg/L			1 U							
12672-29-6	Aroclor-1248	µg/L			1 U							
11097-69-1	Aroclor-1254	µg/L			1 U							
11096-82-5	Aroclor-1260	µg/L			1 U							
319-85-7	beta-BHC	µg/L			0.05 U							
319-86-8	delta-BHC	µg/L			0.05 U							
60-57-1	Dieldrin	µg/L			0.1 U							
959-98-8	Endosulfan I	µg/L			0.05 U							
33213-65-9	Endosulfan II	µg/L			0.1 U							
1031-07-8	Endosulfan sulfate	µg/L			0.1 U							
72-20-8	Endrin	µg/L			0.1 U							
7421-93-4	Endrin aldehyde	µg/L			0.1 U							
53494-70-5	Endrin ketone	µg/L			0.1 U							
58-89-9	gamma-BHC (Lindane)	µg/L			0.05 U							
5103-74-2	gamma-Chlordane	µg/L			0.05 U							
76-44-8	Heptachlor	µg/L			0.05 U							
1024-57-3	Heptachlor epoxide	µg/L			0.05 U							
72-43-5	Methoxychlor	µg/L			0.5 U							
8001-35-2	Toxaphene	µg/L			5 U							

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-04-5-R1 4/11/2006	GWM-04-6-R1 4/11/2006	GWM-04-7-R1 4/11/2006	GWM-04-8-R1 4/11/2006	GWM-04-9-R1 4/11/2006	GWM-04-10-R1 4/11/2006	GWM-05-1-R1 4/14/2006	GWM-05-2-R1 4/14/2006	GWM-05-3-R1 4/14/2006	GWM-05-4-R1 4/14/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L			200 U							
7440-36-0	Antimony	µg/L			14 U							
7440-38-2	Arsenic	µg/L			8 U							
7440-39-3	Barium	µg/L			56							
7440-41-7	Beryllium	µg/L			5 U							
7440-43-9	Cadmium	µg/L			4 U							
7440-70-2	Calcium	mg/L			17							
7440-47-3	Chromium	µg/L			6 U							
7440-48-4	Cobalt	µg/L			8 U							
7440-50-8	Copper	µg/L			10 U							
57-12-5	Cyanide	µg/L			5 U							
7439-89-6	Iron	µg/L			100 U							
7439-92-1	Lead	µg/L			7 U							
7439-95-4	Magnesium	mg/L			5							
7439-96-5	Manganese	µg/L			370							
7439-97-6	Mercury	µg/L			0.2 U							
7439-98-7	Molybdenum	µg/L			8 U							
7440-02-0	Nickel	µg/L			19							
7440-09-7	Potassium	mg/L			4.7							
7782-49-2	Selenium	µg/L			7 U							
7440-22-4	Silver	µg/L			6 U							
7440-23-5	Sodium	mg/L			80 L							
7440-28-0	Thallium	µg/L			20 U							
7440-62-2	Vanadium	µg/L			10 U							
7440-66-6	Zinc	µg/L			40							
	Wet Chemistry Parameters											
CL	Chloride	mg/L			110							
SO4	Sulfate	mg/L			66							
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L			0.16							
TOC	Total Organic Carbon	mg/L			1 U							

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-05-5-R1 4/14/2006	GWM-05-6-R1 4/14/2006	GWM-05-7-R1 4/14/2006	GWM-05-8-R1 4/14/2006	GWM-05-9-R1 4/14/2006	GWM-05-10-R1 4/14/2006	GWM-06-1-R1 3/31/2006	GWM-06-2-R1 3/31/2006	GWM-06-3-R1 3/31/2006	GWM-06-4-R1 3/31/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	0.26 J	0.2 J	1.6	1.5	0.52	0.5 U	7.4	3	14	15
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.15 J	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	1.8	0.7	4.4	4.7	3.1	0.5 U	2	0.99	3.8	6.5
75-35-4	1,1-Dichloroethene	µg/L	0.44 J	0.5 U	2.7	2.8	1.2	0.5 U	6.6	3.7	13	14
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	12	21	9.8	28
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.6	0.94	0.25 J
56-23-5	Carbon Tetrachloride	µg/L	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.27 J	0.24 J	0.5 U	0.5	0.11 J	0.55	0.53
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.19 J	0.24 J	0.47 J	2.5	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	1.7	0.58	0.23 J	0.12 J	0.34 J	0.5 U	1.8	0.69	4.8 J	4.1 J
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	3.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.59	0.29 J	0.58	0.36 J
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 U	0.5 U	0.5 R	0.5 R
1634-04-4	Methyl tert-Butyl Ether	µg/L	1.1	0.7	0.5	0.85	0.85	0.7	0.5 U	0.5 U	0.17 J	0.2 J
75-09-2	Methylene Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1 U	0.5 U	0.38 J	0.56 J
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	0.62	0.31 J	0.5	0.33 J	0.81	0.11 J	0.23 J	0.5 U	0.7	0.52
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.5	6.6	110	42
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	19	5	2.6	0.91	4.4	0.11 J	1.7	0.33 J	8.2	2.1
75-69-4	Trichlorofluoromethane	µg/L	0.56	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.13 J	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1330-20-7	Xylenes (total)	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-05-5-R1 4/14/2006	GWM-05-6-R1 4/14/2006	GWM-05-7-R1 4/14/2006	GWM-05-8-R1 4/14/2006	GWM-05-9-R1 4/14/2006	GWM-05-10-R1 4/14/2006	GWM-06-1-R1 3/31/2006	GWM-06-2-R1 3/31/2006	GWM-06-3-R1 3/31/2006	GWM-06-4-R1 3/31/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L		11 U								
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L		11 U								
95-95-4	2,4,5-Trichlorophenol	µg/L		28 U								
88-06-2	2,4,6-Trichlorophenol	µg/L		11 U								
120-83-2	2,4-Dichlorophenol	µg/L		11 U								
105-67-9	2,4-Dimethylphenol	µg/L		11 U								
51-28-5	2,4-Dinitrophenol	µg/L		28 U								
121-14-2	2,4-Dinitrotoluene	µg/L		11 U								
606-20-2	2,6-Dinitrotoluene	µg/L		11 U								
91-58-7	2-Chloronaphthalene	µg/L		11 U								
95-57-8	2-Chlorophenol	µg/L		11 U								
91-57-6	2-Methylnaphthalene	µg/L		11 U								
95-48-7	2-Methylphenol	µg/L		11 U								
88-74-4	2-Nitroaniline	µg/L		28 U								
88-75-5	2-Nitrophenol	µg/L		11 U								
91-94-1	3,3'-Dichlorobenzidine	µg/L		11 UJ								
99-09-2	3-Nitroaniline	µg/L		28 U								
534-52-1	4,6-Dinitro-2-methylphenol	µg/L		28 U								
101-55-3	4-Bromophenyl-phenylether	µg/L		11 U								
59-50-7	4-Chloro-3-methylphenol	µg/L		11 U								
106-47-8	4-Chloroaniline	µg/L		11 U								
7005-72-3	4-Chlorophenyl-phenylether	µg/L		11 U								
106-44-5	4-Methylphenol	µg/L		11 U								
100-01-6	4-Nitroaniline	µg/L		28 U								
100-02-7	4-Nitrophenol	µg/L		28 U								
83-32-9	Acenaphthene	µg/L		11 U								
208-96-8	Acenaphthylene	µg/L		11 U								
98-86-2	Acetophenone	µg/L		11 U								
120-12-7	Anthracene	µg/L		11 U								
1912-24-9	Atrazine	µg/L		11 U								
100-52-7	Benzaldehyde	µg/L		11 U								
56-55-3	Benzo(a)anthracene	µg/L		11 U								
50-32-8	Benzo(a)pyrene	µg/L		11 U								
205-99-2	Benzo(b)fluoranthene	µg/L		11 U								
191-24-2	Benzo(g,h,i)perylene	µg/L		11 UJ								
207-08-9	Benzo(k)fluoranthene	µg/L		11 U								
111-91-1	bis(2-Chloroethoxy)methane	µg/L		11 U								
111-44-4	bis(2-Chloroethyl) ether	µg/L		11 U								
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L		11 U								
85-68-7	Butylbenzylphthalate	µg/L		11 U								
105-60-2	Caprolactam	µg/L		11 U								
86-74-8	Carbazole	µg/L		11 U								
218-01-9	Chrysene	µg/L		11 U								
53-70-3	Dibenz(a,h)anthracene	µg/L		11 UJ								
132-64-9	Dibenzofuran	µg/L		11 U								
84-66-2	Diethylphthalate	µg/L		11 U								
131-11-3	Dimethylphthalate	µg/L		11 U								
84-74-2	Di-n-butylphthalate	µg/L		11 U								
117-84-0	Di-n-octylphthalate	µg/L		11 U								
206-44-0	Fluoranthene	µg/L		11 U								
86-73-7	Fluorene	µg/L		11 U								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-05-5-R1 4/14/2006	GWM-05-6-R1 4/14/2006	GWM-05-7-R1 4/14/2006	GWM-05-8-R1 4/14/2006	GWM-05-9-R1 4/14/2006	GWM-05-10-R1 4/14/2006	GWM-06-1-R1 3/31/2006	GWM-06-2-R1 3/31/2006	GWM-06-3-R1 3/31/2006	GWM-06-4-R1 3/31/2006
	Semi-Volatile Organic Compounds											
118-74-1	Hexachlorobenzene	µg/L		11 U								
87-68-3	Hexachlorobutadiene	µg/L		11 U								
77-47-4	Hexachlorocyclopentadiene	µg/L		11 U								
67-72-1	Hexachloroethane	µg/L		11 U								
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L		11 UJ								
78-59-1	Isophorone	µg/L		11 U								
91-20-3	Naphthalene	µg/L		11 U								
98-95-3	Nitrobenzene	µg/L		11 U								
621-64-7	n-Nitroso-di-n-propylamine	µg/L		11 U								
86-30-6	n-Nitrosodiphenylamine	µg/L		11 UJ								
87-86-5	Pentachlorophenol	µg/L		28 U								
85-01-8	Phenanthrene	µg/L		11 U								
108-95-2	Phenol	µg/L		11 U								
129-00-0	Pyrene	µg/L		11 U								
	Pesticides/PCBs											
72-54-8	4,4'-DDD	µg/L		0.11 U								
72-55-9	4,4'-DDE	µg/L		0.11 U								
50-29-3	4,4'-DDT	µg/L		0.11 U								
309-00-2	Aldrin	µg/L		0.054 U								
319-84-6	alpha-BHC	µg/L		0.054 U								
5103-71-9	alpha-Chlordane	µg/L		0.054 U								
12674-11-2	Aroclor-1016	µg/L		1.1 U								
11104-28-2	Aroclor-1221	µg/L		2.2 U								
11141-16-5	Aroclor-1232	µg/L		1.1 U								
53469-21-9	Aroclor-1242	µg/L		1.1 U								
12672-29-6	Aroclor-1248	µg/L		1.1 U								
11097-69-1	Aroclor-1254	µg/L		1.1 U								
11096-82-5	Aroclor-1260	µg/L		1.1 U								
319-85-7	beta-BHC	µg/L		0.054 U								
319-86-8	delta-BHC	µg/L		0.054 U								
60-57-1	Dieldrin	µg/L		0.11 U								
959-98-8	Endosulfan I	µg/L		0.054 U								
33213-65-9	Endosulfan II	µg/L		0.11 U								
1031-07-8	Endosulfan sulfate	µg/L		0.11 U								
72-20-8	Endrin	µg/L		0.11 U								
7421-93-4	Endrin aldehyde	µg/L		0.11 U								
53494-70-5	Endrin ketone	µg/L		0.11 U								
58-89-9	gamma-BHC (Lindane)	µg/L		0.054 U								
5103-74-2	gamma-Chlordane	µg/L		0.054 U								
76-44-8	Heptachlor	µg/L		0.054 U								
1024-57-3	Heptachlor epoxide	µg/L		0.054 UJ								
72-43-5	Methoxychlor	µg/L		0.54 U								
8001-35-2	Toxaphene	µg/L		5.4 U								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-05-5-R1 4/14/2006	GWM-05-6-R1 4/14/2006	GWM-05-7-R1 4/14/2006	GWM-05-8-R1 4/14/2006	GWM-05-9-R1 4/14/2006	GWM-05-10-R1 4/14/2006	GWM-06-1-R1 3/31/2006	GWM-06-2-R1 3/31/2006	GWM-06-3-R1 3/31/2006	GWM-06-4-R1 3/31/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L		200 U								
7440-36-0	Antimony	µg/L		14 U								
7440-38-2	Arsenic	µg/L		8 U								
7440-39-3	Barium	µg/L		81								
7440-41-7	Beryllium	µg/L		5 U								
7440-43-9	Cadmium	µg/L		4 U								
7440-70-2	Calcium	mg/L		25								
7440-47-3	Chromium	µg/L		17								
7440-48-4	Cobalt	µg/L		8 U								
7440-50-8	Copper	µg/L		10 U								
57-12-5	Cyanide	µg/L		5 U								
7439-89-6	Iron	µg/L		130								
7439-92-1	Lead	µg/L		7 U								
7439-95-4	Magnesium	mg/L		11								
7439-96-5	Manganese	µg/L		87								
7439-97-6	Mercury	µg/L		0.2 U								
7439-98-7	Molybdenum	µg/L		8 U								
7440-02-0	Nickel	µg/L		47								
7440-09-7	Potassium	mg/L		3.3								
7782-49-2	Selenium	µg/L		7 U								
7440-22-4	Silver	µg/L		6 U								
7440-23-5	Sodium	mg/L		120 L								
7440-28-0	Thallium	µg/L		20 U								
7440-62-2	Vanadium	µg/L		10 U								
7440-66-6	Zinc	µg/L		30								
	Wet Chemistry Parameters											
CL	Chloride	mg/L		200								
SO4	Sulfate	mg/L		40								
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L		4.9								
TOC	Total Organic Carbon	mg/L		1 U								

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-06-5-R1 3/30/2006	GWM-06-6-R1-Avg	GWM-07-1-R1 4/3/2006	GWM-07-2-R1 4/4/2006	GWM-07-3-R1 4/3/2006	GWM-07-4-R1 4/3/2006	GWM-07-5-R1-Avg	GWM-07-6-R1 4/3/2006	GWM-08-1-R1 4/5/2006
	Volatile Organic Compounds										
71-55-6	1,1,1-Trichloroethane	µg/L	21	2	0.5 U	0.66	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	15	0.28 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-35-4	1,1-Dichloroethene	µg/L	22	1.35	0.18 J	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.26 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-93-3	2-Butanone	µg/L	5 U	4.3 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	9.6	36	5 U	5 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.35 J	0.505 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	3.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	2.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.76 J	0.14 J	0.5 U	0.5 U	0.16 J	0.185 J	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	22 J	0.29 J	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.21 J
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.75	0.5 U	0.14 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.53	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 R	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.34 J	0.15 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	µg/L	0.84	0.5 U	0.79 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	1.1	0.11 U	0.5 U	0.11 J	2.2	0.21 J	0.575	0.5 U	1.9
108-88-3	Toluene	µg/L	23	800	0.56 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	4.3	0.275 J	0.18 J	0.66	9.4	0.38 J	1.5	0.5 U	1.9
75-69-4	Trichlorofluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.42 J	0.5 U	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1330-20-7	Xylenes (total)	µg/L	0.5 U	0.27 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-06-5-R1 3/30/2006	GWM-06-6-R1-Avg	GWM-07-1-R1 4/3/2006	GWM-07-2-R1 4/4/2006	GWM-07-3-R1 4/3/2006	GWM-07-4-R1 4/3/2006	GWM-07-5-R1-Avg	GWM-07-6-R1 4/3/2006	GWM-08-1-R1 4/5/2006
	Semi-Volatile Organic Compounds										
92-52-4	1,1'-Biphenyl	µg/L	10 U			10 U					
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L	10 U			10 U					
95-95-4	2,4,5-Trichlorophenol	µg/L	26 U			26 U					
88-06-2	2,4,6-Trichlorophenol	µg/L	10 U			10 U					
120-83-2	2,4-Dichlorophenol	µg/L	10 U			10 U					
105-67-9	2,4-Dimethylphenol	µg/L	10 U			10 U					
51-28-5	2,4-Dinitrophenol	µg/L	26 UJ			26 R					
121-14-2	2,4-Dinitrotoluene	µg/L	10 UJ			10 U					
606-20-2	2,6-Dinitrotoluene	µg/L	10 U			10 U					
91-58-7	2-Chloronaphthalene	µg/L	10 U			10 U					
95-57-8	2-Chlorophenol	µg/L	10 U			10 U					
91-57-6	2-Methylnaphthalene	µg/L	10 U			10 U					
95-48-7	2-Methylphenol	µg/L	10 U			10 U					
88-74-4	2-Nitroaniline	µg/L	26 U			26 U					
88-75-5	2-Nitrophenol	µg/L	10 U			10 U					
91-94-1	3,3'-Dichlorobenzidine	µg/L	10 U			10 U					
99-09-2	3-Nitroaniline	µg/L	26 UJ			26 U					
534-52-1	4,6-Dinitro-2-methylphenol	µg/L	26 U			26 R					
101-55-3	4-Bromophenyl-phenylether	µg/L	10 U			10 U					
59-50-7	4-Chloro-3-methylphenol	µg/L	10 U			10 U					
106-47-8	4-Chloroaniline	µg/L	10 U			10 U					
7005-72-3	4-Chlorophenyl-phenylether	µg/L	10 U			10 U					
106-44-5	4-Methylphenol	µg/L	56			10 U					
100-01-6	4-Nitroaniline	µg/L	26 UJ			26 U					
100-02-7	4-Nitrophenol	µg/L	26 U			26 UJ					
83-32-9	Acenaphthene	µg/L	10 U			10 U					
208-96-8	Acenaphthylene	µg/L	10 U			10 U					
98-86-2	Acetophenone	µg/L	10 U			10 U					
120-12-7	Anthracene	µg/L	10 U			10 U					
1912-24-9	Atrazine	µg/L	10 U			10 U					
100-52-7	Benzaldehyde	µg/L	10 U			10 U					
56-55-3	Benzo(a)anthracene	µg/L	10 U			10 U					
50-32-8	Benzo(a)pyrene	µg/L	10 U			10 U					
205-99-2	Benzo(b)fluoranthene	µg/L	10 U			10 U					
191-24-2	Benzo(g,h,i)perylene	µg/L	10 UJ			10 U					
207-08-9	Benzo(k)fluoranthene	µg/L	10 U			10 U					
111-91-1	bis(2-Chloroethoxy)methane	µg/L	10 U			10 U					
111-44-4	bis(2-Chloroethyl) ether	µg/L	10 U			10 UJ					
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L	10 U			10 UJ					
85-68-7	Butylbenzylphthalate	µg/L	10 U			10 UJ					
105-60-2	Caprolactam	µg/L	10 UJ			10 U					
86-74-8	Carbazole	µg/L	10 U			10 U					
218-01-9	Chrysene	µg/L	10 U			10 U					
53-70-3	Dibenz(a,h)anthracene	µg/L	10 U			10 U					
132-64-9	Dibenzofuran	µg/L	10 U			10 U					
84-66-2	Diethylphthalate	µg/L	10 UJ			10 U					
131-11-3	Dimethylphthalate	µg/L	10 U			10 U					
84-74-2	Di-n-butylphthalate	µg/L	10 U			10 U					
117-84-0	Di-n-octylphthalate	µg/L	10 UJ			10 UJ					
206-44-0	Fluoranthene	µg/L	10 U			10 U					
86-73-7	Fluorene	µg/L	10 U			10 U					

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-06-5-R1 3/30/2006	GWM-06-6-R1-Avg	GWM-07-1-R1 4/3/2006	GWM-07-2-R1 4/4/2006	GWM-07-3-R1 4/3/2006	GWM-07-4-R1 4/3/2006	GWM-07-5-R1-Avg	GWM-07-6-R1 4/3/2006	GWM-08-1-R1 4/5/2006
	Semi-Volatile Organic Compounds										
118-74-1	Hexachlorobenzene	µg/L	10 U			10 U					
87-68-3	Hexachlorobutadiene	µg/L	10 U			10 U					
77-47-4	Hexachlorocyclopentadiene	µg/L	10 UJ			10 UJ					
67-72-1	Hexachloroethane	µg/L	10 U			10 U					
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L	10 U			10 U					
78-59-1	Isophorone	µg/L	10 U			10 U					
91-20-3	Naphthalene	µg/L	10 U			10 U					
98-95-3	Nitrobenzene	µg/L	10 U			10 U					
621-64-7	n-Nitroso-di-n-propylamine	µg/L	10 U			10 U					
86-30-6	n-Nitrosodiphenylamine	µg/L	10 U			10 U					
87-86-5	Pentachlorophenol	µg/L	26 U			26 UJ					
85-01-8	Phenanthrene	µg/L	10 U			10 U					
108-95-2	Phenol	µg/L	6			10 U					
129-00-0	Pyrene	µg/L	10 U			10 U					
	Pesticides/PCBs										
72-54-8	4,4'-DDD	µg/L	0.1 U			0.1 U					
72-55-9	4,4'-DDE	µg/L	0.1 U			0.1 U					
50-29-3	4,4'-DDT	µg/L	0.1 U			0.1 U					
309-00-2	Aldrin	µg/L	0.05 U			0.05 U					
319-84-6	alpha-BHC	µg/L	0.05 U			0.05 U					
5103-71-9	alpha-Chlordane	µg/L	0.05 U			0.043 J					
12674-11-2	Aroclor-1016	µg/L	1 U			1 U					
11104-28-2	Aroclor-1221	µg/L	2 U			2 U					
11141-16-5	Aroclor-1232	µg/L	1 U			1 U					
53469-21-9	Aroclor-1242	µg/L	1 U			1 U					
12672-29-6	Aroclor-1248	µg/L	1 U			1 U					
11097-69-1	Aroclor-1254	µg/L	1 U			1 U					
11096-82-5	Aroclor-1260	µg/L	1 U			1 U					
319-85-7	beta-BHC	µg/L	0.05 U			0.05 U					
319-86-8	delta-BHC	µg/L	0.05 U			0.05 U					
60-57-1	Dieldrin	µg/L	0.1 U			0.073 J					
959-98-8	Endosulfan I	µg/L	0.05 U			0.05 U					
33213-65-9	Endosulfan II	µg/L	0.1 U			0.1 U					
1031-07-8	Endosulfan sulfate	µg/L	0.1 U			0.1 U					
72-20-8	Endrin	µg/L	0.1 U			0.1 U					
7421-93-4	Endrin aldehyde	µg/L	0.1 U			0.1 U					
53494-70-5	Endrin ketone	µg/L	0.1 U			0.1 U					
58-89-9	gamma-BHC (Lindane)	µg/L	0.05 U			0.05 U					
5103-74-2	gamma-Chlordane	µg/L	0.05 U			0.022 J					
76-44-8	Heptachlor	µg/L	0.05 U			0.05 U					
1024-57-3	Heptachlor epoxide	µg/L	0.05 U			0.05 U					
72-43-5	Methoxychlor	µg/L	0.5 U			0.5 U					
8001-35-2	Toxaphene	µg/L	5 U			5 U					

