ORIGINAL
(Red)

R-585-7-1-2

SITE INSPECTION
OF
BLACK AND DECKER, INCORPORATED
PREPARED UNDER

TDD NO. F3-9101-19
EPA DSN MD-370
FACILITY ID NO. MDD003065877
CONTRACT NO. 68-01-7346

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

OCOTBER 9, 1991

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY	REVIEWED BY	APPROVED BY
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(Reg)

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SECTION 1

1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-7346. This specific report was prepared in accordance with Technical Directive Document No. F3-9101-19 for the Black and Decker, Incorporated site, located in Hampstead, Carroll County, Maryland.

1.2 Scope of Work

NUS FIT 3 was tasked to conduct a site inspection of the subject site.

1.3 Summary

The 286-acre Black and Decker facility is located directly south of Hampstead, Carroll County, Maryland. The major environmental concern at the site is contamination of groundwater by trichloroethene (TCE) and tetrachloroethene (PCE).

The plant, which is owned by Black and Decker (U.S.), Incorporated, currently functions as the principal distribution center on the East Coast for Black and Decker tools and appliances. A small portion of the on-site activities involves steel sintering using heat-treating furnaces and degreasing tool components utilizing TCE, 1,1,1-trichloroethane (1,1,1-TCEA), and other solvents. On-site sewage and wastewater treatment plants discharge effluent into two on-site lagoons.

From 1952 until 1987, the Black and Decker facility manufactured power hand tools. Numerous oils and solvents utilized in the manufacturing processes were stored on site in above-ground and underground storage tanks. Allegedly, several areas on the subject property were used for disposal of waste materials and off-specification tool products.

In April 1984, TCE and PCE contamination was detected in the groundwater at the Black and Decker facility during a sampling investigation of a local gasoline spill. The Maryland Department of Health and Mental Hygiene (MD DHMH) inspected the facility and conducted sampling several times in 1984. On September 17, 1984, Black and Decker entered into a Consent Order with MD DHMH. In compliance with this order, the company performed an investigation of groundwater conditions at the facility. Twenty-one monitoring wells were installed on Black and Decker's property by Geraghty and Miller (consultants) in April 1985. Further evaluation of the contaminated groundwater was recommended by the consultant. MD DHMH conducted home well sampling in the area surrounding the subject facility. Varying levels of PCE and TCE contamination were detected in several wells.

As a result of PCE contamination, Black and Decker installed filters in a downgradient dairy barn well in 1987.

A soil investigation was requested by MD DHMH and performed by BCM Eastern, Incorporated in August 1986. BCM installed an air stripper for on-site potable water treatment in December 1986.

Black and Decker contracted Roy F. Weston, Incorporated (consultants) in 1987 to perform an environmental investigation of the facility. Weston installed 17 monitoring wells on the property as part of this investigation. Seven areas were identified as possible sources of groundwater and/or soil contamination: the previous storage tank areas, a past plant landfill area, two past heat-treating residue and waste deposition areas, a past off-specification product disposal area, an area of past used-product burning, and the on-site lagoons. An underground storage tank area was determined to be a continuing source of groundwater contamination. The investigation also identified separate plumes of groundwater contamination: TCE was determined to be the primary groundwater contaminant in the eastern half of the plant, and PCE was the predominant groundwater contaminant in the western section of the plant. A work plan for soil and groundwater remediation was submitted to Maryland Department of the Environment, Hazardous and Solid Waste Management Administration (MDE HSWMA) in December 1989 by Weston. Information indicates that this work plan has not yet been approved by MDE.

Residents within a four-mile radius of the facility obtain their drinking water from a public supplier o domestic wells. The City of Hampstead Water Department obtains its potable supply from 10 wells located around the city and within the study area. The supplier serves about 2,800 people. Residents not served by the public supplier are assumed to maintain private domestic wells. Approximately 750 employees at Black and Decker depend on 5 on-site production wells for their potable water supply. These wells are connected to an air stripper for groundwater treatment. A total population of about 9,475 people depends on groundwater from within the study area for its potable supply. The nearest home well is about 100 feet northeast of the site.

Surface water drainage from the site is mainly toward a tributary of Deep Run west and southwest of the facility. Deep Run enters the North Branch of the Patapsco River. A small northeastern portion of the site drains eastwardly into a tributary of Piney Run. Piney Run flows southeastwardly into Western Run. Piney Run and Western Run are natural trout streams; Deep Run and the North Branch of the Patapsco River are recreational stocked trout streams.

FIT 3 conducted a site inspection of Black and Decker on February 26 and 27, 1991. Activities included sampling on-site soils, sediment, groundwater, and surface water and off-site groundwater, surface water, and sediment. A detailed Quality Assurance Review and a Toxicological Evaluation of the sample results from this inspection can be found in sections 7.0 and 8.0, respectively.

SECTION 2

ORIGINAL (Red)

2.0 THE SITE

2.1 Location

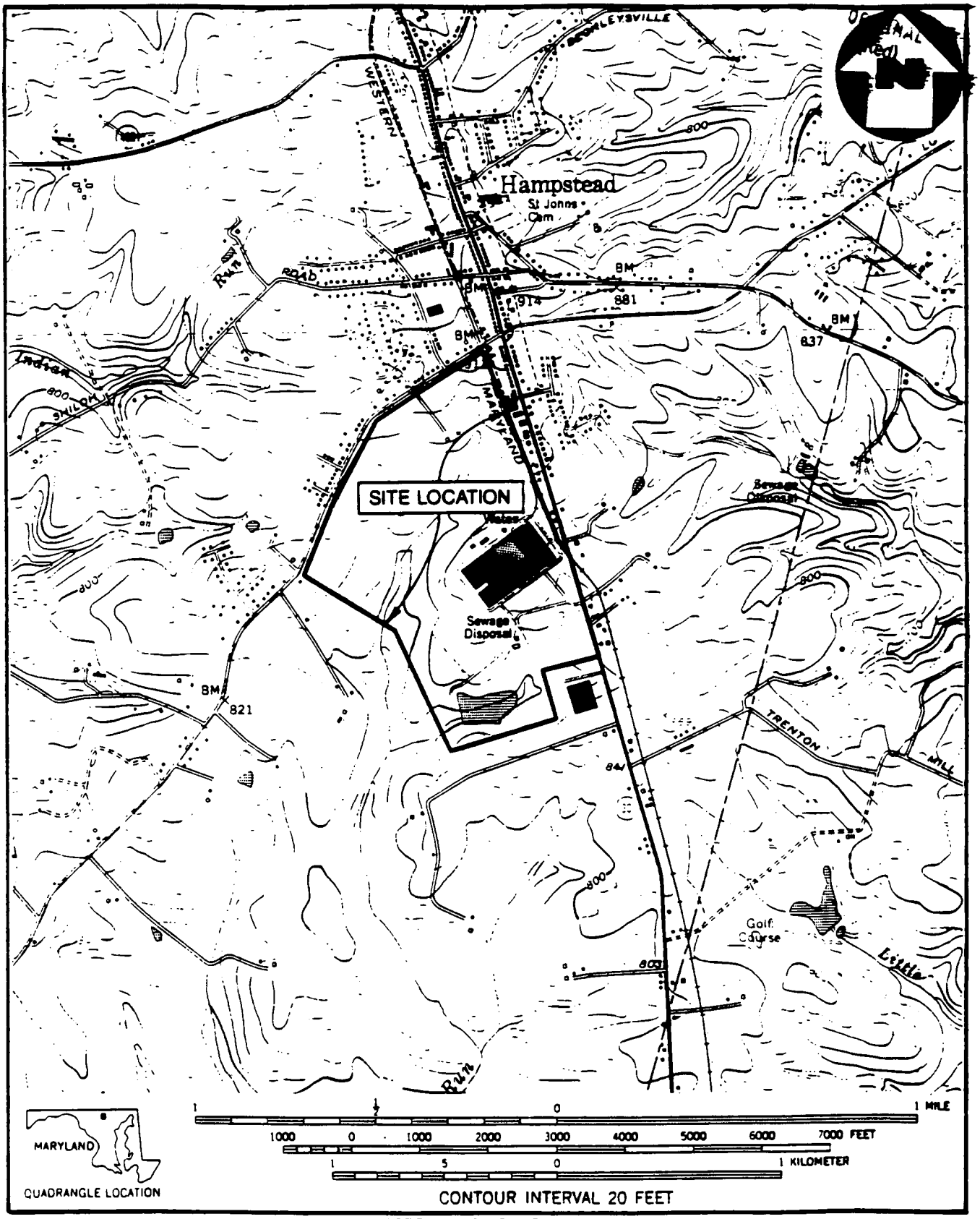
The Black and Decker site is located in Carroll County, Maryland (see figure 2.1, page 2-2). The site can be found at the intersection of 39° 35' 36" north latitude and 76° 50' 58" west longitude on the Hampstead, Maryland 7.5 minute series United States Geological Survey (U.S.G.S.) topographic quadrangle map. As measured from the northwestern corner of the Hampstead, Maryland topographic map, the site is 3.56 inches east and 5.75 inches south.[1]

2.2 Site Layout

The 286-acre Black and Decker property is located directly south of the town of Hampstead, Maryland, directly west of Route 30. Approximately 140 acres of the northern and western sections of the property are leased to local dairy farmers for pasture land. The main facility is situated on the remaining 146 acres.[1,2]

The major feature of the main facility is a 17-acre rectangular building; its length is oriented in a northeastern to southwestern direction (see figure 2.2, page 2-3). It is secured by fencing and guarded gate. Hanover Road (Route 30) is directly east of the building. Access to the facility is through the monitored gate that is off Hanover Road and southeast of the building. Parking areas are also within the fenced portion of the property, immediately south and southeast of the building. A railroad leads into the northernmost corner of the building.[1,2,3]

Several significant areas are located around the Black and Decker building. The former location of tank farm no. 1 is adjacent to the northwestern edge of the building. The tank farm consisted of 13 underground storage tanks that contained oils and solvents. Tank farm no. 2 was east of the northernmost corner of the building and consisted of five underground storage tanks that contained various oils used in Black and Decker's manufacturing process. An above-ground tank farm is west of the northernmost corner of the building. A liquid nitrogen storage tank and a methanol storage tank can be found in this tank farm. TCE storage tanks were previously located in this area; all of these tanks have been removed. A hazardous waste storage area is located southwest of tank farm no. 1, along the northwestern edge of the building, according to LaVere Grimes, Black and Decker's facilities manager. An area of possible past disposal of heat-treating residues is adjacent to the westernmost corner of the building. An air-stripping tower is located northwest of the building.[1,2,3,4,5,6,7]



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. HAMPSTEAD, MD., QUAD.

SITE LOCATION MAP
BLACK & DECKER

SCALE 1: 24000

FIGURE 2.1

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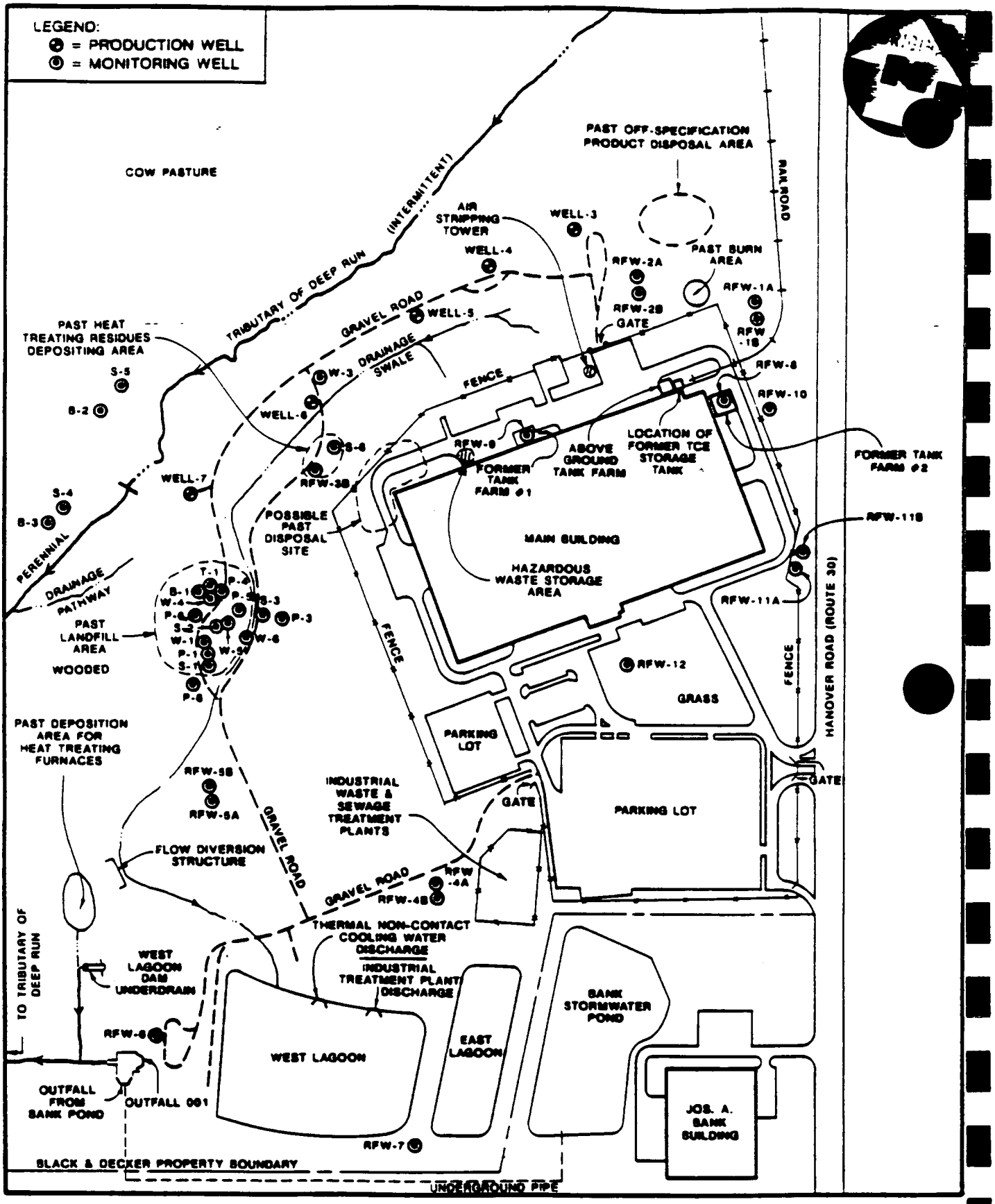

SITE SKETCH
BLACK & DECKER

(NO SCALE)

FIGURE 2.2

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Wooded land surrounds the Black and Decker main facility on the northern, western and southwestern sides. Access to these areas is unrestricted. A gravel road, exiting from a gate northwest of the facility building, travels through the wooded areas and re-enters the fenced portion of the property through a gate south of the building. Five water supply wells (nos. 3, 4, 5, 6, and 7) are located at intervals along the northwestern section of the road. Well nos. 1 and 2 are sealed and no longer used by the facility. Black and Decker's industrial waste and sewage treatment plants are located within a fenced area directly south of the entry point of the gravel road into the southern gate and several hundred feet south of the facility building.[2,3,5]

Two lagoons are located about 1/4 mile south of the main facility; access to the lagoons is unrestricted. The easternmost lagoon (east lagoon) is approximately two acres in size and six feet deep. The westernmost lagoon (west lagoon) is about 8 acres in size and 13 to 14 feet deep. Effluent from the industrial treatment plant and thermal non-contact cooling water from the facility discharge into the west lagoon via two separate discharge pipes. The east lagoon is clay lined, and the west lagoon is partially clay lined. A clay liner is between the two lagoons; an overflow pipe that is continuously open connects the east lagoon to the west lagoon. Effluent from the west lagoon flows into a concrete culvert via outfall no. 001. An underdrain for the west lagoon dam is located northwest of the culvert; the underdrain releases seepage coming through the west lagoon dam. An area previously used for the deposition of heat-treating furnaces is directly north of the dam underdrain. Surface water runoff from this area joins drainage from the underdrain; the resulting stream flows into the outfall discharge stream coming from the concrete culvert.[2,3,4,5,6]

Several other significant features are located on Black and Decker's property outside the restricted main building area. Two areas of concern are several hundred feet north of the building: an area used in the past for burning off-specification products, plastic parts, and other materials and a second area used for disposal of off-specification products. Heat-treating residues were allegedly buried in an area between the building and water supply well no. 6. In the past, off-specification products were disposed in a landfill located west of the facility building in addition to the disposal areas mentioned previously.[2,3,4,5,6]

A drainage swale originates directly north of the Black and Decker building and flows in southwestward direction. The swale continues west of the facility, flowing southwardly. The swale then makes a 90-degree angle at a flow diversion structure and flows southeastwardly into the west lagoon. The flow diversion structure controls the direction of water flow in the swale toward the west lagoon.[2,3,4,5,6,7,8]

Thirty-eight monitoring wells are on Black and Decker's property at various locations.[2,3,4]

A tributary of Deep Run flows in a southwestward direction northwest and west of the main facility. A drainage pathway, several hundred feet in length, flows from the past landfill area into this tributary.[2,3]

A clothier warehouse, the Joseph A. Bank building, is located off the southeastern corner of the Black and Decker property on Hanover Road. A storm water pond located behind this building discharges via an underground pipe into the concrete culvert below the west lagoon. This effluent combines with the outfall no. 001 discharge (which is in the same culvert) to form a small stream.[2,3,4,5]

2.3 Ownership History

The subject site is solely owned by Black and Decker (U.S.), Incorporated. The northern and western sections of the property (140 acres) are leased to dairy farmers for pasture land.[4,5]

Black and Decker purchased the property in separate tracts at various times. The first tract of property, 185 acres, was purchased in 1951 from Charles J. Miller. A second tract was purchased in 1952 from Herbert R. Wooden, and a third tract was bought from Ada and Nellie B. Wooden in 1960. According to Mr. Grimes, the second and third purchases were probably small parcels of land northeast of the facility between the railroad tracks and Hanover Road. A fourth purchase was made in 1967 of 138 acres north of the facility. This tract was purchased from Olin Henry Hoffman, according to the Maryland preliminary assessment report.[4,5,9]

The Black and Decker facility building was built on the first tract of land in 1952. Several other buildings were constructed on this tract after 1952. Thirty-nine acres of the original 185 acres, a building, and a storm water pond were sold to Joseph A. Bank in 1986.[4,5,9]

Information concerning ownership before Mr. Miller, the Woodens, and Mr. Hoffman is unavailable.[4,5]

2.4 Site Use History

The subject facility currently functions as the principal distribution center on the East Coast for Black and Decker, Incorporated. About 80 percent of the activities at the Hampstead facility relate to the distribution of Black and Decker products (i.e., power hand tools and small electrical appliances). A small portion of the activities involves light assembly packaging and the manufacture of gears, according to Mr. Grimes. Heat-treating furnaces are used in the sintering of steel to form gear components. Cleaning and treatment of power tool accessories for rust prevention are also conducted at the plant. TCE, 1,1,1-TCEA, and various other solvents are used as degreasers in manufacturing and cleaning processes.[4,5]

The Black and Decker facility was originally constructed in 1952 for the manufacture of power hand tools. Additions to the main building and several other buildings were built in later years. Numerous oils, solvents, and paints utilized in Black and Decker's manufacturing processes were stored on site in above-ground and underground storage tanks. MDE information from the early to mid-1980s indicates that waste products from the manufacturing processes were shipped off site as hazardous waste during this specific time period (see appendix M for hazardous waste reports). Waste disposal practices before 1982 are unknown. The use of most of these oils and solvents was discontinued when the facility changed its emphasis from manufacturing to distribution. The underground tanks have been excavated, cleaned, and filled with sand. The above-ground tanks are no longer used; TCE and 1,1,1-TCEA are stored in drums on site, according to Mr. Grimes.[4,5,6,9]

A phase-out of tool manufacturing began in 1983 at the facility. Plant activities were refocused on product distribution; the conversion from manufacturing to distribution was completed in July 1987.[6]

According to a report by Roy F. Weston, Incorporated, Black and Decker's consultant, Black and Decker employees recall that several areas on the subject property were used for disposal of debris and off-specification tool products during the history of manufacturing operations. The manufacturing processes involved the utilization of numerous paints, solvents, and oils.[6]

Two lagoons on Black and Decker's property have been used by the facility since 1978 for wastewater treatment. The east lagoon is currently utilized as a surge basin for contact cooling water from manufacturing processes at the facility. Boiler blow-down water and effluent from the sewage treatment plant are also discharged into this lagoon. An overflow pipe that is continuously open connects the east lagoon to the west lagoon. When the level reaches a certain depth in the east lagoon, the wastewater is pumped into the industrial chemical treatment plant. Effluent from this plant is discharged into the west lagoon. Thermal non-contact cooling water and drainage from the on-site swaleway also flow into the west lagoon. Water from the west lagoon is recycled for use as non-contact cooling water in the Black and Decker facility, according to the Weston report. The west lagoon also functions as a source of fire-protection water for the facility in emergencies. Excess water from the west lagoon is discharged via NPDES-permitted outfall no.001.[4,5,6]

In the past, industrial sewage from various manufacturing operations was piped into the east lagoon for subsequent treatment. These operations included cleaning and etching aluminum castings with phosphoric acid, paint stripping using a caustic solution (pH, 12), metal treating with an acid solution, application of a dry coating with heat treatment, and metal grinding using a water-soluble lubricant.[10]

Information concerning wastewater disposal before 1978 is unavailable.

Sludge produced from sewage and industrial treatment processes is currently removed off site as nonhazardous waste. The sludge was generated as hazardous waste in the past; modifications to the treatment system enabled the facility to classify the sludge as nonhazardous. Sludge in the lagoons has not reached a level necessitating removal, according to Mr. Grimes.[4,5]

The storm water pond, located south of the facility on the Bank property, receives surface runoff from the surrounding area, in addition to rainwater from Black and Decker's southern roof drains and surface runoff from Black and Decker's parking areas and driveways. The pond currently functions as a water source for fire protection for the Bank property. Black and Decker constructed the pond sometime after 1978 to prevent overflow of the west lagoon due to storm runoff.[4,5]

Before Black and Decker's purchases, the site was utilized as dairy farming land.[4,5]

2.5 Permit and Regulatory Action History

Black and Decker filed a Notification of Hazardous Waste Activity in September 1980 listing the following as the wastes handled: F001 (halogenated solvents), F010 (bath residues from heat-treating operations with cyanide used in the process), F011 (spent cyanide solutions), F012 (wastewater treatment sludge from heat-treating operations with cyanide used in the process), F017, F018, U002 (acetone), U054, U080 (dichloromethane), U123 (methanoic acid), U220 (toluene), U226 (1,1,1-TCEA), U228 (TCE), and U239 (xylene).[10]

Several of these waste codes have been deleted from the hazardous waste listing; substance descriptions for these codes are unavailable in recent editions of the CFR. The facility was assigned EPA I.D. No. MDD003065877 (see appendix C).[11,12]

Black and Decker submitted a Part A Hazardous Waste Permit Application to EPA in November 1980. A complete description of the facility's water recycle system was included with this application (see appendix C). Process codes S04 (surface impoundment) and T04 (treatment other than tank, surface impoundment, or incinerator) were listed on the application at capacities of 4,000,000 gallons and 1,000,000 gallons, respectively. The facility's NPDES Permit No. MD-0001881, Oil Operations Permit No. 79-OP-0185, and Water Appropriation Permit No. CL66GAP029 were also listed on the application. No waste codes were identified on the application. On June 4, 1981, EPA informed Black and Decker that the Part A application did not demonstrate that the facility required a federal permit and returned the application. Information indicates that the company kept its generator I.D. No. MDD003065877.[13,14]

A Notice of Violation and corrective order were issued to Black and Decker by MD DHMH in February 1978 for minor air emission violations. According to Mr. Grimes, the company developed a line of water-based paints to use on its products within the following year in order to comply with the order.[5,15]

On November 16, 1978, MD DHMH issued an order to Black and Decker requesting information concerning the facility's waste disposal methods and emergency plans. According to Mr. Grimes, Black and Decker provided a Preparedness, Prevention, and Contingency (PPC) Plan to MD DHMH in compliance with this order.[5,16,17]

In July 1979, Metcalf and Eddy, Incorporated, environmental consultants for Black and Decker completed a report concerning the sludge generated in the facility's wastewater treatment system. Analysis of the sludge indicated chromium levels up to 4,380 ppm and lead levels up to 13,500 ppm. Sampling of water mixed with bottom sludge from one of the Black and Decker lagoons in December 1979 revealed concentrations of chromium at 18.9 ppm and lead at 93.3 ppm (see appendix D for report and analysis results). Metcalf and Eddy recommended modification of the treatment system producing the sludge. Available information indicates that modifications were made, enabling the facility to dispose the sludge as nonhazardous waste.[18,19]

In April 1984, the Carroll County Health Department sampled the five production wells at Black and Decker to determine the impact of a gasoline spill at a Hampstead service station. Elevated levels of TCE (up to 72 ppb), PCE (up to 1900 ppb), and other chlorinated hydrocarbons were detected in the groundwater at the facility (see appendix E). As a result, MD DHMH inspected the facility on May 2, 1984 and filed a site complaint against Black and Decker for water pollution and controlled hazardous substances violations including leaking hazardous waste containers, lack of a hazardous waste containment structure, and potential drainage of hazardous wastes into surface runoff. MD DHMH also conducted a compliance monitoring inspection on May 7, 1984. Sampling was conducted by state representatives during each of these May inspections. Analysis results indicated volatile organic compound (VOC) contamination in soils and surface water at various locations on the Black and Decker property, including concentrations of PCE at 72 ppb in underdam drainage from the west lagoon (see appendix F for MD DHMH reports and appendix G for the Geraghty and Miller, Incorporated consultant report, which includes MD DHMH sampling results).[7,20,21]

Sampling of the wells at several residences downgradient of the subject facility was conducted in May and November 1984 by county representatives. The Leister dairy barn well, which is about 110 feet deep, was found to contain up to 4 ppb PCE. The Richards dairy farm well was found to contain 15 ppb 1,2-dichloroethane (1,2-DCEA). Several nearby homes and a shallow dug well (60 feet deep) used in the Leister farmhouse contained no significant levels of VOCs (see appendix H).[22,23]

In June 1984, samples collected from potable water supplies for employees at the Black and Decker facility revealed up to 6ppb TCE and 3ppb PCE, in addition to several other VOCs (see appendix I).[24]

On September 17, 1984, Black and Decker entered into a Consent Order with MD DHMH. In compliance with the order, the company performed an investigation of groundwater conditions at its Hampstead facility. Phase I of this investigation, completed by Geraghty and Miller, Incorporated in March 1985, involved a compilation of past sampling data and included a summary of the geology and hydrogeology at the facility and the construction details of the production wells (see appendices G and J).[22,25]

A RCRA Compliance Evaluation Inspection was conducted at the facility on August 16, 1985. A containment structure for hazardous waste storage had been constructed since the MD DHMH inspection. RCRA inspectors noted storage of hazardous waste over 90 days in an inspection report (see appendix K). The report included November 1984 sludge sample results from Black and Decker's holding pond revealing lead concentrations of 330 ppm.[26]

In September 1985, Phase II of the groundwater investigation was completed by Geraghty and Miller. The investigation focused primarily on the area south of PW-7 as a source of PCE contamination. Information collected from Black and Decker employees indicated that this area was used by the company as a disposal area in the past. Three source areas of buried substances (allegedly off-specification equipment) were identified utilizing geophysical surveys (see appendix L for report). Twenty-one monitoring wells were installed by Geraghty and Miller in April 1985 on Black and Decker's property. The majority of the wells were located in the vicinity of the three identified source areas (see appendix L, figure 4). Groundwater sampling of the wells revealed levels of PCE up to 1,400 ppb in MW B-1 and W-4; PCE concentrations were found to increase with the groundwater depth. Geraghty and Miller also collected samples from three seeps west of the landfill disposal area. PCE levels up to 310 ppb were detected. Further evaluation of the source areas and a recovery system for contaminated groundwater were recommended by Geraghty and Miller.[27]

On September 5, 1985, MD DHMH performed an inspection at Black and Decker to determine compliance with Toxic Substances Control Act (TSCA) regulations. Three non-leaking transformers with PCB-contaminated oils were identified at the facility. Information from Mr. Grimes and from 1988 and 1989 hazardous waste reports indicates that the electrical transformers were drained of PCB-contaminated oil and replaced with non-PCB oil (see appendix M for hazardous waste reports).[5,28,29,30]

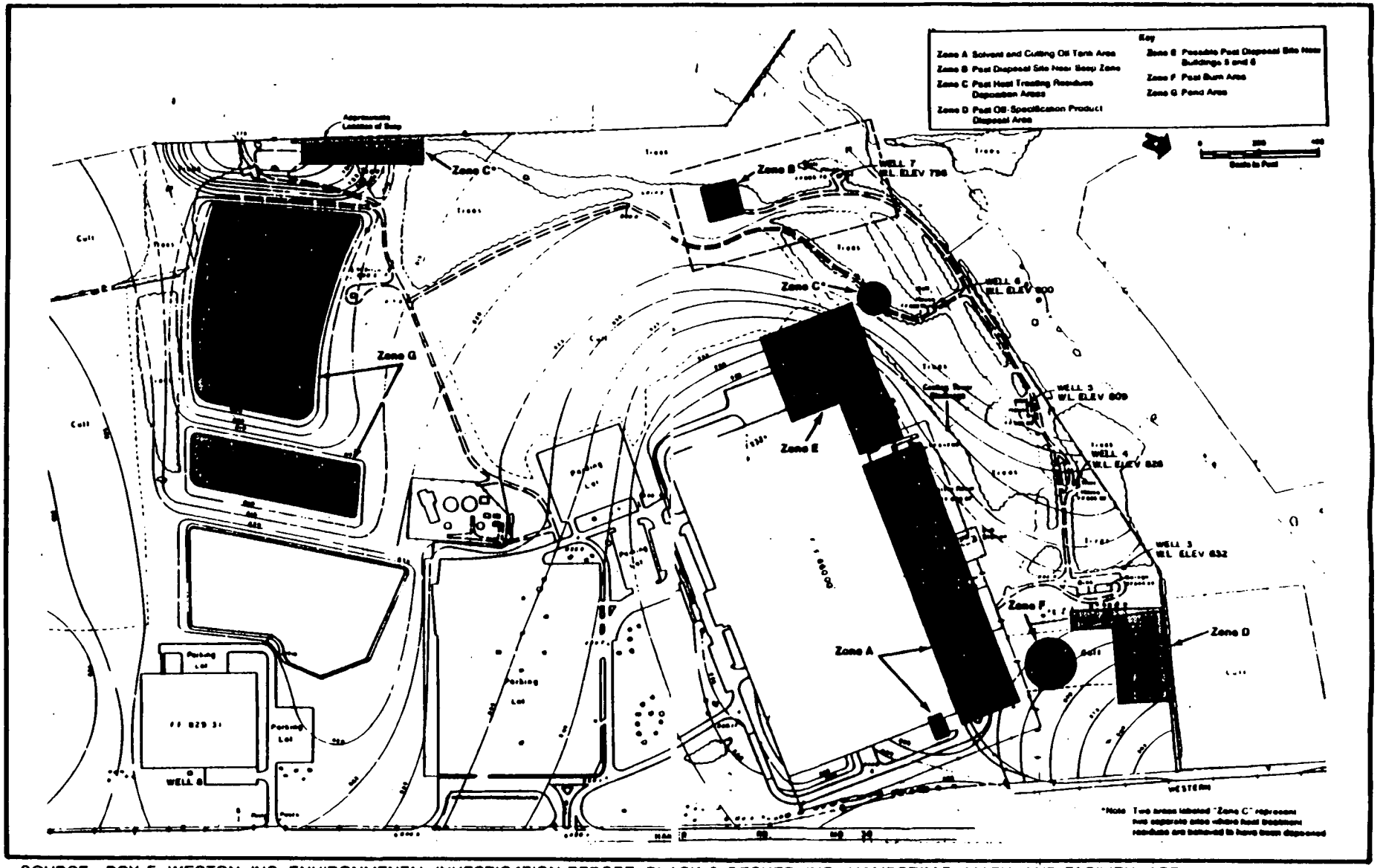
MD DHMH conducted home well sampling in the areas surrounding Black and Decker on several occasions in 1985 and 1986 (see appendix N). Varying levels of PCE and TCE were detected in several wells. The Leister dairy barn contained up to 9 ppb PCE. A TCE level of 2 ppb was detected in wells at 4321 Hampshire Road and at the Mosner and Harner residences. MD DHMH also collected surface water samples downstream of the subject facility on Deep Run; no contaminants were identified (see appendix O).[31,32,33]

In August 1986, BCM Eastern, Incorporated (consultants) performed a soil boring investigation at Black and Decker; the investigation was requested by MD DHMH. The purpose of the study was to determine whether contaminant sources could be detected in the source areas identified by Geraghty and Miller in 1985 and whether groundwater remediation could be expedited by excavation and/or treatment of the soil in the landfill source areas. Soil borings and subsurface sampling were conducted in each of the three source areas identified by Geraghty and Miller and verified by BCM with geophysical surveys. No significant levels of TCE or PCE contamination were found in any of the areas (see appendix P for report and results). BCM installed an air-stripper tower at the facility in December 1986.[34,35]

Black and Decker contracted Weston in 1987 to perform an environmental investigation of the subject facility. The first phase was conducted in November and December 1987 and utilized environmental sampling, test pit excavations, and geophysical surveying in an effort to identify potential sources of groundwater contamination.[6,9]

According to an April 1989 Weston report, seven areas were identified as possible sources of groundwater and/or soil contamination based on discussions with Black and Decker employees and previous investigations (see figure 2.3, page 2-12, and appendix Q).[6]

Zone A, the storage tank areas, consisted of tank farm no. 1, tank farm no. 2, and the above-ground storage tank area. Tank farm no. 1 consisted of 13 underground tanks containing oils and solvents; tank farm no. 2 consisted of 5 underground tanks that contained processing oils and waste oils (see appendix Q, table 3-1, for inventories of tank farm nos. 1 and 2). The above-ground storage tank area consisted of two 5,000-gallon above-ground tanks containing TCE and a solvent called UCAR. The underground tanks in the tank farms were excavated, cleaned, and backfilled, according to the Weston report. No further information is available on the closure of the underground tanks. The old TCE storage tank was also removed; a new diked TCE storage tank and tanks for methanol and liquid nitrogen were located in this area at the time of the Weston investigation.[6]



SOURCE: ROY F. WESTON, INC. ENVIRONMENTAL INVESTIGATION REPORT, BLACK & DECKER, INC., HAMPSTEAD, MARYLAND FACILITY, APRIL, 1989.

