WARZYN

PPG

PROJECT
15004301

VOLUME I OF II

RCRA FACILITY INVESTIGATION:

I. DESCRIPTION OF CURRENT CONDITIONS AND II. PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES

PPG INDUSTRIES, INC.
10800 SOUTH 13TH STREET
OAK CREEK, WISCONSIN

SEPTEMBER 1992

PREPARED FOR:
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

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PREPARED BY:
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MILWAUKEE, WISCONSIN

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10800 South 13th Street Oak Creek, Wisconsin 53154 USA (414) 764-6000

September 1, 1992

Mr. Allan Debus, Minnesota/Wisconsin Section
RCRA Permitting Branch HRD-8J
United States Environmental Protection Agency, Region V
77 West Jackson Boulevard
Chicago, Illinois 60604-3509

Re: PPG Industries, Inc.
Oak Creek, Wisconsin
EPA ID WID 059972935
RCRA Facility Investigation
Task I and II Report

Dear Mr. Debus:

Enclosed are two copies of the RCRA Facility Investigation report for Task I (Description of Current Conditions) and Task II (Pre-Investigation Evaluation of Corrective Measure Technologies) as required by the Corrective Action section of the RCRA Hazardous Waste Management Permit obtained by the PPG Industries, Inc. (PPG), Oak Creek, Wisconsin Coatings & Resins manufacturing facility.

The federal portion of the permit became effective May 4, 1992. PPG received approval for a Class I modification to the permit by letter dated June 5, 1992 which extended the permit compliance date for completion of Task I to within 120 days of the permit's effective date.

On August 24, 1992, we had a telephone conversation regarding an aerial photograph that was taken in 1975 that shows soil piles located north of the active portion of the PPG facility. Aerial photographs were obtained to prepare Task I. From the photograph, it appears that soils removed during construction of the complex were moved to this location. No other information regarding this area is known. I informed you that PPG will initiate an investigation to determine if any other activities took place in this area that would classify it as a solid waste management unit. You agreed that it should not be considered a solid waste management unit until a determination can be made.

Please feel free to contact me regarding any questions you may have as you review the Task I and II reports.

Sincerely,

Thomas J. Yurick
Environmental Coordinator

Enclosures: As Stated

cc: Mr. Patrick Brady, Wisconsin Department of Natural Resources
Mr. Mike Netzer, Wisconsin Department of Natural Resources
Mr. Mitchell Magee, PPG Industries, Inc.

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INTRODUCTION

Warzyn Inc. (Warzyn) was authorized by PPG Industries, Inc. (PPG) to prepare this portion of the required RCRA Facility Investigation (RFI) for their facility located at 10800 South 13th Street in Oak Creek, Wisconsin (EPA Identification Number WID 059972935).

This report was prepared to meet the initial requirements of the Corrective Action section of PPG's RCRA Hazardous Waste Management Permit as issued by the United States Environmental Protection Agency, Region V, (U.S. EPA) on March 31, 1992 with an effective date of May 4, 1992. Specifically, this report pertains to the Task I (Description of Current Conditions) and Task II (Pre-Investigation Evaluation of Corrective Measure Technologies) portions of the RFI process as specified in the permit.

Information contained in the Task I portion of this report (Section 1) was primarily obtained through discussions with PPG personnel; a review of facility environmental records, correspondence, and laboratory analytical results; and review of other pertinent information relative to the PPG facility or surrounding vicinity.

Information contained in the Task II portion of this report (Section 2) was primarily developed by Warzyn in-house, through use of various treatment technology databases and a review of available information pertaining to site geologic and hydrogeologic conditions and hazardous waste management practices (see Appendix A for a list of quoted references).

In addition to their active facility, PPG also owns adjacent surrounding land that has never been used for industrial purposes and has either been vacant greenspace or farmland. For the purpose of this document, the site referenced includes only the active portion of the PPG facility unless otherwise noted.

Throughout this document, various solid waste management units (SWMUs) are referenced by number. Warzyn has included both the numbering system first employed by the Wisconsin Department of Natural Resources (WDNR) in their 1988 RCRA Facility Assessment (RFA) and the SWMU numbering system

included in the federal permit. This dual numbering system was required because each SWMU has a unique number in the RFA whereas, the numbering system used in the federal permit grouped like units into a single number. For the purpose of this document, the reference numbers are provided in parentheses with the RFA number given first and the federal permit number second (also referenced as RFI in some of the tables). Thus, (SWMU RFA #35, permit #20) would indicate SWMU #35 in the original RFA and SWMU #20 as subsequently numbered in the federal permit.

TASK I

DESCRIPTION OF CURRENT CONDITIONS

This Section presents a discussion of the facility background (i.e., physical setting and historical perspective) and the nature and extent of contamination known or suspected to be present. This Section is intended to summarize the body of knowledge available regarding past and present hazardous constituent and hazardous waste management activities at the site. This Section will form the basis for subsequent decisions made during the RFI process, including the requirement for no further action or the need to obtain additional data to further assess potential impact at a particular solid waste management unit (SWMU).

A. FACILITY BACKGROUND

This Subsection summarizes background information for the site and surrounding vicinity. Figures and tables are referenced to supplement the discussion of physical setting (i.e., location, site features, site and vicinity setting). Both tables and appendices are referenced to supplement the discussion of site history. This Subsection is intended to present the setting and framework for evaluating the potential for impact from waste management practices at facility SWMUs.

A.1. Site Description

A.1.a. Site Location and Setting - The site is located at 10800 South 13th Street in a mixed agricultural, industrial, and residential area in the City of Oak Creek, Wisconsin. The site is located in the NW 1/4 of the SW 1/4 of the Section 32, Township 5 North, Range 22 East, in the City of Oak Creek, Milwaukee County, Wisconsin (Figure 1).

The site is bounded by agricultural land to the north; agricultural land and a Chicago, Milwaukee, and St. Paul railroad line to the east; agricultural land to the south; and South 13th Street and across the way by agricultural land to the west. The boundaries of the PPG-owned lands and adjacent property owners are shown

on the Plat Map depicted on Figure 2. Surrounding land use is shown on the Zoning Map depicted on Figure 3 and indicates the site is zoned IPD, Industrial Planned Development.

According to the RFA, water pumped from Lake Michigan, and not groundwater, is used as the primary source of drinking water for the City of Oak Creek. The City also has five deep water supply wells that have been used only as an emergency backup source since 1984. None of the City wells are located within a 1/2 mile radius of the PPG-Oak Creek facility.

Also, according to PPG's *Feasibility Report* 19 private wells are located within a one mile radius of the site (refer to Figure 4 for locations and Table 1 for further discussion). Of these, eight wells are located within 1/2 mile of one of the SWMUs at the site. These eight wells are located west and northwest of the site. Of the total of 19 wells within a one mile radius of the site, only two wells are completed within the sand and gravel aquifer and 17 in the dolomite aquifer (refer to Figure 4 for locations).

At its closest point (southwest corner of the facility) the Root River is approximately 700 to 800 feet from the site boundary (Figure 1). A small, unnamed creek collects runoff from the eastern portion of the site and flows south, to the Root River (Figure 1). According to the PPG *Feasibility Report,* the site is not located within the Zone A 100-year floodplain of the Root River or the unnamed creek. However, a small portion of the site has been classified as Zone B, which is an area between the limits of the 100-year and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one foot; or where the contributing drainage area is less than one square mile (Figure 5). No other waterbodies appear to exist within an approximate 1/2 mile radius of the site.

According to the WDNR *Wetland Inventory Map* for the vicinity, identified wetland areas are located approximately 3000 feet northeast, less than 100 feet at its closest to the east (along the unnamed creek), and 700 to 1,000 feet south (Root River) of the site (refer to the Figure 5 for approximate delineations). Lands adjoining the Root River and the unnamed creek, including a portion of the site, have been classified as a primary environmental corridor (Figure 5).

According to the RFA, an endangered plant, Heartleaf Plaintain (Plantago cordata), is located approximately 1/2 mile downstream from the site, along the unnamed creek. Apparently two other plants of concern, Red Trillium (Trillium recurvatum) and Golden Seal (Hydrostis canadensis) have also been observed along the unnamed creek. An approximate 40 acre beech woods, (known as the

Root River forest) is also located approximately 900 feet southeast of the site, along the unnamed creek (refer to Figure 5 for location).

According to the Southeastern Wisconsin Regional Planning Commission (SEWRPC) publication, *A Solid Waste Management Plan for Milwaukee County, Wisconsin (July 1987);* the 40 acre beech woods is classified as a natural and scientific area. Also, according to the SEWRPC publication, there are no historical and archaeological sites within a 1/2 mile radius of the site.

The only parkland known to exist within a 1/2 mile radius of the site is the Root River Parkway area to the south. No schools are now located within at least 3,500 feet of the site.

A.1.b. Site Description - The PPG-Oak Creek property consists of approximately 118 acres of land, of which approximately 51 acres comprises the active portion of the manufacturing facility (also referred to as the site). The manufacturing facility consists of two major production areas (a resin plant and a paint plant which includes a finished product warehouse and raw material storage area); a technical/administrative services building; a waste treatment center; a raw materials tank farm and associated impoundment basin; a boiler house; a contractor fabrication shop; and other miscellaneous support buildings. A railroad spur enters the site near the southeast corner and generally trends to the northwest, towards the center of the property. Figure 6 depicts the major features of the site. Figure 7 depicts the known locations of major site utilities, Figure 8 provides a wind rose, and Figure 9 depicts the tank farm and associated tank identification numbering system.

During the RFA the WDNR identified a total of 36 SWMUs which are depicted on Figure 6 and summarized in Table 2. Based on discussions of past practices with facility personnel, available information, and a site walk-through additional SWMUs have been identified and will also be further discussed.

A.1.c. Site Topography and Drainage - The general topography of the site slopes slightly from west to east ranging in elevation from 680 feet to 710 feet National Geodetic Vertical Datum (NGVD). Lake Michigan is located approximately 5 miles east of the property with an approximate mean water surface elevation recorded at 580 feet NGVD according to the *Racine North, Wisconsin 7.5 minute USGS Topographic Quadrangle Map (dated 1958 and photorevised in 1971).* Figures 10 and 10A provide detailed topographic maps of the site and adjoining lands.

Surface drainage at the site is primarily dictated by topography and the stormwater conveyance system. Figure 11, obtained from PPG's recent permit

application for stormwater discharge associated with industrial activities under the Wisconsin Pollutant Discharge Elimination System (WPDES) program, indicates there are four major drainage patterns at the site.

The north yard area, roof drains from the paint plant (except the finished goods warehouse area), a portion of the roof drains from the resin plant, and the main employee parking lot all drain through a stormwater collection system to an interceptor basin (SWMU RFA #35, permit #20). Internal roads and yard areas that are a part of this system are all paved and storm drains are plugged to provide for spill control. These drains are opened to allow for discharge to the interceptor basin only after stormwater is observed and determined not to be visually contaminated.

The interceptor basin normally discharges to WPDES permitted Outfall 001 (also identified as 1 on Figure 11). This outfall is monitored under the WPDES program and is equipped with a continuous total carbon analyzer. In the unlikely event elevated organic levels are detected, a signal from the analyzer will automatically shut a sluice gate, preventing discharge through the outfall.

Under normal conditions Outfall 001 discharges to the unnamed creek along the eastern boundary of the property and ultimately discharges to the Root River, south of the facility. Two other drainage swales also discharge to the unnamed creek (identified as 2 and 4 on Figure 11). The northernmost swale drains the north employee parking lot, the grass area along the north property line and a gravel area occasionally used to stage trailers. A small portion of the southeast corner of the site also drains to the unnamed creek from the southernmost outfall.

Runoff from the south side of the manufacturing facility along the shipping and receiving area, the grassy area along the west property boundary, the trailer and tank wagon parking areas as well as roof drains from the administrative/technical building and finished good warehouse is conveyed primarily through underground piping to the drainage ditch along South 13th Street (identified as 3 on Figure 11). This drainage ditch ultimately discharges to the Root River.

In the tank farm, aboveground tanks with concrete pads and curbing are connected to a concrete trench system that discharges to the impoundment basin (SWMU RFA #29, permit #17). In addition, the remainder of the roof drains from the resin plant, roof drains from the paint plant raw materials warehouse, and road and trailer parking areas between the resin and paint plant also discharge to the impoundment basin (historically this discharge has also gone to the unnamed creek and the interceptor basin). All water from the impoundment basin is now discharged to the sanitary sewer if within discharge limits (otherwise the water would be disposed off-site).

The underground storage tank portion of the tank farm has an underdrain system which discharges to a concrete sump (SWMU RFA #30, permit #18). The sump is periodically pumped and is discharged to the sanitary sewer.

Stormwater from two of the noted hazardous waste storage areas, including the former container accumulation area by the waste treatment center (SWMU RFA #4, permit #3) and the 3,000, 55-gallon drum equivalent container accumulation area (SWMU RFA #5, permit #4), are also discharged to the sanitary sewer. Both areas have a pitched slope towards a collection sump or basin as a part of required secondary containment.

A.1.d. General Physiography and Regional Hydrogeology - Four soil series were present at the site prior to construction, according to the U.S.D.A. Soil Survey for the area. The soil series included the Morley (84% of site), Blount (10% of site), Drummer (5% of site) and the Askum (1% of site). These soils are classified as poorly to well drained and consist of silty soils overlying calcareous silty clay loam glacial till. Permeability of these shallow soils are typically moderately slow to moderate with a high available water capacity. Groundwater in these undisturbed soil series is generally found at less than five feet from the ground surface.

Underlying the surface soils in the vicinity of the site are glacial till deposits of the Oak Creek formation. The Oak Creek till is comprised of fine textured glacial till, lacustrine clay, silt, sand, and some glaciofluvial sand and gravel. The till is strongly calcareous and fine grained, and commonly contains between 80% and 90% silt and clay. The average grain size distribution is typically 12% sand, 43% silt, and 45% clay. Underlying the Oak Creek till is the New Berlin formation. The New Berlin formation is a dense sandy till with an average grain size distribution typically ranging 58% sand, 29% silt and 13% clay. The Oak Creek till has a low permeability, generally ranging from $1x10^{-6}$ to $3x10^{-8}$ centimeters per second (cm/sec). The New Berlin till has a somewhat higher permeability, generally ranging from $1x10^{-4}$ to $1x10^{-5}$ cm/sec.

According to the log for PPG's abandoned waste supply well, the glacial till is approximately 180 feet thick at the site. Although the maximum thickness of the Oak Creek portion of the till is unknown, it has been observed to reach a thickness of at least 115 feet in some areas of exposed Lake Michigan bluff along the shoreline in southern Milwaukee County.

The uppermost bedrock in the vicinity of the site is Silurian-aged Niagara dolomite which is approximately 200 feet thick. Beneath the dolomite is Ordovician-age Maquoketa shale which is approximately 200 feet thick. Underlying the Maquoketa is a series of Ordovician dolomite formations

(Platteville, Deborah and Galena), with an overall thickness of approximately 250 to 350 feet. Beneath the dolomite layers is a thick sequence (300 feet) of Ordovician to Cambrian-age sandstone deposits. Beneath the sandstones is the Precambrian-age crystalline basement rock.

Three major aquifers are located in the vicinity of the site, including the sand and gravel aquifer located in the glacial till, the Silurian-age dolomite aquifer and the Ordovician and Cambrian-age sandstone aquifer.

The sand and gravel aquifer consist of unconsolidated sand and gravel deposits in glacial drift and alluvium. These surficial deposits may be saturated from near the ground surface to the Niagara dolomite. Recharge is primarily from precipitation in more permeable areas. Discharge may be to local waterbodies, the dolomite aquifer, or to Lake Michigan. General flow direction normally parallels surface topography. Based on a review of the log for PPG's abandoned well, it does not appear that the sand and gravel aquifer exists directly beneath the site.

The Silurian dolomite aquifer overlies the Maquoketa shale in the vicinity of the site and is used as a major source of water. When the till above the dolomite aquifer consists of sands and gravels, the dolomite and sand and gravel aquifers are often hydraulically connected. Conversely, the dolomite aquifer may be under artesian conditions when overlying till consists primarily of clays and silts. Recharge occurs in areas with permeable overlying till and hydraulic connection with overlying glacial sand and gravel deposits. Discharge occurs from wells and hydraulic connection with Lake Michigan. The natural flow direction in the dolomite aquifer is east towards Lake Michigan, but may be affected by local pumping.

Below the Silurian dolomite, the Maquoketa shale forms an aquatard which minimizes vertical groundwater flow to the deep sandstone aquifer. The deep sandstone aquifer extends from the bottom of Maquoketa shale down to the Precambrian crystalline rock. It is a major supplier of water to southeastern Wisconsin, but it is not hydraulically connected to the near surface hydrogeology in the site vicinity.

In evaluating regional geological and hydrogeologic information relative to waste management activities at the site, it is very improbable the primary water supply aquifer (i.e., sandstone) could be affected by a release from a SWMU. As discussed in the next Section, unconsolidated deposits overlying the bedrock (180 feet thick) consist of relatively impermeable clay, silt, and sand, making the likelihood for impact to the dolomite aquifer improbable. The most likely impact from a potential SWMU release would be to the shallow watertable. Contaminant migration would most likely be through isolated sand and gravel lenses or layers

and would be confined by silts and clays. This situation exists in the vicinity of the tank farm where sand and gravel layers/lenses were encountered extending northeast and southwest from the tank excavation.

A.2. History of Facility

A.2.a. General History - The PPG manufacturing facility was constructed from 1973 to 1975 and began producing both solvent and water-based coatings for automotive, industrial and consumer clientele in December, 1975. A review of historical aerial photographs obtained from the Southeastern Wisconsin Regional Planning Commission for the years 1963, 1967, 1970, 1975, 1980, 1985, and 1990 indicated that prior to PPG construction, the site was farmland with a farmstead located along South 13th Street. Final facility construction and earthwork activities (at the parcel of land located immediately north of the site) were noted in the 1975 aerial photographs. The 1980, 1985, and 1990 photographs do not indicate any other changes of significance to the site or vicinity except that the present day interceptor basin was constructed between 1975 and 1980.

A.2.b Process History - Raw materials used in the manufacturing process are received in bags; cans; various sized fiber, plastic, and metal drums; tank wagons; and historically in rail cars. Approximately 85% of the plant's solvents and reactants are brought to the site by bulk tank wagons and off-loaded into the bulk storage tanks located in the southeast corner of the site. Pigments, extenders and drums of miscellaneous raw materials are brought to the site in box trailers and off-loaded on the south side fo the paint plant raw materials warehouse. From there, the raw materials may be transferred to various production areas or small dedicated storage areas.

Finished products are primarily packaged into 5 gallon pails, various sizes drums, totes, and tank wagons for distribution. Finished paint products are stored in and shipped from the finished goods warehouse. Finished resin products are transferred by pipeline to storage tanks or drums for use in production. Resin products are also shipped directly to customers.

Paint manufacturing activites occur on two floors and a mezzanine in the paint plant with the north side dedicated to industrial coatings and the south side to automotive coatings. In general, paint is manufactured by combining resin (a polymer solution), solvent, pigments, extenders and a small amount of additives in a tank equipped with a high intensity mixer. The resultant paste is pumped through a "dispersion" mill into a holding tank where adjustments to viscosity and color are made (i.e., thinning and tinting). From the holding tank, the batch is pumped through strainers and filters into various size containers and shipped to customers. Figure 12 provides a general diagram of the paint making process.

The major raw materials used in the paint plant are water, aromatic solvents (e.g., xylene, toluene, ethyl benzene, mineral spirits, VMP naphtha), ketones (e.g., MEK, MIBK), glycol ethers (e.g., butyl cellosolve), ether acetates (e.g., cellosolve acetate), alcohols (e.g., butanol, isopropyl, and isobutyl), pigments (predominantly titanium dioxide; although zinc oxide, iron oxide, carbon black, toludine red, and heavy metal pigment usage is significant), additives (lecithin, hydroxyethyl cellulose) and extenders (e.g., calcium carbonate, silica, talc, bentonite, aluminum silicates, clay). The major waste streams produced from paint manufacturing are spend solvents and washwater used to clean vessels and equipment, used filter media, QA/QC sample waste, pigment dust and off-specification products.

Synthetic resins (alkyd, epoxy, acrylic) are also manufactured at the facility for use in on-site paint production, shipment to other PPG facilities for use, or occasionally sold as finished goods. Resin manufacturing is a batch polymerization process that can be generally divided into two categories; high and low temperature processes. In the high temperature process, natural oils (e.g. soybean oil), monobasic and dibasic acids (e.g. phthalic anhydride) and solvents (e.g. mineral spirits) are "cooked" in a reactor resulting in a condensation reaction. This resin solution is then dropped into fixed thin tanks where additional solvent is added. After filtering, the resin solution is pumped to storage tanks, filled into drums or filled into bulk tank wagons. Figure 13 provides a general diagram of the resin making process.

The highest volume raw materials in high temperature resin production include natural oils (soybean, safflower, sunflower, and linseed), glycerin, phthalic anhydride, pentaerythritol, benzoic acid, tall oil fatty acids, aromatic and aliphatic mineral spirits, aromatic and aliphatic naphthas, xylene, ethylbenzene, and toluene. The major waste streams from this process are condensation (decanter) water, used solvent from equipment cleaning, QA/QC sample waste, and off-specification batches, filters, empty drums and empty bags.

Acrylic and epoxy polymers are produced in the low temperature process. Acrylic polymers are produced by rate feeding acrylic monomers (e.g. methyl methacrylate) and catalyst (e.g. peroxide based catalyst) into reactors of solvent, resulting in an addition reaction. Epoxy resins are also produced by an addition reaction between epoxy-based raw materials (e.g. EPON 828) and bisphenol A. As with the high temperature resins, these low temperature resin solutions are dropped into fixed thin tanks where additional water or solvent (e.g. MEK) is added. The product is then filtered and transferred to storage or filled into drums or tank wagons.

The high volume raw materials used in the low temperature resin manufacturing process include a variety of acrylates, epoxy resins, styrene, bisphenol A, methyl ethyl ketone, methyl isobutyl ketone, butanol, isopropanol, hexanol, isophorone, and smaller amounts of aromatics and naphtha solvents. The major waste streams include used solvent from cleaning equipment, QA/QC samples waste and off-specification batches.

Laboratories are also located at the site and are involved in product development and quality control activities.

A.2.c. Waste Generation History - Table 3 provides a summary of nonhazardous solid waste generation at the site for the time period of 1988 to 1992. The estimate is based on PPG solid waste invoices for waste collected in site dumpsters and compactors (i.e., empty pigment bags, empty containers, paper waste, food waste, rags, cardboard, empty lab cups, disposable clothing, and some empty fiber and metal drums).

Table 4 provides a summary of hazardous waste generation based on WDNR Hazardous Waste Reports from 1986 to 1991. As indicated in the Table, the vast majority of the hazardous waste at the site has been solvent-related (i.e., D001, F003, F005) and/or has contained heavy metals (i.e., D004-D009).

Excellent records were available at the site detailing the types of hazardous waste that have historically been generated. In addition, small amounts of out-of-date and off-specification finished product from local PPG distribution and retail centers have been shipped to the site. Table 5 provides a summary of the waste streams generated at the site and a listing of the applicable hazardous waste codes. Supporting analytical results can be found in Appendix B.

Although 26 waste streams are listed in Table 5, these waste streams can actually be grouped into only eight general classes, including: dirty wash solvents from the resin making process, dirty wash solvents from the paint making process, dirty wash water from the resin making process, dirty wash water from the paint making process, still sludge, filter waste, air pollution control dust and off-specification and obsolete products and materials.

As indicated in Table 5 and Appendix B, the vast majority of hazardous constituents in the waste streams have included a primary core of approximately 10-20 organic solvents (at least one of which will be found in almost any PPG product and waste) as well as certain heavy metals. As detailed in Table 6 a positive correlation also exists between the waste generating process involved (i.e., resin vs. paint production) and the type of waste stream produced. This type

of information will be used to select analytical parameter lists if further investigation is required in a specific area.

A.2.d. Waste Handling - Hazardous wastes are placed in containers at the point of generation or piped to accumulation or treatment tanks.

Container Accumulation Areas - When the containers (primarily 55-gallon drums) are full, they have historically been taken to a specifically located small container accumulation areas throughout the site. Primarily, the smaller container accumulation areas are located outdoors and all are located on concrete. Drums are never opened at the small container accumulation areas. Except for the container accumulation area near the technical/administrative area (up to 90 day storage), normally, within 24 hours (with a maximum of three days) the drums are transferred to the large container accumulation area (SWMU RFA #5, permit #4). From the large accumulation area, the containers are either loaded onto trucks, or transferred to tank trucks for bulk disposal.

Only minimal waste handling activities (i.e., palletizing drums) occur at these units, significantly reducing the potential for a release. If a release would occur at these smaller container accumulation areas, the wastes would be immediately recontainerized and the residues properly cleaned up, thereby minimizing the potential for impacts to the environment. All container accumulation areas have secondary spill containment, thus also minimizing the potential for impact to the environment.

Bulk Accumulation and Treatment Tanks - Used solvent is generated from cleaning operation in the paint and resin plants and is transferred through permanent aboveground piping to three aboveground tanks in the tank farm (SWMU RFA #11, #12, and #13, permit #8) prior to on-site reclamation in one of two solvent recovery stills (SWMU RFA #27 and #28, permit #16). The stills are located inside the resin plant. Each still is comprised of an evaporator and a receiver. The PPG reclamation system (which includes the three used solvent tanks, two evaporators and two receivers) meets the EPA definition of a closed system. Still bottoms from the reclamation process are transferred to two organic waste treatment tanks (SWMU RFA #2 and #3, permit #2). These two tanks are used to accumulate compatible organic wastes for off-site disposal, which is considered to be treatment by the WDNR. The two organic waste tanks are located inside the waste treatment center. Other organic wastes can be transferred to these tanks through permanent aboveground piping from the resin plant or via pumping from drums or tank wagons at the waste treatment center.

One resin manufacturing process involves stripping methyl isobutyl ketone (MIBK) which is condensed and accumulated in a tank (SWMU RFA #14, permit

#8) prior to off-site reclamation for reuse or sale. The tank is located outdoors and to the east of the resin plant.

Washwater is generated from cleaning operations in the paint and resin plants and these wastes are managed separately. Two washwater treatment tanks (SWMU RFA #9 and #10, permit #7) located inside the waste treatment center are used to treat paint plant washwater. Washwater is transferred through permanent aboveground piping from the paint plant to either tank. A batch treatment process is used that includes flocculating solids followed by sludge dewatering through a filter press. The supernatant is transferred to the POTW through a decanter (SWMU RFA #7, permit #6) located inside the waste treatment center. The dewatered sludge is placed in fiber drums for off-site disposal. The two treatment tanks and decanter are exempt from RCRA regulation and are regulated under the Clean Water Act.

Three tanks located inside the waste treatment center are used to manage resin plant washwater and process water. Washwater and process water from five of the six reactor systems located in the resin plant and water condensed from the solvent recovery process are transferred through permanent aboveground piping to a reclamation tank (SWMU RFA #8, permit #7). The tank meets the definition of legitimate recovery or reclamation of a hazardous waste and the tank is operated in accordance with the requirements of NR 625.06. The waste collected in this tank consists of a solvent-water mixture.The immiscible solvents in the mixture are recovered and returned to the solvent reclamation process for reuse. The immiscible solvent-water portion is transferred to another tank (SWMU RFA #1, permit #1) for storage prior to off-site disposal. Washwater and process water from the remaining reactor system is transferred through permanent aboveground piping to a cationic wastewater tank (arbitrarily assigned SWMU RFA #41, permit #7) for accumulation prior to off-site disposal. The tank is also equipped with an ultrafiltration unit that is presently not in service.

In 1991, an organic waste accumulation tank (SWMU RFA #6, permit #5) was transferred over to use as a product tank. The tank is located inside the resin plant.

A majority of the waste treatment and/or accumulation tanks are located indoors and are either used for temporary storage or minor treatment of waste. The indoor tanks are all located on concrete floors with a majority of these tanks (i.e., within the waste treatment center) also provided with secondary spill containment. All four tanks located outdoors are provided with secondary spill containment. Wastes are transferred to and from the tanks via aboveground permanent pipeline systems, or hose connections. If a spill were to occur from the tanks, the wastes would be collected for proper disposal and the residues cleaned up.

Spill Containment/Runoff Control - Three primary spill containment/runoff control structures are located at the facility. The impoundment basin (SWMU RFA #29, permit #17) is used to collect stormwater runoff or spills related to the tank wagon loading and unloading area and the aboveground tanks in the tank farm. Stormwater collected in the impoundment basin is discharged to the sanitary sewer.

The tank farm underdrain sump (SWMU RFA #30, permit #18) primarily functions to collect groundwater and rainwater infiltration into the underground storage tank basin. The basin consists of an excavation within the natural clay till to a depth of approximately 20 feet. At the bottom of this excavation, drainage tile was installed around each UST to remove surrounding groundwater. The entire basin was then backfilled with high permeable sand and gravel. Any past releases from the USTs (e.g., tank overflows) would have contaminated the sand and gravel and hence precipitation that accumulates in the tank farm underdrain sump. The sump water is currently monitored as part of a UST leak detection program and is directly discharged to the MMSD.

The stormwater interceptor basin outfall (SWMU RFA #35, permit #20) receives stormwater runoff from the northern portion of the facility. The outfall consists of a concrete basin and baffled spillway which is equipped with a total carbon analyzer. The total carbon analyzer sounds an alarm and closes a sluice gate if elevated carbon levels are detected.

Air Pollution Control Devices - Four dust collectors are used to remove and accumulate primarily pigment dust. The dust comes from point source industrial hygiene control and also serves to minimize particulates. The dust is primarily inert solids, but may contain heavy metals. Dust is primarily generated when pigments and other solids are introduced to the paint or resin batches. These dust collectors are enclosed units with concrete floors which capture the dust into 55-gallon drums. Once filled, the drums are properly closed, labeled and transferred to the large container accumulation area, thereby minimizing the potential for release to the environment. Minor amounts of fugitive dust may accumulate within the unit, but is collected and transferred to drums for disposal on a daily basis.

A scrubber system is also used to capture volatile organic compounds from the resin making process. The scrubber system is an enclosed system set on a concrete base with a concrete wall providing secondary containment.

Solid Waste Trash Compactors - Four trash compactors are used to store solid, nonhazardous waste generated during paint and resin production. The solid waste consists of: empty pigment bags; empty containers up to 5 gallons in capacity;

paper and food waste; rags; cardboard; empty lab sample cups; disposable clothing; and empty fiber and metal drums ranging from between 50 and 55 gallons in capacity. Once full, the compactors are properly closed and transported to a licensed solid waste landfill.

A.3. History of Past Releases

Table 7 summarizes the history of past releases from SWMUs to the environment. The Table indicates only those spills from a SWMU (i.e. not raw material or product spills) which were released to the environment.

As indicated by the Table, reportable releases to the environment have only occurred from the interceptor basin (SWMU RFA #35, permit #20), the three used solvent tanks in the tank farm (SWMU RFA #11, #12, and #13, permit #8), and the collection trench associated with the waste treatment center (SWMU RFA #4, permit #3).

A.4. Historical Permitting

Several permits have been required at the site for management, monitoring, storage, and disposal of residuals from the manufacturing process. A discussion of each permit is given below.

A.4.a. Wisconsin Hazardous Waste Operating License - In September 1980 the PPG-Oak Creek facility submitted a Federal Part A permit application for interim status as a storage and treatment facility. Waste treatment consists solely of mixing compatible wastes in bulk tanks. In 1986, PPG submitted a plan to burn used solvent in a facility boiler. However, this proposed activity has never been conducted.

Revised Part A applications for the addition and deletion of management units and the addition and deletion of hazardous waste codes generated at the site were submitted on March 13, 1981; October 23, 1981; May 5, 1984; July 10, 1985; March 12, 1986, and September 21, 1990. Table 8 provides a summary of the waste codes that have been included in the various Part A applications.

On January 6, 1983, PPG was issued two interim licenses (one for storage and one for treatment) by the WDNR. On October 23, 1984 the interim storage license was modified to include an additional storage tank.

On March 12, 1986, PPG submitted a *Feasibility Report* (first step in the state of Wisconsin for obtaining the site equivalent of a federal RCRA Part B permit) to the WDNR. The *Feasibility Report* was approved with modifications in May 1989. In February 1990 PPG submitted a *Plan of Operation* to the WDNR which

was approved with modifications, resulting in PPG receiving a Wisconsin Hazardous Waste Operating License on March 31, 1992.

In conjunction with the Wisconsin Operating License, the U.S. EPA issued the federal portion of the permit on March 31, 1992 with an effective date of May 4, 1992. The federal portion of the permit required an RFI be conducted. The RFI was required based on a January 1986 continuing release survey submitted by PPG, an August 1987 Visual Site Investigation/Preliminary Assessment (VSI/PA) conducted by the WDNR, and the May 1988 RFA prepared by the WDNR. Submittal of this document is the first step in the RFI process.

A.4.b. WPDES Permit - The PPG-Oak Creek facility submitted a Wisconsin Pollutant Discharge Elimination System (WPDES) application for permit to the WDNR on April 5, 1974 and the resulting WPDES permit (No. WI - 002949) was issued by the WDNR on November 15, 1974. According to the accompanying PPG cover letter, ultimate discharge to the Root River would occur at six different points, five of which would include only stormwater runoff. The sixth discharge point (presently referred to as Outfall 001) was to include blowdown from the two cooling towers and two boilers as well as uncontaminated stormwater runoff. At a later date, vacuum pump seal water and fire protection system test water were added as discharge sources to Outfall 001. Boiler and cooling tower blowdown as well as storm water from licensed hazardous waste management areas were subsequently rerouted to the sanitary sewer system. This was done to minimize the potential for a release to the environment.

In the fall of 1977 the WDNR approved engineering details for a stormwater interceptor basin to control discharges to Outfall 001 (SWMU RFA #35, permit #20). An internal monitoring system, comprised of a total carbon analyzer, is used by PPG to monitor the discharge. The monitor is capable of shutting the sluice gate, should an elevated total carbon reading be detected.

On August 5, 1985; PPG received a WPDES notification of noncompliance from the WDNR for numerous chemical oxygen demand (COD) exceedences for the time period between November 1984 and April 1985. Subsequently, the WDNR issued a notice of violation (NOV) for the COD exceedences and an enforcement conference was scheduled.

As the result of the enforcement conference, a higher interim COD effluent limit was established. At the enforcement conference, PPG was given from November 1, 1985 to May 1, 1986 to demonstrate "substantial compliance" so that the WPDES permit could be reissued. A second conference was held on June 27, 1986 pertaining to continuing COD problems and a second six month "substantial compliance" extension was given. Through an extensive program of investigation

to determine potential COD sources and various operational modifications, PPG brought the COD into acceptable compliance and the permit was reissued.

Eventually the interim COD limits were decreased by the WDNR and the requirements for TOD were discontinued.

A.4.c. MMSD Wastewater Discharge Permit - The PPG-Oak Creek facility maintains an industrial wastewater discharge permit (No. 4241.01) with the Milwaukee Metropolitan Sewerage District (MMSD) for the discharge of industrial wastewaters through two defined outfalls. MMSD sanitary sewer Outfall 1.0 is defined as the total manufacturing facility process water discharge including cooling tower and boiler blowdown, the impoundment basin, the tank farm sump, the paint plant treatment system water, water softener backwash and general sanitary discharge.

MMSD sanitary sewer Outfall 1.1 is defined as the holding tank for the permeate from the cationic washwater ultrafilter located in the waste treatment center building. U.S. EPA categorical pretreatment standards for organic chemicals, plastics and synthetic fibers point source category (40 CFR, Part 414) apply to MMSD sanitary sewer Outfall 1.1. Presently, the water collected in the holding tank is disposed off-site and not discharged to the sanitary sewer. Thus, no monitoring activities have been conducted for MMSD defined outfall 1.1, although the outfall still remains in the permit.

PPG is required to sample their MMSD sanitary sewer Outfall 1.0 discharge twice per year and meet effluent limits for pH, copper, nickel, lead, zinc, cadmium, oil and grease.

There are no enforcement actions relative to PPG's wastewater discharge permit.

A.4.d. Air Emissions Permits - The resin plant and paint plant are identified as separate stationary air emission sources (FID #241027490 and FID #241177530, respectively). Emission sources at the site include nine boilers (referred to as boilers 20-28), the resin manufacturing process (stack 11, process P30) equipped with a wet scrubber and direct flame afterburner control devices, the pigment dispensing process (stack 10, process P30) equipped with fabric filter baghouses, the solvent thinning/paint manufacturing operation (stack 11, process 31) with no listed control devices, and fugitive emissions from paint plant cleanup operations (F #99).

Since the manufacturing facility was constructed in 1973-1975, initial construction and operating permits were not required by the WDNR. However, PPG did receive an air pollution control permit (No. 88-DAA-223) from the

WDNR on December 14, 1988 for minor modifications to the pigment manufacturing operation. This permit authorized construction and paint operation as described in the required plans and specifications submitted.