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-06-5-R1 3/30/2006	GWM-06-6-R1-Avg	GWM-07-1-R1 4/3/2006	GWM-07-2-R1 4/4/2006	GWM-07-3-R1 4/3/2006	GWM-07-4-R1 4/3/2006	GWM-07-5-R1-Avg	GWM-07-6-R1 4/3/2006	GWM-08-1-R1 4/5/2006
	Inorganic Analytes										
7429-90-5	Aluminum	µg/L	200 U			200 U					
7440-36-0	Antimony	µg/L	14 U			14 U					
7440-38-2	Arsenic	µg/L	8 U			8 U					
7440-39-3	Barium	µg/L	23			84					
7440-41-7	Beryllium	µg/L	5 U			5 U					
7440-43-9	Cadmium	µg/L	4 U			4 U					
7440-70-2	Calcium	mg/L	7.9			10					
7440-47-3	Chromium	µg/L	6 U			8.2					
7440-48-4	Cobalt	µg/L	8 U			8 U					
7440-50-8	Copper	µg/L	30			10 U					
57-12-5	Cyanide	µg/L	5.5			5 U					
7439-89-6	Iron	µg/L	8000			110					
7439-92-1	Lead	µg/L	7 U			7 U					
7439-95-4	Magnesium	mg/L	2.4			2.4					
7439-96-5	Manganese	µg/L	280			35					
7439-97-6	Mercury	µg/L	0.2 U			0.2 U					
7439-98-7	Molybdenum	µg/L	8 U			8 U					
7440-02-0	Nickel	µg/L	5 U			43					
7440-09-7	Potassium	mg/L	4.6			2.6					
7782-49-2	Selenium	µg/L	7 U			7 U					
7440-22-4	Silver	µg/L	6 U			6 U					
7440-23-5	Sodium	mg/L	55 L			31 L					
7440-28-0	Thallium	µg/L	20 U			20 U					
7440-62-2	Vanadium	µg/L	10 U			10 U					
7440-66-6	Zinc	µg/L	37			36					
	Wet Chemistry Parameters										
CL	Chloride	mg/L	42			34					
SO4	Sulfate	mg/L	19			34					
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L	0.05 U			2.2					
TOC	Total Organic Carbon	mg/L	5.9			1 U					

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-08-2-R1 4/5/2006	GWM-08-3-R1 4/5/2006	GWM-08-4-R1 4/6/2006	GWM-08-5-R1 4/5/2006	GWM-08-6-R1 4/5/2006	GWX-10019-R1 3/22/2006	GWX-10020-R1 3/23/2006	GWX-10035-R1 3/24/2006	GWX-8474-R1 3/27/2006	GWX-8475-R1 3/27/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.93	5.3
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.48 J	2.3
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18 J	0.5 U	0.5 U	0.39 J	0.7
75-35-4	1,1-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	17
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.18 J	0.5 U	0.5 U	0.18 J	0.5 U	21	0.19 J	0.5 U	0.76	1.2
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.13 J	0.5 U	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.33 J	0.5 U	0.5 U	0.5 U	0.5 U	0.62	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	17	1.7	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	1.9	15	17	34	0.92	2	1.3	0.5 U	5.8	5.5
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J	0.5 U	0.5 U	0.1 J	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	1.5	1.2	1	1.6	0.5 U	260	1.6	1.2	29	24
75-69-4	Trichlorofluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1330-20-7	Xylenes (total)	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-08-2-R1 4/5/2006	GWM-08-3-R1 4/5/2006	GWM-08-4-R1 4/6/2006	GWM-08-5-R1 4/5/2006	GWM-08-6-R1 4/5/2006	GWX-10019-R1 3/22/2006	GWX-10020-R1 3/23/2006	GWX-10035-R1 3/24/2006	GWX-8474-R1 3/27/2006	GWX-8475-R1 3/27/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
95-95-4	2,4,5-Trichlorophenol	µg/L			27 U			25 U	25 U	25 U	25 U	25 U
88-06-2	2,4,6-Trichlorophenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
120-83-2	2,4-Dichlorophenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
105-67-9	2,4-Dimethylphenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
51-28-5	2,4-Dinitrophenol	µg/L			27 R			25 R	25 R	25 UJ	25 UJ	25 UJ
121-14-2	2,4-Dinitrotoluene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
606-20-2	2,6-Dinitrotoluene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
91-58-7	2-Chloronaphthalene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
95-57-8	2-Chlorophenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
91-57-6	2-Methylnaphthalene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
95-48-7	2-Methylphenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
88-74-4	2-Nitroaniline	µg/L			27 U			25 U	25 U	25 U	25 U	25 U
88-75-5	2-Nitrophenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
91-94-1	3,3'-Dichlorobenzidine	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
99-09-2	3-Nitroaniline	µg/L			27 U			25 U	25 U	25 U	25 U	25 U
534-52-1	4,6-Dinitro-2-methylphenol	µg/L			27 R			25 UJ	25 UJ	25 U	25 U	25 U
101-55-3	4-Bromophenyl-phenylether	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
59-50-7	4-Chloro-3-methylphenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
106-47-8	4-Chloroaniline	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
7005-72-3	4-Chlorophenyl-phenylether	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
106-44-5	4-Methylphenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
100-01-6	4-Nitroaniline	µg/L			27 U			25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
100-02-7	4-Nitrophenol	µg/L			27 UJ			25 U	25 U	25 U	25 UJ	25 UJ
83-32-9	Acenaphthene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
208-96-8	Acenaphthylene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
98-86-2	Acetophenone	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
120-12-7	Anthracene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
1912-24-9	Atrazine	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
100-52-7	Benzaldehyde	µg/L			11 U			10 U	10 U	10 U	10 UJ	10 UJ
56-55-3	Benzo(a)anthracene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
50-32-8	Benzo(a)pyrene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
205-99-2	Benzo(b)fluoranthene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
191-24-2	Benzo(g,h,i)perylene	µg/L			11 U			10 UJ	10 U	10 U	10 U	10 U
207-08-9	Benzo(k)fluoranthene	µg/L			11 U			10 U	10 U	10 U	10 UJ	10 UJ
111-91-1	bis(2-Chloroethoxy)methane	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
111-44-4	bis(2-Chloroethyl) ether	µg/L			11 UJ			10 U	10 U	10 U	10 U	10 U
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L			11 UJ			10 U	10 U	10 U	10 U	10 U
85-68-7	Butylbenzylphthalate	µg/L			11 UJ			10 U	10 U	10 U	10 U	10 U
105-60-2	Caprolactam	µg/L			11 U			10 U	10 U	10 UJ	10 UJ	10 UJ
86-74-8	Carbazole	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
218-01-9	Chrysene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
53-70-3	Dibenz(a,h)anthracene	µg/L			11 U			10 UJ	10 U	10 U	10 U	10 U
132-64-9	Dibenzofuran	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
84-66-2	Diethylphthalate	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
131-11-3	Dimethylphthalate	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
84-74-2	Di-n-butylphthalate	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
117-84-0	Di-n-octylphthalate	µg/L			11 UJ			10 UJ	10 U	10 U	10 U	10 U
206-44-0	Fluoranthene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
86-73-7	Fluorene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-08-2-R1 4/5/2006	GWM-08-3-R1 4/5/2006	GWM-08-4-R1 4/6/2006	GWM-08-5-R1 4/5/2006	GWM-08-6-R1 4/5/2006	GWX-10019-R1 3/22/2006	GWX-10020-R1 3/23/2006	GWX-10035-R1 3/24/2006	GWX-8474-R1 3/27/2006	GWX-8475-R1 3/27/2006
	Semi-Volatile Organic Compounds											
118-74-1	Hexachlorobenzene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
87-68-3	Hexachlorobutadiene	µg/L			11 U			10 U	10 U	10 UJ	10 UJ	10 UJ
77-47-4	Hexachlorocyclopentadiene	µg/L			11 UJ			10 UJ	10 U	10 U	10 U	10 U
67-72-1	Hexachloroethane	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
78-59-1	Isophorone	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
91-20-3	Naphthalene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
98-95-3	Nitrobenzene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
621-64-7	n-Nitroso-di-n-propylamine	µg/L			11 U			10 U	10 U	10 UJ	10 UJ	10 UJ
86-30-6	n-Nitrosodiphenylamine	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
87-86-5	Pentachlorophenol	µg/L			27 UJ			25 U	25 U	25 U	25 U	25 U
85-01-8	Phenanthrene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
108-95-2	Phenol	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
129-00-0	Pyrene	µg/L			11 U			10 U	10 U	10 U	10 U	10 U
	Pesticides/PCBs											
72-54-8	4,4'-DDD	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
72-55-9	4,4'-DDE	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
50-29-3	4,4'-DDT	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
309-00-2	Aldrin	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
319-84-6	alpha-BHC	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
5103-71-9	alpha-Chlordane	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 UJ
12674-11-2	Aroclor-1016	µg/L			1 U			1 U	1 U	1 U	1.1 U	1 U
11104-28-2	Aroclor-1221	µg/L			2 U			2 U	2 U	2 U	2.1 U	2 U
11141-16-5	Aroclor-1232	µg/L			1 U			1 U	1 U	1 U	1.1 U	1 U
53469-21-9	Aroclor-1242	µg/L			1 U			1 U	1 U	1 U	1.1 U	1 U
12672-29-6	Aroclor-1248	µg/L			1 U			1 U	1 U	1 U	1.1 U	1 U
11097-69-1	Aroclor-1254	µg/L			1 U			1 U	1 U	1 U	1.1 U	1 U
11096-82-5	Aroclor-1260	µg/L			1 U			1 U	1 U	1 U	1.1 U	1 U
319-85-7	beta-BHC	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
319-86-8	delta-BHC	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
60-57-1	Dieldrin	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 UJ
959-98-8	Endosulfan I	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
33213-65-9	Endosulfan II	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
1031-07-8	Endosulfan sulfate	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
72-20-8	Endrin	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
7421-93-4	Endrin aldehyde	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
53494-70-5	Endrin ketone	µg/L			0.1 U			0.1 U	0.1 U	0.1 U	0.11 U	0.1 U
58-89-9	gamma-BHC (Lindane)	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
5103-74-2	gamma-Chlordane	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
76-44-8	Heptachlor	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
1024-57-3	Heptachlor epoxide	µg/L			0.05 U			0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
72-43-5	Methoxychlor	µg/L			0.5 U			0.5 U	0.5 U	0.5 U	0.53 U	0.5 U
8001-35-2	Toxaphene	µg/L			5 U			5 U	5 U	5 U	5.3 U	5 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-08-2-R1 4/5/2006	GWM-08-3-R1 4/5/2006	GWM-08-4-R1 4/6/2006	GWM-08-5-R1 4/5/2006	GWM-08-6-R1 4/5/2006	GWX-10019-R1 3/22/2006	GWX-10020-R1 3/23/2006	GWX-10035-R1 3/24/2006	GWX-8474-R1 3/27/2006	GWX-8475-R1 3/27/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L			200 U			200 U	200 U	200 U	200 U	200 U
7440-36-0	Antimony	µg/L			14 U			14 U	14 U	14 U	14 U	14 U
7440-38-2	Arsenic	µg/L			8 U			8 U	8 U	8 U	8 U	8 U
7440-39-3	Barium	µg/L			13			43	45	220	6 U	6 U
7440-41-7	Beryllium	µg/L			5 U			5 U	5 U	5 U	5 U	5 U
7440-43-9	Cadmium	µg/L			4 U			4 U	4 U	4 U	4 U	4 U
7440-70-2	Calcium	mg/L			3			16	24	22	2.9	4.7
7440-47-3	Chromium	µg/L			6 U			6 U	6 U	17	6 U	6 U
7440-48-4	Cobalt	µg/L			8 U			12	8 U	8 U	8 U	8 U
7440-50-8	Copper	µg/L			10 U			10 U	10 U	10 U	10 U	10 U
57-12-5	Cyanide	µg/L			5 U			5 U	5 U	5 U	5 U	5 U
7439-89-6	Iron	µg/L			100 U			9800	8300	1200	100 U	100 U
7439-92-1	Lead	µg/L			7 U			25	27	7 U	7 U	7 U
7439-95-4	Magnesium	mg/L			1 U			7.1	9.9	4.6	1.6	2.4
7439-96-5	Manganese	µg/L			29			380	210	60	5 U	5 U
7439-97-6	Mercury	µg/L			0.2 U			0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
7439-98-7	Molybdenum	µg/L			8 U			8 U	8 U	8 U	8 U	8 U
7440-02-0	Nickel	µg/L			5 U			11	5 U	14	5 U	5 U
7440-09-7	Potassium	mg/L			2.1			3.6	2.8	3.3	1 U	1 U
7782-49-2	Selenium	µg/L			7 U			7 U	7 U	7 U	7 U	7 U
7440-22-4	Silver	µg/L			6 U			6 U	6 U	6 U	6 U	6 U
7440-23-5	Sodium	mg/L			32 L			40 L	100 L	110 L	5 UL	8.9 L
7440-28-0	Thallium	µg/L			20 U			20 U	20 U	20 U	20 U	20 U
7440-62-2	Vanadium	µg/L			10 U			10 U	10 U	10 U	10 U	10 U
7440-66-6	Zinc	µg/L			18			39 J	62	11	13	13 J
	Wet Chemistry Parameters											
CL	Chloride	mg/L			19			89	140	180	10	23
SO4	Sulfate	mg/L			38			29	36	18	5 U	5 U
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L			3			1.7	0.11	2.2	2.1	1.6
TOC	Total Organic Carbon	mg/L			1 U			1 U	1 U	1 U	1 U	1 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-9398-R1 3/23/2006	GWX-9966-R1 3/24/2006	GWX-9973-R1 3/24/2006
	Volatile Organic Compounds				
71-55-6	1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U
75-35-4	1,1-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane	µg/L	0.5 U	0.5 U	0.5 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	2.3 J
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 R	0.5 R
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.5 U	0.5 U	4.2
75-09-2	Methylene Chloride	µg/L	0.5 U	0.5 U	0.5 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	0.16 J	0.5 U	0.5 U
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	0.5 U	0.5 U	0.5 U
75-69-4	Trichlorofluoromethane	µg/L	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U
1330-20-7	Xylenes (total)	µg/L	0.5 U	0.5 U	0.5 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-9398-R1 3/23/2006	GWX-9966-R1 3/24/2006	GWX-9973-R1 3/24/2006
	Semi-Volatile Organic Compounds				
92-52-4	1,1'-Biphenyl	µg/L	10 U	10 U	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L	10 U	10 U	10 U
95-95-4	2,4,5-Trichlorophenol	µg/L	25 U	25 U	25 U
88-06-2	2,4,6-Trichlorophenol	µg/L	10 U	10 U	10 U
120-83-2	2,4-Dichlorophenol	µg/L	10 U	10 U	10 U
105-67-9	2,4-Dimethylphenol	µg/L	10 U	10 U	10 U
51-28-5	2,4-Dinitrophenol	µg/L	25 R	25 UJ	25 UJ
121-14-2	2,4-Dinitrotoluene	µg/L	10 U	10 U	10 U
606-20-2	2,6-Dinitrotoluene	µg/L	10 U	10 U	10 U
91-58-7	2-Chloronaphthalene	µg/L	10 U	10 U	10 U
95-57-8	2-Chlorophenol	µg/L	10 U	10 U	10 U
91-57-6	2-Methylnaphthalene	µg/L	10 U	10 U	10 U
95-48-7	2-Methylphenol	µg/L	10 U	10 U	10 U
88-74-4	2-Nitroaniline	µg/L	25 U	25 U	25 U
88-75-5	2-Nitrophenol	µg/L	10 U	10 U	10 U
91-94-1	3,3'-Dichlorobenzidine	µg/L	10 U	10 U	10 U
99-09-2	3-Nitroaniline	µg/L	25 U	25 U	25 U
534-52-1	4,6-Dinitro-2-methylphenol	µg/L	25 UJ	25 U	25 U
101-55-3	4-Bromophenyl-phenylether	µg/L	10 U	10 U	10 U
59-50-7	4-Chloro-3-methylphenol	µg/L	10 U	10 U	10 U
106-47-8	4-Chloroaniline	µg/L	10 U	10 U	10 U
7005-72-3	4-Chlorophenyl-phenylether	µg/L	10 U	10 U	10 U
106-44-5	4-Methylphenol	µg/L	10 U	10 U	10 U
100-01-6	4-Nitroaniline	µg/L	25 UJ	25 UJ	25 UJ
100-02-7	4-Nitrophenol	µg/L	25 U	25 U	25 U
83-32-9	Acenaphthene	µg/L	10 U	10 U	10 U
208-96-8	Acenaphthylene	µg/L	10 U	10 U	10 U
98-86-2	Acetophenone	µg/L	10 U	10 U	10 U
120-12-7	Anthracene	µg/L	10 U	10 U	10 U
1912-24-9	Atrazine	µg/L	10 U	10 U	10 U
100-52-7	Benzaldehyde	µg/L	10 U	10 U	10 U
56-55-3	Benzo(a)anthracene	µg/L	10 U	10 U	10 U
50-32-8	Benzo(a)pyrene	µg/L	10 U	10 U	10 U
205-99-2	Benzo(b)fluoranthene	µg/L	10 U	10 U	10 U
191-24-2	Benzo(g,h,i)perylene	µg/L	10 U	10 U	10 U
207-08-9	Benzo(k)fluoranthene	µg/L	10 U	10 U	10 U
111-91-1	bis(2-Chloroethoxy)methane	µg/L	10 U	10 U	10 U
111-44-4	bis(2-Chloroethyl) ether	µg/L	10 U	10 U	10 U
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L	10 U	10 U	10 U
85-68-7	Butylbenzylphthalate	µg/L	10 U	10 U	10 U
105-60-2	Caprolactam	µg/L	10 U	10 UJ	10 UJ
86-74-8	Carbazole	µg/L	10 U	10 U	10 U
218-01-9	Chrysene	µg/L	10 U	10 U	10 U
53-70-3	Dibenz(a,h)anthracene	µg/L	10 U	10 U	10 U
132-64-9	Dibenzofuran	µg/L	10 U	10 U	10 U
84-66-2	Diethylphthalate	µg/L	10 U	10 U	10 U
131-11-3	Dimethylphthalate	µg/L	10 U	10 U	10 U
84-74-2	Di-n-butylphthalate	µg/L	10 U	10 U	10 U
117-84-0	Di-n-octylphthalate	µg/L	10 U	10 U	10 U
206-44-0	Fluoranthene	µg/L	10 U	10 U	10 U
86-73-7	Fluorene	µg/L	10 U	10 U	10 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-9398-R1 3/23/2006	GWX-9966-R1 3/24/2006	GWX-9973-R1 3/24/2006
	Semi-Volatile Organic Compounds				
118-74-1	Hexachlorobenzene	µg/L	10 U	10 U	10 U
87-68-3	Hexachlorobutadiene	µg/L	10 U	10 UJ	10 UJ
77-47-4	Hexachlorocyclopentadiene	µg/L	10 U	10 U	10 U
67-72-1	Hexachloroethane	µg/L	10 U	10 U	10 U
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L	10 U	10 U	10 U
78-59-1	Isophorone	µg/L	10 U	10 U	10 U
91-20-3	Naphthalene	µg/L	10 U	10 U	10 U
98-95-3	Nitrobenzene	µg/L	10 U	10 U	10 U
621-64-7	n-Nitroso-di-n-propylamine	µg/L	10 U	10 UJ	10 UJ
86-30-6	n-Nitrosodiphenylamine	µg/L	10 U	10 U	10 U
87-86-5	Pentachlorophenol	µg/L	25 U	25 U	25 U
85-01-8	Phenanthrene	µg/L	10 U	10 U	10 U
108-95-2	Phenol	µg/L	10 U	10 U	10 U
129-00-0	Pyrene	µg/L	10 U	10 U	10 U
	Pesticides/PCBs				
72-54-8	4,4'-DDD	µg/L	0.1 U	0.1 U	0.1 U
72-55-9	4,4'-DDE	µg/L	0.1 U	0.1 U	0.1 U
50-29-3	4,4'-DDT	µg/L	0.1 U	0.1 U	0.1 U
309-00-2	Aldrin	µg/L	0.05 U	0.05 U	0.05 U
319-84-6	alpha-BHC	µg/L	0.05 U	0.05 U	0.05 U
5103-71-9	alpha-Chlordane	µg/L	0.49 R	0.05 U	0.05 U
12674-11-2	Aroclor-1016	µg/L	1 U	1 U	1 U
11104-28-2	Aroclor-1221	µg/L	2 U	2 U	2 U
11141-16-5	Aroclor-1232	µg/L	1 U	1 U	1 U
53469-21-9	Aroclor-1242	µg/L	1 U	1 U	1 U
12672-29-6	Aroclor-1248	µg/L	1 U	1 U	1 U
11097-69-1	Aroclor-1254	µg/L	1 U	1 U	1 U
11096-82-5	Aroclor-1260	µg/L	1 U	1 U	1 U
319-85-7	beta-BHC	µg/L	0.05 U	0.05 U	0.05 U
319-86-8	delta-BHC	µg/L	0.05 U	0.05 U	0.05 U
60-57-1	Dieldrin	µg/L	0.1 U	0.1 U	0.1 U
959-98-8	Endosulfan I	µg/L	0.05 U	0.05 U	0.05 U
33213-65-9	Endosulfan II	µg/L	0.1 U	0.1 U	0.1 U
1031-07-8	Endosulfan sulfate	µg/L	0.1 U	0.1 U	0.1 U
72-20-8	Endrin	µg/L	0.1 U	0.1 U	0.1 U
7421-93-4	Endrin aldehyde	µg/L	0.1 U	0.1 U	0.1 U
53494-70-5	Endrin ketone	µg/L	0.1 U	0.1 U	0.1 U
58-89-9	gamma-BHC (Lindane)	µg/L	0.05 U	0.05 U	0.05 U
5103-74-2	gamma-Chlordane	µg/L	0.86	0.05 U	0.05 U
76-44-8	Heptachlor	µg/L	0.05 U	0.05 U	0.05 U
1024-57-3	Heptachlor epoxide	µg/L	0.13 JN	0.05 U	0.05 U
72-43-5	Methoxychlor	µg/L	0.5 U	0.5 U	0.5 U
8001-35-2	Toxaphene	µg/L	5 U	5 U	5 U