WESTON PHASE 1 AREAS OF INVESTIGATION MAP

BLACK & DECKER

(SCALE ABOVE)

FIGURE2.3

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Zone B was identified in the western portion of the property as an alleged site of past plant refuse disposal. Fill material was found during Weston's test pit excavations in this area.[6]

Zone C consisted of two areas. The northern area may have received residues from the heat-treating furnaces. The southern area received debris from the furnaces in addition to furnace fragments and brick.[6]

Zone D was identified as an area of past off-specification product disposal. Fill material, including power tool parts, was encountered during Weston's excavations in this zone.[6]

Zone E was allegedly used for deposition of heat-treating residues. This area has been filled and regraded several times during construction at the plant. No fill material was found during soil borings in Zone E.[6]

Zone F was possibly used in the past as a burn area for off-specification products, plastic parts, and other materials before their disposal. Fill material was not encountered in Weston's excavations in Zone F.[6]

Zone G included the east lagoon, which serves as a surge-detention basin for wastewater, and the west lagoon, a receiving pond for treated wastewater and noncontact cooling water.[6]

Analytical results from each of these seven areas indicated that zones B, C, D, E, F and the above-ground storage tank area in zone A were not current sources of groundwater contamination at the Black and Decker facility. Significant levels of TCE (up to 2.4 ppm), PCE (up to 380 ppm), and petroleum hydrocarbons (TPH) (up to 150,000 ppm) were detected in soils from underground tank farm nos. 1 and 2. Sampling of sediment and surface water in the lagoons revealed elevated levels of VOCs, including TCE (up to 480 ppb), PCE (up to 16 ppb), and toluene (up to 8,300 ppb). Elevated levels of several inorganic compounds were also detected (see table 3-13, appendix Q). Further characterization of the lagoons and the underground tank farms was recommended by Weston.[6]

Weston's Phase II investigation attempted to further characterize the extent of organic contaminants in the Zone A underground storage tank areas, evaluate the local hydrogeology to identify the probable contaminant migration pathways, and assess the groundwater quality at the Black and Decker facility. A total of 17 monitoring wells were installed: 13 on the western half of the property and 4 on the eastern half (see appendix Q).[6]

Sampling of tank farm no. 1 soils revealed elevated concentrations of TPH (up to 14,000 ppm), toluene (up to 4,600 ppm), ethylbenzene (up to 120 ppm), xylene (up to 310 ppm), PCE (up to 1 ppm), and TCE (up to 0.03 ppm) (see appendix Q, table 4-1). According to Weston, these results, in addition to TCLP results, indicated that TPH and VOCs were present below concentrations necessary to significantly impact groundwater on site. However, a preliminary report prepared by MDE HSWMA in February 1990 states that these contaminants are present in significant quantities in the soil to affect groundwater and should be remediated.[6,9]

TPH, PCE, TCE, 1,1,1-TCEA, and benzene were detected in soils from tank farm no. 2 at concentrations up to 93,000 ppm, 70 ppm, 1.6 ppm, 0.52 ppm, and 1.5 ppm, respectively. Weston concluded that contaminants were present at significant concentrations and quantities to potentially migrate into groundwater on site. Soil remediation was recommended for this area. According to the Weston report, the lagoons did not present a source of continuing groundwater contamination.[6]

The Phase II groundwater quality investigation confirmed that the major contaminants of concern in groundwater at Black and Decker are PCE and TCE. Concentrations of PCE up to 3,100 ppb and TCE up to 1,700 ppb were detected during groundwater sampling in late 1988. Separate plumes of PCE and TCE contamination were identified; TCE was determined to be the primary groundwater contaminant in the eastern half of the plant, and PCE was the predominant groundwater contaminant in the western section of the plant. A groundwater recovery plan was recommended by Weston to treat contaminated groundwater on site and to prevent off-site migration of contaminated groundwater.[6]

A work plan for soil and groundwater remediation was submitted to MDE HSWMA in December 1989 by Weston. At the time of the FIT 3 site visit, this plan had not yet been approved by MDE.[4,9]

MD DHMH sampled several area home wells in 1988. TCE was detected up to 2 ppb; various other volatile organic compounds were also identified (see appendix R). Sampling of the Leister barn well indicated PCE contamination at 5 ppb in August 1989 and 4 ppb in May 1990 (see appendix R).[35]

In January 1990, MD DHMH conducted a generator/treatment, storage, or disposal (TSD) facility inspection at Black and Decker. Several violations were noted, including lack of hazardous waste storage area inspections, lack of an updated spill plan and compliance with the current spill plan, and lack of personnel training.[36]

MDE HSWMA sampled two recently constructed production wells in the town of Hampstead's well field during July 1990. The closest well is located 1,350 feet east of the subject site. No contamination was detected in either well. Installation of two monitoring wells between Black and Decker's property and the well field was proposed by Weston under MDE's guidance. MDE information indicates that installation of these wells has been postponed due to access problems.[1,37,38,39,40]

MDE HSWMA conducted surface water and outfall discharge sampling at Black and Decker in July and August 1990. TCE levels of 1,300 ppb and 7 ppb were detected in the contaminated waste holding basin and in the discharge stream, respectively. A PCE concentration of 63 ppb was also detected in the stream (see appendix S).[41,42]

Groundwater sampling by Weston at Black and Decker in August 1990 indicated continued elevated TCE and PCE levels. TCE was detected at 12,000 ppb in MW RFW-12 and 40 ppb in PW-6. PCE concentrations of 1,600 ppb in MW B-1 and 3,100 ppb in PW-7 were detected (see appendix T).[43]

Black and Decker holds NPDES Permit No. MD0001881 and state discharge permit no. 88-DP-0022 for effluent from the west lagoon. Information concerning the original date of issue of the NPDES permit is unavailable; the current permit expires on March 7, 1993. Two other outfalls are noted in the permit (see appendix U). These outfalls are for storm water discharge only.[44]

According to MDE Air Management Administration information, Black and Decker holds registrations for two boilers, the on-site air stripper, and the heat-treating furnace. The respective registration permit numbers are 4-0063, 4-0062, 9-0049, and 6-0119.[45,46]

2.6 Remedial Action to Date

In May 1977, Black and Decker informed the Department of Natural Resources of Maryland of a spill that occurred at its facility on March 15, 1977. Mechanical failure of a process water transfer pump caused an uncontrolled discharge to Deep Run of about 40,000 gallons of process water. Flow was diverted into the on-site lagoon, and the pump was repaired. A sample of the process water discharge was collected, it was within the discharge permit limitations (see appendix V for results).[8]

In May 1984, Black and Decker installed carbon filters on the facility potable water supply system as a result of VOC groundwater contamination detected in the plant's on-site production wells. An air stripper was installed by BCM engineers in December 1986 and connected to the five on-site production wells. The treated water is the plant's sole potable water supply.[5]

Black and Decker installed four in-line granular-activated charcoal filter (GAC) units in the Leister dairy barn in October 26,1987 under MDE direction. The filter installation was a result of an agreement with Black and Decker to provide potable water to the farm due to PCE contamination.[47]

Eighteen underground storage tanks were excavated, cleaned, and backfilled in the early to mid-1980s, according to Mr. Grimes. Further information concerning closure of these tanks is unavailable. An old TCE storage tank was also removed; a new diked TCE storage tank was constructed in its place.[4,6]

In 1988 and 1989, PCB-contaminated oil was drained from non-leaking electrical transformers on site and removed as hazardous waste.[5,28,29,30]

SECTION 3

3.0 ENVIRONMENTAL SETTING

3.1 Water Supply

Residents in the study area are served by municipal and private water supplies. The City of Hampstead Water Department (CHWD) is the only public water supplier in the study area. This system serves a population of approximately 2,800 people within the corporate limits of the city of Hampstead. Water is obtained from 10 wells that are located around the city. Eleven other wells are not currently in use. The yields for these wells range from 21 to 80 gallons per minute (gpm). The locations of these wells in relation to the site are given in the following table.[1,48,49]

Well	Distance (feet)	Direction	Depth (feet)
TW-N-3	3,000	east	161
TW-L	2,800	east-northeast	161
PW no. 23	2,100	northeast	102
PW no. 22	1,350	northeast	132
PW no. 15	1,800	north-northeast	not available
PW-C-2	3,000	west-northwest	162
PW-1	4,800	northwest	203
PW-A3	3,400	northwest	200
PW-13	3,000	north-northeast	not available
TW-7	5,300	northwest	123
TW-5	5,500	northwest	223
TW-3	5,500	northwest	115
PW-25	6,500	north-northwest	148.5
PW no. 24	6,400	north-northwest	173.5
PW no. 12	8,400	north-northwest	not available
PW no. 11	8,700	north-northwest	not available
PW no. 10	8,800	north-northwest	not available
PW no. 21	9,900	northwest	not available
PW no. 20	9,800	northwest	not available
18	12,900	northwest	not available
19	12,800	northwest	not available

Apportionment data for these sources are unavailable. The state of Maryland does not collect the production data for individual wells in the CHWD system. The total production for 6 of the wells that CHWD is permitted to draw from was 237,717 gallons per day (gpd) for the year 1990. No other production data are currently available from the state. The 10 wells that are currently producing are nos. PW-7, 11, 12, 13, 18, 19, 20, 21, 22, and 23. CHWD has no interconnections and does not sell or purchase water from any other source.[1,48,49]

The remainder of the population within the study area (approximately 5,925 people) is assumed to rely on private wells for drinking water. This figure is based on a count of homes outside public water service, multiplied by 3.02 persons per home. The nearest home well is about 100 feet northeast of the site. The private wells range in depth from hand-dug wells, which are most likely less than 50 feet deep, to drilled wells approximately 200 feet deep (see appendix Z). These wells produce from the Wissahickon Formation; the median yield of wells in this unit is 16 gpm. No surface water intakes are located within 15 downstream miles of the site.[1,48,50,51]

The total population dependent on groundwater within the study area is approximately 9,475 people. This figure includes the population utilizing private wells, the population served by CHWD, and the employees at the Black and Decker plant. The populations dependent on groundwater sources for potable supply within the study area are as follows:[1,4,48,49,51]

Radius from Site	Population
0 to 1/4 mile	0 residents, 750 Black and Decker employees
1/4 to 1/2 mile	297
1/2 to 1 mile	1,855
1 to 2 miles	1,848
2 to 3 miles	2,140
3 to 4 miles	2,585

3.2 Surface Waters

The direction of surface water drainage varies in different portions of the site. Surface water runoff from the northeastern corner of the property drains in an eastward direction for 0.6 stream mile into an intermittent tributary of Piney Run. The stream becomes perennial and joins Piney Run 0.3 stream mile downstream. Piney Run flows southeastwardly approximately 7.6 stream miles into Western Run. Piney Run and Western Run are classified by the state of Maryland as Class III streams (natural trout streams).[1,4,52]

Surface water runoff from the remainder of the Black and Decker property eventually flows into a tributary of Deep Run. Storm water drains collect runoff from the area immediately surrounding the main building. The drains north of the main building empty into the facility's drainage swale (see figure 2.2, page 2-3), which flows into the west lagoon. Most of the drains south of the main building lead to the east lagoon. The Bank building storm water pond receives rain water from Black and Decker's southern roof drains and surface runoff from Black and Decker's parking areas and driveways. Water from the east lagoon is pumped into the facility's industrial waste treatment plant and is discharged into the west lagoon after treatment is complete. The west lagoon discharges via outfall no. 001, forming a stream, which flows about 0.2 stream mile into a tributary of Deep Run west of the facility. Effluent from the Bank building storm water pond discharges via an underground pipe into the concrete culvert below the west lagoon; it combines with the outfall no. 001 discharge to form a small stream.[1,4]

Surface water from the remainder of the property flows into the on-site drainage swale, the stream formed by outfall discharge, or a tributary of Deep Run. The drainage swale leads to the west lagoon. A flow diversion structure in the swale controls the direction of water flow in the swale. In normal situations, overflow in the swale would flow to the ground surface near the former deposition area for heat-treating furnaces. The stream formed by the outfall discharge is described above. The tributary of Deep Run, which is intermittent northwest of the facility and becomes perennial west of the facility, flows in a southward direction, joining Deep Run 1.7 stream miles downstream. Deep Run flows in a southward direction approximately five stream miles before entering the North Branch of the Patapsco River.[1,4]

Deep Run and the North Branch of the Patapsco River are classified by MDE as Class IV streams (recreational stocked trout streams).[52]

No wetlands more than five acres in size exist within one stream mile downstream of the site. Several wetland areas less than five acres can be found within this distance.[53]

3.3 Hydrogeology

The geologic and hydrogeologic conditions in the study area were researched as part of the site inspection. A preliminary literature review was conducted to determine surface and subsurface geologic conditions, soil character, and the status of groundwater transport and storage.

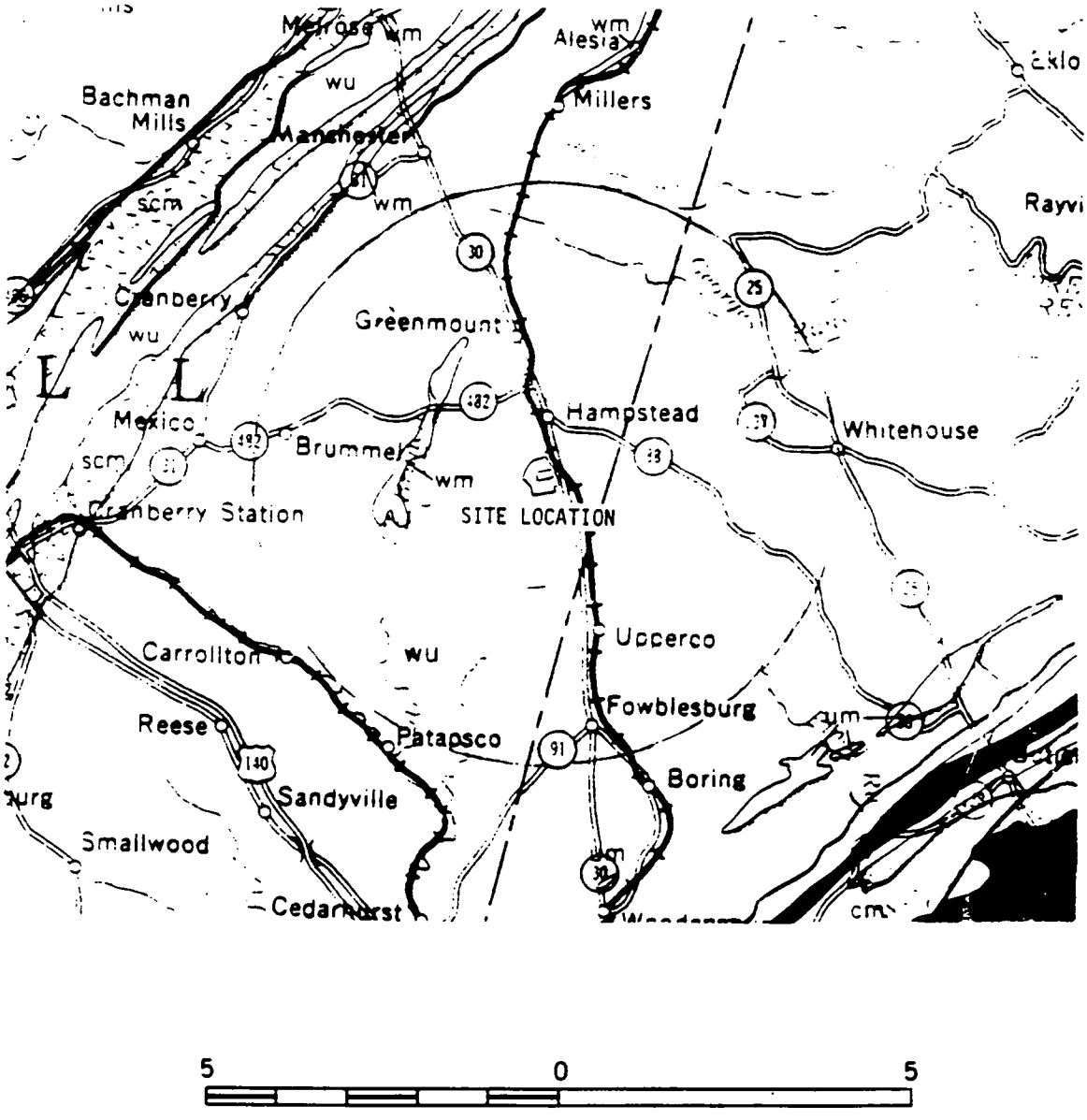
3.3.1 Geology

The site is located in the Eastern Division of the Piedmont Upland Physiographic Province of northeastern Maryland (see figure 3.1, page 3-5). The Piedmont Upland Province is characterized by gently rolling hills drained by many small perennial streams that form a dendritic drainage pattern. The maximum relief in the study area is approximately 550 feet. The geological units beneath the site are of late Precambrian age. The stratigraphic relationships of these units and other Piedmont metamorphic units in the region are complex and not well understood.[1,54,55]

Underlying the site is the late Precambrian age Wissahickon Formation (undivided). This unit is composed of muscovite-chlorite-albite schist, muscovite-chlorite schist, chloritoid schist, and quartzite. The Wissahickon is intensely folded and cleaved. The cleavage pattern is platy, highly abundant, and well developed. Bedding is fissile to thin and steeply dipping. Jointing in this unit is poorly formed, steeply dipping, and irregular, with wide spacing. Cleavage and joints tend to be open. The thickness of this unit is not known.[54,55]

The Precambrian age Wakefield marble crops out 1.2 miles west-northwest of the site in an elongate, northeast-southwest-trending outcrop approximately 1.3 miles in length. This unit is composed of predominantly white, fine-grained marble consisting of calcite and dolomite; subordinate white, pink, and green variegated marble may also be present. Jointing in this unit is similar to that in the Wissahickon. It is poorly formed, irregular, steeply dipping, and open. Gravel or clay-filled solution cavities may be present.[54,55]

wm Wakefield marble
wu Wissahickon Fm. (undiv.)



source: Weaver, K.N., Cleaves, E.T., Edwards, J., Glaser, J.D., Maryland Geological Survey. Geologic Map of Maryland. 1968.

FIGURE 3.1

GEOLOGIC MAP
BLACK AND DECKER SITE
Carroll County, Maryland

NUS CORPORATION

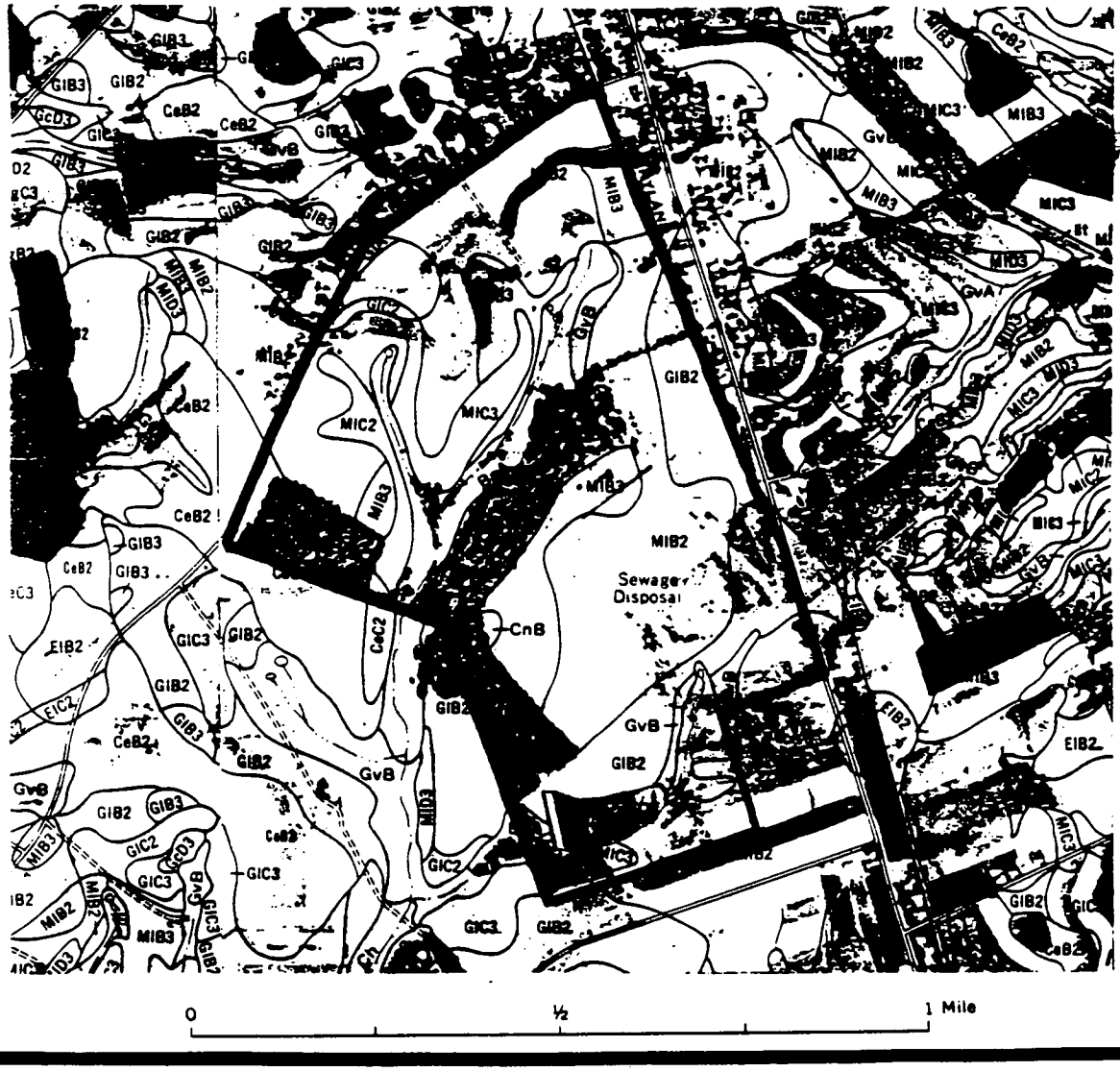
3.3.2 Soils

The soils that occur at the site belong to six soil series that are typical of the Piedmont Upland in Maryland (see figure 3.2, page 3-7). Site-specific data may be obtained from the soil boring logs (see appendices P and W). The soils at the site appear to be generally undisturbed except for the impact caused during the construction of the facilities. The most prevalent series is the Manor loam, which occurs on slopes ranging from 0 to 15 percent, with moderate to severe erosion. The Manor loam series consists of deep, very well-drained soils of level to steeply sloping uplands. It typically consists of an organic horizon that is a dark brown loam, one to four inches thick. The subsoil is red to yellowish-brown loam and may contain quartzite, mica, or schist fragments and is 17 to 30 inches thick. The substratum is an extremely micaceous, variegated loam saprolite. The permeability of this series is moderately rapid to rapid (two to 6.3 inches per hour) throughout all horizons in the profile. The soil reaction is very strongly acid to strongly acid (pH, 4.0 to 5.5) from 0 to 23 inches below the surface and very strongly acid (pH, 4.0 to 5.0) from 23 to 90 inches below the surface.[6, 22, 27, 34, 56]

The Glenelg loam is the next most prevalent soil series under the site and occurs on 0 to 15 percent slopes, with moderate to severe erosion. The Glenelg loam series is a deep, well-drained soil of level to steep uplands. The surface organic horizon is brown to dark brown loam, 5 to 11 inches thick. The subsoil is brown to strong brown silty clay loam, 13 to 28 inches thick. The substratum is typically a variegated, micaceous, loam-textured saprolite. The permeability for this series is moderate (0.63 to two inches per hour) throughout the entire profile from 0 to 50 inches below the surface. The soil reaction ranges from strongly acid (pH, 5.1 to 5.5) in the surface layer to very strongly acid (pH, 4.5 to 5.0) in the subsurface horizons.[56]

The Glenville silt loam series (GvB, three to eight percent slopes) occurs on level to gently sloping land in upland depressions and along footslopes of drainageways. It is moderately well drained with a fragipan. The surface layer is dark grayish-brown silt loam, 8 to 10 inches thick. The subsoil is brownish-yellow, light, silty clay loam, 33 to 44 inches thick. A fragipan commonly occurs at a depth of 28 to 48 inches. The substratum is light yellowish-brown, highly micaceous saprolite, with a loam texture. The permeability of this series is moderate (0.63 to two inches per hour) and moderately slow (0.2 to 6.3 inch per hour) in the surface layer and the subsoil, respectively. The fragipan permeability is slow (less than 0.2 inch per hour), and the substratum permeability is moderate (0.63 to two inches per hour). The soil reaction is very strongly acid (pH, 4.5 to 5.0) throughout all the horizons.[56]

GlA Glenelg loam (0-3% slopes)
GlB2 Glenelg loam (3-8% slopes)
GlC2 Glenelg loam (8-15% slopes)
MlB2 Manor loam (0-8% slopes)
MlB3 Manor loam (3-8% slopes)
MlC2 Manor loam (8-15% slopes)
MlC3 Manor loam (8-15% slopes)
GvB Glenville silt loam (3-8% slopes)
CeB2 Chester silt loam (3-8% slopes)
BaA Baile silt loam (3-8% slopes)
CnB Comus silt loam (3-8% slopes)



Source: United States Department of Agriculture. Soil Conservation Service. Soil Survey of Carroll County, Maryland. October, 1969.

FIGURE 3.2

SOILS MAP
BLACK AND DECKER SITE
Carroll County, Maryland

NUS CORPORATION

The Chester silt loam series (CeB2, three to eight percent slopes) is a deep, well-drained soil of level to sloping uplands. It commonly occurs at the crests of ridges. The organic surface layer is dark brown silt loam, 8 to 10 inches thick. The subsoil is yellowish-red clay loam that becomes more silty and micaceous with depth. This horizon is 28 to 45 inches thick. The substratum is a variegated loam saprolite. The permeability of this series is moderate (0.63 to two inches per hour), respectively, for the surface layer and the subsoil. The substratum permeability ranges from moderately rapid to rapid (two to 6.3 inches per hour). The soil reaction is strongly acid (pH, 5.1 to 5.5) in the surface layer, very strongly acid to strongly acid (pH, 4.5 to 5.5) in the subsoil, and very strongly acid (pH, 4.5 to 5.0) in the substratum.[56]

The Baile silt loam series (BaA, three to eight percent slopes) consists of poorly drained soils of upland depressions and at the footslopes of drainageways. The surface organic layer is dark gray silt loam, seven to nine inches thick. The subsoil is gray, mottled heavy silt loam, 26 to 39 inches thick. The substratum is greenish-gray, highly micaceous saprolite of loam texture. The permeability of this series is moderately slow to moderate (0.2 to 0.63 in the per hour) in the surface layer and slow (less than 0.2 inch per hour) throughout the remainder of the profile. The soil reaction ranges from very strongly acid to strongly acid (pH, 4.5 to 5.5) in all horizons.[56]

The Comus silt loam series (CnB, local alluvium, zero to three percent slopes) is a deep, well-drained soil of flood plains and depressions. These soils may occasionally flood during wet seasons. The organic surface layer is dark grayish-brown silt loam, 10 to 12 inches thick. The subsoil is yellowish-brown silt loam, 24 to 42 inches thick. The substratum is weakly stratified yellowish-brown silt loam. The permeability is moderate (0.63 to two inches per hour) in the surface layer and moderately rapid to rapid (two to 6.3 inches per hour) in the subsoil. No permeability measurement for the substratum is available. The soil reaction ranges from strongly acid (pH, 5.1 to 5.5) in the surface layer to very strongly acid (pH, 4.5 to 5.0) in the subsoil.[56]

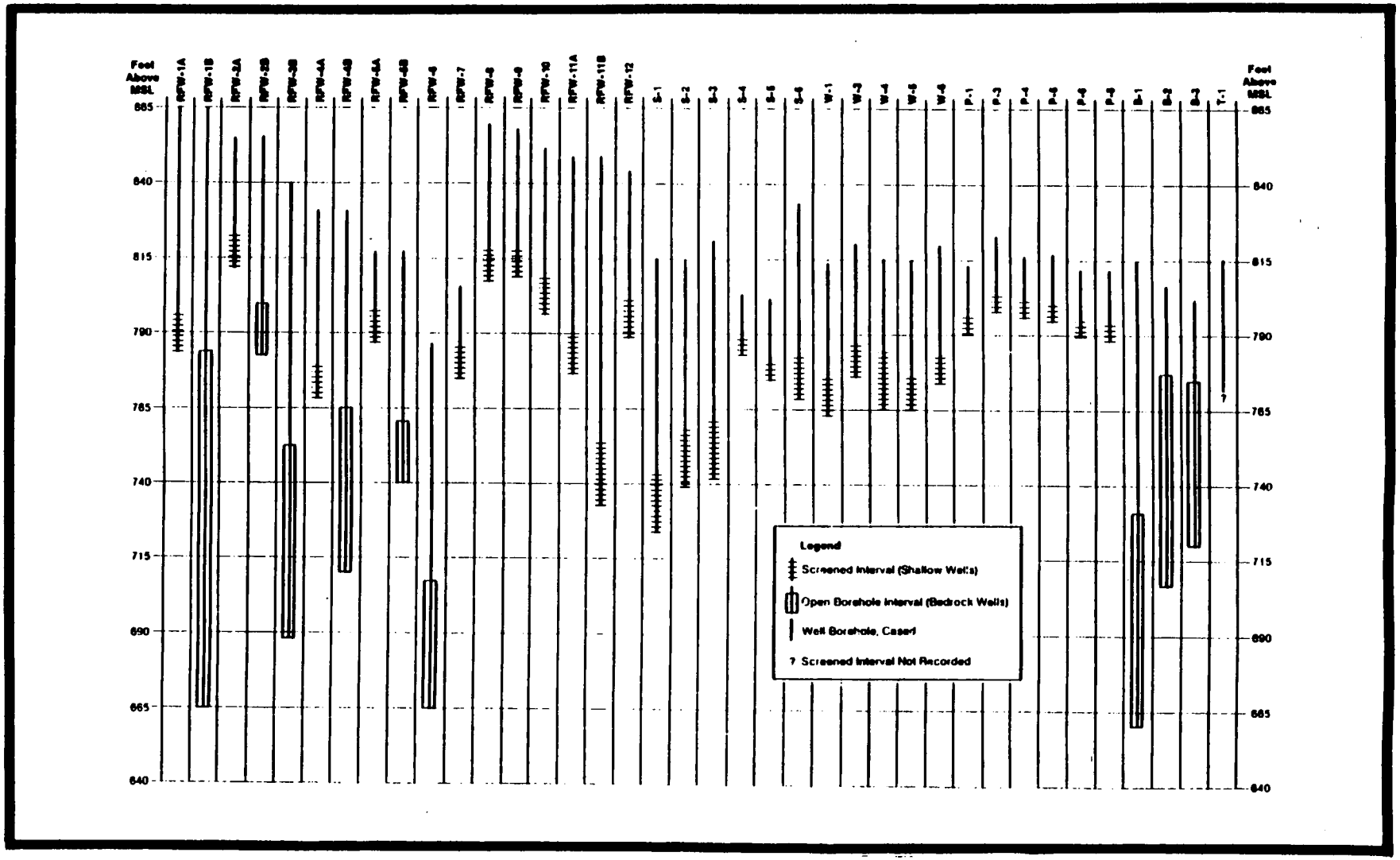
3.3.3 Groundwater

All the lithologic units in the study area are water bearing. Groundwater occurs under water-table conditions. The recharge of groundwater is through the infiltration of precipitation. Precipitation that is not absorbed flows as runoff to streams and wetlands or is returned to the atmosphere through evaporation. No wetlands more than five acres in size are located within three downstream miles of the site. Groundwater discharge is to pumping wells and to the baseflow in streams and rivers. Groundwater storage and movement occur within the fracture-induced secondary porosity of the crystalline rocks and the primary intergranular porosity of the overlying saprolite. Because of the lack of discrete hydrologic units, the geologic units in the study area are considered to be hydrologically interconnected.[54,55]

The Wakefield marble is an important aquifer despite its small geographic extent. Solution cavities and the widening of joints by dissolution of the marble contribute to greater secondary porosity than in the surrounding Wissahickon Formation. The yields of 27 wells drilled into the Wakefield marble range from 0 to several hundred gpm, with an average of 106 gpm. The maximum reported yield is 575 gpm. The average well depth of 35 wells drilled into this is 139 feet. Specific capacity has been measured as 8.2 gpm per foot of drawdown in one well in this unit. The static water level at the tim that these data were collected was 34.0 feet below top of casing in one well.[55]

The Wissahickon Formation is a reliable source of groundwater in small to moderate supplies and is an important aquifer in the region. Yields from 120 wells drilled into this unit range from 0 to 300 gpm, with a median of 16 gpm. The depths of these wells range from 21 to 645 feet and average approximately 100 feet.[55]

A hydrogeologic investigation was conducted at the site in 1988. Monitoring wells were installed such that the potentiometric surface of groundwater in the Wissahickon Formation bedrock and the overlying saprolite mantle could be measured (see figure 3.3, page 3-10). Data from the monitoring wells indicate that the saprolite ranges in depth from 30 to 96 feet below surface.[6,27,34]



Source: Roy F. Weston, Inc., Environmental Investigation Report, Black and Decker, Incorporated, Hampstead, Maryland Facility. April 1989.