PPG also submitted their Mandatory Operating Permit (MOP) application to the WDNR but has not received any permits. Recent changes in the federal air emission regulations have nessitated the need to evaluate changes to the WDNR MOP program.

There are no enforcement actions relative to PPG's air emission requirements.

B. NATURE AND EXTENT OF CONTAMINATION

This Section includes a description of the solid waste management units (SWMUs) and recent observations made at each unit. In addition, the site soil, hydrogeologic, and environmental data was used to assess the potential for and possible impacts from contamination at the site. The results of this assessment are presented as well as conclusions and recommendations for further actions at SWMUs.

B.1. Summary of Solid Waste Management Units

The RFA conducted at the PPG Oak Creek facility identified 36 SWMUs (refer to Figure 6 for locations). In addition, during completion of this report, five other SWMUs were identified and are discussed in detail in this Section. The SWMUs consist of six general types, based on the activities performed at each unit, including:

- container accumulation areas (13 SWMUs; 1 indoors, 12 outdoors)
- waste treatment and/or accumulation tanks (15 SWMUs; 11 indoors, 4 outdoors)
- air pollution control dust collectors (5 SWMUs; 1 indoors, 4 outdoors)
- solid waste trash compactors (4 SWMUs; all outdoors)
- spill containment/runoff control structures (3 SWMUs; all outdoors)
- wet scrubber (1 SWMU; outdoors)

The following Subsections describe the activities and observations associated with the individual SWMUs. For ease in discussion, the SWMUs have been grouped together based on their geographic locations.

B.1.a. Technical/Administrative Area - The administrative wing includes a cafeteria and office areas. The technical wing supports production through product formulation, product enhancement, and troubleshooting activities. Small batches of paint are prepared in pint, quart and gallon sized containers and undergo various physical and chemical tests. The wastes that are generated are similar to those generated in the paint plant but on a much smaller scale. All wastes are consolidated in drums. The technical/administrative area includes two SWMUs.

A solid waste trash compactor (SWMU RFA #31, permit #19) is used exclusively to accumulate discarded paper waste and food items but not hazardous waste. The solid waste compactor is on competent concrete with no evidence of staining apparent.

A container accumulation area (SWMU RFA #15, permit #9) is located at the north side of the technical wing and is used to accumulate (<90 days) laboratory generated paint and resin wastes. The container accumulation area is on concrete, although some cracking was observed. In addition, evidence of staining in this container accumulation area was apparent.

B.1.b. Paint Plant - North Yard - The North Yard is a paved surface that is equipped with spill control and a stormwater collection system. Raw materials, products and wastes are transported through the yard via fork trucks, tank wagons and trailers. Temporary storage of raw materials, products and empty containers occurs in the yard. This area also includes nine SWMUs.

A former 6'x6', 20 drum container accumulation area (SWMU RFA #16, permit #10) and a former 6'x16', 60 drum container accumulation area (SWMU RFA #17, permit #11) used to accumulate various types of paint waste are located in the paint plant north yard. Both former container accumulation areas are on competent concrete. There was no significant staining in the vicinity of either container accumulation area.

A dust collector (SWMU RFA #22, permit #13) with three collection chambers, and a dust collector (SWMU RFA #24, permit #14) with two collection chambers are located in the paint plant north yard. Both dust collectors are located inside separate, small steel-framed buildings with a competent concrete base. A minimal amount of residual dust was observed inside (but not outside) these buildings.

A solid waste trash compactor (SWMU RFA #32, permit #19) used to accumulate paint pigment bags and other discarded solids from the paint operation is also located in the north yard. The solid waste compactor is located on a sloped concrete base with curbing to provide secondary containment. There was no significant cracking or staining in the concrete curbing or base.

In addition to the SWMUs described in the RFA, four other SWMUs were identified in this area during completion of this report. These included four 6'x16' container accumulation areas directly north of the paint plant capable of accumulating approximately 60 drums of paint waste. These areas were located in the vicinity of door #26 (arbitrary assigned SWMU RFA #37, permit #11), door #27 (arbitrarily assigned SWMU RFA #38, permit #11), door #28 (arbitrarily assigned SWMU RFA #39, permit #11) and door #29 (arbitrarily assigned

SWMU RFA #40, permit #11). All these areas are located on concrete with only an occasional concrete joint or small crack. There was no significant staining at any of these container accumulation areas.

B.1.c. Paint Plant - South Yard - The South Yard is paved and is connected to the primary internal roadway that is used for plant deliveries and shipments. This area includes four SWMUs.

A former 6'x16', 60 drum container accumulation area (SWMU RFA #20, permit #11) used to accumulate various types of paint and resin wastes is located in the paint plant south yard. The former container accumulation area is located on a concrete floor inside the raw materials warehouse. There was no significant staining or cracking in the vicinity of this area.

A dust collector (SWMU RFA #23, permit #13) with three collection chambers, and a dust collector (RFA #25, permit #14) with two collection chambers are located in the paint plant south yard. Each dust collector is located inside a separate, small steel-framed building with a competent concrete base. A minimal amount of residual dust was observed inside the buildings. Residuals were not observed outside of the westernmost dust collector building (SWMU RFA #23, permit #13) and a minimal amount of residuals, reportedly carbon black, were observed outside the easternmost dust collector building (SWMU RFA #25, permit #14).

A solid waste compactor (SWMU #33, permit #19) used to accumulate discarded nonhazardous solids from the paint operation is also located in the paint plant south yard. The solid waste compactor has sloped concrete and curbing to provide secondary containment and is located on a concrete base. The concrete base slopes towards a sump with stormwater manually pumped to the waste treatment center. Curbing is competent with minimal cracking in the concrete base. Rust-colored staining is located within most of the containment area.

B.1.d. Waste Treatment Center - The waste treatment center is used for waste management activities. Bulk waste streams are transferred through permanent aboveground piping from the paint and resin plants to bulk tanks located inside the waste treatment center. This area includes nine SWMUs.

This area includes: a 10,000 gallon water-based treatment tank (SWMU RFA #1, permit #1), two 6,000 gallon organic waste treatment tanks (SWMU RFA #2 and #3, permit #2), a 2,500 gallon wastewater decanter tank (SWMU RFA #7, permit #6), three 6,000 gallon wastewater treatment/accumulation tanks (SWMU RFA #8, #9, and #10, permit #7), and a former 40.5'x50', 300 drum/equivalent container accumulation area (SWMU RFA #4, permit #3).

All the tanks in this area are aboveground and located indoors inside the wastewater treatment center, which has a concrete floor. The floor of the building is concave in shape and is pitched to the south, towards a grated collection trench with a sump which provides the required spill containment. There was no staining within the building. The joint between the floor and wall has been sealed with an epoxy-based sealant. The container accumulation area is located outdoors on concrete with a 4-inch curb and is pitched to the previously mentioned trench. According to the RFA, cracks were observed in the concrete base of the container accumulation area. At the time of the walk-through, the pad had been recoated to meet RCRA storage requirements and did not have cracks or stains.

In addition to the SWMUs described in the RFA, the aboveground catonic washwater accumulation tank associated with the resin ultrafiltration unit was identified during the preparation of this report as a SWMU (arbitrarily assigned SWMU RFA #41, permit #7). This tank was formerly used in the ultrafiltration process, but is now used only to accumulate the washwater for off-site disposal. This tank is also located within the waste treatment center.

B.1.e. Resin Plant - The resin plant contains six reactor systems and operations take place on three floors and a mezzanine. The solvent recovery stills that serve both the paint and resin plants are located on the first floor of the resin plant. This area includes eleven SWMUs.

Four accumulation areas including a large 100'x140', 3,000 drum equivalent container accumulation area (SWMU RFA #5, permit #4) which stores paint and resin waste generated at the site. A 6'x8', 20 drum container accumulation area (SWMU RFA and #19, permit #10) and a former 6'x8', 20 drum container accumulation area (SWMU RFA #19, #18, permit #10) used to accumulate resin waste and a former 20'x40', 1,000 drum container accumulation area (SWMU RFA #21, permit #12) used to accumulate resin waste are all located in the vicinity of the resin plant. The large 3,000 drum container accumulation area is located outdoors on a concrete base with curbing on three sides and is pitched to the northeast corner to a common collection area. The concrete base and curbing are competent with some minor staining within the containment area. The two small container accumulation areas are located outdoors, on two separate concrete bases, both of which had insignificant hairline cracks. Slight staining is present in one of the areas (SWMU RFA #19, permit #10) but did not appear to be significant. The former 1,000 drum container accumulation area (SWMU RFA #21, permit #12) is located outdoors on a concrete base in an area without containment. The concrete is competent and there was no significant staining.

A 6,000 gallon organic waste treatment tank (SWMU RFA #6, permit #5) formerly used to store resin waste, but now used to store product (tank closure has

been addressed with the WDNR), is an aboveground tank located indoors, on a concrete floor. Insignificant staining was observed in the vicinity of this tank.

A 15,000 gallon waste solvent accumulation tank (SWMU RFA #14, permit #8) used to store methyl isobutyl ketone condensate, is located outdoors and is entirely surrounded by a concrete wall and base, which are competent. There was no staining and rain water which had collected within the containment did not exhibit a sheen.

A dust collector (SWMU RFA #26, permit #15) with one collection chamber is located on the third floor of the resin building on a competent concrete floor with no evidence of staining.

Two 5,200 gallon solvent recovery stills (SWMU RFA #27 and #28, permit #16) used to recover solvents used in the resin process, are located inside the resin plant on a concrete floor with no evidence of staining.

A solid waste compactor (SWMU RFA #34, permit #19) used to store discarded nonhazardous solids from the resin operation, is located outdoors on a concrete base and did not have secondary containment. The concrete is competent and there was no evidence of significant staining.

A wet scrubber system which is a countercurrent packed column (SWMU RFA #36, permit #21) used as an air pollution control device for the resin plant which vents to a fume incinerator. The wet scrubber system is located outdoors and is entirely surrounded by a concrete wall and base which is competent. There was no staining in this area.

The dust collector operates only occasionally when solids additions are made to the resin kettles. During solids additions, a local ventilation system pulls general room air away from the reactor hatch to minimize operator exposure to the dust. This dust is then collected in the baghouse dust collector. No pigments are used in the resin making process. The major solid raw material used in the resin operation is Bisphenol A.

B.1.f. Outfall - Stormwater from the northern portion of the plant is discharged through Outfall 001 to an unnamed tributary of the Root River. The outfall is a SWMU.

This area includes the 41,295 gallon stormwater interceptor basin (SWMU RFA #35, permit #20). The basin is equipped with a total carbon analyzer which sounds an alarm and closes a sluice gate if a spill is detected. The basin is located

outdoors and consists of concrete. Sheening was not present on the water in the basin.

B.1.g. Tank Farm - The tank farm consists of both underground and above-ground storage tanks, and is used for raw material storage. Tank wagon unloading and rail loading operations also take place in the vicinity of the tank farm. Five SWMUs are located in the tank farm area.

Three 15,000 gallon solvent accumulation tanks (SWMU RFA #11, #12, and #13, permit #8), two of which accumulates used paint-related solvent (PPG tank Nos. 122 and 123) and one (PPG tank No. 124) which accumulates used resin-related solvent are located outdoors and are on concrete with curbing to direct surface flow to the impoundment basin collection system. Both the curbing and base have cracks and evidence of staining.

The 210,188 gallon impoundment basin (SWMU RFA #29, permit #17) is constructed of concrete with evidence of cracks. However, no visible staining was present.

The 3,770 gallon tank farm underdrain sump (SWMU RFA #30, permit #18) is constructed of concrete and appeared to be approximately 20 to 25 feet deep. Where observable, there was no evidence of cracks or staining.

B.2. Assessment of Contamination

Various subsurface investigations have been conducted at the site. The location of soil borings and monitoring wells for each investigation can be found on Figure 14. As indicated by the Figure, most environmental sampling was conducted in the southeast quarter of the site in the vicinity of the impoundment basin (SWMU RFA #29, permit #17) the tank farm (possibly including SWMU RFA #11, #12, and #13, permit #8) and the tank farm sump (SWMU RFA #30, permit #18).

Information contained in the investigations was used to form the basis of the discussions pertaining to site soils and hydrogeology, soil contamination, and groundwater contamination. Information from these investigations has been collected for reference and is presented in Appendix format as follows:

Appendix	Subject
C	Soil Boring Logs
D	Geologic Cross Sections
E	Monitoring Well Construction Details
F	Groundwater Contour Maps
G	Summary of Available Soil and Groundwater Investigations

For ease in identification, each Appendix is further subdivided by each individual report and is referenced by the firm preparing the report and the year of investigation.

B.2.a. Site Soils and Hydrogeology - Eighty-two deep (i.e., greater than 10 feet deep to a maximum depth of 35 feet) soil borings/monitor well installation borings have been conducted at the site and indicate that soils consist primarily of low permeability clay/silt till with occasional sand and gravel layers or lenses.

Boring logs for a majority of the site borings are included in Appendix C. Several of the Layne-Western Company, Inc. geotechnical boring logs, primarily near the western property boundary, could not be located. Several logs for borings apparently located outside the site are also included in the Appendix. Previously prepared geologic cross sections are included in Appendix D.

During the initial construction of the facility, various types of natural fill was placed on the site. Natural site subsoils consist primarily of glacial till composed primarily of silty clay and clayey silt. Four grain size analyses conducted by Warzyn Engineering Inc. in 1981 indicated the till consisted of 1-4% gravel, 8-20% sand, 34-83% silt and 9-57% clay.

In general silty clays and clayey silts are present at the site to a depth of at least 35 feet. Isolated layers and/or lenses of sand and occasionally gravel were also encountered in several borings. These deposits were inconsistent in thickness, depth, and composition and were located primarily in the eastern 1/2 of the property (excluding the eastern property boundary). When present, the layers/lenses were predominantly encountered in depths ranging from 10 to 20 feet, with thicknesses ranging from approximately 0.1 to 5 feet. These layers/lenses do not appear to be continuous. Beneath the sand and gravel layers/lenses, additional silty clays and clayey silts were encountered.

Infield baildown permeability tests conducted by Warzyn Engineering Inc. in 1981 to evaluate the horizontal permeability of the glacial till indicated the average horizontal permeability was 3.2×10^{-5} cm/sec and ranged from 1.1×10^{-4} cm/sec to 2.2×10^{-6} cm/sec. The highest permeability was in the vicinity

of TW4. Warzyn Inc. also conducted infield baildown permeability tests in 1992 with horizontal permeabilities reported between $1.3x10^{-5}$ cm/sec to $6.8x10^{-7}$ cm/sec. In 1992, Warzyn Inc. also submitted a sample of undisturbed lean clay from beneath the tank farm for laboratory analysis of hydraulic conductivity which was reported as 4.1×10^{-8} cm/sec. Slug tests were performed by Geraghty & Miller in 1987. Hydraulic conductivity ranged from $4.14x10^{-4}$ cm/sec to $2.09x10^{-6}$ cm/sec with a geometric mean of $1.69x10^{-5}$ cm/sec. Based on this information, the glacial till clays and silts are relatively impermeable and would tend to significantly limit contaminant migration. Therefore the only significant subsurface migration pathway would be through sand lenses and layers where present.

Twenty-two monitoring wells have been installed at the site, 18 of which are water table wells and 4 of which are piezometer wells (MW10, MW15, LP1, LP3). Available monitoring well construction details are located in Appendix D. Water levels have been measured in the wells at numerous times and are summarized in Table 9.

Groundwater contour maps (Appendix F) have been developed by Warzyn Engineering Inc. (1981) and Geraghty & Miller (1987). The depth to groundwater indicated by these maps ranges from approximately 5 to 10 feet below the ground surface. Both maps indicate an eastern and southerly component to flow direction. Flow direction may be due to the unnamed creek to the east and the Root River to the south, both of which may serve as groundwater discharge points. Horizontal hydraulic gradients were reported by Warzyn Engineering Inc. as ranging from 0.001-0.006 ft/ft along the axis where the easterly and southerly groundwater flow components divide and as 0.02-0.03 ft/ft in the south and eastern portion of the site. Downward vertical gradient was reported by Geraghty & Miller in 1987 to be 0.225 ft/ft in the vicinity of well nest MW15/MW16.

In their 1981 report, Warzyn Engineering Inc. suggested that discharge from the stormwater interceptor basin may be causing a localized shallow groundwater mound and the tank farm under drain system and sump may be causing a localized depression of the water table. The Warzyn Inc. report of 1992 also indicated the tank farm underdrain system may be causing a localized depression of the watertable with static water levels adjacent to the tank farm estimated to be 5 to 10 feet below ground surface and at 15 feet within the tank farm. Thus, it would appear localized shallow groundwater may flow into the tank farm, which would tend to limit outward contaminant migration. However, as previously discussed, isolated sand and gravel layers/lenses are also present at the site and may serve as a migration pathway.

B.2.b. Soil Contamination - A significant number of soil sampling investigations have been conducted which included 54 hand-auger/shallow soil borings and 60 deeper (i.e., greater than 10 feet) soil borings (refer to Figure 14 for locations). These investigations have primarily been performed in the southeast quarter of the site and represent data accumulated by PPG to assess the environmental conditions at these specific locations. Analytical testing performed in each study is described below.

O.H. Materials Corp. (1987) - Seven (25 feet deep) soil borings within the boundaries of the underground tank farm and nine (10 feet deep) soil borings outside the tank farm limits were drilled. Thirteen soil samples showing the highest PID readings were analyzed for aromatic volatile compounds (AVC) using EPA Method 8020. Eleven of the 13 samples were analyzed from shallow depths ranging from ground surface to seven feet. Of these, three samples inside the tank farm contained significant detectable concentrations of toluene, ethyl benzene, and total xylenes. An additional four samples contained only minor concentrations (0.50 - 6.15 mg/kg) of toluene or total xylenes. The remaining shallow samples inside and outside the tank farm did not contain detectable concentrations of AVCs (Appendix F).

One of the remaining two deeper boring samples (A1, 10-12 feet) was collected within sand backfill in the tank farm and contained significant concentrations (15,500 mg/kg, total) of toluene, ethyl benzene, and total xylenes. The other deeper sample collected inside the tank farm (A3, 15-17 feet) was collected in natural clay and contained only a minor concentration of total xylenes (2.78 mg/kg).

All borings outside the tank farm were relatively clean and soils consisted almost exclusively of clay. Sand lenses were encountered in a couple of borings, however, field analysis did not show any evidence of contamination.

Geraghty & Miller (1987) - Geraghty & Miller in 1987 collected and analyzed two soil samples collected in the southeastern quarter of the property for priority pollutant volatile and "Rexlist" compounds. Because no elevated TIP readings were measured in any of the samples collected, sample selection (i.e., 9 to 10.5 foot depth interval) was chosen on the basis of location, soil type, and depth of the watertable. The sample collected from the impoundment basin (MW9) and the sample collected near the southeast corner of the resin building (MW15) contained only low concentrations of o-xylene (1.8 mg/kg and 2.8 m/kg, respectively).

Warzyn Inc. (1992) - Warzyn Inc. in 1992 collected and analyzed 95 soil samples for VOCs (EPA Method 8240) from 54 shallow and 22 deeper (10 to 35

feet) soil borings performed at the site. Sample selection was based primarily on PID readings and establishing the maximum depth of contamination. The following conclusions were derived from this investigation.

- Detectable concentrations of VOCs were found in samples collected from the tank farm backfill material. In general, the concentrations were higher in the samples obtained from deeper backfill material (near the base of the underground storage tanks), with the exception of higher isolated surface concentrations. The contamination decreases significantly in the natural low permeability clay soil below the backfill material.

- The extent of contamination beyond the tank farm excavation appears isolated to the northeast and southwest corners. Soil contamination was encountered in borings in these areas at the depth of a sand lense. The depth of the sand lense roughly corresponds to the depth of the water level within the tank farm. The extent of the sand lenses was not determined.

- Soil contamination was identified in the subsoil directly underlying the concrete slab in the base of the impoundment basin. Based on PID readings from soil samples the vertical extent of soil contamination appears to be limited to within a few feet below the slab.

- The horizontal extent of contamination does not appear to extend east beyond the limits of the impoundment basin. However, contamination does appear to exist west of the impoundment basin at a depth of approximately 10 feet, based on detectable levels of VOCs obtained at boring GTB3 (approximately 10 feet west of the impoundment basin). Based on laboratory analysis conducted on deeper soil samples, contamination appears to be confined within a sand lense found at a depth of approximately 10 feet.

- Isolated shallow soil contamination was also identified at various locations surrounding the resin plant foundation.

In summary, a significant amount of data is available regarding VOC-related soil contamination in the southeast quarter of the site. This data as related to SWMUs suggests impact to shallow soils beneath the impoundment basin (SWMU RFA #29, permit #17) to a depth of 3 to 5 feet. In addition, the tank farm backfill material and natural soil extending northeast and southwest of the tank excavation also is impacted with VOCs (including SWMU RFA #11, #12, #13; permit #8 and SWMU RFA #30, permit #18). Soil contamination in the tank farm vicinity generally appears to be relatively shallow (i.e., 15 feet or less) based on analytical results of tank farm subsoils.

B.2.c. Groundwater Contamination - A significant amount of water quality data has been collected from the 18 watertable wells and 4 piezometer wells located at the site (refer to Figure 14 for locations). In addition, a significant amount of sampling has been conducted from water within the sump associated with the tank farm underdrain system. Analysis has primarily included various VOCs (EPA Method 8240 direct injection, EPA Method 8240 purge and trap, ASTM Method D-3328 for total complex petroleum hydrocarbons, EPA Method 602, priority pollutant volatiles, "RexList" organics EPA Method 624, and EPA Methods 501/502). In addition, total organic nitrogen (TON) as an indicator parameter of amines (EPA Methods 350.2 and 351.3), mercury (automatic absorption techniques, method unspecified), base/neutral extractable (EPA Method 625), acid extractables (EPA Method 625), base/neutral and acid extractables (EPA Method 8270), and dissolved lead (method unspecified) have also been conducted.

To date, TON analysis (sampled only in the southeast quarter of the site) has indicated minimal concentrations in groundwater. Only two base/neutral and acid extractable compounds have ever been detected during sampling. These include: one time occurrences of 2, 4-dimethylphenol at TW4 (35 ug/l) and MW16 (46 ug/l) as well as di-n-butylphthalate at TW7 (9 ug/l) and TW4 (5 ug/l). Low concentrations of mercury (0.002-0.007 mg/L) were reported as one time occurrences at TW4 and TW8 and three times at TW7. One relatively elevated concentration of dissolved lead was reported as a one time occurrence at MW15 (35 ug/l). None of these analytical results appear to indicate a significant impact to groundwater.

The majority of the detectable groundwater contaminants have been VOCs. VOCs have not been detected in any of the 4 piezometer wells except for a one time occurrence of 2-butanone at MW15 at a concentration of 29 ug/l. This suggests VOC groundwater contamination is likely limited to the shallow watertable.

According to the available data, various VOCs have been detected at different times in the shallow watertable wells at the facility. However, historical samples from 7 of the 18 wells (TW1, TW2, TW8, MW9, MW11, MW13, and MW14) have not contained detectable concentrations of VOCs. In addition, four wells have only had one time occurrences of a particular VOC.

Of these four, one-time occurrences, only two wells exhibited relatively high (i.e., > 40 ug/l) VOC concentrations. Both elevated toluene and xylene were reported in 1989 at TW7 and MW12 but no detectable concentrations were reported at these wells thereafter. Thus, those isolated incidents would not suggest a significant groundwater impact had occurred. Neither of the remaining two-time

occurrences contained concentrations which would pose a significant concern. Also, toluene has been reported twice at TW5 (1.6 ug/l and 3.6 ug/l) and does not suggest significant groundwater impact.

Of the remaining six wells not previously discussed, four wells (LW1-LW4) surrounding the tank farm have had detectable quantities of VOCs; but due to their recent installation (Warzyn, Inc. in 1992) a historical evaluation could not be made. Nevertheless, available data shows very low VOC concentrations in these newer wells (0.91 to 22 ug/l) have been found in groundwater in the vicinity of the southeast corner of the tank farm at LW1 (ethyl benzene, toluene, total xylenes), in the northeast corner of the tank farm at LW2 (ethyl benzene, toluene, total xylenes, 1,2, 4-trimethyl benzene) and in the northwest corner of the tank farm at LW3 (methyl ethyl ketone). These low concentrations do not indicate a significant impact to groundwater. Analytical results do indicate a significant impact to groundwater near the southwest corner of the tank farm (LW4), with eight different VOCs and total complex petroleum hydrocarbons reported up to a maximum of 28,000 ug/l.

The remaining two wells, TW4 and MW16 located near the southeast corner of the resin plant, have historically contained elevated concentrations of various VOCs. Likewise, samples from the tank farm sump have historically contained numerous different VOCs at elevated concentrations.

In summary, groundwater impacts have generally been noted at isolated locations at the site at the watertable but not in deeper piezometer wells. The majority of the data comes from the southeast quarter of the property and suggests potential impact to groundwater in the tank farm area (possibly including the spent solvent accumulation tanks and the underdrain sump) but cannot be attributed to other SWMUs. The groundwater contamination in the tank farm area exists in a sand and gravel seam which extends northeast and southwest from the tank excavation. The groundwater analytical results have indicated that VOCs are the predominant contaminants of concern.

Monitoring wells MW13 (likely downgradient) and MW12 (likely cross-gradient) are located in close proximity to the large container accumulation area (SWMU RFA #5, permit #4). Detectable concentrations of VOCs have never been reported at MW13 and only one time occurrences in 1989 of toluene and xylene have been reported at MW12. This suggests that the large container accumulation area has not had a significant impact on groundwater.

B.2.d. Potential Impact Assessment - The following discussion includes a preliminary assessment of potential contaminant migration pathways and a general description of the potential for impact to human health and the

environment. This is a qualitative assessment only, based on the review of available information described and referenced in this report.

Soils - Because of the regional glacial till which consists primarily of low permeability clays and silts, soil contaminants would not exhibit a significant potential for either horizontal or vertical migration. This is especially true where competent concrete exists below a SWMU and/or a complete berm or dike exists. Likewise SWMUs located indoors, with competent flooring, would not likely impact the environment.

Sand and gravel layers/lenses were encountered in the central portion of the site at depths ranging from approximately 10 to 20 feet below ground surface. These layers/lenses could potentially provide a limited horizontal migration pathway. The full extent of the sand and gravel layers/lenses is not known but they do appear to be discontinuous in nature. Contaminants from SWMUs which include temporary and/or minimal waste activites (i.e., dust collectors, trash compactors, temporary container accumulation areas) would not likely penetrate downward through the clay and silt zone and impact a sand and gravel layer/lens, creating a migration pathway. Only those SWMUs which include subsurface activities (i.e., tank farm sump, and drainage system impoundment basin, interceptor basin, the three used solvent tanks in the tank farm, and the collection trench for the waste treatment building) have a significant potential to impact a sand and gravel lense.

Information to date indicates that contaminant migration in soil has potentially occurred in the vicinity of the tank farm and the impoundment basin. Information was not available to evaluate whether the interceptor basin or collection trench near the waste treatment building had impacted a sand and gravel layer/lense.

Due to the strict security system maintained by PPG and the nature of the primary potential soil contaminant pathway (i.e., sand and gravel layers/lenses at 10 to 20 feet in depth), the potential for exposure through physical contact or ingestion of soils appears minimal.

Groundwater - The primary migration pathways for contaminants in groundwater appears to be lateral movement, through saturated sand and gravel layers/lenses or if a utility trench is present near or beneath a SWMU. Vertical transport is likely limited due to the presence of the low permeable glacial till soils which are prevalent to depths of at least 35 feet below ground surface (based on soil boring data). Ultimately shallow groundwater may discharge to surface/groundwater drainage features off-site. Receptors to shallow lateral contaminant migration likely include the unnamed creek to the east of the property and the Root River to the south. To date, analytical results from wells

along the eastern property boundary do not indicate the presence of impacted groundwater.

At this time, documented evidence of groundwater contamination in relation to a SWMU exists only for the area surrounding the tank farm. The shallow groundwater VOC contamination appears localized and exists primarily in areas where sand and gravel layers/lenses were encountered. (northeast and southwest of the tank farm). Groundwater analytical results from deep piezometer wells around the tank farm have not shown significant VOC contamination. On a localized basis, the tank farm underdrain system appears to create a localized depression in the watertable. The water is collected and discharged to the sanitary sewers, minimizing the potential for human contact.

Shallow groundwater downgradient of the site is not used as an industrial or potable water source for at least 1/2 mile. Wells identified within 1/2 mile of facility are all located either up-gradient or cross-gradient. In addition, these wells are completed in the deep sand and gravel or dolomite aquifer at depths ranging from 92 to 399 ft. Thus the potential for exposure to contaminated groundwater from the site through ingestion or physical contact appears minimal.

Surface Water - The primary migration pathway for surface water migration leaving the site is via the outfall from the interceptor basin, which discharges to the unnamed creek along the east property boundary. The quality of drainage to the unnamed creek from the interceptor outfall is regulated under a WPDES permit. Historical exceedences of COD limits have been documented. Potential exposure through ingestion (via biological accumulation through the food chain) or physical contact is possible as the unnamed creek discharges to the Root River which offers some limited fishing and recreational opportunities.

Of the three runoff outfalls identified by PPG on their recent stormwater discharge permit application, both the outfalls in the northeast and southeast corners of the site do not likely receive runoff from a SWMU. The fourth runoff outfall discharges from the property near the southwest corner and includes runoff from two dust collectors (SWMU RFA #25, permit 14, and RFA #23, permit #13) and a trash compactor (SWMU RFA #33, permit #19). Runoff from these SWMUs channels to a small ditch (partially underground) which then discharges through the outfall.

Air - Based on existing information, no long term migration pathways which would affect air quality have been identified. Any release that has occurred to the air would be relatively short in nature. Surrounding land is primarily farmland, minimizing the potential for human exposure. As the need for intrusive activities

(i.e., further subsurface investigation, soil excavation, and installation of remedial technologies) occurs, potential air migration pathways will be re-evaluated.

B.2.e. Recommendations For Further Action

Table 2 summarized relevant information pertaining to each SWMU as well as provides recommendations regarding further activities. The activities include no further action or further investigation, as described below.

No further action is recommended for areas where historical documentation of a release does not exist, observations did not indicate a significant evidence of impact, and the potential for impact to health and the environment was low. Factors evaluated to determine the potential at each SWMU included: location, (i.e., indoors vs. outdoors), maximum amount of waste anticipated to be present, at any one time, length of time waste would be present (i.e., 24 hours vs. long term storage), activities conducted (i.e. accumulative only, process- related activity), spill reports and containment and historical soil and groundwater analytical results. In addition, the observations and recommendations made by the WDNR on their Preliminary Investigation Report form were used in determining the need for further action.

The following SWMUs are recommended for no further action:

- Container accumulation areas - A majority of the container accumulation areas are recommended for no further action due to their competent concrete bases, no evidence of significant staining, no reported spills, and minimal waste handling activites and duration wastes are stored at the units. The container accumulation areas where no further action appears warranted include:

  SWMU RFA #16, #18, #19; permit #10
  SWMU RFA #17, #20, #37, #38, #39, #40; permit #11
  SWMU RFA #21; permit #12

- Waste treatment and/or accumulation tanks - Many of the waste treatment and/or accumulation tanks are recommended for no further action primarily due to their location indoors (except the MIBK distillant tank) on concrete, no reported spills, no evidence of significant staining, and the recommendation for no further action by the WDNR in the Preliminary Investigation Report. These tanks include:

  SWMU RFA #1; permit #1
  SWMU RFA #2, #3, permit #2
  SWMU RFA #6; permit #5

SWMU RFA #7; permit #6
SWMU RFA #8, #9, #10, #41; permit #7
SWMU RFA #14; permit #8
SWMU RFA #27, #28; permit #16

- Air pollution control dust collectors - All air pollution control dust collectors are recommended for no further action due to the enclosed nature of the units, no reported spills, no significant staining, minimal waste handling activities, solid nature of the waste, and the recommendation for no further action by the WDNR in the Preliminary Investigation Report. These units include:

  SWMU RFA #22, #23; permit #13
  SWMU RFA #24, #25; permit #14
  SWMU RFA #26; permit #15

- Solid waste trash compactors - All solid waste trash compactors are recommended for no further action based on their competent concrete bases, no hazardous waste management activities, no reported spills, and the recommendation by the WDNR in the Preliminary Investigation Report. These units include:

  SWMU RFA #31, #32, #33, #34; permit #19.

- Wet scrubber system - The wet scrubber system (SWMU RFA #36; permit #21) is recommended for no further action based on the minimal waste handling activities, enclosed and contained concrete wall and base unit, no reported spills, no evidence of staining, and the recommendation by the WDNR for no further action.

Further investigation is recommended for SWMUs where sufficient information was not available for a complete impact assessment. The following SWMUs are recommended for further investigation:

- Container accumulation area - Three container accumulation areas are recommended for further investigation including:

  SWMU RFA #4; permit #3
  SWMU RFA #5; permit #4
  SWMU RFA #15; permit #9

The presence of contamination has not been identified for any of these SWMUs, however, either significant staining or a reported spill has been associated with each unit. The investigation should begin with sampling of shallow soil to determine the presence or absence of contamination.

- Waste storage and/or treatment tanks - Three tanks are recommended for further investigation including SWMU RFA #11, #12, #13; permit #8. Documented spills, observation of staining and soil data from the vicinity of the tanks indicate that the presence of contamination from these tanks is likely.

- Spill contaminant/runoff control structures - The tank farm sump (SWMU RFA #30, permit #18), the impoundment basin (SWMU RFA #29, permit #17), and the interceptor basin outfall (SWMU RFA #35, permit #20) are recommended for further investigation. Documented soil contamination (tank farm sump, impoundment basin), groundwater contamination (tank farm sump) and reported spills (interceptor basin outfall) warrant further investigation.

For SWMUs where documented evidence of soil and/or groundwater contamination exists, further investigation will be necessary prior to implementing any corrective measure. The following Section (Task 2) provides a preliminary discussion of potential corrective measures which may be required as well as further data needs.

TASK II
PRE-INVESTIGATION EVALUATION CORRECTIVE MEASURE TECHNOLOGIES

This section presents a discussion of the general response actions and potential corrective measure technologies which may be implemented if corrective actions are deemed necessary based on the RFI at the site. The primary purpose of performing the Pre-Investigation Evaluation of Corrective Measure Technologies is to identify additional data needed to facilitate the evaluation and selection of final corrective measures (if required).

A. IDENTIFICATION OF POTENTIAL CORRECTIVE MEASURE TECHNOLOGIES

The objective of the this preliminary evaluation of potential corrective measure technologies is to catalog the applicable remedial technologies which can then be further evaluated if a Corrective Measures Study (CMS) phase is warranted. For the PPG-Oak Creek site, this evaluation consisted of three steps:

- Identification of media of concern
- Development of general response actions
- Identification of potential corrective measure technologies.

The following sections describe the procedures and results of this process.

A.1. Identification of Media of Concern

In this step, the various media of concern were identified for use in developing general response actions. The potential media of concern that were considered as part of this analysis included:

- Soil
- Groundwater
- Surface water
- Air

Based on the information assembled in Task 1 of this report, a release from a SWMUs could primarily impact surface or subsurface soil, groundwater or surface water. Therefore, general response actions and potential corrective measures were developed only for these types of media.

A.2. Development of General Response Actions

General response actions were developed for each of the media of concern. General response actions are typically developed based on-site conditions, results of the RFI, and media specific goals that may be established to protect human health and the environment. However, general response actions were limited to those actions considered applicable to the site rather than listing all response actions whether applicable or not. Therefore, general response actions identified for consideration are:

Media	General Response Action
Soil	No action/monitoring Access restrictions Containment Excavation and disposal off-site In-situ treatment Excavation and treatment on-site Excavation and treatment off-site Monitoring
Groundwater	No action/monitoring Groundwater use restrictions Gradient controls In-situ treatment Extraction and treatment Groundwater discharge
Surface Water	No action Source control

A.3. Identification of Potential Corrective Measure Technologies

Potentially applicable corrective measure technologies were identified for soil and groundwater contamination. Corrective measures for surface water (if required) would be limited to source control response actions, which could potentially include spill containment, collection and routing to the wastewater treatment system or other typical engineering remedies. The data needed to design and implement these measures is already available and would be assembled during the Corrective Measure Study. Therefore, a detailed pre-investigation evaluation of these surface water remedies was not performed.

The corrective measures initially implemented at a specific SWMU may be a conditional remedy required to minimize the current or potential risks to human health and the environment, while allowing for continued operation of the manufacturing facility. The conditional remedy would be incorporated into the final clean-up of the SWMU when waste management at the unit ceases.

Similar to the general response actions, corrective measure technologies for soil and groundwater discussed below are limited to those actions considered potentially applicable to the site rather than listing the majority of known conventional and new remediation technologies. The list of technologies and discussion of applicable alternatives may change as additional information regarding the physical characteristics of the site and contaminant levels are obtained.