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TABLE G-1
ANALYTICAL RESULTS OF GROUNDWATER ROUND 1 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-9398-R1 3/23/2006	GWX-9966-R1 3/24/2006	GWX-9973-R1 3/24/2006
	Inorganic Analytes				
7429-90-5	Aluminum	µg/L	200 U	200 U	200 U
7440-36-0	Antimony	µg/L	14 U	14 U	14 U
7440-38-2	Arsenic	µg/L	8 U	8 U	8 U
7440-39-3	Barium	µg/L	41	19	87
7440-41-7	Beryllium	µg/L	5 U	5 U	5 U
7440-43-9	Cadmium	µg/L	4 U	4 U	4 U
7440-70-2	Calcium	mg/L	24	4.5	19
7440-47-3	Chromium	µg/L	6 U	8.4	6 U
7440-48-4	Cobalt	µg/L	8 U	8 U	8 U
7440-50-8	Copper	µg/L	10 U	10 U	10 U
57-12-5	Cyanide	µg/L	5 U	5 U	5 U
7439-89-6	Iron	µg/L	100 U	26000	6400
7439-92-1	Lead	µg/L	7 U	10	7 U
7439-95-4	Magnesium	mg/L	1.8	1 U	5.1
7439-96-5	Manganese	µg/L	5 U	430	220
7439-97-6	Mercury	µg/L	0.2 U	0.2 U	0.2 U
7439-98-7	Molybdenum	µg/L	8 U	8 U	8 U
7440-02-0	Nickel	µg/L	5 U	5.4	5 U
7440-09-7	Potassium	mg/L	2.6	1 U	2.3
7782-49-2	Selenium	µg/L	7 U	7 U	7 U
7440-22-4	Silver	µg/L	6 U	6 U	6 U
7440-23-5	Sodium	mg/L	12 L	5 UL	24 L
7440-28-0	Thallium	µg/L	20 U	20 U	20 U
7440-62-2	Vanadium	µg/L	10 U	10 U	10 U
7440-66-6	Zinc	µg/L	8 U	8.9	8 U
	Wet Chemistry Parameters				
CL	Chloride	mg/L	15	4.9	52
SO4	Sulfate	mg/L	29	5 U	7.3
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L	4.3	0.22	3
TOC	Total Organic Carbon	mg/L	1 U	1 U	1 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-01-2-R2	GWM-01-3-R2	GWM-01-4-R2	GWM-01-5-R2	GWM-01-6-R2	GWM-01-7-R2	GWM-01-8-R2	GWM-01-9-R2	GWM-01-10-R2	GWM-02-1-R2
		Sample Date	7/12/2006	7/14/2006	4/12/2006	7/13/2006	7/13/2006	7/13/2006	7/13/2006	7/13/2006	7/13/2006	7/13/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	1.7	3.7	0.8	0.18 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.72	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 J	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	5.6	9.4	3.8	0.81	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-35-4	1,1-Dichloroethene	µg/L	0.5 U	4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
123-91-1	1,4-Dioxane	µg/L	2 R	2 R	2 R	2 R	2 R	2 R	2 R	2 R	2 R	2 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.2 J	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	1.6 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 R	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 R	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.49 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.03 J
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 R	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 R	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.13 J	0.22 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.74
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 R	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.39 J	1.1	9.9	8.1	1.8	0.15 J	0.5 U	0.5 U	0.5 U	0.97
75-09-2	Methylene Chloride	µg/L	0.5 U	0.78	0.5 U	0.8 U	0.94 U	0.97 U	0.85 U	0.76 U	0.76 U	0.89 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	0.7	0.8	0.8	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.8
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	0.99	2.4	0.92	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	15
75-69-4	Trichlorofluoromethane	µg/L	1	4.2	16	20	10	0.5 U	0.5 U	0.5 U	0.5 U	3
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
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Old Roosevelt Field Groundwater Contaminated Site
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CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-01-2-R2 / 7/12/2006	GWM-01-3-R2 / 7/14/2006	GWM-01-4-R2 / 4/12/2006	GWM-01-5-R2 / 7/13/2006	GWM-01-6-R2 / 7/13/2006	GWM-01-7-R2 / 7/13/2006	GWM-01-8-R2 / 7/13/2006	GWM-01-9-R2 / 7/13/2006	GWM-01-10-R2 / 7/13/2006	GWM-02-1-R2 / 7/13/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L		5 U								
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L		5 U								
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L		5 U								
95-95-4	2,4,5-Trichlorophenol	µg/L		5 U								
88-06-2	2,4,6-Trichlorophenol	µg/L		5 U								
120-83-2	2,4-Dichlorophenol	µg/L		5 U								
105-67-9	2,4-Dimethylphenol	µg/L		5 U								
51-28-5	2,4-Dinitrophenol	µg/L		10 U								
121-14-2	2,4-Dinitrotoluene	µg/L		5 U								
606-20-2	2,6-Dinitrotoluene	µg/L		5 U								
91-58-7	2-Chloronaphthalene	µg/L		5 U								
95-57-8	2-Chlorophenol	µg/L		5 U								
91-57-6	2-Methylnaphthalene	µg/L		0.1 U								
95-48-7	2-Methylphenol	µg/L		5 U								
88-74-4	2-Nitroaniline	µg/L		10 U								
88-75-5	2-Nitrophenol	µg/L		5 U								
91-94-1	3,3'-Dichlorobenzidine	µg/L		5 U								
99-09-2	3-Nitroaniline	µg/L		10 U								
534-52-1	4,6-Dinitro-2-methylphenol	µg/L		10 U								
101-55-3	4-Bromophenyl-phenylether	µg/L		5 U								
59-50-7	4-Chloro-3-methylphenol	µg/L		5 U								
106-47-8	4-Chloroaniline	µg/L		5 U								
7005-72-3	4-Chlorophenyl-phenylether	µg/L		5 U								
106-44-5	4-Methylphenol	µg/L		5 U								
100-01-6	4-Nitroaniline	µg/L		10 U								
100-02-7	4-Nitrophenol	µg/L		10 U								
83-32-9	Acenaphthene	µg/L		0.1 U								
208-96-8	Acenaphthylene	µg/L		0.1 U								
98-86-2	Acetophenone	µg/L		5 U								
120-12-7	Anthracene	µg/L		0.1 U								
1912-24-9	Atrazine	µg/L		5 U								
100-52-7	Benzaldehyde	µg/L		5 U								
56-55-3	Benzo(a)anthracene	µg/L		0.1 U								
50-32-8	Benzo(a)pyrene	µg/L		0.08 J								
205-99-2	Benzo(b)fluoranthene	µg/L		0.1 U								
191-24-2	Benzo(g,h,i)perylene	µg/L		0.1 U								
207-08-9	Benzo(k)fluoranthene	µg/L		0.1 U								
111-91-1	bis(2-Chloroethoxy)methane	µg/L		5 U								
111-44-4	bis(2-Chloroethyl) ether	µg/L		5 U								
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L		5 U								
85-68-7	Butylbenzylphthalate	µg/L		5 U								
105-60-2	Caprolactam	µg/L		5 U								
86-74-8	Carbazole	µg/L		5 U								
58-90-2	Chlorophenols	µg/L		5 U								
218-01-9	Chrysene	µg/L		0.1 U								
53-70-3	Dibenz(a,h)anthracene	µg/L		0.1 U								
132-64-9	Dibenzofuran	µg/L		5 U								
84-66-2	Diethylphthalate	µg/L		5 U								
131-11-3	Dimethylphthalate	µg/L		5 U								
84-74-2	Di-n-butylphthalate	µg/L		5 U								
117-84-0	Di-n-octylphthalate	µg/L		5 U								

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	Semi-Volatile Organic Compounds											
206-44-0	Fluoranthene	µg/L		0.1 U								
86-73-7	Fluorene	µg/L		0.1 U								
118-74-1	Hexachlorobenzene	µg/L		5 U								
87-68-3	Hexachlorobutadiene	µg/L		5 U								
77-47-4	Hexachlorocyclopentadiene	µg/L		5 U								
67-72-1	Hexachloroethane	µg/L		5 U								
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L		0.1 U								
78-59-1	Isophorone	µg/L		5 U								
91-20-3	Naphthalene	µg/L		0.19								
98-95-3	Nitrobenzene	µg/L		5 U								
621-64-7	n-Nitroso-di-n-propylamine	µg/L		5 U								
86-30-6	n-Nitrosodiphenylamine	µg/L		5 U								
87-86-5	Pentachlorophenol	µg/L		0.2 U								
85-01-8	Phenanthrene	µg/L		0.1 U								
108-95-2	Phenol	µg/L		5 U								
129-00-0	Pyrene	µg/L		0.1 U								
	PCBs											
12674-11-2	Aroclor-1016	µg/L		1 U								
11104-28-2	Aroclor-1221	µg/L		1 U								
11141-16-5	Aroclor-1232	µg/L		1 U								
53469-21-9	Aroclor-1242	µg/L		1 U								
12672-29-6	Aroclor-1248	µg/L		1 U								
11097-69-1	Aroclor-1254	µg/L		1 U								
11096-82-5	Aroclor-1260	µg/L		1 U								
37324-23-5	Aroclor-1262	µg/L		1 U								
11100-14-4	Aroclor-1268	µg/L		1 U								
	Pesticides											
72-54-8	4,4'-DDD	µg/L		0.1 U								
72-55-9	4,4'-DDE	µg/L		0.1 U								
50-29-3	4,4'-DDT	µg/L		0.1 U								
309-00-2	Aldrin	µg/L		0.05 U								
319-84-6	alpha-BHC	µg/L		0.05 U								
5103-71-9	alpha-Chlordane	µg/L		0.05 U								
319-85-7	beta-BHC	µg/L		0.05 U								
319-86-8	delta-BHC	µg/L		0.05 U								
60-57-1	Dieldrin	µg/L		0.1 U								
959-98-8	Endosulfan I	µg/L		0.05 U								
33213-65-9	Endosulfan II	µg/L		0.1 U								
1031-07-8	Endosulfan sulfate	µg/L		0.1 U								
72-20-8	Endrin	µg/L		0.1 U								
7421-93-4	Endrin aldehyde	µg/L		0.1 U								
53494-70-5	Endrin ketone	µg/L		0.1 U								
58-89-9	gamma-BHC (Lindane)	µg/L		0.05 U								
5103-74-2	gamma-Chlordane	µg/L		0.05 U								
76-44-8	Heptachlor	µg/L		0.05 U								
1024-57-3	Heptachlor epoxide	µg/L		0.05 U								
72-43-5	Methoxychlor	µg/L		0.5 U								
8001-35-2	Toxaphene	µg/L		5 U								

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Old Roosevelt Field Groundwater Contaminated Site
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CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-01-2-R2 7/12/2006	GWM-01-3-R2 7/14/2006	GWM-01-4-R2 4/12/2006	GWM-01-5-R2 7/13/2006	GWM-01-6-R2 7/13/2006	GWM-01-7-R2 7/13/2006	GWM-01-8-R2 7/13/2006	GWM-01-9-R2 7/13/2006	GWM-01-10-R2 7/13/2006	GWM-02-1-R2 7/13/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L		30.8 J								
7440-36-0	Antimony	µg/L		2 U								
7440-38-2	Arsenic	µg/L		1 U								
7440-39-3	Barium	µg/L		200 U								
7440-41-7	Beryllium	µg/L		1 U								
7440-43-9	Cadmium	µg/L		1 U								
7440-70-2	Calcium	mg/L		15.8								
7440-47-3	Chromium	µg/L		45.8								
7440-48-4	Cobalt	µg/L		1.6 J								
7440-50-8	Copper	µg/L		28.6								
57-12-5	Cyanide	µg/L		10 U								
7439-89-6	Iron	µg/L		391								
7439-92-1	Lead	µg/L		10 U								
7439-95-4	Magnesium	mg/L		6.12								
7439-96-5	Manganese	µg/L		180								
7439-97-6	Mercury	µg/L		0.2 UJ								
7439-98-7	Molybdenum	µg/L										
7440-02-0	Nickel	µg/L		19.2 J								
7440-09-7	Potassium	mg/L		5 UJ								
7782-49-2	Selenium	µg/L		1.6 J								
7440-22-4	Silver	µg/L		10 U								
7440-23-5	Sodium	mg/L		32								
7440-28-0	Thallium	µg/L		1 U								
7440-62-2	Vanadium	µg/L		50 U								
7440-66-6	Zinc	µg/L		35.9 J								
	Wet Chemistry Parameters											
CL	Chloride	mg/L		29								
SO4	Sulfate	mg/L		39								
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L		11								
TOC	Total Organic Carbon	mg/l		1 U								

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Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-02-2-R2 / 7/13/2006	GWM-02-3-R2 / 7/13/2006	GWM-02-4-R2 / 7/13/2006	GWM-02-5-R2 / 7/13/2006	GWM-02-6-R2 / 7/14/2006	GWM-02-7-R2 / 7/13/2006	GWM-02-8-R2 / 7/13/2006	GWM-02-9-R2 / 7/13/2006	GWM-02-10-R2 / 7/13/2006	GWM-03-1-R2 / 7/17/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.27 J	0.5 U	0.5 U	0.5 U	0.5 U	0.26 J
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	0.87	0.38 J	0.19 J	0.17 J	0.33 J	0.5 U	0.5 U	0.5 U	0.5 U	1.1
75-35-4	1,1-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
123-91-1	1,4-Dioxane	µg/L	2 U	2 U	2 U	2 U	2 R	2 U	2 U	2 U	2 R	2 R
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	60	68	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	3.2 J	5 U	5 U	5 U	5 U	5 U	2.8 J	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	3.1 J
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.15 J	0.5 U	0.5 U	0.07 J	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.06 J	0.07 J	0.13 J	0.1 J	0.06 J	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	4.1	10	5.8	5.7	10	0.34 J	0.48 J	0.76	0.14 J	0.12 J
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.02 J
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.54	1.1	0.58	0.67	1.1	0.72	1.4	4.6	0.5 U	0.5 U
75-09-2	Methylene Chloride	µg/L	0.88 U	1.3 U	0.73 U	1.6 U	0.93	0.61 U	0.62 U	1.9 U	4.1	0.54 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	2.3	4.4	2.6	2.2	4.3	2.3	2.3	0.38 J	0.14 J	0.5 U
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.22 J	0.58	0.35 J	0.24 J	0.84	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	17	38 J	21	23 J	17	12	18	18	1	6.1
75-69-4	Trichlorofluoromethane	µg/L	8.2	0.5 U	0.39 J	0.44 J	0.5 U	0.5 U	0.5 U	0.1 J	0.1 J	52
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / *Sample Name* / Sample Date / Unit \\	GWM-02-2-R2 / 7/13/2006	GWM-02-3-R2 / 7/13/2006	GWM-02-4-R2 / 7/13/2006	GWM-02-5-R2 / 7/13/2006	GWM-02-6-R2 / 7/14/2006	GWM-02-7-R2 / 7/13/2006	GWM-02-8-R2 / 7/13/2006	GWM-02-9-R2 / 7/13/2006	GWM-02-10-R2 / 7/13/2006	GWM-03-1-R2 / 7/17/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L					5 U					
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L					5 U					
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L					5 U					
95-95-4	2,4,5-Trichlorophenol	µg/L					5 U					
88-06-2	2,4,6-Trichlorophenol	µg/L					5 U					
120-83-2	2,4-Dichlorophenol	µg/L					5 U					
105-67-9	2,4-Dimethylphenol	µg/L					5 U					
51-28-5	2,4-Dinitrophenol	µg/L					10 U					
121-14-2	2,4-Dinitrotoluene	µg/L					5 U					
606-20-2	2,6-Dinitrotoluene	µg/L					5 U					
91-58-7	2-Chloronaphthalene	µg/L					5 U					
95-57-8	2-Chlorophenol	µg/L					5 U					
91-57-6	2-Methylnaphthalene	µg/L					0.1 U					
95-48-7	2-Methylphenol	µg/L					5 U					
88-74-4	2-Nitroaniline	µg/L					10 U					
88-75-5	2-Nitrophenol	µg/L					5 U					
91-94-1	3,3'-Dichlorobenzidine	µg/L					5 U					
99-09-2	3-Nitroaniline	µg/L					10 U					
534-52-1	4,6-Dinitro-2-methylphenol	µg/L					10 U					
101-55-3	4-Bromophenyl-phenylether	µg/L					5 U					
59-50-7	4-Chloro-3-methylphenol	µg/L					5 U					
106-47-8	4-Chloroaniline	µg/L					5 U					
7005-72-3	4-Chlorophenyl-phenylether	µg/L					5 U					
106-44-5	4-Methylphenol	µg/L					5 U					
100-01-6	4-Nitroaniline	µg/L					10 U					
100-02-7	4-Nitrophenol	µg/L					10 U					
83-32-9	Acenaphthene	µg/L					0.1 U					
208-96-8	Acenaphthylene	µg/L					0.1 U					
98-86-2	Acetophenone	µg/L					5 U					
120-12-7	Anthracene	µg/L					0.1 U					
1912-24-9	Atrazine	µg/L					5 U					
100-52-7	Benzaldehyde	µg/L					5 U					
56-55-3	Benzo(a)anthracene	µg/L					0.1 U					
50-32-8	Benzo(a)pyrene	µg/L					0.05 J					
205-99-2	Benzo(b)fluoranthene	µg/L					0.1 U					
191-24-2	Benzo(g,h,i)perylene	µg/L					0.1 U					
207-08-9	Benzo(k)fluoranthene	µg/L					0.1 U					
111-91-1	bis(2-Chloroethoxy)methane	µg/L					5 U					
111-44-4	bis(2-Chloroethyl) ether	µg/L					5 U					
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L					5 U					
85-68-7	Butylbenzylphthalate	µg/L					5 U					
105-60-2	Caprolactam	µg/L					5 U					
86-74-8	Carbazole	µg/L					5 U					
58-90-2	Chlorophenols	µg/L					5 U					
218-01-9	Chrysene	µg/L					0.1 U					
53-70-3	Dibenz(a,h)anthracene	µg/L					0.1 U					
132-64-9	Dibenzofuran	µg/L					5 U					
84-66-2	Diethylphthalate	µg/L					5 U					
131-11-3	Dimethylphthalate	µg/L					5 U					
84-74-2	Di-n-butylphthalate	µg/L					5 U					
117-84-0	Di-n-octylphthalate	µg/L					5 U					

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TABLE G-2
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Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-02-2-R2 7/13/2006	GWM-02-3-R2 7/13/2006	GWM-02-4-R2 7/13/2006	GWM-02-5-R2 7/13/2006	GWM-02-6-R2 7/14/2006	GWM-02-7-R2 7/13/2006	GWM-02-8-R2 7/13/2006	GWM-02-9-R2 7/13/2006	GWM-02-10-R2 7/13/2006	GWM-03-1-R2 7/17/2006
	Semi-Volatile Organic Compounds											
206-44-0	Fluoranthene	µg/L					0.1 U					
86-73-7	Fluorene	µg/L					0.1 U					
118-74-1	Hexachlorobenzene	µg/L					5 U					
87-68-3	Hexachlorobutadiene	µg/L					5 U					
77-47-4	Hexachlorocyclopentadiene	µg/L					5 U					
67-72-1	Hexachloroethane	µg/L					5 U					
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L					0.1 U					
78-59-1	Isophorone	µg/L					5 U					
91-20-3	Naphthalene	µg/L					0.26					
98-95-3	Nitrobenzene	µg/L					5 U					
621-64-7	n-Nitroso-di-n-propylamine	µg/L					5 U					
86-30-6	n-Nitrosodiphenylamine	µg/L					5 U					
87-86-5	Pentachlorophenol	µg/L					0.2 U					
85-01-8	Phenanthrene	µg/L					0.1 U					
108-95-2	Phenol	µg/L					5 U					
129-00-0	Pyrene	µg/L					0.1 U					
	PCBs											
12674-11-2	Aroclor-1016	µg/L					1 U					
11104-28-2	Aroclor-1221	µg/L					1 U					
11141-16-5	Aroclor-1232	µg/L					1 U					
53469-21-9	Aroclor-1242	µg/L					1 U					
12672-29-6	Aroclor-1248	µg/L					1 U					
11097-69-1	Aroclor-1254	µg/L					1 U					
11096-82-5	Aroclor-1260	µg/L					1 U					
37324-23-5	Aroclor-1262	µg/L					1 U					
11100-14-4	Aroclor-1268	µg/L					1 U					
	Pesticides											
72-54-8	4,4'-DDD	µg/L					0.1 U					
72-55-9	4,4'-DDE	µg/L					0.1 U					
50-29-3	4,4'-DDT	µg/L					0.1 U					
309-00-2	Aldrin	µg/L					0.05 U					
319-84-6	alpha-BHC	µg/L					0.05 U					
5103-71-9	alpha-Chlordane	µg/L					0.05 U					
319-85-7	beta-BHC	µg/L					0.05 U					
319-86-8	delta-BHC	µg/L					0.05 U					
60-57-1	Dieldrin	µg/L					0.1 U					
959-98-8	Endosulfan I	µg/L					0.05 U					
33213-65-9	Endosulfan II	µg/L					0.1 U					
1031-07-8	Endosulfan sulfate	µg/L					0.1 U					
72-20-8	Endrin	µg/L					0.1 U					
7421-93-4	Endrin aldehyde	µg/L					0.1 U					
53494-70-5	Endrin ketone	µg/L					0.1 U					
58-89-9	gamma-BHC (Lindane)	µg/L					0.05 U					
5103-74-2	gamma-Chlordane	µg/L					0.05 U					
76-44-8	Heptachlor	µg/L					0.05 U					
1024-57-3	Heptachlor epoxide	µg/L					0.05 U					
72-43-5	Methoxychlor	µg/L					0.5 U					
8001-35-2	Toxaphene	µg/L					5 U					