FIGURE 3.3

MONITORING WELL CHARACTERISTICS
BLACK AND DECKER SITE
Carroll County, Maryland

NUS CORPORATION

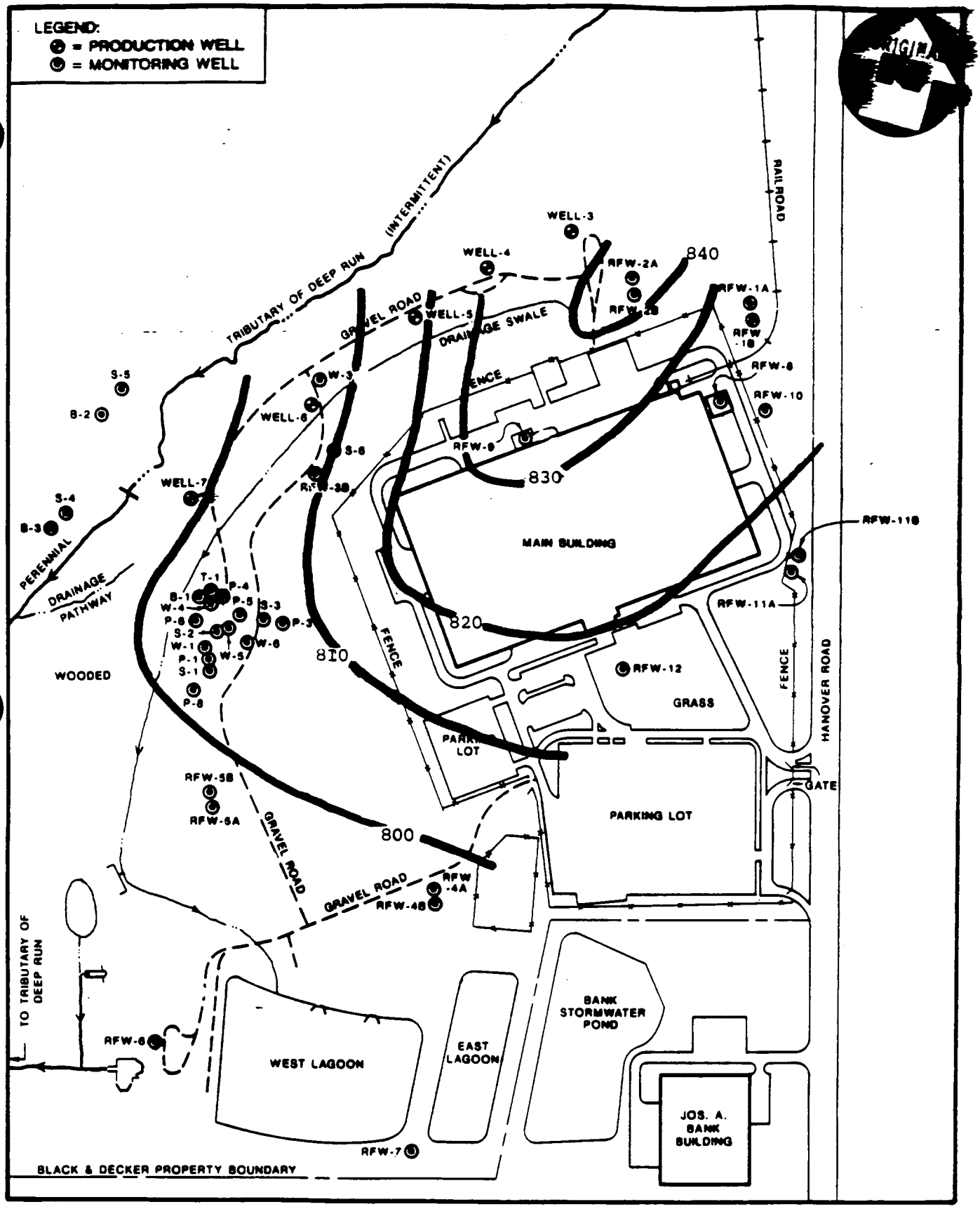
The yields that were obtained from the shallow wells were generally greater than 10 gpm. Within the underlying bedrock, the yields ranged from less than 0.5 to 60 gpm. Typically, groundwater entered these wells from one or two fractures or quartz-filled veins. The fractures commonly occur within 50 feet of the bedrock-saprolite interface. Well logs for all monitoring wells located at the site are located in appendices L and X. Seven production wells are located at the site (see table 1, appendix G). The locations for production well nos. 8 and 9 are unavailable at this time. These wells are cased with open borehole completions. These wells range in depth from 125 to 302 feet. The range of depths of the cased portions of these wells is from 58 to 123 feet.[6,22,27,34]

Data from monitoring wells were used to construct groundwater contour elevation maps for water obtained from the saprolite zone (see figure 3.4, page 3-12) and from water obtained from the bedrock (see figure 3.5, page 3-13). The results indicate that, in both sets of wells, the groundwater elevation surface tends to mirror the topography of the land surface. Thus, the two units are hydrologically interconnected. In addition, the site appears to occupy a groundwater divide. This groundwater ridge has a northeast-southwest trend that approximates topography at the site. The flow of groundwater under the site is predominantly to the southwest, with an eastward flow direction under a small portion of the northeastern corner of the site. The depth to groundwater, as determined from monitoring wells, is an average of approximately 13.4 feet below ground surface, with a range of 8 to 20 feet.[6,27,34]

No wetlands more than five acres in size are located within the study area.[53]

3.4 Climate and Meteorology

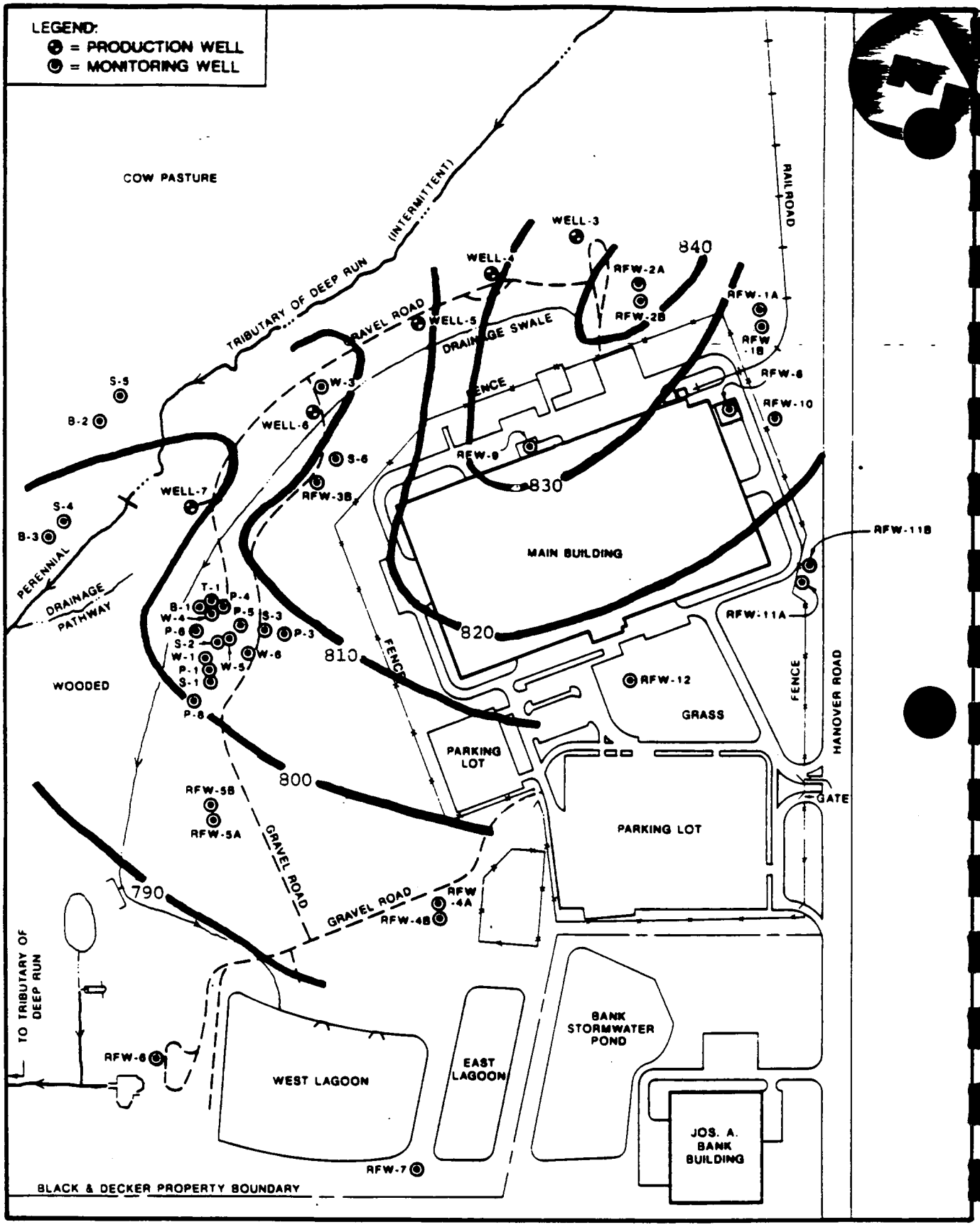
The subject site is located within the humid continental climate of the United States. The annual temperature for Baltimore, Maryland, which is located approximately 25 miles southeast of the site, is 55.3°F. The average monthly temperatures range from 33.2°F in December to 78.7°F in July. The average annual precipitation for Baltimore, Maryland is 51.03 inches. The average monthly precipitation ranges from 1.31 inches in July to 6.72 inches in December. The mean annual lake evaporation for the area of the site is approximately 19.03 inches. The net annual precipitation for the site area is approximately 19.03 inches. A 2-year, 24-hour rainfall will produce approximately 3.2 inches of rain.[57,58,59,60]



Source: Roy F. Weston, Inc., Environmental Investigation Report, Black and Decker, Incorporated, Hampstead, Maryland Facility. April 1989.

FIGURE 3.4

SHALLOW GROUNDWATER ELEVATION CONTOUR MAP
BLACK AND DECKER SITE
Carroll County, Maryland



Source: Roy F. Weston, Inc., Environmental Investigation Report, Black and Decker, Incorporated, Hampstead, Maryland Facility. April 1989.

FIGURE 2-5

DEEP GROUNDWATER CONTOUR ELEVATION MAP
BLACK AND DECKER SITE
Carroll County, Maryland

3.5 Land Use

The site is surrounded by a combination of residential, commercial, and farming areas. Black and Decker leases the land directly north and west of the facility to local dairy farmers. The town of Hampstead, Maryland lies immediately north of the subject site. A shopping center is located east of the facility. The Joseph A. Bank building, which is adjacent to the southeastern corner of the property, is a clothier warehouse and distribution center. General land use south of the property is primarily rural residential.[1,4,5]

Dairy and agricultural farming areas surround the site within the three-mile radius. Several small rural towns can also be found in this area. State Route 30 bisects the three-mile radius directly east of the Black and Decker facility and is aligned north to south. State Route 89 runs along the northwestern border of the property in a northeast to southwest direction. The Carroll and Baltimore County line bisects the radius approximately 0.6 mile east of the site.[1,4,5]

3.6 Population Distribution

The estimated population within a 1/4-mile radius of the site is 0 persons; within a 1/4- to 1/2-mile radius and a 1/2- to 1-mile radius, the estimated populations are 297 and 1,855 persons, respectively. The estimated population within a 1- to 2-mile radius of the subject site is 1,848 persons. Within a 2- to 3-mile radius of the subject site, the population is 2,140 persons; within a 3- to 4-mile radius of the site, the population is 2,585 persons. The total population within a 4-mile radius of the site is approximately 8,725 persons. These figures are based on a house count of homes in the area multiplied by the number of persons per household for Carroll County, Maryland and on information from CHWD.[1,48,51]

3.7 Critical Environments

Except for occasional transient individuals, no federally listed or proposed endangered or threatened species are known to exist in the study area.[61]

SECTION 4

4.0 WASTE TYPES AND QUANTITIES

The subject facility manufactured power hand tools from 1952 to 1987. Numerous paints, oils, and solvents were utilized in Black and Decker's manufacturing processes. In correspondence to MD DHMH, Black and Decker reported using 20,000 gallons per year of TCE and 7,200 gallons per year of 1,1,1-TCEA.[6,62]

According to reports from several Black and Decker consultants, various waste materials were disposed in scattered areas on the facility property. Off-specification products were buried in an area north of the plant (see figure 2.3, page 2-12, zone D); fill and debris were encountered in excavations in this zone. Heat-treating furnace parts and residues were allegedly deposited in areas west and south of the plant (zones E and C). Plant refuse was landfilled in an area west of the plant (zone B); scrap metal, bricks, and burnt wood were found during test pits excavated in this zone. Another area (zone F) was possibly used as a burn area for waste materials.[6,22,27]

Two on-site lagoons have been used by the facility for wastewater treatment since 1978. The surge basin or east lagoon is six feet deep and two acres in size; it can hold four million gallons. The west lagoon is 13 to 14 feet deep and 8 acres in size; it can hold 10 to 12 million gallons.[4,5,6]

Information from recent hazardous waste reports and manifests and a state inspection report indicates that the wastes currently generated include TCE (F001), 1,1,1-TCEA (F001), mineral spirits (D001), and used oils (D001) (see appendices M and Y). These waste codes were derived from recent hazardous waste reports and may not represent all wastes present on site. Waste quantities generated in 1989 were as follows: TCE, 14,950 pounds; 1,1,1-TCEA, 4,000 pounds; solvents, 2,000 pounds; and used oil, 1,200 pounds. According to an MDE report, wastes generated in the past included waste barium compounds, polychlorinated biphenyls, and toluene, in addition to the above-mentioned waste substances. Information concerning waste generation and handling before 1982 is unavailable.[8,29,30,36,63]

FIT 3 sampling in February 1991 revealed elevated levels of organic compounds in on-site groundwater, including 1,1-dichloroethene (up to 7 ppb), 1,1-dichloroethane (up to 8 ppb), total 1,2-dichloroethene (up to 29 ppb), 1,1,1-TCEA (up to 37 ppb), TCE (up to 12,000 ppb), and PCE (up to 1,800 pb). Sampling of surface water from the west lagoon, outfall no. 001, and the Banks building outfall indicated levels of TCE at 18 ppb, 15 ppb, and 7 ppb, respectively. Elevated levels of TCE and PCE were detected in surface water (TCE, 6 ppb and PCE, 89 ppb) and sediment (TCE, 5 ppb and PCE, 46 ppb) obtained from the west lagoon underdrain. Samples from Deep Run Tributary revealed levels of TCE (7 ppb) and PCE (5 ppb) in surface water and TCE (2 ppb) in sediments.

Sampling of domestic wells east of the subject site indicated elevated levels of 1,1,1-TCEA (4 ppb), TCE (up to 2 ppb), and PCE (0.9 ppb). The Leister dairy barn well was found to contain 4 ppb PCE.

SECTION 6

5.0 FIELD TRIP REPORT

Orig (Red)

5.1 Summary

On Tuesday and Wednesday, February 26 and 27, 1991, NUS FIT 3 members Linda Ciarletta, Janis Hottinger, Thomas Smith, Steven Sottung, Paul Davis, John Pugh, Ronald Dabravalskie, Thomas Ferrie, and Mary Williams performed a site inspection of the Black and Decker site in Carroll County, Hampstead, Maryland. Weather conditions on both days were partly sunny, with temperatures in the mid-30s. On Tuesday, February 26, 1991, FIT 3 was accompanied by Lynnette Elser, of EPA, and Phyllis Buff, of MDE. FIT 3 was accompanied on both days by J. David Cairns, Black and Decker's consultant from Roy F. Weston, Incorporated. Access to the site and permission to take photographs were granted by LaVere Grimes, the facility manager.

The total number of samples obtained was 34 aqueous, 13 solids, and 8 filtered, including blanks and duplicates (see figures 5.1 and 5.2, pages 5-5 and 5-6). Photographs were taken on site (see figures 5.4 and 5.5, pages 5-10 and 5-11, and the photograph log, section 5.5).

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Lynnette Elser
Site Investigation Officer
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-8333

LaVere Grimes
Black and Decker Facility Manager
Black and Decker (U.S.), Incorporated
Facilities Group
626 Hanover Pike
Hampstead, MD 21074
(301) 239-5555

Phyllis Buff
Groundwater Investigation Division
MDE
2500 Broening Highway
Baltimore, MD 21224
(301) 631-3493

Arlene Weiner
Groundwater Investigation Division
MDE
2500 Broening Highway
Baltimore MD 21224
(301) 631-3493

John Riley
Hampstead Water Department
1034 Carroll Street
Hampstead, MD 21074
(301) 374-2761

George Vaughn
Home Owner
511 Houcksville Road
Hampstead, MD 21074
(301) 374-9218

5.2.1 Prior to Field Trip (continued)

John Vaughn
Home Owner
513 Houcksville Road
Hampstead, MD 21074
(301) 374-1366

Nick Scholtes
Home Owner
601 Hanover Road
Hampstead, MD 21074
(301) 374-9282

Robert Basler
Home Owner
4321 Hampshire Road
Hampstead, MD 21074
(301) 374-6436

Stanley Gilmore
Home Owner
716 Houcksville Road
Hampstead, MD 21074
(301) 374-9218

Carroll County Christian Center, Incorporated
802 South Main Street
Hampstead, MD 21074
(301) 374-2000

Carroll Leister
Home Owner
717 Houcksville Road
Hampstead, MD 21074
(301) 374-9218

5.2.2 At the Site

Lynnette Elser
Site Investigation Officer
U. S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-8333

LaVere Grimes
Black and Decker Facility Manager
Black and Decker (U.S.), Incorporated
Facilities Group
626 Hanover Pike
Hampstead, MD 21074
(301) 239-5555

J. David Cairns
Geologist
Roy F. Weston, Incorporated
Weston Way
West Chester, PA 19380
(215) 430-7255

Phyllis Buff
Groundwater Investigation Division
MDE
2500 Broening Highway
Baltimore, MD 21224
(301) 631-3493

5.2.3 Water Supply Well Information

The following off-site wells were sampled during the site inspection. For the locations of these wells, see figure 5.3 (page 5-7). Well questionnaires were completed for all the home wells (see appendix Z).

TDD NUMBER F3-9101-19

EPA NUMBER MD-370

5.3 SAMPLE LOG

SITE NAME Black + Decker

TRAFFIC REPORTS			SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FELD MEASUREMENTS
Organic	Inorganic	High Hazard							
CDV72	MCE078	—	PW-22	AQ	clear, odorless	Hampstead Water Dept. well head no. 22 Pre-treatment	public potable supply	—	—

TDD NUMBER F3-9101-19

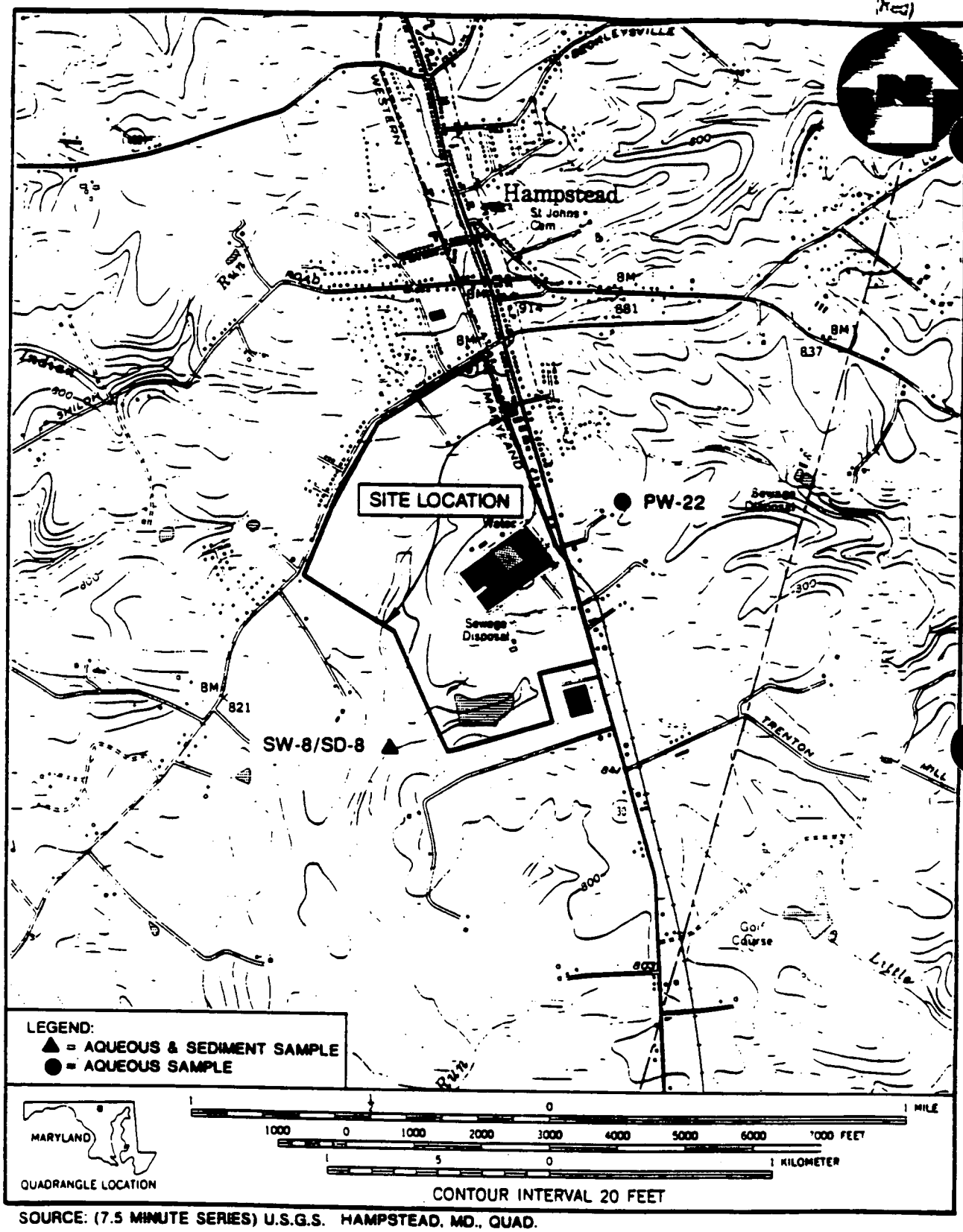
EPA NUMBER MD-370

5.3 SAMPLE LOG

SITE NAME Black + Decker

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CDN24	MCED24	—	MW-2A	AQ	Rust colored odorless Depth to water 17 ft.	RFW-2A, Northwest of facility, 6" outer casing, 4" inner PVC casing Total Depth: 36 ft.	area groundwater used as potable supply well locked	—	—
CDN25	MCED25	—	MW-2B	AQ	reddish brown odorless Depth to water 12ft	RFW-2B, Northwest of facility; 6" metal casing Total Depth. 77ft	area groundwater used as potable supply well locked	—	—
CDN26	MCED26	—	MW-8	AQ	Light brown Depth to water: odorless 31.5ft oily sheen on top	RFW-8, Adjacent to northeast corner of building, 6" outer casing, 4" PVC inner casing former tank farm #1 area Total Depth: 56ft.	area groundwater used as potable supply well locked	—	—
CDN27	MCED27	—	MW-9	AQ	gray/brown with white film odorless Depth to water: 23ft.	RFW-9, Former Tank Farm #2 area, Adjacent to north western side of building 6" outer casing, 4" PVC inner casing Total Depth: 52.5ft.	area groundwater used as potable supply well locked	—	—
CDN28	MCED28	—	MW-B1	AQ	Rust-colored with sediment odorless Depth to water 12 ft.	B-1, West of building, 6" metal casing Total Depth. 113ft.	area groundwater used as potable supply well locked	—	—
CDN29	MCED29	—	MW-12	AQ	clear, odorless Depth to water 20ft	RFW-12, In grassy area outside front door of building, 4" PVC casing Total Depth. 51ft.	area groundwater used as potable supply well locked	—	—
CDN30	MCED30	—	MW-10	AQ	Duplicate of MW-8	Same as MW-8	same as MW-8	—	—
—	MCED31	—	MW-2AF	AQ	Same as MW-2A	Same as MW-2A	Same as MW-2A	—	—
—	MCED32	—	MW-2BF	AQ	Same as MW-2B	Same as MW-2B	same as MW-2B	—	—

ORIGINAL



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. HAMPSTEAD, MD., QUAD.

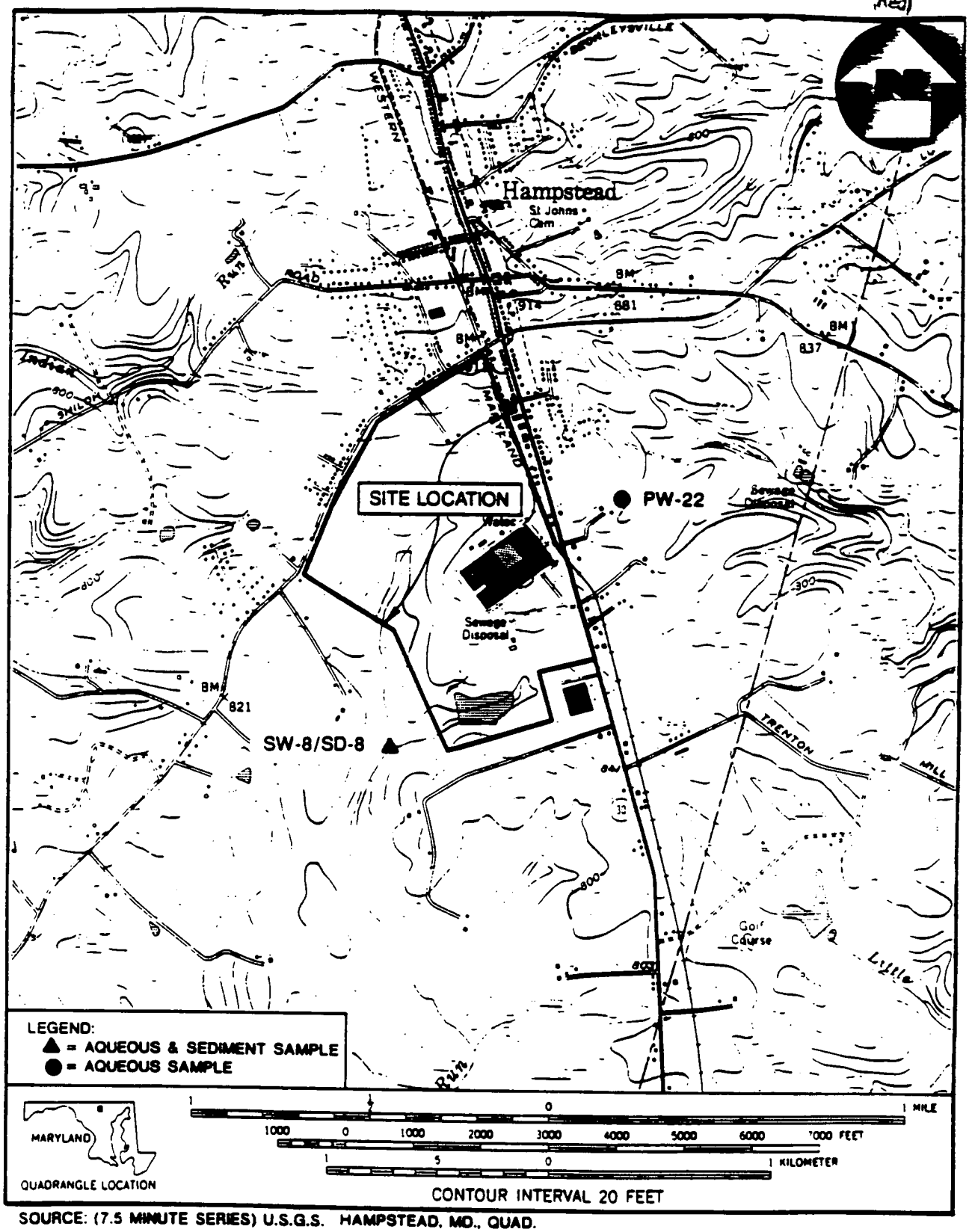
OFF-SITE SAMPLE LOCATION MAP

BLACK & DECKER

SCALE 1: 24000

FIGURE 5.2

NUS CORPORATION



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. HAMPSTEAD, MD., QUAD.