A.3.a. Potential Soil Corrective Measure Technologies - Several potential soil corrective measure technologies were identified for the general response actions described above. The potential technologies for each response action are presented in Table 10. The selection of the potential technologies for a specific SWMU area will be made based on several factors including:

- nature and extent of contamination
- risk to human health and environment
- operational needs of the facility.

The presence of soil contamination at a majority of the SWMUs is not anticipated based on a review of current information and recent site inspections and therefore no further action would be warranted in these areas. However, if soil contamination does exist, in most cases (except the tank farm sump) the source would tend to be related to more surficial management of waste materials. Therefore, soil contamination (if present) is anticipated to be at the highest levels at or near the ground surface, with the level of contamination decreasing significantly with depth. As the volume of impacted soil requiring corrective measures increases, the preferred response action would likely shift from removal based (excavation and treatment or disposal) to an in-situ based solution (containment or in-situ treatment).

A.3.b. Potential Groundwater Corrective Measure Technologies - Potential groundwater corrective measures were identified for the general response actions described in Section A.2. The potential groundwater corrective measures for each general response action are presented in Table 11. The selection of groundwater corrective measure technology will be based on several factors including:

- nature and extent of contamination
- risk to human health and environment
- geologic and hydrogeologic setting
- operational needs of the facility

The presence of groundwater contamination is known to exist in the vicinity of the tank farm area. Isolated occurrences of groundwater contamination may also exist related to other SWMUs. The general strategy for the treatment of isolated occurrences of groundwater contamination would be extraction and treatment technologies. Whereas, treatment of larger areas of impacted groundwater (if encountered) may be more efficiently corrected with in-situ response actions (gradient control and/or in-situ treatment technologies).

B. IDENTIFICATION OF DATA NEEDS

Additional data may be required in individual SWMUs, where suspected or known soil or groundwater contamination may exist. The general data needs to evaluate and select a specific corrective measure were assembled for each applicable technology and are included in Table 10 and 11. The specific data needs at each SWMU will vary depending on the following factors:

- suspected media of concern
- existing data at the SWMU
- geologic and hydrogeologic setting
- applicable potential corrective measure

Therefore, only the general data needs for the technologies were included in this report. The specific data needs at each SWMU will be further evaluated and specified in the RFI Work Plan. The data collection during the RFI will be performed in a phased approach, with initial results utilized to determine the need and scope for subsequent data collection phases. For example, results from an investigation of near-surface soil in a SWMU where surface waste management occurs will be used to determine the need for a deeper subsurface soil investigation. This approach will enable the RFI to focus on the collection of specific data required to make decisions regarding the applicability of corrective measure technologies.

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TABLE 1

Summary of Private Water Supply Well Information
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

Well	Owner of Record, Address, Section-Township-Range	Total Depth (ft)	Completed In:	Casing Diameter and Depth	Yield (gpm)	Depth to Water (ft)	Use
A	H.K. Dawe W. Elm Road E 1/2, Sec. 31, T5N, R22E	189'	Gravel	5" @ 189'	8	47	Domestic
B	D.F. Goelzer 1501 W. Elm Road NW NE SE, Sec. 31, T5N, R22E	256'	Solid Limestone	6" @ 214'	15	55	Domestic
C	Russell Williams 1505 W. Elm Road NW NE SE, Sec. 31, T5N, R22E	259'	Solid Limestone	6" @ 219'	10	45	Domestic
D	Wayne Martinko 1535 W. Elm Road NW NE SE, Sec. 31, T5N, R22E	226'	Solid Limestone	6" @ 213'	15	53	Domestic
E	George Bahr 1575 W. Elm Road NW NE SE, Sec. 31, T5N, R22E	241'	Limestone	6" @ 241'	10	90	Domestic
F	Max Ketelsoro 1641 W. Elm Road NW NE SE, Sec. 31, T5N, R22E	246'	Limestone	6" @ 213'	15	60	Domestic
G	PPG Industries, Inc. 10800 South 13th Street NW SW, Sec. 32, T5N, R22E	228'	Limestone	6" @ 180	10	65	Abandoned
H	Anton Huber 10484 S. 13th Street SW NW NW, Sec. 32, T5N, R22E	263'	Solid Limestone	6" @ 216'	15	55	Domestic
I	Joseph Plesko 10470 S. 13th Street SW NW NW, Sec. 32, T5N, R22E	245'	Lime Rock	6" @ 217'	12	60	Domestic

TABLE 1

Summary of Private Water Supply Well Information
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

Well	Owner of Record, Address, Section-Township-Range	Total Depth (ft)	Completed In:	Casing Diameter and Depth	Yield (gpm)	Depth to Water (ft)	Use
J	James Schneber 8720 Nicholson Road NW, Sec. 5, T4N, R22E	215'	Lime Rock	6" @ 130'	10	40	Domestic
K	E. Paesche 8605 Hwy. V NE, Sec. 6, T4N, R22E	92'	Limestone	6" @ 56'	10	30	Domestic
L	John Kruchter 8645 Hwy. V NE, Sec. 6, T4N, R22E	130'	Limestone	6" @ 80'	10	30	Domestic
M	Oscar Peterson County Trunk V Sec. 6, T4N, R22E	152'	Lime Rock	6" @ 150'	8	80	Domestic
N	Val Al Greenhouse 8644 Hwy. V Sec. 5, T4N, R22E	292'	Limestone	6" @ 44'	30	15	Commercial
O	John Kavitz Oakwood Road Sec. 32, T5N, R22E	285'	Limestone	6" @ 225'	5	57	Domestic
P	Valentine Lyhels Hwy. 41 and Oakwood Road NW NW, Sec. 31, T4N, R22E	215'	Gravel	6" @ 215	10	50	Unknown
Q	Lydia Delikat 547 Oakwood Road NW NW NE, Sec. 32, T5N, R22E	235'	Limestone	6" @ 207'	10	55	Domestic
R	Dennis Nommensen 595 Oakwood Road NW NW NE, Sec. 32, T5N, R22E	259'	Solid Lime	6" @ 210'	13	60	Domestic

TABLE 1

Summary of Private Water Supply Well Information
RCRA Facility Investigation
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PPG Industries, Inc.
Oak Creek, Wisconsin

Well	Owner of Record, Address, Section-Township-Range	Total Depth (ft)	Completed In:	Casing Diameter and Depth	Yield (gpm)	Depth to Water (ft)	Use
S	Henry Repa 823 W. Oakwood Road NE NW, Sec. 32, T5N, R22E	399'	Limestone	6" @ 197'	10	60	Commercial

Notes:

1. Table identifies water supply wells located within a one mile radius of the PPG site. Refer to Figure 4 for well locations.

2. Source of well information: Baker/TSA, Inc. Feasibility Report for Storage and Treatment of Hazardous Waste Generated at the PPG Industries, Inc., Oak Creek, Wisconsin Coatings and Resins Facility (October, 1986, as revised).

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TABLE 2

SUMMARY OF SOLID WASTE MANAGEMENT UNITS
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

SWMU # RFI	RFA	Description	LOCATION	CAPACITY	BASE	ACTIVITY	TIME	RELEASES	ANALYTICAL	WARZYN	WDNR	RECOMMENDATION
		TECHNICAL/ADMINISTRATIVE AREA										
9	15	container accumulation area (15'x30')	O	16 dr	C	S	2	N	3	S	I	I
19	31	solid waste compactor	O	NA	C	S	2	N	3	I	NFA	NFA
		PAINT PLANT – NORTH YARD										
10	16	container accumulation area (6'x6')	O	20 dr	C	S	1	N	3	I	I	NFA
11	37*,38*,39*,40*,17	container accumulation areas (6'x16')	O	60 dr	C	S	1	N	3	I	I	NFA
13	22	air pollution control dust collector	O	8 dr	C	S	2	N	3	I	NFA	NFA
14	24	air pollution control dust collector	O	7 dr	C	S	2	N	3	I	NFA	NFA
19	32	solid waste trash compactor	O	NA	C	S	2	N	3	I	NFA	NFA
		PAINT PLANT – SOUTH YARD										
11	20	drum accumulation area (6'x16')	O	60 dr	C	S	1	N	3	I	I	NFA
13	23	air pollution control dust collector	O	8 dr	C	S	2	N	3	I	NFA	NFA
14	25	air pollution control dust collector	O	7 dr	C	S	2	N	3	S	NFA	NFA
19	33	solid waste trash compactor	O	NA	C	S	2	N	3	S	NFA	NFA
		WASTE TREATMENT CENTER										
1	1	water-based sludge treatment tank	I	10,000 gal	C	P	2	N	3	I	NFA	NFA
2	2,3	organic waste treatment tanks (2)	I	6,000 gal	C	P	2	N	3	I	NFA	NFA
6	7	wastewater decanter	I	2,500 gal	C	P	2	N	3	I	NFA	NFA
7	41*,8,9,10	wastewater treatment/accum. tanks (4)	I	6,000 gal	C	S	2	N	3,4	I	NFA	NFA
3	4	container accumulation area (40.5'x50')	O	300 dr	C	S	2	Y**	3	I	I	I***

TABLE 2

SUMMARY OF SOLID WASTE MANAGEMENT UNITS
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

SWMU # RFI	RFA	Description	LOCATION	CAPACITY	BASE	ACTIVITY	TIME	RELEASES	ANALYTICAL	WARZYN	WDNR	RECOMMENDATION
		RESIN PLANT										
4	5	container accumulation area (100'x140')	O	3,000 dr	C	S	2	N	5	S	I	I
5	6	organic waste treatment tank	I	6,000 gal	C	P	2	N	3	I	NFA	NFA
8	14	waste solvent accumulation tanks (1)	O	15,000 gal	C	S	2	N	3	I	NFA	NFA
10	18	container accumulation area (6'x8')	O	20 dr	C	S	1	N	3	I	I	NFA
10	19	container accumulation area (6'x8')	O	20 dr	C	S	1	N	4	I	I	NFA
12	21	former container accumulation area (20'x40')	O	1,000 dr	C	S	1	N	3	I	I	NFA
15	26	air pollution control dust collector	I	1 dr	C	S	2	N	3	I	NFA	NFA
16	27,28	solvent recovery stills (2)	I	5,200 gal	C	P	2	N	3	I	NFA	NFA
19	34	solid waste trash compactor	O	NA	C	S	2	N	3	I	NFA	NFA
21	36	wet scrubber system	O	NA	C	P	2	N	3	I	N	NFA
		OUTFALL										
20	35	stormwater interceptor basin	O	41,295 gal	S	S	2	Y	3	I	CA	I
		TANK FARM										
8	11,12,13	solvent accumulation tanks (3)	O	15,000 gal	C	S	2	Y	1,2,5	S	NFA	I
17	29	impoundment basin	O	210,188 gal	S	S	2	N	1,5	I	I	I
18	30	tank farm underdrain sump	O	3,770 gal	S	S	2	N	1,5	I	CA	I

TABLE 2

SUMMARY OF SOLID WASTE MANAGEMENT UNITS
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

NOTES:

1. Location
   I = Indoors
   O = Outdoors

2. Capacity = Maximum capacity
   dr = drums
   gal = gallons

3. Base
   C = Concrete
   S = Soil

4. Activity
   S = Storage
   P = Process-related

5. Time = Indicates length of time waste anticipated to be present
   1 = < 3 days
   2 = > 3 days

6. Releases = Indicates documented release from SWMU potentially to environment
   Y = Yes
   N= No

7. Analytical = Indicates historical analytical results
   1 = Documented soil contamination
   2 = Documented ground water contamination
   3 = No available data
   4 = Available data does not indicate soil or groundwater contamination from SWMU
   5 = Soil screening indicates the presence of VOCs

8. Warzyn = Observations made during recent site walk-through
   S = Evidence of staining observed
   I = Evidence of insignificant or no staining observed

9. WDNR = Indicates recommendations by WDNR in VSI/RA
   NFA = No Further Action
   I = Need further information
   CA = Corrective Action plan
   N = Not discussed

10. Recommendation
    NFA = No Further Action
    I = Need further investigation
    CA = Corrective Action plan

11. * = Indicates RFI/RFA numbers arbitrarily assigned by Warzyn

12. ** = Indicates spill from containment trench to the environment

13. *** = Indicates investigation of containment trench area only

TABLE 3

Annual Solid Waste Generation
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

YEAR	TOTAL SOLID WASTE DISPOSED (LBS)
1988	672,000
1989	816,000
1990	732,000
1991	808,000
1992, 1st Quarter	218,400
1992, 2nd Quarter	192,900

Notes:

1. Total annual solid waste disposed was estimated from disposal invoices received by PPG.

2. Solid waste is almost exclusively collected in site dumpsters and compactors. The solid waste consists of: empty pigment bags; empty containers up to 5 gallons in capacity; paper and food waste; rags; cardboard; empty lab sample cups; disposable clothing; and empty fiber and metal drums ranging between 50 and 55 gallons in capacity.

NMC/kak/CWI
[mil-608-51c]

TABLE 4

Annual Hazardous Waste Generation
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

	Total Quantity of Waste Generated for Offsite Disposal *						Total Quantity of Facility Hazardous Waste Recycled and Treated Onsite				Total Hazardous Waste Generated
Year	D001	D002	D003	D004-D008	U190	F003	Process A	Process B	Process C	Process D	
1991	2746840	20880	0	2901125	0	20577397	9098837	2231925	3083780	0	40660784
1990	3289211	0	40058	4996586	0	28684847	19386641	4291526	700300	1867500	37010702
1989	4248810	35460	64064	9661823	106080	25138795	16744160	8675093	0	3106050	67780335
1988**	40603945	16000	119160	23109454	0	0	NR	NR	NR	NR	63848559
1987**	35462267	25300	0	15204915	0	0	NR	NR	NR	NR	50692482
1986**	19181040	9900	0	895200	0	0	NR	NR	NR	NR	20077230

Notes:

1. All units are in pounds.
2. Table developed from available PPG Annual Hazardous Waste Activity Reports.
3. Process Information
   A= Distillation unit for recycling spent solvent waste from paint and resin plant production.
   B= Wastewater treatment tanks for chemical treatment of rinse water from paint manufacturing operations.
   C= Legitimate recovery of solvents from resin manufacturing process and cleaning operations.
   D= Ultrafiltration unit to filter resin solids from cationic wastewater.
4. NR= Not a reportable column on this years Annual Hazardous Waste Activity Report.
5. * = Does not include wastes received from offsite sources or storage operations.
6. **= Includes total quantity of site hazardous waste recycled and treated onsite due to reporting method.
7. = Hazardous waste generated for offsite disposal is grouped by the primary hazardous waste code indicated on the Annual Hazardous Waste Activity Reports.

NMC/vas/JEG/CWI
[mil-608-51h]
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TABLE 5

Summary of Waste Streams
RCRA Facility Investigation
Task I and II Report PPG Industries, Inc.
Oak Creek, Wisconsin

Waste Name	Present General Description	Historic EPA Waste Codes
A. Paint Plant, Dirty Solvent	Solvent is used to clean process equipment in paint manufacturing. This waste is a single-phase organic liquid with resin and pigment solids. It is accumulated in two-15,000 gallon tanks prior to onsite recovery by batch distillation. On occasion, this waste may be shipped offsite for recovery when it cannot be handled onsite. The solvent varies in concentration but usually not in composition unless a different makeup solvent is added or a new product is produced. This variation, however, does not affect the solvent's major characteristics.	D001, D018, D035, D005, D006, D007, D008, F003, F005
B. Resin Plant, Dirty Solvent	Solvent is used to clean process equipment in resin manufacturing. This waste is a single-phase organic liquid with resin solids. It is accumulated in one-15,000 gallon tank prior to onsite recovery by batch distillation. It may also be shipped offsite. Similar to paint plant dirty solvent in organic composition.	D001, D007, D018, D035, D008, F003, F005
C. Solvent Recovery Still Sludge	Residues removed from the solvent recovery distillation systems are blended with other compatible wastes in one of two 6,000 gallon tanks prior to shipment to an offsite secondary fuel or incineration facility.	D001, D005, D006, D007, D008 D018, D035, D038, F003, F005
D. Water-Base and Water-Reducible Paint Waste	Discarded, spilled, defective or obsolete paint or paint residues from industrial paint manufacturing using water as the main solvent. Liquids are either blended in a treatment tank or shipped directly in drums to an offsite incineration facility. Some absorbent material may be added to solids at the time the waste is placed in the container.	D001, D005, D006, D007, D008, D009
E. Solvent-Base Paint Waste	Discarded, spilled, defective or obsolete paint or paint residues from industrial and automotive paint manufacturing. Liquids and solids are handled in a similar manner as Water-Base Paint Waste except that the two wastes are handled separately.	D001, D005, D007, D008, D009, D035
F. Resin Waste	Discarded, spilled, defective or obsolete resin or resin residues from resin manufacturing. Liquids and solids are handled in a similar manner as solvent-base paint waste.	D001, D003, D007, D008, D035

TABLE 5

Summary of Waste Streams
RCRA Facility Investigation
Task I and II Report PPG Industries, Inc.
Oak Creek, Wisconsin

Waste Name	Present General Description	Historic EPA Waste Codes
G. Cationic Distillate-MIBK	By-product of a resin manufacturing process. This waste is accumulated in a tank prior to shipment offsite to a solvent reclaimer, reuser, or secondary fuel processor. It may also be burned in a plant boiler as a replacement for natural gas.	F003
H. Paint Plant, Filter Cartridges and Bags	Fiber filter cartridge, bag and/or paper straining media contaminated with paint, resins, solvent or water and pigments. An inert absorbent material or solidifying agent may be added at the time the waste is placed in the container. Waste is shipped offsite to an incineration facility.	D005, D006, D007, D008, D009
I. Resin Plant, Filter Cartridges and Bags	Fiber filter cartridge, bag or paper straining media contaminated with resins. An inert absorbent material or solidifying agent may be added at the time the waste is placed in the container. Waste is shipped offsite to an incineration facility.	Various Organic Constituents
J. Paint Plant, Baghouse Dust	This is a solid waste generated from air pollution dust collection systems located at several points throughout the Paint Manufacturing Plant. Consists of pigment, resin, and other dry raw material particulates. This waste is shipped offsite to an incineration facility.	D005, D006, D007, D008, D009
K. Resin Plant, Baghouse Dust	This is a solid waste generated from an air pollution dust collection system located at the Resin Manufacturing Plant. Consists of raw material particulates but no solvent. This waste is presently reused directly as a raw material but is identified as a waste in the event that it cannot be reused in the future. It has been shipped offsite to an incineration facility.	Various Organic Constituents
L. Paint Plant, Trade Washwater	Washwaters from cleaning latex paint production equipment. Physically/chemically treated onsite supernatant is discharged to POTW.	D009
M. Paint Plant, Industrial Washwaters	Washwaters from cleaning industry paint production equipment. Physically/chemically treated onsite. Supernatant is discharged to POTW.	D001, D002, D005, D006, D007, D008, D009,
N. Paint Plant, Caustic Cleaning Water	Spent recycled caustic washwater from cleaning portable tanks used in paint production. Physically/chemically treated onsite. Supernatant is discharged to POTW.	D001, D002, D005, D006, D007, D008, D009
O. Resin Plant, Caustic Cleaning Water	Spent caustic washwater from cleaning resin production equipment. This waste is generated infrequently, and is shipped offsite to an incineration facility.	D001, D002

TABLE 5

Summary of Waste Streams
RCRA Facility Investigation
Task I and II Report PPG Industries, Inc.
Oak Creek, Wisconsin

Waste Name	Present General Description	Historic EPA Waste Codes
P. Resin Plant, Wastewaters	This waste can be a two-phase liquid by-product of resin manufacturing. This waste consists of mostly water with a small amount of soluble and insoluble organic solvents and/or other hydrocarbons. Waste-water also results from cleaning resin plant production equipment. The organic phase is returned for solvent reuse. The water phase is shipped offsite to an incineration facility.	D001, F003, F005
Q. Cationic Washwater	Washwater from cleaning process equipment and product tankwagons. It is ultrafiltered onsite. The permeate is discharged to the POTW. The concentrate is shipped offsite to an incineration facility. Untreated cationic washwater is sometimes shipped offsite to an incineration facility.	D001, D007, D008, D035
R. Wastewater Treatment Supernatant	Treated water from all process wastewaters which is discharged to a POTW. Waste is currently exempt under RCRA regulations.	D001, D007, D008, D009
S. Wastewater Treatment Sludges	This waste consists of solids that are physically/chemically separated from process wastewaters. The sludge is dewatered and stored in drums prior to shipment offsite to an incineration facility. The water is discharged to the POTW.	D005, D006, D007, D008, D009
T. Paint Plant, Caustic Sludge	Residues removed from the caustic cleaning recycling system. This waste is infrequent and stored in drums prior to shipment to and offsite incineration facility.	D001, D005, D006, D007, D008, D009
U. Floor Sweepings	Solid floor sweeping compound contaminated with dry raw material pigment and resin residues. This waste is usually collected with waste filters and used as an additional absorbent material as filters are added to the drum.	D005, D006, D007, D008, D009
V. Floor Cleaning Solution	Solvent or water floor cleaning wastes contaminated with pigments or other raw materials. Solvent is combined with dirty solvent wastes. Water is combined with washwater wastes.	D001, D005, D006, D007, D008, D009, or F003, F005
W. Discarded or Spilled Raw Materials	Many raw materials would be listed hazardous wastes if discarded or spilled. Wastes would be stored in drums or blended in tanks with other compatible wastes prior to shipment offsite to an incineration facility.	P000-U000 refer to Table 8
X. Offsite Wastes	Off-specification or obsolete products returned to PPG-Oak Creek and declared waste if it cannot be reworked. These wastes are managed the same as paint wastes. Wastes generated at offsite PPG product distribution centers consisting of solvent-base paint waste, water-base paint water, dirty solvent and washwaters. The majority of the wastes come from small quantity generators.	D001, D005, D006, D007, D008, D009, D018, D035, D038, F003, F005

TABLE 5

Summary of Waste Streams
RCRA Facility Investigation
Task I and II Report PPG Industries, Inc.
Oak Creek, Wisconsin

Waste Name	Present General Description	Historic EPA Waste Codes
Y. Off-Specification Products	Onsite off-specification or obsolete products are occasionally declared waste when reuse or reformulation is not possible. These materials could be either paint or resin and would be managed in the same manner as paint and resin wastes.	D001, D005, D006, D007, D008, D009, D018, D035, D038
Z. Laboratory Paint and Resin Wastes	Quality control samples taken from the production processes are discarded after analysis is complete and they are no longer needed. Samples are segregated by type. (e.g., paint, resin, raw material) and by compatibility (e.g., corrosive versus flammable). These wastes are handled in the same manner as similar plant wastes.	D001, D002, D003, D004, D005, D006, D007, D008, D009, D018, D035, D038

Notes:

1. Information taken from: Baker.TSA, Inc. Feasibility Report for Storage and Treatment of Hazardous Waste Generated at the PPG Industries Inc., Oak Creek, Wisconsin Coating and Resins Facility (October 1986, as revised).

2. Analytical data for individual waste streams can be found in Appendix B.

[mad-406-206]

TABLE 6

SUMMARY OF WASTE MANAGED AT INDIVIDUAL SWMUS
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

SWMU # RFI	RFA	Description	Waste Stream Type A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Solid Waste
		TECHNICAL/ADMINISTRATIVE AREA																											
9	15	container accumulation area (15'x30')				X	X																					X	
19	31	solid waste compactor																											X
		PAINT PLANT – NORTH YARD																											
10	16	container accumulation area (6'x6')				X	X			X		X											X	X			X		
11	37*,38*,39*,40*,17	container accumulation areas (6'x16')				X	X			X		X										X	X	X	X	X	X		
13	22	air pollution control dust collector										X																	
14	24	air pollution control dust collector										X																	
19	32	solid waste trash compactor																											X
		PAINT PLANT – SOUTH YARD																											
11	20	drum accumulation area (6'x16')				X	X			X												X	X	X	X	X	X		
13	23	air pollution control dust collector										X																	
14	25	air pollution control dust collector										X																	
19	33	solid waste trash compactor																											X
		WASTE TREATMENT CENTER																											
1	1	water-based sludge treatment tank				X								X	X	X	X	X		X	X	X		X	X	X	X	X	
2	2,3	organic waste treatment tanks (2)	X	X	X		X	X																X	X	X	X	X	
6	7	wastewater decanter																		X									
7	41*,8,9,10	wastewater treatment/accum. tanks (4)												X	X	X	X	X	X	X	X								
3	4	container accumulation area (40.5'x50')			X	X	X	X													X				X	X	X	X	

TABLE 6

SUMMARY OF WASTE MANAGED AT INDIVIDUAL SWMUS
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

SWMU # RFI	RFA	Description	Waste Stream Type A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Solid Waste
		RESIN PLANT																											
4	5	container accumulation area (100'x140')				X	X	X		X	X	X	X								X	X	X	X	X	X	X	X	
5	6	organic waste treatment tank		X			X	X																X	X		X		
8	14	waste solvent accumulation tanks (1)							X																				
10	18	container accumulation area (6'x8')						X			X												X	X					
10	19	container accumulation area (6'x8')						X			X		X										X	X					
12	21	former container accumulation area (20'x40')						X			X		X										X	X	X				
15	26	air pollution control dust collector											X																
16	27,28	solvent recovery stills (2)	X	X	X		X	X																					
19	34	solid waste trash compactor																											X
21	36	wet scrubber system																											
		OUTFALL																											
20	35	stormwater interceptor basin																							X				
		TANK FARM																											
8	11,12,13	solvent accumulation tanks (3)	X	X																									
17	29	impoundment basin	X	X																					X				
18	30	tank farm underdrain sump	X	X																					X				

NOTES:

1) * Indicates RFI/RFA numbers arbitrarily assigned by Warzyn.
2) Information regarding a particular waste stream can be found in Table 5 with supporting analytical results found in Appendix B.
3) Solid waste includes only nonhazardous waste.

TABLE 7

Summary of Known Releases from SWMUs
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

Date	Substance	Destination	Quantity (gal)	Response	Location	SWMU RFA	Permit
6-10-79	Titanium Dioxide	Unnamed Creek & Interceptor Basin	400 (+)	Cleanup	Tank Car Unloading Area	#35	#20
8-23-84	Dirty Cleaning Solvent	Tank Farm Basin	40	Pumped Into Drums	Tank Farm	#11, #12, #13	#8
9-17-84	Dirty Cleaning Solvent	Drain and Impoundment Basin	300	Cleanup Containment Area	Solvent Recovery Still	#11, #12, #13	#8
5-16-85	Cationic Resin	Interceptor Basin and Storm Sewer	200-300	Containment & Cleanup	Plant Yard Area	#35	#20
4-30-87	Dirty Cleaning Solvent	Containment Area	100	Contained, Drummed	Tank Farm	#11, #12, #13	#8
7-30-87	Solvent Recovery Still Bottoms	Waste Treatment Containment Trench	2500	Mostly Contained, (2450 gal) in trench. 50 gal. released from trench to ditch with liquid vacuumed up.	Waste Treatment Containment Trench	#4	#3
8-15-88	Dirty Cleaning Solvent	Soil	30-40	Clean Diked Area	Tank Farm	#11, #12, #13	#8
4-10-89	Reclaimed Solvent	Soil	300	Excavated	Tank Farm	#11, #12, #13	#8
8/24/92	Dirty Cleaning Solvent	Soil	3900 lb	Excavated Soils	Tank Farm	#11, #12,#13	#8

NOTES:

1. Table includes only those releases which originated from a SWMU and were released to the environment. Table does not include raw material or product spills that are unrelated to a SWMU. Table does not include spills to containment-type SWMUs (i.e., interceptor basin, impoundment basin, or tank farm sump) which did not result in a release to the environment but rather were captured in whole.

NMC/lek/JEG/CWI
[mil-608-51f]

TABLE 8

Summary of Part A Application Waste Codes
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

Hazardous Waste Code	Waste Description	Status
F003	Spent nonhalogenated solvents	Active
F005	Spent nonhalogenated solvents	Active
D001	Ignitable wastes	Active
D002	Corrosive wastes	Active
D003	Reactive wastes	Active
D004	Arsenic, characteristic	Active
D005	Barium, characteristic	Active
D006	Cadmium, characteristic	Active
D007	Chromium, characteristic	Active
D008	Lead, characteristic	Active
D009	Mercury, characteristic	Active
D018	Benzene	Active
D035	Methyl ethyl ketone	Active
D038	Pyridine	Active
K078	Spent cleaning wastes	Deleted 3/13/81 - 5/5/84
K079	Water/caustic cleaning waste	Deleted 3/13/81 - 5/5/84
K081	Wastewater treatment sludge	Deleted 3/13/81 - 5/5/84
K082	Emission control dust	Deleted 3/13/81 - 5/5/84
P092	Phenylmercuric acetate	Active
P100	1,2-Propanediol	Active
U002	Acetone	Active
U007	Acrylamide	Active
U008	Acrylic acid	Active
U031	n-Butyl alcohol	Active
U056	Cyclohexane	Active
U057	Cyclohexanone	Active
U092	Dimethylamine	Deleted July 10, 1985

TABLE 8

Summary of Part A Application Waste Codes
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

Hazardous Waste Code	Waste Description	Status
U112	Ethyl acetate	Active
U113	Ethyl acrylate	Active
U118	Ethylmethacrylate	Deleted July 10, 1985
U122	Formaldehyde	Active
U140	Isobutyl alcohol	Active
U154	Methanol	Active
U159	Methyl ethyl ketone (MEK)	Active
U161	Methyl isobutyl ketone (MIBK)	Active
U162	Methyl methacrylate	Active
U190	Phthalic anhydride	Active
U197	p-Benzoquinone	Active
U220	Toluene	Active
U223	Toluene diisocyanate	Active
U238	Carbamic acid, ethyl ester	Deleted July 10, 1985
U239	Xylene	Active
U009	Acrylonitrile	Deleted July 10, 1985
U032	Chromic acid, calcium salt	Deleted July 10, 1985
U069	1,2-Benzenedicarboxylic acid, dibutyl ester	Active
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester	Active Active
U123	Formic acid	Active
U147	Maleic anhydride	Active
U080	Dichloromethane	Active

Notes:

1. Table developed from information contained in the *RCRA Facility Assessment* conducted by the Wisconsin Department of Natural Resources.

2. Revisions to the original Part A application of November 1980 made on March 13, 1981, October 23, 1981, May 5, 1984, July 10, 1985, and September 21, 1990.

JEG/lek/NMC/CWI
[mil-608-51G]

TABLE 9

Summary of Available
Water Level Measurements
RCRA Facility Investigation
Task I and II Report
PPG Industries, Inc.
Oak Creek, Wisconsin

Well	Highest Recorded Water Level Measurement	Lowest Recorded Water Level Measurement	Average of Highest and Lowest Recorded Water Level Measurement
TW1	6.60	14.30	10.45
TW2	4.77	12.00	8.39
TW3	9.10	16.00	12.55
TW4	3.66	14.65	9.16
TW5	2.42	18.10	10.26
TW6	8.36	20.00	14.18
TW7	6.76	13.20	9.98
TW8	5.50	11.25	8.38
MW9	6.55	12.43	9.49
MW10	10.12	11.50	10.81
MW11	6.80	9.23	8.01
MW12	6.21	9.70	7.96
MW13	2.85	7.51	5.18
MW14	4.43	7.79	6.11
MW15	11.39	12.68	12.04
MW16	5.72	7.67	6.70
LW1	6.23	7.72	6.98
LW2	12.06	13.17	12.62
LW3	10.27	12.34	11.31
LW4	11.04	13.12	12.08
LP1	6.62	13.01	9.82
LP3	11.78	21.75	16.77

NOTES:

1. Refer to Appendix G for summary of investigations involving groundwater sampling and water level measurements.

JEG/lek/NMC/CWI
[mil-608-51i]

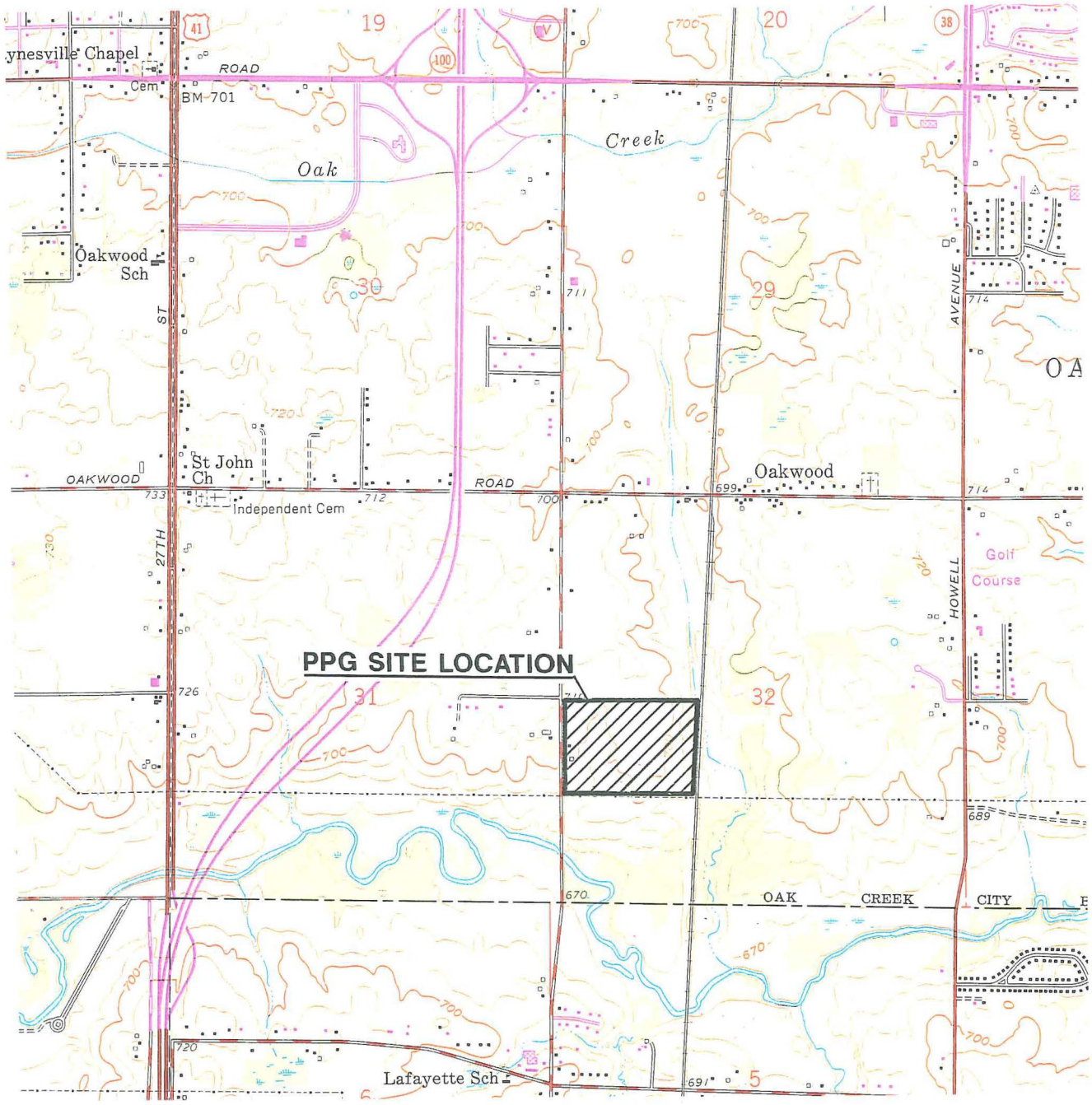
TABLE 10
POTENTIAL SOIL CORRECTIVE MEASURE TECHNOLOGIES
PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Media	General Response Action	Applicable Technology	Description	Data Needs
SOIL	No Action/ Monitoring	No Action	No Action	None
		Monitoring Wells	Long-term monitoring of groundwater quality site in/near area of soil contamination.	Limits of contamination; action levels, possible risk assessment.
	Access Restrictions	Deed Restrictions	All deeds for property within potentially contaminated areas would include restrictions on use of property.	Horizontal limits of areas of concern.
		Fence	Fence would be installed around contaminated areas and repaired as necessary.	Horizontal limits of contamination.
	Containment	Asphalt/Concrete Cap	Asphaltic or concrete pavement to minimize infiltration of surface water and restrict contact with contaminated soil.	Site survey for existing grades, horizontal limits of contamination.
		Soil-Clay Cap	Compacted clay with soil to minimize infiltration and contact.	Location of clay borrow source, horizontal limits of contamination.
		Soil Cover	Compacted soil to minimize infiltration and contact.	Site survey for existing grades, horizontal limits of contamination.
	Excavate – Offsite Disposal	Solid Waste Landfill	Permanent disposal of soils at a State-approved, engineered landfill.	Waste charact. analysis, TCLP, quantity of affected soil.
		Hazardous Waste Landfill	Permanent disposal of sils at an approved RCRA-permitted landfill.	Waste charact. analysis, TCLP, quantity of affected soil.
	Excavate – Offsite Treatment	Asphalt Plant	Thermal destruction of volatiles at an asphalt batch plant.	Waste charact. analysis, TCLP, quantity of affected soil.
		Incineration	Thermal destruction of soil contaminants in an approved RCRA-permitted incinerator.	Waste charact. analysis, TCLP, quantity of affected soil.
		Off-site Landfarm	Soils are spread within a lined containment area and contaminants are volatilized or biodegraded.	Laboratory screening assay for indigenous organism growth/toxicity, quantity of affected soil.
	Excavate – Onsite Treatment	Landfarming	Soils are spread within a lined containment area and contaminants are volatilized or biodegraded.	Laboratory screening assay for indigenous organism growth/toxicity, quantity of affected soil.
		Fixation	Soils mixed with sorbent material which can fix contaminants and stabilize waste/soil mass.	Type and mobility of all contaminants presently in soil, particularly surface soils.
		Biodegradation	Soil mixed with nutrients in reaction cells to promote biodegradation of contaminants.	Laboratory screening assay for indigenous organism growth/toxicity, quantity of affected soil.
		Thermal Volatilization	Low temperature thermal VOC volatilization in a soil drying unit.	Moisture content, grain size, quantity of affected soil, pH, type of contaminants.
		Rotary Kiln Incinerator	High temperature thermal destruction of VOCs from soils.	Moisture content, grain size, quantity of affected soil, pH, type of contaminants.
		Infrared Incinerator	Combustion of solids in a horizontal rectangular chamber using electric infrared heat.	Moisture content, grain size, quantity of affected soil, pH, type of contaminants.
	In-situ Treatment	Vapor Extraction	Removal of VOCs by application of vacuum through a system of wells or trenches.	Moisture content, soil permeability, quantity of affected soil, organic matter.
		Biodegradation	Soil mixed with nutrients to promote biodegradation contaminants.	Laboratory screening assay for indigenous organism growth/toxicity, quantity of affected soil, pH, soil conductivity.
		Fixation	Soils mixed with sorbent material which can fix contaminants and stabilize waste/soil mass.	Type and mobility of contaminants in soil, grain size.