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-02-2-R2 7/13/2006	GWM-02-3-R2 7/13/2006	GWM-02-4-R2 7/13/2006	GWM-02-5-R2 7/13/2006	GWM-02-6-R2 7/14/2006	GWM-02-7-R2 7/13/2006	GWM-02-8-R2 7/13/2006	GWM-02-9-R2 7/13/2006	GWM-02-10-R2 7/13/2006	GWM-03-1-R2 7/17/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L					200 U					
7440-36-0	Antimony	µg/L					2 U					
7440-38-2	Arsenic	µg/L					1 U					
7440-39-3	Barium	µg/L					200 U					
7440-41-7	Beryllium	µg/L					0.04 J					
7440-43-9	Cadmium	µg/L					1 U					
7440-70-2	Calcium	mg/L					7.05					
7440-47-3	Chromium	µg/L					8.5 J					
7440-48-4	Cobalt	µg/L					1.5 J					
7440-50-8	Copper	µg/L					25 U					
57-12-5	Cyanide	µg/L					10 U					
7439-89-6	Iron	µg/L					45.9 J					
7439-92-1	Lead	µg/L					10 U					
7439-95-4	Magnesium	mg/L					2.55 J					
7439-96-5	Manganese	µg/L					82.1					
7439-97-6	Mercury	µg/L					0.2 UJ					
7439-98-7	Molybdenum	µg/L										
7440-02-0	Nickel	µg/L					8.6 J					
7440-09-7	Potassium	mg/L					5 UJ					
7782-49-2	Selenium	µg/L					0.97 J					
7440-22-4	Silver	µg/L					10 U					
7440-23-5	Sodium	mg/L					25.6					
7440-28-0	Thallium	µg/L					1 U					
7440-62-2	Vanadium	µg/L					50 U					
7440-66-6	Zinc	µg/L					27.6 J					
	Wet Chemistry Parameters											
CL	Chloride	mg/L					32					
SO4	Sulfate	mg/L					23					
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L					0.83					
TOC	Total Organic Carbon	mg/l					1 U					

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-03-2-R2 / 7/17/2006	GWM-03-3-R2 / 7/17/2006	GWM-03-4-R2 / 7/17/2006	GWM-03-5-R2 / 7/17/2006	GWM-03-6-R2 / 7/17/2006	GWM-03-7-R2 / 7/17/2006	GWM-04-1-R2 / 7/14/2006	GWM-04-2-R2 / 7/14/2006	GWM-04-3-R2 / 7/14/2006	GWM-04-4-R2 / 7/14/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	1.4	0.93	0.5 U	0.5 U	0.77	0.63	2.6	1.7	2.7	1.7
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	5.8	3.3	0.5 U	1.5	0.28 J	0.5 U	6	3.3	1.1	0.52
75-35-4	1,1-Dichloroethene	µg/L	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.8	4	9.7	4.8
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.05 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
123-91-1	1,4-Dioxane	µg/L	2 R	2 R	2 R	2 R	2 R	2 R	2 R	2 R	2 R	2 R
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	4.2 J	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.17 J	0.5 U	0.5 U	0.5 U	0.5 U	0.7	0.43 J
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.21 J	0.5 U	0.5 U	0.5 U	0.12 J	0.07 J	1.8	2.9	0.29 J	0.12 J
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.8	2.3	0.53	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.8	0.61	0.5 U	0.5 U	0.5 U	0.5 U	2.2 J	2.9	11 J	5
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	11 J	13
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.5 U	0.5 U	0.5 U	4.7	0.33 J	0.5 U	3	2.5	15	13
75-09-2	Methylene Chloride	µg/L	1.4 U	1 U	1.3 U	1.4 U	0.5 U	0.5 U	1.2	3	1.4	1.3
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	0.5 U	0.3 J	0.24 J	0.46 J	0.64	0.54	21 J	29	210	200
108-88-3	Toluene	µg/L	0.04 J	0.5 U	0.5 U	0.5 U	0.04 J	0.5 U	0.5 U	0.5 U	0.5 U	0.04 J
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.45 J	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	14	13	0.51	1	0.5 U	0.5 U	21 J	22	180	200
75-69-4	Trichlorofluoromethane	µg/L	15	9.2	0.5 U	0.5 U	0.5 U	0.5 U	14	9.6	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-03-2-R2 7/17/2006	GWM-03-3-R2 7/17/2006	GWM-03-4-R2 7/17/2006	GWM-03-5-R2 7/17/2006	GWM-03-6-R2 7/17/2006	GWM-03-7-R2 7/17/2006	GWM-04-1-R2 7/14/2006	GWM-04-2-R2 7/14/2006	GWM-04-3-R2 7/14/2006	GWM-04-4-R2 7/14/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L		5 U								
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L		5 U								
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L		5 U								
95-95-4	2,4,5-Trichlorophenol	µg/L		5 U								
88-06-2	2,4,6-Trichlorophenol	µg/L		5 U								
120-83-2	2,4-Dichlorophenol	µg/L		5 U								
105-67-9	2,4-Dimethylphenol	µg/L		5 U								
51-28-5	2,4-Dinitrophenol	µg/L		10 U								
121-14-2	2,4-Dinitrotoluene	µg/L		5 U								
606-20-2	2,6-Dinitrotoluene	µg/L		5 U								
91-58-7	2-Chloronaphthalene	µg/L		5 U								
95-57-8	2-Chlorophenol	µg/L		5 U								
91-57-6	2-Methylnaphthalene	µg/L		0.1 U								
95-48-7	2-Methylphenol	µg/L		5 U								
88-74-4	2-Nitroaniline	µg/L		10 U								
88-75-5	2-Nitrophenol	µg/L		5 U								
91-94-1	3,3'-Dichlorobenzidine	µg/L		5 U								
99-09-2	3-Nitroaniline	µg/L		10 U								
534-52-1	4,6-Dinitro-2-methylphenol	µg/L		10 U								
101-55-3	4-Bromophenyl-phenylether	µg/L		5 U								
59-50-7	4-Chloro-3-methylphenol	µg/L		5 U								
106-47-8	4-Chloroaniline	µg/L		5 U								
7005-72-3	4-Chlorophenyl-phenylether	µg/L		5 U								
106-44-5	4-Methylphenol	µg/L		5 U								
100-01-6	4-Nitroaniline	µg/L		10 U								
100-02-7	4-Nitrophenol	µg/L		10 U								
83-32-9	Acenaphthene	µg/L		0.1 U								
208-96-8	Acenaphthylene	µg/L		0.1 U								
98-86-2	Acetophenone	µg/L		5 U								
120-12-7	Anthracene	µg/L		0.1 U								
1912-24-9	Atrazine	µg/L		5 U								
100-52-7	Benzaldehyde	µg/L		5 U								
56-55-3	Benzo(a)anthracene	µg/L		0.1 U								
50-32-8	Benzo(a)pyrene	µg/L		0.1 U								
205-99-2	Benzo(b)fluoranthene	µg/L		0.1 U								
191-24-2	Benzo(g,h,i)perylene	µg/L		0.1 U								
207-08-9	Benzo(k)fluoranthene	µg/L		0.1 U								
111-91-1	bis(2-Chloroethoxy)methane	µg/L		5 U								
111-44-4	bis(2-Chloroethyl) ether	µg/L		5 U								
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L		5 U								
85-68-7	Butylbenzylphthalate	µg/L		5 U								
105-60-2	Caprolactam	µg/L		5 U								
86-74-8	Carbazole	µg/L		5 U								
58-90-2	Chlorophenols	µg/L		5 U								
218-01-9	Chrysene	µg/L		0.1 U								
53-70-3	Dibenz(a,h)anthracene	µg/L		0.1 U								
132-64-9	Dibenzofuran	µg/L		5 U								
84-66-2	Diethylphthalate	µg/L		5 U								
131-11-3	Dimethylphthalate	µg/L		5 U								
84-74-2	Di-n-butylphthalate	µg/L		5 U								
117-84-0	Di-n-octylphthalate	µg/L		5 U								

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CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-03-2-R2 7/17/2006	GWM-03-3-R2 7/17/2006	GWM-03-4-R2 7/17/2006	GWM-03-5-R2 7/17/2006	GWM-03-6-R2 7/17/2006	GWM-03-7-R2 7/17/2006	GWM-04-1-R2 7/14/2006	GWM-04-2-R2 7/14/2006	GWM-04-3-R2 7/14/2006	GWM-04-4-R2 7/14/2006
	Semi-Volatile Organic Compounds											
206-44-0	Fluoranthene	µg/L		0.1 U								
86-73-7	Fluorene	µg/L		0.1 U								
118-74-1	Hexachlorobenzene	µg/L		5 U								
87-68-3	Hexachlorobutadiene	µg/L		5 U								
77-47-4	Hexachlorocyclopentadiene	µg/L		5 U								
67-72-1	Hexachloroethane	µg/L		5 U								
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L		0.1 U								
78-59-1	Isophorone	µg/L		5 U								
91-20-3	Naphthalene	µg/L		0.36								
98-95-3	Nitrobenzene	µg/L		5 U								
621-64-7	n-Nitroso-di-n-propylamine	µg/L		5 U								
86-30-6	n-Nitrosodiphenylamine	µg/L		5 U								
87-86-5	Pentachlorophenol	µg/L		0.2 UJ								
85-01-8	Phenanthrene	µg/L		0.1 U								
108-95-2	Phenol	µg/L		5 U								
129-00-0	Pyrene	µg/L		0.1 U								
	PCBs											
12674-11-2	Aroclor-1016	µg/L		1 U								
11104-28-2	Aroclor-1221	µg/L		1 U								
11141-16-5	Aroclor-1232	µg/L		1 U								
53469-21-9	Aroclor-1242	µg/L		1 U								
12672-29-6	Aroclor-1248	µg/L		1 U								
11097-69-1	Aroclor-1254	µg/L		1 U								
11096-82-5	Aroclor-1260	µg/L		1 U								
37324-23-5	Aroclor-1262	µg/L		1 U								
11100-14-4	Aroclor-1268	µg/L		1 U								
	Pesticides											
72-54-8	4,4'-DDD	µg/L		0.1 U								
72-55-9	4,4'-DDE	µg/L		0.1 U								
50-29-3	4,4'-DDT	µg/L		0.1 U								
309-00-2	Aldrin	µg/L		0.05 U								
319-84-6	alpha-BHC	µg/L		0.05 U								
5103-71-9	alpha-Chlordane	µg/L		0.05 U								
319-85-7	beta-BHC	µg/L		0.05 U								
319-86-8	delta-BHC	µg/L		0.05 U								
60-57-1	Dieldrin	µg/L		0.1 U								
959-98-8	Endosulfan I	µg/L		0.05 U								
33213-65-9	Endosulfan II	µg/L		0.1 U								
1031-07-8	Endosulfan sulfate	µg/L		0.1 U								
72-20-8	Endrin	µg/L		0.1 U								
7421-93-4	Endrin aldehyde	µg/L		0.1 U								
53494-70-5	Endrin ketone	µg/L		0.1 U								
58-89-9	gamma-BHC (Lindane)	µg/L		0.05 U								
5103-74-2	gamma-Chlordane	µg/L		0.05 U								
76-44-8	Heptachlor	µg/L		0.05 U								
1024-57-3	Heptachlor epoxide	µg/L		0.05 U								
72-43-5	Methoxychlor	µg/L		0.5 U								
8001-35-2	Toxaphene	µg/L		5 U								

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Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-03-2-R2 7/17/2006	GWM-03-3-R2 7/17/2006	GWM-03-4-R2 7/17/2006	GWM-03-5-R2 7/17/2006	GWM-03-6-R2 7/17/2006	GWM-03-7-R2 7/17/2006	GWM-04-1-R2 7/14/2006	GWM-04-2-R2 7/14/2006	GWM-04-3-R2 7/14/2006	GWM-04-4-R2 7/14/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L		200 U								
7440-36-0	Antimony	µg/L		2 U								
7440-38-2	Arsenic	µg/L		1 U								
7440-39-3	Barium	µg/L		200 U								
7440-41-7	Beryllium	µg/L		1 U								
7440-43-9	Cadmium	µg/L		0.12 J								
7440-70-2	Calcium	mg/L		10.5								
7440-47-3	Chromium	µg/L		24.3								
7440-48-4	Cobalt	µg/L		1.2 J								
7440-50-8	Copper	µg/L		25 U								
57-12-5	Cyanide	µg/L		10 U								
7439-89-6	Iron	µg/L		178								
7439-92-1	Lead	µg/L		10 U								
7439-95-4	Magnesium	mg/L		1.9 J								
7439-96-5	Manganese	µg/L		46.9								
7439-97-6	Mercury	µg/L		0.2 U								
7439-98-7	Molybdenum	µg/L										
7440-02-0	Nickel	µg/L		87.1								
7440-09-7	Potassium	mg/L		5 UJ								
7782-49-2	Selenium	µg/L		5 U								
7440-22-4	Silver	µg/L		35 U								
7440-23-5	Sodium	mg/L		54								
7440-28-0	Thallium	µg/L		0.02 J								
7440-62-2	Vanadium	µg/L		50 U								
7440-66-6	Zinc	µg/L		619								
	Wet Chemistry Parameters											
CL	Chloride	mg/L		47								
SO4	Sulfate	mg/L		17								
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L		3.6								
TOC	Total Organic Carbon	mg/l		1 U								

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Old Roosevelt Field Groundwater Contaminated Site
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CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-04-5-R2 / 7/14/2006	GWM-04-6-R2 / 7/17/2006	GWM-04-7-R2 / 7/17/2006	GWM-04-8-R2 / 7/17/2006	GWM-04-9-R2 / 7/17/2006	GWM-04-10-R2 / 7/17/2006	GWM-05-1-R2 / 7/19/2006	GWM-05-2-R2 / 7/19/2006	GWM-05-3-R2 / 7/19/2006	GWM-05-4-R2 / 7/19/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	1.2	0.89	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.05 J	0.17 J
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	0.49 J	0.54	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.62	1.7	2.3
75-35-4	1,1-Dichloroethene	µg/L	3.4	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.96	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.06 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
123-91-1	1,4-Dioxane	µg/L	2 R	2 R	2 R	2 R	2 R	2 R	2 U	2 U	2 U	2 U
78-93-3	2-Butanone	µg/L	5 U	17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.36 J	0.58	0.32 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.13 J	0.03 J
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.08 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.43 J	0.87	0.19 J	0.11 J
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	4.7	7.8	2.7	1.4	0.62	0.13 J	1.1	2.9	1.8	2
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.07 J	0.5 U	0.5 U	0.5 U	0.5 U	0.47 J	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.07 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	18	21	26 J	9.9	0.5 U	0.5 U	0.5 U	0.5 U	0.95	1.6
75-09-2	Methylene Chloride	µg/L	1.4	1.2 U	0.5 U	1.7 U	0.86 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.08 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	100	94	25	16	14	0.31 J	0.35 J	0.92	0.63	0.73
108-88-3	Toluene	µg/L	0.5 U	0.35 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	130	94	120	16	2.9	1.6	9.3	28	14	18
75-69-4	Trichlorofluoromethane	µg/L	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.8	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
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CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-04-5-R2 7/14/2006	GWM-04-6-R2 7/17/2006	GWM-04-7-R2 7/17/2006	GWM-04-8-R2 7/17/2006	GWM-04-9-R2 7/17/2006	GWM-04-10-R2 7/17/2006	GWM-05-1-R2 7/19/2006	GWM-05-2-R2 7/19/2006	GWM-05-3-R2 7/19/2006	GWM-05-4-R2 7/19/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L			5 U							
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L			5 U							
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L			5 U							
95-95-4	2,4,5-Trichlorophenol	µg/L			5 U							
88-06-2	2,4,6-Trichlorophenol	µg/L			5 U							
120-83-2	2,4-Dichlorophenol	µg/L			5 U							
105-67-9	2,4-Dimethylphenol	µg/L			5 U							
51-28-5	2,4-Dinitrophenol	µg/L			10 U							
121-14-2	2,4-Dinitrotoluene	µg/L			5 U							
606-20-2	2,6-Dinitrotoluene	µg/L			5 U							
91-58-7	2-Chloronaphthalene	µg/L			5 U							
95-57-8	2-Chlorophenol	µg/L			5 U							
91-57-6	2-Methylnaphthalene	µg/L			0.1 U							
95-48-7	2-Methylphenol	µg/L			5 U							
88-74-4	2-Nitroaniline	µg/L			10 U							
88-75-5	2-Nitrophenol	µg/L			5 U							
91-94-1	3,3'-Dichlorobenzidine	µg/L			5 U							
99-09-2	3-Nitroaniline	µg/L			10 U							
534-52-1	4,6-Dinitro-2-methylphenol	µg/L			10 U							
101-55-3	4-Bromophenyl-phenylether	µg/L			5 U							
59-50-7	4-Chloro-3-methylphenol	µg/L			5 U							
106-47-8	4-Chloroaniline	µg/L			5 U							
7005-72-3	4-Chlorophenyl-phenylether	µg/L			5 U							
106-44-5	4-Methylphenol	µg/L			5 U							
100-01-6	4-Nitroaniline	µg/L			10 U							
100-02-7	4-Nitrophenol	µg/L			10 U							
83-32-9	Acenaphthene	µg/L			0.1 U							
208-96-8	Acenaphthylene	µg/L			0.1 U							
98-86-2	Acetophenone	µg/L			5 U							
120-12-7	Anthracene	µg/L			0.1 U							
1912-24-9	Atrazine	µg/L			5 U							
100-52-7	Benzaldehyde	µg/L			5 U							
56-55-3	Benzo(a)anthracene	µg/L			0.1 U							
50-32-8	Benzo(a)pyrene	µg/L			0.1 U							
205-99-2	Benzo(b)fluoranthene	µg/L			0.1 U							
191-24-2	Benzo(g,h,i)perylene	µg/L			0.1 U							
207-08-9	Benzo(k)fluoranthene	µg/L			0.1 U							
111-91-1	bis(2-Chloroethoxy)methane	µg/L			5 U							
111-44-4	bis(2-Chloroethyl) ether	µg/L			5 U							
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L			5 U							
85-68-7	Butylbenzylphthalate	µg/L			5 U							
105-60-2	Caprolactam	µg/L			5 U							
86-74-8	Carbazole	µg/L			5 U							
58-90-2	Chlorophenols	µg/L			5 U							
218-01-9	Chrysene	µg/L			0.1 U							
53-70-3	Dibenz(a,h)anthracene	µg/L			0.1 U							
132-64-9	Dibenzofuran	µg/L			5 U							
84-66-2	Diethylphthalate	µg/L			5 U							
131-11-3	Dimethylphthalate	µg/L			5 U							
84-74-2	Di-n-butylphthalate	µg/L			5 U							
117-84-0	Di-n-octylphthalate	µg/L			5 U							

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TABLE G-2
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Old Roosevelt Field Groundwater Contaminated Site
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CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-04-5-R2	GWM-04-6-R2	GWM-04-7-R2	GWM-04-8-R2	GWM-04-9-R2	GWM-04-10-R2	GWM-05-1-R2	GWM-05-2-R2	GWM-05-3-R2	GWM-05-4-R2
		Sample Date	7/14/2006	7/17/2006	7/17/2006	7/17/2006	7/17/2006	7/17/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006
	Semi-Volatile Organic Compounds											
206-44-0	Fluoranthene	µg/L			0.1 U							
86-73-7	Fluorene	µg/L			0.1 U							
118-74-1	Hexachlorobenzene	µg/L			5 U							
87-68-3	Hexachlorobutadiene	µg/L			5 U							
77-47-4	Hexachlorocyclopentadiene	µg/L			5 U							
67-72-1	Hexachloroethane	µg/L			5 U							
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L			0.1 U							
78-59-1	Isophorone	µg/L			5 U							
91-20-3	Naphthalene	µg/L			0.24							
98-95-3	Nitrobenzene	µg/L			5 U							
621-64-7	n-Nitroso-di-n-propylamine	µg/L			5 U							
86-30-6	n-Nitrosodiphenylamine	µg/L			5 U							
87-86-5	Pentachlorophenol	µg/L			0.2 UJ							
85-01-8	Phenanthrene	µg/L			0.1 U							
108-95-2	Phenol	µg/L			5 U							
129-00-0	Pyrene	µg/L			0.1 U							
	PCBs											
12674-11-2	Aroclor-1016	µg/L			1 U							
11104-28-2	Aroclor-1221	µg/L			1 U							
11141-16-5	Aroclor-1232	µg/L			1 U							
53469-21-9	Aroclor-1242	µg/L			1 U							
12672-29-6	Aroclor-1248	µg/L			1 U							
11097-69-1	Aroclor-1254	µg/L			1 U							
11096-82-5	Aroclor-1260	µg/L			1 U							
37324-23-5	Aroclor-1262	µg/L			1 U							
11100-14-4	Aroclor-1268	µg/L			1 U							
	Pesticides											
72-54-8	4,4'-DDD	µg/L			0.1 U							
72-55-9	4,4'-DDE	µg/L			0.1 U							
50-29-3	4,4'-DDT	µg/L			0.1 U							
309-00-2	Aldrin	µg/L			0.05 U							
319-84-6	alpha-BHC	µg/L			0.05 U							
5103-71-9	alpha-Chlordane	µg/L			0.05 U							
319-85-7	beta-BHC	µg/L			0.05 U							
319-86-8	delta-BHC	µg/L			0.05 U							
60-57-1	Dieldrin	µg/L			0.1 U							
959-98-8	Endosulfan I	µg/L			0.05 U							
33213-65-9	Endosulfan II	µg/L			0.1 U							
1031-07-8	Endosulfan sulfate	µg/L			0.1 U							
72-20-8	Endrin	µg/L			0.1 U							
7421-93-4	Endrin aldehyde	µg/L			0.1 U							
53494-70-5	Endrin ketone	µg/L			0.1 U							
58-89-9	gamma-BHC (Lindane)	µg/L			0.05 U							
5103-74-2	gamma-Chlordane	µg/L			0.05 U							
76-44-8	Heptachlor	µg/L			0.05 U							
1024-57-3	Heptachlor epoxide	µg/L			0.05 U							
72-43-5	Methoxychlor	µg/L			0.5 U							
8001-35-2	Toxaphene	µg/L			5 U							