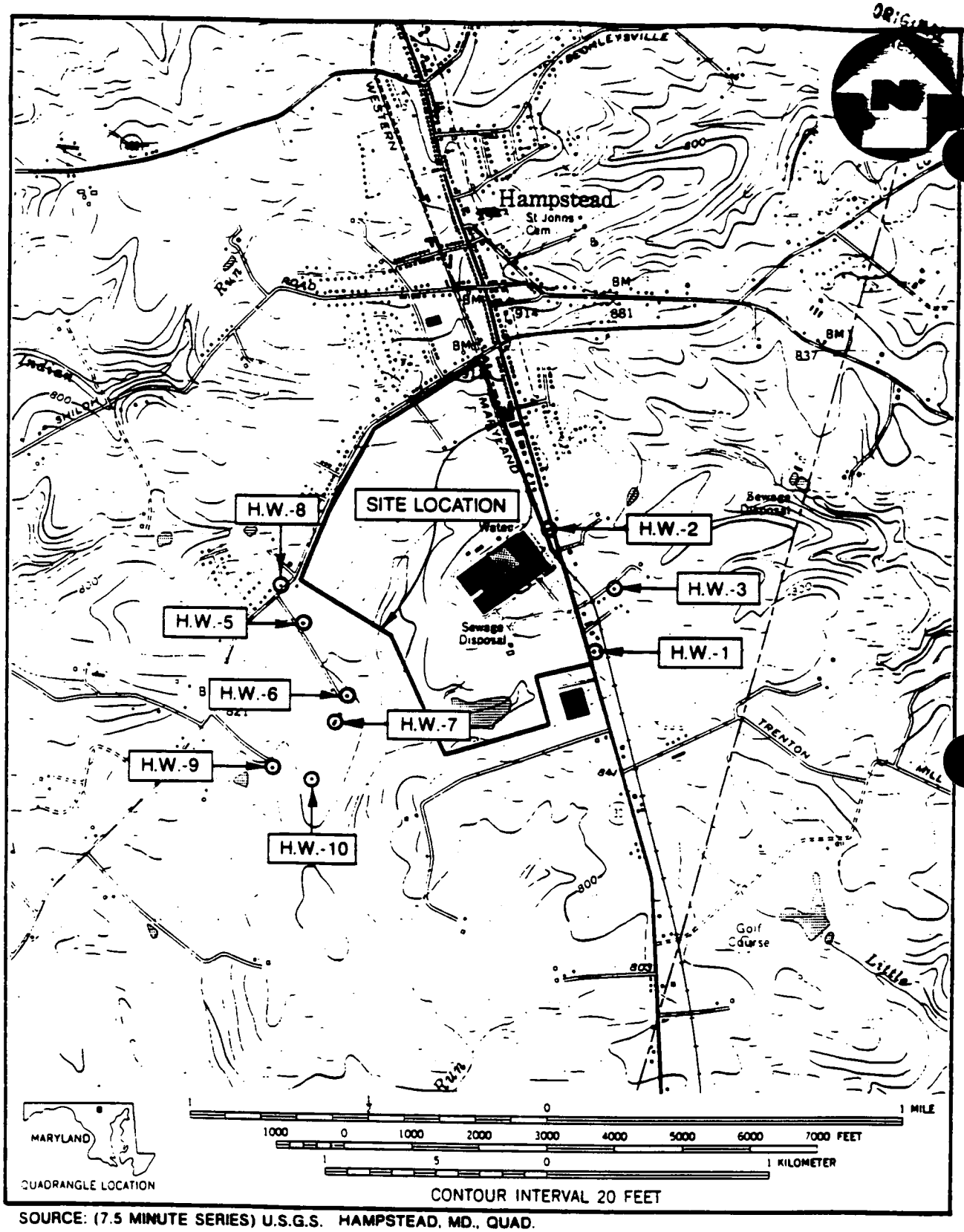
OFF-SITE SAMPLE LOCATION MAP

BLACK & DECKER

SCALE 1: 24000

FIGURE 5.2

NUS CORPORATION



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. HAMPSTEAD, MD., QUAD.

HOME-WELL SAMPLE LOCATION MAP

BLACK & DECKER

SCALE 1: 24000

FIGURE 5.3

NUS CORPORATION

5.4 Site Observations

- The OVA was set on the X1 scale. The background reading was 1.2 ppm. No readings above background were recorded.

- The HNU was set on the 0 to 20 scale; the 0 to 200 scale was used when necessary. The background reading was 0.2 to 0.4 ppm. A reading of 4.0 to 5.0 ppm above background was recorded at MW-B1. A reading of 120 ppm above background was recorded at MW-12.

- The mini-alert was set on the X1 position; no readings above background were recorded.

- Access to the facility building and the areas immediately surrounding the building was restricted by a six-foot-high fence and a front gate monitored by security personnel.

- Fencing secured the industrial waste and sewage treatment plants.

- Access to the remaining portions of the site was unrestricted. Barbed-wire fencing surrounded these sections; however, the majority of the fenceline was in need of repair.

- A concrete pad was located adjacent to the northern corner of the facility's main building. A TCE storage tank was formerly situated on this pad. The ground sloped downward from the concrete pad to a stormwater drain.

- The treatment plant discharge into the west lagoon was noted to have a strong chlorine odor.

- A drainage swale is located northwest of the main building and flows in a southwestward direction. The swale continues west of the facility, flowing in a southward direction. The swale then makes a 90-degree angle at a flood-control structure and flows southeastwardly into the west lagoon. The swale was dry at the time of the FIT 3 site visit.

- The land immediately surrounding the facility was lightly wooded with some meadows. The outer boundaries of the property consist of dairy pastures.

- A concrete culvert in the southwestern corner of the property received effluent from two separate discharge pipes. The discharges from these pipes joined to form a stream that flowed off site and into a tributary of Deep Run.

- Effluent from the west lagoon dam underdrain formed a stream that joined the stream from the outfall discharge approximately 60 feet west of the concrete culvert.

- A tributary of Deep Run flows in a southwestward direction northwest of the subject facility. The tributary is intermittent north of the facility and becomes perennial west of the facility.

- A drainage ditch joined the perennial section of the Deep Run tributary southwest of the facility building.

- The monitoring wells sampled by FIT 3 were located at various points surrounding the facility.

- The monitoring wells were capped and locked. A consultant from Weston unlocked the wells for sampling. The wells had six-inch steel outer casings. Some of the wells had four-inch polyvinyl chloride inner casings. Details of the wells are as follows:

Monitoring Well Identification	Height of Stickup (inches)	Total Depth (feet) (from top of casing)	Depth to Water (feet) (from top of casing)	Inner Casing Diameter (inches)	Volume Purged (gallons)
MW-2A	18	36	12	4	48
MW-2B	24	77	12	none	288
MW-8	24	56	31.5	4	48
MW-9	24	50.5	23	4	55
MW-B1	19	113	12	none	446
MW-12	none	51	20	4	60

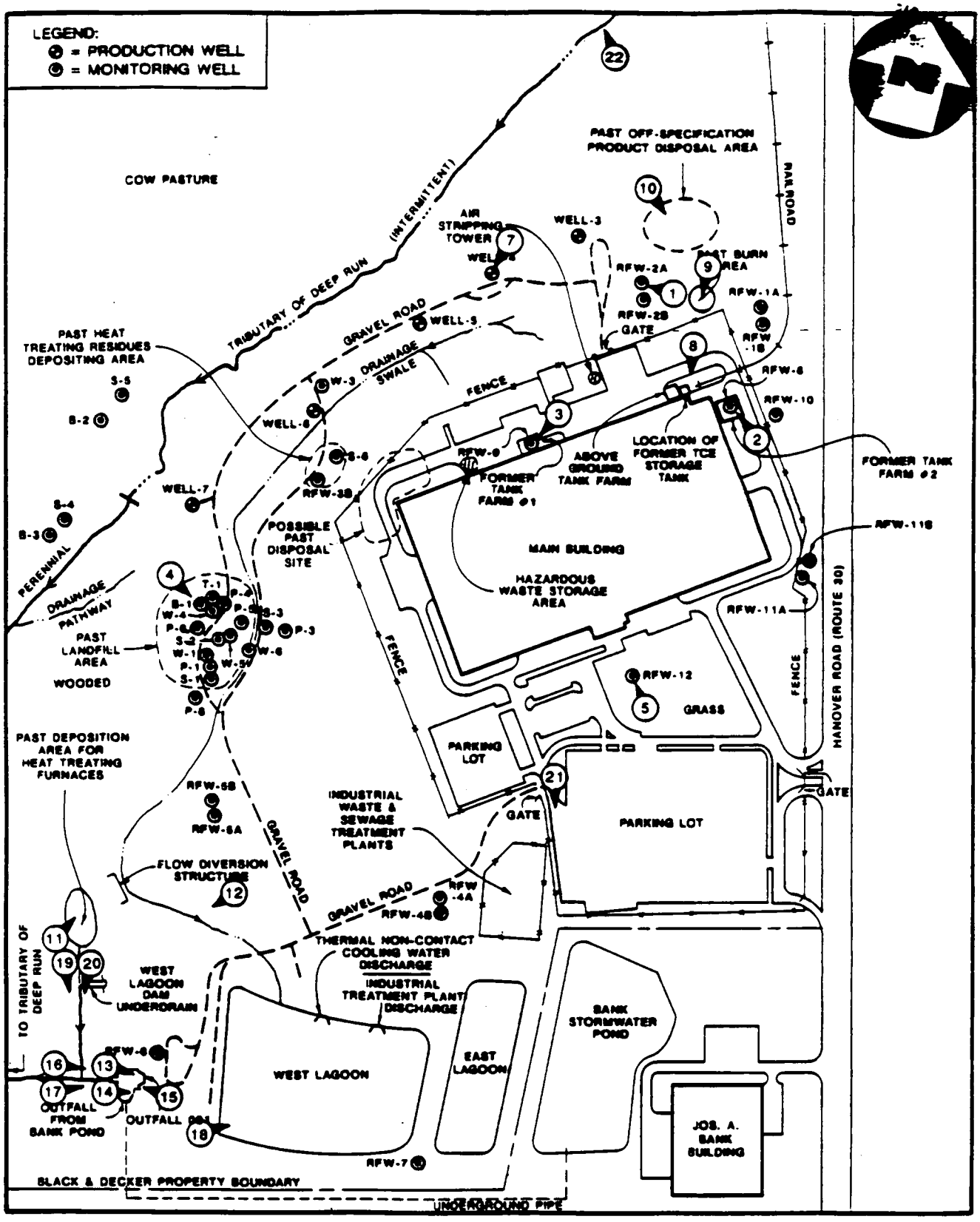


PHOTO LOCATION MAP

BLACK & DECKER

(NO SCALE)

FIGURE 5.4

NUS CORPORATION

TDD NUMBER F3-9101-19
EPA NUMBER MD-370

5.3 SAMPLE LOG

SITE NAME Black + Decker

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CDN36	MCED42	—	PW-7	AQ	Clear, colorless	Black + Decker well head no 7 pretreatment	Black + Decker employees' potable supply	—	—
CDN36	MCED43	—	PW 8	AQ	Duplicate of PW-1	same location as PW 7	same as PW-4	—	—
—	MCED44		Blank-F	AQ	Filtered Blank	—	—	—	—
CDN37	MCED45	—	AQ-Blk-1	AQ	Field blank for first day of sampling	field blank - first day of sampling			
CDN39	MCED46	—	S-1 (30")	SOL	Subsurface soil. 30". Dry, medium brown, few rocks	30Ft from concrete pad of former TCE storage tank.	on-site restricted access	—	—
CDN40	MCED47	—	S-2 (36")	SOL	Subsurface soil. 36". Dry, coarse Light red	North of facility building In past burn area	on-site unrestricted access	—	—
CDN41	MCED48	—	S-3 (3')	SOL	Subsurface soil. 3'. loosely packed clay red with brown	North of facility building In past off specification product disposal area	on-site unrestricted access	—	—
CDN42	MCED49	—	S-4 (2')	SOL	Subsurface soil. Brown/black Moist clay	2 ft. into soil embankment in past deposition area for heat-treating furnaces	on-site unrestricted access	—	—
CDN43	MCED50	—	S-Rock (2')	SOL	Subsurface soil. 2' Clay loam, reddish brown no rocks	In wooded area northwest of west keycon	on-site unrestricted access	—	—

5.4 Site Observations

- The OVA was set on the X1 scale. The background reading was 1.2 ppm. No readings above background were recorded.

- The HNU was set on the 0 to 20 scale; the 0 to 200 scale was used when necessary. The background reading was 0.2 to 0.4 ppm. A reading of 4.0 to 5.0 ppm above background was recorded at MW-B1. A reading of 120 ppm above background was recorded at MW-12.

- The mini-alert was set on the X1 position; no readings above background were recorded.

- Access to the facility building and the areas immediately surrounding the building was restricted by a six-foot-high fence and a front gate monitored by security personnel.

- Fencing secured the industrial waste and sewage treatment plants.

- Access to the remaining portions of the site was unrestricted. Barbed-wire fencing surrounded these sections; however, the majority of the fenceline was in need of repair.

- A concrete pad was located adjacent to the northern corner of the facility's main building. A TCE storage tank was formerly situated on this pad. The ground sloped downward from the concrete pad to a stormwater drain.

- The treatment plant discharge into the west lagoon was noted to have a strong chlorine odor.

- A drainage swale is located northwest of the main building and flows in a southwestward direction. The swale continues west of the facility, flowing in a southward direction. The swale then makes a 90-degree angle at a flood-control structure and flows southeastwardly into the west lagoon. The swale was dry at the time of the FIT 3 site visit.

- The land immediately surrounding the facility was lightly wooded with some meadows. The outer boundaries of the property consist of dairy pastures.

TDD NUMBER F3-9101-19

EPA NUMBER MD-370

5.3 SAMPLE LOG

SITE NAME Black + Decker

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CDN53	MCED60	—	Sd-5	SOL	Duplicate of Sd-4	Same location as Sd-4	Same as Sd-4	—	—
CDN54	MCED61	—	SW-6	AQ	Murky brown odorless	Intermittent portion of Deep Run tributary upgradient of site	on-site unrestricted access in dairy pasture	—	—
CDN55	MCED62	—	Sd-6	SOL	clayey some small pebbles	Same location as SW-6	on-site unrestricted access in dairy pasture	—	—
CDN56	MCED63	—	SW-7	AQ	clear, odorless	15 ft. downstream of confluence of perennial tributary of Deep Run + on-site drainage pathway	on-site unrestricted access in dairy pasture	—	—
CDN57	MCED64	—	Sd-7	SOL	dark silt with organic matter	Same location as SW-7	on-site unrestricted access in dairy pasture	—	—
CDN58	MCED65	—	SW-8	AQ	clear, odorless	20 ft. downstream from confluence of on-site outfall stream + on-site tributary	off-site unrestricted access, in dairy pasture	—	—
CDN59	MCED66	—	Sd-8	SOL	Med. brown some pebbles and organic matter	Same location as SW-8	off-site unrestricted access in dairy pasture	—	—
CDN60	MCED67	—	HW-1	AQ	clear, odorless	Scholte residence 601 Hanover Rd Hampstead, MD 21074	potable supply	—	—
CDN61	MCED68	—	HW-2	AQ	clear, odorless	Carroll County Christian Center 802 S. Main Hampstead, MD 21074	potable supply	—	—

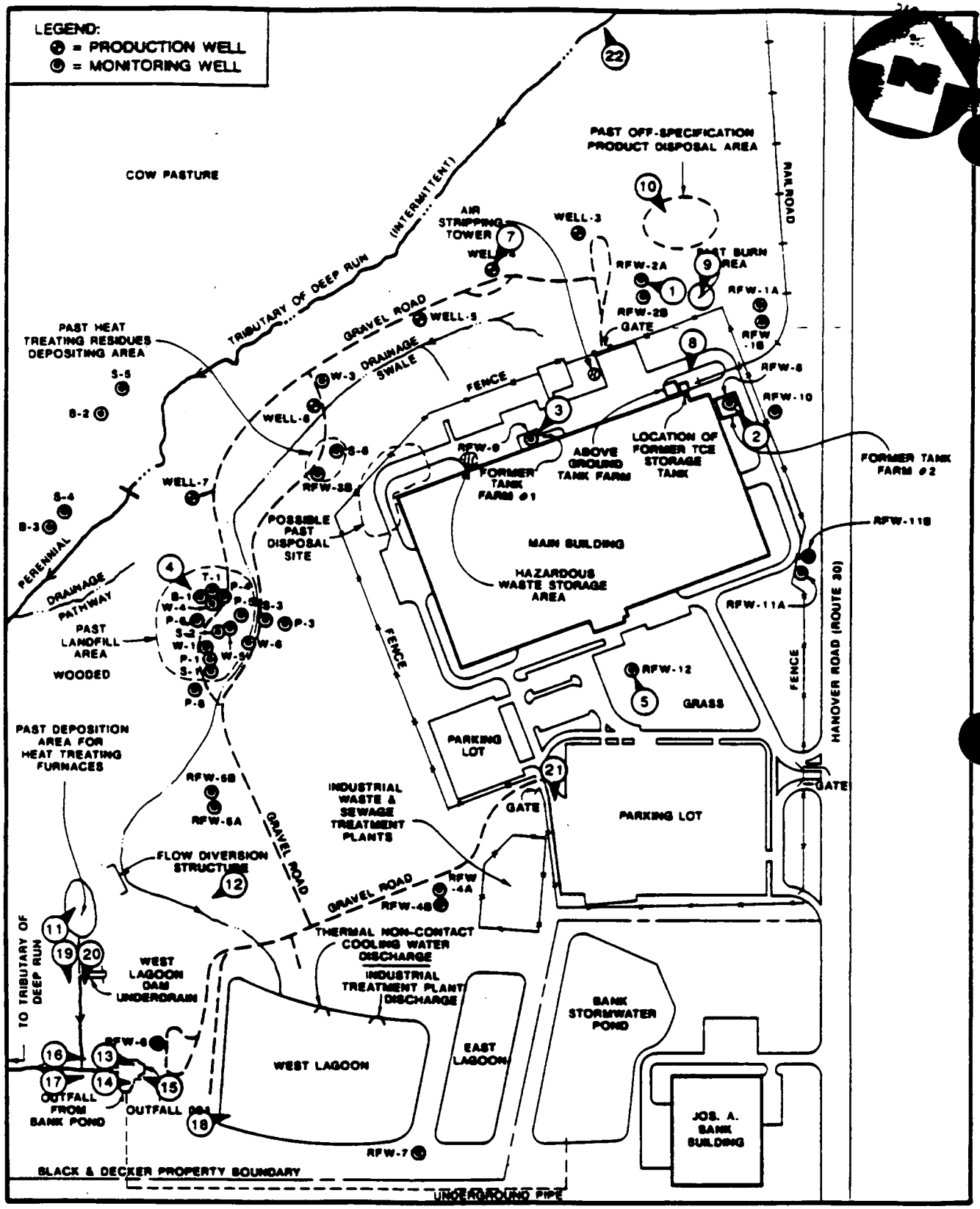
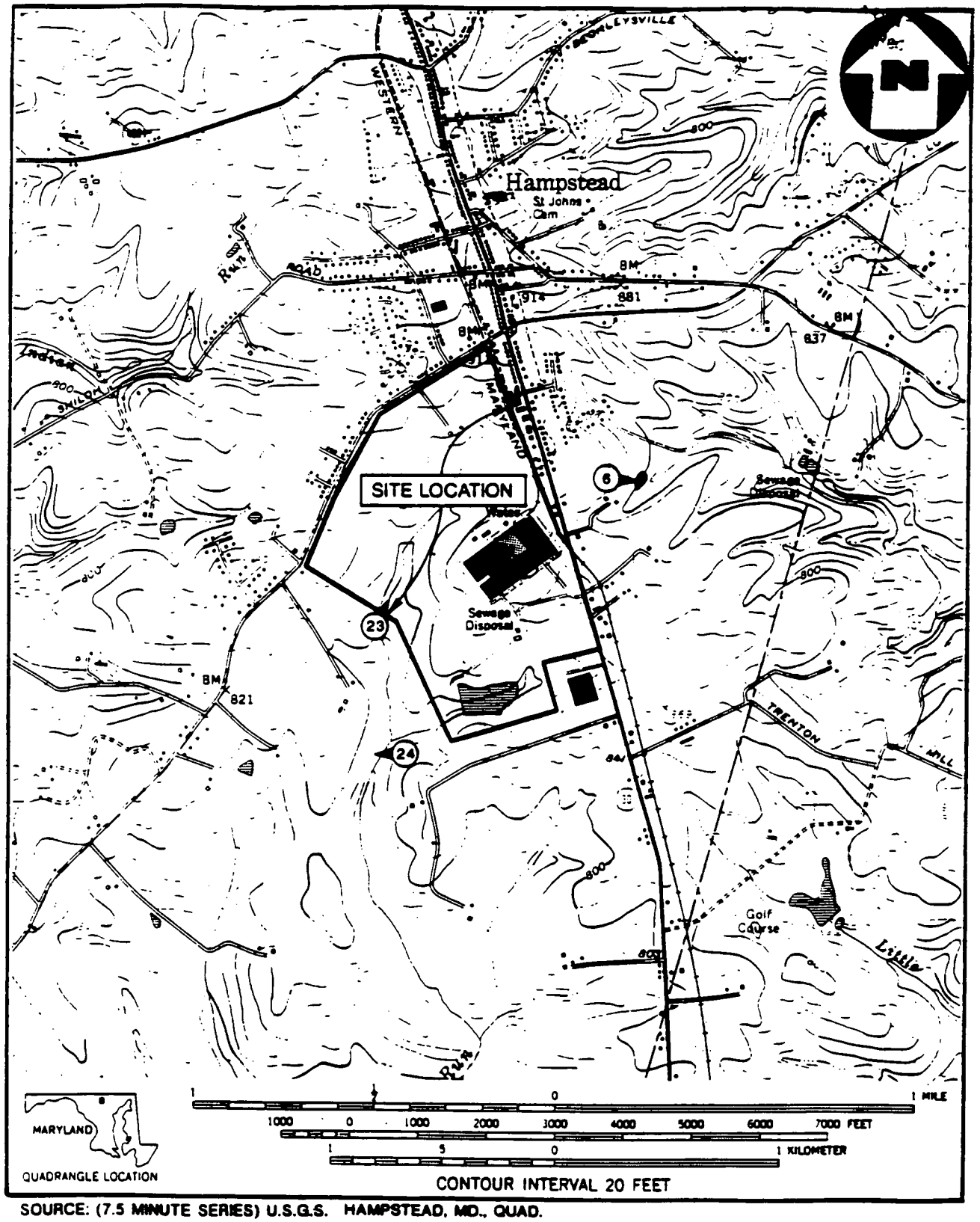


PHOTO LOCATION MAP
BLACK & DECKER

(NO SCALE)

FIGURE 5.4

NUS CORPORATION



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. HAMPSTEAD, MD., QUAD.

OFF-SITE PHOTO LOCATIONS

BLACK & DECKER

SCALE 1: 24000

FIGURE 5.5

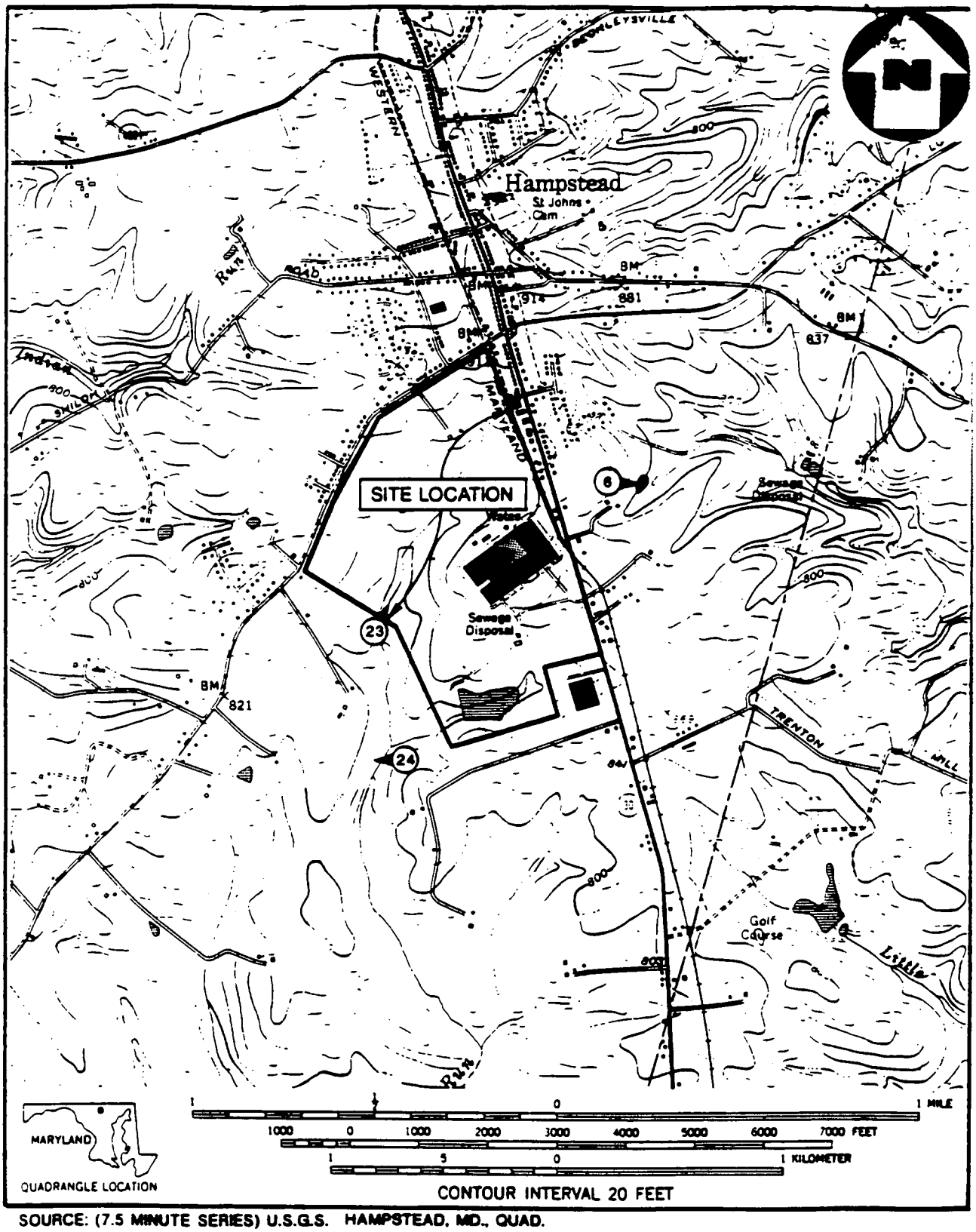
NUS CORPORATION

TDD NUMBER F3-9101-19
EPA NUMBER MD-370

5.3 SAMPLE LOG

SITE NAME Black + Decker

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FELD MEASUREMENTS
CDU72	MFE078	—	PW-22	AQ	clear, odorless	Hampstead Water Dept. well head no. 22 Pre-treatment	public potable supply	—	—



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. HAMPSTEAD, MD., QUAD.

OFF-SITE PHOTO LOCATIONS

BLACK & DECKER

SCALE 1: 24000

FIGURE 5.5

NUS CORPORATION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE: MD | 02 SITE NUMBER: 370

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☒	C. ☒
D. ☐	E. ☒	F. ☒

03 DISTANCE TO SITE
community well
A. 0.26 (mi)
potable supply wells
B. on site (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING
☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)
☐ D. NOT USED, UNUSABLE

02 POPULATION SERVED BY GROUND WATER: 9475

03 DISTANCE TO NEAREST DRINKING WATER WELL: <0.1 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
18.5 to 35.0 (ft)	southwest and northeast	18.5 to 35.0 (ft)	86,400 (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)
Homewell No. 2 - Well approximately 50 to 60 feet deep, high iron content, water not treated.

10 RECHARGE AREA
☒ YES ☐ NO
COMMENTS: Infiltration of precipitation

11 DISCHARGE AREA
☐ YES ☐ NO
COMMENTS: Pumping of wells and discharge to streams; intermittent streams occur at the site.

IV. SURFACE WATER

01 SURFACE WATER USE IN VICINITY (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
☐ C. COMMERCIAL, INDUSTRIAL
☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Piney Run	☐	0.9 (mi)
Deep Run	☒	1.9 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 2152 NO. OF PERSONS	B. 4000 NO. OF PERSONS	C. 6140 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: <0.1 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
1324	<0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)
Land use in the area is a combination of residential, commercial, and farming.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE: MD | 02 SITE NUMBER: 370

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} - 10^{-8} cm/sec ☐ B. 10^{-4} - 10^{-6} cm/sec ☒ C. 10^{-4} - 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) ☒ C. RELATIVELY PERMEABLE (10^{-2} - 10^{-6} cm/sec) ☐ D. VERY PERMEABLE (greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
22.0 to 50.0 (ft)	unknown (ft)	4.0 to 5.5	

06 NET PRECIPITATION	07 ONE-YEAR 24-HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
19.03 (in)	3.2 (in)	4 %	mainly southwest	5 %

09 FLOOD POTENTIAL

SITE IS IN N/A YEAR FLOOD PLAIN

10 N/A

☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5-acre minimum)

ESTUARINE	OTHER
A. N/A (mi)	B. >1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

N/A (mi)

ENDANGERED SPECIES:

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. <0.1 (mi)	B. <0.1 (mi)	C. N/A (mi)	D. <0.1 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site generally slopes toward the west and southwest toward a tributary of Deep Run. A small portion in the northeastern corner of the property slopes eastwardly.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See reference nos. 1,4,5,9,10,11,12,13,14,15,16,17,18, and 22

EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	[illegible]

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	30	Organics: Aquatec, Incorporated	currently
SURFACE WATER	8	Inorganics: GP Environmental Service	available
WASTE			
AIR			
RUNOFF			
SPILL		Organics: Aquatec, Incorporated	
SOIL	13	Inorganics: GP Environmental Service	currently
VEGETATION			available
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU	A background reading of 0.2 to 0.4 ppm was recorded. A reading of 4.0 to
	5.0 ppm above background was recorded at MW-B1. A reading of 120 ppm above
	background was recorded at MW-12.
Radiation Alert	No readings above background were recorded.
OVA	A background reading of 1.2 ppm was recorded. No readings above background were obtained.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF NUS FIT 3
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS NUS FIT 3

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

N/A

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See reference no. 9

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

II. CURRENT OWNER(S)

01 NAME	02 D & B NUMBER	04 SIC CODE
Black and Decker (U.S.), Incorporated		

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	05 CITY	06 STATE	07 ZIP CODE
626 Hanover Pike	Hampstead	MD	21074

PARENT COMPANY (If applicable)

09 NAME	11 D & B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE
N/A						

01 NAME	02 D & B NUMBER	04 SIC CODE
N/A		

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	05 CITY	06 STATE	07 ZIP CODE

09 NAME	11 D & B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE
N/A						

01 NAME	02 D & B NUMBER	04 SIC CODE
N/A		

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	05 CITY	06 STATE	07 ZIP CODE

09 NAME	11 D & B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE
N/A						

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D & B NUMBER	04 SIC CODE
Charles J. Miller		

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	05 CITY	06 STATE	07 ZIP CODE
unknown			

IV. ~~NEARBY~~ Previous OWNER(S) (If applicable, list most recent first)

09 NAME	11 D & B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE
Olin Henry Hoffman		unknown				

01 NAME	02 D & B NUMBER	04 SIC CODE
Herbert R. Wooden		

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	05 CITY	06 STATE	07 ZIP CODE
unknown			

09 NAME	11 D & B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE
N/A						

01 NAME	02 D & B NUMBER	04 SIC CODE
Ada and Nellie B. Wooden		

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	05 CITY	06 STATE	07 ZIP CODE
unknown			

09 NAME	11 D & B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE
N/A						

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See reference nos. 7 and 19

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME	02 D & B NUMBER
Black and Decker (U.S.), Incorporated	

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
626 Hanover Pike	

05 CITY	06 STATE	07 ZIP CODE
Hampstead	MD	21074

08 YEARS OF OPERATION	09 NAME OF OWNER
1952 - present	Black and Decker (U.S), Incorporated

OPERATOR'S PARENT COMPANY *(if applicable)*

10 NAME	11 D & B NUMBER
N/A	

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR (S) *(List most recent first; provide if different from owner)*

PREVIOUS OPERATOR'S PARENT COMPANIES *(if applicable)*

01 NAME	02 D & B NUMBER	10 NAME	11 D & B NUMBER
N/A		N/A	

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

01 NAME	02 D & B NUMBER	10 NAME	11 D & B NUMBER
N/A		N/A	

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

01 NAME	02 D & B NUMBER	10 NAME	11 D & B NUMBER
N/A		N/A	

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

IV. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

See reference nos. 7 and 19

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

II. ON-SITE GENERATOR

01 NAME	02 D & B NUMBER	
Black and Decker (U.S.), Incorporated		
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	
626 Hanover Pike		
05 CITY	06 STATE	07 ZIP CODE
Hampstead	MD	21074

III. OFF-SITE GENERATOR(S)

01 NAME	02 D & B NUMBER	01 NAME	02 D & B NUMBER
N/A		N/A	
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D & B NUMBER	01 NAME	02 D & B NUMBER
N/A		N/A	
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D & B NUMBER	01 NAME	02 D & B NUMBER
Ecoflo, Incorporated		N/A	
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
2750 Patterson Street			
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
Greensboro	NC 27407		
01 NAME	02 D & B NUMBER	01 NAME	02 D & B NUMBER
N/A		N/A	
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See reference nos. 7 and 19

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION ORIGINAL Red

01 STATE	02 SITE NUMBER
MD	370

II. PAST RESPONSE ACTIVITIES

01 ☐ A WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ B TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ C PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ D SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ E CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ F WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ G WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ H ON-SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ I IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ J IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ K IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ L ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ M EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ N CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ O EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ P CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ Q SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ P BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ Q CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ R BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ S GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ T BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ U GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ V FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ W LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ X AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ Y ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ Z POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported or observed

01 ☐ 3 OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
In May 1984, Black and Decker installed carbon filters on the facility potable water supply system as a result of VOC groundwater contamination detected in the plant's on-site production wells. An air stripper installed by BCM engineers in December 1986 was connected to the five on-site production wells. The treated water is the plant's sole potable water supply.