TABLE 11
POTENTIAL GROUNDWATER CORRECTIVE MEASURE TECHNOLOGIES
PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Media	General Response Action	Applicable Technology	Description	Data Needs
GROUNDWATER	No Action/ Monitoring	No Action	No Action	None
		Monitoring Wells	Long-term monitoring of site conditions and contamination levels.	Extent of plume (if present) Location of potential future affected drinking water sources.
	Groundwater Use Restrictions	Deed Restrictions	All deeds for property within potentially contaminated areas would include future restrictions on use of groundwater.	Extent of contaminant plume (if any).
	Gradient Controls	Slurry Wall	Trench is excavated while filled with a bentonite-water slurry. Trench is back-filled with a soil-bentonite mix.	Depth to low permeablity layer below contamination.
		Perimeter Extraction	Trenches, wells, or drains are used to intercept migration of contaminated groundwater.	Hydraulic conductivity, thickness of aquifer, confirm gradient and direction of flow.
	In-situ Treatment	Biodegradation	Contaminated soil mixed with nutrients to promote biodegradation of contaminants.	Laboratory bench scale treatability test; baseline water quality parameters.
		Chemical Oxidation	Wells or trenches are used along with chemical addition to promote oxidation of organic compounds.	Hydraulic conductivity, water quality parameters.
	Extraction and Treatment	Air Stripping	Contacting large volumes of air with water in a packed column or by diffused aeration to transfer VOCs to air.	VOC concentration, baseline water quality parameters (eg. COD, iron, hardness, suspended solids).
		Carbon Adsorption	Discharging water through activated carbon canisters where contaminants adsorb to the carbon surface.	VOC concentration, baseline water quality parameters (eg. COD, iron, hardness, suspended solids).
		Biological Treatment	Use of microorganisms in an aerobic or anaerobic environment to degrade organics.	Laboratory bench scale treatability test; baseline water quality parameters.
		UV-Oxidation	Chemical oxidation of groundwater using ultra-violet light.	Type and concentrations of organic and inorganic compounds.
	Groundwater Discharge	Sanitary Sewer	Discharge groundwater to sanitary sewer for additional treatment at Oak Creek WWTP.	Characterization of groundwater to determine compliance with Oak Creek WWTP pretreatment requirements.
		Storm Sewer	Discharge groundwater to local surface water via storm sewer.	Availability of suitable discharge point. Determination of necessary discharge requirements.

QUALITY CONTROL
Graphic Standards CCM 8-17-92
Lead Professional
Technical Review
Project Manager
Management Review
Other



NOTES

1. BASE MAP DEVELOPED FROM THE FRANKSVILLE, WISCONSIN 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP, DATED 1958, PHOTOREVISED 1971.

QUADRANGLE LOCATION

north

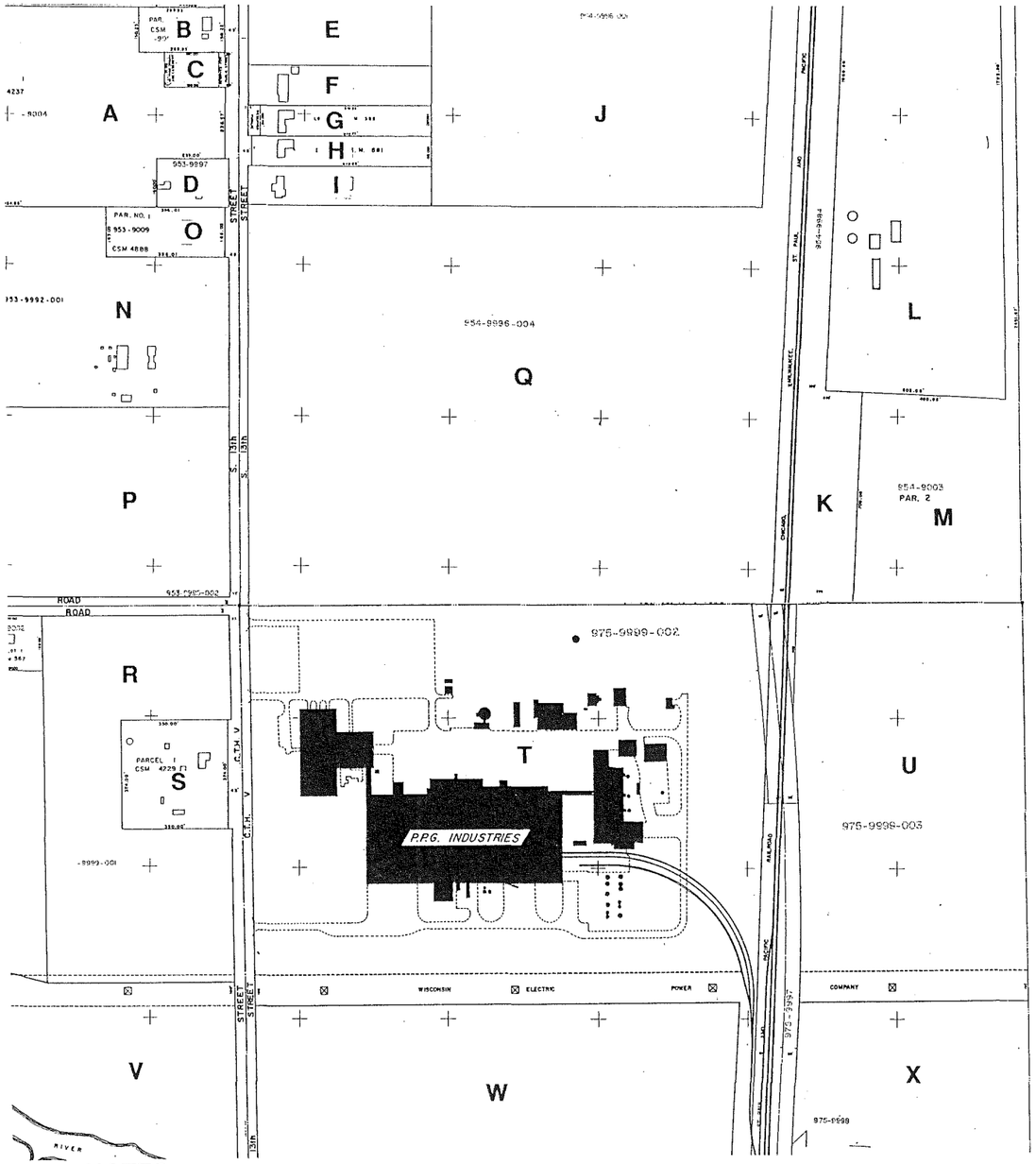
0 2000 4000

SCALE IN FEET

FIGURE 1

Developed By: JEG Drawn By: CCM Approved By: Date: Reference: Revisions:	**SITE LOCATION MAP** RCRA FACILITY INVESTIGATION TASK I AND II REPORT PPG INDUSTRIES, INC. OAK CREEK, WISCONSIN	Drawing Number 15004301 A1 WARZYN

WARZYN INC.



NOTES

1. BASE MAP DEVELOPED FROM 1992 CITY OF OAK CREEK OFFICIAL PLAT MAPS.
2. PROPERTY OWNERSHIP RECORDS OBTAINED FROM THE 1992 CITY OF OAK CREEK PROPERTY OWNERSHIP LISTING.

0 400 800

SCALE IN FEET

north

PROPERTY OWNERSHIP KEY

	TAX KEY #	OWNER NAME/ADDRESS
A	953–9004	JAMES A. & SARAH VESHI 10441 SOUTH 13th STREET
B	953–9003	ANDREW & META E. LOUREK 10401 SOUTH 13th STREET
C	953–9000	ELDEN J. BODENDORFER 10421 SOUTH 13th STREET
D	953–9997	CHARLES J. & KAREN CRAIG 10475 SOUTH 13th STREET
E	954–9987	ELLEN ODEGARD 10400 SOUTH 13th STREET
F	954–9986	BERT PETERSON 10460 SOUTH 13th STREET
G	954–9000	DELBERT J. & LAURA L. BERTLING 10470 SOUTH 13th STREET
H	954–9001	ANTON HUBER JR. 10480 SOUTH 13th STREET
I	954–9985	JAMES P. ROSZINA 10510 SOUTH 13th STREET
J	954–9996–01	NORMA B. & HATTIE GOELZER 1045 WEST OAKWOOD ROAD
K	954–9984	CMSTP & P RR CO. 725 WEST OAKWOOD ROAD
L	954–9002	AIR PRODUCTS & CHEMICALS, INC. 701 WEST OAKWOOD ROAD
M	954–9003	MILWAUKEE METROPOLITAN SEWERAGE DISTRICT 641 WEST OAKWOOD ROAD
N	953–9992–001	KENNETH R. DAWE 10543 SOUTH 13th STREET
O	953–9009	JAMES B. & JOYCE FUCILE 10501 SOUTH 13th STREET
P	953–9990–002	JAMES A. & SARAH VESHI 10601 SOUTH 13th STREET
Q	954–9996–004	PPG INDUSTRIES, INC. 10800 SOUTH 13th STREET
R	976–9999–001	PPG INDUSTRIES, INC. 10800 SOUTH 13th STREET
S	976–9005	JAMES G. & AUDREY PRUITT 10771 SOUTH 13th STREET
T	975–9999–002	PPG INDUSTRIES, INC. 10800 SOUTH 13th STREET
U	975–9999–003	MILWAUKEE METROPOLITAN SEWERAGE DISTRICT 10080–R SOUTH 13th STREET
V	976–9996	MILWAUKEE COUNTY 11031 SOUTH 13th STREET
W	975–9998	MILWAUKEE COUNTY (PARK COMMISSION) 11000 SOUTH 13th STREET
X	975–9998	MILWAUKEE COUNTY (PARK COMMISSION) 11000 SOUTH 13th STREET

FIGURE 2

Developed By: JEG Drawn By: CCM
Approved By: Date:
Reference:
Revisions:

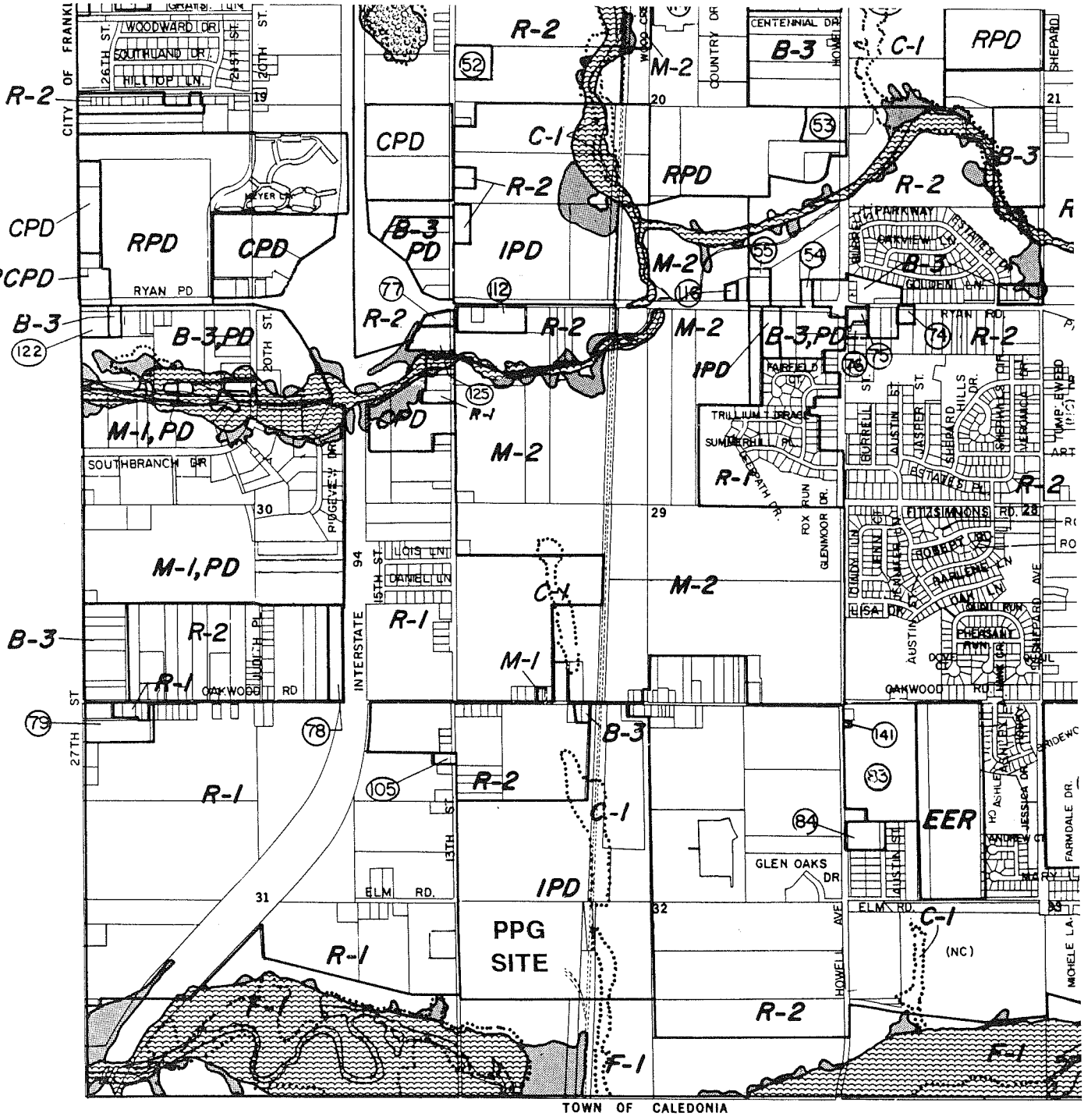
PLAT MAP
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Drawing Number
15004301 B1

WARZYN

QUALITY CONTROL | Graphic Standards CCM 8-14-92 | Lead Professional | Technical Review | Project Manager | Management Review | Other

WARZYN INC.



north

0 2000 4000

SCALE IN FEET

NOTES

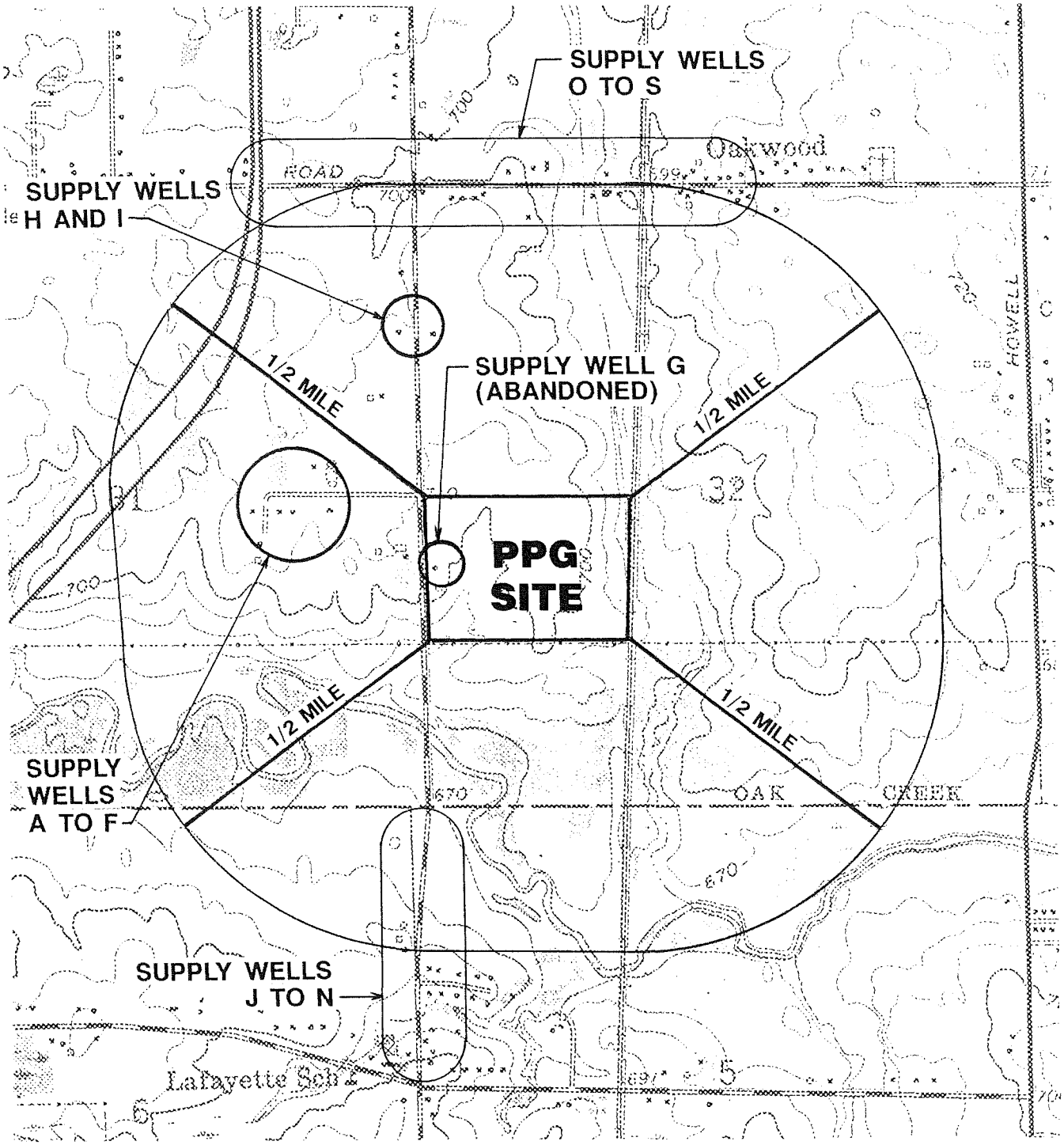
1. BASE MAP DEVELOPED FROM THE CITY OF OAK CREEK OFFICIAL ZONING DISTRICT MAP, DATED MAY 26, 1992.

FIGURE 3

Developed By: JEG	Drawn By: CCM	**ZONING MAP**	Drawing Number 15004301 A2
Approved By:	Date:	RCRA FACILITY INVESTIGATION TASK I AND II REPORT PPG INDUSTRIES, INC. OAK CREEK, WISCONSIN	WARZYN
Reference:			
Revisions:			

WARZYN INC.

QUALITY CONTROL | Graphic Standards CM 8-14-92 | Lead Professional | Technical Review | Project Manager | Management Review | Other



NOTES

1. BASE MAP DEVELOPED FROM THE FRANKSVILLE, WISCONSIN 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP, DATED 1958, PHOTOREVISED 1971.
2. SOURCE OF WELL INFORMATION: BAKER/TSA, INC. FEASIBILITY REPORT FOR STORAGE AND TREATMENT OF HAZARDOUS WASTE GENERATED AT THE PPG INDUSTRIES, INC. OAK CREEK, WISCONSIN COATINGS AND RESINS FACILITY (OCTOBER 1986 AS REVISED).

north

FIGURE 4

QUALITY CONTROL | Graphic Standards | Lead Professional | M 8-17-92 | Technical Review | Project Manager | Management Review | Other

WARZYN INC.

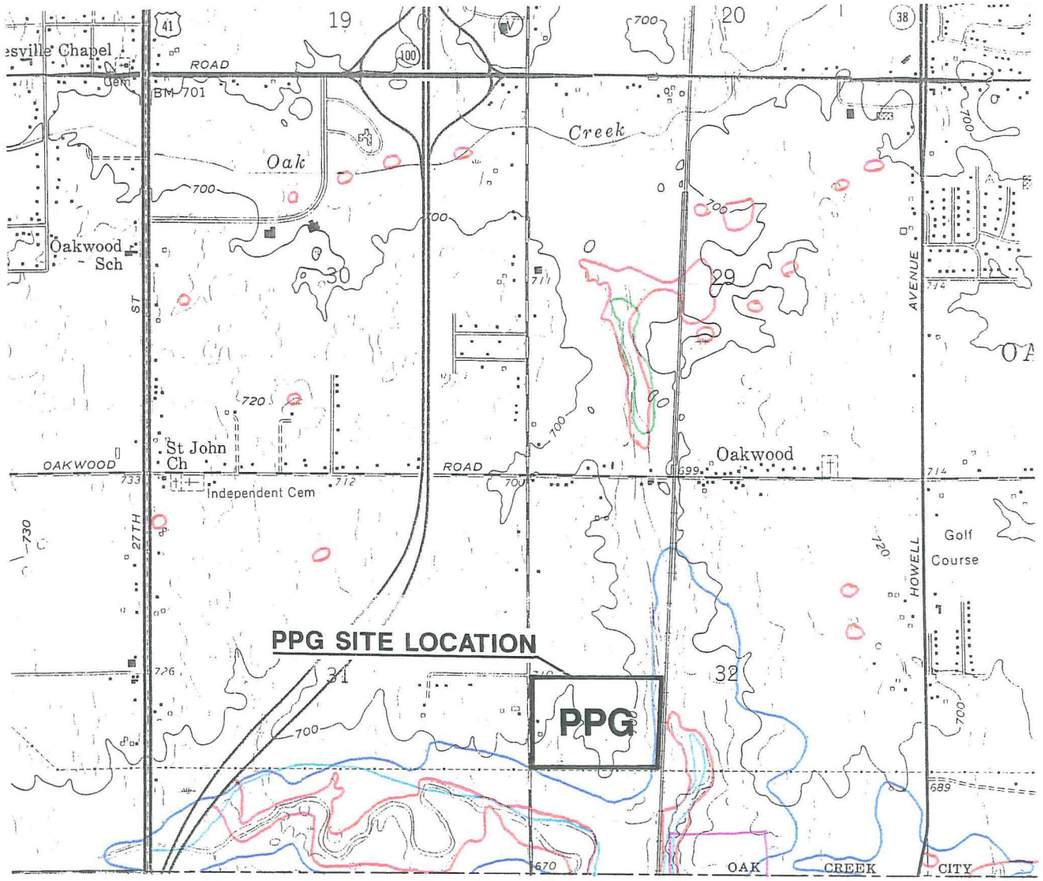
Developed By: JEG Drawn By: CCM
Approved By: Date:
Reference:
Revisions:

WATER SUPPLY WELL LOCATION MAP

RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Drawing Number
15004301 A4

WARZYN



LEGEND

- ROOT RIVER FOREST
- FLOOD PLAIN
- PRIMARY ENVIRONMENTAL CORRIDOR
- WETLAND
- CONSERVANCY

NOTES

1. BASE MAP DEVELOPED FROM THE FRANKSVILLE, WISCONSIN 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP, DATED 1958, PHOTOREVISED 1971.
2. SOUTHERN BOUNDARY OF MAP ENDS AT THE RACINE COUNTY LINE. SOME ENVIRONMENTALLY SENSITIVE AREAS EXTEND FURTHER TO THE SOUTH THAN SHOWN.
3. WETLAND AREAS OBTAINED FROM WDNR WISCONSIN WETLANDS INVENTORY MAP T5N, R22&23E, MIL-WAUKEE COUNTY, WISCONSIN, REVISED MARCH, 1989.
4. FLOODPLAIN AND CONSERVANCY AREAS OBTAINED FROM THE CITY OF OAK CREEK OFFICIAL ZONING DISTRICT MAP.
5. PRIMARY ENVIRONMENTAL CORRIDOR LOCATIONS OBTAINED FROM THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION – A SOLID WASTE MANAGEMENT PLAN FOR MILWAUKEE COUNTY, DATED JULY, 1987.
6. ROOT RIVER FOREST LOCATION OBTAINED FROM WDNR RCRA FACILITY ASSESSMENT, DATED 1988.

north

0 2000 4000

SCALE IN FEET

FIGURE 5

Developed By: JEG Drawn By: CCM
Approved By: Date:
Reference:
Revisions:

ENVIRONMENTALLY SENSITIVE AREAS

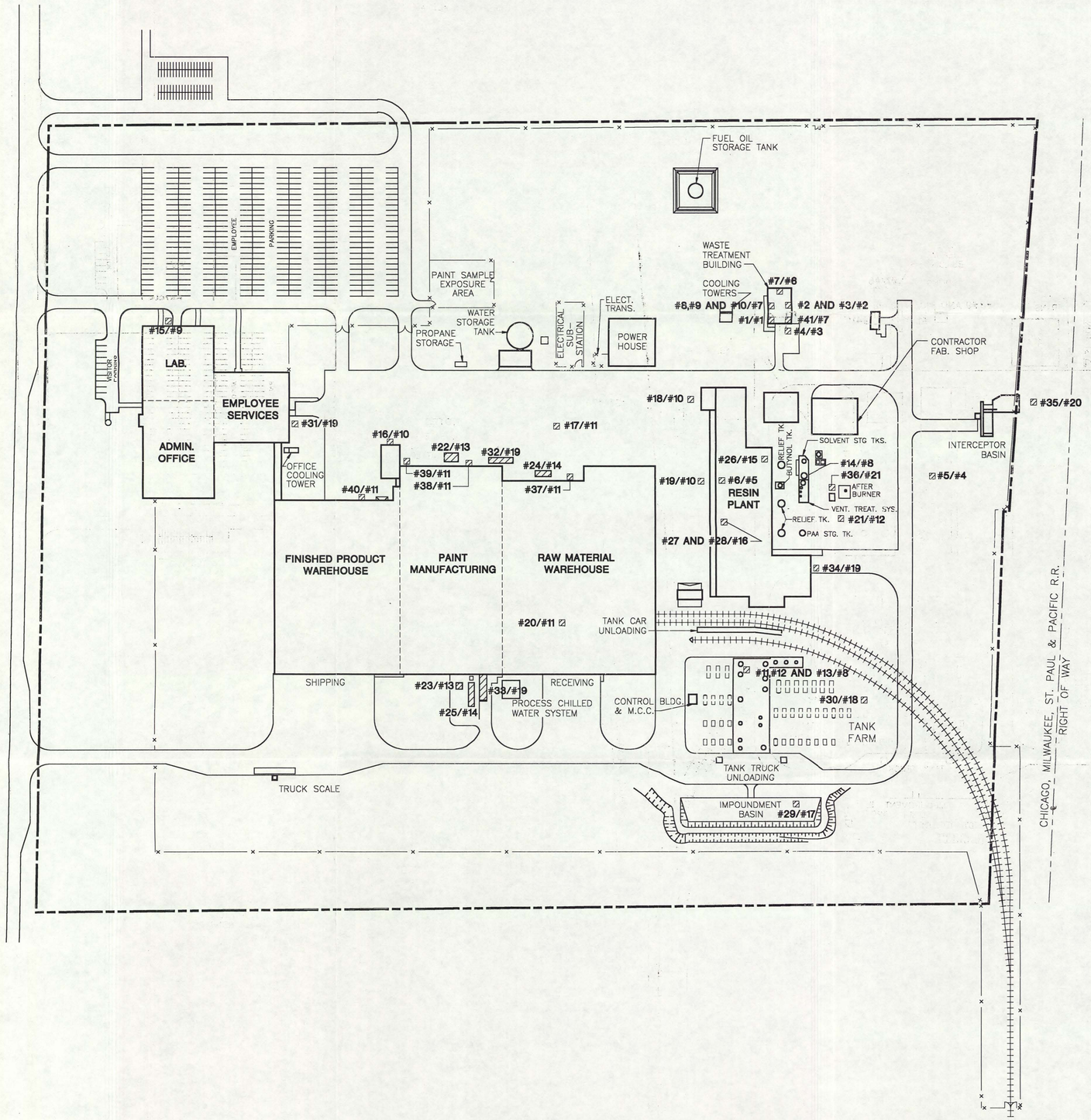
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Drawing Number
15004301 B5

WARZYN

QUALITY CONTROL
Graphic Standards CCM 8-19-92
Lead Professional
Technical Review
Project Manager
Management Review
Other

WARZYN INC.



LEGEND

- FACILITY BOUNDARY
- RAILROAD TRACK
- FENCE LINE
- #20/#11 SOLID WASTE MANAGEMENT UNIT LOCATION
  - REFERENCE NUMBER DESIGNATED IN FEDERAL PERMIT
  - REFERENCE NUMBER DESIGNATED IN WDNR RFA

NOTES

1. BASE MAP DEVELOPED FROM A DRAWING PROVIDED BY PPG INDUSTRIES, INC. COATINGS AND RESINS GROUP, TITLED "MONITOR WELL & SOLID WASTE MANAGEMENT UNIT LOCATIONS," DATED JULY 13, 1992.

north

0 100 200

SCALE IN FEET

FIGURE 6

QUALITY CONTROL: Graphic Standards ____ Lead Professional ____ | Technical Review ____ Project Manager ____ | Management Review ____ Other ____

Developed By: JEG/NMC | Drawn By: CCM | Approved By: | Date: | Reference: | Revisions:

SITE FEATURES MAP

RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

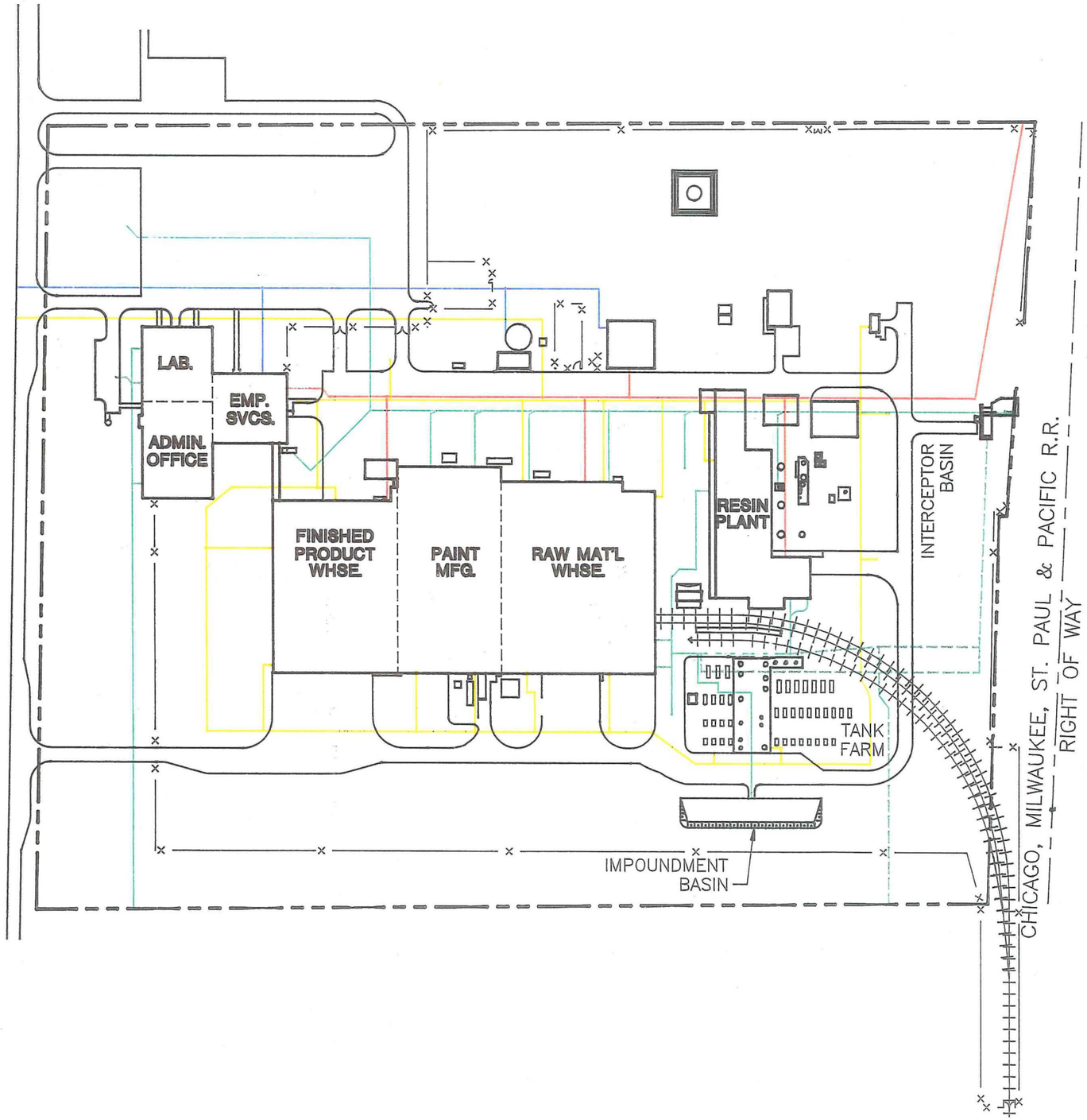
Printed

Sheet Number
of

Drawing Number
15004301 D1

WARZYN

WARZYN INC.



LEGEND

- FACILITY BOUNDARY
- RAILROAD TRACK
- FENCE LINE
- SANITARY SEWER
- STORM SEWER
- FORMER STORM SEWER
- NATURAL GAS
- POTABLE AND/OR FIRE SUPPRESSION WATER

NOTES

1. BASE MAP DEVELOPED FROM A DRAWING PROVIDED BY PPG INDUSTRIES INC. COATINGS AND RESINS GROUP, TITLED "MONITOR WELL & SOLID WASTE MANAGEMENT UNIT LOCATIONS," DATED JULY 13, 1992.
2. UTILITY LOCATIONS OBTAINED FROM PLANT CONSTRUCTION DRAWINGS, DATED MARCH 8, 1973 PROVIDED BY PPG INDUSTRIES, INC.
3. ELECTRICITY SUPPLIED TO PROPERTY BY OVERHEAD LINES ARE NOT SHOWN.

north

0 200 400

SCALE IN FEET

FIGURE 7

Management Review
Other

Technical Review
Project Manager

Graphic Standards CCM 8-18-92
Lead Professional

QUALITY CONTROL

WARZYN INC.