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CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-04-5-R2 7/14/2006	GWM-04-6-R2 7/17/2006	GWM-04-7-R2 7/17/2006	GWM-04-8-R2 7/17/2006	GWM-04-9-R2 7/17/2006	GWM-04-10-R2 7/17/2006	GWM-05-1-R2 7/19/2006	GWM-05-2-R2 7/19/2006	GWM-05-3-R2 7/19/2006	GWM-05-4-R2 7/19/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L			200 U							
7440-36-0	Antimony	µg/L			2 U							
7440-38-2	Arsenic	µg/L			1 U							
7440-39-3	Barium	µg/L			200 U							
7440-41-7	Beryllium	µg/L			1 U							
7440-43-9	Cadmium	µg/L			0.06 J							
7440-70-2	Calcium	mg/L			15.1							
7440-47-3	Chromium	µg/L			17.4							
7440-48-4	Cobalt	µg/L			2.8 J							
7440-50-8	Copper	µg/L			25 U							
57-12-5	Cyanide	µg/L			10 U							
7439-89-6	Iron	µg/L			178							
7439-92-1	Lead	µg/L			10 U							
7439-95-4	Magnesium	mg/L			4.94 J							
7439-96-5	Manganese	µg/L			462							
7439-97-6	Mercury	µg/L			0.2 U							
7439-98-7	Molybdenum	µg/L										
7440-02-0	Nickel	µg/L			13.3 J							
7440-09-7	Potassium	mg/L			5 UJ							
7782-49-2	Selenium	µg/L			5 U							
7440-22-4	Silver	µg/L			35 U							
7440-23-5	Sodium	mg/L			79.4							
7440-28-0	Thallium	µg/L			0.09 J							
7440-62-2	Vanadium	µg/L			50 U							
7440-66-6	Zinc	µg/L			23.8 J							
	Wet Chemistry Parameters											
CL	Chloride	mg/L			98							
SO4	Sulfate	mg/L			46							
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L			1.4							
TOC	Total Organic Carbon	mg/l			1 U							

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Old Roosevelt Field Groundwater Contaminated Site
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CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-05-5-R2	GWM-05-6-R2	GWM-05-7-R2	GWM-05-8-R2	GWM-05-9-R2	GWM-05-10-R2	GWM-06-1-R2	GWM-06-2-R2	GWM-06-3-R2	GWM-06-4-R2
		Sample Date	7/19/2006	7/18/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	0.2 J	0.49 J	0.97	0.85	0.5 U	0.29 J	0.57	0.22 J	0.22 J	1.8
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.08 J	0.5 U	0.5 U	0.22 J	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	1.6	1.4	2.7	3.1	0.5 U	1	0.5 U	0.17 J	9.5	9.3
75-35-4	1,1-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	9.7	6.7
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U
123-91-1	1,4-Dioxane	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.4	2 U
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.1 J	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	8.2	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.063 J
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.27 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.47 J	0.36 J	0.37 J
56-23-5	Carbon Tetrachloride	µg/L	0.12 J	0.5 U	0.12 J	0.16 J	0.5 U	0.5 U	0.06 J	0.5 U	0.5 U	0.29 J
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.58 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	2	1.8	0.26 J	0.25 J	0.5 U	0.18 J	0.67	0.19 J	5.9 J	3.7 J
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.17 J	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.06 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.089 J
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	1.2	0.98	0.49 J	1.1	0.5 U	0.99	0.5 U	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.55 U	0.5 U	1	0.5 U	0.5 U	0.5 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	0.6	0.72	0.4 J	0.49 J	0.11 J	0.37 J	0.5 U	0.5 U	0.29 J	0.24 J
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	800	0.79
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
79-01-6	Trichloroethene	µg/L	18	12	2.1	1.7	0.19 J	1.6	1.4	0.5 U	2.3	1
75-69-4	Trichlorofluoromethane	µg/L	0.64	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-05-5-R2 7/19/2006	GWM-05-6-R2 7/18/2006	GWM-05-7-R2 7/19/2006	GWM-05-8-R2 7/19/2006	GWM-05-9-R2 7/19/2006	GWM-05-10-R2 7/19/2006	GWM-06-1-R2 7/19/2006	GWM-06-2-R2 7/19/2006	GWM-06-3-R2 7/19/2006	GWM-06-4-R2 7/19/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L		5 R								
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L		5 R								
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L		5 R								
95-95-4	2,4,5-Trichlorophenol	µg/L		5 R								
88-06-2	2,4,6-Trichlorophenol	µg/L		5 R								
120-83-2	2,4-Dichlorophenol	µg/L		5 R								
105-67-9	2,4-Dimethylphenol	µg/L		5 R								
51-28-5	2,4-Dinitrophenol	µg/L		10 R								
121-14-2	2,4-Dinitrotoluene	µg/L		5 R								
606-20-2	2,6-Dinitrotoluene	µg/L		5 R								
91-58-7	2-Chloronaphthalene	µg/L		5 R								
95-57-8	2-Chlorophenol	µg/L		5 R								
91-57-6	2-Methylnaphthalene	µg/L		0.1 U								
95-48-7	2-Methylphenol	µg/L		5 R								
88-74-4	2-Nitroaniline	µg/L		10 R								
88-75-5	2-Nitrophenol	µg/L		5 R								
91-94-1	3,3'-Dichlorobenzidine	µg/L		5 R								
99-09-2	3-Nitroaniline	µg/L		10 R								
534-52-1	4,6-Dinitro-2-methylphenol	µg/L		10 R								
101-55-3	4-Bromophenyl-phenylether	µg/L		5 R								
59-50-7	4-Chloro-3-methylphenol	µg/L		5 R								
106-47-8	4-Chloroaniline	µg/L		5 R								
7005-72-3	4-Chlorophenyl-phenylether	µg/L		5 R								
106-44-5	4-Methylphenol	µg/L		5 R								
100-01-6	4-Nitroaniline	µg/L		10 R								
100-02-7	4-Nitrophenol	µg/L		10 R								
83-32-9	Acenaphthene	µg/L		0.1 U								
208-96-8	Acenaphthylene	µg/L		0.1 U								
98-86-2	Acetophenone	µg/L		5 R								
120-12-7	Anthracene	µg/L		0.1 U								
1912-24-9	Atrazine	µg/L		5 R								
100-52-7	Benzaldehyde	µg/L		5 R								
56-55-3	Benzo(a)anthracene	µg/L		0.1 U								
50-32-8	Benzo(a)pyrene	µg/L		0.1 U								
205-99-2	Benzo(b)fluoranthene	µg/L		0.1 U								
191-24-2	Benzo(g,h,i)perylene	µg/L		0.1 U								
207-08-9	Benzo(k)fluoranthene	µg/L		0.1 U								
111-91-1	bis(2-Chloroethoxy)methane	µg/L		5 R								
111-44-4	bis(2-Chloroethyl) ether	µg/L		5 R								
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L		5 R								
85-68-7	Butylbenzylphthalate	µg/L		5 R								
105-60-2	Caprolactam	µg/L		5 R								
86-74-8	Carbazole	µg/L		5 R								
58-90-2	Chlorophenols	µg/L		5 R								
218-01-9	Chrysene	µg/L		0.1 U								
53-70-3	Dibenz(a,h)anthracene	µg/L		0.1 U								
132-64-9	Dibenzofuran	µg/L		5 R								
84-66-2	Diethylphthalate	µg/L		5 R								
131-11-3	Dimethylphthalate	µg/L		5 R								
84-74-2	Di-n-butylphthalate	µg/L		5 R								
117-84-0	Di-n-octylphthalate	µg/L		5 R								

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-05-5-R2	GWM-05-6-R2	GWM-05-7-R2	GWM-05-8-R2	GWM-05-9-R2	GWM-05-10-R2	GWM-06-1-R2	GWM-06-2-R2	GWM-06-3-R2	GWM-06-4-R2
		Sample Date	7/19/2006	7/18/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006	7/19/2006
	Semi-Volatile Organic Compounds											
206-44-0	Fluoranthene	µg/L		0.1 U								
86-73-7	Fluorene	µg/L		0.1 U								
118-74-1	Hexachlorobenzene	µg/L		5 R								
87-68-3	Hexachlorobutadiene	µg/L		5 R								
77-47-4	Hexachlorocyclopentadiene	µg/L		5 R								
67-72-1	Hexachloroethane	µg/L		5 R								
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L		0.1 U								
78-59-1	Isophorone	µg/L		5 R								
91-20-3	Naphthalene	µg/L		0.21 U								
98-95-3	Nitrobenzene	µg/L		5 R								
621-64-7	n-Nitroso-di-n-propylamine	µg/L		5 R								
86-30-6	n-Nitrosodiphenylamine	µg/L		5 R								
87-86-5	Pentachlorophenol	µg/L		0.2 UJ								
85-01-8	Phenanthrene	µg/L		0.1 U								
108-95-2	Phenol	µg/L		5 R								
129-00-0	Pyrene	µg/L		0.1 U								
	PCBs											
12674-11-2	Aroclor-1016	µg/L		1 U								
11104-28-2	Aroclor-1221	µg/L		1 U								
11141-16-5	Aroclor-1232	µg/L		1 U								
53469-21-9	Aroclor-1242	µg/L		1 U								
12672-29-6	Aroclor-1248	µg/L		1 U								
11097-69-1	Aroclor-1254	µg/L		1 U								
11096-82-5	Aroclor-1260	µg/L		1 U								
37324-23-5	Aroclor-1262	µg/L		1 U								
11100-14-4	Aroclor-1268	µg/L		1 U								
	Pesticides											
72-54-8	4,4'-DDD	µg/L		0.1 U								
72-55-9	4,4'-DDE	µg/L		0.1 U								
50-29-3	4,4'-DDT	µg/L		0.1 UJ								
309-00-2	Aldrin	µg/L		0.05 U								
319-84-6	alpha-BHC	µg/L		0.05 U								
5103-71-9	alpha-Chlordane	µg/L		0.05 U								
319-85-7	beta-BHC	µg/L		0.05 U								
319-86-8	delta-BHC	µg/L		0.05 UJ								
60-57-1	Dieldrin	µg/L		0.1 U								
959-98-8	Endosulfan I	µg/L		0.05 U								
33213-65-9	Endosulfan II	µg/L		0.1 U								
1031-07-8	Endosulfan sulfate	µg/L		0.1 U								
72-20-8	Endrin	µg/L		0.1 U								
7421-93-4	Endrin aldehyde	µg/L		0.1 U								
53494-70-5	Endrin ketone	µg/L		0.1 U								
58-89-9	gamma-BHC (Lindane)	µg/L		0.05 U								
5103-74-2	gamma-Chlordane	µg/L		0.05 U								
76-44-8	Heptachlor	µg/L		0.05 U								
1024-57-3	Heptachlor epoxide	µg/L		0.05 U								
72-43-5	Methoxychlor	µg/L		0.5 U								
8001-35-2	Toxaphene	µg/L		5 U								

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-05-5-R2 7/19/2006	GWM-05-6-R 7/18/2006	GWM-05-7-R2 7/19/2006	GWM-05-8-R2 7/19/2006	GWM-05-9-R2 7/19/2006	GWM-05-10-R2 7/19/2006	GWM-06-1-R2 7/19/2006	GWM-06-2-R2 7/19/2006	GWM-06-3-R2 7/19/2006	GWM-06-4-R2 7/19/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L		200 U								
7440-36-0	Antimony	µg/L		2 U								
7440-38-2	Arsenic	µg/L		1 U								
7440-39-3	Barium	µg/L		200 U								
7440-41-7	Beryllium	µg/L		1 U								
7440-43-9	Cadmium	µg/L		0.09 J								
7440-70-2	Calcium	mg/L		24.8								
7440-47-3	Chromium	µg/L		34.3								
7440-48-4	Cobalt	µg/L		4.8 J								
7440-50-8	Copper	µg/L		25 U								
57-12-5	Cyanide	µg/L		10 U								
7439-89-6	Iron	µg/L		140								
7439-92-1	Lead	µg/L		10 U								
7439-95-4	Magnesium	mg/L		11.4								
7439-96-5	Manganese	µg/L		61.1								
7439-97-6	Mercury	µg/L		0.2 U								
7439-98-7	Molybdenum	µg/L										
7440-02-0	Nickel	µg/L		61.1								
7440-09-7	Potassium	mg/L		5 UJ								
7782-49-2	Selenium	µg/L		5 U								
7440-22-4	Silver	µg/L		35 U								
7440-23-5	Sodium	mg/L		109								
7440-28-0	Thallium	µg/L		0.16 J								
7440-62-2	Vanadium	µg/L		50 U								
7440-66-6	Zinc	µg/L		19.3 J								
	Wet Chemistry Parameters											
CL	Chloride	mg/L		200								
SO4	Sulfate	mg/L		42								
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L		4.8								
TOC	Total Organic Carbon	mg/l		1 U								

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-06-5-R2 / 7/20/2006	GWM-06-6-R2 / 7/19/2006	GWM-07-1-R2 / 7/11/2006	GWM-07-2-R2 / 7/12/2006	GWM-07-3-R2 / 7/11/2006	GWM-07-4-R2 / 7/11/2006	GWM-07-5-R2 / 7/11/2006	GWM-07-6-R2 / 7/11/2006	GWM-08-1-R2 / 7/18/2006	GWM-08-2-R2 / 7/18/2006
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	µg/L	6.1	0.47 J	0.5 U	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	25 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-35-4	1,1-Dichloroethene	µg/L	16	0.5 U	0.5 U	5.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.042 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.026 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
123-91-1	1,4-Dioxane	µg/L	6	2 U	2 R	2 R	2 R	2 R	2 R	2 R	2 U	2 U
78-93-3	2-Butanone	µg/L	5 U	22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	130	5 U	2 J	5 U	5 U	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.37 J	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	17 J	0.5 U	0.5 U	0.76	3.9	0.5 U	0.5 U	0.5 U	0.5 U	0.46 J
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.42 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	6.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	µg/L	1.5 U	0.5 U	1.7 U	0.57	0.5 U	1.2 U	0.5 U	0.5 U	0.5 U	0.5 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	0.54	0.087 J	0.5 U	0.5 U	7.7	0.56	0.69	0.5 U	6.7	13
108-88-3	Toluene	µg/L	0.69	270	0.5 U	0.5 U	0.04 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.07 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	2.5	0.5 U	0.24 J	6.2	20	0.81	1.8	0.5 U	1.4	3.2
75-69-4	Trichlorofluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-06-5-R2 7/20/2006	GWM-06-6-R2 7/19/2006	GWM-07-1-R2 7/11/2006	GWM-07-2-R2 7/12/2006	GWM-07-3-R2 7/11/2006	GWM-07-4-R2 7/11/2006	GWM-07-5-R2 7/11/2006	GWM-07-6-R2 7/11/2006	GWM-08-1-R2 7/18/2006	GWM-08-2-R2 7/18/2006
	Semi-Volatile Organic Compounds											
92-52-4	1,1'-Biphenyl	µg/L	5 U			5 U						
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L	5 U			5 U						
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L	5 U			5 U						
95-95-4	2,4,5-Trichlorophenol	µg/L	5 U			5 U						
88-06-2	2,4,6-Trichlorophenol	µg/L	5 U			5 U						
120-83-2	2,4-Dichlorophenol	µg/L	5 U			5 U						
105-67-9	2,4-Dimethylphenol	µg/L	5 U			5 U						
51-28-5	2,4-Dinitrophenol	µg/L	10 U			10 U						
121-14-2	2,4-Dinitrotoluene	µg/L	5 U			5 U						
606-20-2	2,6-Dinitrotoluene	µg/L	5 U			5 U						
91-58-7	2-Chloronaphthalene	µg/L	5 U			5 U						
95-57-8	2-Chlorophenol	µg/L	5 U			5 U						
91-57-6	2-Methylnaphthalene	µg/L	0.06 J			0.1 U						
95-48-7	2-Methylphenol	µg/L	5 U			5 U						
88-74-4	2-Nitroaniline	µg/L	10 U			10 U						
88-75-5	2-Nitrophenol	µg/L	5 U			5 U						
91-94-1	3,3'-Dichlorobenzidine	µg/L	5 U			5 U						
99-09-2	3-Nitroaniline	µg/L	10 U			10 U						
534-52-1	4,6-Dinitro-2-methylphenol	µg/L	10 U			10 U						
101-55-3	4-Bromophenyl-phenylether	µg/L	5 U			5 U						
59-50-7	4-Chloro-3-methylphenol	µg/L	5 U			5 U						
106-47-8	4-Chloroaniline	µg/L	5 U			5 U						
7005-72-3	4-Chlorophenyl-phenylether	µg/L	5 U			5 U						
106-44-5	4-Methylphenol	µg/L	5 U			5 U						
100-01-6	4-Nitroaniline	µg/L	10 U			10 U						
100-02-7	4-Nitrophenol	µg/L	10 U			10 U						
83-32-9	Acenaphthene	µg/L	0.1 U			0.1 U						
208-96-8	Acenaphthylene	µg/L	0.1 U			0.1 U						
98-86-2	Acetophenone	µg/L	5 U			5 U						
120-12-7	Anthracene	µg/L	0.1 U			0.1 U						
1912-24-9	Atrazine	µg/L	5 U			5 U						
100-52-7	Benzaldehyde	µg/L	5 U			5 U						
56-55-3	Benzo(a)anthracene	µg/L	0.1 U			0.1 U						
50-32-8	Benzo(a)pyrene	µg/L	0.1 U			0.07 J						
205-99-2	Benzo(b)fluoranthene	µg/L	0.1 U			0.1 U						
191-24-2	Benzo(g,h,i)perylene	µg/L	0.1 U			0.1 U						
207-08-9	Benzo(k)fluoranthene	µg/L	0.1 U			0.1 U						
111-91-1	bis(2-Chloroethoxy)methane	µg/L	5 U			5 U						
111-44-4	bis(2-Chloroethyl) ether	µg/L	5 U			5 U						
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L	5 U			5 U						
85-68-7	Butylbenzylphthalate	µg/L	5 U			5 U						
105-60-2	Caprolactam	µg/L	5 U			5 U						
86-74-8	Carbazole	µg/L	5 U			5 U						
58-90-2	Chlorophenols	µg/L	5 U			5 U						
218-01-9	Chrysene	µg/L	0.1 U			0.1 U						
53-70-3	Dibenz(a,h)anthracene	µg/L	0.1 U			0.1 U						
132-64-9	Dibenzofuran	µg/L	5 U			5 U						
84-66-2	Diethylphthalate	µg/L	5 U			5 U						
131-11-3	Dimethylphthalate	µg/L	5 U			5 U						
84-74-2	Di-n-butylphthalate	µg/L	5 U			5 U						
117-84-0	Di-n-octylphthalate	µg/L	5 U			5 U						

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-06-5-R2 7/20/2006	GWM-06-6-R2 7/19/2006	GWM-07-1-R2 7/11/2006	GWM-07-2-R2 7/12/2006	GWM-07-3-R2 7/11/2006	GWM-07-4-R2 7/11/2006	GWM-07-5-R2 7/11/2006	GWM-07-6-R2 7/11/2006	GWM-08-1-R2 7/18/2006	GWM-08-2-R2 7/18/2006
	Semi-Volatile Organic Compounds											
206-44-0	Fluoranthene	µg/L	0.1 U			0.1 U						
86-73-7	Fluorene	µg/L	0.1 U			0.1 U						
118-74-1	Hexachlorobenzene	µg/L	5 U			5 U						
87-68-3	Hexachlorobutadiene	µg/L	5 U			5 U						
77-47-4	Hexachlorocyclopentadiene	µg/L	5 U			5 U						
67-72-1	Hexachloroethane	µg/L	5 U			5 U						
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L	0.1 U			0.1 U						
78-59-1	Isophorone	µg/L	5 U			5 U						
91-20-3	Naphthalene	µg/L	0.27			0.27						
98-95-3	Nitrobenzene	µg/L	5 U			5 U						
621-64-7	n-Nitroso-di-n-propylamine	µg/L	5 U			5 U						
86-30-6	n-Nitrosodiphenylamine	µg/L	5 U			5 U						
87-86-5	Pentachlorophenol	µg/L	0.2 U			0.2 U						
85-01-8	Phenanthrene	µg/L	0.1 U			0.1 U						
108-95-2	Phenol	µg/L	5 U			5 U						
129-00-0	Pyrene	µg/L	0.1 U			0.1 U						
	PCBs											
12674-11-2	Aroclor-1016	µg/L	1 UJ			1 U						
11104-28-2	Aroclor-1221	µg/L	1 UJ			1 U						
11141-16-5	Aroclor-1232	µg/L	1 UJ			1 U						
53469-21-9	Aroclor-1242	µg/L	1 UJ			1 U						
12672-29-6	Aroclor-1248	µg/L	1 UJ			1 U						
11097-69-1	Aroclor-1254	µg/L	1 UJ			1 U						
11096-82-5	Aroclor-1260	µg/L	1 UJ			1 U						
37324-23-5	Aroclor-1262	µg/L	1 UJ			1 U						
11100-14-4	Aroclor-1268	µg/L	1 UJ			1 U						
	Pesticides											
72-54-8	4,4'-DDD	µg/L	0.1 U			0.1 U						
72-55-9	4,4'-DDE	µg/L	0.1 U			0.1 U						
50-29-3	4,4'-DDT	µg/L	0.1 UJ			0.1 U						
309-00-2	Aldrin	µg/L	0.05 U			0.05 U						
319-84-6	alpha-BHC	µg/L	0.05 U			0.05 U						
5103-71-9	alpha-Chlordane	µg/L	0.05 U			0.05 U						
319-85-7	beta-BHC	µg/L	0.05 U			0.05 U						
319-86-8	delta-BHC	µg/L	0.05 UJ			0.05 U						
60-57-1	Dieldrin	µg/L	0.1 U			0.038 J						
959-98-8	Endosulfan I	µg/L	0.05 U			0.05 U						
33213-65-9	Endosulfan II	µg/L	0.1 U			0.1 U						
1031-07-8	Endosulfan sulfate	µg/L	0.1 U			0.1 U						
72-20-8	Endrin	µg/L	0.1 U			0.1 U						
7421-93-4	Endrin aldehyde	µg/L	0.1 U			0.1 U						
53494-70-5	Endrin ketone	µg/L	0.1 U			0.1 U						
58-89-9	gamma-BHC (Lindane)	µg/L	0.05 U			0.05 U						
5103-74-2	gamma-Chlordane	µg/L	0.05 U			0.05 U						
76-44-8	Heptachlor	µg/L	0.05 U			0.05 U						
1024-57-3	Heptachlor epoxide	µg/L	0.05 U			0.05 U						
72-43-5	Methoxychlor	µg/L	0.5 U			0.5 U						
8001-35-2	Toxaphene	µg/L	5 U			5 U						