Black and Decker installed four in-line granular activated carbon filter (GAC) units in the Leister dairy barn on October 26, 1987 under MDE direction. The filter installation was a result of an agreement with Black and Decker to provide potable water to the farm due to PCE contamination.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See reference nos. 7 and 20

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

II. ENFORCEMENT INFORMATION

21 PAST REGULATORY ACTION ☒ YES ☐ NO

22 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

In April 1984, TCE and PCE contamination was detected in the groundwater at the Black and Decker facility. MD DHMH inspected the facility and conducted sampling several times in 1984. On September 17, 1984, Black and Decker entered into a Consent Order with MD DHMH. In compliance with this order, the company performed an investigation of groundwater conditions at the facility. Twenty-one MWs were installed on Black and Decker's property by Geraghty and Miller consultants in April 1985. Further evaluation of the contaminated groundwater was recommended by the consultant.

MD DHMH conducted home well sampling in the area surrounding the subject facility. Varying levels of PCE and TCE contamination were detected in several wells.

A soil investigation was requested by MD DHMH and performed by BCM Eastern, Incorporated in August 1986.

Black and Decker contracted Weston consultants in 1987 to perform an environmental investigation of the facility. Weston installed 17 MWs on the property as part of this investigation. A work plan for soil and groundwater remediation was submitted to MD HSWMA in December 1989 by Weston. Information indicates that this work plan has not yet been approved by MDE.

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

See reference nos. 7, 19 and 21

1. Roy F. Weston, Incorporated. Environmental Investigation Report, Black and Decker, Incorporated, Hampstead, Maryland Facility. April 1989.

2. NUS FIT 3. Site Inspection; sample results. TDD No. F3-9101-19, February 26 and 27, 1991.

3. Lewis, Charles, MD DHMH. Site Complaint No. SC-0-84-487. May 2, 1984.

4. United States Geological Survey. Hampstead, Maryland Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1974. Combined with Manchester, Maryland Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1971; Westminster, Maryland Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1979; and Lineboro, Maryland - Pennsylvania Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1974.

5. United States Department of Commerce, Bureau of the Census. 1980 Census of the Population. Volume 1 Characteristics of the Population, Chapter B General Population Characteristics. Part 40, Maryland. Issued August 1982.

6. Ramnarain, Pars, MDE Air Management Administration, with Linda Ciarletta, NUS FIT 3. Telecon. May 13, 1991.

7. Grimes, LaVere, Black and Decker Facilities Manager, with Linda Ciarletta, NUS FIT 3. Telecons. February5, March 18, April 18, 1991.

8. NUS Corporation, FIT 3. Non-sampling site reconnaissance; Logbook No. 2480. TDD No. F3-9101-19, January 31, 1991.

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12. United States Department of Commerce, United States Printing Office. Rainfall Frequency Atlas of the United States. Technical Paper No. 40, 1963.

13. United States Department of the Interior, Fish and Wildlife Service. Hampstead, Maryland Quadrangle, 7.5 Minute Series. National Wetlands Inventory. 1991.

14. Riley, John, City of Hampstead Water Department. NUS FIT 3 Water Supply Questionnaire. November 6, 1990.

15. Miller, K.M., Maryland Department of Natural Resources, Water Resources Administration to William Wentworth, NUS FIT 3. Correspondence. April 29, 1991.

16. Weaver, K.N., and E.T. Cleaves, J. Edwards, J.D. Glaser, Maryland Geological Survey. Geologic Map of Maryland. 1968

17. Meyer, G., and R.M. Beall, Maryland Department of Geology, Mines, and Water Resources. The Water Resources of Carroll and Frederick Counties. Bulletin 22, 1958.

18. United States Department of Agriculture, Soil Conservation Service. Soil Survey of Carroll County, Maryland. October 1969.

19. Maryland Department of the Environment, Hazardous and Solid Waste Management Administration. A Preliminary Assessment of the Black and Decker, Incorporated Site. February 1990.

20. Chambers, Barry, MDE, to Butch Dye, MDE. Memorandum. October 28, 1987.

21. BCM Eastern, Incorporated. Landfill Soil Sampling Report, BCM Project No. 00-5543-03. September 16, 1986.

22. NUS FIT 3. Home Well Surveys for Black and Decker Site. January 31, February 6 and 20, 1991.

(Red)

SECTION 6

6.0 REFERENCES FOR SECTIONS 1.0 THROUGH 5.0

1. United States Geological Survey. Hampstead, Maryland Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1974. Combined with Manchester, Maryland Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1971; Westminster, Maryland Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1979; and Lineboro, Maryland - Pennsylvania Quadrangle, 7.5 Minute Series. Topographic Map. 1953, photorevised 1974.

2. NUS Corporation, FIT 3. Non-sampling site reconnaissance; logbook no. 2480. TDD No. F3-9101-19, January 31, 1991.

3. NUS Corporation, FIT 3. Site inspection; site visit. TDD No. F3-9101-19, February 26 and 27, 1991.

4. Grimes, LaVere, Black and Decker Facilities Manager, with Linda Ciarletta, NUS FIT 3. Meeting. January 31, 1991.

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6. Roy F. Weston, Incorporated. Environmental Investigation Report, Black and Decker, Incorporated, Hampstead, Maryland Facility. April 1989.

7. Lewis, Charles, Maryland Department of Health and Mental Hygiene. Site Complaint No. SC-0-84-487. May 2, 1984.

8. Bailey, William, Plant Services Manager, Black and Decker, to James Metz, Maryland Department of Natural Resources, Water Resources Administration. Correspondence. May 4, 1977.

9. Maryland Department of the Environment, Hazardous and Solid Waste Management Administration. A Preliminary Assessment of the Black and Decker, Incorporated Site. February 1990.

10. Healy, David, Maryland Department of Health and Mental Hygiene. Memorandum for the Record. January 27, 1978.

11. United States Environmental Protection Agency. Notification of Hazardous Waste Activity. Form Approved OMB No. 158-S79016, September 10, 1980.

12. The Office of the Federal Register, National Archives and Records Administration. Code of Federal Regulations 40, Part 261. July 1, 1985.

13. United States Environmental Protection Agency. Hazardous Waste Permit Application - Consolidated Permits Program. Form Approved OMB No. 158-S80004, November 24, 1980.

14. Bulkin, Shirley, United States Environmental Protection Agency, to Daniel Noble, Black and Decker (U.S.) Incorporated. Correspondence. June 4, 1981.

15. Noren, Donald, Maryland Department of Health and Mental Hygiene, to E.G. Delcher, Black and Decker. Notice of Violation and Corrective Order No. 77-12-003 (By Consent). February 21, 1978.

16. Noren, Donald, Maryland Department of Health and Mental Hygiene, to LaVere Grimes, Black and Decker. Correspondence (Corrective Order). November 16, 1978.

17. Connelly, J.M., Black and Decker Facilities Manager, to Donald Noren, Maryland Department of Health and Mental Hygiene. Correspondence. January 11, 1979.

18. Metcalf and Eddy, Incorporated. Report to Black and Decker (U.S.) Incorporated on Sludge Characterization and Alternatives for Sludge Management and Disposal. July 30, 1979.

19. Gascoyne Laboratories, Incorporated. Certificate of Analysis. Report No. 1630, December 17, 1979.

20. Maryland Department of Health and Mental Hygiene, Trace Organics Laboratory. Volatile Organic Analyses. April 23, 1984.

21. Daniel, Robert, Maryland Department of Health and Mental Hygiene. Summary of Findings of Compliance Inspection of Black and Decker, Carroll County, Maryland. July 20, 1984.

22. Geraghty and Miller, Incorporated. Ground Water Conditions at the Black and Decker Plant, Hampstead, Maryland, Phase I. March 1985.

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25. Maryland Department of Health and Mental Hygiene. Consent Order C-0-85-022. September 17, 1984.

26. United States Environmental Protection Agency. RCRA Compliance Evaluation Inspection. August 16, 1985.

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28. Maryland Department of Health and Mental Hygiene. Report of Inspection to Determine Compliance with the TSCA Regulations. September 3, 1985.

29. Maryland Department of the Environment. 1989 Hazardous Waste Report. Form OMB No. 2050-0024, March 22, 1990.

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31. Maryland Department of Health and Mental Hygiene, Trace Organics Laboratory. Volatile Organic Analyses: December 17, 1985, January 9 and 24, 1986, February 21, 1986, August 7,11 and 18, 1986, October 3,7, and 24, 1986, November 7, 1986.

32. Maryland Department of Health and Mental Hygiene. Report of Observations. September 4, 1986.

33. Maryland Department of Health and Mental Hygiene, Trace Organics Laboratory. Volatile Organic Analyses. September 4, 1986.

34. BCM Eastern, Incorporated. Landfill Soil Sampling Report. BCM Project No. 00-5543-03, September 16, 1986.

35. Maryland Department of Health and Mental Hygiene, Trace Organics Laboratory. Volatile Organic Analyses. September 23, 1988, October 12, 1988, August 15, 1989, and May 29, 1990.

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43. McAlister, Randall, Roy F. Weston, Incorporated, to Arlene Weiner, Maryland Department of the Environment Hazardous and Solid Waste Management Administration. Correspondence. September 5, 1990.

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48. Riley, John, City of Hampstead Water Department. NUS FIT 3 Water Supply Questionaire. November 6, 1990.

49. Miller, K.M., Maryland Department of Natural Resources, Water Resources Administration, to William Wentworth, NUS FIT 3. Correspondence. April 29, 1991.

50. NUS Corporation, FIT 3. Home Well Surveys for Black and Decker site. TDD No. F3-9101-19. January 31, 1991, February 6 and 20, 1991.

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52. Dintaman, Ray, Maryland Tidewater Administration, with Linda Ciarletta, NUS FIT 3. Telecon. March 18, 1991.

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54. Weaver, K.N., and E.T. Cleaves, J. Edwards, J.D. Glaser, Maryland Geological Survey. Geologic Map of Maryland. 1968.

55. Meyer, G., and R.M. Beall, Maryland Department of Geology, Mines and Water Resources. The Water Resources of Carroll and Frederick Counties. Bulletin 22, 1958.

56. United States Department of Agriculture. Soil Conservation Service. Soil Survey of Carroll County, Maryland. October 1969.

57. National Oceanic and Atmospheric Administration. Climatography of the United States. No. 60, Climate of Maryland. 1977.

58. National Oceanic and Atmospheric Administration. Climatography of the United States. Local Climatological Data, Baltimore, Maryland. 1983.

59. United States Department of Commerce, National Climatic Center. Climatic Atlas of the United States. 1979.

60. United States Department of Commerce, United States Printing Office. Rainfall Frequency Atlas of the United States. Technical Paper No. 40, 1963.

61. Wolfin, John, United States Department of the Interior, Fish and Wildlife Service, to Garth Glenn, NUS FIT 3. Correspondence. March 19, 1991.

WESTON

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATING TO IDENTIFICATION
(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

DATA SUMMARY FORM: V O L A T I L E S 1

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation lim
(CRQL * Dilution Fact

CRQL	COMPOUND	CDN24		CDN25		CDN26		CDN27		CDN28		CDN29		CDN30		CDN31		CDN3
	Sample No.	CDN24		CDN25		CDN26		CDN27		CDN28		CDN29		CDN30		CDN31		CDN3
	Dilution Factor	1		1		1/10		1		11.4		1/76.9		12.5		1		1
	Location	MW-2A		MW-2B		MW-9 Field Dup. of CDN30		MW-7		MW-8I		MW-12		MW-10 Field Dup of CDN26		PW-3		PW-4
10	Chloromethane																	2
10	Bromomethane		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ	
10	*Vinyl Chloride																	
10	Chloroethane																	
5	*Methylene Chloride											3	B					
10	Acetone											3	B					
5	Carbon Disulfide												UJ					
5	*1,1-Dichloroethene											4	J			7		
5	1,1-Dichloroethane					4	J	8										
5	*Total 1,2-Dichloroethene					29		15		15	J	12		21	J	5	J	4
5	Chloroform											3	B					
5	*1,2-Dichloroethane																	
10	*2-Butanone																	
5	*1,1,1-Trichloroethane					7		3	J			2	J			37		15
5	*Carbon Tetrachloride																	
10	Vinyl Acetate								UJ		UJ		UJ		UJ		UJ	
5	Bromodichloromethane																	

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI

DATA SUMMARY FORM: VOLATILES 2

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit
(CRQL * Dilution Factor

CRQL	COMPOUND	Sample No. / Dilution Factor / Location		CDN24 / 1 / MW-2A		CDN25 / 1 / MW-2B		CDN26 / 1/10 / MW-8 Field Dup. of CDN30		CDN27 / 1 / MW-9		CDN28 / 11.4 / MW-8I		CDN29 / 1/76.9 / MW-12		CDN30 / 12.5 / MW-10 Field Dup. of CDN26		CDN31 / 1 / PW-3		CDN32 / 1 / PW-4	
5	*1,2-Dichloropropane																				
5	Cis-1,3-Dichloropropene														UJ						
5	Trichloroethene							1800	+	18		33	J	12000	+	2000		50		27	
5	Dibromochloromethane																				
5	1,1,2-Trichloroethane																				
5	*Benzene										UL				UL		UL		UL		UL
5	Trans-1,3-Dichloropropene																				
5	Bromoform																				
10	4-Methyl-2-pentanone																				
10	2-Hexanone																				
5	*Tetrachloroethene							36		19		1900		210	+ J	35	J			2	J
5	1,1,2,2-Tetrachloroethane																				
5	*Toluene					6					UL				UL		UL		UL		UL
5	*Chlorobenzene																				
5	*Ethylbenzene																				
5	*Styrene																				
5	*Total Xylenes																				

UL = Contract Required Quantitation Limit

Action Level Exists

+ = Result is from diluted analysis

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/

DATA SUMMARY FORM: VOLATILES 1

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L.)

To calculate sample quantitation li
(CRQL * Dilution Fac

CRQL	COMPOUND																					
	Sample No.	CDN33		CDN34		CDN35		CDN36		CDN37		CDN44		CDN46		CDN48		CDN	
	Dilution Factor	1		1		10		13.2		1		1		1		1		1	
	Location	PW-5		PW-6		PW-7 Field Dup. of CDN36		PW-8 Field Dup. of CDN35		Aq Blank		SW-1		SW-2		SW-3		SW-	
10	Chloromethane																		
10	Bromomethane				UJ						UJ								
10	*Vinyl Chloride																		
10	Chloroethane																		
5	*Methylene Chloride							54	B										
10	Acetone							57	B			5	B						
5	Carbon Disulfide																		
5	*1,1-Dichloroethene																		
5	1,1-Dichloroethane																		
5	*Total 1,2-Dichloroethene			5	J														
5	Chloroform			1	B							3	B						
5	*1,2-Dichloroethane																		
10	*2-Butanone																		
5	*1,1,1-Trichloroethane													3	J				
5	*Carbon Tetrachloride																		
10	Vinyl Acetate				UJ						UJ								
5	Bromodichloromethane											4	J						

RQL = Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINI-

DATA SUMMARY FORM: VOLATILES 2

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit
(CRQL * Dilution Factor

CRQL	COMPOUND	Sample No. / Dilution Factor / Location																			
		CDN37 / 1 / PW-5		CDN34 / 1 / PW-6		CDN35 / 10 / PW-7 Field Dup. of CDN36		CDN36 / 13.3 / PW-8 Field Dup of CDN35		CDN37 / 1 / A Blank 1		CDN44 / 1 / SW-1		CDN45 / 1 / SW-2		CDN47 / 1 / SW-3		CDN49 / 1 / SW-4	
5	*1,2-Dichloropropane																				
5	Cis-1,3-Dichloropropene																				
5	Trichloroethene	3	J	9												18		15		7	
5	Dibromochloromethane													3	J						
5	1,1,2-Trichloroethane																				
5	*Benzene		UL		UL		UL		UL		UL										
5	Trans-1,3-Dichloropropene																				
5	Bromoform																				
10	4-Methyl-2-pentanone																				
10	2-Hexanone																				
5	*Tetrachloroethene	13	J	10		1600		1500												1	
5	1,1,2,2-Tetrachloroethene																				
5	*Toluene		UL		UL		UL		UL		UL										
5	*Chlorobenzene																				
5	*Ethylbenzene																				
5	*Styrene																				
5	*Total Xylenes																				

* Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

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DATA SUMMARY FORM: V O L A T I L E S 1

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation lim
(CRQL * Dilution Fact

Sample No. / Dilution Factor / Location		CDN51 / 1 / SW-5		CDN54 / 1 / SW-6		CDN56 / 1 / SW-7		CDN57 / 1 / GW-8		CDN60 / 1 / MW-1		CDN61 / 1 / MW-2		CDN62 / 1 / MW-3		CDN64 / 1 / MW-5 Jeff Leister		CDN65 / 1 / MW-6 Stuart Leister	
CRQL	COMPOUND																		
10	Chloromethane																		
10	Bromomethane						UJ		UJ		UJ		UJ		UJ		UJ		
10	*Vinyl Chloride																		
10	Chloroethane																		
5	*Methylene Chloride							1	B			1	B						
10	Acetone	3	B	4	B														
5	Carbon Disulfide						UJ		UJ		UJ		UJ		UJ		UJ		
5	*1,1-Dichloroethene																		
5	1,1-Dichloroethane																		
5	*Total 1,2-Dichloroethene	2	J																
5	Chloroform																		
5	*1,2-Dichloroethane																		
10	*2-Butanone																		
5	*1,1,1-Trichloroethane											4	J						
5	*Carbon Tetrachloride																		
10	Vinyl Acetate						UJ		UJ		UJ		UJ		UJ		UJ		
5	Bromodichloromethane																		

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI

DATA SUMMARY FORM: VOLATILES 2

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 3/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit
(CRQL * Dilution Factor

CRQL	COMPOUND	Sample No. / Dilution Factor / Location																	
		CDN51 / 1 / SW-5		CDN54 / 1 / SW-6		CDN56 / 1 / SW-7		CDN58 / 1 / SW-8		CDN60 / 1 / MW-1		CDN61 / 1 / MW-2		CDN62 / 1 / MW-3		CDN64 / 1 / MW-5 Jeff Leister		CDN65 / 1 / MW-6 Stewart Leister	
5	*1,2-Dichloropropane																		
5	Cis-1,3-Dichloropropene						UJ		UJ		UJ		UJ		UJ		UJ		U
5	Trichloroethene	6						7		2	J	2	J	1	J				
5	Dibromochloromethane																		
5	1,1,2-Trichloroethane																		
5	*Benzene		UL		UL		UL		UL		UL		UL		UL		UL		U
5	Trans-1,3-Dichloropropene																		
5	Bromoform																		
10	4-Methyl-2-pentanone																		
10	2-Hexanone																		
5	*Tetrachloroethene	89				1	J	5	J			0.9	J						
5	1,1,2,2-Tetrachloroethane																		
5	*Toluene		UL		UL		UL		UL		UL		UL		UL		UL		U
5	*Chlorobenzene																		
5	*Ethylbenzene																		
5	*Styrene																		
5	*Total Xylenes																		

CRQL = Contract Required Quantitation Limit

* = Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIO

revised 01/

DATA SUMMARY FORM: V O L A T I L E S 1

Site Name: Black and Decker

WATER SAMPLES
(µg/L)

Case #: 15947 Sampling Date(s): 2/26-27/91

To calculate sample quantitation li
(CRQL * Dilution Fac

	Sample No.	CDN66		CDN67		CDN68		CDN69		CDN70		CDN71		CDN72				
	Dilution Factor	1		1		1		1		1		1		1				
	Location	HW-7		HW-8		HW-7		HW-10		AQ Blank2		Trip Blank2		PW-22				
CRQL	COMPOUND																	
10	Chloromethane																	
10	Bromomethane		UJ		UJ		UJ		UJ		UJ		UJ		UJ			
10	*Vinyl Chloride																	
10	Chloroethane																	
5	*Methylene Chloride																	
10	Acetone																	
5	Carbon Disulfide		UJ		UJ		UJ		UJ		UJ		UJ		UJ			
5	*1,1-Dichloroethene																	
5	1,1-Dichloroethane																	
5	*Total 1,2-Dichloroethene																	
5	Chloroform													2	B			
5	*1,2-Dichloroethane																	
10	*2-Butanone																	
5	*1,1,1-Trichloroethane																	
5	*Carbon Tetrachloride																	
10	Vinyl Acetate		UJ		UJ		UJ		UJ		UJ		UJ		UJ			
5	Bromodichloromethane																	

CRQL = Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINIT

DATA SUMMARY FORM: V O L A T I L E S 2

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit
(CRQL * Dilution Factor

CRQL	COMPOUND	Sample No. / Dilution Factor / Location																	
		CDNG6 / 1 / HW-7		CDNG7 / 1 / HW-8		CDNG8 / 1 / HW-7		CDNG9 / 1 / HW-10		CDNJ0 / 1 / APBMNK2		CDNJ1 / 1 / TripBlnk2		CDNJ2 / 1 / PW-22			
5	*1,2-Dichloropropane																		
5	Cis-1,3-Dichloropropene		U		U		U		U		U		U		U				
5	Trichloroethene																		
5	Dibromochloromethane																		
5	1,1,2-Trichloroethane																		
5	*Benzene		U		U		U		U		U		U		U				
5	Trans-1,3-Dichloropropene																		
5	Bromoform																		
10	4-Methyl-2-pentanone																		
10	2-Hexanone																		
5	*Tetrachloroethene	4	J																
5	1,1,2,2-Tetrachloroethane																		
5	*Toluene		U		U		U		U		U		U		U				
5	*Chlorobenzene																		
5	*Ethylbenzene																		
5	*Styrene																		
5	*Total Xylenes																		

U = Contract Required Quantitation Limit

* = Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIO

revised 01/

DATA SUMMARY FORM: B N A S 1

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limi
(CRQL * Dilution Fact

CRQL	COMPOUND	CDN24 / MW-2A	CDN25 / MW-2B	CDN26 / MW-8 Field Dup of CDN30	CDN27 / MW-9	CDN28 / MW-8I	CDN29 / MW-12	CDN30 / MW-10 Field Dup of CDN26	CDN31 / PW-3	CDN32 / PW-4
	Sample No. / Dilution Factor / Location									
10	Phenol									
10	bis(2-Chloroethyl)ether									
10	2-Chlorophenol									
10	*1,3-Dichlorobenzene									
10	*1,4-Dichlorobenzene									
10	Benzyl Alcohol									
10	1,2-Dichlorobenzene									
10	2-Methylphenol									
10	bis(2-Chloroisopropyl)ether									
10	4-Methylphenol									
10	N-Nitroso-di-n-propylamine									
10	Hexachloroethane									
10	Nitrobenzene									
10	Isophorone									
10	2-Nitrophenol									
10	2,4-Dimethylphenol									
50	Benzoic Acid									
10	bis(2-Chloroethoxy)methane									
10	2,4-Dichlorophenol									
10	1,2,4-Trichlorobenzene									
10	Naphthalene									
10	4-Chloroaniline									

Rep 1/4

*CRQL = Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINIT

revised 0

DATA SUMMARY FORM: B N A S 2

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

CRQL	COMPOUND	CDN24 / 1 / MW-2A		CDN25 / 1 / MW-2B		CDN26 / 1 / MW-8 Field Dup of CDN30		CDN27 / 1 / MW-9		CDN28 / 1 / MW-8I		CDN29 / 1 / MW-12		CDN30 / 1 / MW-10 Field Dup of CDN26		CDN31 / 1 / PW-3		CDN32 / 1 / PW-4	
10	Hexachlorobutadiene																		
10	4-Chloro-3-methylphenol																		
10	2-Methylnaphthalene																		
10	Hexachlorocyclopentadiene																		
10	2,4,6-Trichlorophenol																		
50	2,4,5-Trichlorophenol																		
10	2-Chloronaphthalene																		
50	2-Nitroaniline																		
10	Dimethylphthalate																		
10	Acenaphthylene																		
10	2,6-Dinitrotoluene																		
50	3-Nitroaniline																		
10	Acenaphthene																		
50	2,4-Dinitrophenol																		
50	4-Nitrophenol												UJ						
10	Dibenzofuran																		
10	2,4-Dinitrotoluene																		
10	Diethylphthalate																		
10	4-Chlorophenyl-phenylether																		
10	Fluorene																		
50	4-Nitroaniline																		
50	4,6-Dinitro-2-methylphenol																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 07/91

DATA SUMMARY FORM: B N A S 3

Site Name: Black + Decker

WATER SAMPLES
(µg/L)

Case #: 15947 Sampling Date(s): 2/26-27/91

To calculate sample quantitation limi
(CRQL * Dilution Fact

CRQL	COMPOUND	Sample No. / Dilution Factor / Location	CDN24 / 1 / MW-2A	CDN25 / 1 / MW-2B	CDN26 / 1 / MW-8 Field Dup. of CDN30	CDN27 / 1 / MW-9	CDN28 / 1 / MW-8I	CDN29 / 1 / MW-12	CDN30 / 1 / MW-10 Field Dup of CDN26	CDN31 / 1 / PW-3	CDN3 / 1 / PW-4
10	N-Nitrosodiphenylamine										
10	4-Bromophenyl-phenylether										
10	*Hexachlorobenzene										
50	*Pentachlorophenol										
10	Phenanthrene										
10	Anthracene										
10	Di-n-butylphthalate										
10	Fluoranthene										
10	Pyrene										
10	Butylbenzylphthalate										
20	3,3'-Dichlorobenzidine										
10	Benzo(a)anthracene										
10	Chrysene										
10	bis(2-Ethylhexyl)phthalate										
10	Di-n-octylphthalate										
10	Benzo(b)fluoranthene										
10	Benzo(k)fluoranthene										
10	Benzo(a)pyrene										
10	Indeno(1,2,3-cd)pyrene										
10	Dibenz(a,h)anthracene										
10	Benzo(g,h,i)perylene										

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI

revised 07

DATA SUMMARY FORM: B N A S 1

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(ug/L)

To calculate sample quantitation limi
(CRQL * Dilution Facto

	Sample No. / Dilution Factor / Location	CDN33 / 1 / PW-5		CDN34 / 1 / PW-6		CDN35 / 1 / PW-7 Field Dup. of CDN36		CDN36 / 1 / PW-8 Field Dup. of CDN35		CDN37 / 1 / AP BLANK1		CDN44 / 1 / SW-1		CDN46 / 1 / SW-2		CDN48 / 1 / SW-3		CDN49 / 1 / SW-4	
CRQL	COMPOUND																		
10	Phenol																		
10	bis(2-Chloroethyl)ether																		
10	2-Chlorophenol																		
10	*1,3-Dichlorobenzene																		
10	*1,4-Dichlorobenzene																		
10	Benzyl Alcohol																		
10	1,2-Dichlorobenzene																		
10	2-Methylphenol																		
10	bis(2-Chloroisopropyl)ether						UJ				UJ		UJ		UJ		UJ		
10	4-Methylphenol																		
10	N-Nitroso-di-n-propylamine																		
10	Hexachloroethane																		
10	Nitrobenzene																		
10	Isophorone																		
10	2-Nitrophenol																		
10	2,4-Dimethylphenol																		
50	Benzoic Acid																		
10	bis(2-Chloroethoxy)methane																		
10	2,4-Dichlorophenol																		
10	1,2,4-Trichlorobenzene																		
10	Naphthalene																		
10	4-Chloroaniline																		

CRQL = Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI
revised 01

DATA SUMMARY FORM: B N A S 2

Site Name: Black + DeCker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limi
(CRQL * Dilution Facto

CRQL	COMPOUND	CDN33 / 1 / PW-5		CDN34 / 1 / PW-6		CDN35 / 1 / PW-7 Field Dup of CDN36		CDN36 / 1 / PW-8 Field Dup of CDN35		CDN37 / 1 / AP Blank		CDN44 / 1 / SW-1		CDN46 / 1 / SW-2		CDN48 / 1 / SW-3		CDN47 / 1 / SW-4	
10	Hexachlorobutadiene																		
10	4-Chloro-3-methylphenol																		
10	2-Methylnaphthalene																		
10	Hexachlorocyclopentadiene																		
10	2,4,6-Trichlorophenol																		
50	2,4,5-Trichlorophenol																		
10	2-Chloronaphthalene																		
50	2-Nitroaniline																		
10	Dimethylphthalate																		
10	Acenaphthylene																		
10	2,6-Dinitrotoluene																		
50	3-Nitroaniline						UJ				UJ		UJ		UJ		UJ		
10	Acenaphthene																		
50	2,4-Dinitrophenol																		
50	4-Nitrophenol						UJ				UJ		UJ		UJ		UJ		
10	Dibenzofuran																		
10	2,4-Dinitrotoluene																		
10	Diethylphthalate											32							
10	4-Chlorophenyl-phenylether																		
10	Fluorene																		
50	4-Nitroaniline						UJ				UJ		UJ		UJ		UJ		
50	4,6-Dinitro-2-methylphenol																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIO

revised 07

DATA SUMMARY FORM: B N A S 3

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit
(CRQL * Dilution Factor

CRQL	COMPOUND	CDN33 / 1 / PW-5	CDN34 / 1 / PW-6	CDN35 / 1 / PW-7 Field Dup of CDN36	CDN36 / 1 / PW-8 Field Dup of CDN35	CDN37 / 1 / AQ BLANK1	CDN44 / 1 / SW-1	CDN46 / 1 / SW-2	CDN48 / 1 / SW-3	CDN47 / 1 / SW-4
10	N-Nitrosodiphenylamine									
10	4-Bromophenyl-phenylether									
10	*Hexachlorobenzene									
50	*Pentachlorophenol									
10	Phenanthrene									
10	Anthracene									
10	Di-n-butylphthalate									
10	Fluoranthene									
10	Pyrene									
10	Butylbenzylphthalate									
20	3,3'-Dichlorobenzidine			UJ			UJ	UJ	UJ	UJ
10	Benzo(a)anthracene									
10	Chrysene									
10	bis(2-Ethylhexyl)phthalate								160	
10	Di-n-octylphthalate									
10	Benzo(b)fluoranthene									
10	Benzo(k)fluoranthene									
10	Benzo(a)pyrene									
10	Indeno(1,2,3-cd)pyrene									
10	Dibenz(a,h)anthracene									
10	Benzo(g,h,i)perylene									

ORIGINAL (Red)

CRQL = Contract Required Quantitation Limit

* Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS
revised 6/1/

DATA SUMMARY FORM: B N A S 1

Site Name: Black + Decker

WATER SAMPLES
(µg/L)

Case #: 15947 Sampling Date(s): 2/26-27/91

To calculate sample quantitation lim
(CRQL * Dilution Fact

	Sample No.	CDN51	CDN54	CDN56	CDN58	CDN60	CDN61	CDN62	CDN64	CDN63
	Dilution Factor	1	1	1	1	1	1	0.99	1	1
	Location	SW-5	SW-6	SW-7	SW-8	HW-1	HW-2	HW-3	HW-5 Jeff	HW- Stuar
CRQL	COMPOUND									
10	Phenol									
10	bis(2-Chloroethyl)ether									
10	2-Chlorophenol									
10	*1,3-Dichlorobenzene									
10	*1,4-Dichlorobenzene									
10	Benzyl Alcohol									
10	1,2-Dichlorobenzene									
10	2-Methylphenol									
10	bis(2-Chloroisopropyl)ether									
10	4-Methylphenol									
10	N-Nitroso-di-n-propylamine									
10	Hexachloroethane									
10	Nitrobenzene									
10	Isophorone									
10	2-Nitrophenol									
10	2,4-Dimethylphenol									
50	Benzoic Acid									
10	bis(2-Chloroethoxy)methane									
10	2,4-Dichlorophenol									
10	1,2,4-Trichlorobenzene									
10	Naphthalene									
10	4-Chloroaniline									

CRQL = Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINIT
revised 0

DATA SUMMARY FORM: B N A S 2

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L.)