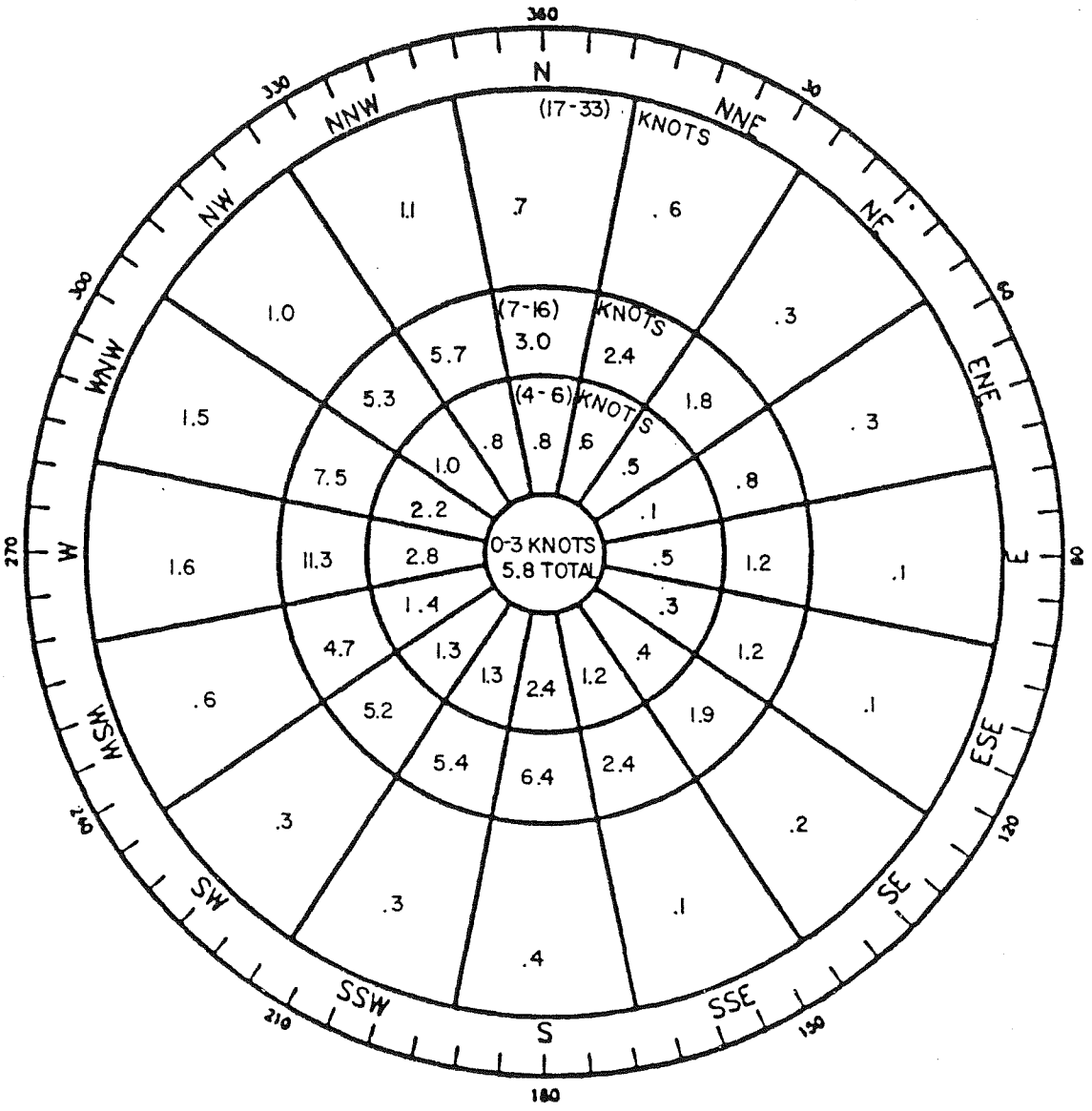
Developed By: JEG
Drawn By: CCM
Approved By:
Date:
Reference:
Revisions:

UTILITY PLAN

RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Drawing Number
15004301 B4

WARZYN

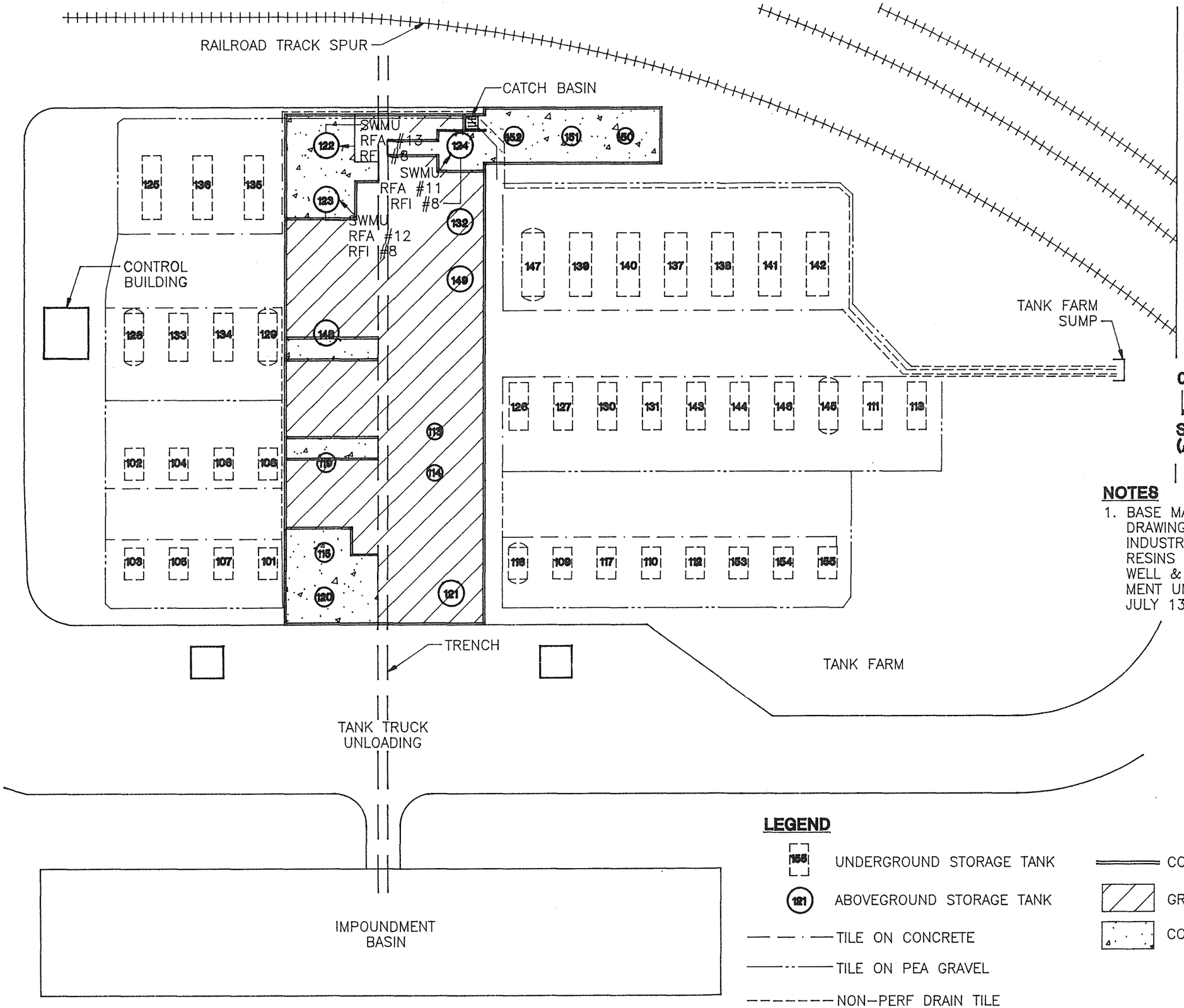


Source: N.O.A.A. Summary – Milwaukee Mitchell Field (1965–1974)
Climatography no. 90 (Feb. 1978)

FIGURE 8

Developed By: JEG Drawn By: CCM Approved By: Date: Reference: Revisions:	**WIND ROSE** RCRA FACILITY INVESTIGATION TASK I AND II REPORT PPG INDUSTRIES, INC. OAK CREEK, WISCONSIN	Drawing Number 15004301 A3 WARZYN

WARZYN INC.



north

0 30 60

SCALE IN FEET (APPROXIMATE)

NOTES

1. BASE MAP DEVELOPED FROM A DRAWING PROVIDED BY PPG INDUSTRIES, INC. COATINGS AND RESINS GROUP, TITLED "MONITOR WELL & SOLID WASTE MANAGEMENT UNIT LOCATIONS," DATED JULY 13, 1992.

LEGEND

- 155 — UNDERGROUND STORAGE TANK
- 121 — ABOVEGROUND STORAGE TANK
- TILE ON CONCRETE
- TILE ON PEA GRAVEL
- NON-PERF DRAIN TILE
- CONCRETE CURBING
- GRAVEL
- CONCRETE

FIGURE 9

QUALITY CONTROL
Graphic Standards CCM 8-27-92
Lead Professional
Technical Review
Project Manager
Management Review
Other

Developed By: JEG
Drawn By: CCM
Approved By:
Date:
Reference:
Revisions:

TANK FARM MAP
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Drawing Number
15004301 B2

WARZYN

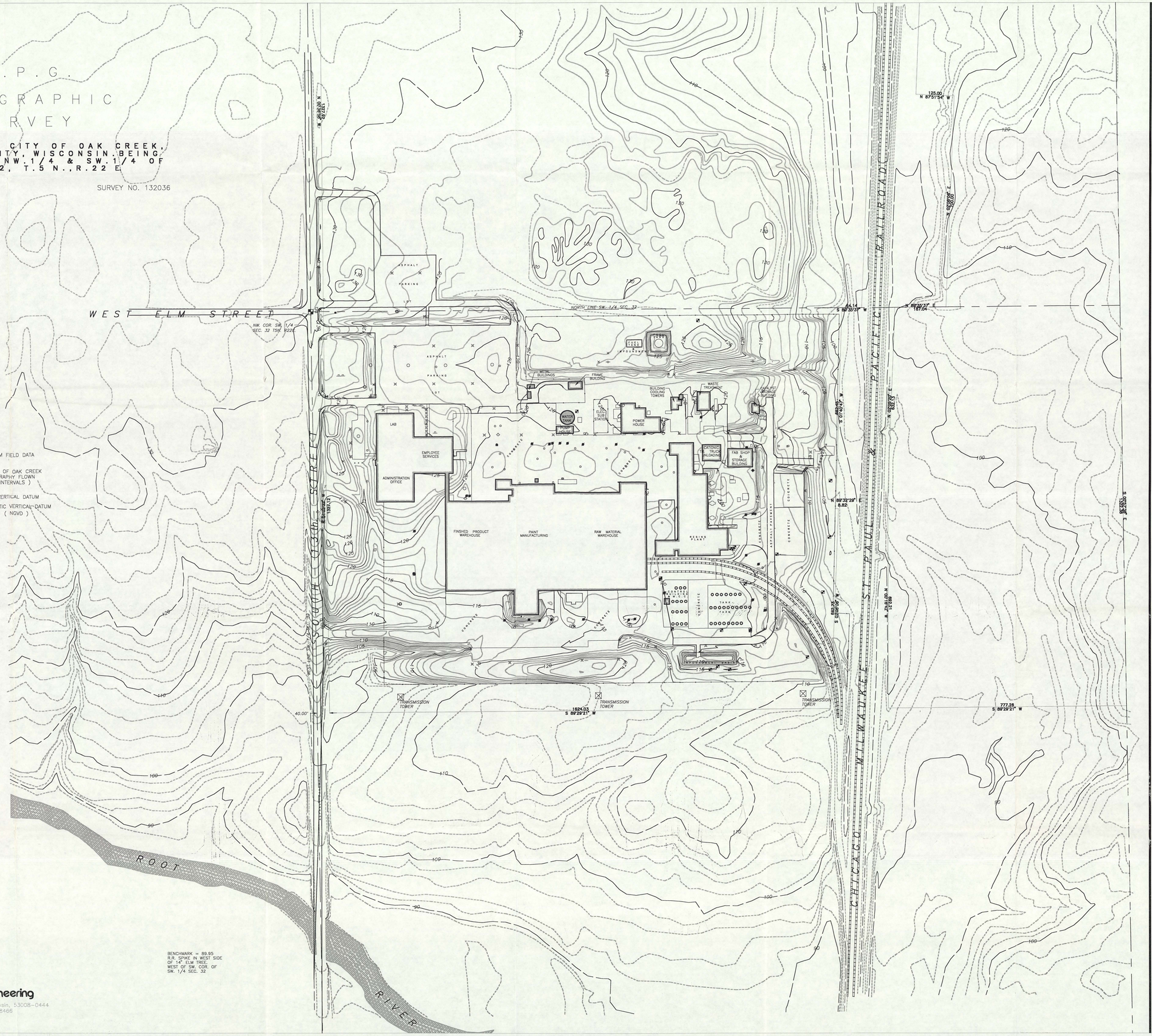
WARZYN INC.

P.P.G.
TOPOGRAPHIC
SURVEY

LOCATED IN THE CITY OF OAK CREEK, MILWAUKEE COUNTY, WISCONSIN. BEING A PART OF THE NW.1/4 & SW.1/4 OF SECTION 32, T.5 N., R.22 E.

AUGUST 19, 1992

SURVEY NO. 132036



CONTOURS DETERMINED FROM FIELD DATA (1 FOOT INTERVALS)

CONTOURS TAKEN FROM CITY OF OAK CREEK TOPOGRAPHIC MAPS, PHOTOGRAPHY FLOWN APRIL 2, 1976 (2 FOOT INTERVALS)

ELEVATIONS REFERENCED TO CITY OF OAK CREEK VERTICAL DATUM

ADD 580.56 TO PLACE ELEVATIONS AT NATIONAL GEODETIC VERTICAL DATUM (NGVD)

LEGEND

- WATER VALVE
- HYDRANT
- GUY POLE
- UTILITY POLE
- WOOD POLE
- VIDEO TOWER
- SIGN
- MONITORING WELL
- CLEANOUT
- CATCH BASIN

100 0 100 200 300

SCALE: 1" = 100'

BENCHMARK = 89.95
R.R. SPIKE IN WEST SIDE OF 14" ELM TREE, WEST OF SW. COR. OF SW. 1/4 SEC. 32

national survey & engineering
4125 north 124th street • brookfield, wisconsin, 53008-0444
phone 414/781-1000 • fax 414/781-8466

Developed By:

Drawn By: MJZ

Approved By: JEG

Date: 9/1/92

Reference:

Revisions:

TOPOGRAPHIC SURVEY MAP

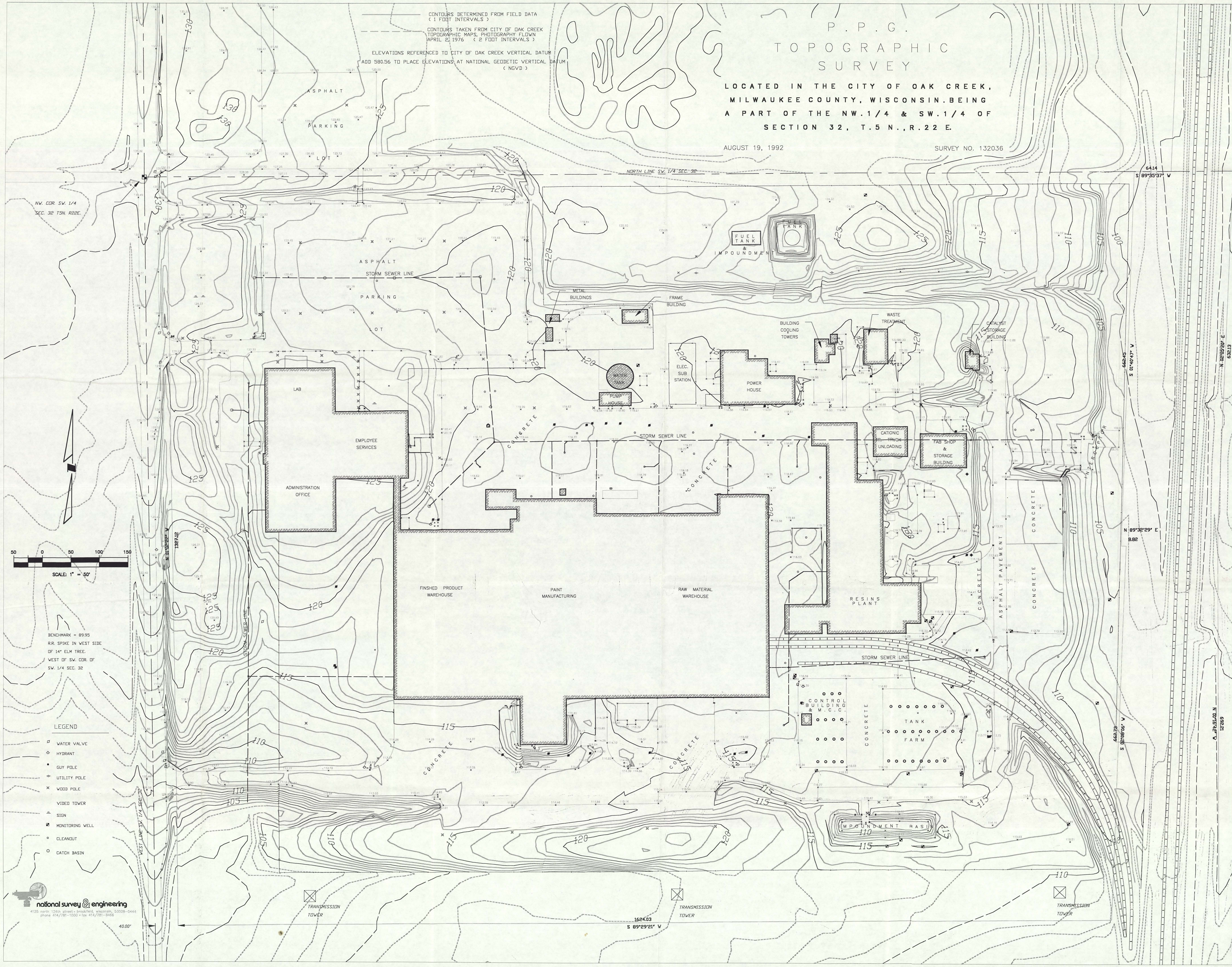
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Printed

Sheet Number

Drawing Number
FIGURE-10

WARZYN



Drawn By: MJZ
Date: 9/1/92
Developed By:
Approved By: JEG
Reference:
Revisions:

TOPOGRAPHIC SURVEY MAP

RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

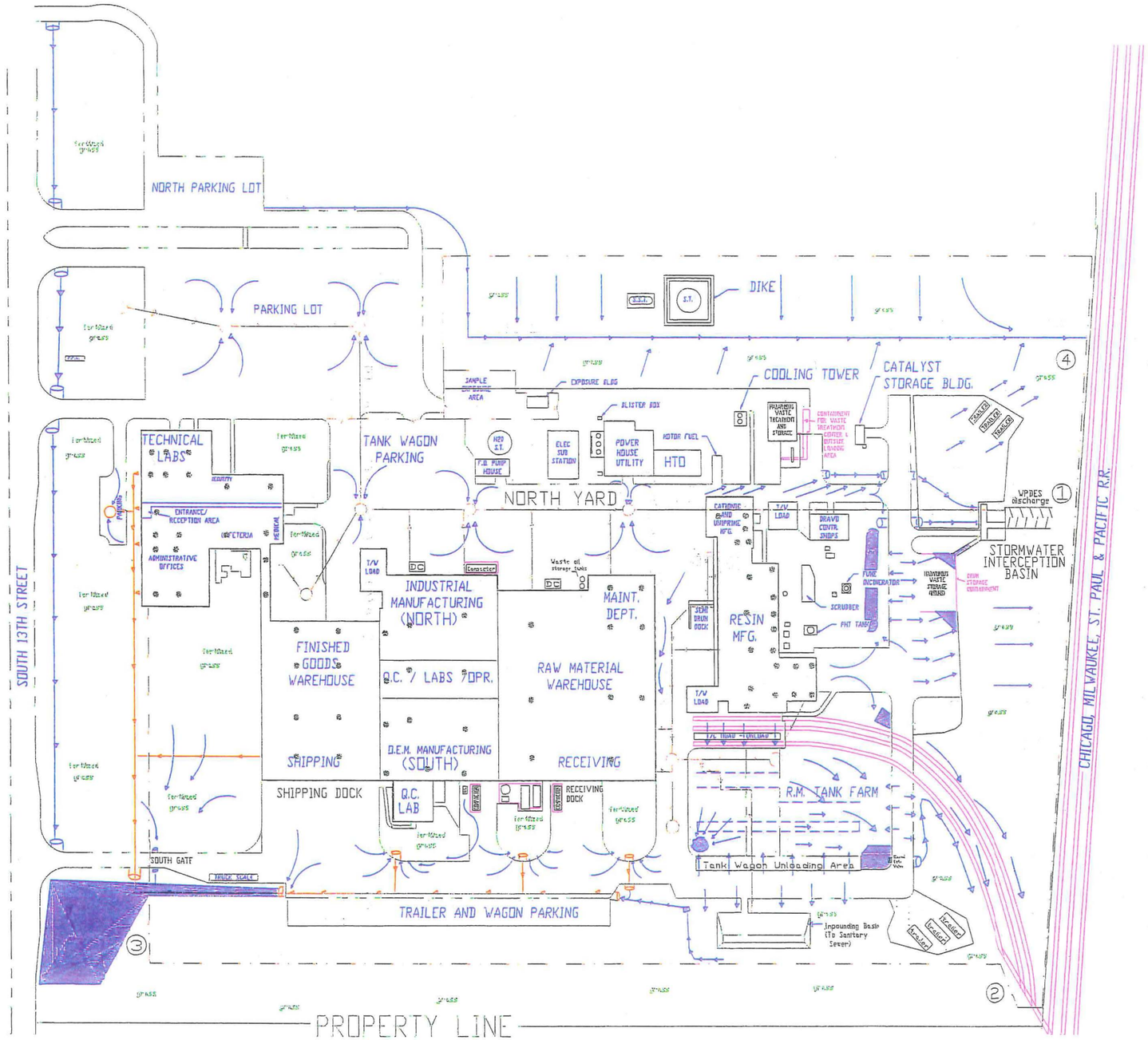
Printed

Sheet Number

Drawing Number
FIGURE-10A

WARZYN

APPROXIMATELY 50 ACRES OF LAND NORTH OF THE PLANT IS LEASED TO A FARMER BY PPG AND DOES NOT INVOLVE ANY INDUSTRIAL ACTIVITY.



LEGEND

- ROOF DRAIN
- RAINWATER OUTFALL
- GRAVEL AREA
- FENCE LINE AROUND PLANT
- PLUGGED MANHOLE COVER
- UNDERGROUND TRANSFER TO OUTFALL 3
- UNDERGROUND TRANSFER TO STORMWATER COLLECTION SYSTEM
- ABOVEGROUND WATER FLOW
- DC — DUST COLLECTOR
- COMPACTOR — TRASH COMPACTOR
- CURBING AND DIKING TO PREVENT RUNOFF
- ① WPDES OUTFALL 001, TRIBUTARY TO ROOT RIVER
- ② SMALL OUTFALL ALONG RAILROAD TRACKS, SEEPS INTO GROUND
- ③ MARSHY DITCH ALONG 13th STREET, SEEPS INTO GROUND
- ④ SMALL OUTFALL THAT NORMALLY SEEPS INTO THE GROUND. ON THE OCCASION OF A LARGE RAINFALL IT WILL JOIN WITH OUTFALL 001

NOTES

1. BASE MAP DEVELOPED FROM PPG STORM-WATER DIAGRAM.

NOT TO SCALE

north

FIGURE 11

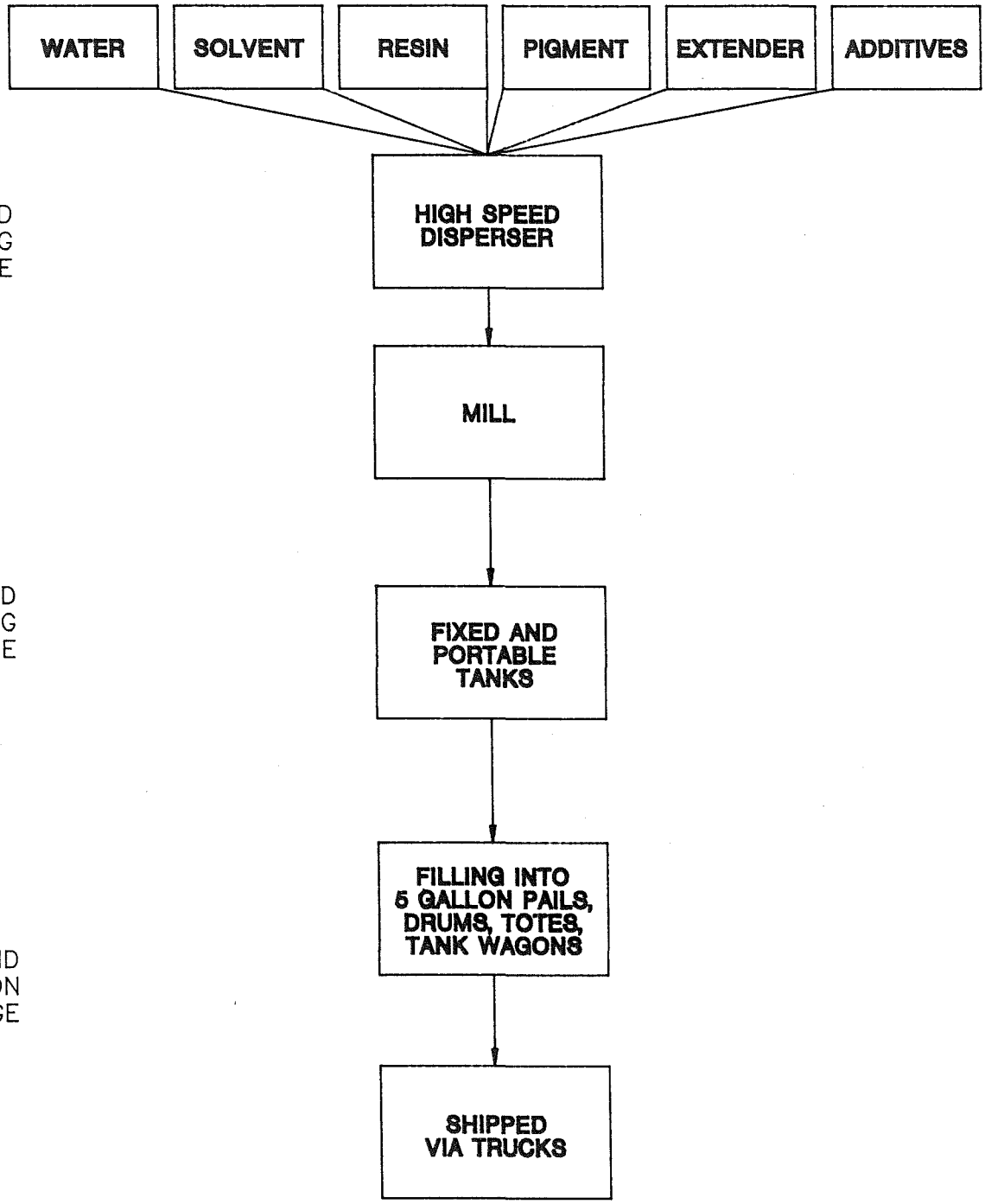
Management Review
Other
Technical Review
Project Manager
QUALITY CONTROL
Graphic Standards CCM 8-18-92
Lead Professional
WARZYN INC.

Developed By: JEG
Drawn By: CCM
Approved By:
Date:
References:
Revisions:

STORMWATER RUNOFF MAP
RCRA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Drawing Number
15004301 B3

WARZYN



QUALITY CONTROL
Graphic Standards CCM 8-18-92
Lead Professional
Technical Review
Project Manager
Management Re
Other

FIGURE 12

Developed By: NMC Drawn By: CCM Approved By: Date: Reference: Revisions:	**PAINT PRODUCTION DIAGRAM** RCRA FACILITY INVESTIGATION TASK I AND II REPORT PPG INDUSTRIES, INC. OAK CREEK, WISCONSIN	Drawing Number 15004301 **A5** WARZYN

WARZYN INC.

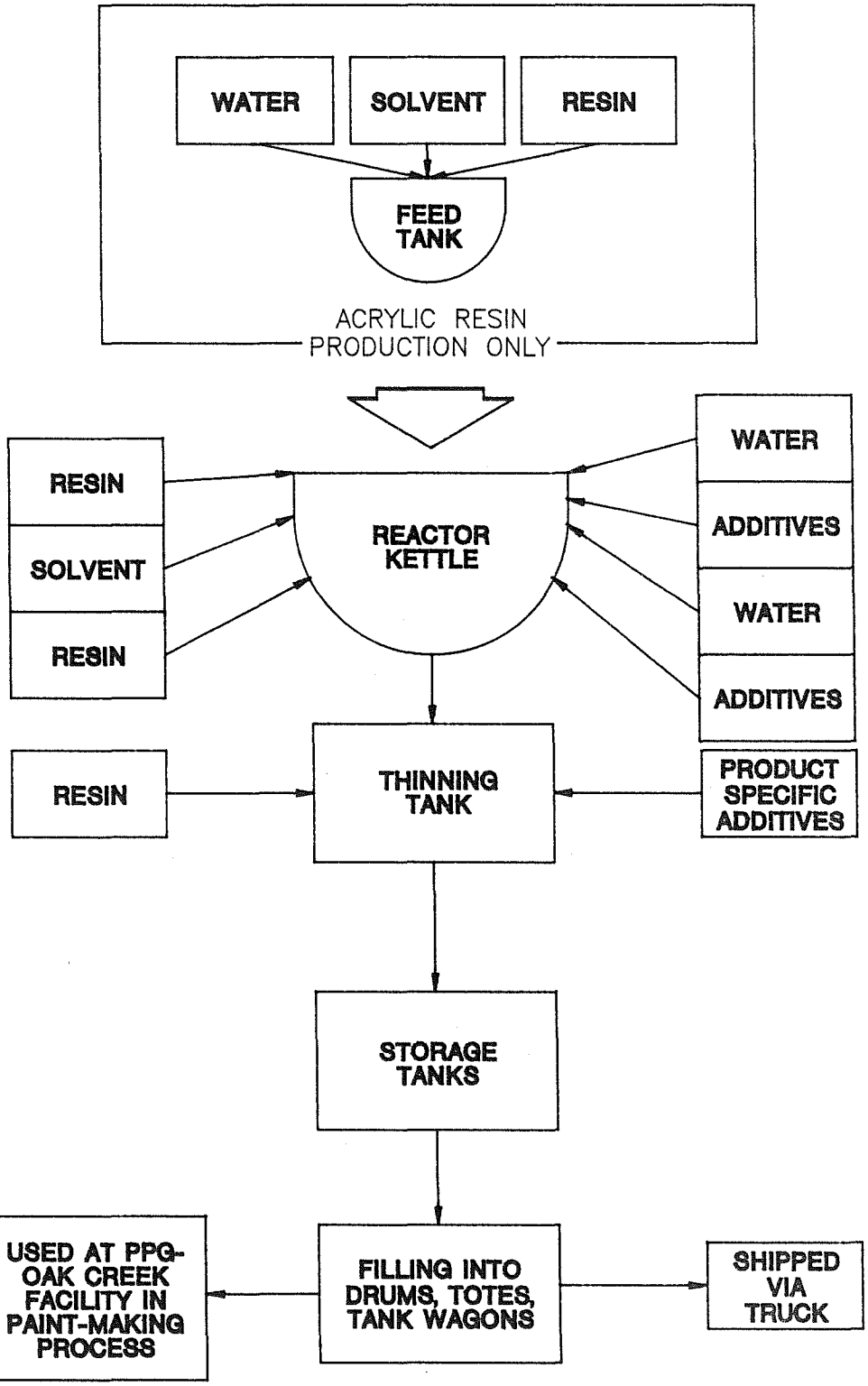
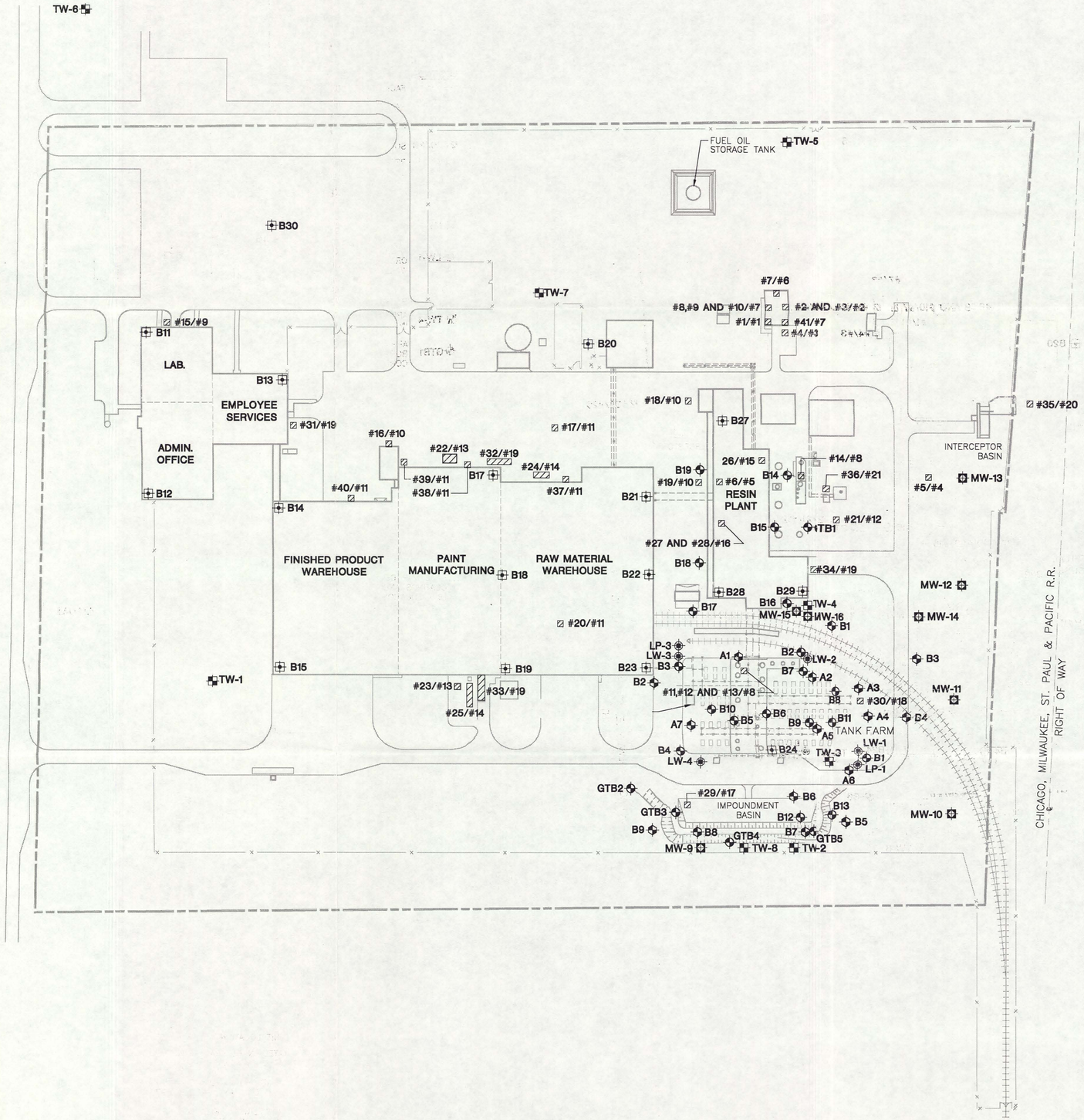


FIGURE 13

Developed By: NMC Drawn By: CCM Approved By: Date: Reference: Revisions:	**RESIN PRODUCTION DIAGRAM** RCRA FACILITY INVESTIGATION TASK I AND II REPORT PPG INDUSTRIES, INC. OAK CREEK, WISCONSIN	Drawing Number 15004301 **A6** WARZYN

WARZYN INC.



LEGEND

- FACILITY BOUNDARY
- RAILROAD TRACK
- FENCE LINE
- #20/#11 — SOLID WASTE MANAGEMENT UNIT LOCATION AND NUMBER
  - REFERENCE NUMBER DESIGNATED IN FEDERAL PERMIT
  - REFERENCE NUMBER DESIGNATED IN WDNR RFA
- B11 — APPROXIMATE LOCATION OF GEOTECHNIAL BORING CONDUCTED BY LAYNE-WESTERN COMPANY, INC. IN 1973
- MW-12 — APPROXIMATE LOCATION OF MONITORING WELL INSTALLED BY GERAGHTY & MILLER IN 1987
- LW-1 — APPROXIMATE LOCATION OF WATERTABLE WELL (LW) OR PIEZOMETER WELL (LP) INSTALLED BY WARZYN INC. IN 1992
- B6 — APPROXIMATE LOCATION OF SOIL BORING CONDUCTED BY O.H. MATERIALS CORP. IN 1987
- TW-4 — APPROXIMATE LOCATION OF MONITORING WELL INSTALLED BY WARZYN ENGINEERING INC. IN 1981
- GTB1 — APPROXIMATE LOCATION OF ENVIRONMENTAL SOIL BORING (B) OR GEOTECHNICAL SOIL BORING (GTB) CONDUCTED BY WARZYN INC. IN 1992

NOTES

1. BASE MAP DEVELOPED FROM A DRAWING PROVIDED BY PPG INDUSTRIES, INC. COATINGS AND RESINS GROUP, TITLED "MONITOR WELL & SOLID WASTE MANAGEMENT UNIT LOCATIONS," DATED JULY 13, 1992.

north

0 100 200

SCALE IN FEET

FIGURE 14

QUALITY CONTROL | Graphic Standards, CCM 8-20-92 | Lead Professional | Technical Review | Project Manager | Management Review | Other

Developed By: JEG/NMC | Drawn By: CCM | Approved By: | Date: | Reference: | Revisions:

SOIL BORING AND MONITORING WELL LOCATION MAP
AURORA FACILITY INVESTIGATION
TASK I AND II REPORT
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

Printed

Sheet Number of

Drawing Number 15004301 D2

WARZYN

WARZYN, INC.