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-06-5-R2 7/20/2006	GWM-06-6-R2 7/19/2006	GWM-07-1-R2 7/11/2006	GWM-07-2-R2 7/12/2006	GWM-07-3-R2 7/11/2006	GWM-07-4-R2 7/11/2006	GWM-07-5-R2 7/11/2006	GWM-07-6-R2 7/11/2006	GWM-08-1-R2 7/18/2006	GWM-08-2-R2 7/18/2006
	Inorganic Analytes											
7429-90-5	Aluminum	µg/L	200 U			200 U						
7440-36-0	Antimony	µg/L	2 U			2 U						
7440-38-2	Arsenic	µg/L	2.1			1 U						
7440-39-3	Barium	µg/L	200 U			200 U						
7440-41-7	Beryllium	µg/L	1 U			0.03 J						
7440-43-9	Cadmium	µg/L	0.04 J			1 U						
7440-70-2	Calcium	mg/L	6.46			8.41						
7440-47-3	Chromium	µg/L	8.5 J			8.6 J						
7440-48-4	Cobalt	µg/L	50 U			2.3 J						
7440-50-8	Copper	µg/L	25 U			25 U						
57-12-5	Cyanide	µg/L	10 U			10 U						
7439-89-6	Iron	µg/L	8770			75.2 J						
7439-92-1	Lead	µg/L	10 U			10 U						
7439-95-4	Magnesium	mg/L	2.04 J			2.73 J						
7439-96-5	Manganese	µg/L	306			40.1						
7439-97-6	Mercury	µg/L	0.2 U			0.2 UJ						
7439-98-7	Molybdenum	µg/L										
7440-02-0	Nickel	µg/L	5.5 J			40 U						
7440-09-7	Potassium	mg/L	5 UJ			5 UJ						
7782-49-2	Selenium	µg/L	5 U			2.2 J						
7440-22-4	Silver	µg/L	35 U			10 U						
7440-23-5	Sodium	mg/L	48.7			25.9						
7440-28-0	Thallium	µg/L	1 U			1 U						
7440-62-2	Vanadium	µg/L	0.4 J			50 U						
7440-66-6	Zinc	µg/L	16.7 J			68.1						
	Wet Chemistry Parameters											
CL	Chloride	mg/L	43			28						
SO4	Sulfate	mg/L	20			28						
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L	0.05 U			1.6						
TOC	Total Organic Carbon	mg/l	1 U			1 U						

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-08-3-R2 7/18/2006	GWM-08-4-R2-Avg	GWM-08-5-R2 7/18/2006	GWM-08-6-R2 7/18/2006	GWX-10019-R2 7/11/2006	GWX-10020-R2 7/10/2006	GWX-10035-R2 7/11/2006	GWX-8068-R2 7/10/2006	GWX-8474-R2 7/10/2006
	Volatile Organic Compounds										
71-55-6	1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.1	2.7
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.5	1.2
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18 J	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.22 J	0.5 U	0.5 U	1.2	0.48 J
75-35-4	1,1-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	17	7.4
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U
123-91-1	1,4-Dioxane	µg/L	2 U	2 U	2 U	2 U	2 R	2 R	2 R	2 R	2 R
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	3 J
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U	5 U	7.7 J	2.8 J	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	0.44 J	0.42 J
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.8	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.5 U	0.16 J	0.3 J	0.5 U	23	0.5 U	0.5 U	5.3 J	1.4 J
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.16 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.75 U	4 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	24	0.5 U	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	µg/L	0.5 U	0.565 U	0.5 U	0.5 U	0.84 U	4.8 U	0.91 U	0.5 U	0.52 U
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	23	31.5	57	0.35 J	2.2	0.5 U	0.5 U	170	6.3
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.24 J	0.5 U	0.5 U	0.07 J	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	1.1	1.3	2	0.5 U	170	0.14 J	0.31 J	54	25
75-69-4	Trichlorofluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	1.9	0.5 U	0.5 U	1.2	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWM-08-3-R2 7/18/2006	GWM-08-4-R2-Avg	GWM-08-5-R2 7/18/2006	GWM-08-6-R2 7/18/2006	GWX-10019-R2 7/11/2006	GWX-10020-R2 7/10/2006	GWX-10035-R2 7/11/2006	GWX-8068-R2 7/10/2006	GWX-8474-R2 7/10/2006
	Semi-Volatile Organic Compounds										
92-52-4	1,1'-Biphenyl	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
95-95-4	2,4,5-Trichlorophenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
88-06-2	2,4,6-Trichlorophenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
120-83-2	2,4-Dichlorophenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
105-67-9	2,4-Dimethylphenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
51-28-5	2,4-Dinitrophenol	µg/L		10 R			10 U	10 U	10 U	10 U	10 U
121-14-2	2,4-Dinitrotoluene	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
606-20-2	2,6-Dinitrotoluene	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
91-58-7	2-Chloronaphthalene	µg/L		5 R			5 U	5 UJ	5 U	5 U	5 U
95-57-8	2-Chlorophenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
91-57-6	2-Methylnaphthalene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
95-48-7	2-Methylphenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
88-74-4	2-Nitroaniline	µg/L		10 R			10 U	10 U	10 U	10 U	10 U
88-75-5	2-Nitrophenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
91-94-1	3,3'-Dichlorobenzidine	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
99-09-2	3-Nitroaniline	µg/L		10 R			10 U	10 U	10 U	10 U	10 U
534-52-1	4,6-Dinitro-2-methylphenol	µg/L		10 R			10 U	10 U	10 U	10 U	10 U
101-55-3	4-Bromophenyl-phenylether	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
59-50-7	4-Chloro-3-methylphenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
106-47-8	4-Chloroaniline	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
7005-72-3	4-Chlorophenyl-phenylether	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
106-44-5	4-Methylphenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
100-01-6	4-Nitroaniline	µg/L		10 R			10 U	10 U	10 U	10 U	10 U
100-02-7	4-Nitrophenol	µg/L		10 R			10 U	10 U	10 U	10 U	10 U
83-32-9	Acenaphthene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
208-96-8	Acenaphthylene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
98-86-2	Acetophenone	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
120-12-7	Anthracene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1912-24-9	Atrazine	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
100-52-7	Benzaldehyde	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
56-55-3	Benzo(a)anthracene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
50-32-8	Benzo(a)pyrene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.12	0.1 U
205-99-2	Benzo(b)fluoranthene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
191-24-2	Benzo(g,h,i)perylene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
207-08-9	Benzo(k)fluoranthene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
111-91-1	bis(2-Chloroethoxy)methane	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
111-44-4	bis(2-Chloroethyl) ether	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
85-68-7	Butylbenzylphthalate	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
105-60-2	Caprolactam	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
86-74-8	Carbazole	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
58-90-2	Chlorophenols	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
218-01-9	Chrysene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
53-70-3	Dibenz(a,h)anthracene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
132-64-9	Dibenzofuran	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
84-66-2	Diethylphthalate	µg/L		5 R			5 U	0.22 J	5 U	5 U	5 U
131-11-3	Dimethylphthalate	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
84-74-2	Di-n-butylphthalate	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
117-84-0	Di-n-octylphthalate	µg/L		5 R			5 U	5 U	5 U	5 U	5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-08-3-R2 7/18/2006	GWM-08-4-R2-Avg	GWM-08-5-R2 7/18/2006	GWM-08-6-R2 7/18/2006	GWX-10019-R2 7/11/2006	GWX-10020-R2 7/10/2006	GWX-10035-R2 7/11/2006	GWX-8068-R2 7/10/2006	GWX-8474-R2 7/10/2006
	Semi-Volatile Organic Compounds										
206-44-0	Fluoranthene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
86-73-7	Fluorene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
118-74-1	Hexachlorobenzene	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
87-68-3	Hexachlorobutadiene	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
77-47-4	Hexachlorocyclopentadiene	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
67-72-1	Hexachloroethane	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
78-59-1	Isophorone	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
91-20-3	Naphthalene	µg/L		0.29			0.2	0.22 U	0.16	0.22	0.13 U
98-95-3	Nitrobenzene	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
621-64-7	n-Nitroso-di-n-propylamine	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
86-30-6	n-Nitrosodiphenylamine	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
87-86-5	Pentachlorophenol	µg/L		0.2 UJ			0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
85-01-8	Phenanthrene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
108-95-2	Phenol	µg/L		5 R			5 U	5 U	5 U	5 U	5 U
129-00-0	Pyrene	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	PCBs										
12674-11-2	Aroclor-1016	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
11104-28-2	Aroclor-1221	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
11141-16-5	Aroclor-1232	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
53469-21-9	Aroclor-1242	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
12672-29-6	Aroclor-1248	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
11097-69-1	Aroclor-1254	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
11096-82-5	Aroclor-1260	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
37324-23-5	Aroclor-1262	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
11100-14-4	Aroclor-1268	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
	Pesticides										
72-54-8	4,4'-DDD	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
72-55-9	4,4'-DDE	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
50-29-3	4,4'-DDT	µg/L		0.1 UJ			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
309-00-2	Aldrin	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
319-84-6	alpha-BHC	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
5103-71-9	alpha-Chlordane	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
319-85-7	beta-BHC	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
319-86-8	delta-BHC	µg/L		0.05 UJ			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
60-57-1	Dieldrin	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
959-98-8	Endosulfan I	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
33213-65-9	Endosulfan II	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1031-07-8	Endosulfan sulfate	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
72-20-8	Endrin	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
7421-93-4	Endrin aldehyde	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
53494-70-5	Endrin ketone	µg/L		0.1 U			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
58-89-9	gamma-BHC (Lindane)	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
5103-74-2	gamma-Chlordane	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
76-44-8	Heptachlor	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1024-57-3	Heptachlor epoxide	µg/L		0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
72-43-5	Methoxychlor	µg/L		0.5 U			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
8001-35-2	Toxaphene	µg/L		5 U			5 U	5 U	5 U	5 U	5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	GWM-08-3-R2 7/18/2006	GWM-08-4-R2-Avg	GWM-08-5-R2 7/18/2006	GWM-08-6-R2 7/18/2006	GWX-10019-R2 7/11/2006	GWX-10020-R2 7/10/2006	GWX-10035-R2 7/11/2006	GWX-8068-R2 7/10/2006	GWX-8474-R2 7/10/2006
	Inorganic Analytes										
7429-90-5	Aluminum	µg/L		200 U			200 U	200 U	200 U	200 U	200 U
7440-36-0	Antimony	µg/L		2 U			2 U	2 U	2 U	2 U	2 U
7440-38-2	Arsenic	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
7440-39-3	Barium	µg/L		200 U			200 U	200 U	297	200 U	200 U
7440-41-7	Beryllium	µg/L		1 U			1 U	1 U	1 U	1 U	1 U
7440-43-9	Cadmium	µg/L		0.105 J			1 U	1 U	1 U	1 U	1 U
7440-70-2	Calcium	mg/L		5.72			16.9	15.3	26.2	7.07	3.52 J
7440-47-3	Chromium	µg/L		6.3 J			3.8 J	1 J	5.9 J	10 U	0.6 J
7440-48-4	Cobalt	µg/L		5.2 J			10.9 J	50 U	50 U	2.8 J	1.3 J
7440-50-8	Copper	µg/L		25 U			25 U	25 U	25 U	249	25 U
57-12-5	Cyanide	µg/L		10 U			10 U	10 U	10 U	10 U	10 U
7439-89-6	Iron	µg/L		54.4 J			5140	1630	1120	59.3 J	100 U
7439-92-1	Lead	µg/L		10 U			10.4	10.2	10 U	21.9	10 U
7439-95-4	Magnesium	mg/L		2.145 J			7.71	7.99	5.16	3.06 J	2.08 J
7439-96-5	Manganese	µg/L		38.35			265	181	15 U	15 U	15 U
7439-97-6	Mercury	µg/L		0.2 U			0.2 UJ	0.2 UJ	0.2 UJ	0.042 J	0.2 UJ
7439-98-7	Molybdenum	µg/L									
7440-02-0	Nickel	µg/L		9.55 J			40 U	40 U	40 U	40 U	40 U
7440-09-7	Potassium	mg/L		5 UJ			5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
7782-49-2	Selenium	µg/L		5 U			2.2 J	0.85 J	0.6 J	1.1 J	0.67 J
7440-22-4	Silver	µg/L		35 U			10 U	10 U	10 U	10 U	10 U
7440-23-5	Sodium	mg/L		23.75			45.6	51.7	125.001	32.9	8.55
7440-28-0	Thallium	µg/L		0.095 J			1 U	1 U	1 U	1 U	1 U
7440-62-2	Vanadium	µg/L		0.4 U			50 U	50 U	50 U	50 U	50 U
7440-66-6	Zinc	µg/L		26.35 J			60 U	60 U	60 U	214	60 U
	Wet Chemistry Parameters										
CL	Chloride	mg/L		20			94	94	230	55	15
SO4	Sulfate	mg/L		30			26	1.6	13	9.1	1.7
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L		3.15			2	0.27	2.5	2.7	1.8
TOC	Total Organic Carbon	mg/l		1 U			1 U	1 U	1 U	1 U	1 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-8475-R2 7/10/2006	GWX-9398-R2 7/12/2006	GWX-9966-R2 7/11/2006	GWX-9973-R2 7/12/2006
	Volatile Organic Compounds					
71-55-6	1,1,1-Trichloroethane	µg/L	6.9	0.5 U	0.5 U	0.5 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	4.9	0.5 U	0.5 U	0.5 U
79-00-5	1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	µg/L	0.75	0.5 U	0.5 U	0.5 U
75-35-4	1,1-Dichloroethene	µg/L	20 J	0.5 U	0.5 U	0.5 U
87-61-6	1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
96-12-8	1,2-Dibromo-3-chloropropane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
106-93-4	1,2-Dibromoethane	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
95-50-1	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	µg/L	0.02 J	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	µg/L	0.02 J	0.5 U	0.5 U	0.5 U
123-91-1	1,4-Dioxane	µg/L	3.2 J	2 R	2 R	2 R
78-93-3	2-Butanone	µg/L	5 U	5 U	5 U	5 U
591-78-6	2-Hexanone	µg/L	5 U	5 U	5 U	5 U
108-10-1	4-Methyl-2-pentanone	µg/L	5 U	5 U	5 U	5 U
67-64-1	Acetone	µg/L	5 U	5 U	5 U	5 U
71-43-2	Benzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Chlorobromomethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
67-66-3	Chloroform	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
156-59-2	cis-1,2-Dichloroethene	µg/L	0.79 J	0.5 U	0.5 U	0.5 U
10061-01-5	cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
100-41-4	Ethylbenzene	µg/L	0.5 U	0.5 U	0.03 J	0.5 U
98-82-8	Isopropylbenzene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	m,p-Xylenes	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
79-20-9	Methyl Acetate	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl tert-Butyl Ether	µg/L	0.5 U	0.5 U	0.5 U	5.3
75-09-2	Methylene Chloride	µg/L	0.64 U	2.4	0.52 U	2.2
108-87-2	Metylcyclohexane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
95-47-6	o-Xylene	µg/L	0.5 U	0.5 U	0.2 J	0.5 U
100-42-5	Styrene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	µg/L	3.7	0.5 U	0.5 U	0.5 U
108-88-3	Toluene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
79-01-6	Trichloroethene	µg/L	16	0.5 U	0.5 U	0.5 U
75-69-4	Trichlorofluoromethane	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-8475-R2 7/10/2006	GWX-9398-R2 7/12/2006	GWX-9966-R2 7/11/2006	GWX-9973-R2 7/12/2006
	Semi-Volatile Organic Compounds					
92-52-4	1,1'-Biphenyl	µg/L	5 U	5 U	5 U	5 U
95-94-3	1,2,4,5-Tetrachlorobenzene	µg/L	5 U	5 U	5 U	5 U
108-60-1	2,2'-oxybis(1-Chloropropane)	µg/L	5 U	5 U	5 U	5 U
95-95-4	2,4,5-Trichlorophenol	µg/L	5 U	5 U	5 U	5 U
88-06-2	2,4,6-Trichlorophenol	µg/L	5 U	5 U	5 U	5 U
120-83-2	2,4-Dichlorophenol	µg/L	5 U	5 U	5 U	5 U
105-67-9	2,4-Dimethylphenol	µg/L	5 U	5 U	5 U	5 U
51-28-5	2,4-Dinitrophenol	µg/L	10 U	10 U	10 U	10 U
121-14-2	2,4-Dinitrotoluene	µg/L	5 U	5 U	5 U	5 U
606-20-2	2,6-Dinitrotoluene	µg/L	5 U	5 U	5 U	5 U
91-58-7	2-Chloronaphthalene	µg/L	5 U	5 U	5 U	5 U
95-57-8	2-Chlorophenol	µg/L	5 U	5 U	5 U	5 U
91-57-6	2-Methylnaphthalene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
95-48-7	2-Methylphenol	µg/L	5 U	5 U	5 U	5 U
88-74-4	2-Nitroaniline	µg/L	10 U	10 U	10 U	10 U
88-75-5	2-Nitrophenol	µg/L	5 U	5 U	5 U	5 U
91-94-1	3,3'-Dichlorobenzidine	µg/L	5 U	5 U	5 U	5 U
99-09-2	3-Nitroaniline	µg/L	10 U	10 U	10 U	10 U
534-52-1	4,6-Dinitro-2-methylphenol	µg/L	10 U	10 U	10 U	10 U
101-55-3	4-Bromophenyl-phenylether	µg/L	5 U	5 U	5 U	5 U
59-50-7	4-Chloro-3-methylphenol	µg/L	5 U	5 U	5 U	5 U
106-47-8	4-Chloroaniline	µg/L	5 U	5 U	5 U	5 U
7005-72-3	4-Chlorophenyl-phenylether	µg/L	5 U	5 U	5 U	5 U
106-44-5	4-Methylphenol	µg/L	5 U	5 U	5 U	5 U
100-01-6	4-Nitroaniline	µg/L	10 U	10 U	10 U	10 U
100-02-7	4-Nitrophenol	µg/L	10 U	10 U	10 U	10 U
83-32-9	Acenaphthene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
208-96-8	Acenaphthylene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
98-86-2	Acetophenone	µg/L	5 U	5 U	5 U	5 U
120-12-7	Anthracene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
1912-24-9	Atrazine	µg/L	5 U	5 U	5 U	5 U
100-52-7	Benzaldehyde	µg/L	5 U	5 U	5 U	5 U
56-55-3	Benzo(a)anthracene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
50-32-8	Benzo(a)pyrene	µg/L	0.1 U	0.08 J	0.1 U	0.1 U
205-99-2	Benzo(b)fluoranthene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
191-24-2	Benzo(g,h,i)perylene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
207-08-9	Benzo(k)fluoranthene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
111-91-1	bis(2-Chloroethoxy)methane	µg/L	5 U	5 U	5 U	5 U
111-44-4	bis(2-Chloroethyl) ether	µg/L	5 U	5 U	5 U	5 U
117-81-7	bis(2-Ethylhexyl) phthalate	µg/L	5 U	5 U	5 U	14
85-68-7	Butylbenzylphthalate	µg/L	5 U	5 U	5 U	5 U
105-60-2	Caprolactam	µg/L	5 U	5 U	5 U	5 U
86-74-8	Carbazole	µg/L	5 U	5 U	5 U	5 U
58-90-2	Chlorophenols	µg/L	5 U	5 U	5 U	5 U
218-01-9	Chrysene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
53-70-3	Dibenz(a,h)anthracene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
132-64-9	Dibenzofuran	µg/L	5 U	5 U	5 U	5 U
84-66-2	Diethylphthalate	µg/L	5 U	5 U	5 U	5 U
131-11-3	Dimethylphthalate	µg/L	5 U	5 U	5 U	5 U
84-74-2	Di-n-butylphthalate	µg/L	5 U	5 U	5 U	5 U
117-84-0	Di-n-octylphthalate	µg/L	5 U	5 U	5 U	5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-8475-R2 7/10/2006	GWX-9398-R2 7/12/2006	GWX-9966-R2 7/11/2006	GWX-9973-R2 7/12/2006
	Semi-Volatile Organic Compounds					
206-44-0	Fluoranthene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
86-73-7	Fluorene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
118-74-1	Hexachlorobenzene	µg/L	5 U	5 U	5 U	5 U
87-68-3	Hexachlorobutadiene	µg/L	5 U	5 U	5 U	5 U
77-47-4	Hexachlorocyclopentadiene	µg/L	5 U	5 U	5 U	5 U
67-72-1	Hexachloroethane	µg/L	5 U	5 U	5 U	5 U
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
78-59-1	Isophorone	µg/L	5 U	5 U	5 U	5 U
91-20-3	Naphthalene	µg/L	0.16 U	0.18	0.1 U	0.2
98-95-3	Nitrobenzene	µg/L	5 U	5 U	5 U	5 U
621-64-7	n-Nitroso-di-n-propylamine	µg/L	5 U	5 U	5 U	5 U
86-30-6	n-Nitrosodiphenylamine	µg/L	5 U	5 U	5 U	5 U
87-86-5	Pentachlorophenol	µg/L	0.2 UJ	0.2 U	0.2 UJ	0.2 U
85-01-8	Phenanthrene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
108-95-2	Phenol	µg/L	5 U	5 U	5 U	5 U
129-00-0	Pyrene	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
	PCBs					
12674-11-2	Aroclor-1016	µg/L	1 U	1 U	1 U	1 U
11104-28-2	Aroclor-1221	µg/L	1 U	1 U	1 U	1 U
11141-16-5	Aroclor-1232	µg/L	1 U	1 U	1 U	1 U
53469-21-9	Aroclor-1242	µg/L	1 U	1 U	1 U	1 U
12672-29-6	Aroclor-1248	µg/L	1 U	1 U	1 U	1 U
11097-69-1	Aroclor-1254	µg/L	1 U	1 U	1 U	1 U
11096-82-5	Aroclor-1260	µg/L	1 U	1 U	1 U	1 U
37324-23-5	Aroclor-1262	µg/L	1 U	1 U	1 U	1 U
11100-14-4	Aroclor-1268	µg/L	1 U	1 U	1 U	1 U
	Pesticides					
72-54-8	4,4'-DDD	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
72-55-9	4,4'-DDE	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
50-29-3	4,4'-DDT	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
309-00-2	Aldrin	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
319-84-6	alpha-BHC	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
5103-71-9	alpha-Chlordane	µg/L	0.05 U	0.56 JN	0.05 U	0.05 U
319-85-7	beta-BHC	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
319-86-8	delta-BHC	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
60-57-1	Dieldrin	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
959-98-8	Endosulfan I	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
33213-65-9	Endosulfan II	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
1031-07-8	Endosulfan sulfate	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
72-20-8	Endrin	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
7421-93-4	Endrin aldehyde	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
53494-70-5	Endrin ketone	µg/L	0.1 U	0.1 U	0.1 U	0.1 U
58-89-9	gamma-BHC (Lindane)	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
5103-74-2	gamma-Chlordane	µg/L	0.05 U	0.99	0.05 U	0.026 J
76-44-8	Heptachlor	µg/L	0.05 U	0.05 U	0.05 U	0.05 U
1024-57-3	Heptachlor epoxide	µg/L	0.05 U	0.05 U	0.05 U	0.026 J
72-43-5	Methoxychlor	µg/L	0.5 U	0.5 U	0.5 U	0.5 U
8001-35-2	Toxaphene	µg/L	5 U	5 U	5 U	5 U