To calculate sample quantitation limit
(CRQL * Dilution Factor

	Sample No.	CDN51		CDN54		CDN56		CDN58		CDN60		CDN61		CDN62		CDN64		CDN65	
	Dilution Factor	1		1		1		1		1		1		0.99		1		1	
	Location	SW-5		SW-6		SW-7		SW-8		HW-1		HW-2		HW-3		HW-5 Jeff		HW-6 Stuart	
CRQL	COMPOUND																		
10	Hexachlorobutadiene																		
10	4-Chloro-3-methylphenol																		
10	2-Methylnaphthalene																		
10	Hexachlorocyclopentadiene																		
10	2,4,6-Trichlorophenol																		
50	2,4,5-Trichlorophenol																		
10	2-Chloronaphthalene																		
50	2-Nitroaniline																		
10	Dimethylphthalate																		
10	Acenaphthylene																		
10	2,6-Dinitrotoluene																		
50	3-Nitroaniline								UJ		UJ		UJ		UJ		UJ		
10	Acenaphthene																		
50	2,4-Dinitrophenol								UJ		UJ		UJ		UJ		UJ		
50	4-Nitrophenol								UJ		UJ		UJ		UJ		UJ		
10	Dibenzofuran																		
10	2,6-Dinitrotoluene																		
10	Diethylphthalate																		
10	4-Chlorophenyl-phenylether																		
10	Fluorene																		
50	4-Nitroaniline								UJ		UJ		UJ		UJ		UJ		
50	4,6-Dinitro-2-methylphenol																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIO

revised 07/

DATA SUMMARY FORM: B N A S 3

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limi
(CRQL * Dilution Facto

CRQL	COMPOUND	CDN51	CDN54	CDN56	CDN58	CDN60	CDN61	CDN62	CDN64	CDN65
	Sample No.									
	Dilution Factor	1	1	1	1	1	1	0.99	1	1
	Location	SW-5	SW-6	SW-7	SW-8	HW-1	HW-2	HW-3	HW-5 Jeff	HW-6 Stuart
10	N-Nitrosodiphenylamine									
10	4-Bromophenyl-phenylether									
10	*Hexachlorobenzene									
50	*Pentachlorophenol									
10	Phenanthrene									
10	Anthracene									
10	Di-n-butylphthalate									
10	Fluoranthene									
10	Pyrene									
10	Butylbenzylphthalate									
20	3,3'-Dichlorobenzidine				UJ		UJ	UJ	UJ	UJ
10	Benzo(a)anthracene									
10	Chrysene									
10	bis(2-Ethylhexyl)phthalate									
10	Di-n-octylphthalate									
10	Benzo(b)fluoranthene									
10	Benzo(k)fluoranthene									
10	Benzo(a)pyrene									
10	Indeno(1,2,3-cd)pyrene									
10	Dibenz(a,h)anthracene									
10	Benzo(g,h,i)perylene									

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI

revised 07

DATA SUMMARY FORM: B N A S 1

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation limi
(CRQL * Dilution Facto

	Sample No.	CDN66	CDN67/RE	CDN68	CDN69	CDN70	CDN72			
	Dilution Factor	0.99	1	1	1	1	1			
	Location	HW-7	HW-8	HW-9	HW-10	AQ Blank2	PW-22			
CRQL	COMPOUND									
10	Phenol		UJ							
10	bis(2-Chloroethyl)ether									
10	2-Chlorophenol		UJ							
10	*1,3-Dichlorobenzene									
10	*1,4-Dichlorobenzene									
10	Benzyl Alcohol		UJ							
10	1,2-Dichlorobenzene									
10	2-Methylphenol		UJ							
10	bis(2-Chloroisopropyl)ether			UJ	UJ	UJ	UJ			
10	4-Methylphenol		UJ							
10	N-Nitroso-di-n-propylamine									
10	Hexachloroethane									
10	Nitrobenzene									
10	Isophorone									
10	2-Nitrophenol		UJ							
10	2,4-Dimethylphenol		UJ							
50	Benzoic Acid		UJ							
10	bis(2-Chloroethoxy)methane									
10	2,4-Dichlorophenol		UJ							
10	1,2,4-Trichlorobenzene									
10	Naphthalene									
10	4-Chloroaniline									

CRQL = Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI

revised 01

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Black and Decker, Incorporated	626 Hanover Pike				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Hampstead	MD	21074	Carroll	013	MD06

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
39° 35' 36" N	76° 50' 58" W	[X] A. PRIVATE [ ] B. FEDERAL _____ [ ] C. STATE [ ] D. COUNTY [ ] E. MUNICIPAL [ ] F. OTHER _____ [ ] G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
02 / 26, 27 91 (month day year)	[X] A. ACTIVE [ ] B. INACTIVE	1952 / present (BEGINNING YEAR / ENDING YEAR) ____ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

[ ] A. EPA [X] B. EPA CONTRACTOR NUS FIT 3 (Name of firm) [ ] C. MUNICIPAL [ ] D. MUNICIPAL CONTRACTOR _____ (Name of firm)

[ ] E. STATE [ ] F. STATE CONTRACTOR _____ (Name of firm) [ ] G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Linda Ciarletta	Biologist	NUS FIT 3	(215) 687-9510
09 OTHER INSPECTORS Janis Hottinger Mary Williams	10 TITLE Environmental Scientist Environmental Scientist	11 ORGANIZATION NUS FIT 3 NUS FIT 3	12 TELEPHONE NO. 215 687-9510 (215) 687-9510
Thomas Ferrie Steven Sottung	Environmental Scientist Environmental Scientist	NUS FIT 3 NUS FIT 3	215 687-9510 (215) 687-9510
John Pugh	Environmental Scientist	NUS FIT 3	(215) 687-9510
Paul Davis	Environmental Scientist	NUS FIT 3	(215) 687-9510
Thomas Smith	Environmental Scientist	NUS FIT 3	(215) 687-9510

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
LaVere Grimes	Facilities Manager	626 Hanover Pike Hampstead, MD 21071	(301) 239-5555
			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
[X] PERMISSION [ ] WARRANT	02/26/91 10:00AM 02/27/91 8:30AM	partly sunny, with temperatures in the mid-30s

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Donna Santiago	US EPA	(215) 597-1105

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Linda Ciarletta	NUS	FIT 3	(215) 687-9510	05 / 15 / 91 (month day year)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

ORIGINAL (Red)

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS: unknown
CUBIC YARDS: _____
NO. OF DRUMS: _____

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☒ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTES			
SOL	SOLVENTS	unknown	unknown	On-site groundwater was found to
PSD	PESTICIDES			contain elevated levels of PCE and
OCC	OTHER ORGANIC CHEMICALS			TCE.
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Previous sampling:				
SOL	TCE	79-01-6	detected on-site	12000	ppb
SOL	PCE	127-18-4	groundwater	3100	ppb
SOL	TCE	79-01-6	detected on-site	2400	ppb
SOL	PCE	127-18-4	Soils in previous	380000	ppb
SOL	toluene	108-88-3	underground tank areas	4600000	ppb
SOL	ethylbenzene	100-41-4		120000	ppb
SOL	xylene	1330-20-7		310000	ppb
	FIT 3 samplings:				
SOL	TCE	79-01-6	Detected on-site	12000	ppb
SOL	PCE	127-184	groundwater	1800	ppb
SOL	1,1-DCE	75-35-4		7	ppb
SOL	1,1-DCEA	75-34-3		8	ppb
SOL	Total 1,2-DCE	540-59-0		29	ppb
SOL	1,1,1-TCEA	71-55-6		37	ppb

IV. FEEDSTOCKS *(See Appendix for CAS Numbers)* NA

CONTINUED

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

See reference nos. 1 and 2.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MD	370

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ *(Specify)*
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTES			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
CONTINUED					
SOL	TCE	79-01-6	detected in on-site	18	ppb
SOL	PCE	127-18-4	surface water	89	ppb
SOL	TCE	79-01-6	detected in on-site	5	ppb
SOL	PCE	127-18-4	sediments	46	ppb

IV. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE: MD | 02 SITE NUMBER: 370-

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION | 02 [X] OBSERVED (DATE: February 1991) [ ] POTENTIAL [ ] ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 9475/4 mile radius | 04 NARRATIVE DESCRIPTION

Elevated levels of TCE (up to 12,000 ppb) and PCE (up to 3,100 ppb) have been detected in on-site groundwater. FIT 3 sampling in February 1991 revealed elevated levels of TCE (up to 12,000 ppb), PCE (up to 1,800 ppb), 1,1,1-TCEA (up to 37 ppb), and several other volatile organic compounds.

01 [X] B. SURFACE WATER CONTAMINATION | 02 [X] OBSERVED (DATE: February 1991) [ ] POTENTIAL [ ] ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 0 | 04 NARRATIVE DESCRIPTION

An on-site wastewater lagoon discharges into Deep Run via an NPDES outfall. Sampling of the lagoon and outfall effluent revealed elevated levels of TCE (up to 18 ppb). Downstream samples of the Deep Run tributary indicated TCE and PCE contamination (7 ppb and 5 ppb, respectively)..

01 [ ] C. CONTAMINATION OF AIR | 02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

None reported or observed.

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS | 02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

None reported or observed.

01 [X] E. DIRECT CONTACT | 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 2152/1 mile radius | 04 NARRATIVE DESCRIPTION

Access is generally unrestricted to a majority of the site. FIT 3 sampling in February 1991 of surface water and sediments on site indicated elevated levels of TCE and PCE (up to 18 ppb and 89 ppb, respectively).

01 [X] F. CONTAMINATION OF SOIL | 02 [X] OBSERVED (DATE: February 1991) [ ] POTENTIAL [ ] ALLEGED

03 AREA POTENTIALLY AFFECTED: 146 acres | 04 NARRATIVE DESCRIPTION

FIT 3 sampling in February 1991 revealed no elevated contaminant levels in on-site subsurface soils. Elevated levels of TCE (5 ppb) and PCE (46 ppb) were detected in on-site sediments.

01 [X] G. DRINKING WATER CONTAMINATION | 02 [X] OBSERVED (DATE: February 1991) [ ] POTENTIAL [ ] ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 9475/radius | 04 NARRATIVE DESCRIPTION

FIT 3 sampling of the on-site production wells, which provide potable water for plant employees, revealed TCE (up to 50 ppb), 1,1,1-TCEA (up to 37 ppb), and PCE (up to 1,600 ppb). Domestic well sampling by FIT 3 in February 1991 revealed levels of 1,1,1-TCEA up to 4 ppb, TCE up to 2 ppb, and PCE up to 4 ppb.

01 [X] H. WORKER EXPOSURE/INJURY | 02 [X] OBSERVED (DATE: April 1984) [ ] POTENTIAL [ ] ALLEGED

03 WORKERS POTENTIALLY AFFECTED: 3500 during manufacturing operations | 04 NARRATIVE DESCRIPTION

Potable water for Black and Decker employees is provided by 5 on-site production wells. PCE and TCE contamination has been detected in several of the wells. Volatile organic contamination has also been found in on-site surface water and sediments. The company currently employs 750 people.

01 [X] I. POPULATION EXPOSURE/INJURY | 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 2152/1 mile radius | 04 NARRATIVE DESCRIPTION

Access is generally unrestricted to a majority of the site. Elevated levels of TCE and PCE have been detected in on-site surface water and sediments.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

ORIGINAL

01 STATE	02 SITE NUMBER
MD	9760

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ E. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☐ F. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION (*Include name(s) of species*)

None reported or observed

01 ☐ G. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☒ H. UNSTABLE CONTAINMENT OF WASTES 02 ☒ OBSERVED (DATE 05/02/84) ☐ POTENTIAL ☐ ALLEGED

Spills, Runoff, Standing liquids, Leaking drums

03 POPULATION POTENTIALLY AFFECTED 9475/4 mile radius 04 NARRATIVE DESCRIPTION

An MD DHMH inspection report indicates that hazardous waste containers were observed to be leaking and potentially draining into surface runoff.

01 ☐ I. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☐ J. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☐ K. ILLEGAL UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported or observed

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Off-specification products and other waste materials were buried in various areas around the site. Numerous oils, paints, and solvents were utilized in the manufacture of these products.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 12,975

IV. COMMENTS

N/A

V. SOURCES OF INFORMATION (*Cite specific references, e.g., state files, sample analysis, reports*)

See reference nos. 1,2,3,4, and 5

EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION (ORIGINAL)

01 STATE	02 SITE NUMBER
MD	370 (REG)

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
[X] A. NPDES	MD0001881	unknown	3-7-93	
[ ] B. UIC	4-0063	unknown	N/A	boiler
[X] C. AIR	4-0062	unknown	N/A	boiler
[ ] D. RCRA	9-0049	unknown	N/A	air stripper
[ ] E. RCRA INTERIM STATUS	6-0119	unknown	N/A	heat furnace
[ ] F. SPCC PLAN				
[X] G. STATE (specify)	88-DP-0022			effluent discharge
[ ] H. LOCAL (specify)				
[ ] I. OTHER (specify)				
[ ] J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
[X] A. SURFACE IMPOUNDMENT	14 - 16 million	gallons
[ ] B. PILES		
[X] C. DRUMS, ABOVE GROUND	unknown number	
[X] D. TANK, ABOVE GROUND	3 - 4	varying sizes
[X] E. TANK, BELOW GROUND	18	varying sizes
[X] F. LANDFILL	unknown size	
[ ] G. LANDFARM		
[ ] H. OPEN DUMP		
[ ] I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- [ ] A. INCINERATION
- [ ] B. UNDERGROUND INJECTION
- [X] C. CHEMICAL/PHYSICAL
- [X] D. BIOLOGICAL
- [ ] E. WASTE OIL PROCESSING
- [ ] F. SOLVENT RECOVERY
- [ ] G. OTHER RECYCLING/RECOVERY
- [ ] H. OTHER (Specify)

05 OTHER

- [X] A. BUILDINGS ON SITE

06 AREA OF SITE

286 (Acres)

07 COMMENTS

Two on-site lagoons have been used by Black and Decker since 1978 for wastewater treatment. A sewage treatment plant and industrial chemical treatment plant were also utilized on site; treated effluent is discharged into the larger lagoon. Lagoon overflow is via a NPDES outfall. Underground storage tanks were used in the past for storage of oils and solvents. Two above ground tanks are currently utilized for methanol and liquid nitrogen storage; TCE was previously stored in aboveground tanks. MD DHMH representatives observed leaking drums at the site in 1984. Several areas on the subject property were used as landfill areas for disposal of debris during the history of manufacturing operations.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

[ ] A. ADEQUATE, SECURE [ ] B. MODERATE [X] C. INADEQUATE, POOR [ ] D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Off-specification products and other waste materials were allegedly buried and burned on site in unlined areas. MD DHMH reported leaking hazardous waste containers on-site in past inspections.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE [X] YES [ ] NO

02 COMMENTS

The main facility has restricted access. However, access is generally unrestricted to the remaining portion of the property.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See reference nos. 1,6,7,8, and 9.

DATA SUMMARY FORM: B N A S 2

Site Name: Black + Decker

WATER SAMPLES
(µg/L)

Case #: 15947 Sampling Date(s): 2/26-27/91

To calculate sample quantitation lim
(CRQL * Dilution Fact

	Sample No.	CDNG6		CDNG7/6MS		CDNG8		CDNG9		CDN70		CDN72					
	Dilution Factor	0.99		1		1		1		1		1					
	Location	HW-7		HW-8		HW-9		HW-10		AP Blank 2		PW-22					
CRQL	COMPOUND																
10	Hexachlorobutadiene																
10	4-Chloro-3-methylphenol				UJ												
10	2-Methylnaphthalene																
10	Hexachlorocyclopentadiene																
10	2,4,6-Trichlorophenol				UJ												
50	2,4,5-Trichlorophenol				UJ												
10	2-Chloronaphthalene																
50	2-Nitroaniline																
10	Dimethylphthalate																
10	Acenaphthylene																
10	2,6-Dinitrotoluene																
50	3-Nitroaniline		UJ		UJ												
10	Acenaphthene																
50	2,4-Dinitrophenol		UJ		UJ												
50	4-Nitrophenol		UJ		UJ		UJ		UJ		UJ		UJ				
10	Dibenzofuran																
10	2,4-Dinitrotoluene																
10	Diethylphthalate																
10	4-Chlorophenyl-phenylether																
10	Fluorene																
50	4-Nitroaniline		UJ		UJ												
50	4,6-Dinitro-2-methylphenol				UJ												

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINIT

revised 0

DATA SUMMARY FORM: B N A S 3

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 8/26-27/91

WATER SAMPLES
(µg/L.)

To calculate sample quantitation limi
(CRQL * Dilution Factc

	Sample No.	CDN66	CDN67/67R	CDN68	CDN69	CDN70	CDN72			
	Dilution Factor	0.99	1	1	1	1	1			
	Location	HW-7	HW-8	HW-9	HW-10	APBlank2	PW-22			
CRQL	COMPOUND									
10	N-Nitrosodiphenylamine									
10	4-Bromophenyl-phenylether									
10	[a]Hexachlorobenzene									
50	[b]Pentachlorophenol		U							
10	Phenanthrene									
10	Anthracene									
10	Di-n-butylphthalate									
10	Fluoranthene									
10	Pyrene									
10	Butylbenzylphthalate									
20	3,3'-Dichlorobenzidine		U		U					
10	Benzo(a)anthracene									
10	Chrysene									
10	bis(2-Ethylhexyl)phthalate									
10	Di-n-octylphthalate									
10	Benzo(b)fluoranthene									
10	Benzo(k)fluoranthene									
10	Benzo(a)pyrene									
10	Indeno(1,2,3-cd)pyrene									
10	Dibenz(a,h)anthracene									
10	Benzo(g,h,i)perylene									

CRQL = Contract Required Quantitation Limit

Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI
revised 01

DATA SUMMARY FOR.. PESTICIDES AND CB'S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(ug/L.)

To calculate sample quantitation limi
(CRQL. * Dilution Facto

CRQL	COMPOUND	CDN24 / 1 / MW-2A	CDN25 / 1 / MW-2B	CDN26 / 1 / MW-8 Field Dup of CDN30	CDN27 / 1 / MW-9	CDN28 / 1 / MW-81	CDN29 / 1.01 / MW-12	CDN30 / 1 / MW-10 Field Dup of CDN26	CDN31 / 1 / PW-3	CDN3 / 1 / PW-4
0.05	alpha-BHC									
0.05	beta-BHC									
0.05	delta-BHC									
0.05	*gamma-BHC (Lindane)									
0.05	*Heptachlor									
0.05	Aldrin									
0.05	Heptachlor Epoxide									
0.05	Endosulfan I									
0.10	Dieldrin									
0.10	4,4'-DDE									
0.10	*Endrin									
0.10	Endosulfan II									
0.10	4,4'-DDD									
0.10	Endosulfan Sulfate									
0.10	4,4'-DDT									
0.50	*Methoxychlor									
0.10	Endrin Ketone									
0.50	*alpha-Chlordane									
0.50	*gamma-Chlordane									
1.0	*Toxaphene									
0.50	*Aroclor-1016									
0.50	*Aroclor-1221									
0.50	*Aroclor-1232									
0.50	*Aroclor-1242									
0.50	*Aroclor-1248									
1.0	*Aroclor-1254									
1.0	*Aroclor-1260									

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI

DATA SUMMARY Form: PESTICIDES AND PCB'S

Site Name: Black + Decker

WATER SAMPLES
(µg/L)

Case #: 15947 Sampling Date(s): 9/26-27/91

To calculate sample quantitation lim
(CRQL * Dilution Fact

CRQL	COMPOUND	Sample No.	CDN33	CDN34	CDN35	CDN36	CDN37	CDN44	CDN46	CDN48	CDN
		Dilution factor	1	1	0.99	0.99	1	1	1	1	0.9
		Location	PW-5	PW-6	PW-7	PW-8	10 Blank	SW-1	SW-2	SW-3	SW-4
					Field Dup of CDN36	Field Dup of CDN35					
0.05	alpha-BHC										
0.05	beta-BHC										
0.05	delta-BHC										
0.05	*gamma-BHC (Lindane)										
0.05	*Heptachlor										
0.05	Aldrin										
0.05	Heptachlor Epoxide										
0.05	Endosulfan I										
0.10	Dieldrin										
0.10	4,4'-DDE										
0.10	*Endrin										
0.10	Endosulfan II										
0.10	4,4'-DDD										
0.10	Endosulfan Sulfate										
0.10	4,4'-DDT										
0.50	*Methoxychlor										
0.10	Endrin Ketone										
0.50	*alpha-Chlordane										
0.50	*gamma-Chlordane										
1.0	*Toxaphene										
0.50	*Aroclor-1016										
0.50	*Aroclor-1221										
0.50	*Aroclor-1232										
0.50	*Aroclor-1242										
0.50	*Aroclor-1248										
1.0	*Aroclor-1254										
1.0	*Aroclor-1260										

C[illegible] = Contract Required Quantitation Limit

[illegible]ction Level Exists

SEE NARRATIVE [illegible] CODE DEFINITI
revised 8

DATA SUMMARY F[illegible] PESTICIDES AND PCB'S

Site Name: Black & Decker

Case #: 15917 Sampling Date(s): 2/26-27/91

WATER SAMPLES
(µg/L)

To calculate sample quantitation li
(CRQL * Dilution Fac

	Sample No.	CDN51		CDN54		CDN56		CDN58		CDN60		CDN61		CDN62		CDN64		CDN
	Dilution Factor	1		1		1		1		1		1		1		1		1
	Location	SW-5		SW-6		SW-7		SW-8		HW-1		HW-2		HW-3		HW-5 Jeff		HW Stua
CRQL	COMPOUND																	
0.05	alpha-BHC																	
0.05	beta-BHC																	
0.05	delta-BHC																	
0.05	*gamma-BHC (Lindane)																	
0.05	*Heptachlor																	
0.05	Aldrin																	
0.05	Heptachlor Epoxide																	
0.05	Endosulfan I																	
0.10	Dieldrin																	
0.10	4,4'-DDE																	
0.10	*Endrin																	
0.10	Endosulfan II																	
0.10	4,4'-DDD																	
0.10	Endosulfan Sulfate																	
0.10	4,4'-DDT																	
0.50	*Methoxychlor																	
0.10	Endrin Ketone																	
0.50	*alpha-Chlordane																	
0.50	*gamma-Chlordane																	
1.0	*Toxaphene																	
0.50	*Aroclor-1016																	
0.50	*Aroclor-1221																	
0.50	*Aroclor-1232																	
0.50	*Aroclor-1242																	
0.50	*Aroclor-1248																	
1.0	*Aroclor-1254																	
1.0	*Aroclor-1260																	

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINI

DATA SUMMARY FORM: PESTICIDES AND PCB'S

Site Name: Black + Decker

WATER SAMPLES
(µg/L)

Case #: 15947 Sampling Date(s): 2/26-27/91

To calculate sample quantitation lim
(CRQL * Dilution Fact

CRQL	COMPOUND	Sample No. / Dilution Factor / Location		CDN66 / 1 / HW-7		CDN67 / 1 / HW-8		CDN68 / 1 / HW-9		CDN69 / 1 / HW-10		CDN70 / 1 / AB Blank		CDN72 / 1 / PW-22					
0.05	alpha-BHC																		
0.05	beta-BHC																		
0.05	delta-BHC																		
0.05	*gamma-BHC (Lindane)																		
0.05	*Heptachlor																		
0.05	Aldrin																		
0.05	Heptachlor Epoxide																		
0.05	Endosulfan I																		
0.10	Dieldrin																		
0.10	4,4'-DDE																		
0.10	*Endrin																		
0.10	Endosulfan II																		
0.10	4,4'-DDD																		
0.10	Endosulfan Sulfate																		
0.10	4,4'-DDT																		
0.50	*Methoxychlor																		
0.10	Endrin Ketone																		
0.50	*alpha-Chlordane																		
0.50	*gamma-Chlordane																		
1.0	*Toxaphene																		
0.50	*Aroclor-1016																		
0.50	*Aroclor-1221																		
0.50	*Aroclor-1232																		
0.50	*Aroclor-1242																		
0.50	*Aroclor-1248																		
1.0	*Aroclor-1254																		
1.0	*Aroclor-1260																		

C[redacted] Contract Required Quantitation Limit

[redacted] Action Level Exists

SEE NARRATIVE [redacted] CODE DEFINIT
revised 8

DATA SUMMARY FORM: V O L A T I L E S 1

Ite Name: Black and Decker

ase #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100

	Sample No.	CDN39		CDN40		CDN41		CDN42		CDN43		CDN45		CDN47		CDN50		CDN51	
	Dilution Factor	1.43		1.43		1.43		1.33		1.28		1.43		1.39		1.33		1.19	
	% Moisture	16		11		16		28		17		35		57		46		40	
	Location	S-1 (50')		S-2 (36')		S-3 (3')		S-4 (2')		S-BGK (2')		Sd-1		Sd-2		Sd-3		Sd-4 Field Dup. of CDN 63	
CRQL	COMPOUND																		
10	Chloromethane																		
10	Bromomethane		UJ		UJ		UJ		UJ		UJ		UJ						
10	Vinyl Chloride																		
10	Chloroethane																		
5	Methylene Chloride	6	B	5	B	6	B	10	B	13	B	3	B	4	B	3	B	4	B
10	Acetone	6	B	3	B	4	B	5	B	7	B	6	B	9	B			14	B
5	Carbon Disulfide								UJ		UJ		UJ						
5	1,1-Dichloroethene																		
5	1,1-Dichloroethane																		
5	Total 1,2-Dichloroethene																		
5	Chloroform																		
5	1,2-Dichloroethane																		
10	2-Butanone																		
5	1,1,1-Trichloroethane																		
5	Carbon Tetrachloride																		
10	Vinyl Acetate		UJ		UJ		UJ		UJ		UJ		UJ						
5	Bromodichloromethane																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: V O L A T I L E S 2

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation limi
(CRQL * Dilution Factor) / ((100 - % moisture)/10

	Sample No.	CDN39		CDN40		CDN41		CDN42		CDN43		CDN45		CDN47		CDN50		CDN5
	Dilution Factor	1.43		1.43		1.43		1.32		1.28		1.43		1.39		1.32		1.19
	% Moisture	16		11		16		28		17		35		57		46		40
	Location	S-1 (50')		S-2 (36')		S-3 (5')		S-4 (2')		S-89K (2')		SW-1						Field D... of CDN5
CRQL	COMPOUND																	
5	1,2-Dichloropropane																	
5	Cis-1,3-Dichloropropene								UJ		UJ		UJ					
5	Trichloroethene													7	J			3
5	Dibromochloromethane																	
5	1,1,2-Trichloroethane																	
5	Benzene		UL		UL		UL		UL		UL		UL		UL		UL	
5	Trans-1,3-Dichloropropene																	
5	Bromoform																	
10	4-Methyl-2-pentanone																	
10	2-Hexanone																	
5	Tetrachloroethene															5	J	37
5	1,1,2,2,-Tetrachloroethane																	
5	Toluene		UL		UL		UL		UL		UL		UL		UL		UL	
5	Chlorobenzene																	
5	Ethylbenzene																	
5	Styrene																	
5	Total Xylenes																	

CR... Contract Required Quantitation Limit

SEE NARRATIVE F... CODE DEFINITI...

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DATA SUMMARY FORM: V O L A T I L E S 1

Site Name: Black and Decker

Case #: 16947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(ug/Kg)

*To calculate sample quantitation limi
(CRQL * Dilution Factor) / ((100 - % moisture)/10

	Sample No.	CDN53		CDN55		CDN57		CDN59									
	Dilution Factor	1.39		1.28		1.25		1.39									
	% Moisture	37		42		50		23									
	Location	Sd-5		Sd-6		Sd-7		Sd-8									
		Field Dup. of CDN52															
CRQL	COMPOUND																
10	Chloromethane																
10	Bromomethane																
10	Vinyl Chloride																
10	Chloroethane																
5	Methylene Chloride	5	B	14	B	28	B	31	B								
10	Acetone	14	B	11	B	33	B	35	B								
5	Carbon Disulfide																
5	1,1-Dichloroethene																
5	1,1-Dichloroethane																
5	Total 1,2-Dichloroethene																
5	Chloroform																
5	1,2-Dichloroethane																
10	2-Butanone																
5	1,1,1-Trichloroethane																
5	Carbon Tetrachloride																
10	Vinyl Acetate																
5	Bromodichloromethane																

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIO

DATA SUMMARY FORM: V O L A T I L E S 2

Site Name: Black and Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation limit
(CRQL * Dilution Factor) / ((100 - % moisture)/100

CRQL	COMPOUND																					
	Sample No.	CDN53		CDN65		CDN57		CDN59														
	Dilution Factor	1.39		1.27		1.25		1.37														
	% Moisture	37		42		50		23														
	Location	Sd-5 Field Dup. of CDN52		Sd-2		Sd-7		Sd-8														
5	1,2-Dichloropropane																					
5	Cis-1,3-Dichloropropene																					
5	Trichloroethene	5	J					2	J													
5	Dibromochloromethane																					
5	1,1,2-Trichloroethane																					
5	Benzene		UL		UL		UL		UL													
5	Trans-1,3-Dichloropropene																					
5	Bromoform																					
10	4-Methyl-2-pentanone																					
10	2-Hexanone																					
5	Tetrachloroethene	46																				
5	1,1,2,2,-Tetrachloroethane																					
5	Toluene		UL		UL		UL	130	L													
5	Chlorobenzene								UL													
5	Ethylbenzene																					
5	Styrene																					
5	Total Xylenes																					

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

revised 11/

DATA SUMMARY FORM: B N A S 1

Site Name: Black + Decker

Case #: 15947 Sampling Date: 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation lim
(CRQL * Dilution Factor) / ((1 - % moisture)/1

	Sample No.	CDN39	CDN40	CDN41	CDN42	CDN43	CDN45	CDN47	CDN50	CDN5
	Dilution Factor	1.97	1.97	1.97	1.99	1.99	2.00	1.97	2.00	1.97
	% Moisture	17	12	16	28	18	28	22	18	37
	Location	S-1(50')	S-2 (36')	S-3(3')	S-4(2')	S-B9K(2')	Sd-1	Sd-2	Sd-3	Sd-4
										Field D. of CDN
CRQL	COMPOUND									
330	Phenol									
330	bis(2-Chloroethyl)ether									
330	2-Chlorophenol									
330	1,3-Dichlorobenzene									
330	1,4-Dichlorobenzene									
330	Benzyl Alcohol									
330	1,2-Dichlorobenzene									
330	2-Methylphenol									
330	bis(2-Chloroisopropyl)ether									
330	4-Methylphenol									
330	N-Nitroso-di-n-propylamine									
330	Hexachloroethane									
330	Nitrobenzene									
330	Isophorone									
330	2-Nitrophenol									
330	2,4-Dimethylphenol									
1600	Benzoic Acid									
330	bis(2-Chloroethoxy)methane									
330	2,4-Dichlorophenol									
330	1,2,4-Trichlorobenzene									
330	Naphthalene									
330	4-Chloroaniline									

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINIT

DATA SUMMARY FORM: B N A S 2

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

[2] To calculate sample quantitation li
(CRQL * Dilution Factor) / ((100 - % moisture)/

	Sample No.	CDN39		CDN40		CDN41		CDN42		CDN43		CDN45		CDN47		CDN50		CDN5
	Dilution Factor	1.97		1.97		1.97		1.99		1.99		2.00		1.97		2.00		1.9
	% Moisture	17		12		16		28		19		28		22		18		37
	Location	S-1 (50')		S-2 (36')		S-3 (3')		S-4 (2')		S-B9K (3')		Sd-1		Sd-2		Sd-3		SD-4 FIELD of CDN
CRQL	COMPOUND																	
330	Hexachlorobutadiene																	
330	4-Chloro-3-methylphenol																	
330	2-Methylnaphthalene																	
330	Hexachlorocyclopentadiene																	
330	2,4,6-Trichlorophenol																	
1600	2,4,5-Trichlorophenol																	
330	2-Chloronaphthalene																	
1600	2-Nitroaniline																	
330	Dimethylphthalate																	
330	Acenaphthylene																	
330	2,6-Dinitrotoluene																	
1600	3-Nitroaniline														UJ		UJ	
330	Acenaphthene																	
1600	2,4-Dinitrophenol		UJ		UJ		UJ		UJ		UJ		UJ					
1600	4-Nitrophenol		UJ		UJ		UJ		UJ		UJ		UJ					
330	Dibenzofuran																	
330	2,4-Dinitrotoluene																	
330	Diethylphthalate																	
330	4-Chlorophenyl-phenylether																	
330	Fluorene																	
1600	4-Nitroaniline														UJ		UJ	
1600	4,6-Dinitro-2-methylphenol																	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINIT

revised 0

DATA SUMMARY FORM: B N A S 3

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation li
(CRQL * Dilution Factor) / ((100 - % moisture)/1