WARZYN

PROJECT
15004301

VOLUME II OF II

RCRA FACILITY INVESTIGATION:

I. DESCRIPTION OF CURRENT CONDITIONS AND II. PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES

PPG INDUSTRIES, INC.
10800 SOUTH 13TH STREET
OAK CREEK, WISCONSIN

SEPTEMBER 1992

PREPARED FOR:
PPG INDUSTRIES, INC.
OAK CREEK, WISCONSIN

• • •

PREPARED BY:
WARZYN INC.
MILWAUKEE, WISCONSIN

Volume II of II

LIST OF APPENDICES

A

List of References

A

LIST OF REFERENCES

- Wisconsin Department of Natural Resources, *RCRA Facility Assessment PPG Industries, Inc., Oak Creek, Wisconsin WID 059972935 (September 1987, Revised March 1988).*

- Baker/TSA, Inc., *Feasibility Report for Storage and Treatment of Hazardous Waste Generated at the PPG Industries, Inc. Oak Creek, Wisconsin Coatings and Resins Facility (October 1986, as revised).*

- RMT, Inc., *Plan of Operation for the Hazardous Waste Storage Facility at the PPG Industries, Inc. (February 1990, as revised).*

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- Geraghty and Miller, *Groundwater Assessment (December 1987).*

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- Wisconsin Department of Natural Resources, Bureau of Planning, Wisconsin *Wetlands Inventory Map,* Township 5 North, Ranges 22 and 33 East, Milwaukee County Wisconsin (July 1979, latest revision March 1989).

- Southeastern Wisconsin Regional Planning Commission, *A Solid Waste Management Plan for Milwaukee County, Wisconsin (July 1987).*

- U.S. Department of Agriculture (USDA) Soil Conservation Service, *Soil Survey of Milwaukee and Waukesha Counties Wisconsin (July 1971).*

B

Waste Stream Analytical Results

TABLE VI-B-1

LIST OF WASTESTREAMS

Description	Attachment
Paint Plant Dirty Solvent	VI-B-1
Resin Plant Dirty Solvent	VI-B-2
Solvent Recovery Still Sludge	VI-B-3
Water-Base Paint Waste	VI-B-4
Solvent-Base Paint Waste	VI-B-5
Resin Waste	VI-B-6
Cationic Distillate - MIBK	VI-B-7
Paint Plant Filter Cartridges and Bags	VI-B-8
Resin Plant Filter Cartridges and Bags	VI-B-9
Paint Plant Baghouse Dust	VI-B-10
Resin Plant Baghouse Dust	VI-B-11
Paint Plant Trade Washwaters	VI-B-12
Paint Plant Industrial Washwaters	VI-B-13
Paint Plant Caustic Cleaning Water	VI-B-14
Resin Plant Caustic Cleaning Water	VI-B-15
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Revision No: 1
March 22, 1991

C-1-A(-1)

ATTACHMENT VI-B-1

Paint Plant Dirty Solvent
(F003, F005, D001, D005, D006, D007, D008)

General Description:

Liquid	Single Phase
Flash Point	<100 F
Heating Value	10,000 - 15,000 BTU/LB
Total Resin Solids	1 - 5%
Total Pigment Solids	1 - 5%
Solvents	85 - 97%
ıter	1 - 10%
Weight/Gallon	7 - 7.5 LB/GAL

Basis for hazardous designation:

Listed for ignitability and toxicity depending on solvents. Assumed TCLP Toxic characteristics based on knowledge of product residues. Ignitable characteristic applies for solvents not listed.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BARKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040552
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: 00-85-0068-00 - Dirty Solvent — Paint Plant

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.44	mg/l
M040	Barium (Ba)	1.0	mg/l
M050	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	6.6	mg/l
M200	Lead (Pb)	6.9	mg/l
M250	Mercury (Hg)	1.4	mg/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
M030	Beryllium (Be)	< 0.02	mg/l
M110	Calcium (Ca)	15	mg/l
M141	Chromium, Hexavalent(Cr+6)	INT	
M150	Cobalt (Co)	< 0.1	mg/l
M160	Copper (Cu)	2.7	mg/l
M190	Iron,total (Fe)	360	mg/l
M230	Magnesium (Mg)	9.5	mg/l
M240	Manganese (Mn)	71	mg/l
M270	Nickel (Ni)	0.9	mg/l
M310	Sodium (Na)	34	mg/l
M320	Strontium (Sr)	14	mg/l
M390	Zinc (Zn)	1.7	mg/l
OF01	Xylenes	29000	mg/l
OF04	Acetone	< 4000	mg/l
OF05	2-butanone	170000	mg/l
OF08	4-methyl-2-pentanone	110000	mg/l
OM32	Butyl Cellosolve	23000	mg/l
OM58	i-Butanol	< 50000	mg/l
OM79	Cellosolve Acetate	580	mg/l
OV03	Benzene	< 2000	mg/l
OV22	Methylene Chloride	< 2000	mg/l
OV25	Toluene	30000	mg/l
S015	% Ash @ 550 C	0.3	%

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C-1-A(-2)

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

SAMPLE #: OC-85-00699-00 LOCATION: OAK CREEK

DATE REC'D: 3-8-85 DATE SAMPLED: 12-19-85

ANALYSIS	DATE	RESULTS
T E.P.	4-3-85	SOLIDS 110 gm INIT. DiH_2O 1760ml FINAL DiH_2O 2111ml
	used	ACID SOLN. 229ml INIT. pH 8.5 FINAL pH 4.4
I .PT.		20°F
° SOLIDS		____
C.O.D.		____ mg/l
OTHER:		
: H-	4-3-85	8.0

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ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)
ASTM D-93-71 (FLASH POINT)
HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

C-1-A(-5)

Signature: [illegible] 5-10-85

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238

REPORT DATE: 06/04/85

ATTENTION: MS. CHRIS BABKA

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042198
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: OC-85-0131-03 - Paint Plant Dirty Solvent

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.28	mg/l
I040	Barium (Ba)	680	mg/l
M090	Cadmium (Cd)	0.12	mg/l
I140	Chromium (Cr)	32	mg/l
M200	Lead (Pb)	26	mg/l
I250	Mercury (Hg)	1.8	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l
OF01	Xylenes	42000	mg/l
IF05	2-butanone	< 20000	mg/l
OF08	4-methyl-2-pentanone	130000	mg/l
IN32	Butyl Cellosolve	60000	mg/l
OV25	Toluene	37000	mg/l
S015	% Ash @ 550 C	4.6	%
S040	British Thermal Units	15000	BTU/lb
S165	% Solids, total at 103 C	7.8	%
S168	Specific Weight	7.3	lb/gal
S195	% Water (Karl Fisher)	9.1	%
S210	Viscosity	9.0	CP
I270	Cyanide, total (CN)	0.35	mg/l
W500	Phenolics	13	mg/l

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ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-A(-6)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040558
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0068-00 - Dirty Solvent — Paint Plant

TEST	DETERMINATION	RESULTS	UNITS
S040	British Thermal Units	15000	BTU/lb
S054	Chlorine, Organic	< 0.1	%
S098	Fluorine, Organic	0.03	%
S165	% Solids, total at 103 C	4.0	%
S168	Specific Weight	7.2	lb/gal
S195	% Water (Karl Fisher)	4.9	%
S210	Viscosity	6.0	CP
S950	Acid Digestion		
S971	Ashing		
S980	Oxygen Bomb Preparation		
W032	Ammonia as N (distillation)	< 1	mg/l
W270	Cyanide, total (CN)	< 0.1	mg/l
W435	Nitrogen, Kjeldahl (N)	68	mg/l
W440	Nitrogen, Organic (N)	68	mg/l
W500	Phenolics	16	mg/l
W740	Sulfide (S)	< 4	mg/l

RECEIVED
MAY 16 1985
ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

COMMENTS: INT for Cr+6 because sample was not soluble in water.
< means detection Limit. Benzene and chlorinated compounds should be much less than detection limits. /CMB
C-1-A(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BARKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041215
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/17/85

SAMPLE IDENTIFICATION: OC-85-0068-03A - Dirty Solvent Extract — Paint Plant

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.43	mg/l
M040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	0.3	mg/l
M200	Lead (Pb)	< 0.3	mg/l
M250	Mercury (Hg)	0.03	mg/l
M290	Selenium (Se)	0.31	mg/l
M300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

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& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-A(-4)

Reviewed and Approved by: JMC

C-1-B(-1)

ATTACHMENT VI-B-2

Resin Plant Dirty Solvent
(F003, F005, D001, D007, D008)

General Description

Liquid	Single Phase
Flash Point	<100 F
Heating Value	10,000 - 15,000 BTU/LB
Total Resin Solids	1 - 5%
Total Pigment Solids	0 - 0.5%
Solvents	90 - 99%
Water	0 - 5%
Weight/Gallon	7 - 7.5%

Basis for hazardous designation:

Listed for ignitability and toxicity depending on solvents. Assumed TCLP Toxic characteristics based on knowledge of product residues. Ignitability characteristic applies to solvents not listed. Analysis should be similar to Paint Plant Dirty Solvent except for pigment solids.

C-1-C(-1)

ATTACHMENT VI-B-3

Solvent Recovery Still Sludge
(F003, F005, D001, D005, D006, D007, D008)

General Description:

Liquid	Single Phase Pumpable Sludge
Flash Point	<100 F
Heating Value	9,000 - 15,000 BTU/LB
Total Resin Solids	10 - 40%
Total Pigment Solids	5 - 25%
Solvents	40 - 70%
Water	1 - 15%
Weight/Gallon	7.9 - 9.2 LB/GAL

Basis for hazardous designation:

Listed for ignitability and toxicity depending on solvents. Assumed TCLP Toxic characteristics based on knowledge of product residues. Ignitability characteristic applies to solvents not listed.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROBINHA DRIVE
ALLISON PARK, PA 15101
REPORT DATE: 05/15/85
ATTENTION: CHRIS BABKA

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040[illegible]
VENDOR NO: 01831710
WORK ORDER NO: 55870
DATE RECEIVED: 04/09/85

SAMPLE IDENTIFICATION: 00-85-0086-03 - Solvent Recovery Sludge

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M031	Arsenic (As)	0.14	mg/l
M040	Barium (Ba)	170	mg/l
M090	Cadmium (Cd)	0.27	mg/l
M140	Chromium (Cr)	32	mg/l
M200	Lead (Pb)	39	mg/l
M250	Mercury (Hg)	5.8	ug/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
M050	Beryllium (Be)	< 0.02	mg/l
M110	Calcium (Ca)	750	mg/l
M141	Chromium, Hexavalent(Cr+6)	INT	
M150	Cobalt (Co)	18	mg/l
M160	Copper (Cu)	10	mg/l
M190	Iron,total (Fe)	420	mg/l
M230	Magnesium (Mg)	50	mg/l
M240	Manganese (Mn)	22	mg/l
M270	Nickel (Ni)	1.6	mg/l
M310	Sodium (Na)	340	mg/l
M320	Strontium (Sr)	33	mg/l
M390	Zinc (Zn)	700	mg/l
[illegible]	Maleic Anhydride	< 10000	mg/l
8V06	Carbon Tetrachloride	< 2000	mg/l
8V22	Methylene Chloride	< 2000	mg/l
8V25	Toluene	< 2000	mg/l
8V30	Trichlorofluoromethane	< 2000	mg/l
S015	% Ash @ 550 C	21	%
S040	British Thermal Units	14000	BTU/lb
S064	Chlorine, Organic	< 0.1	%
S065	Fluorine, Organic	< 0.01	%
S165	% Solids, total at 103 C	29.9	%
S185	Specific Weight	8.2	lb/gal

RECEIVED
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NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BARKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040516
VENDOR NO: 01631710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: 0C-85-0066-03 - Solvent Recovery Sludge

TEST	DETERMINATION	RESULTS	UNITS
S195	% Water (Karl Fisher)	1.2	%
S211	Viscosity	35	CP
S950	Acid Digestion		
S971	Ashing		
S980	Oxygen Bomb Preparation		
W032	Ammonia as N (distillation)	5.2	mg/l
W270	Cyanide, total (CN)	0.3	mg/l
W435	Nitrogen, Kjeldahl (N)	< 50	mg/l
W440	Nitrogen, Organic (N)	< 50	mg/l
W500	Phenolics	50	mg/l
W740	Sulfide (S)	< 5	mg/l

COMMENTS: INT for C-46 because sample was not water soluble. < means detection limit. Chromium interference should be [illegible]

C-1-C(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/31/85

ATTENTION: CHRIS BABKA

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041480
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: OC-85-0066-03A - Solvent Recovery Sludge Extract

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.30	mg/l
M040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	8.2	mg/l
M200	Lead (Pb)	< 0.3	mg/l
M250	Mercury (Hg)	0.005	mg/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

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ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS:

C-1-C(-4)

Reviewed and Approved by: JMC

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

SAMPLE #: OC-85-006600 LOCATION: OAK CREEK

DATE REC'D: 3-8-85 DATE SAMPLED: _____

ANALYSIS	DATE	RESULTS					
T E.P.	4-1-85	SOLIDS	110 ppm	INIT. DiH_2O	176 ml	FINAL DiH_2O	414 ml
	used	ACID SOLN.	25.8	INIT. pH	5.6	FINAL pH	5.0
PT.			____				
SOLIDS			____				
C.O.D.			____ mg/l				

OTHER:

: H 4-2-85 6.7

RECEIVED
MAY 14 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)
ASTM D-93-77 (FLASH POINT)
HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

E - A ENVIRO-ANALYSTS, INC.

1300 S. Green Bay Road
Racine, Wisconsin 53406

LABORATORY REPORT

Report No. 8165

Dan Scudder
PPG

Subject: Laboratory anlaysis of waste sample for Barium

Date: 9/4/84

P.O. #

Sample: 7/31/84

(organic sludge sample returned from Systech)

Date	7/31/84	7/31/84
Sample Identification	7/31/84	7/31/84
Lab I.D. Number	8034	8034
Units	ppm/Wet Weight	ppm/Dry Weight
Barium	6.30	23.63

C-1-C(-6)

LAB MANAGER: [signature]

LABORATORY REPORT

E-A ENVIRO-ANALYSTS, INC.
1300 S Green Bay Rd.
Racine, Wisconsin 53406

Report No. 6660

To Dan Scudder
PPG Industries

Subject Laboratory analysis of sludge samples for Barium

Date 4/17/84

P.O. #

Sample 3/13,15/84

	Organic Tank 3/13	Organic 3/15
Barium, Total	308.3 mg/kg	343.0 mg/kg

C-1-C(-7)

LAB MANAGER: R. E. Klassen

LABORATORY REPORT

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

Report No. 6452

To Dan Scudder
PPG Industries

Subject Laboratory analysis of organic still bottoms:

Date 3/5/84

P.O. #

Sample 2/2/84

	2/2/84 mg/l
Barium	217.8
% Solids	25.99
% Ash	3.82

C-1-C(-8)

LAB MANAGER: Michael Koston

CBC AQUASEARCH
140 EAST RYAN ROAD (414) 764-7005
OAK CREEK, WISCONSIN 53154 - 4599

LABORATORY NUMBER	DATE	PAGE
#83-5176	9/8/ 83	1

LABORATORY REPORT

PPG INDUSTRIES INC.
10800 S. 13TH STREET
OAK CREEK, WI 53154

ATTN: DAN SCUDDER

REFERENCE METHOD:

DATE RECEIVED	DATE COLLECTED
7/8/83	N/A
SAMPLE NAME	
ORGANIC SLUDGE	
ACCOUNT NUMBER	
#771	

☒ STANDARD METHODS, APHA, 15th EDITION, 1980.
☒ METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE, EPA, 1979.
☐ TEST METHODS FOR THE EVALUATION OF SOLID WASTE, PHYSICAL, CHEMICAL METHODS, EPA, 1980.

PARAMETER	SAMPLE	EP TOXICITY LIMITS
CADMIUM	0.88	1.0
HEXAVALENT CHROMIUM	3.1	5.0
TOTAL CHROMIUM	920	5.0
COPPER	4.0	
LEAD	160	5.0
NICKEL	2.2	
ZINC	1,100	
BARIUM	510	100
SILVER	0.15	5.0
IRON	2,300	
MAGNESIUM	160	
ARSENIC	0.041	5.0
SELENIUM	-0.01	1.0
MERCURY	0.12	0.2
MANGANESE	38	
SODIUM	38	
CALCIUM	2,300	
FLASH POINT	90°F	
TOTAL CYANIDE	1.4	
% SOLIDS	23%	
SPECIFIC WEIGHT	1.053	

* ALL UNITS ARE EXPRESSED AS:
☐ MG/L ☒ PPM
☐ MG/KG

C-1-C(-9)

9/10/83
DATE

LABORATORY SUPERVISOR

CBC AQUASEARCH
140 EAST RYAN ROAD (414) 764-7005
OAK CREEK, WISCONSIN 53154 - 4599

LABORATORY NUMBER	DATE	PAGE
#83-5176	9/8/83	2

COMPANY NAME: PPG INDUSTRIES INC.

PARAMETER	SAMPLE
% ASH	14%
% WATER	35.33
TOTAL VOLATILE ORGANICS	UNABLE TO RESOLVE WITHOUT MAS SPEC IDENTIFICATION
VISCOSITY (CPS)	78.4
PHENOLS	7.0
BTU'S	7,130
FLUORIDES	-1.0
KJELDAHL NITROGEN	1900
AMMONIA NITROGEN	2.6
TOTAL ORGANIC NITROGEN	1897
TOTAL SULFUR	0.42%
CHLORIDES	-10

A (-) SIGN DENOTES A 'LESS THAN' VALUE.

C-1-C(-10)

*UNITS ARE EXPRESSED IN MG/L UNLESS OTHERWISE STATED

9/10/83
DATE

LABORATORY SUPERVISOR

LH

Rexnord

LABORATORY REPORT

TO: Mr. Martin Scheerbaum
PPG Industries
10800 South 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643- 2761

DATE: 5/29/81

PURCHASE ORDER NO.: 19354 REXNORD WORK ORDER NO.: FG41435

Analysis of organic still sludge sample submitted on April 24, 1981.

Solids (%)

Total Solids	28.03%
Volatile Solids	20.83%
Non-Volatile Solids (calculated)	7.20%

Metals (mg/l)

As	0.005	Pb	360
Ba	156	Mg	110
Cd	0.55	Mn	32
Ca	4500	Hg	5.6
Cr^{+3}	11	Ni	1.5
Cr^{+6}	<0.1	Se	<0.5
Cu	12	Ag	<0.01
Fe	3300	Na	1200
		Zn	1500

Total Volatiles, 71.97% (calculated)

% of Water	14%
% Solvents	57.97% (calculated)
	(48.66% identified)
Butyl Cellosolve	4.5%
Xylene (Total)	17.6%
MIBK	10.8%
n-butanol	3.66%
i-butanol	4.63%
Toluene	2.9%
Cellosolve Acetate	1.5%
Benzene	0.2%
Styrene	0.13%
MEK	2.5%
Acetone	0.24%

Density:	0.95 ~~lbs/gal~~. ≡ 7.9 lb/gal
Viscosity:	40 cp
Heating Value:	11,945 BTU/lb
Flash Point:	<75°F

Thank you for your order.

C-1-C(-11) Steve Galewski

Steve Galewski

CHRIS SAEKA
SPRINGDALE RD

W-FILE CC WASTE AREA

Rexnord

LABORATORY REPORT

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643- 2761

TO: Mr. Howard Timian
PPG Industries Inc.
Coatings and Resins Division
10800 S. 13th Street
Oak Creek, WI 53154

Date: 1-27-81

Purchase Order No.: 18889 Rexnord Work Order No.: FG 41379

Still sludge sample submitted on January 12, 1981.

Substance	Concentration
% Solids	39.2%
% Water	13.3%
Density	8.42 lbs/gal.
Viscosity	400 cps @ 23°C
Heating Value	9,317 BTU/lb
% Solvent	47.5%
Flash Point	85°F

FEB - 4 1981

Thank you for your order.

C-1-C(-12)

Steve Galewski
Signature

PPG - FILE

PPG INDUSTRIES

INTER-OFFICE CORRESPONDENCE

Date: October 30, 1980

From: C. M. Babka

To: M. Scheerbaum/E. Timian
Oak Creek

Location: Springdale R&D

Subject: Oak Creek Organic Waste (Still Sludge)

The following is a summary of the results on this waste stream. Sample was taken week of 4/20/80.

Total Solids	46.3%
% Ash or Non-volatile solids	14.8% 13.47% Ave. 14.1%
% Volatile Solids or Resins (calculated)	32.2%

Metals (ppm) (1.65% Identified)

As	<10	Pb	1800
Ba	1300	Mg	720
Cd	<1	Mn	51
Ca	4600	Hg	<10
Cr^{+3}	730	Ni	10
Cr^{+6}	<1	Se	<10
Cu	23	Ag	<1
Fe	4650	Na	1800
		Zn	780

Total Volatiles (calculated)	53.7%
% Water	8.93%
% Solvents (calculated)	44.77%
	(31.71% identified)
Butyl Cellosolve	15%
Xylene (Total)	8.9%
MIBK	1.7%
n-butanol	1.6%
i-butanol	1.5%
Toluene	1.4%
Cellosolve Acetate	.96%
Benzene	.46%
Styrene	.09%
MEK	.053%
Acetone	.047%

C-1-C(-13)

FORM 503-A REV. 6-1-70

Wt/Gallon	8.85 lb/gallon
Flash Point	82°F

C. M. Babka

/n

cc: L. N. Streff

ENVIRONMENTAL SAMPLE RESULTS SHEET — K 008

Date Submitted: 6/26/80

Date Completed:

Date Released:

K 008

I.H. Sample #:

Submitted By: C.M. Babka

Extension: 337

Result To: C.M. Babka

Source: Dix Creek Steel Sludge (wet) 4/20/80

Check for all except those marked "X"

Parameter	Date	Result	Reference
Arsenic (As)	230ct	<10	1 - 50
Barium (Ba)	210ct	1300	IH80-47
Cadmium (Cd)	230ct	<1	1 - 51
Calcium (Ca)	220ct	4600	1 - 48
Chromium (Tot.)(Cr)	5 Aug	730	IH80 10
Chromium +6 (Cr)	170ct	<1	IH3-76
Copper (Cu)	210ct	23	IH80-46
Iron (Fe)	220ct	4650	1 - 48
Lead (Pb)	5 Aug	1800	IH80-11
Magnesium (Mg)	220ct	720	1 - 49
Manganese (Mn)	210ct	51	IH80-46
Mercury (Hg)	220ct	<10	1 - 50
Nickel (Ni)	210ct	10	IH80-47
Selenium (Se)	220ct	<10	1 - 49
Silver (Ag)	13 Aug	<1	IH80-13
Sodium (Na)	14 Aug	1800	1 - 15
Solids; suspended X			
Solids; dissolved X			
Solids; total	8 Jul	46.3%	IH3-59
Solids; Non-Volatile	1	14.8%	1
Zinc (Zn)	230ct	780	IH80-51
~~Beryllium~~			

Parameter	Date	Result	Reference
Acetone	30 Jun	470	IH3-66
Methyl Ethyl Ketone		530	
Methyl, i-Butyl Ketone		1.7%	
Toluene		1.4%	
i-Butanol		1.5%	
n-Butanol		1.6%	
Ethyl Benzene		N.R.	
Xylene (Tot.)		8.9%	
Styrene		900	
Cellosolve Acetate		9600	
Ethyl Cellosolve		N.I.	
Butyl Cellosolve		15.%	
Hexyl Cellosolve		N.I.	
ethyl acetate		N.I.	
benzene		4600	

see attached sheet for unident peaks

% results as wght/vol

results in µg/ml unless noted (ppm)

Laboratory/Supervisor/Director:

C-1-C(-15) Date: 10/23/80

Not 7 ≡ 7

file,
O.C. Waste
Analyses

PENN ENVIRONMENTAL CONSULTANTS, INC.
FORT PITT PROFESSIONAL BUILDING
1517 WOODRUFF STREET
PITTSBURGH, PA. 15220
412-381-1133

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 151 COLFAX STREET
SPRINGDALE, PA 15144

PEC PROJECT NO: 0165-00
PEC JOB NUMBER: 9650
PEC SAMPLE NO: 55132

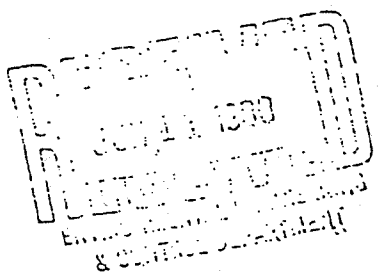
REPORT DATE: 06.09.80

ATTENTION: MR. JIM DIXON

DATE RECEIVED: 05.21.80

SAMPLE IDENTIFICATION: OAK CREEK STILL SLUDGE wk of 4/20/80

PARAMETER	SYMBOL	RESULTS	UNITS
CHLORIDE	CL	47	MG/L
TOTAL CYANIDE	CN	< .005	MG/L
FLUORIDE DISTILLATION	F, DIST	12	MG/L
PHENOLS	PHENOL	124	MG/L
TOTAL SULFUR	S	149	MG/L



C-1-C(-16)

COMMENTS:

Reviewed and Approved by:

cc: MS. CHRIS BABKA

Chemical Waste Management

W124 N9451 Boundary Road / Menomonee Falls, WI 53051

Analytical Laboratory Report

Customer PPG, Ind. C/R No. 11687

Address 10800 S. 13th St. Oak Creek, WI 53154 P.O. No. 12-595

SAMPLE INFORMATION:

Organic waste-still bottoms from solvent recovery

Date Sampled: 3/1/79 Date Received: Feb. 3, 1979

pH		Arsenic, ppb	
Acidity, % as		Barium, as Ba, mg/l	
Alkalinity, % as		Cadmium, as Cd, mg/l	0.18
Specific gravity, g/cm³	0.9496	Chromium, Total, as Cr, mg/l	185
COD, mg/l		Chromium, hexav., as Cr, mg/l	15.36
BOD, mg/l		Copper, as Cu, mg/l	
Total solids, @ 105C		Iron, as Fe, mg/l	
Suspended solids		Lead, as Pb, mg/l	33
		Mercury, ppb, as Hg	0.510
Flash point, F	69° F.	Nickel, as Ni, mg/l	
Heating value, BTU/lb		Selenium, as Se, mg/l	
		Silver, as Ag, mg/l	
Cyanides, as Cn, mg/l		Zinc, as Zn, mg/l	688
Phenols, mg/l	1.395		
Chlorides, as Cl, mg/l		Soluble in:	
Sulfides, mg/l			
Fluorides, mg/l			

REMARKS

Chromium, lead, and zinc levels

The metals level is high and may require fixation in the future.

Cadmium

C-1-C(-17)

Janet Bussow
Analyst

3/14/79
Date Completed

WW 101

PPG INDUSTRIES, INC.
10800 South 13th Street, POB 28
Oak Creek, Wisconsin 53154

(414) 764-6000

Contact: Dan Scudder, Environmental Engineer

Organic Waste

Generation Rate: 600000 gallon/yr

Total Solids	25-50%	Total Volatiles	50-75%
Total Volatile Solids (resins)	20-40%	% Water	1-20%
Total Non-volatile Solids (% Ash @ 550°C)	5-20%	% Solvents	40-60%

Metals, mg/l ≡ ppm			
Arsenic	<.005 - 10	Calcium	1000-5000
Barium	10 - 1500	Copper	1-25
Cadmium	.5 - 5	Iron	2000-5000
Cr (total)	10 - 750	Magnesium	100-1000
Cr^{+6}	<.1 - 1	Manganese	25-100
Lead	300 - 2000	Nickel	1-20
Mercury	3 - 10	Sodium	500-2000
Selenium	<.5 - 10	Zinc	500-2000
Silver	<.01 - 1		

Solvent, %	
Butyl Cellosolves	5-15
Xylene	5-20
MIBK	1-15
n-Butanol	1-5
i-Butanol	1-5
Toluene	1-5
Cellosolve Acetate	1-5
Benzene	.1-.5
Styrene	.05-.2
MEK	.05-5
Acetone	.05-.5

Weight/gallon	7.9 - 9.2 lb/gallon
Flash Point, P.M.C.C.	<100°F
Viscosity	40-100 cps
Heating Value	7000-12000 Btu/lb.
Total Cyanide	<.005 ppm
Phenols	<150 ppm
Fluorides	<10 ppm
Total Organic Nitrogen	< 2%
Sulfur	<.5%
Chlorides	<.5%

DOT Shipping Name:	Waste Paint
DOT Hazard Class:	Flammable Liquid
DOT ID Number:	UN1263
EPA Waste Code:	F003, F005

12/15/81: C. M. Babka

oremost-McKesson
hemical Group

IcKesson Envirosystems Co.
27 West Berry Street
00 Commerce Building
ort Wayne, IN 46802
19 424-1940

McKESSON ENVIROSYSTEMS

FOF US

Spent Material / Waste Products Survey

Please provide all information requested below, then return this form to your local McKesson Chemical Representa

COMPANY	SIC NUMBER
PPG Industries	2851 and 2821
MAILING ADDRESS	**PRODUCT CODE**
10800 S. 13th St. Oak Creek, WI. 53154	

DESCRIPTION OF SPENT MATERIAL / WASTE PRODUCT: Solvent recovery still bottoms

INDICATE PROCESS WHICH GENERATES THIS SPENT / WASTE (BE SPECIFIC)

VOLUME	FREQUENCY			PACKING	
17,000 to 22,000 gallons	PER MONTH X	PER YEAR	ONE TIME	IN DRUMS	IN BULK X

PHYSICAL PROPERTIES: (DATE OF LAB ANALYSIS 12/5/ revised 7/93)

PHYSICAL STATE AT 70°F

SOLID ____ LIQUID X FLASH POINT <100°F

SEMI-SOLID ____ PH ~7.0

SPECIFIC GRAVITY ~1.0 % CHLORINE ____

% SULFUR <0.1% BTU PER LB/GAL 7,000-12,000

HAZARDOUS PROPERTIES:

DESCRIBE—

Flammable

Listed waste F003, F005

Possibly EP toxic for D008

D007, D008, D009

EPA / DOT IDENTIFICATION:

EPA HAZARDOUS WASTE NUMBERS UN1263 EPA HAZARD CODES F003, F005

DOT HAZARDOUS MATERIAL DESCRIPTION Waste Paint

CHEMICAL COMPOSITION:

SUBSTANCE	MIN	MAX	TYP	SUBSTANCE	MIN	MAX	TYP
Solvents	30	70					
Solids	20	60					
Water	1	2.5					

GENERAL:

1. PLEASE PROVIDE LAB ANALYSIS IF HEAVY METALS, CYANIDES, PESTICIDES, CARCINOGENS OR OTHER TOXICS ARE INVOLVED.

2. PLEASE DISCUSS ANY OTHER INFORMATION WHICH MAY HELP McKESSON BE OF SERVICE:

This waste stream can be variable in its chemical composition. Typical ranges are indicated on the attached analysis from 12/5/91

PLEASE ATTACH ANY ADDITIONAL HAZARD AND HANDLING INFORMATION TO THIS SHEET.

TO THE BEST OF MY KNOWLEDGE AND ABILITY TO DETERMINE THIS IS A COMPLETE AND ACCURATE DESCRIPTION OF THIS MATERIAL.

SIGNATURE	TITLE
C-1-C(-19)	Environmental Engineer
PHONE NUMBER (INCLUDE AREA CODE)	DATE 12/27/91
	EPA IDENTIFICATION NO.

Oak Creek Organic Waste
PPG Sample #E-1424
DOT Shipping Name: Waste Paint Mixture
DOT Hazard Class: Flammable Liquid
DOT Code Number: UN1263
RCRA Waste Codes: F003, F005
Generation Rate: 600000 gallons/year

SYSTECH WASTE FORM

Application Number _____

Generator PPG Industries, Inc.
10800 South 13th Street
Oak Creek, WI 53155 (WID005997291

Date 12/17/81
C. M. Babka (412) 274-4500, Ext. 337

PART 3. SAMPLE ANALYSIS

A. Physical/Chemical Parameters

Heat Content 7000 - 12000 Btu/#

Viscosity 40-100 Centipoise

Solids 25-50% Percent volume

Sulfate <.5% Percent weight

Nitrate < 2% Percent weight

Halogens Cl <.5%, F <.5% Percent weight

Aqueous Extraction - pH

Water (Separated Phase) 1-20% Percent volume

Ash 5-20% Percent weight

Specific Gravity .95 - 1.1

B. Organic Analysis

Constituents as identified by gas chromatograph

Cellosolves	5-15 %	Cellosolve Acetate	1-5 %
Xylene	5-20 %	Styrene	.05 - 2 %
MIBK	1-15 %		. %
MEK	.05 - 5 %		%
Butanols	1-5 %		%
Toluene	1-5 %		%
Acetone	.05-.5 %	Benzene	.1 - .5 %

C. Metals Analysis (concentration in combustible stream)

Zinc	500-2000 ppm	Arsenic	< .005-10 ppm
Chromium	10 - 750 ppm	Barium	10 - 1500 ppm
Copper	1-25 ppm	Cadmium	.5 - 5 ppm
Lead	3000-2000 ppm	Mercury	3-10 ppm
Manganese	25-100 ppm	Selenium	< .5 - 10 ppm
Nickel	1-20 ppm	Silver	<.01 - 1 ppm

D. Recommendation regarding the use of this material as a supplemental fuel

1. Analyst comments _____

_____

Signature _____

2. Technical representative comments _____

_____

Signature _____

3. Submitted to General Portland Inc. for approval as a qualified source

_____ Yes

_____ No

by _____
Date

E. Reviewed and accepted/rejected by GPI

_____ _____
By Date

Reasons for rejection _____

_____

_____

Robert Koss & Sons Inc.

334 Mills Road • Walton, Ohio 44644 (216) 744-2171 • (216) [illegible] Cleveland Line

WASTE PRODUCT SURV

US/EPA Facility ID# OHD048415665 #_____

1. Generator: PPG Industries, Inc. US/EPA ID #: WID059972935

Mailing Address: POB 28, Oak Creek, WI 53154

Plant Address: 10800 South 13th Street, Oak Creek, WI 53154

Business Contact: Martin Scheerbaum/Dan Scudder Phone: (414) 764-6000

Technical Contact: Martin Scheerbaum/Dan Scudder Phone: (414) 764-6000

THIS INFORMATION IS BEING REQUIRED TO COMPLY WITH RCRA 40 CFR PART 265.13 GENERAL WASTE ANALYSIS.

II. GENERAL WASTE INFORMATION

Waste Material Name: Organic Waste

Generator Code(if used):

Describe process that generates waste: Paint and Resin Plant Solvent Recovery Batch Distillation

SIC Code(optional): 2851, 2821

Is this Waste "Hazardous" as defined by RCRA Part 261?
NO [YES] (circle)
If yes, list applicable EPA Hazardous Waste Number(s) be
F003, F005

Rate of Generation: 200M-300M Gal/yr. Current Accumulation Drums: _____ Bulk: X

Specify all types of containerization for which you request quotation.
55 gallon steel drums_____; 70 gallon recovery drum_____; (with fiber or steel drum inside); 55 gallon fiber drum_____; 5 gallon pail_____; Bulk X ; Other_____
If bulk, I would like a quote for pumping charge. (circle) NO [YES]

III. WASTE STREAM CHEMICAL COMPOSITION

Components including contaminants	Concentration Range WT%		Average WT% Must Total 100%	TLV (if publis +ACGIH	OSH
Polymeric Resins (acrylic, alkyd, polyester, vinyl, amine, epoxy, polyurethane)	20	40	30		
Inorganic Pigments	7	20	10		
% Water	1	20	10		
Solvents (total)	45	60	50		
Butyl Cellosolves	5	15	9		25
Xylene	10	20	15		100
MIBK	1	10	6		100
Butanols	2	10	5		100
Toluene	1	3	2		
Cellosolve Acetates	1	3	1.5		25
Benzene	.1	.5	.3		10

Attach to this form any additional information which must be known to treat, store or di pose of the waste in accordance with RCRA Section 265.13, including but not limited to d developed under RCRA 261, laboratory analysis, technical publications or safety data she

(CONTINUED ON LAST PAGE)

IV. SPECIFIC ANALYSIS OF WASTE

ANSWER EVERY ITEM IN THIS SECTION
DO NOT LEAVE BLANKS. If the specific element is not present, indicate "none".

Organic Bound Sulfur*	None	%WT
" " Chlorine*	Trace	%WT
" " Flourine*	Trace	%WT
" " Bromine*	None	%WT
" " Iodine*	None	%WT
" " Nitrogen	<2	%WT
" "Phosphorous	None	%WT

(Base %WT on Molecular Structure)

Metals

Lead*	300 - 2000	PPM
Mercury*	3 - 10	PPM
Arsenic	<.01 - 1	PPM
Barium	10 - 1500	PPM
Cadmium	< .5 - 3	PPM
Chromium	10 - 800	PPM
Selenium	<.5 - 1	PPM
Silver	<.01 - 1	PPM

*These items are specifically required by RCRA Part 265 Subpart O

Does this waste contain PCBS? (circle)

[NO] YES If yes, give the concentration and attach supporting documentation.

_____ PPM

Does this waste contain Insecticides, Pesticides, Herbicides or Rodenticidies?

[NO] YES If yes, identify each in the space below and the concentrations.