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TABLE G-2
ANALYTICAL RESULTS OF GROUNDWATER ROUND 2 SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	GWX-8475-R2 7/10/2006	GWX-9398-R2 7/12/2006	GWX-9966-R2 7/11/2006	GWX-9973-R2 7/12/2006
	Inorganic Analytes					
7429-90-5	Aluminum	µg/L	200 U	156 J	200 U	200 U
7440-36-0	Antimony	µg/L	2 U	2 U	2 U	2 U
7440-38-2	Arsenic	µg/L	1 U	1 U	1 U	1 U
7440-39-3	Barium	µg/L	200 U	200 U	200 U	200 U
7440-41-7	Beryllium	µg/L	1 U	1 U	0.02 J	1 U
7440-43-9	Cadmium	µg/L	1 U	1 U	1 U	1 U
7440-70-2	Calcium	mg/L	5.25	22.7	6.08	18.5
7440-47-3	Chromium	µg/L	10 U	1.5 J	0.96 J	0.95 J
7440-48-4	Cobalt	µg/L	1.7 J	50 U	50 U	0.44 J
7440-50-8	Copper	µg/L	39.8	25 U	25 U	25 U
57-12-5	Cyanide	µg/L	10 U	10 U	10 U	10 U
7439-89-6	Iron	µg/L	100 U	202	8860	11100
7439-92-1	Lead	µg/L	10 U	10 U	10 U	10 U
7439-95-4	Magnesium	mg/L	2.76 J	2.33 J	1.27 J	5.82
7439-96-5	Manganese	µg/L	15 U	15 U	222	253
7439-97-6	Mercury	µg/L	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
7439-98-7	Molybdenum	µg/L				
7440-02-0	Nickel	µg/L	40 U	40 U	40 U	40 U
7440-09-7	Potassium	mg/L	5 U	5 UJ	5 UJ	5 UJ
7782-49-2	Selenium	µg/L	0.6 J	0.92 J	0.34 J	0.46 J
7440-22-4	Silver	µg/L	10 U	10 U	10 J	10 U
7440-23-5	Sodium	mg/L	11.7	25.7	14.5	25.1
7440-28-0	Thallium	µg/L	1 U	1 U	1 U	1 U
7440-62-2	Vanadium	µg/L	50 U	0.81 J	50 U	50 U
7440-66-6	Zinc	µg/L	60 U	60 U	60 U	60 U
	Wet Chemistry Parameters					
CL	Chloride	mg/L	28	7.9	23	49
SO4	Sulfate	mg/L	2.4	27	3.7	6.3
NO3/NO2	Nitrogen, Nitrate-Nitrite	mg/L	1.1	10	0.12	1.8
TOC	Total Organic Carbon	mg/l	1 U	1 U	1 U	1 U

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TABLE G-3
ANALYTICAL RESULTS OF SOIL GAS SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	SGRF-01	SGRF-02	SGRF-03	SGRF-04	SGRF-05	SGRF-06	SGRF-07	SGRF-08-Avg	SGRF-12	SGRF-13	SGRF-14	SGRF-15	SGRF-16	SGRF-17	SGRF-18	SGRF-19
			12/20/2005	12/20/2005	12/20/2005	12/21/2005	12/21/2005	12/21/2005	12/22/2005		12/23/2005	12/23/2005	12/23/2005	12/23/2005	1/5/2006	1/5/2006	1/5/2006	1/5/2006
	Volatile Organic Compounds - Air																	
71-55-6	1,1,1-Trichloroethane	µg/m³	5.3 U	5.5 U	5.2 U	5.2 U	5.2 U	5.2 U	5.3 U	5.8 U	5.4 U	5.4 U	5.5 U	5.6 U	5.9 U	5.4 U	5.4 U	5.7 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/m³	6.6 U	6.9 U	6.6 U	6.6 U	6.5 U	6.6 U	6.6 U	7.3 U	6.8 U	6.8 U	6.9 U	7 U	7.4 U	6.8 U	6.8 U	7.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/m³	7.4 U	7.7 U	7.4 U	7.4 U	7.2 U	7.4 U	7.4 U	8.15 U	7.5 U	7.6 U	7.7 U	7.8 U	8.3 U	7.5 U	7.5 U	8 U
79-00-5	1,1,2-Trichloroethane	µg/m³	5.3 U	5.5 U	5.2 U	5.2 U	5.2 U	5.2 U	5.3 U	5.8 U	5.4 U	5.4 U	5.5 U	5.6 U	5.9 U	5.4 U	5.4 U	5.7 U
75-34-3	1,1-Dichloroethane	µg/m³	3.9 U	4.1 U	3.9 U	3.9 U	3.8 U	3.9 U	3.9 U	4.3 U	4 U	4 U	4.1 U	4.1 U	4.4 U	4 U	4 U	4.2 U
75-35-4	1,1-Dichloroethene	µg/m³	3.8 U	4 U	3.8 U	3.8 U	3.7 U	3.8 U	3.8 U	4.2 U	3.9 U	3.9 U	4 U	4.1 U	4.3 U	3.9 U	3.9 U	4.2 U
120-82-1	1,2,4-Trichlorobenzene	µg/m³	29 UJ	30 UJ	28 UJ	28 UJ	28 UJ	28 UJ	29 UJ	31.5 UJ	29 UJ	30 UJ	30 UJ	30 UJ	32 U	29 U	29 U	31 UJ
95-63-6	1,2,4-Trimethylbenzene	µg/m³	4.8 U	5 U	3.6 J	4.7 U	4.6 U	4.7 U	4.8 U	5.2 U	4.8 U	2.9 J	5 U	5 U	5.3 U	4.8 U	4.7 J	5.2 U
106-93-4	1,2-Dibromoethane	µg/m³	7.4 U	7.8 U	7.4 U	7.4 U	7.3 U	7.4 U	7.4 U	8.15 U	7.6 U	7.6 U	7.8 U	7.9 U	8.3 U	7.6 U	7.6 U	8.1 U
95-50-1	1,2-Dichlorobenzene	µg/m³	5.8 U	6.1 U	5.8 U	5.8 U	5.7 U	5.8 U	5.8 U	6.4 U	5.9 U	6 U	6.1 U	6.2 U	6.5 U	5.9 U	5.9 U	6.3 U
107-06-2	1,2-Dichloroethane	µg/m³	3.9 U	4.1 U	3.9 U	3.9 U	3.8 U	3.9 U	3.9 U	4.3 U	4 U	4 U	4.1 U	4.1 U	4.4 U	4 U	4 U	4.2 U
78-87-5	1,2-Dichloropropane	µg/m³	4.5 U	4.7 U	4.4 U	4.4 U	4.4 U	4.4 U	4.5 U	4.9 U	4.6 U	4.6 U	4.7 U	4.7 U	5 U	4.6 U	4.6 U	4.8 U
76-14-2	1,2-Dichlorotetrafluoroethane;Fluorocarbon 114	µg/m³	6.8 U	7.1 U	6.7 U	6.7 U	6.6 U	6.7 U	6.8 U	7.45 U	6.9 U	7 U	7.1 U	7.2 U	7.6 U	6.9 U	6.9 U	7.3 U
108-67-8	1,3,5-Trimethyl Benzene	µg/m³	4.8 U	5 U	1 J	4.7 U	4.6 U	4.7 U	4.8 U	5.2 U	4.8 U	4.9 U	5 U	5 U	5.3 U	4.8 U	18	5.2 U
106-99-0	1,3-Butadiene	µg/m³	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.35 U	2.2 U	2.2 U	2.2 U	2.3 U	2.4 U	4	2.2 U	3.3 J
541-73-1	1,3-Dichlorobenzene	µg/m³	5.8 U	6.1 U	5.8 U	5.8 U	5.7 U	5.8 U	5.8 U	6.4 U	5.9 U	6 U	6.1 U	6.2 U	6.5 U	5.9 U	5.9 U	6.3 U
106-46-7	1,4-Dichlorobenzene	µg/m³	5.8 U	6.1 U	5.8 U	5.8 U	5.7 U	5.8 U	5.8 U	6.4 U	5.9 U	6 U	6.1 U	6.2 U	6.5 U	5.9 U	5.9 U	6.3 U
123-91-1	1,4-Dioxane	µg/m³	14 U	14 U	14 U	14 U	14 U	14 U	14 U	15.5 U	14 U	14 U	14 U	15 U	16 U	14 U	2.4 J	15 U
540-84-1	2,2,4-Trimethylpentane	µg/m³	4.5 U	4.7 U	4.5 U	4.5 U	4.4 U	4.5 U	4.5 U	4.95 U	4.6 U	4.6 U	4.7 U	0.96 J	5 UJ	4.6 UJ	4.6 UJ	4.9 U
78-93-3	2-Butanone	µg/m³	2.9 U	3 U	5.1	1.2 J	1.1 J	0.95 J	1.3 J	2.5 U	1.2 J	1.6 J	1 J	7.5	0.96 J	3.1	1.4 J	3.1
591-78-6	2-Hexanone	µg/m³	16 U	16 U	16 U	16 U	15 U	16 U	16 U	17.5 U	16 U	16 U	16 U	1.3 J	18 U	16 U	16 U	17 U
107-05-1	3-Chloropropene	µg/m³	12 U	13 U	12 U	12 U	12 U	12 U	12 U	13.5 U	12 U	12 U	13 U	13 U	14 U	12 U	12 U	13 U
622-96-8	4-Ethyltoluene	µg/m³	4.8 U	5 U	3.2 J	4.7 U	4.6 U	4.7 U	4.8 U	5.2 U	4.8 U	2.2 J	5 U	5 U	5.3 U	4.8 U	5.2	5.2 U
108-10-1	4-Methyl-2-pentanone	µg/m³	4 U	4.1 U	3.9 U	3.9 U	3.9 U	3.9 U	4 U	4.35 U	4 U	4.1 U	4.1 U	4.2 U	4.4 U	4 U	4 U	4.3 U
67-64-1	Acetone	µg/m³	9 J	7.1 J	30	28	13	18	15	16	8.4 J	7.8 J	6.9 J	35	10 U	16 U	9.4 U	15
71-43-2	Benzene	µg/m³	1.6 J	1.5 J	3.5	2.9 J	1.6 J	1.6 J	1.6 J	2 J	1.8 J	2.3 J	2.8 J	2.8 J	2.2 J	3.8	1.5 J	2.6 J
100-44-7	Benzyl Chloride	µg/m³	5 U	5.2 U	5 U	5 U	4.9 U	5 U	5 U	5.5 U	5.1 U	5.2 U	5.2 U	5.3 U	5.6 U	5.1 U	5.1 U	5.4 U
75-27-4	Bromodichloromethane	µg/m³	6.5 U	6.8 U	6.4 U	6.4 U	6.3 U	6.4 U	6.5 U	7.1 U	6.6 U	6.7 U	6.8 U	6.9 U	7.2 U	6.6 U	6.6 U	7 U
75-25-2	Bromoform	µg/m³	10 U	10 U	9.9 U	9.9 U	9.8 U	9.9 U	10 U	11 U	10 U	10 U	10 U	10 U	11 U	10 U	10 U	11 U
74-83-9	Bromomethane	µg/m³	3.8 U	3.9 U	3.7 U	3.7 U	3.7 U	3.7 U	3.8 U	4.1 U	3.8 U	3.9 U	3.9 U	4 U	4.2 U	3.8 U	3.8 U	4.1 U
75-15-0	Carbon Disulfide	µg/m³	3 U	3.1 U	4.4	3 U	0.98 J	1.4 J	0.92 J	0.94 U	3.1 U	3.1 U	3.1 U	3.2 U	0.47 J	19	3.1 U	0.8 J
56-23-5	Carbon Tetrachloride	µg/m³	6.1 U	6.4 U	6 U	6 U	5.9 U	6 U	6.1 U	6.7 U	6.2 U	6.3 U	6.4 U	6.4 U	6.8 U	6.2 U	6.2 U	6.6 UJ
108-90-7	Chlorobenzene	µg/m³	4.5 U	4.6 U	4.4 U	4.4 U	4.4 U	4.4 U	4.5 U	4.9 U	4.5 U	4.6 U	4.6 U	4.7 U	5 U	4.5 U	4.5 U	4.8 U
75-00-3	Chloroethane	µg/m³	2.6 U	2.7 U	2.5 U	2.5 U	2.5 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U	2.7 U	2.7 U	2.8 U	2.6 U	2.6 U	2.8 U
67-66-3	Chloroform	µg/m³	4.7 U	4.9 U	4.7 U	4.7 U	4.6 U	4.7 U	4.7 U	5.2 U	4.8 U	4.8 U	4.9 U	5 U	5.3 U	4.8 U	4.8 U	5.1 U
74-87-3	Chloromethane	µg/m³	8 U	8.3 U	7.9 U	7.9 U	7.8 U	7.9 U	8 U	8.75 U	8.1 U	8.2 U	8.3 U	8.5 U	8.9 U	2.5 J	3.6 J	2.4 J
156-59-2	cis-1,2-Dichloroethene	µg/m³	3.8 U	4 U	3.8 U	3.8 U	3.7 U	3.8 U	3.8 U	4.2 U	3.9 U	3.9 U	4 U	4.1 U	4.3 U	3.9 U	3.9 U	4.2 U
10061-01-5	cis-1,3-Dichloropropene	µg/m³	4.4 U	4.6 U	4.4 U	4.4 U	4.3 U	4.4 U	4.4 U	4.8 U	4.5 U	4.5 U	4.6 U	4.6 U	4.9 U	4.5 U	4.5 U	4.8 U
110-82-7	Cyclohexane	µg/m³	3.3 U	3.5 U	3.3 U	3.3 U	3.2 U	3.3 U	3.3 U	3.65 U	3.4 U	3.4 U	3.5 U	3.5 U	3.7 U	3.4 U	3.4 U	3.6 U
124-48-1	Dibromochloromethane	µg/m³	8.3 U	8.6 U	8.2 U	8.2 U	8 U	8.2 U	8.3 U	9.05 U	8.4 U	8.5 U	8.6 U	8.7 U	9.2 U	8.4 U	8.4 U	8.9 U
75-71-8	Dichlorodifluoromethane	µg/m³	4.8 U	5 U	4.7 U	4.7 U	4.7 U	4.7 U	4.8 U	5.25 U	4.9 U	4.9 U	5 U	5.1 U	2.5 J	2.8 J	2.8 J	5.2 U
64-17-5	Ethanol	µg/m³	7.3 U	6.1 J	12	8.1	9.4	7.7	9.1	10.8	6.9 J	8.8	13	18	4.1 J	8.4 J	6.1 J	10
100-41-4	Ethylbenzene	µg/m³	4.2 U	4.4 U	4.2 U	4.2 U	4.1 U	4.2 U	4.2 U	4.6 U	4.3 U	4.3 U	4.4 U	4.4 U	4.7 U	4.3 U	4.3 U	4.6 U
87-68-3	Hexachlorobutadiene	µg/m³	41 U	43 U	41 U	41 U	40 U	41 U	41 UJ	45 U	42 U	42 U	43 U	44 U	46 U	42 U	42 U	45 U
110-54-3	Hexane	µg/m³	3.4 U	1.2 J	8.6	2 J	1.4 J	1.1 J	2.8 J	1.95 J	3.5 U	1.3 J	1.4 J	2.1 J	3.8 U	3.1 J	3.5 U	3.5 J
67-63-0	Isopropyl Alcohol (Manufacturing-Strong Acid	µg/m³	9.5 U	1.1 J	3.4 J	9.4 U	9.3 U	9.4 U	9.5 U	10.5 U	9.7 U	9.8 U	9.9 U	2.7 J	11 U	1.4 J	65	1.5 J
98-82-8	Isopropylbenzene	µg/m³	4.8 U	5 U	4.7 U	4.7 U	4.6 U	4.7 U	4.8 U	5.2 U	4.8 U	4.9 U	5 U	5 U	5.3 U	4.8 U	4.8 U	5.2 U
1634-04-4	Methyl tert-Butyl Ether	µg/m³	3.5 U	3.6 U	3.5 U	3.5 U	3.4 U	3.5 U	3.5 U	3.85 U	3.6 U	3.6 U	3.6 U	0.97 J	3.9 UJ	3.6 UJ	3.6 UJ	3.8 U
75-09-2	Methylene Chloride	µg/m³	3.4 U	3.5 U	3.3 U	3.3 U	3.3 U	0.99 J	3.4 U	3.7 U	3.4 U	1.3 J	3.5 U	1.1 J	3.8 U	1.3 J	3.4 U	3.6 U
108-38-3	m-Xylene	µg/m³	4.2 U	4.4 U	3.6 J	1.7 J	1.7 J	1.7 J	1.9 J	2.55 J	4.3 U	3.1 J	2.1 J	2.6 J	4.7 U	4.3 U	2.2 J	4.6 U
142-82-5	n-Heptane	µg/m³	4 U	4.1 U	5.1	3.9 U	3.9 U	3.9 U	4 U	4.35 U	4 U	4.1 U	4.1 U	4.2 U	4.4 U	3 J	4 U	4.3 U
103-65-1	n-Propylbenzene	µg/m³	4.8 U	5 U	0.95 J	4.7 U	4.6 U	4.7 U	4.8 U	5.2 U	4.8 U	4.9 U	5 U	5 U	5.3 U	4.8 U	4.8 U	5.2 U
95-47-6	o-Xylene	µg/m³	4.2 U	4.4 U	2.1 J	4.2 U	4.1 U	4.2 U	4.2 U	4.6 U	4.3 U	1.3 J	4.4 U	4.4 U	4.7 U	4.3 U	4.3 U	4.6 U
100-42-5	Styrene	µg/m³	4.1 U	4.3 U	4.1 U	4.1 U	4 U	4.1 U	4.1 U	4.5 U	4.2 U	4.2 U	4.3 U	4.4 U	4.6 U	4.2 U	4.2 U	4.5 U
127-18-4	Tetrachloroethene	µg/m³	6.6 U	6.8 U	6.5 U	6.5 U	6.4 U	6.5 U	6.6 U	7.2 U	6.7 U	6.7 U	6.8 U	7 U	7.3 U	2.3 J	6.7 U	7.1 U
109-99-9	Tetrahydrofuran	µg/m³	3.4	2.1 J	2.7 J	1.9 J	1.9 J	2.8 U	2.9 U	3.15 U	2.9 U	1.8 J	3 U	2 J	3.2 U	2.9 U	2.9 U	3.1 U
108-88-3	Toluene	µg/m³	3 J	2.9 J	3.6	3.6	2.7 J	3.2 J	3.2 J	4.2	2.2 J	3.1 J	3.9	4.6	2.2 J	5.7	3.7 J	3.9 J
156-60-5	trans-1,2-Dichloroethene	µg/m³	3.8 U	4 U	3.8 U	3.8 U	3.7 U	3.8 U	3.8 U	4.2 U	3.9 U	3.9 U	4 U	4.1 U	4.3 U	3.9 U	3.9 U	4.2 U
10061-02-6	trans-1,3-Dichloropropene	µg/m³	4.4 U	4.6 U	4.4 U	4.4 U	4.3 U	4.4 U	4.4 U	4.8 U	4.5 U	4.5 U	4.6 U	4.6 U	4.9 U	4.5 U	4.5 U	4.8 U
79-01-6	Trichloroethene	µg/m³	5.2 U	5.4 U	5.2 U	5.2 U	5.1 U	5.2 U	5.2 U	5.7 U	5.3 U	5.3 U	5.4 U	5.5 U	5.8 U	1.5 J	5.3 U	5.6 U
75-69-4	Trichlorofluoromethane	µg/m³	1.4 J	5.7 U	5.4 U	1.3 J	1.7 J	5.4 U	5.4 U	6 U	5.5 U	5.6 U	5.7 U	5.8 U	6.1 U	5.5 U	5.5 U	5.9 U
75-01-4	Vinyl Chloride	µg/m³	2.5 U	2.6 U	2.4 U	2.4 U	2.4 U	2.4 U	2.5 U	2.75 U	2.5 U	2.5 U	2.6 U	2.6 U	2.8 UJ	2.5 UJ	2.5 UJ	2.7 U