	Sample No.	CDN39	CDN40	CDN41	CDN42	CDN43	CDN45	CDN47	CDN50	CDN
	Dilution Factor	1.97	1.97	1.97	1.99	1.99	2.00	1.97	2.00	1.97
	% Moisture	17	12	16	38	18	28	22	18	37
	Location	S-1(50')	S-2(36')	S-3(3')	S-4(2')	S-89K(2')	Sed-1	Sed-2	Sed-3	Sed-4
										Field D of CDN
CRQL	COMPOUND									
330	N-Nitrosodiphenylamine									
330	4-Bromophenyl-phenylether									
330	Hexachlorobenzene									
1600	Pentachlorophenol									
330	Phenanthrene									
330	Anthracene									
330	Di-n-butylphthalate									
330	Fluoranthene									
330	Pyrene		86 J							
330	Butylbenzylphthalate									
660	3,3'-Dichlorobenzidine							UJ	UJ	
330	Benzo(a)anthracene									
330	Chrysene									
330	bis(2-Ethylhexyl)phthalate						410 J			
330	Di-n-octylphthalate									
330	Benzo(b)fluoranthene									
330	Benzo(k)fluoranthene									
330	Benzo(a)pyrene									
330	Indeno(1,2,3-cd)pyrene									
330	Dibenz(a,h)anthracene									
330	Benzo(g,h)perylene									

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINIT

revised

DATA SUMMARY FORM: B N A S 1

Site Name: Black + Decker

Case #: 16947 Sampling Date: 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation li
(CRQL * Dilution Factor) / ((1 - % moisture)/

	Sample No.	CDN53	CDN55	CDN57	CDN59					
	Dilution Factor	1.95	1.97	1.94	1.95					
	% Moisture	38	39	32	35					
	Location	Sol-5	Sol-2	Sol-7	Sol-8					
CRQL	COMPOUND									
330	Phenol									
330	bis(2-Chloroethyl)ether									
330	2-Chlorophenol									
330	1,3-Dichlorobenzene									
330	1,4-Dichlorobenzene									
330	Benzyl Alcohol									
330	1,2-Dichlorobenzene									
330	2-Methylphenol									
330	bis(2-Chloroisopropyl)ether									
330	4-Methylphenol				270	J				
330	N-Nitroso-di-n-propylamine									
330	Hexachloroethane									
330	Nitrobenzene									
330	Isophorone									
330	2-Nitrophenol									
330	2,4-Dimethylphenol									
1600	Benzoic Acid									
330	bis(2-Chloroethoxy)methane									
330	2,4-Dichlorophenol									
330	1,2,4-Trichlorobenzene									
330	Naphthalene									
330	4-Chloroaniline									

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINI

revised

DATA SUMMARY FORM: B N A S 2

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

* To calculate sample quantitation lim
(CRQL * Dilution Factor) / ((100 - % moisture)/1

	Sample No.	CDN53		CDN55		CDN57		CDN59									
	Dilution Factor	1.95		1.98		1.94		1.95									
	% Moisture	38		39		32		35									
	Location	SW-5		SW-2		SW-7		SW-8									
CRQL	COMPOUND																
330	Hexachlorobutadiene																
330	4-Chloro-3-methylphenol																
330	2-Methylnaphthalene																
330	Hexachlorocyclopentadiene																
330	2,4,6-Trichlorophenol																
1600	2,4,5-Trichlorophenol																
330	2-Chloronaphthalene																
1600	2-Nitroaniline																
330	Dimethylphthalate																
330	Acenaphthylene																
330	2,6-Dinitrotoluene																
1600	3-Nitroaniline		UJ		UJ		UJ		UJ								
330	Acenaphthene																
1600	2,4-Dinitrophenol																
1600	4-Nitrophenol																
330	Dibenzofuran																
330	2,4-Dinitrotoluene																
330	Diethylphthalate																
330	4-Chlorophenyl-phenylether																
330	Fluorene																
1600	4-Nitroaniline		UJ		UJ		UJ		UJ								
1600	4,6-Dinitro-2-methylphenol																

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINIT

revised

DATA SUMMARY FORM: B N A S 3

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation li
(CRQL * Dilution Factor) / ((100 - % moisture)/1

	Sample No.	CDN53		CDN55		CDN57		CDN59									
	Dilution Factor	1.95		1.98		1.94		1.95									
	% Moisture	38		39		32		35									
	Location	Sd-5		Sd-2		Sd-7		Sd-8									
CRQL	COMPOUND																
330	N-Nitrosodiphenylamine																
330	4-Bromophenyl-phenylether																
330	Hexachlorobenzene																
1600	Pentachlorophenol																
330	Phenanthrene																
330	Anthracene																
330	Di-n-butylphthalate																
330	Fluoranthene																
330	Pyrene																
330	Butylbenzylphthalate																
660	3,3'-Dichlorobenzidine		UJ		UJ		UJ		UJ								
330	Benzo(a)anthracene																
330	Chrysene																
330	bis(2-Ethylhexyl)phthalate																
330	Di-n-octylphthalate																
330	Benzo(b)fluoranthene																
330	Benzo(k)fluoranthene																
330	Benzo(a)pyrene																
330	Indeno(1,2,3-cd)pyrene																
330	Dibenz(a,h)anthracene																
330	Benzo(g,h)perylene																

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINI
revised

DATA SUMMARY FORM: PESTICIDES AND PCB'S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation lim
(CRQL * Dilution Factor) / ((100 - % moisture)/1

CRQL	COMPOUND	CDN39	CDN40	CDN41	CDN42	CDN43	CDN45	CDN47	CDN50	CDN5
	Sample No.	CDN39	CDN40	CDN41	CDN42	CDN43	CDN45	CDN47	CDN50	CDN5
	Dilution Factor	1.97	1.97	1.97	1.99	1.99	2.00	1.97	2.00	1.97
	%Moisture	17	12	16	27	19	28	22	18	37
	Location	S-1 (50')	S-2 (16')	S-3 (3')	S-4 (2')	S-Black (2')	Sd-1	Sd-2	Sd-3	Sd-4
										Field D of CDN
8	alpha-BHC									
8	beta-BHC									
8	delta-BHC									
8	gamma-BHC (Lindane)									
8	Heptachlor									
8	Aldrin									
8	Heptachlor Epoxide									
8	Endosulfan I									
16	Dieldrin									
16	4,4'-DDE									
16	Endrin									
16	Endosulfan II									
16	4,4'-DDD									
16	Endosulfan Sulfate									
16	4,4'-DDT									
80	Methoxychlor									
16	Endrin Ketone									
80	alpha-Chlordane									
80	gamma-Chlordane									
160	Toxaphene									
80	Aroclor-1016									
80	Aroclor-1221									
80	Aroclor-1232									
80	Aroclor-1242									
80	Aroclor-1248									
160	Aroclor-1254				370 J					
160	Aroclor-1260									

= Contract Required Quantitation Limit

SEE NARRATIVE ... CODE DEFINIT
revised

DATA SUMMARY FO. . PESTICIDES AND PCB'S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/27/91

SOIL SAMPLES
(µg/Kg)

To calculate sample quantitation lim
(CRQL * Dilution Factor) / ((100 - % moisture)/1

	Sample No.	CDN53	CDN55	CDN57	CDN59					
	Dilution Factor	1.95	1.98	1.94	1.95					
	% Moisture	38	39	32	35					
	Location	Sd-5	Sd-2	Sd-7	Sd-8					
CRQL	COMPOUND									
8	alpha-BHC									
8	beta-BHC									
8	delta-BHC									
8	gamma-BHC (Lindane)									
8	Heptachlor									
8	Aldrin									
8	Heptachlor Epoxide									
8	Endosulfan I									
16	Dieldrin									
16	4,4'-DDE									
16	Endrin									
16	Endosulfan II									
16	4,4'-DDD									
16	Endosulfan Sulfate									
16	4,4'-DDT									
80	Methoxychlor									
16	Endrin Ketone									
80	alpha-Chlordane									
80	gamma-Chlordane									
160	Toxaphene									
80	Aroclor-1016									
80	Aroclor-1221									
80	Aroclor-1232									
80	Aroclor-1242									
80	Aroclor-1248									
160	Aroclor-1254									
160	Aroclor-1260									

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITI

WESTON

TABLE 1A

SUMMARY OF QUALIFIERS ON DATA SUMMARY
AFTER DATA VALIDATION

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Al	All aqueous (SDG# MCED44)	J	UJ		A (27.9%)
Sb	MCED72	K		High	B (118%)
	All soils (SDG# MCED44)		UL	Low	C (42.2%)
	MCED64	L		Low	C (66.9%)
	MCED66		UL	Low	C (66.9%) D (79.0%)
As	All aqueous (SDG# MCED24)	L	R	Extremely Low	E (7.8%)
	MCED61	K		High	B (156%)
	MCED71,74,75	L	UL	Low	D (73.6-84.1%)
	All soils (SDG# MCED44)	L	UL	Low	C (32.9%)
Cd	All aqueous (SDG# MCED24)	J	UJ		A (±5.0 ppb)
	All soils (SDG# MCED44)	L	UL	Low	C (72.9%)
Fe	MCED31,33,34,36,37	B			F (42.3 ppb)
	MCED39,40,41,42,43	B		High	F (45.7 ppb)
	MCED44,45,51,61,63	J			A (38.0%)
	MCED53,55,56,58	B		High	F (45.7 ppb) A (38.0%)
	All aqueous except MCED68,76,77 (SDG# MCED64)	B		High	F (54.3 ppb)

ORIGINAL
(Red)

WESTON

TABLE 1A

SUMMARY OF QUALIFIERS ON DATA SUMMARY AFTER DATA VALIDATION

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Pb	All aqueous except MCED26,35,41 (SDG# MCED24)	L	UL	Low	C (57.1%) D (42.5-77.1%)
	MCED26,35,41		UL	Low	C (57.1%)
	All soils (SDG# MCED44)	L		Low	C (56.0%)
Hg	All aqueous (SDG# MCED24)	J	UJ		A (±0.2 ppb) G (146%)
K	MCED68,69,75,76	B		High	H (550 ppb)
	MCED46,47,48,57,59, 64,66	B		High	H (122 ppb)
Se	All aqueous except MCED24,26,27,28,31, 32,34 (SDG# MCED24)	L	R	Extremely Low	E (0.0%) D (68.2-84.5%)
	MCED24,26,27,28,31, 32,34		R	Extremely Low	E (0.0%)
	All aqueous except MCED53 (SDG# MCED44)		UL	Low	C (60.4%)
	MCED53		UL	Low	C (60.4%) D (74.5%)
	All soils except MCED54 (SDG# MCED44)		R	Extremely Low	E (0.0%)
	MCED54		R	Extremely Low	E (0.0%) D (79.8%)
	All soils (SDG# MCED64)		R	Extremely Low	E (0.0%)
Ag	MCED30,33		UL	Low	D (76.0-78.0%)
	MCED49,50,51,52,53, 54,55,61	L	UL	Low	D (59.5-83.0%)

WESTON

TABLE 1A

SUMMARY OF QUALIFIERS ON DATA SUMMARY AFTER DATA VALIDATION

ANALYTE	SAMPLES AFFECTED	NON-POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Tl	All aqueous (SDG# MCED24)		UL	Low	C (69.7%) D (48.0-84.0%)
	MCED61,63,67,72,78		UL	Low	D (67.5-77.0%)
Zn	All unfiltered except MCED39 (SDG# MCED24)	B		High	F (54.8 ppb)
	All filtered except MCED36,37 (SDG# MCED24)	B		High	F (12.8 ppb)
	All aqueous except MCED44,45,61 (SDG# MCED44)	B		High	F (54.8 ppb)
CN	All soils (SDG# MCED44)		R	Extremely Low	E (0.0%)

WESTON

TABLE 1B

CODES USED IN COMMENTS COLUMN

A = The laboratory duplicate result was outside of the control limit (the result is in parentheses), the quantitation limits and reported results are estimated.

B = Due to a high analytical spike recovery (% recovery is in parentheses), the reported results may be biased high.

C = Due to a low matrix spike recovery (% recovery is in parentheses), the quantitation limits and reported results may be biased low.

D = Due to a low analytical spike recovery (% recovery is in parentheses), the quantitation limits and reported results may be biased low.

E = Due to an extremely low matrix spike recovery (% recovery is in parentheses), the quantitation limits and reported results may be biased extremely low.

F = The field blank had a result that was >IDL (the result is in parentheses) and the reported results were <5x the blank. The reported results may be biased high.

G = Due to a high matrix spike recovery (% recovery is in parentheses), the reported results may be biased high.

H = The preparation blank had a result that was >IDL (the result is in parentheses) and the reported results were <5x the blank. The reported results may be biased high.

WESTON

TABLE 2

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Table 2

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 3/26/91

WATER SAMPLES
(ug/L)

†Due to dilution, sample quantitation limit is affect
See dilution table for specifi

CRDL	ANALYTE	Sample No. / Dilution Factor / Location		MCED24 / 1.0 / MW-24		MCED25 / 1.0 / MW-24		MCED26 / 1.0 / MW-8		MCED27 / 1.0 / MW-9		MCED28 / 1.0 / MW B1		MCED29 / 1.0 / MW-12		MCED30 / 1.0 / MW-10		MCED31 / 1.0 / MW-2AF		MCED32 / 1.0 / MW-2BF		MCED3 / 1.0 / MW-B1	
200	Aluminum			1620				2200		4700		915		219		1570							
60	Antimony																						
10	*Arsenic			[3.0]	L	[2.3]	L	[4.7]	L	[4.1]	L	[3.3]	L	[3.0]	L		R	[4.1]	L	[3.0]	L	[3.8]	
200	Barium			[65.9]		[53.9]		[107]		[52.9]						[111]		[46.9]				[93.9]	
5	Beryllium																						
5	*Cadmium				UJ	5.7	J		UJ		UJ		UJ		UJ		UJ		UJ		UJ		
5000	Calcium			[2920]		9070		5660		6110		16300		6450		5700		[2890]		8170		5290	
10	*Chromium											76.1											
50	Cobalt																						
25	Copper									[10.9]		60.7											
100	Iron			3070		52300		1790		8820		101000		838		3040		[31.4]	B	10500		[33.9]	
3	*Lead			7.5	L		UL		UL		UL	188	L		UL		UL		UL		UL		
5000	Magnesium			[4680]		8520		7620		7800		5880		[4960]		7920		[4340]		8230		6770	
15	Manganese			574		1020		200		780		420		54.9		191		29.0		80.1		24.1	
0.2	Mercury			1.2	J	0.34	J	0.16	J	0.40	J		UJ	0.60	J	0.23	J	0.23	J	0.17	J	0.34	
40	*Nickel									[28.6]		[37.4]											
5000	Potassium			[2100]		[3360]		[1940]		[1770]		[990]		[2110]		[1680]		[2100]		[3170]		[1660]	
5	Selenium				R		R		R		R				R		R		R		R		
10	Silver																UL						
5000	Sodium			9840		26400		97700		29500		5560		15500		95600		10700		25200		90100	
10	Thallium				UL		UL		UL		UL		UL		UL		UL		UL		UL		
50	Vanadium																						
20	Zinc			42.2	B	134	B	116	B	74.4	B	47.1	B	22.1	B	82.1	B	26.4	B	30.9	B	54.6	
10	*Cyanide																		Q		Q		

CRDL = Contract Required Detection Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINIT

Table 5

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26/91

WATER SAMPLES
(ug/L)

[1]Due to dilution, sample quantitation limit is affecte
See dilution table for specific

CRDL	ANALYTE	Sample No. / Dilution Factor / Location																					
		MCED34 / 1.0 / MW-9F		MCED35 / 1.0 / MW-8IF		MCED36 / 1.0 / MW-12F		MCED37 / 1.0 / MW-10I		MCED32 / 1.0 / AV-3		MCED39 / 1.0 / PW-4		MCED40 / 1.0 / PW-5		MCED41 / 1.0 / PW-6		MCED42 / 1.0 / PW-7		MCED43 / 1.0 / PW-8	
200	Aluminum							[123]															
60	Antimony																						
10	*Arsenic		R	[4.3]	L		R		R		R		R		R		R		R		R		
200	Barium	[16.1]						[96.6]															
5	Beryllium																						
5	*Cadmium		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		
5000	Calcium	6120		15600		6610		5810		7190		13600		15200		25900		9560		9420			
10	*Chromium																						
50	Cobalt																						
25	Copper											[13.4]											
100	Iron	[38.5]	B	775		[41.9]	B	[21.5]	B	612		[85.2]	B	112	B	213	B	[31.4]	B	[36.9]	B		
3	*Lead		UL		UL		UL		UL	[2.2]	L	[2.9]	L		UL		UL		UL				
5000	Magnesium	5240		5150		[1700]		7150		[1920]		6600		[4330]		8520		[3810]		[3600]			
15	Manganese	543		196		20.9		24.0		18.8		26.6		[7.8]		[10.5]		[9.9]		[8.8]			
0.2	Mercury	0.47	J	0.53	J	0.20	J	0.39	J	0.39	J	0.40	J	0.47	J		UJ		UJ				
40	*Nickel																						
5000	Potassium	[1470]		[805]		[2720]		[2110]		[1230]		[1760]		[710]		[710]		[1110]		[1200]			
5	Selenium		R		R		R		R	[3.4]	L		R		R		R	[3.4]	L				
10	Silver																						
5000	Sodium	29100		6000		17600		19500		22000		25200		11000		16500		21800		21600			
10	Thallium		UL		UL		UL		UL		UL		UL		UL		UL		UL				
50	Vanadium																						
20	Zinc	11.4	B	[10.1]	B	180		66.5		65.9	B	1230		256	B	23.8	B	27.7	B	44.0	B		
10	*Cyanide		Q		Q		Q		Q														

CRDL = Contract Required Detection Limit

...ction Level Exists

SEE NARRATIVE F... DE DEFINITIO...
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Table 5

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/26/91

WATER SAMPLES
(µg/L)

¹Due to dilution, sample quantitation limit is affect
See dilution table for specifi

CRDL	Analyte	Sample No. / Dilution Factor / Location	MCED44 1.0 Field Blank Filtered		MCED45 1.0 Field Blank		MCED51 1.0 SW-1		MCED53 1.0 SW-2		MCED55 1.0 SW-3		MCED56 1.0 SW-4		MCED58 1.0 SW-5		MCED61 1.0 SW-6		MCED62 1.0 SW-7	
200	Aluminum			UJ		UJ	1330	J	[190]	J	[133]	J	[111]	J		UJ	189000	J	[176.]	J
60	Antimony																			
10	*Arsenic																[24.1]	K		
200	Barium						[44.6]		[64.7]		[62.3]		[44.6]				1980			
5	Beryllium																14.6			
5	*Cadmium																18.2			
5000	Calcium		[192]				45600		24400		24200		13900		7460		62200		9210	
10	*Chromium																321			
50	Cobalt						[17.4]										172			
25	Copper						29.3										361			
100	Iron		[42.3]	J	[45.7]	J	1960	J	102	B	112	B	215	B	156	B	44000	J	257	J
3	*Lead						41.3		5.0		3.5		[2.5]				739		[2.3]	
5000	Magnesium						7980		5440		5220		5500		[3540]		22300		6210	
15	Manganese						314		33.0		32.3		697		[11.6]		27400		49.1	
0.2	Mercury																			
40	*Nickel																181			
5000	Potassium						7000		[1160]		[1580]		5080		[1880]		12800		[1360]	
5	Selenium			UL		UJ		UJ		UJ		UJ		UJ		UL		UJ		UL
10	Silver							UJ		UJ		UJ					[1.2]	L		
5000	Sodium		[460]		[490]		47500		44000		44800		46200		15900		11400		5910	
10	Thallium																	UJ		JL
50	Vanadium																419			
20	Zinc		[12.8]		54.8		62.7	B	31.0	B	28.4	B	45.1	B	[17.2]	B	1990		[16.7]	B
10	*Cyanide			Q													121			

CRDL = Contract Required Detection Limit

*Action Level Points

Jaime 5

DATA SUMMARY FORM: INORGANICS

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 2/27/91

WATER SAMPLES
(ug/L)

[Due to dilution, sample quantitation limit is affected
See dilution table for specific

CRDL	ANALYTE	Sample No.	MCFD65		MCFD67		MCFD68		MCFD69		MCFD71		MCFD72		MCFD73		MCFD74		MCFD75		MCFD76	
		Dilution Factor	1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0	
		Location	SW-8		HW-1		HW-2		HW-3		HW-5 Jeff		HW-6 Stuart		HW-7		HW-8		HW-9		HW-10	
200	Aluminum												[1.9]									
60	Antimony		[17.1]		[19.6]		[12.8]		[23.X]		[25.0]		[10.9]	K			[18.9]				[15.2]	
10	*Arsenic										[3.0]	1	[3.0]					UL		UL		
200	Barium		[50.1]						[21.5]		[71.1]		[159]		[192]		[195]		[40.6]			
5	Beryllium												[2.1]									
5	*Cadmium																					
5000	Calcium		17500		10200		[1170]		[1430]		12600		7660		61500		5670		11200		19700	
10	*Chromium																		11.9			
50	Cobalt																[21.9]					
25	Copper				325		202		342		159		255				93.6		106			
100	Iron		116	B	[65.1]	B	501		109	B	[45.0]	B	101	B	[48.0]	B	[81.8]	B	[42.9]	B	110	
3	*Lead				3.5		[2.8]		7.0				41.6				2.18		[2.6]		[2.3]	
5000	Magnesium		5260		7480		[2690]		[4680]		7740		7630		6700		7440		10400		[3490]	
15	Manganese		48.3		76.3		19.8		49.9		40.1		36.1		25.6		4260				118	
0.2	Mercury																					
40	*Nickel		[38.1]										[31.1]									
5000	Potassium		[3940]		6370		[1040]	B	[1530]	B	[3370]		19600		[3240]		6860		[1260]	B	[1190]	
5	Selenium																					
10	Silver																					
5000	Sodium		33900		9190		[1100]		14200		5200		11500		8780		10000		7040		5710	
10	Thallium					UL								UL								
50	Vanadium																					
20	Zinc		[18.8]		65.3		33.2		30.6		21.1		27.3				62.9				[13.8]	
10	*Cyanide																					

CRDL = Contract Required Detection Limit

[illegible] Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIO

revised 9[illegible]

Table 5

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 3/27/91

WATER SAMPLES
(µg/L)

‡Due to dilution, sample quantitation limit is affecte
See dilution table for specific

CRDL	ANALYTE	Sample No.																			
		Dilution Factor	MCFD77 1.0		MCFJ78 1.0																
		Location	Field Blank		PW-22																
200	Aluminum																				
60	Antimony																				
10	*Arsenic																				
200	Barium																				
5	Beryllium																				
5	*Cadmium																				
5000	Calcium		[150]		9360																
10	*Chromium																				
50	Cobalt																				
25	Copper																				
100	Iron		[513]		199	B															
3	*Lead																				
5000	Magnesium				[3750]																
15	Manganese																				
0.2	Mercury																				
40	*Nickel																				
5000	Potassium				[835]																
5	Selenium																				
10	Silver																				
5000	Sodium				5020																
10	Thallium					U															
50	Vanadium																				
20	Zinc																				
10	*Cyanide																				

CRDL = Contract Required Detection Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITI

Table 5

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Black + Decker

SOIL SAMPLES
(mg/Kg)

Case #: 15947 Sampling Date(s): 2/26/91

due to dilution, sample quantitation limit is affecte
See dilution table for specific

CRDL	ANALYTE	Sample No.		MCED46		MCED47		MCED48		MCED49		MCED50		MCED52		MCED54		MCED55		MCED56		MCED57
		Dilution Factor		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0
		% Solids		83.0		87.1		81.9		73.1		81.1		67.6		71.8		77.7		59.6		58.6
		Location		S-1(30")		S-2(36")		S-3(3')		S-4(3')		S-5(3')		SD-1		SD-2		SD-3		SD-4		SD-5
40	Aluminum		5780		3620		4960		5900		5900		25600		7220		6970		12600		10800
12	Antimony			UL		UL		UL		UL		UL		UL		UL		UL		UL		
2	*Arsenic			UL	[0.71]	L		UL	[1.5]	1	[1.5]	1	[1.9]	L	[1.4]	L	2.6	L	6.9	L	5.6
40	Barium		[32.7]				[13.0]		16.3		[22.3]		60.1		[32.6]		[12.8]		[35.3]		[36.9]
1	Beryllium		[0.54]																[0.67]		
1	*Cadmium		2.8	L	2.2	L	2.4	L	2.2	L		UL		UL		UL		UL	2.6	L	3.3
1000	Calcium		[343]		[116]		1280		3210		[174]		23300		10300		[172]		[520]		[625]
2	*Chromium		7.0		19.3		12.1		32.6		19.4		36.4		12.1		9.5		33.1		28.1
10	Cobalt		23.1		23.6		10.9		21.6		19.9		[9.1]		[12.0]		[11.6]		[10.8]		[7.6]
5	Copper		48.2		43.3		39.4		37.1		35.0		26.6		22.6		26.1		40.1		31.9
20	Iron		41800		30100		36100		40000		47000		51800		17800		18800		55300		38100
0.6	*Lead		7.3	L	5.5	L	9.0	L	46.3	L	6.2	L	22.7	L	11.4	L	5.6	L	9.8	L	9.7
1000	Magnesium		[149]		[49.8]		1320		1760		[539]		[1250]		15700		2900		[661]		[698]
3	Manganese		1180		1090		1080		557		190		233		[307]		383		115		134
0.2	Mercury																				
8	*Nickel		12.4		15.8		29.9		17.5		[7.7]		19.1		12.6		20.0		18.2		19.1
1000	Potassium		[416]	B	[180]	B	[399]	B	[1050]		[681]		[420]		[1060]		[263]	B	[513]	B	[643]
1	Selenium			R		R		R		R		R		R		R		R		R	
2	Silver									UL		UL		UL		UL					
1000	Sodium						[177]						[237]		[749]						
2	Thallium																				
10	Vanadium		27.8		20.0		26.7		41.9		39.4		59.6		15.5		[10.6]		57.1		45.3
4	Zinc		36.7		38.0		36.2		126		43.0		38.3		46.6		76.0		48.6		41.6
2	*Cyanide			R		R		R		R		R		R		R		R		R	

C[illegible] = Contract Required Detection Limit *Action Level Exists SEE NARRATIVE CODE DEFINIT

Table 5

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Black + Decker

Case #: 15947 Sampling Date(s): 3/26-27/91

SOIL SAMPLES
(mg/Kg)

[Due to dilution, sample quantitation limit is affec
See dilution table for specif

	Sample No.	MCED62		MCED61		MCED66											
	Dilution Factor	1.0		1.0		1.0											
	% Solids	58.0		66.1		70.5											
	Location	SD-6		SD-7		SD-8											
CRDL	ANALYTE																
40	Aluminum	15700		3510		3230											
12	Antimony		UL	[5.2]	J		UJ										
2	*Arsenic		UL			[1.5]											
40	Barium	82.5		[28.8]		[22.7]											
1	Beryllium																
1	*Cadmium		UL														
1000	Calcium	[1310]		[325]		[951]											
2	*Chromium	20.3		8.2		6.3											
10	Cobalt	[15.1]		[8.1]		[7.3]											
5	Copper	18.0		8.8		8.8											
20	Iron	25400		15900		50100											
0.6	*Lead	18.7	L	7.2		4.7											
1000	Magnesium	[969]		[555]		[1350]											
3	Manganese	587		215		256											
0.2	Mercury																
8	*Nickel	[12.8]		[9.0]		[7.7]											
1000	Potassium	[1130]		[339]	B	[418]	B										
1	Selenium		R		K		K										
2	Silver																
1000	Sodium	[82.8]															
2	Thallium																
10	Vanadium	12.5		13.1		8.7											
4	Zinc	60.7		36.1		39.0											
2	*Cyanide		R														

2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: July 02, 1991

SUBJECT: ORGANIC DATA VALIDATION, CASE 15947
SITE: BLACK & DECKER

FROM: MAHBOOBEH MECANIC
SENIOR DATA REVIEWER

DON O'BRIEN
SENIOR DATA REVIEWER

TO: TERRY SIMPSON
ESAT DEPUTY PROJECT OFFICER

THRU: RICHARD D. DRESSER
ESAT TEAM MANAGER

OVERVIEW

Case 15947 consisted of thirty-four (34) water and thirteen (13) soil samples submitted to Aquatec for volatile, semivolatile and pesticide/PCB analyses. Included in this case were one (1) trip blank, two (2) field blanks, two (2) aqueous field duplicate pairs and one (1) soil field duplicate pair. The trip blank was analyzed for volatiles only. The samples were analyzed as a Contract Laboratory Program (CLP) Routine Analytical Service (RAS), under three (3) sample delivery groups (SDGs).

SUMMARY

All samples were successfully analyzed for all target compounds. All instrument and method sensitivities were according to the Contract Laboratory Program (CLP) Routine Analytical Service (RAS) protocol.

MINOR PROBLEMS

- The volatile analyses of several water samples were performed eight (8) to eleven (11) days from the date of sample collection. The technical holding time of seven (7) days for volatile aromatic compounds in unpreserved water samples has been exceeded by one (1) to four (4) days. The quantitation limits in the affected samples were qualified "UL". The affected samples are: CDN27, CDN29, CDN29DL, CDN30 - CDN37, CDN49, CDN51, CDN54, CDN56, CDN58, CDN60 - CDN62, CDN64, CDN65 and CDN66 - CDN72.

- The volatile analyses of all soil samples were performed eight (8) to nine (9) days from the date of sample collection. Although no technical holding time has been established for soil samples, the technical holding time of seven (7) days for volatile aromatic compounds in water samples has been exceeded by one (1) to two (2) days. The quantitation limits were qualified "UL" and positive results were qualified "L".

- The initial semivolatile analysis of samples CDN67 had two (2) acid surrogate recoveries less than 10%. This sample was reextracted sixteen (16) days after the date of sample collection, which exceeded the seven (7) days technical extraction holding time by nine (9) days. Sample CDN67RE had acceptable surrogate recoveries. Results from the initial analysis for base/neutral compounds and reanalysis for acid extractable compounds are reported on the data summary forms. The quantitation limits for acid extractable compounds are qualified "UJ".

- Several compounds failed precision criteria during the volatiles and semivolatiles continuing calibrations. The quantitation limits were qualified "UJ" for these compounds in the affected samples.

NOTES

- The field and trip blanks were free of contaminants. The maximum concentrations of all compounds found in the analyses of the laboratory method blanks are listed below. All samples with concentrations of the common laboratory contaminants less than ten times (<10x), or uncommon laboratory contaminants less than five times (<5x) the blank concentration have been qualified "B" on the data summary forms.

Compound	Concentration
methylene chloride*	5 J ug/L
acetone*	7 J ug/L
chloroform	2 J ug/Kg

* Common laboratory contaminant.

- GPC cleanup was employed for semivolatile and pesticide/PCB analyses of all soil samples. The dilution factors reported on the data summary forms have been adjusted by the reviewer to reflect this action. Dilution factors have also been adjusted to compensate for the difference in sample volume/weight used by the laboratory for several samples.

- The volatile analyses of samples CDN26 and CDN29 required dilutions to correct for compounds which exceeded the linear calibration range. Results from both analyses are reported on the data summary forms.

- During the pesticide/PCB continuing calibrations analyzed on 3/9/91 at 0635 and 1051, several compounds had retention times (RTs) slightly outside the RT windows. No data were affected. (SDG = CDN24)

- The percent difference (%D) between the calibration factors was greater than 15% on the quantitation column for dieldrin analyzed on 3/9/91 at 1051. No positive results were detected for this compound and no sample was analyzed after this standard, therefore, no data were qualified. (SDG = CDN24)

- The percent differences (%Ds) between the calibration factors were greater than 20% on the confirmation column for the last IND B analyzed on 3/8/91 at 0726. No data were affected. (SDG = CDN29 and CDN47)

- Non-spiked compounds, other than blank contaminants, were determined in the volatile analyses of samples CDN28 and CDN29 and the MS/MSD analyses of these samples. The results and precision estimates are summarized in the following tables:

	Concentration (ug/L)			
Compound	CDN28	MS	MSD	%RSD
1,2 dichloroethene (total)	15 J	15 J	14 J	3.9
tetrachloroethene	1800	1800	1700	3.3

	Concentration (ug/L)			
Compound	CDN29	MS	MSD	%RSD
1,2-dichloroethene (total)	12	ND	ND	IN
chloroform	3 J	ND	ND	IN
1,1,1-trichloroethene	2 J	ND	ND	IN
tetrachloroethene	210 J	200 J	190 J	5.0

%RSD = Percent Relative Standard Deviation
ND = Not detected
IN = Indeterminate

- The "Y" qualifier on the pesticide/PCB Form I (sample CDN42) indicates the reported result is below the specified reporting limit.