_____ PPM

_____ PPM

V. TOXICITY

Check applicable data

X Ingestion; explain Heavy Metals & Solvents
X Inhalation; explain Avoid Breathing Vapors
X Dermal; explain May be an Irritant
X Eyes; explain Avoid Contact
___ Other; explain _____
X Carcinogen(suspected or known); explain
Benzene .1 - .5%

VI. PHYSICAL PROPERTIES

Physical State @70°F (circle)

Normally [Liquid] Similar to Paint Semisolid Solid
Slurry Possibly [Sludge] Gas

Viscosity @ 70°F <1000 sus [cps]

Is material pourable/pumpable? (circl

NO [YES]

Is waste multi-layered? NO YES Possibly

1.(top) _____ % 3. _____ %

2. _____ % 4. _____ %

Dissolved Solids N/A %W

Suspended Solids N/A %W
(identity and indicate % by WT)

BTU Value/lbs.* 7000 - 12000

*Specifically required by RCRA Part 265 Subpart O.

Normal
Flash Point: 75 - 100°F °F

Specific Gravity: .9 - 1.1

pH: N/A

Characteristics

Color: Varies (usually brown to gray)

Odor: Solvent

Other: _____

VII. REACTIVITY

(circle) [Stable] Unstable

Handling conditions to avoid _____

_____

Chemical Incompatibility _____

_____

II. SHIPPING INFORMATION FOR WASTE

In accordance with the Department of Transportation 49 CFR Parts 171 through 177.

DOT Proper Shipping Name: Waste Resin Solution

DOT Hazard Class: Flammable Liquid

DOT UN or NA Number: UN1866
(Required on all shipments after June 30, 1981.)

Container Label(s): N/A
(For containers of 110 gallons or less)

Placard(s): Flammable Liquid

For assistance call Hazardous Material Transportation of the Department of Transportation
Phone: (800)424-9158

Generators of Hazardous Waste shipments must also comply with the labeling requirements o: RCRA 40 CFR Part 262.

IX. I hereby certify that I have personally examined and am familiar with the information submitted in this and all attached documents. Based on my inquiry of thos individuals immediately responsible for obtaining the information, the submitted information is true, accurate, and complete and all known and suspected hazards have been disclosed.

Christine M. Babka / Environmental Engineer / 10/20/81

Christine M. Babka — Authorized Signature
Environmental Engineer — Title
10/20/81 — Date

Coatings & Resins Division
(412) 274-4500, Ext. 337

II. WASTE STREAM CHEMICAL COMPOSITION (Continued from front page)

Components including Contaminants	Concentration Range WT%	Average WT% Must Total 100%	TLF (if published) +ACGIH	OSHA
Styrene	.05 - .15	.1		100
MEK	.05 - 3	1		200
Acetone	.05 - .3	.1		1000
Others	5 - 15	10		

C-1-D(-1)

ATTACHMENT VI-B-4

Water-Base Paint Waste
(D005, D006, D007, D008)
Possibly D001, D009

General Description:

Liquid or Liquid and Sludge

Flash Point	<100 F - >140 F
Heating Value	<1,000 - 5,000 BTU/LB
Total Resin Solids	15 - 30%
Total Pigment Solids	10 - 30%
Solvents	0 - 60%
Water	15 - 60%
Weight/Gallon	8.9 - 9 LB/GAL

Description will vary depending on product.

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the product.

C-1-E(-1)

ATTACHMENT VI-B-5

Solvent Base Paint Waste
(D001, D005, D007, D008, D035)
Possibly D009

General Description:

Liquid or Liquid and Sludge

Flash Point	<100 F
Heating Value	8,000 - 15,000 BTU/LB
Total Resin Solids	15 - 40%
Total Pigment Solids	5 - 20%
Solvents	40 - 80%
Water	5 - 15%
Weight/Gallon	7 - 8 LB/GAL

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the product. Also tested for ignitability.

Revision No: 1
March 22, 1991

C-1-F(-1)

ATTACHMENT VI-B-6

Resin Waste
(D001, D007, D008, D035)
Possibly D003

General Description:

Liquid, semi-solid or solid

Flash Point	<100 F to >140 F
Heating Value	<100 - >10,000 BTU/LB
Total Resin Solids	20 - 70%
Total Pigment Solids	<.5%
Solvents	15 - 75%
Water	0 - 75%
Weight/Gallon	7.5 - 9 LB/GAL

Description will vary depending on product.

Basis for hazardous designation:

Usually ignitable waste. Assumed TCLP Toxic characteristics based on knowledge of product.

Certain types of resins may also be reactive when mixed with water or may spontaneously ignite. These are generated infrequently.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BARNA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040557
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0067-00 - Cationic Sample Waste

TEST	DETERMINATION	RESULTS	UNITS
0V22	Methylene Chloride	< 2	mg/l
0V25	Toluene	< 2	mg/l
0V30	Trichlorofluoromethane	< 2	mg/l
S015	% Ash @ 550 C	< 0.1	%
S040	British Thermal Units	WNC	
S064	Chlorine, Organic	< 0.1	%
S092	Fluorine, Organic	< 0.01	%
S165	% Solids, total at 103 C	< 0.1	%
S168	Specific Weight	8.6	lb/gal
S195	% Water (Karl Fisher)	75.1	% — recheck 78%
S210	Viscosity	10	CP
S950	Acid Digestion		
S971	Ashing		
S980	Oxygen Bomb Preparation		
W032	Ammonia as N (distillation)	< 1	mg/l
W270	Cyanide, total (CN)	< 0.1	mg/l
W435	Nitrogen, Kjeldahl (N)	15	mg/l
W440	Nitrogen, Organic (N)	15	mg/l
W500	Phenolics	< 0.4	mg/l
W740	Sulfide (S)	< 1	mg/l

RECEIVED MAY 16 1985 ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

MENTS: WNC indicates that the sample will not combust. < means detection Limit

C-1-F-(-3)

Reviewed and Approved by: JMC

C-1-G(-1)

ATTACHMENT VI-B-7

Cationic Distillate
(F003)

General Description:

Liquid

Flash Point	<100 F
Heating Value	10,000 - 15,000 BTU/LB
Total Resin Solids	<1%
Total Pigment Solids	0
Solvents	70 - 95%
Water	5 - 30%
Weight/Gallon	7.5 - 8 LB/GAL

Basis for hazardous designation:

Listed for Ignitability.

C-1-H(-1)

ATTACHMENT VI-B-8

Paint Plant Filter Cartridges and Bags
(D005, D006, D007, D008)

General Description:

Fiber filter cartridge, bag, and/or paper straining media contaminated with paint, resins, solvent or water and pigments. An inert absorbent material may be added at the time the waste is placed in the container.

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the products.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSAHNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041223
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/18/85

SAMPLE IDENTIFICATION: OC-85-0077-03A - Paint Filter Bag

TEST	DETERMINATION	RESULTS	UNITS
S015	% Ash @ 550 C	5.2	%
S040	British Thermal Units	10820	BTU/lb
S120	% Moisture (As received)	30	%
S165	% Solids, total at 103 C	70	%
S170	Specific Gravity	INT	
S410	Barium (Ba)	960	mg/kg
S417	Beryllium(Be)	< 0.2	mg/kg
S430	Chromium (Cr)	700	mg/kg
S450	Lead (Pb)	3600	mg/kg
S460	Mercury (Hg)	2.7	mg/kg
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limits

C-1-H(-2)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSAHHA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041221
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/17/85

SAMPLE IDENTIFICATION: OC-85-0077-03-A1 - Paint Filter Bag Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.34	mg/l
I040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	1.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.0003	mg/l
M290	Selenium (Se)	0.28	mg/l
I300	Silver (Ag)	< 0.1	mg/l
M141	Chromium, Hexavalent(Cr+6)	< 0.01	mg/l
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-H(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
REPORT DATE: 05/31/85
ATTENTION: MS. C. BABKA

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041224
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/18/85

SAMPLE IDENTIFICATION: OC-85-0077-03B - Paint Filter

TEST	DETERMINATION	RESULTS	UNITS
S015	% Ash @ 550 C	45	%
S040	British Thermal Units	6099	BTU/lb
S120	% Moisture (As received)	20	%
S165	% Solids, total at 103 C	77	%
S170	Specific Gravity	INT	
S410	Barium (Ba)	4300	mg/kg
S417	Beryllium(Be)	< 0.2	mg/kg
S430	Chromium (Cr)	170	mg/kg
S450	Lead (Pb)	280	mg/kg
S460	Mercury (Hg)	0.40	mg/kg
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 0 5 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-H(-4)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/31/85

ATTENTION: MS. C. BABKA

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041225
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/18/85

SAMPLE IDENTIFICATION: OC-85-0077-03C - Paint Filter

TEST	DETERMINATION	RESULTS	UNITS
S015	% Ash @ 550 C	23	%
S040	British Thermal Units	8673	BTU/lb
S120	% Moisture (As received)	28	%
S165	% Solids, total at 103 C	70	%
S170	Specific Gravity	INT	g/cc
S410	Barium (Ba)	120	mg/kg
S417	Beryllium(Be)	< 0.2	mg/kg
S430	Chromium (Cr)	2.0	mg/kg
S450	Lead (Pb)	< 3	mg/kg
S460	Mercury (Hg)	0.26	mg/kg
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-H(-5)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
ATTENTION: MS. CHRIS BABKA

REPORT DATE: 06/04/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042187
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: OC-85-0077-03 C1 - Paint Filter Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	< 0.01	mg/l
I040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.0003	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l

RECEIVED
JUN 06 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-H(-6)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041226
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/18/85

SAMPLE IDENTIFICATION: OC-85-0077-03D - Paint ... Filter

TEST	DETERMINATION	RESULTS	UNITS
S040	British Thermal Units	4891	BTU/lb
S120	% Moisture (As received)	18	%
S170	Specific Gravity	INT	
S410	Barium (Ba)	6700	mg/kg
S417	Beryllium(Be)	< 0.2	mg/kg
S450	Lead (Pb)	220	mg/kg
S460	Mercury (Hg)	0.13	mg/kg
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-H(-7)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238

REPORT DATE: 06/04/85

ATTENTION: MS. CHRIS BABKA

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042186
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: DC-85-0077-03 D1 - Paint Filter Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	< 0.01	mg/l
I040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	< 0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	< 0.0002	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l

RECEIVED
JUN 06 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: Laboratory Manager

C-1-H(-8)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041485
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: OC-85-0077-03E - Paint Filter

TEST	DETERMINATION	RESULTS	UNITS
S015	% Ash @ 550 C	40	%
S040	British Thermal Units	6930	BTU/lb
S120	% Moisture (As received)	19	%
S165	% Solids, total at 103 C	78	%
S170	Specific Gravity	INT	
S410	Barium (Ba)	350	mg/kg
S417	Beryllium(Be)	< 0.2	mg/kg
S430	Chromium (Cr)	8.1	mg/kg
S450	Lead (Pb)	14	mg/kg
S460	Mercury (Hg)	0.3	mg/kg
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: INT indicates sample matrix interference during sample analysis. Means detection limit
C-1-H(-9)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041222
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/17/85

SAMPLE IDENTIFICATION: DC-85-0077-03-E1 - Paint Filter Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.32	mg/l
I040	Barium (Ba)	1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	< 0.0002	mg/l
M290	Selenium (Se)	0.25	mg/l
I300	Silver (Ag)	< 0.1	mg/l
M141	Chromium, Hexavalent(Cr+6)	0.01	mg/l
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-H(-10)

Reviewed and Approved by: JMC

E - A ENVIRO-ANALYSTS, INC.

1300 S. Green Bay Road
Racine, Wisconsin 53406

LABORATORY REPORT

Report No. 8090

To Dan Scudder
PPG Industries

Subject Chemical and Physical Characterization of Paint Filter Waste.

Date 8/13/84

P.O. # 31459

Sample 7/18/84

---

pH 3.17
Flashpoint 86°F
Specific Gravity 1.16
Specific Weight 9.72 lb/gal

Total Solids 77.0%

% Ash Content 47.5%
% Volatile Solids
(by calculation) 29.5%

Metals (ppm)

Arsenic	<0.1	Lead	9.9
Barium	<1.0	Mercury	<0.01
Cadmium	0.77	Nickel	6.0
Chromium, total	18.0	Silver	<0.5
Chromium, +6	<0.1	Selenium	<0.1
Copper	14.0	Zinc	29.0
Iron	1900		

Inorganic/Reactive Components (ppm)

Cyanide	<0.03
Sulfide	<0.25
Sulfite	<1.0

Total Volatiles 23.0% (based on calculation)

% water
% oil
% solvents

C-1-H(-11)

LAB MANAGER: R E Gleason

E - A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Road
Racine, Wisconsin 53406

LABORATORY REPORT

Report No. 8089

Dan Scudder
PPG Industries

Subject EP Toxicity test on Paint Filter Waste.

Date 8/13/84

P.O. # 31459

Sample 7/18/84

Sample Identification	Paint Filter Waste
Lab I.D. Number	7866
Units	mg/l
Arsenic	<0.1
Barium	<0.3
Cadmium	<0.1
Chromium	0.35
Lead	<0.1
Mercury	<0.01
Selenium	<0.1
Silver	<0.1
Copper	0.40
Zinc	0.7
Nickel	<0.1

C-1-H(-12)

LAB MANAGER: [signature]

E-A ENVIRO-ANALYSTS, INC.
1300 S Green Bay Rd
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 2949

To Dan Scudder
PPG Industries

Subject Chemical and Physical Characterization of Paint and Resin Filter waste

Date 7/15/82

P.O. # Scudder

Sample 7/9/82

pH	6.05
Flashpoint	98°C, 208°F
Specific Gravity	0.24
Specific Weight	2.00 lb/gal

Total Solids	75.5%
% Ash Content	21.8%
% Volatile Solids (by calculation)	53.7%

Metals (ppm)

Arsenic	<0.1	Lead	3.1
Barium	258.2	Mercury	0.86
Cadmium	4.9	Nickel	18.3
Chromium, total	290.0	Silver	<0.1
Chromium, +6	18.5	Selenium	0.2
Copper	16.2	Zinc	119.0
Iron	9,766.5		

Inorganic/Reactive Components (ppm)

Cyanide	<0.03
Sulfide	<0.25
Sulfite	<1.0

Total Volatiles	24.5% (by calculation)
% water	-
% oil	-
% solvents	- (Aliphatic hydrocarbons)

C-1-H(-13)

LAB MANAGER R. E. Tallman

C-1-I(-1)

ATTACHMENT VI-B-9

Resin Plant Filter Cartridges and Bags

General Description:

Fiber filter cartridge, bag, and/or paper straining media contaminated with resins. An inert absorbent material may be added at the time the waste is placed in the container.

Basis for hazardous designation:

Declared hazardous based on organics.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/31/85

ATTENTION: CHRIS BABKA

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041486
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: OC-85-0078-03A - Resin Filter Bag

TEST	DETERMINATION	RESULTS	UNITS
S015	% Ash @ 550 C	0.2	%
S040	British Thermal Units	14640	BTU/lb
S120	% Moisture (As received)	16	%
S165	% Solids, total at 103 C	83	%
S170	Specific Gravity	INT	
S410	Barium (Ba)	290	mg/kg
S417	Beryllium(Be)	< 0.2	mg/kg
S430	Chromium (Cr)	5.0	mg/kg
S450	Lead (Pb)	15	mg/kg
S460	Mercury (Hg)	0.2	mg/kg
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: INT indicates sample matrix interference during sample analysis. < means less than

C-1-I(-2)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSAHNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041487
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: OC-85-0078-03B - Resin Filter Cartridge

TEST	DETERMINATION	RESULTS	UNITS
S015	% Ash @ 550 C	< 0.1	%
S040	British Thermal Units	10490	BTU/lb
S120	% Moisture (As received)	2.3	%
S165	% Solids, total at 103 C	97	%
S170	Specific Gravity	INT	
S417	Beryllium(Be)	< 0.2	mg/kg
S430	Chromium (Cr)	3.0	mg/kg
S450	Lead (Pb)	< 3	mg/kg
S460	Mercury (Hg)	0.1	mg/kg
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: INT indicates sample matrix interference during analysis. < means detection limit

C-1-I(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
ATTENTION: MS. CHRIS BABKA

REPORT DATE: 06/04/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042185
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: OC-85-0078-03 B1 - Resin Filter Cartridge Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	< 0.01	mg/l
I040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	< 0.0002	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l

RECEIVED
JUN 06 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-I(-4)

Reviewed and Approved by: JMC

E - A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Road
Racine, Wisconsin 53406

LABORATORY REPORT

Report No. 8095
Date 8/13/84
P.O. # 31459
Sample 7/18/84

To: Dan Scudder
PPG Industries

Subject: Chemical and Physical Characterization of Resin Filter Waste

pH 7.27
Flashpoint 113° F
Specific Gravity 0.5
Specific Weight 4.1 lb/gal

Total Solids 95.28%

% Ash Content 1.55%
% Volatile Solids
(by calculation) 93.73%

Metals (ppm)

Arsenic	<0.1	Lead	26.0
Barium	<1.0	Mercury	<0.01
Cadmium	2.0	Nickel	12.0
Chromium, total	8.3	Silver	<0.1
Chromium, +6	<0.1	Selenium	<0.1
Copper	<0.1	Zinc	41.0
Iron	450.0		

Inorganic/Reactive Components (ppm)

Cyanide	<0.03
Sulfide	<0.25
Sulfite	<1.0

Total Volatiles 4.72% (by calculation)

% water
% oil
% solvents

C-1-I(-5)

LAB MANAGER: R E Schlosser

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Road
Racine, Wisconsin 53406

LABORATORY REPORT

Report No. 7096

To Dan Scudder
PPG Industries

Subject EP Toxicity test on
Resin Filter Waste

Date 8/13/84

P.O. # 31459

Sample 7/18/84

Sample Identification	Resin Filter Waste
Lab I.D. Number	7855
Units	mg/l
Arsenic	<0.1
Barium	<0.3
Cadmium	<0.1
Chromium	<0.1
Lead	<0.1
Mercury	<0.01
Selenium	<0.1
Silver	<0.1
Copper	0.08
Zinc	0.17
Nickel	<0.1

C-1-I(-6)

LAB MANAGER: R. E. Hoesser

LABORATORY REPORT

E-A ENVIRO-ANALYSTS, INC.
1300 S Green Bay Rd.
Racine, Wisconsin 53406

Report No. 3103

To Dan Scudder
PPG Industries

Subject EP Toxicity Test on Resin Filters waste

Date 9/23/82

P.O. # Scudder

Sample 8/23/82

	Resin Filters mg/l
Arsenic	< 0.01
Barium	0.42
Cadmium	< 0.01
Chromium	< 0.01
Lead	15.6
Mercury	< 0.01
Selenium	< 0.01
Silver	< 0.01
Copper	< 0.01
Zinc	0.05
Nickel	< 0.01

C-1-I(-7)

LAB MANAGER: R E Schoessow

E-A ENVIRO-ANALYSTS, INC.
1300 S Green Bay Rd.
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 3101

To Dan Scudder
PPG Industries

Subject Chemical and Physical Characterization of Resin Filter Waste

Date 9/23/82

P.O. # Scudder

Sample 8/23/82

pH	6.58
Flashpoint	> 212°F, does not flash
Specific Gravity	0.48
Specific Weight	4.0 lb/gal

Total Solids	73.7%
% Ash Content	13.2%
% Volatile Solids (by calculation)	60.5%

Metals (ppm)

Arsenic	0.2	Lead	202.2
Barium	126.5	Mercury	< 0.01
Cadmium	1.4	Nickel	8.4
Chromium, total	< 0.1	Silver	2.7
Chromium, +6	< 0.1	Selenium	< 0.1
Copper	3.4	Zinc	6.1
Iron	74.8		

Inorganic/Reactive Components (ppm)

Cyanide	1.2
Sulfide	< 0.25
Sulfite	< 1.0

Total Volatiles	26.3% (by calculation)
% water	
% oil	
% solvents	(aliphatic hydrocarbons)

C-1-I(-8)

LAB MANAGER: R E Schoessow

E-A ENVIRO-ANALYSTS, INC.
1300 S Green Bay Rd
Racine Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 2949

To Dan Scudder
PPG Industries

Subject Chemical and Physical Characterization of Paint and Resin Filter waste

Date 7/15/82

P.O. # Scudder

Sample 7/9/82

pH	6.05
Flashpoint	98°C, 208°F
Specific Gravity	0.24
Specific Weight	2.00 lb/gal

Total Solids	75.5%
% Ash Content	21.8%
% Volatile Solids (by calculation)	53.7%

Metals (ppm)

Arsenic	<0.1	Lead	3.1
Barium	258.2	Mercury	0.86
Cadmium	4.9	Nickel	18.3
Chromium, total	290.0	Silver	<0.1
Chromium, +6	18.5	Selenium	0.2
Copper	16.2	Zinc	119.0
Iron	9,766.5		

Inorganic/Reactive Components (ppm)

Cyanide	<0.03
Sulfide	<0.25
Sulfite	<1.0

Total Volatiles	24.5% (by calculation)
% water	-
% oil	-
% solvents	- (Aliphatic hydrocarbons)

C-1-I(-9)

LAB MANAGER

C-1-J(-1)

ATTACHMENT VI-B-10

Paint Plant Baghouse Dust
(D005, D006, D007, D008)

General Description:

This is a solid waste generated from air pollution dust collection systems located at several points throughout the Paint Manufacturing Plant. Pigment and resin raw material particulates are drawn away from the operator by a hood at the point where these materials are charged to the production equipment.

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the waste.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238

REPORT DATE: 07/02/85

ATTENTION: MS. CHRIS BABKA

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040565
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0075-03 - Paint Baghouse Dust

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	4.1	mg/kg
I040	Barium (Ba)	5800	mg/kg
M090	Cadmium (Cd)	2.6	mg/kg
I140	Chromium (Cr)	5600	mg/kg
M200	Lead (Pb)	4500	mg/kg
I250	Mercury (Hg)	2.5	mg/kg
M290	Selenium (Se)	< 0.4	mg/kg
I300	Silver (Ag)	< 1.0	mg/kg
M050	Beryllium (Be)	< 0.2	mg/kg
I110	Calcium (Ca)	16000	mg/kg
M141	Chromium, Hexavalent(Cr+6)	3800	mg/kg Rev.
I150	Cobalt (Co)	7.0	mg/kg
M160	Copper (Cu)	1500	mg/kg
I190	Iron,total (Fe)	99	mg/kg
M230	Magnesium (Mg)	2000	mg/kg
I240	Manganese (Mn)	63	mg/kg
M270	Nickel (Ni)	94	mg/kg
I310	Sodium (Na)	880	mg/kg
M320	Strontium (Sr)	5100	mg/kg
I390	Zinc (Zn)	11000	mg/kg
OM99	Infrared Analysis		
S010	Ammonia, distillation (N)	590	mg/kg
S015	% Ash @ 550 C	78	%
S064	Chlorine, Organic	< 0.1	%
S080	Cyanide, Total (CN)	< 2	mg/kg
S098	Fluorine, Organic	0.02	%
S120	% Moisture (As received)	1.5	%
S125	Nitrogen, Kjeldahl (N)	3600	mg/kg
S126	Nitrogen, Organic (N)	3000	mg/kg
S165	% Solids, total at 103 C	98.3	%
S170	Specific Gravity	INT	

RECEIVED JUL - 8 1985 ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

C-1-J(-2)

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040565
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0075-03 - Paint Baghouse Dust

TEST	DETERMINATION	RESULTS	UNITS
S174	Sulfide by H2 generation (S)	< 5	mg/kg
S190	Sulfur, total	0.60	%
S950	Acid Digestion		
S955	Water Digestion		
S980	Oxygen Bomb Preparation		
W490	pH	7.2	

RECEIVED
MAY 16 1985
ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

COMMENTS: No resins were detected by the infrared analysis. < means detection limit

C-1-J(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041219
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/17/85

SAMPLE IDENTIFICATION: OC-85-0075-03A - Paint Baghouse Dust Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.36	mg/l
I040	Barium (Ba)	1	mg/l
M090	Cadmium (Cd)	0.11	mg/l
I140	Chromium (Cr)	92	mg/l
M200	Lead (Pb)	0.8	mg/l
I250	Mercury (Hg)	0.035	mg/l
M290	Selenium (Se)	0.28	mg/l
I300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-J(-4)

Reviewed and Approved by: JMC

E - A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Road
Racine, Wisconsin 53406

LABORATORY REPO

Report No. 8093

To Dan Scudder
PPG Industries

Subject Chemical and Physical Characterization of Paint Plant Dust Wastes.

Date 8/13/84

P.O. # 31459

Sample 7/18/84

---

pH 7.13

Flashpoint 212° F, does not flash

Specific Gravity 0.39

Specific Weight 3.25 lbs/gal

Total Solids 81.23%

% Ash Content 72.07%

% Volatile Solids 9.16%
(by calculation)

Metals (ppm)

Arsenic	<0.1	Lead	3.2
Barium	<1.0	Mercury	0.39
Cadmium	2.7	Nickel	18.6
Chromium, total	876.0	Silver	0.8
Chromium, +6	<0.1	Selenium	<0.1
Copper	975.0	Zinc	683.0
Iron	12,600		

Inorganic/Reactive Components (ppm)

Cyanide <0.03

Sulfide <0.25

Sulfite <1.0

Total Volatiles 18.77% (by calculation)

% water

% oil

% solvents

C-1-J(-5)

LAB MANAGER: R E Hoesen

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Road
Racine, Wisconsin 53406

LABORATORY REPO

To Dan Scudder
PPG Industries

Subject EP Toxicity test on
Paint Plant Dust Waste.

Report No. 8094
Date 8/13/84
P.O. # 31459
Sample 7/18/84

Sample Identification	Paint Plant Dust
Lab I.D. Number	7847
Units	mg/l
Arsenic	<0.1
Barium	<0.3
Cadmium	<0.1
Chromium	160.0
Lead	0.19
Mercury	0.021
Selenium	<0.1
Silver	<0.1
Copper	32.0
Zinc	53.0
Nickel	0.21

Note: EP Toxicity for Chromium

C-1-J(-6)

LAB MANAGER: R. E. Gilbertson

LABORATORY REPORT

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

Report No. 3211

To Dan Scudder
PPG

Subject EP Toxicity Test on Paint Dust Composite

Date 11/5/82

P.O. # Scudder

Sample 8/30/82

	8/30 mg/l
Arsenic	< 0.01
Barium	1.50
Cadmium	0.32
Chromium	8.60
Lead	< 0.01
Mercury	0.012
Selenium	< 0.01
Silver	< 0.01
Copper	0.06
Zinc	3.82
Nickel	0.15

EP Toxic for Chromium

C-1-J(-7)

LAB MANAGER: [signature]

E-A ENVIRO-ANALYSTS, INC.
1300 S Green Bay Rd
Racine, Wisconsin 53406

LABORATORY REPOR
WASTE WATER EXAMINATIO:

Report No. 3022

To Dan Scudder
PPG Industries

Subject Chemical and Physical Characterization of Paint Powder Waste composite

Date 8/19/82

P.O. # Scudder

Sample 6/23/82

pH	6.72
Flashpoint	>212°F, does not flash
Specific Gravity	0.33
Specific Weight	2.8 lb/gal

Total Solids	98.3%
% Ash Content	80.4%
% Volatile Solids (by calculation)	17.9%

Metals (ppm)

Arsenic	0.2	Lead	135.0
Barium	150.0	Mercury	<0.01
Cadmium	9.3	Nickel	110.1
Chromium, total	760.0	Silver	12.4
Chromium, +6	2.3	Selenium	<0.1
Copper	186.1	Zinc	583.2
Iron	11,323.1		

Inorganic/Reactive Components (ppm)

Cyanide	<0.03
Sulfide	<0.25
Sulfite	<0.25

Total Volatiles	1.7% (by calculation)
% water	-
% oil	-
% solvents	-

C-1-J(-8)

LAB MANAGER R E Schoesow

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 3023

To Dan Scudder
PPG Industries

Subject EP Toxicity Test Results of Paint Powder composite

Date 8/17/82

P.O. # Scudder

Sample 6/23/82

	Paint Powder mg/l
Arsenic	<0.01
Barium	0.85
Cadmium	0.10
Chromium	1.70
Lead	0.12
Mercury	<0.01
Selenium	<0.01
Silver	<0.01
Copper	0.25
Zinc	0.95
Nicke;	0.80

C-1-J(-9)

LAB MANAGER: R E Schlosser

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 3021

To Dan Scudder
PPG Industries

Subject EP Toxicity Test: U.V. Paint Powder and Dust

Date 7/23/82

P.O. # Scudder

Sample 6/23/82

	U.V. Paint Powder mg/l
Arsenic	<0.01
Barium	0.47
Cadmium	<0.01
Chromium	0.10
Lead	<0.01
Mercury	<0.0001
Selenium	<0.01
Silver	0.75
Copper	<0.01
Zinc	0.11
Nickel	0.09

C-1-J(-10)

LAB MANAGER: R E Schlosser

PPG INDUSTRIES PAINT DUST COLLECTION WASTE

P.O. #24645 $250.00

SPECIAL WASTE ANALYSIS REPORT

SALES CODE: N-1

CWD	A64307 N
	WASTE PROFILE SHEET CODE

LABORATORY: CONTROLLED WASTE DIVISION

PROFILE SHEET RECEIVED ON: 9/13/82 REPRESENTATIVE SAMPLE RECEIVED ON: 9/13/82

CERTIFICATE OF REP. SAMPLE RECEIVED: 9/13/82 SAMPLE TAKEN: 6/23/82

PROPOSED TREATMENT/DISPOSAL FACILITY: _____

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (*).

DATE OF ANALYSIS: 10/5/82 LAB MANAGER: [signature]

Test	As Received	Leachate	Analyst Initials
Specific Gravity	0.263		
pH	7.55		
Acidity, as			
Alkalinity, as			
C.O.D., mg/l			
B.O.D., mg/l			
Total Solids @ 105°C	98,275	102,	
Total Dissolved Solids, mg/l			
Total Suspended Solids, mg/l			
Residue on Evaporation @ 180°C			
Flash Point, °F			
Ash Content on Ignition			
Heating Value, BTU/lb			
Acid Soluble, g NaOH/g			
Arsenic, as As, mg/l	0.12		
Barium, as Ba, mg/l	<0.078		
Boron, as B, mg/l			
Cadmium, as Cd, mg/l	<0.078		
Chromium, Total as Cr, mg/l			
Hexavalent Chromium as Cr, mg/l	2811.28		
Copper, as Cu, mg/l	759.59		
Iron, Total as Fe, mg/l			
Iron, Dissolved, as Fe, mg/l			
Lead, as Pb, mg/l	3429.91		
Manganese, as Mn, mg/l			
Magnesium, as Mg, mg/l			
Mercury, as Hg, mg/l	0.54		
Nickel, as Ni, mg/l	<0.078		
Selenium, as Se, mg/l	<0.078		
Silver, as Ag, mg/l	<0.078		
Zinc, as Zn, mg/l	4659.36		
Bicarbonate, as HCO_3, mg/l			
Carbonate, as CO_3, mg/l			
Chloride, as Cl, mg/l			
Fluoride, as F, mg/l			
Nitrate, as NO_3, mg/l			
Sulfate, as SO_4, mg/l			
Phosphate, as P, mg/l			
Sulfide, as S, mg/l			

Test	As Received	Leachate	Analyst Initials
Phenols, mg/l	7.82		
Cyanides as CN, Total, mg/l	159.		
Cyanides as CN, Free, mg/l			
Nitrogen, Ammonia as N, mg/l			
Nitrogen, Organic, as N, mg/l			
Total Kjeldahl Nitrogen, as N, mg/l			
Total Alkalinity (P), as $CaCO_3$, mg/l			
Total Alkalinity (M), as $CaCO_3$, mg/l			
Total Hardness, as $CaCO_3$, mg/l			
Calcium Hardness, as $CaCO_3$, mg/l			
Magnesium Hardness, as $CaCO_3$, mg/l			
Oil and Grease, mg/l			
Aldrin, mg/l			
Chlordane, mg/l			
DDT, mg/l			
Dieldrin, mg/l			
Endrin, mg/l			
Heptachlor, mg/l			
Lindane, mg/l			
Methoxychlor, mg/l			
Toxaphene, mg/l			
Parathion, mg/l			
2,4-D, mg/l			
2,4,5-TP (Silvex), mg/l			
PCB's, mg/l			
Layering			
Physical State			
Color			
Odor			

THIS REPORT HAS BEEN PREPARED FOR THE EXCLUSIVE USE AND BENEFIT OF THE WASTE DIVISION MERIT OF THE SAMPLE VALIDITY NO ANALYTICAL OR OTHER PERSON RECEIVING OR ANALYTICAL HEREBY MADE TO ANY OTHER THIS REPORT.

PENN ENVIRONMENTAL CONSULTANTS, INC.
FORT PITT PROFESSIONAL BUILDING
1517 WOODRUFF STREET
PITTSBURGH, PA. 15220
412-381-1133

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 151 COLFAX STREET
SPRINGDALE, PA 15144

ATTENTION: MR. JIM DIXON

REPORT DATE: 10.06.80

PEC PROJECT NO: 0165-00
PEC JOB NUMBER: 0371
PEC SAMPLE NO: 59450

DATE RECEIVED: 09.19.80

SAMPLE IDENTIFICATION: O.C. TRADE DUST EXTRACT 8-14

PARAMETER	SYMBOL	RESULTS	UNITS
BARIUM	BA	4.1	MG/L
CADMIUM	CD	0.12	MG/L
CHROMIUM	CR	9.7	MG/L
LEAD	PB	0.12	MG/L
MERCURY (COLD VAPOR METHOD)	HG CV	< 10	UG/L
SILVER	AG	< .01	MG/L
ARSENIC	AS(LOW)	0.004	MG/L
SELENIUM	SE(LOW)	< .002	MG/L

COMMENTS: Lmeans detection limit

C-1-J(-12)

Reviewed and Approved by:

cc: MS. CHRIS BABKA

Revision No: 1
March 22, 1991

C-1-K(-1)

ATTACHMENT VI-B-11

Resin
~~Paint~~ Plant Baghouse Dust

General Description:

This is a solid waste generated from air pollution dust collection systems located at the Resin Manufacturing Plant. Raw material particulates are drawn away from the operator by a hood at the point where these materials are charged to the production equipment. This waste is presently reused directly as a raw material but is identified here as a waste in the event that it cannot be reused in the future.

Basis for hazardous designation:

Declared hazardous based on organics.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/15/85

ATTENTION: CHRIS BABKA

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040564
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0074-03 - Resin Baghouse Dust

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	3.8	mg/kg
I040	Barium (Ba)	1900	mg/kg
M090	Cadmium (Cd)	49	mg/kg
I140	Chromium (Cr)	210	mg/kg
M200	Lead (Pb)	510	mg/kg
I250	Mercury (Hg)	3.4	mg/kg
M290	Selenium (Se)	< 0.4	mg/kg
I300	Silver (Ag)	1.0	mg/kg
M050	Beryllium (Be)	< 0.2	mg/kg
I110	Calcium (Ca)	7500	mg/kg
M141	Chromium, Hexavalent(Cr+6)	< 10	mg/kg
I150	Cobalt (Co)	9.0	mg/kg
M160	Copper (Cu)	12	mg/kg
I190	Iron,total (Fe)	7800	mg/kg
M230	Magnesium (Mg)	9100	mg/kg
I240	Manganese (Mn)	210	mg/kg
M270	Nickel (Ni)	38	mg/kg
I310	Sodium (Na)	1100	mg/kg
M320	Strontium (Sr)	100	mg/kg
M390	Zinc (Zn)	8000	mg/kg
OM99	Infrared Analysis		
S010	Ammonia, distillation (N)	1500	mg/kg
S015	% Ash @ 550 C	82	%
S040	British Thermal Units	2500	BTU/lb
S064	Chlorine, Organic	1.5	%
S080	Cyanide, Total (CN)	< 2	mg/kg
S098	Fluorine, Organic	0.01	%
S120	% Moisture (As received)	1.9	%
S125	Nitrogen, Kjeldahl (N)	3300	mg/kg
S126	Nitrogen, Organic (N)	1800	mg/kg
S140	Phenolics	180	mg/kg

RECEIVED MAY 16 1985 ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

C-1-K(-2)

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040564
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: CC-85-0074-03 - Resin Baghouse Dust

TEST	DETERMINATION	RESULTS	UNITS
S165	% Solids, total at 103 C	98.0	%
S170	Specific Gravity	INT	
S174	Sulfide by H2 generation (S)	< 5	mg/kg
S950	Acid Digestion		
S955	Water Digestion		
S980	Oxygen Bomb Preparation		
W490	pH	7.1	

RECEIVED
MAY 16 1985
ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

COMMENTS: No resins were detected by the infrared analysis. < means detection limit

C-1-K(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041218
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/17/85

SAMPLE IDENTIFICATION: OC-85-0074-03A - Resin Dust Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.36	mg/l
I040	Barium (Ba)	1	mg/l
M090	Cadmium (Cd)	0.05	mg/l
I140	Chromium (Cr)	1.8	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.0006	mg/l
M290	Selenium (Se)	0.27	mg/l
I300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-K(-4)

Reviewed and Approved by: JMC

LABORATORY REPORT

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

Report No. 3210

To Dan Scudder
PPG

Subject EP Toxicity Test on Resin Dust

Date 11/5/82

P.O. # Scudder

Sample October, 1982

	mg/l
Arsenic	<0.01
Barium	< 0.01
Cadmium	< 0.01
Chromium	0.20
Lead	<0.01
Mercury	<0.01
Selenium	< 0.01
Silver	< 0.01
Copper	0.04
Zinc	0.84
Nickel	< 0.01

Not Hazardous by EP Toxicity

C-1-K(-5)

LAB MANAGER: R. E. Wasser

PPG INDUSTRIES WASTE RESIN POWDER
P.O.#24645 $250.00

SPECIAL WASTE ANALYSIS REPORT

SALES CODE: A64306

LABORATORY: CONTROLLED WASTE DIVISION

WASTE PROFILE SHEET CODE

PROFILE SHEET RECEIVED ON: 9/13/82 REPRESENTATIVE SAMPLE RECEIVED ON: 9/13/82

CERTIFICATE OF REP. SAMPLE RECEIVED: 9/13/82 SAMPLE TAKEN: 8/4/82

PROPOSED TREATMENT DISPOSAL FACILITY:

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (*).