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TABLE G-3
ANALYTICAL RESULTS OF SOIL GAS SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\	SGRF-20 1/5/2006	SGRF-21 1/5/2006	SGRF-22 1/5/2006	SGRF-23 1/5/2006	SGRF-24 1/6/2006	SGRF-25 1/6/2006	SGRF-26 1/6/2006	SGRF-27 1/6/2006	SGRF-28 1/6/2006	SGRF-29 1/6/2006	SGRF-30 1/6/2006	SGRF-31 1/6/2006	SGRF-32 1/6/2006	SGRF-33-Avg	SGHP-1a 12/22/2005	SGHP-1b 1/12/2006
	Volatile Organic Compounds - Air																	
71-55-6	1,1,1-Trichloroethane	µg/m³	5.7 U	5.8 U	5.5 U	5.5 U	5.8 U	5.4 U	5.9 U	5.4 U	5.4 U	5.5 U	5.5 U	5.4 U	5.5 U	5.45 U	5.4 U	5.8 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/m³	7.2 U	7.3 U	6.9 U	6.9 U	7.3 U	6.8 U	7.4 U	6.8 U	6.8 U	6.9 U	6.9 U	6.8 U	6.9 U	6.85 U	6.8 U	7.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/m³	8 U	8.2 U	7.7 U	7.7 U	8.2 U	7.6 U	8.3 U	7.6 U	7.6 U	7.7 U	7.7 U	7.6 U	7.7 U	7.6 U	7.6 U	8.2 U
79-00-5	1,1,2-Trichloroethane	µg/m³	5.7 U	5.8 U	5.5 U	5.5 U	5.8 U	5.4 U	5.9 U	5.4 U	5.4 U	5.5 U	5.5 U	5.4 U	5.5 U	5.45 U	5.4 U	5.8 U
75-34-3	1,1-Dichloroethane	µg/m³	4.2 U	4.3 U	4.1 U	4.1 U	4.3 U	4 U	4.4 U	4 U	4 U	4.1 U	4.1 U	4 U	4.1 U	4.05 U	4 U	4.3 U
75-35-4	1,1-Dichloroethene	µg/m³	4.1 U	4.2 U	4 U	4 U	4.2 U	3.9 U	4.3 U	3.9 U	3.9 U	4 U	4 U	3.9 U	4 U	3.95 U	3.9 U	4.2 U
120-82-1	1,2,4-Trichlorobenzene	µg/m³	31 UJ	32 UJ	30 UJ	30 UJ	32 UJ	30 UJ	32 UJ	30 UJ	30 UJ	30 UJ	30 UJ	30 UJ	30 UJ	29.5 UJ	30 UJ	32 U
95-63-6	1,2,4-Trimethylbenzene	µg/m³	5.1 U	5.2 U	2 J	5 U	5.2 U	4.9 U	5.3 U	1.6 J	4.9 U	5 U	5 U	4.9 U	2.2 J	4.9 U	4.9 U	5.2 U
106-93-4	1,2-Dibromoethane	µg/m³	8 U	8.2 U	7.8 U	7.8 U	8.2 U	7.6 U	8.3 U	7.6 U	7.6 U	7.8 U	7.8 U	7.6 U	7.8 U	7.7 U	7.6 U	8.2 U
95-50-1	1,2-Dichlorobenzene	µg/m³	6.3 U	6.4 U	6.1 U	6.1 U	6.4 U	6 U	6.5 U	6 U	6 U	6.1 U	6.1 U	6 U	6.1 U	6 U	6 U	6.4 U
107-06-2	1,2-Dichloroethane	µg/m³	4.2 U	2.4 J	4.1 U	4.1 U	4.3 U	4 U	4.4 U	4 U	4 U	4.1 U	4.1 U	4 U	4.1 U	4.05 U	4 U	4.3 U
78-87-5	1,2-Dichloropropane	µg/m³	4.8 U	4.9 U	4.7 U	4.7 U	4.9 U	4.6 U	5 U	4.6 U	4.6 U	4.7 U	4.7 U	4.6 U	4.7 U	4.65 U	4.6 U	4.9 U
76-14-2	1,2-Dichlorotetrafluoroethane;Fluorocarbon 114	µg/m³	7.3 U	7.4 U	7.1 U	7.1 U	7.4 U	7 U	7.6 U	7 U	7 U	7.1 U	7.1 U	7 U	7.1 U	7 U	7 U	7.4 U
108-67-8	1,3,5-Trimethyl Benzene	µg/m³	5.1 U	5.2 U	5 U	5 U	5.2 U	4.9 U	5.3 U	4.9 U	4.9 U	5 U	5 U	4.9 U	5 U	4.9 U	4.9 U	5.2 U
106-99-0	1,3-Butadiene	µg/m³	9.9 J	7.2 J	2.4 J	2.2 U	2.4 UJ	2.2 UJ	2.4 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 U	2.4 U
541-73-1	1,3-Dichlorobenzene	µg/m³	6.3 U	6.4 U	6.1 U	6.1 U	6.4 U	6 U	6.5 U	6 U	6 U	6.1 U	6.1 U	6 U	6.1 U	6 U	6 U	6.4 U
106-46-7	1,4-Dichlorobenzene	µg/m³	6.3 U	6.4 U	6.1 U	6.1 U	6.4 U	6 U	6.5 U	6 U	6 U	6.1 U	6.1 U	6 U	6.1 U	6 U	6 U	6.4 U
123-91-1	1,4-Dioxane	µg/m³	15 U	19	14 U	14 U	15 U	14 U	16 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	15 U
540-84-1	2,2,4-Trimethylpentane	µg/m³	4.9 U	5 U	4.7 U	4.7 U	5 U	4.6 U	5 U	4.6 U	4.6 U	4.7 U	4.7 U	4.6 U	4.7 U	4.65 U	4.6 U	5 UJ
78-93-3	2-Butanone	µg/m³	4.2	3 J	3 J	2.5 J	2 J	2 J	1.8 J	1.6 J	3.5	2 J	3 U	1.7 J	2.8 J	0.935 J	5.4	3.7
591-78-6	2-Hexanone	µg/m³	17 U	17 U	16 U	16 U	17 U	16 U	18 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	17 U
107-05-1	3-Chloropropene	µg/m³	13 U	13 U	13 U	13 U	13 U	12 U	14 U	12 U	12 U	13 U	13 U	12 U	13 U	12.5 U	12 U	13 U
622-96-8	4-Ethyltoluene	µg/m³	5.1 U	5.2 U	1.7 J	5 U	5.2 U	4.9 U	5.3 U	1.5 J	4.9 U	5 U	5 U	4.9 U	1.7 J	4.9 U	4.9 U	5.2 U
108-10-1	4-Methyl-2-pentanone	µg/m³	4.3 U	4.4 U	4.1 U	4.1 U	4.4 U	4.1 U	4.4 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.05 U	4.1 U	4.4 U
67-64-1	Acetone	µg/m³	18	12	18	13	7.9 J	6.8 J	6.7 J	7.1 J	17	9 J	3.9 J	7.6 J	14	4.1 J	22	36
71-43-2	Benzene	µg/m³	4.2	3.4	2 J	1.5 J	1.3 J	2.2 J	1.4 J	1.3 J	1.7 J	1.4 J	1.3 J	1.4 J	3 J	1.03 J	1.4 J	1.7 J
100-44-7	Benzyl Chloride	µg/m³	5.4 U	5.5 U	5.2 U	5.2 U	5.5 U	5.2 U	5.6 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.15 U	5.2 U	5.5 U
75-27-4	Bromodichloromethane	µg/m³	7 U	7.1 U	6.8 U	6.8 U	7.1 U	6.7 U	7.2 U	6.7 U	6.7 U	6.8 U	6.8 U	6.7 U	6.8 U	6.7 U	6.7 U	7.1 U
75-25-2	Bromoform	µg/m³	11 U	11 U	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	11 U
74-83-9	Bromomethane	µg/m³	4 U	4.1 U	3.9 U	3.9 U	4.1 U	3.9 U	4.2 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.85 U	3.9 U	4.1 U
75-15-0	Carbon Disulfide	µg/m³	2.8 J	1.9 J	0.72 J	0.6 J	3.3 U	2.2 J	3.4 U	3.1 U	1.3 J	3.1 U	3.1 U	0.98 J	3.1 U	1 U	1.4 J	3.3 U
56-23-5	Carbon Tetrachloride	µg/m³	6.6 UJ	6.7 UJ	6.4 UJ	6.4 UJ	6.7 U	6.3 U	6.8 U	6.3 U	6.3 U	6.4 U	6.4 U	6.3 U	6.4 U	6.3 U	6.3 U	6.7 U
108-90-7	Chlorobenzene	µg/m³	4.8 U	4.9 U	4.6 U	4.6 U	4.9 U	4.6 U	5 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.55 U	4.6 U	4.9 U
75-00-3	Chloroethane	µg/m³	2.8 U	2.8 U	2.7 U	2.7 U	2.8 U	2.6 U	2.8 U	2.6 U	2.6 U	2.7 U	2.7 U	2 J	2.7 U	2.65 U	2.6 U	2.8 U
67-66-3	Chloroform	µg/m³	5.1 U	5.2 U	4.9 U	4.9 U	5.2 U	4.8 U	5.3 U	4.8 U	4.8 U	4.9 U	4.9 U	4.8 U	4.9 U	4.85 U	4.8 U	5.2 U
74-87-3	Chloromethane	µg/m³	1.9 J	1.7 J	2.2 J	3.2 J	8.8 U	8.2 U	8.9 U	8.2 U	8.2 U	8.3 U	8.3 U	8.2 U	8.3 U	8.2 U	8.2 U	1.9 J
156-59-2	cis-1,2-Dichloroethene	µg/m³	4.1 U	4.2 U	4 U	4 U	4.2 U	3.9 U	4.3 U	3.9 U	3.9 U	4 U	4 U	3.9 U	4 U	3.95 U	3.9 U	4.2 U
10061-01-5	cis-1,3-Dichloropropene	µg/m³	4.7 U	4.8 U	4.6 U	4.6 U	4.8 U	4.5 U	4.9 U	4.5 U	4.5 U	4.6 U	4.6 U	4.5 U	4.6 U	4.55 U	4.5 U	4.8 U
110-82-7	Cyclohexane	µg/m³	3.6 U	3.7 U	3.5 U	3.5 U	3.7 U	3.4 U	3.7 U	3.4 U	3.4 U	3.5 U	3.5 U	3.4 U	3.5 U	3.45 U	3.4 U	3.7 U
124-48-1	Dibromochloromethane	µg/m³	8.9 U	9.1 U	8.6 U	8.6 U	9.1 U	8.5 U	9.2 U	8.5 U	8.5 U	8.6 U	8.6 U	8.5 U	8.6 U	8.5 U	8.5 U	9.1 U
75-71-8	Dichlorodifluoromethane	µg/m³	2.8 J	2.8 J	2.8 J	2.8 J	5.3 U	4.9 U	5.3 U	4.9 U	4.9 U	5 U	5 U	4.9 U	5 U	4.95 U	4.9 U	2.4 J
64-17-5	Ethanol	µg/m³	15	11	14	8.1	5.8 J	7 J	8.2	4.5 J	16	6.6 J	7.2 J	70	3.8 J	4.85 J	7.7	11
100-41-4	Ethylbenzene	µg/m³	4.5 U	4.6 U	4.4 U	4.4 U	4.6 U	4.3 U	4.7 U	4.3 U	4.3 U	4.4 U	4.4 U	4.3 U	4.4 U	4.35 U	4.3 U	4.6 U
87-68-3	Hexachlorobutadiene	µg/m³	44 U	45 U	43 U	43 U	45 UJ	42 UJ	46 UJ	42 UJ	42 UJ	43 UJ	43 UJ	42 UJ	43 UJ	42.5 UJ	42 U	45 U
110-54-3	Hexane	µg/m³	5	4.1	1.5 J	3.6 U	3.8 U	1.5 J	3.8 U	3.5 U	1.6 J	3.6 U	1.3 J	3.5 U	1.8 J	3.55 U	3.5 U	1.2 J
67-63-0	Isopropyl Alcohol (Manufacturing-Strong Acid	µg/m³	2.6 J	3.5 J	2.3 J	1.6 J	1.4 J	0.7 J	0.79 J	0.82 J	1.4 J	1.1 J	1.7 J	2.4 J	1.6 J	0.815 J	9.8 U	1.9 J
98-82-8	Isopropylbenzene	µg/m³	5.1 U	5.2 U	5 U	5 U	5.2 U	4.9 U	5.3 U	4.9 U	4.9 U	5 U	5 U	4.9 U	5 U	4.9 U	4.9 U	5.2 U
1634-04-4	Methyl tert-Butyl Ether	µg/m³	0.95 J	1.3 J	1.4 J	3.6 U	3.8 U	3.6 U	3.9 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.8 U
75-09-2	Methylene Chloride	µg/m³	3.6 U	3.7 U	3.5 U	2 J	3.7 U	0.84 J	3.8 U	3.4 U	3.4 U	1 J	1.6 J	3.4 U	3.5 U	3.45 U	1.5 J	3.7 U
108-38-3	m-Xylene	µg/m³	2.4 J	4.2 J	3.6 J	4.4 U	4.6 U	4.3 U	4.7 U	4.3 U	4.3 U	4.4 U	4.4 U	4.3 U	4.4 U	4.35 U	4.3 U	4.6 U
142-82-5	n-Heptane	µg/m³	3.4 J	4.4 U	4.1 U	4.1 U	4.4 U	4.1 U	4.4 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.05 U	4.1 U	4.4 U
103-65-1	n-Propylbenzene	µg/m³	5.1 U	5.2 U	5 U	5 U	5.2 U	4.9 U	5.3 U	4.9 U	4.9 U	5 U	5 U	4.9 U	5 U	4.9 U	4.9 U	5.2 U
95-47-6	o-Xylene	µg/m³	4.5 U	1.5 J	1.5 J	4.4 U	4.6 U	4.3 U	4.7 U	4.3 U	4.3 U	4.4 U	4.4 U	4.3 U	4.4 U	4.35 U	4.3 U	4.6 U
100-42-5	Styrene	µg/m³	4.4 U	4.5 U	4.3 U	4.3 U	4.5 U	4.2 U	4.6 U	4.2 U	4.2 U	4.3 U	4.3 U	4.2 U	4.3 U	4.25 U	4.2 U	4.5 U
127-18-4	Tetrachloroethene	µg/m³	7.1 U	7.2 U	6.8 U	6.8 U	7.2 U	6.7 U	7.3 U	6.7 U	6.7 U	6.8 U	6.8 U	6.7 U	6.8 U	6.75 U	6.7 U	11
109-99-9	Tetrahydrofuran	µg/m³	3.1 U	3.1 U	3 U	3 U	2.2 J	2.9 U	3.2 U	2.9 U	2.9 U	2.6 J	3.6	2.9 U	2.1 J	2.95 U	2.9 U	3.1 U
108-88-3	Toluene	µg/m³	6	8.3	4.7	3.6 J	1.9 J	2.6 J	2.4 J	2.2 J	2.3 J	1.8 J	3.1 J	1.4 J	2.6 J	1.35 J	2.5 J	3.2 J
156-60-5	trans-1,2-Dichloroethene	µg/m³	4.1 U	4.2 U	4 U	4 U	4.2 U	3.9 U	4.3 U	3.9 U	3.9 U	4 U	4 U	3.9 U	4 U	3.95 U	3.9 U	4.2 U
10061-02-6	trans-1,3-Dichloropropene	µg/m³	4.7 U	4.8 U	4.6 U	4.6 U	4.8 U	4.5 U	4.9 U	4.5 U	4.5 U	4.6 U	4.6 U	4.5 U	4.6 U	4.55 U	4.5 U	4.8 U
79-01-6	Trichloroethene	µg/m³	5.6 U	5.7 U	5.4 U	5.4 U	5.7 U	23	5.8 U	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	5.4 U	5.35 U	5.3 U	5.7 U
75-69-4	Trichlorofluoromethane	µg/m³	5.9 U	6 U	5.7 U	5.7 U	6 U	5.6 U	6.1 U	1.4 J	1.3 J	5.7 U	1.3 J	5.6 U	5.7 U	5.6 U	5.6 U	6 U
75-01-4	Vinyl Chloride	µg/m³	2.7 U	2.7 U	2.6 U	2.6 U	2.7 U	2.5 U	2.8 U	2.5 U	2.5 U	2.6 U	2.6 U	2.5 U	2.6 U	2.55 U	2.5 U	2.7 UJ

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TABLE G-3
ANALYTICAL RESULTS OF SOIL GAS SAMPLES
Old Roosevelt Field Groundwater Contaminated Site
Nassau County, New York

CAS No.	Chemical Name	Sample Code Sample Name Sample Date Unit \\	SGHP-2 1/12/2006	SGHP-3a 12/22/2005	SGHP-3b 1/12/2006	SGHP-4 1/12/2006
	Volatile Organic Compounds - Air					
71-55-6	1,1,1-Trichloroethane	µg/m³	5.4 U	5.5 U	21	5.4 U
79-34-5	1,1,2,2-Tetrachloroethane	µg/m³	6.8 U	6.9 U	6.8 U	6.8 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/m³	7.6 U	7.7 U	4.3 J	7.6 U
79-00-5	1,1,2-Trichloroethane	µg/m³	5.4 U	5.5 U	5.4 U	5.4 U
75-34-3	1,1-Dichloroethane	µg/m³	4 U	4.1 U	6.8	4 U
75-35-4	1,1-Dichloroethene	µg/m³	3.9 U	4 U	3.9 U	3.9 U
120-82-1	1,2,4-Trichlorobenzene	µg/m³	30 U	30 UJ	30 U	30 U
95-63-6	1,2,4-Trimethylbenzene	µg/m³	4.9 U	1.7 J	4.9 U	4.9 U
106-93-4	1,2-Dibromoethane	µg/m³	7.6 U	7.8 U	7.6 U	7.6 U
95-50-1	1,2-Dichlorobenzene	µg/m³	6 U	6.1 U	6 U	6 U
107-06-2	1,2-Dichloroethane	µg/m³	4 U	4.1 U	4 U	4 U
78-87-5	1,2-Dichloropropane	µg/m³	4.6 U	4.7 U	4.6 U	4.6 U
76-14-2	1,2-Dichlorotetrafluoroethane;Fluorocarbon 114	µg/m³	7 U	7.1 U	7 U	7 U
108-67-8	1,3,5-Trimethyl Benzene	µg/m³	4.9 U	5 U	4.9 U	4.9 U
106-99-0	1,3-Butadiene	µg/m³	2.2 U	2.2 U	2.2 U	3.9 J
541-73-1	1,3-Dichlorobenzene	µg/m³	6 U	6.1 U	6 U	6 U
106-46-7	1,4-Dichlorobenzene	µg/m³	6 U	6.1 U	6 U	6 U
123-91-1	1,4-Dioxane	µg/m³	14 U	14 U	14 U	14 U
540-84-1	2,2,4-Trimethylpentane	µg/m³	4.6 UJ	1.2 J	4.6 UJ	4.6 UJ
78-93-3	2-Butanone	µg/m³	2.7 J	3.2	2.5 J	3.6
591-78-6	2-Hexanone	µg/m³	16 U	16 U	16 U	16 U
107-05-1	3-Chloropropene	µg/m³	12 U	13 U	12 U	12 U
622-96-8	4-Ethyltoluene	µg/m³	4.9 U	5 U	4.9 U	4.9 U
108-10-1	4-Methyl-2-pentanone	µg/m³	4.1 U	4.1 U	4.1 U	4.1 U
67-64-1	Acetone	µg/m³	20	20	19	20
71-43-2	Benzene	µg/m³	1.7 J	3 J	2 J	2.6 J
100-44-7	Benzyl Chloride	µg/m³	5.2 U	5.2 U	5.2 U	5.2 U
75-27-4	Bromodichloromethane	µg/m³	6.7 U	6.8 U	6.7 U	6.7 U
75-25-2	Bromoform	µg/m³	10 U	10 U	10 U	10 U
74-83-9	Bromomethane	µg/m³	3.9 U	3.9 U	3.9 U	3.9 U
75-15-0	Carbon Disulfide	µg/m³	3.1 U	2.1 J	3.1 U	2.9 J
56-23-5	Carbon Tetrachloride	µg/m³	6.3 U	6.4 U	6.3 U	6.3 U
108-90-7	Chlorobenzene	µg/m³	4.6 U	4.6 U	4.6 U	4.6 U
75-00-3	Chloroethane	µg/m³	2.6 U	2.7 U	2.6 U	2.6 U
67-66-3	Chloroform	µg/m³	4.8 U	4.9 U	7.9	4.8 U
74-87-3	Chloromethane	µg/m³	8.2 U	8.3 U	3.3 J	2.4 J
156-59-2	cis-1,2-Dichloroethene	µg/m³	2.5 J	4 U	6.5	3.9 U
10061-01-5	cis-1,3-Dichloropropene	µg/m³	4.5 U	4.6 U	4.5 U	4.5 U
110-82-7	Cyclohexane	µg/m³	3.4 U	1.7 J	3.4 U	3.4 U
124-48-1	Dibromochloromethane	µg/m³	8.5 U	8.6 U	8.5 U	8.5 U
75-71-8	Dichlorodifluoromethane	µg/m³	2.2 J	5 U	2.3 J	2.9 J
64-17-5	Ethanol	µg/m³	8.5	22	13	10
100-41-4	Ethylbenzene	µg/m³	4.3 U	2 J	4.3 U	4.3 U
87-68-3	Hexachlorobutadiene	µg/m³	42 U	43 U	42 U	42 U
110-54-3	Hexane	µg/m³	0.88 J	4.3	1.4 J	1.6 J
67-63-0	Isopropyl Alcohol (Manufacturing-Strong Acid	µg/m³	1.5 J	4.7 J	2.8 J	1.4 J
98-82-8	Isopropylbenzene	µg/m³	4.9 U	5 U	4.9 U	4.9 U
1634-04-4	Methyl tert-Butyl Ether	µg/m³	3.6 U	3.6 U	3.6 U	3.6 U
75-09-2	Methylene Chloride	µg/m³	3.4 U	4.6	1.2 J	3.4 U
108-38-3	m-Xylene	µg/m³	4.3 U	5.7	4.3 U	4.3 U
142-82-5	n-Heptane	µg/m³	4.1 U	4.4	4.1 U	4.1 U
103-65-1	n-Propylbenzene	µg/m³	4.9 U	5 U	4.9 U	4.9 U
95-47-6	o-Xylene	µg/m³	4.3 U	2 J	4.3 U	4.3 U
100-42-5	Styrene	µg/m³	4.2 U	4.3 U	4.2 U	4.2 U
127-18-4	Tetrachloroethene	µg/m³	17	6.8 U	23	14
109-99-9	Tetrahydrofuran	µg/m³	2.9 U	3 U	2.9 U	2.9 U
108-88-3	Toluene	µg/m³	2.8 J	17	3.2 J	3.7 J
156-60-5	trans-1,2-Dichloroethene	µg/m³	3.9 U	4 U	3.9 U	3.9 U
10061-02-6	trans-1,3-Dichloropropene	µg/m³	4.5 U	4.6 U	4.5 U	4.5 U
79-01-6	Trichloroethene	µg/m³	3.9 J	5.4 U	12	3 J
75-69-4	Trichlorofluoromethane	µg/m³	5.6 U	5.7 U	1.7 J	5.6 U
75-01-4	Vinyl Chloride	µg/m³	2.5 UJ	2.6 U	2.5 UJ	2.5 UJ

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