- Three (3) field duplicate pairs were analyzed by the laboratory. The results and precision estimates are given in the following tables:

Compound	Concentration (ug/L) CDN26	CDN30	RPD
1,1-dichloroethene	4 J	ND	IN
1,2-dichloroethene (total)	29	21	32
1,1,1-trichloroethene	7	ND	IN
trichloroethene	1800	2000	11
tetrachlorethene	36	35	2.8

Compound	Concentration (ug/L) CDN35	CDN36	RPD
tetrachloroethene	1600	1500	6.4

Compound	Concentration (ug/Kg) CDN52	CDN53	RPD
trichloroethene	3 J	5 J	50
tetrachloroethene	37	46	22

RPD = Relative Percent Difference
ND = Not detected

- The reported tentatively identified compounds (TIC) of Appendix D have been reviewed during data validation. Compounds identified as blank contaminants have been crossed off the TIC Form Is.

All data for case 15947 were reviewed in accordance with the Functional Guidelines for Evaluating Organic Analyses with Modifications for Use within Region III. The text of this report addresses only those problems affecting usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R").
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - TPO Report for Contractual Compliance
6) Appendix F - Support Documentation

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ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES

CASE 15947 SDG CDN24, CDN29 WATER SAMPLES

Item 1A The volatile analyses of several water samples were performed eight (8) to eleven (11) days from the date of sample collection. The technical holding time of seven (7) days for volatile aromatic compounds in unpreserved water samples has been exceeded by one (1) to four (4) days. The affected samples are: CDN27, CDN29, CDN29DL, CDN30-CDN37, CDN49, CDN51, CDN54, CDN56, CDN58, CDN60-CDN62, CDN64, CDN65 and CDN66-CDN72.

Item 1B The semivolatile extraction of sample CDN67RE was performed sixteen (16) days from the date of sample collection. The technical extraction holding time of seven (7) days was exceeded by nine (9) days. The contractual extraction holding time of five (5) days from VTSR was exceeded by fifteen (15) days.

Item 4A 4B Several compounds had %Ds greater than 25% during the volatiles and semivolatiles continuing calibrations. (See Table I in Appendix F.)

Item 4C The percent difference (%D) between the calibration factors was greater then 15% on the quantitation column for dieldrin analyzed on 3/9/91 at 1051. No positive results were detected for this compound therefore, no data were qualified. (SDG = CDN24)

The percent differences (%Ds) between the calibration factors were greater than 20% on the confirmation column for the last IND B analyzed on 3/8/91 at 0726. No data were affected. (SDG = CDN29).

Item 6A The maximun concentrations of all compounds found in the analyses of the laboratory method blanks are listed below.

Compound	Concentration
methylene chloride*	5 J ug/L
acetone*	7 J ug/L
chloroform	2 J ug/Kg

* Common laboratory contaminant.

Item 7B The initial semivolatile analysis of sample CDN67 had two (2) acid surrogate recoveries less than 10%. The reextracted analysis of this sample had acceptable surrogate recoveries.

Sample CDN25 had one (1) acid surrogate recovery below the QC limit. (See Form II SV in Appendix F.)

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES

CASE 15947 SDG CDN24, CDN29 WATER SAMPLES

Item 8C The pesticide/PCB MS/MSD analyses of sample CDN28 had three (3) out of six (6) RPDS outside the QC limits. Sample CDN29 had two (2) out of six (6) RPDs outside the QC limits. (See Form III pest in Appendix F.)

Item 13C During the pesticide/PCB continuing calibrations analyzed on 3/9/91 at 0635 and 1051, several compounds had retention time (RT) slightly outside the RT windows. No data were affected. (SDG = CDN24)

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES

CASE 15947 SDG CDN24, CDN29 SOIL SAMPLES

Item 1A The volatile analyses of all soil samples were performed eight (8) to nine (9) days from the date of sample collection. Although no technical holding time has been established for soil samples, the technical holding time of seven (7) days for volatile aromatic compounds in water samples has been exceeded by one (1) to two (2) days.

Item 4A 4B Several compounds had %Ds greater than 25% during the volatiles and semivolatiles continuing calibrations. (See Table I in Appendix F.)

Item 4C The percent differences (%Ds) between the calibration factors were greater than 20% on the confirmation column for the last IND B analyzed on 3/8/91 at 726. No data were affected. (SDG = CDN29 and CDN47)

Item 6A The maximun concentrations of all compounds found in the analyses of the laboratory method blanks are listed below.

Compound	Concentration
methylene chloride*	5 J ug/L
acetone*	7 J ug/L
chloroform	2 J ug/Kg

* Common laboratory contaminant.

Item 8A The volatile MS/MSD analyses of sample CDN47 had one (1) out of five (5) RPDs outside the QC limits. (See Form III VOA in Appendix F.)

WESTON

TABLE 3

SAMPLES EXCEEDING THE CHEMICAL HEALTH ADVISORY LEVELS

Cd (ug/L)

Sample ID	Advisory Level	Actual Result
MCED61	8.0	18.2

Pb (ug/L)

Sample ID	Advisory Level	Actual Result
MCED28	20.0	188
MCED51	20.0	41.3
MCED61	20.0	739
MCED74	20.0	278

WESTON
MANAGERS DESIGNERS CONSULTANTS
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DATE: 5 AUGUST 1991

SUBJECT: INORGANIC DATA VALIDATION, Case 15947
SITE: BLACK AND DECKER

FROM: PETE CHAPMAN PC — INORGANIC DATA REVIEWER
MARSHA BURRELL -mjb — SENIOR DATA REVIEWER

TO: TERRY SIMPSON
ESAT DEPUTY PROJECT OFFICER

THRU: RICHARD D. DRESSER RDD
ESAT TEAM MANAGER

OVERVIEW

The set of samples for Case 15947 contained thirty-three (33) unfiltered aqueous, eight (8) filtered aqueous and thirteen (13) soil samples which were analyzed according to the Contract Laboratory Program (CLP) Routine Analytical Services. The case consisted of three (3) different Sample Delivery Groups (SDG's). Included in the sample set were two (2) unfiltered aqueous field blanks, a filtered aqueous field blank, an unfiltered aqueous field duplicate pair, and a filtered aqueous duplicate pair. Several samples exceeded the 10-day Chemical Health Advisory Level for the Cd and Pb analytes. The advisory levels and the results for these samples are listed on Table 3.

SUMMARY

All analytes except As and Se in the aqueous samples for SDG# MCED24, Se and CN^- in the soil samples for SDG# MCED44 and Se in the soil samples for SDG# MCED64 were successfully analyzed in all samples. Areas of concern with respect to data usability are listed according to the seriousness of the problem. These include:

11. National Academy of Sciences. 1977. Drinking Water and Health. Volume 1. Safe Drinking Water Committee, Washington, D.C.

12. Travis, C.C., and A.D. Arms. 1988. Bioconcentration of organics in beef, milk, and vegetation. Environ. Sci. Technol. Vol. 22, No. 3, pp. 271-274.

13. Cline, P.V., and D.R. Viste. 1984. Migration and Degradation Patterson of Volatile Organic Compounds. Presented at the Fifth National Conference on Management of Uncontrolled Hazardous Waste Sites, Washington, D.C. November 7 to 9, 1984.

14. National Primary Drinking Water Regulations; Final Rule. 56 FR 3526-3614, January 30, 1991.

15. United States Environmental Protection Agency. April 1991. Drinking Water Regulations and Health Advisories. Office of Water.

16. National Primary Drinking Water Regulations. 40 CFR 141, Subparts B and G, July 1990.

17. United States Environmental Protection Agency. 1991. Integrated Risk Information System (IRIS). Record for Chloromethane. August 30, 1991.

18. Maximum Contamination Level Goals and National Primary Drinking Water Regulations for Lead and Copper; Final Rule. 56 FR 26460-26564, June 7, 1991.

19. Federal Register. 1985. National Primary Drinking Water Regulations; Synthetic Organic Chemicals, Inorganic Chemicals, and Microorganisms; Proposed Rule. Volume 50, Number 219. November 13, 1985.

LIST OF SOURCES

1. Sittig, M. 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens. Second Edition. Noyes Publications, Park Ridge, New Jersey.

2. Sax, N.I., and R.J. Lewis, Sr. 1989. Dangerous Properties of Industrial Materials. Seventh Edition. Van Nostrand Reinhold Company, New York.

3. United States Environmental Protection Agency. 1990. A Guide on Remedial Actions at Superfund Sites with PCB Contamination: Quick Reference Fact Sheet. Office of Emergency and Remedial Response, Hazardous Site Control Division, August 1990.

4. United States Environmental Protection Agency. 1991. Health Effects Assessment Summary Tables; Annual FY91. Office of Emergency and Remedial Response, Washington, D.C.

5. Doull, J., C.D. Klaassen, and M.O. Amdur. 1986. Casarett and Doull's Toxicology: The Basic Science of Poisons. Third Edition. MacMillan Publishing Company, New York.

6. Dragun, J. 1988. The Soil Chemistry of Hazardous Materials. HMCRI/Silver Spring, Maryland.

7. United States Environmental Protection Agency. 1988. Ambient Aquatic Life Water Quality Criteria for Aluminum. Office of Research and Development, Duluth, Minnesota. EPA 440/5-86-006.

8. United States Environmental Protection Agency. 1987. Update Number 2 to Quality Criteria for Water 1986. Office of Water Regulations and Standards, Criteria and Standards Division, Washington, D.C.

9. Versar, Incorporated, for United States Environmental Protection Agency. 1979. Water-Related Environmental fate of 129 Priority Pollutants. Monitoring and Data Support Division, Washington, D.C. EPA 440/4-79-029.

10. United States Environmental Protection Agency. 1986. Quality Criteria for Water. Office of Water Regulations and Standards, Criteria and Standards Division, Washington, D.C. EPA 440/5-86-001.

MAJOR PROBLEM

The matrix spike recoveries were extremely low (<30%) for the As and Se analytes in the aqueous samples (SDG# MCFG24), for Se and CN^- in the soil samples (SDG# MCED44), and for Se in the soil samples (SDG# MCED64). Therefore, the quantitation limits and reported results for these analytes in the affected samples may be biased extremely low, and they have been qualified, "R" and "L", respectively.

MINOR ISSUES

Several blanks had reported results for analytes that were >IDL. The reported results for the analytes in the affected samples which are <5x the blank concentration may be biased high and, therefore, have been qualified "B" as summarized in the following table:

ANALYTE	SAMPLE TYPE(SDG#)		TYPE OF BLANK
K	Unfiltered aqueous	(MCED64)	Preparation
Fe,Zn	Unfiltered aqueous	(MCED24) (MCED44)	Field
Fe	Unfiltered aqueous	(MCED64)	Field
Fe,Zn	Filtered aqueous	(MCED24)	Field
K	Soil	(MCED44) (MCED64)	Preparation

Several laboratory duplicate results were outside of the control limits for various analytes in the samples. Therefore, the quantitation limits and reported results for these analytes in the affected samples have been qualified estimated, as summarized in the following table:

ANALYTE	SAMPLE TYPE (SDG#)	REPORTED RESULT	QUANTITATION LIMIT
Cd, Hg	Aqueous (MCED24)	J	UJ
Al, Fe	Aqueous (MCED44)	J*	UJ

* = Several results for the Fe analyte were superseded by the qualifier "B" as previously mentioned.

Several matrix spike recoveries were low (30-75%) or high (>125%) in the analyses. The quantitation limits and reported results may be biased and have been qualified accordingly for the analytes in the affected samples as summarized in the following table:

ANALYTE	SAMPLE TYPE (SDG#)	BIAS	REPORTED RESULT	QUANTITATION LIMIT
Pb,Tl	Aqueous (MCED24)	Low	L	UL
Hg	Aqueous (MCED24)	High	K*	N/A
Se	Aqueous (MCED44)	Low	-	UL
Sb,As, Cd,Pb	Soil (MCED44)	Low	L	UL
Sb	Soil (MCED64)	Low	L	UL

* = The reported results have been superseded by the qualifier "J" as previously mentioned.

N/A = Not applicable.

Several analytical spike recoveries were low (<85%) for the As, Sb, Pb, Se, Ag and Tl analytes in the samples. The quantitation limits and reported results may be biased low, and therefore, they have been qualified "UL" and "L", respectively.

The analytical spike recoveries were high (>125%) for the Sb analyte in sample MCED72 and for the As analyte in sample MCED61. The reported results may be biased high, and therefore, they have been qualified "K".

NOTES:

The laboratory duplicate result for the Al analyte in the soil samples (SDG# MCED64) was flagged according to U.S.E.P.A. SOW 3/90. However, the National Functional Guidelines allow a larger control limit for the soil samples, therefore, the samples were not qualified.

The data was reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses.

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers added to the laboratory's results during evaluation.

ATTACHMENTS

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN
TABLE 2	GLOSSARY OF DATA QUALIFIER CODES
TABLE 3	CHEMICAL HEALTH ADVISORY TABLE
TABLE 4	SAMPLE DELIVERY GROUP IDENTIFICATION TABLE
TABLE 5	DATA SUMMARY FORMS
APPENDIX A	RESULTS REPORTED BY LABORATORY FORM Is
APPENDIX B	TPO REPORT
APPENDIX C	SUPPORT DOCUMENTATION

PC107A02.BDR

SECTION 8

8.0 TOXICOLOGICAL EVALUATION

8.1 Summary

A polychlorinated biphenyl (PCB), a polycyclic aromatic hydrocarbon (PAH), and cadmium were detected in subsoil at concentrations not expected to produce significant noncarcinogenic effects. Several metals in surface water exceeded Ambient Water Quality Criteria (AWQCs), including aluminum in most locations, lead in some locations, and 11 inorganic analytes in the upstream sample. Several volatile organic compounds (VOCs) were detected in surface water below levels associated with aquatic toxicity. Some phthalate ester concentrations in two areas exceeded an AWQC. Potential cancer risk increase for carcinogens detected in subsoil, surface water, and sediment cannot be ruled out.

Potable and nonpotable wells were sampled. In both types of wells, concentrations of 1,1-dichloroethene (1,1-DCE), trichloroethene (TCE), and tetrachloroethene (PCE) exceeded drinking water criteria or guidelines, sometimes by as much as a factor of 2,400. Concentrations of lead and manganese in home well (HW) no. 8 were well above criteria or guidelines; such water would not be recommended for potable use in an untreated state. Drinking water criteria for antimony in most HWs were also exceeded. Theoretical cancer risk increases cannot be ruled out for groundwater due to the presence of TCE, PCE, lead, arsenic, and beryllium.

8.2 Support Data

8.2.1 Soil Contaminants

On-site subsurface soil was sampled. In one sample (S-4), Aroclor 1254, a PCB, was detected at approximately 370 ug/kg. PCBs are persistent chemicals used in transformers and capacitors.[1] They have been associated with chloracne and liver ailments after prolonged high-level exposure.[1,2] However, the reported concentration in this subsoil is below even a recommended minimum quantitation level of 1,000 ppb in residential soil.[3] PCBs are classified as Group B2 (probable human) carcinogens based on Aroclor 1260.[4] If this carcinogenic ranking is applied to all Aroclor mixtures and the no-threshold theory of carcinogenicity is assumed, then some potential increase in cancer risk could not be ruled out if this subsoil were contacted.

A PAH, pyrene, was detected in one on-site subsurface soil sample (S-2) at 86 ug/kg. PAHs are common environmental contaminants that are found in the products of the combustion of organic material. For example, they are often found near roads and railroads.[5] PAHs can be found up to around 10,000 ug/kg as naturally occurring soil chemicals.[6] No significant impacts are indicated from the reported subsoil concentration of pyrene.

Cadmium was detected in on-site subsoil up to 2.8 mg/kg. Cadmium is a metal that can affect the blood, kidney, and prostate after high-level exposure.[1] Significant impacts are not indicated from the reported subsoil concentrations, even if 100 mg of soil were ingested daily by a 70-kilogram adult, based on the risk reference dose (RfD).[4]

8.2.2 Surface Water and Sediment Contaminants

Table 8.1 (below) displays notable levels of inorganic analytes detected in surface water. It can be seen that aluminum in most water samples exceeded the AWQC of 87 ug/l.[7] Other metals that exceeded AWQCs were copper, iron, and lead in the east lagoon and lead in the west lagoon and one outfall area sample.[8] Interestingly, the highest concentrations of metals were reported in the sample farthest upstream of the site (SW-6). In that sample, aluminum, beryllium, cadmium, chromium, copper, iron, lead, nickel, silver, zinc, and cyanide exceeded AWQCs.[7,8] It is important to note that this sample was described as containing much sediment. Sediment in a surface water sample may artificially elevate metal concentrations by providing an adsorptive surface for these contaminants. Only a portion of the metals reported in SW-6 may actually be dissolved in water.

Table 8.1
Notable Concentrations of Inorganic Analytes in Surface Water (ug/l)

Analyte[7,8] (WQC)	SW-6 tributary dairy pasture upstream	SW-7 tributary dairy pasture	SW-1 east lagoon	SW-2 west lagoon	SW-3 outfall	SW-4 outfall
aluminum (87)	189,000 (J)	175 (J)	1,330 (J)	190 (J)	133 (J)	141 (J)
barium	1,980					
beryllium (5.3)	14.6					
cadmium (1.1)	18.2					
chromium (11-hex)	321					
cobalt	472		17.4			
copper (12)	361		29.3			
iron (1,000)	414,000 (J)		1,960 (J)			
lead (3.2)	739		41.3	5	3.5	
manganese	27,400					
nickel (160)	181					
silver (0.12)	1.2 (L)					
vanadium	419					
zinc (110)	1,990					
cyanide (5.2)	121					

WQC - Chronic fresh-water AWQC or lowest observed effect level (LOEL). For hardness-dependent criteria, 100 mg/l was assumed.

hex - hexavalent

When AWQCs are exceeded, potential effects on sensitive aquatic species cannot be ruled out. Bioconcentration of metals such as lead and cadmium can also be a potential concern; however, concentration of such metals in fish tissue is best assessed by fish-tissue analysis.[9,10]

A suggested guideline for surface water used for consumption and the support of edible fish (1,000 ug/l) was the only barium water guideline available.[8] This level was exceeded only by the barium level in SW-6, the upstream sample. Manganese also has no surface water quality criteria.[8] However, low-pH irrigation water containing 1,000 ug/l or more of manganese has been reported to affect plants.[10] Aquatic species have varying sensitivities to manganese; some can tolerate up to 1,000,000 ug/l.[10]

No AWQCs have been developed for cobalt or vanadium. Typical cobalt levels in United States rivers reportedly range from less than 1 to 99 ug/l, with 87 percent of the samples having 5 ug/l or less.[11] Another study found cobalt in raw United States surface waters ranging from 1 to 48 ug/l, with a mean of 17 ug/l.[11] Cobalt was detected at 17.4 ug/l in the east lagoon and at 472 ug/l in the upstream sample. Typical vanadium water levels have been reported to range from 2 to 300 ug/l, with a mean of 40 ug/l; vanadium was reported in the upstream sample at 419 ug/l.[11]

Table 8.2 (page 8-4) displays organic compounds detected in surface water samples. It can be seen that the chlorinated VOC concentrations [1,1,1-trichloroethane (1,1,1-TCEA), 1,2-DCE, TCE, and PCE] are well below AWQCs or levels reported to be toxic to aquatic life.[8] No AWQCs have been developed for bromodichloromethane (BDCM) or dibromochloromethane (DBCM), which are trihalomethanes.[8] The trihalomethane chloroform has a fresh-water chronic LOEL of 1,240 ug/l.[8] It can be seen that some reported concentrations of phthalates, diethyl phthalate (DEP) in the east lagoon (32 ug/l) and bis(2-ethylhexyl) phthalate (DEHP) at the outfall (160 ug/l), exceeded the AWQC for total phthalates of 3 ug/l.[8] Potential effects on sensitive aquatic species cannot be ruled out; bioconcentration may also be potentially significant.[9,10] Of the organic surface water contaminants, DEHP, BDCM, TCE, and PCE are classified as Group B2 carcinogens. Theoretically, a potential increase in cancer risk following long-term exposure cannot be ruled out.

Of the above contaminants, TCE and PCE were measured in one or both tributary aqueous samples obtained in the dairy pasture. While bioconcentration of TCE and PCE in the meat and milk of cattle cannot totally be ruled out, note that bioconcentration is not considered an important fate process relative to volatilization for these contaminants in surface waters.[9] Biotransfer factors (BTFs) for meat and milk are proportional to octanol water partition coefficients; BTFs estimated for TCE/PCE are three to four orders of magnitude lower than BTFs estimated for PCBs and organochlorine pesticides such as DDT, contaminants that are known to bioconcentrate to a significant degree in the food chain.[12]

Table 8.2

Organic Compounds in Surface Water (ug/l)

Chemical[8] (WQC)	SW-7 tributary dairy pasture	SW-1 east lagoon	SW-2 west lagoon	SW-5 west lagoon drain	SW-3 outfall	SW-4 outfall	SW-8 downstream dairy pasture
BDCM		4 (J)					
DBCM		3 (J)					
1,1,1-TCEA (ma-31,200)			3 (J)				
1,2-DCE (fa-11,600)				2 (J)			
TCE (21,900)			18	6	15	7	7
PCE (840)	1 (J)			89		1 (J)	5 (J)
DEP (tot-3)		32					
DEHP (tot-3)					160		

ma - marine acute

fa - fresh-water acute

tot - total phthalates

Of the organic compounds detected in surface water, three were also detected in sediment: DEHP (east lagoon, approximately 410 ug/kg), TCE (west lagoon, approximately 7 ug/kg; west lagoon drain, up to approximately 5 ug/kg; downstream of the site in the dairy pasture, approximately 2 ug/kg), and PCE (west lagoon drain, up to 46 ug/kg; outfall, approximately 5 ug/kg). Potential increases in carcinogenic risk cannot be ruled out. TCE and PCE are mobile in the environment but, as previously noted, tend to volatilize from surface media.[9]

Toluene (130 ug/kg) and 4-methylphenol (4-MP) (approximately 270 ug/kg) were also detected in downstream sediment. Toluene is a VOC that can cause irritation and neurotoxicity at high levels; 4-MP is a semivolatile irritant.[1,2] Based on incidental ingestion of 100 mg sediment, significant human health impacts due to toluene and 4-MP would not be expected.[4] Toluene concentrations in water reported to affect aquatic or marine life exceed 5,000 ug/l.[8] There is no evidence to suggest that significant impacts on aquatic organisms due to toluene or 4-MP should be expected.

Cadmium was detected in the west lagoon drain sediment up to 3.3 mg/kg. This cadmium concentration is comparable to reported soil levels. Cadmium was reported above the AWQC in surface water only in the upstream tributary sample.

8.2.3 Groundwater

Nonpotable monitoring wells (MWs), potable production wells (PWs), and potable HWs were sampled in the Black and Decker site area. Table 8.3 (pages 8-6 and 8-7) summarizes notable concentrations of groundwater chemicals, including analytes that exceeded drinking water criteria or guidelines and all organic compounds. All the organic compounds were VOCs; these compounds have irritant, neurotoxic, and some hepatotoxic properties.[1,2] PCE can degrade to TCE, DCE, and vinyl chloride in groundwater.[13] It can be seen that the following equaled or exceeded drinking water criteria or guidelines: 1,1-DCE in PW-3; TCE in MW-8/10 (duplicates), MW-9, MW-B1, MW-12, PW-3, PW-4, and PW-6 [the Maximum Contaminant Level (MCL) was exceeded by factors of 2 to 2,400]; PCE in MW-8/10, MW-9, MW-B1, MW-12, PW-5, PW-6, and PW-7/8 (the MCL was exceeded by factors of about 3 to 360).[14,15,16] Criteria have not been established for chloromethane or 1,1-dichloroethane (1,1-DCEA). Using an estimated exposure of 2 liters per day for a 70-kilogram adult, the RfD would not be exceeded for reported groundwater levels of 1,1-DCEA.[4] As of August 30, 1991, no oral RfD has been established for chloromethane.[17] However, a provisional RfD of 9 X 10^{-3} mg/kg/day, derived using the Layton method from an oral rat LD50 (lethal dose to 50 percent of an experimental population) of 1,800 mg/kg, suggests that the 2 ug/l reported in PW-2 poses no serious threats. Few oral toxicity data are available for chloromethane; however, this VOC is described as mildly toxic via inhalation and it is permitted as an additive in food for human consumption.[2]

For the organic compounds that exceeded drinking water criteria, the following would also exceed RfDs, assuming 2-liter daily consumption by a 70-kilogram adult: PCE in MW-B1 and PW-7/8.[4] No RfD has been developed for TCE.[4] Water exceeding MCLs would not be recommended for consumption in an untreated state. The PWs are reported to be treated through air stripping, which is designed to remove VOCs (see section 2.6). The RfD for PCE was based on hepatotoxicity.[4]

TCE and PCE are also classified as Group B2 carcinogens. Table 8-4 (page 8-8) demonstrates estimated oral cancer risks for these compounds if it is assumed that all the groundwater wells were potable in an untreated state.[4] Two-liters-per-day consumption by a 70-kilogram adult was assumed. Inhalation of carcinogenic VOCs through showering and cooking, etc. can further increase carcinogenic risk.

Table 8.3

Notable Concentrations of Reported Analytes in Groundwater (ug/l)

Organics (DW)	HW-1	HW-2	HW-3	HW-5	HW-6	HW-7	HW-8	HW-9	HW-10
1,1,1-TCEA (200)		4 (J)							
TCE (5)	2 (J)	2 (J)	1 (J)						
PCE (5)		0.9 (J)				4 (J)			
Inorganics (DW)									
aluminum (S-50)					139				
antimony (P-10/5)	19.6	12.8	22.8	25	10.4 (K)		18.4		15.2
arsenic (50)				3 (L)	3				
beryllium (P-1)					2.1				
cobalt							21.4		
iron (S-300)		501							1,110
lead (50, A-15)	3.5	2.8	7		4.6		278	2.6	2.3
manganese (S-50)	76.3		49.9		361		4,260		108

Table 8.3 (continued)
Notable Concentrations of Reported Analytes in Groundwater (ug/l)

Organics (DW)	MW-2A*	MW-2B*	MW-8/10*	MW-9*	MW-B1* HNU	MW-12* HNU	PW-3	PW-4	PW-5	PW-6	PW-7/8	PW-22
chloromethane								2 (J)				
1,1-DCE (7)						4 (J)	7					
1,1-DCEA			4 (J)/ND	8								
1,2-DCE (70-C, 100-T)			29/21 (J)	12	15 (J)	12	5 (J)	4 (J)		5 (J)		
1,1,1-TCEA (200)			7/ND	3 (J)		2 (J)	37	15				
TCE (5)			1,800/2,000	18	33 (J)	12,000	50	28	3 (J)	9		
PCE (5)			36/35 (J)	19	1,800	210 (J)		2 (J)	13 (J)	40	1,600/ 1,500	
toluene (1,000)		6										
Inorganics (DW)												
aluminum (S-50)			ND/132									
arsenic (50)	4.1 (L)	3 (L)	3.8 (L)/ND		4.3 (L)							
iron (S-300)		10,500			775		612					
lead (50, A-15)							2.2 (L)	2.9 (L)				
manganese (S-50)		804		543	196							
sodium (G-20,000)		25,300	90,100/ 99,500	29,100			22,200	25,200			24,800/ 24,600	

ND - Not detected
DW - Drinking water criterion or guideline [MCL or National Primarily Drinking Water Regulation (NPDWR) unless otherwise indicated]
S - Secondary MCL
P - Proposed MCL
A - Action level
G - Guideline
C - Cis isomer
T - Trans isomer
*Inorganic MW results are from filtered samples.

Table 8.4

Estimated Oral Cancer Risks for TCE and PCE in Groundwater

Chemical	Q(oral)[4] $(mg/kg/day)^{-1}$	Well Number	Concentration (ug/l)	Risk (oral)
PCE	5.1×10^{-2}	MW-8/10	up to 36	5×10^{-5}
		MW-9	19	3×10^{-5}
		MW-B1	1,800	3×10^{-3}
		MW-12	210	3×10^{-4}
		PW-4	2	3×10^{-6}
		PW-5	13	2×10^{-5}
		PW-6	40	6×10^{-5}
		PW-7/8	up to 1,600	2×10^{-3}
		HW-2	0.9	1×10^{-6}
		HW-7	4	6×10^{-6}
TCE	1.1×10^{-2}	MW-8/10	up to 2,000	6×10^{-4}
		MW-9	18	6×10^{-6}
		MW-B1	33	1×10^{-5}
		MW-12	12,000	4×10^{-3}
		PW-3	50	1×10^{-5}
		PW-4	28	9×10^{-6}
		PW-5	3	9×10^{-7}
		PW-6	9	3×10^{-6}
		HW-1	2	6×10^{-7}
		HW-2	2	6×10^{-7}
		HW-3	1	3×10^{-7}

Table 8-3 also displays notable concentrations of inorganics in groundwater. Several metals in unfiltered MWs (aluminum, arsenic, cadmium, chromium, iron, lead, manganese, sodium) exceeded drinking water criteria or guidelines. Unfiltered MW samples often contain particulates that do not represent dissolved metals. Most of the MW samples for this case were described as "gray brown," "rust colored," or "reddish brown" (see sample log). Therefore, only filtered inorganic MW sample results were presented in table 8-3 and discussed in detail. It can be seen that reported concentrations of antimony in HW-1, HW-2, HW-3, HW-5, HW-6, HW-8, and HW-10 (10.4 to 25 ug/l) and beryllium in HW-8 (2.1 ug/l) exceed proposed MCLs of 10 or 5 ug/l and 1 ug/l, respectively. If 2 liters per day were consumed by a 70-kilogram adult, the RfD for beryllium would not be exceeded.[4] Assuming 2-liter-per-day consumption by a 70-kilogram adult, the antimony RfD would be exceeded by HW-1, HW-3, HW-5, HW-8, and HW-10 and would be so nearly exceeded by HW-2 that increasing consumption to 2.5 liters or reducing weight to 60 kilograms (132 pounds) would result in a dose exceeding the RfD.[4]

ORIGINAL
(Red)

Lead in HW-8 exceeds the action level of 15 ug/l and the NPDWR of 50 ug/l.[16,18] Lead is a metal that has been associated with gastrointestinal, hematopoietic, and nervous system toxicity.[1,2,5] Because no threshold has been established for lead-related effects, it is generally considered desirable to minimize lead exposure. Sometimes lead can be seen in domestic wells from parts of the distribution system such as lead solder.[11] Although the lead levels in HW-1, HW-2, HW-3, HW-6, HW-9, HW-10, PW-3, and PW-4 exceed the ideal exposure of zero, they do not exceed the action level or the NPDWR.[15,16,18] However, the reported level in HW-8 (278 ug/l, before treatment) exceeds the action level by more than 18 times and the NPDWR by more than 5 times; such water would not be recommended for use as a potable supply in an untreated state.

Manganese in HW-8 (4,260 ug/l) would also exceed the RfD, assuming 2-liters-per-day consumption by a 70-kilogram adult.[4] Manganese is not usually seen at such levels in drinking water and would impart a very disagreeable taste at such concentrations. Irritation and neurotoxicity have been reported for high-level manganese exposure.[2]

Arsenic is classified as a Group A carcinogen, and beryllium and lead are classified as Group B2 carcinogens. According to the no-threshold theory of carcinogenicity, any contact with carcinogens can increase overall cancer risk. Oral cancer risks of approximately 2×10^{-4} for wells with arsenic (3 to 4.3 ug/l) and 3×10^{-4} for beryllium in HW-6 (2.1 ug/l) can be estimated; no oral cancer slope factor has been proposed for lead by EPA at this time.[4]

Sodium in three filtered MWs (up to 99,500 ug/l) and three PWs (up to 25,200 ug/l) exceeded a guideline of 20,000 ug/l.[19] This guideline has been recommended by the American Heart Association to minimize the contribution of drinking water to total sodium intake.[19] Adverse effects on the general population would not be expected (assuming MWs were potable).

Aluminum, iron, and manganese in several wells exceeded the Secondary Maximum Contaminant Levels (SMCLs) of 50 ug/l, 300 ug/l, and 50 ug/l, respectively. SMCLs are aesthetic criteria related to organoleptic effects such as taste, staining, and corrosivity. Although these guidelines are not health based, it must be reiterated that manganese in one HW (HW-8; 4,260 ug/l) also exceeded the RfD if 2-liters-per-day consumption by a 70-kilogram adult was assumed.[4]

Cobalt was detected at 21.4 ug/l in HW-8. No drinking water criteria have been established for cobalt. It is an essential element not usually detected at significant levels in drinking water.[5,11] However, the cobalt concentration in this HW is well below levels reported to be cardiotoxic in beer (in excess of 1,000 ug/l).[11]

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