DATE OF ANALYSIS: 10/5/82 LAB MANAGER:

Test	As Received	Leachate	Analyst Initials
Specific Gravity	0.45		
pH	3.74		
Acidity, % as			
Alkalinity, % as			
COD, mg/l			
BOD, mg/l			
Total Solids @ 105°C	98.245		
Total Dissolved Solids, mg/l			
Total Suspended Solids, mg/l			
Residue on Evaporation @ 105°C			
Flash Point, °F	>200°F		
Ash Content on Ignition			
Heating Value, BTU/lb			
Acid Solubility @ pH 3			
Arsenic as As, mg/l	<0.016		
Cadmium as Cd, mg/l	<0.066		
Lead as Pb, mg/l	<0.066		
Mercury as Hg, mg/l	<0.002		
Selenium as Se, mg/l	<0.066		
Silver as Ag, mg/l	<0.066		
Zinc as Zn, mg/l	25.57		
Hexavalent Chromium as Cr, mg/l	<0.066		
Copper as Cu, mg/l	<0.066		
Iron, Total as Fe, mg/l			
Iron, dissolved, as Fe, mg/l			
Nickel as Ni, mg/l	<0.066		
Manganese as Mn, mg/l			
Magnesium as Mg, mg/l			
Barium as Ba, mg/l	<0.066		
Beryllium as Be, mg/l	<0.016		
Vanadium as V, mg/l	<0.066		
Tin as Sn, mg/l	<0.066		
Antimony as Sb, mg/l	<0.066		
Thallium as Tl, mg/l	<0.066		
Phenols, mg/l	1500		
Cyanides as CN, Total, mg/l	<5.0		
Cyanides as CN, Free, mg/l	<5.0		
Nitrogen, Ammonia, as N, mg/l			
Nitrogen, Organic, as N, mg/l			
Total Kjeldahl Nitrogen, as N, mg/l			
Total Alkalinity (PA) as CaCO3, mg/l			
Total Alkalinity (MA) as CaCO3, mg/l			
Total Hardness, as CaCO3, mg/l			
Calcium Hardness, as CaCO3, mg/l			
Magnesium Hardness, as CaCO3, mg/l			
Oil and Grease, mg/l			
Sulfide, mg/l			
Aldrin, mg/l			
Chlordane, mg/l			
DDT's, mg/l			
Dieldrin, mg/l			
Endrin, mg/l			
Heptachlor, mg/l			
Lindane, mg/l			
Methoxychlor, mg/l			
Toxaphene, mg/l			
Parathion, mg/l			
2,4-D, mg/l			
2,4,5-TP (Silvex), mg/l			
PCB's, mg/l			
Asbestos			

THIS REPORT HAS BEEN PREPARED FOR THE EXCLUSIVE USE AND BENEFIT OF WASTE MANAGEMENT OF ... NO REPRESENTATION, WARRANTY OR GUARANTEE IS HEREBY MADE TO ANY OTHER PERSON RECEIVING THIS REPORT.

LABORATORY REPORT

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

Report No. 3212

To Dan Scudder
PPG

Subject EP Toxicity Test on Resin Dust

Date 11/5/82

P.O. # Scudder

Sample 8/30/82

	8/30 mg/l
Arsenic	< 0.01
Barium	< 0.01
Cadmium	< 0.01
Chromium	< 0.01
Lead	2.00
Mercury	< 0.01
Selenium	< 0.01
Silver	< 0.01
Copper	< 0.01
Zinc	0.04
Nickel	< 0.01

Not Hazardous by EP toxicity

C-1-K(-7)

LAB MANAGER: R. E. Schlesser

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 3020

To Dan Scudder
PPG

Subject EP Toxicity Test: Resin Dust composite

Date 8/19/82

P.O. # Scudder

Sample 8/4/82

	Resin Dust mg/l
Arsenic	<0.01
Barium	0.17
Cadmium	<0.01
Chromium	<0.01
Lead	39.00
Mercury	0.017
Selenium	<0.01
Silver	<0.01
Copper	0.13
Zinc	0.68
Nickel	0.01

C-1-K(-8)

LAB MANAGER: [signature]

E-A ENVIRO-ANALYSTS, INC.
7300 S Green Bay Rd
Racine Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 3018

To Dan Scudder
PPG

Subject Chemical and Physical Characterization of Resin Dust Composite sample

Date 8/18/82

P.O. # Scudder

Sample 6/21/82

pH	3.22
Flashpoint	>212°F, does not flash
Specific Gravity	0.56
Specific Weight	4.7 lb/gal

Total Solids	98.9%
% Ash Content	14.3%
% Volatile Solids (by calculation)	84.6%

Metals (ppm)

Arsenic	0.6	Lead	1228.5
Barium	7.5	Mercury	0.06
Cadmium	1.2	Nickel	12.2
Chromium, total	<0.1	Silver	3.7
Chromium, +6	<0.1	Selenium	<0.1
Copper	2.4	Zinc	9.8
Iron	268.1		

Inorganic/Reactive Components (ppm)

Cyanide	<0.03 mg/kg
Sulfide	<1.0 mg/kg
Sulfite	<1.0 mg/kg

Total Volatiles	1.1% (by calculation)
% water	-
% oil	-
% solvents	-

C-1-K(-9)

LAB MANAGER R E Klesser

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 3019

To Dan Scudder
PPG

Subject EP Toxicity Test: Resin Dust composite

Date 8/19/82

P.O. # Scudder

Sample 6/21/82

	Resin Dust mg/l
Arsenic	<0.01
Barium	0.17
Cadmium	0.04
Chromium	0.05
Lead	5.16
Mercury	0.017
Selenium	<0.01
Silver	<0.01
Copper	0.28
Zinc	0.76
Nickel	<0.01

C-1-K(-10)

LAB MANAGER: R E Selbeseer

C-1-L(-1)

ATTACHMENT VI-B-12

Paint Plant Trade Washwater
(D009)

General Description:

Liquid

Flash Point	>140 F
Heating Value	<1,000 BTU/LB
Total Resin Solids	1 - 5%
Total Pigment Solids	1 - 5%
Solvents	Negligible
Water	95 - 99%
Weight/Gallon	8.3 - 8.5 LB/GAL

Basis for hazardous designation:

Assumed TCLP Toxic characteristic based on knowledge of the product.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
ATTENTION: MS. CHRIS BABKA

REPORT DATE: 06/04/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042200
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: OC-85-0130-03 - Trade Washwater Holding Tank

TEST	DETERMINATION	RESULTS	UNITS
V048	Maleic Anhydride	6800	mg/l
OV25	Toluene	50	mg/l
V030	Trichlorofluoromethane	< 2	mg/l
OV46	Carbon Tetrachloride	< 2	mg/l
V062	Methylene Chloride	67	mg/l
S271	RCRA METALS - SOLID		
S400	Arsenic (As)	0.20	mg/l
S410	Barium (Ba)	< 1	mg/l
S420	Cadmium (Cd)	0.07	mg/l
S430	Chromium (Cr)	< 0.1	mg/l
S450	Lead (Pb)	< 0.3	mg/l
S460	Mercury (Hg)	- 2.3	mg/l
S490	Selenium (Se)	< 0.04	mg/l
S500	Silver (Ag)	< 0.01	mg/l
S950	Acid Digestion		
S010	Ammonia, distillation (N)	22	mg/l
S015	% Ash @ 550 C	0.6	%
S065	COD (02)	32000	mg/l
S080	Cyanide, Total (CN)	< 0.1	mg/l
S140	Phenolics	1.7	mg/l
S168	Specific Weight	8.6	lb/gal
S195	% Water (Karl Fisher)	91	%
S437	Chromium, Hexavalent (Cr+6)	< 400	mg/l
S440	Copper (Cu)	0.3	mg/l
S510	Zinc (Zn)	61	mg/l
S525	Iron (Fe)	160	mg/l
S971	Ashing		
W022	Alkalinity, Total (CaCO3)	450	mg/l
W590	Solids, dissolved at 180 C	10500	mg/l
W610	Solids, suspended at 103 C	4400	mg/l

COMMENTS:

C-1-L(-2)

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ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT
CLIENT ORIGINAL

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238

REPORT DATE: 06/04/85

ATTENTION: MS. CHRIS BABKA

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042188
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: OC-85-0130-03A - Trade Washwater Holding Tank Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	< 0.01	mg/l
I040	Barium (Ba)	1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	< 0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.033	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l

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& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-L(-3)

Reviewed and Approved by: JMC

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

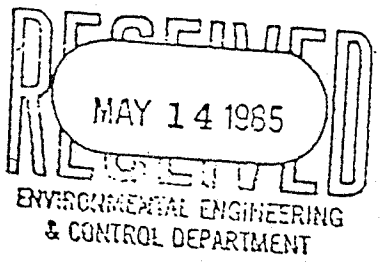
SAMPLE #: OC-85-0130-00 LOCATION: OAK CREEK

DATE REC'D: 4-25-16-85 DATE SAMPLED: _____

ANALYSIS	DATE	RESULTS					
T.E.P.	4.23.85	SOLIDS	110gm	INIT. DiH_2O	1760ml	FINAL DiH_2O	429ml
	used	ACID SOLN.	11ml	INIT. pH	8.1	FINAL pH	4.9
F.PT.	5.9.85		106°F				
% SOLIDS			_____				
C.O.D.			_____ mg/l				

OTHER:

pH 5.9.85 6.7



PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)

ASTM D-93-77 (FLASH POINT)

HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

NAME: James Robinson DATE: 5.13.85

Revision No: 1
March 22, 1991

C-1-M(-1)

ATTACHMENT VI-B-13

Paint Plant Industrial Washwater
(D005, D006, D007, D008)
Possibly D001

General Description:

Liquid

Flash Point	<140 F - >200 F
Heating Value	<1,000 BTU/LB
Total Resin Solids	.5 - 2%
Total Pigment Solids	1 - 5%
Solvents	1 - 10%
Water	85 - 98%
Weight/Gallon	8.3 - 8.5 LB/GAL

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the product. May be ignitable occasionally due to trace solvents.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040551
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: 0C-85-0072-03 - Paint Production Washwater

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.14	mg/l
M040	Barium (Ba)	3	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	46	mg/l
M200	Lead (Pb)	7.2	mg/l
M250	Mercury (Hg)	0.74	mg/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
M050	Beryllium (Be)	< 0.02	mg/l
M110	Calcium (Ca)	64	mg/l
M141	Chromium, Hexavalent(Cr+6)	45	mg/l
M150	Cobalt (Co)	0.5	mg/l
M160	Copper (Cu)	1.3	mg/l
M190	Iron,total (Fe)	110	mg/l
M230	Magnesium (Mg)	7.5	mg/l
M240	Manganese (Mn)	4.5	mg/l
M270	Nickel (Ni)	0.4	mg/l
M310	Sodium (Na)	4600	mg/l
M320	Strontium (Sr)	2	mg/l
M390	Zinc (Zn)	8.9	mg/l
0F01	Xylenes	< 200	mg/l
0F05	2-butanone	< 400	mg/l
0F08	4-methyl-2-pentanone	540	mg/l
0M21	Butyl Cellosolve	520	mg/l
0M48	Maleic Anhydride	< 500	mg/l
0M58	i-Butanol	1100	mg/l
0M79	Cellosolve Acetate	< 100	mg/l
0V06	Carbon Tetrachloride	< 200	mg/l
0V22	Methylene Chloride	710	mg/l
0V25	Toluene	< 200	mg/l
0V32	Trichlorofluoromethane	< 200	mg/l

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C-1-M(-2)

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040562
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: 00-85-0072-03 - Paint Production Washwater

TEST	DETERMINATION	RESULTS	UNITS
S040	British Thermal Units	WNC	
S064	Chlorine, Organic	< 0.1	%
S089	Cyanide, Total (CN)	< 0.1	mg/l
S098	Fluorine, Organic	< 0.01	%
S168	Specific Weight	8.5	lb/gal
S195	% Water (Karl Fisher)	90.2	%
S210	Viscosity	10	CP
S950	Acid Digestion		
S971	Ashing		
S980	Oxygen Bomb Preparation		
W022	Alkalinity, Total (CaCO3)	8100	mg/l
W032	Ammonia as N (distillation)	28	mg/l
W050	BOD, 5-day (O2)	8200	mg/l
W120	COD (O2)	22000	mg/l
W435	Nitrogen, Kjeldahl (N)	< 50	mg/l
W440	Nitrogen, Organic (N)	< 50	mg/l
W500	Phenolics	5.8	mg/l
W590	Solids, dissolved at 180 C	18500	mg/l
W610	Solids, suspended at 103 C	3440	mg/l
W625	Solids, vol total at 550 C	6440	mg/l
W740	Sulfide (S)	< 4	mg/l

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COMMENTS: WNC indicates that the sample will not combust. < means detection limit

C-1-M(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/31/85

ATTENTION: CHRIS BABKA

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041483
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: OC-85-0072-03A - Paint Production Washwater Extract

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.26	mg/l
M040	Barium (Ba)	1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	2.2	mg/l
M200	Lead (Pb)	< 0.3	mg/l
M250	Mercury (Hg)	0.0084	mg/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

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ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-M(-4)

Reviewed and Approved by: JMC

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

SAMPLE #: OC-85-0072-00 LOCATION: OAK CREEK

DATE REC'D: 3.8.85 DATE SAMPLED: 12.19.85

ANALYSIS	DATE	RESULTS					
T.E.P.	4.10.85	SOLIDS	110 gm	INIT. DiH_2O	1760 ml	FINAL DiH_2O	376 ml
	used	ACID SOLN.	65 ml	INIT. pH	11.4	FINAL pH	5.0
F.PT.			>200°F				
% SOLIDS							
C.O.D.			mg/l				
OTHER:							
pH	4.18.85		12.5				

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& CONTROL DEPARTMENT

PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)
ASTM D-93-71 (FLASH POINT)
HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

C-1-M(-5)

James Robinson DATE: 5.13.85

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
ATTENTION: MS. CHRIS BABKA

REPORT DATE: 06/04/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042199
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: OC-85-0129-03 - Industrial Washwater

TEST	DETERMINATION	RESULTS	UNITS
8M48	Maleic Anhydride	5700	mg/l
0V21	Methyl Chloride	< 20	mg/l
8V25	Toluene	1300	mg/l
0V30	Trichlorofluoromethane	< 20	mg/l
8V46	Carbon Tetrachloride	< 20	mg/l
S271	RCRA METALS - SOLID		
S400	Arsenic (As)	0.44	mg/l
S410	Barium (Ba)	22	mg/l
S420	Cadmium (Cd)	< 0.05	mg/l
S430	Chromium (Cr)	190	mg/l
S450	Lead (Pb)	8.2	mg/l
S460	Mercury (Hg)	1.7	mg/l
S490	Selenium (Se)	< 0.04	mg/l
S500	Silver (Ag)	< 0.01	mg/l
S950	Acid Digestion		
S010	Ammonia, distillation (N)	100	mg/l
S015	% Ash @ 550 C	1.0	%
S065	COD (O2)	140000	mg/l
S080	Cyanide, Total (CN)	< 0.1	mg/l
S125	Nitrogen, Kjeldahl (N)	2000	mg/l
S126	Nitrogen, Organic (N)	1900	mg/l
S140	Phenolics	2.8	mg/l
S168	Specific Weight	8.5	lb/gal
S195	% Water (Karl Fisher)	85	%
S210	Viscosity	11.0	CP
S437	Chromium, Hexavalent (Cr+6)	< 400	mg/l
S440	Copper (Cu)	0.2	mg/l
S510	Zinc (Zn)	240	mg/l
S525	Iron (Fe)	76	mg/l
S971	Ashing		
8022	Alkalinity, Total (CaCO3)	2100	mg/l
W590	Solids, dissolved at 180 C	19000	mg/l

C-1-M(-6)

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238

ATTENTION: MS. CHRIS BABKA

REPORT DATE: 06/04/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15042199
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/26/85

SAMPLE IDENTIFICATION: OC-85-0129-03 - Industrial Washwater

TEST	DETERMINATION	RESULTS	UNITS
1610	Solids, suspended at 103 C	4740	mg/l

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& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-M(-7)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205
412-788-1080

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
ATTENTION: MS. CHRIS BABKA

REPORT DATE: 06/12/85

NUS CLIENT NO: 320246
NUS SAMPLE NO: 15050280
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 05/03/85

SAMPLE IDENTIFICATION: OC-85-0129-03-A - Holding Tank #1148
Industrial Wastewater Extract

TEST	DETERMINATION	RESULTS	UNITS
1270	RCRA METALS		
M030	Arsenic (As)	< 0.01	mg/l
I040	Barium (Ba)	1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	4.9	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.031	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

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JUN 14 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-M(-8)

Reviewed and Approved by: JMC

Rexnord

L A B O R A T O R Y R E P O R T

TO: Mr. Martin Scheerbaum
PPG Industries
10800 S. 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

DATE: 5/26/81

PURCHASE ORDER NO.: 19291 REXNORD WORK ORDER NO.: FG 41427

Analysis of Aqueous Waste Stream from Waste Treatment Center.

WASHWATER

Sample Identification	Parameter						
	Lead	Titanium	Chromium	Zinc	Mercury	pH	TOC
816 - 014 Before Treatment (washwater)	76	6	51	52	0.600	10.9	4400
816 - 014 Decant Top	1.8	4	11	0.22	0.036	10.9	2000
816 - 014 After Treatment (Sludge)	68	<0.5	47	43	2.560	10.8	5000
816 - 014 Decant Bottom	1.2	2.5	7.2	0.17	0.112	9.2	2700
817 - 025 Before Treatment (washwater)	40	5	24	41	4.300	11.3	6400
817 - 025 Decant Top	1.7	<0.5	12	0.22	0.162	11.3	4500
817 - 025 After Treatment (Sludge)	57	6.5	27	58	2.440	11.3	6000
817 - 025 Decant Bottom	1.8	<0.5	8.7	0.33	0.085	9.6	8300

(continued page 2)

Thank you for your order.

C-1-M(-9)

Rexnord

LABORATORY REPORT

TO: Mr. Martin Scheerbaum
PPG Industries
10800 S. 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

DATE: 5/26/81

PURCHASE ORDER NO.: 19291 REXNORD WORK ORDER NO.: FG-41427

Parameter

Sample Identification	Lead	Titanium	Chromium	Zinc	Mercury	pH	TOC
816 - 015 Before Treatment (washwater)	16	2	3.55	27	1.220	9.9	2400
816 - 015 Decant Top	8.4	0.5	2.16	1.5	0.077	9.8	1700
815 - 015 After Treatment Sludge	21	2.5	5.1	23	1.460	9.8	2200
816 - 015 Decant Treatment	5.4	<0.5	1.79	2.7	0.140	9.5	1800

All results in mg/ℓ except pH. Samples submitted on 5/6/81.

Thank you for your order.

C-1-M(-10)

Steve Galewski

Revision No: 1
March 22, 1991

C-1-N(-1)

ATTACHMENT VI-B-14

Paint Plant Caustic Cleaning Water
(D005, D006, D007, D008)
Possibly D001, D002

General Description:

Liquid

Flash Point	<140 F - >140 F
Heating Value	<1,000 BTU/LB
Total Resin Solids	1 - 5%
Total Pigment Solids	15 - 25%
Solvents	1 - 5%
Water	75 - 80%
Weight/Gallon	8.5 - 9 LB/GAL

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of similar wastes generated at other PPG facilities. May be ignitable and/or corrosive occasionally.

C-1-O(-1)

ATTACHMENT VI-B-15

Resin Plant Caustic Cleaning Water
(D001, D002)

General Description:

Liquid

Flash Point	<140 F
Heating Value	<1,000 BTU/LB
Total Resin Solids	1 - 5%
Total Pigment Solids	None
Solvents	1 - 5%
Water	90 - 98%
Weight/Gallon	8.3 - 8.5 LB/GAL

Basis for hazardous designation:

Assumed ignitable and corrosive based on knowledge of the waste.

Revision No: 1
March 22, 1991

C-1-P(-1)

ATTACHMENT VI-B-16

Resin Plant Wastewaters
(F003, F005, D001)

General Description:

Liquid

Flash Point	<140 F
Heating Value	<5,000 BTU/LB
Total Resin Solids	1 - 5%
Total Pigment Solids	None
Solvents	1 - 5%
Water	90 - 98%
Weight/Gallon	8 - 8.3 LB/GAL

Basis for hazardous designation:

Listed solvents carried over from recycling spent solvent. Ignitability characteristic applies for solvents not listed.

Revision No: 1
March 22, 1991

C-1-Q(-1)

ATTACHMENT VI-B-17

Cationic Washwater
(D007, D008, D035)
Possibly D001

General Description:

Liquid

Flash Point	<140 F
Heating Value	<1,000 BTU/LB
Total Resin Solids	.5 - 5%
Total Pigment Solids	None
Solvents	1 - 10%
Water	89 - 99%
Weight/Gallon	8.3 - 8.5 LB/GAL

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of product. May be ignitable due to trace solvents.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040559
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0069-03 - Cationic Washwater

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	< 0.01	mg/l
M040	Barium (Ba)	1.0	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
M250	Mercury (Hg)	0.06	mg/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
M050	Beryllium (Be)	< 0.02	mg/l
M110	Calcium (Ca)	2.0	mg/l
M141	Chromium, Hexavalent(Cr+6)	< 1	mg/l
M150	Cobalt (Co)	< 0.1	mg/l
M160	Copper (Cu)	1.7	mg/l
M190	Iron,total (Fe)	0.4	mg/l
M230	Magnesium (Mg)	0.4	mg/l
M240	Manganese (Mn)	0.9	mg/l
M270	Nickel (Ni)	0.5	mg/l
M310	Sodium (Na)	210	mg/l
M320	Strontium (Sr)	< 1	mg/l
M390	Zinc (Zn)	0.6	mg/l
OF01	Xylenes	< 2	mg/l
OF04	Acetone	44	mg/l
OF05	2-butanone	790	mg/l
OF08	4-methyl-2-pentanone	140	mg/l
OF09	Styrene	< 2	mg/l
WM32	Butyl Cellosolve	77000	mg/l
OW58	1-Butanol	3700	mg/l
WM79	Cellosolve Acetate	< 100	mg/l
OW03	Benzene	< 2	mg/l
S040	British Thermal Units	WNC	
S064	Chlorine, Organic	< 0.1	%

RECEIVED MAY 16 1985 ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

C-1-Q(-2)

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BARKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040559
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: 00-85-0069-03 - Cationic Washwater

TEST	DETERMINATION	RESULTS	UNITS
S093	Fluorine, Organic	< 0.01	%
S168	Specific Weight	8.5	lb/gal
S195	% Water (Karl Fisher)	71.7	% — recheck 84%
S210	Viscosity	10	CP
S950	Acid Digestion		
S971	Ashing		
S980	Oxygen Bomb Preparation		
W032	Ammonia as N (distillation)	5.7	mg/l
W050	BOD, 5-day (O2)	4900	mg/l
W120	COD (O2)	170000	mg/l
W270	Cyanide, total (CN)	< 0.1	mg/l
W435	Nitrogen, Kjeldahl (N)	59	mg/l
W440	Nitrogen, Organic (N)	53	mg/l
W500	Phenolics	2.6	mg/l
W590	Solids, dissolved at 180 C	3410	mg/l
W610	Solids, suspended at 103 C	56	mg/l
W625	Solids, vol total at 550 C	2080	mg/l
W740	Sulfide (S)	0.1	mg/l

RECEIVED MAY 16 1985 ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

COMMENTS: WNC indicates that the sample will not combust. < means detection limit

C-1-Q(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: MS. C. BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041216
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/17/85

SAMPLE IDENTIFICATION: OC-85-0069-03A - Cationic Washwater Extract

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.38	mg/l
M040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
M250	Mercury (Hg)	0.0006	mg/l
M290	Selenium (Se)	0.30	mg/l
M300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-Q(-4)

Reviewed and Approved by: JMC

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

SAMPLE #: 02-85-0069-00 LOCATION: OAK CREEK

DATE REC'D: 3-8-85 DATE SAMPLED: 12-19-85

ANALYSIS	DATE	RESULTS					
T.E.P.	4-3-85	SOLIDS	102 gm	INIT. DiH_2O	1632 ml	FINAL DiH_2O	406 ml
	used	ACID SOLN.	2 ml	INIT. pH	5.2	FINAL pH	4.4
F.PT.	4-4-85		92°F				
% SOLIDS							
C.O.D.			mg/l				
OTHER: pH	4-5-85		5.8				

RECEIVED
MAY 14 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)
ASTM D-93-71 (FLASH POINT)
HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

C-1-Q(-5)

James Robinson DATE: 5-10-85

Revision No: 1
March 22, 1991

C-1-R(-1)

ATTACHMENT VI-B-18

Wastewater Treatment Supernatant
(D001, D007, D008)

General Description:

Liquid

Flash Point	Possibly <140 F
Heating Value	<1,000 BTU/LB
Total Resin Solids	<.5%
Total Pigment Solids	<.05%
Solvents	Trace
Water	99.5%
Weight/Gallon	8.3 LB/GAL
pH	7.5 - 9.5

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on total metal analysis of the waste. Possibly ignitable based on similar waste from other PPG facilities.

Rexnord

LABORATORY REPORT

TO: Mr. Martin Scheerbaum
PPG Industries
10800 S. 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

DATE: 5/26/81

PURCHASE ORDER NO.: 19291 REXNORD WORK ORDER NO.: FG 41427

Analysis of Aqueous Waste Stream from Waste Treatment Center.

Supernatant

Sample Identification	Parameter						
	Lead	Titanium	Chromium	Zinc	Mercury	pH	TOC
816 - 014 Before Treatment	76	6	51	52	0.600	10.9	4400
816 - 014 Decant Top	1.8	4	11	0.22	0.036	10.9	2000
816 - 014 After Treatment (Sludge)	68	<0.5	47	43	2.560	10.8	5000
816 - 014 Decant Bottom	1.2	2.5	7.2	0.17	0.112	9.2	2700
817 - 025 Before Treatment	40	5	24	41	4.300	11.3	6400
817 - 025 Decant Top	1.7	<0.5	12	0.22	0.162	11.3	4500
817 - 025 After Treatment (Sludge)	57	6.5	27	58	2.440	11.3	6000
817 - 025 Decant Bottom	1.8	<0.5	8.7	0.33	0.085	9.6	8300

(continued page 2)

Thank you for your order.

C-1-R(-2)

Rexnord

LABORATORY REPORT

TO: Mr. Martin Scheerbaum
PPG Industries
10800 S. 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

DATE: 5/26/81

PURCHASE ORDER NO.: 19291 REXNORD WORK ORDER NO.: FG 41427

Parameter

Sample Identification	Lead	Titanium	Chromium	Zinc	Mercury	pH	TOC
816 - 815 Before Treatment	16	2	3.55	27	1.220	9.9	2400
816 - 815 Decant Top	8.4	0.5	2.16	1.5	0.077	9.8	1700
816 - 815 After Treatment Sludge	21	2.5	5.1	23	1.460	9.8	2200
816 - 815 Decant Treatment	5.4	<0.5	1.79	2.7	0.140	9.5	1800

All results in mg/ℓ except pH. Samples submitted on 5/6/81.

Thank you for your order.

C-1-R(-3)

Steve Gnilewski

Rexnord

LABORATORY REPORT

TO: Mr. Martin Scheerbaum
PPG Industries
10800 S. 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

DATE: 3/26/81

PURCHASE ORDER NO.: 19119 REXNORD WORK ORDER NO.: FG 41405

Analysis of aqueous waste stream from waste treatment center.

	Parameter						
Sample	Lead	Chromium	Zinc	Mercury	Titanium	pH	TOC
818-006 A	18	20	14	0.0053	<0.5	7.30	1,900
818-006 B	12	12	9.5	0.0048	<0.5	7.90	2,900
817-011 A	15	7.0	5.7	0.0098	<0.5	7.10	1,200
817-011 B	7.4	7.2	4.7	0.0031	<0.5	4.45	7,700
818-007 A	2.5	2.5	8.2	0.0050	<0.5	7.20	2,000
818-007 B	1.4	1.8	3.9	0.0066	<0.5	6.9	3,500
817-010 A	18	15	5.4	0.0053	0.5	7.45	2,900
817-010 B	16	16	17	0.0098	0.8	-	-
818-005 A	0.6	9.2	13	0.0065	<0.5	6.0	3,800
818-005 B	2.1	6.7	10	0.0053	<0.5	-	-

All results reported in mg/l except pH.

Thank you for your order.

C-1-R(-4)

Steve Galewski

Steve Galewski

C-1-S(-1)

ATTACHMENT VI-B-19

Wastewater Treatment Sludges - Dewatered
(D005, D006, D007, D008)

General Description:

Solid

Heating Value	<5,000 BTU/LB
Total Resin Solids	2 - 20%
Total Pigment Solids	5 - 20%
Water	<1%

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the waste.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
ATTENTION: MS. CHRIS BABKA

REPORT DATE: 07/02/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040561
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0071-03 - Aqueous Treatment Sludge

TEST	DETERMINATION	RESULTS	UNITS	
I270	RCRA METALS			
M030	Arsenic (As)	0.81	mg/l	
I040	Barium (Ba)	61	mg/l	
M090	Cadmium (Cd)	0.53	mg/l	
I140	Chromium (Cr)	14	mg/l	
M200	Lead (Pb)	66	mg/l	
I250	Mercury (Hg)	5.0	mg/l	
M290	Selenium (Se)	< 0.04	mg/l	
I300	Silver (Ag)	0.1	mg/l	
M050	Beryllium (Be)	< 0.02	mg/l	
I110	Calcium (Ca)	3400	mg/l	
M141	Chromium, Hexavalent(Cr+6)	< 2	mg/l	Rev.
I150	Cobalt (Co)	2.8	mg/l	
M160	Copper (Cu)	2.7	mg/l	
I190	Iron,total (Fe)	17000	mg/l	
M230	Magnesium (Mg)	100	mg/l	
I240	Manganese (Mn)	14	mg/l	
M270	Nickel (Ni)	2.4	mg/l	
I310	Sodium (Na)	5600	mg/l	
M320	Strontium (Sr)	19	mg/l	
I390	Zinc (Zn)	570	mg/l	
OF01	Xylenes	< 2000	mg/l	
IF04	Acetone	< 4000	mg/l	
OF05	2-butanone	< 4000	mg/l	
IF08	4-methyl-2-pentanone	< 4000	mg/l	
OF09	Styrene	< 2000	mg/l	
IK32	Butyl Cellosolve	450	mg/l	
OM48	Maleic Anhydride	< 500	mg/l	
IK58	i-Butanol.	740	mg/l	
OM79	Cellosolve Acetate	< 100	mg/l	
IV03	Benzene	< 2000	mg/l	
OV06	Carbon Tetrachloride	< 2000	mg/l	

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NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BARKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040561
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0071-03 - Aqueous Treatment Sludge

TEST	DETERMINATION	RESULTS	UNITS	
V022	Methylene Chloride	150000	ug/l	X - not possible
V025	Toluene	< 2000	ug/l	
V030	Trichlorofluoromethane	< 2000	ug/l	
S040	British Thermal Units	WNC		
S064	Chlorine, Organic	< 0.1	%	
S168	Specific Weight	9.2	lb/gal	
S195	% Water (Karl Fisher)	72.2	%	- recheck 78%
S210	Viscosity	15	CP	
S950	Acid Digestion			
S971	Ashing			
S980	Oxygen Bomb Preparation			
W022	Alkalinity, Total (CaCO3)	1700	mg/l	
W270	Cyanide, total (CN)	1.1	mg/l	
W500	Phenolics	7.4	mg/l	
W590	Solids, dissolved at 180 C	16200	mg/l	
W610	Solids, suspended at 103 C	10300	mg/l	
W625	Solids, vol total at 550 C	29900	mg/l	
W740	Sulfide (S)	< 4	mg/l	

COMMENTS: WNC indicates that the sample will not combust. < means detection limits. Chlorinated compounds should be much less than detection limits.

C-1-S(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041482
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: DC-85-0071-03A - Aqueous Treatment Sludge Extract

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.30	mg/l
M040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
M250	Mercury (Hg)	0.0068	mg/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < mean detection limit

C-1-S(-4)

Reviewed and Approved by: JMC

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

SAMPLE #: 85-0071-00 LOCATION: OAK CREEK

DATE REC'D: 3-8-85 DATE SAMPLED: 12-18-85

ANALYSIS	DATE	RESULTS					
E.P.	4-8-85	SOLIDS	110gm	INIT. DiH_2O	1760ml	FINAL DiH_2O	413ml
	used	ACID SOLN.	27ml	INIT. pH	6.7	FINAL pH	5.2
PT.			70°F				
SOLIDS							
C.O.D.			mg/l				

OTHER:

pH 4-5-85 6.1

PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)

ASTM D-93-71 (FLASH POINT)

HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

C-1-S(-5)

[illegible] 5-13-85

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 6047

To Dan Scudder
PPG Industries

Subject Characterization of Aqueous Sludge: Analysis for Mercury content

Date 10/15/83

P.O. #

Sample 9/29,9/30/83

	Trial 1 9/29	Trial 2 9/29	Trial 1 9/30	Trial 2 9/30	Mean Value
% Solids	21%	-	37.8%	-	29.4%
% Ash Content	6%	-	17.5%	-	11.8%
Mercury, Total	24.6	88.32	11.1	3.45	31.87

C-1-S(-6)

LAB MANAGER

CBC AQUASEARCH
140 EAST RYAN ROAD (414) 764-7005
OAK CREEK, WISCONSIN 53154 - 4599

LABORATORY NUMBER	DATE	PAGE
#83-5175	9/8/83	1

LABORATORY REPORT

PPG INDUSTRIES, INC.
10800 S. 13TH STREET
OAK CREEK, WI 53154

ATTN: DAN SCUDDER

REFERENCE METHOD:

DATE RECEIVED	DATE COLLECTED
7/8/83	N/A
SAMPLE NAME	
AQUEOUS TREATMENT SLUDGE	
ACCOUNT NUMBER	
#771	

VERBAL

☒ STANDARD METHODS, APHA, 15th EDITION, 1980.
☒ METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE, EPA, 1979.
☐ TEST METHODS FOR THE EVALUATION OF SOLID WASTE, PHYSICAL, CHEMICAL METHODS, EPA, 1980.

PARAMETER	SAMPLE	EP TOXICITY LIMITS
CADMIUM	1.7	1.0
HEXAVALENT CHROMIUM	0.17	5.0
TOTAL CHROMIUM	37	5.0
COPPER	23	
LEAD	85	5.0
NICKEL	7.8	
ZINC	1,300	
BARIUM	230	100
SILVER	0.2	5.0
IRON	15,000	
MAGNESIUM	410	
ARSENIC	0.029	5.0
SELENIUM	-0.01	1.0
MERCURY	0.20	0.2
MANGANESE	82	
SODIUM	480	
CALCIUM	2,800	
TOTAL SOLIDS	23%	
% WATER	73.8	
pH	9.15 @ 26°c	
FLASH POINT	125°F	

* ALL UNITS ARE EXPRESSED AS:
☐ MG/L ☒ PPM
☐ MG/KG

C-1-S(-7)

9/10/83
DATE

David Gillespie
LABORATORY SUPERVISOR

CBC
AQUASEARCH
140 EAST RYAN ROAD (414) 764-7005
OAK CREEK, WISCONSIN 53154 - 4599

LABORATORY NUMBER	DATE	PAGE
#83-5175	9/8/ 83	2

COMPANY NAME
PPG INDUSTRIES

PARAMETERS	SAMPLE
TOTAL CYANIDE	2.4
B.O.D.$_5$	18,900
C.O.D.	32,300
SPECIFIC WEIGHT	1.111
T.O.C.	8600
AMMONIA NITROGEN	150
CHLORIDE	170
FLUORIDE	2.9
PHENOLS	5.8
VISCOSITY(cps)	32.4
% ASH	14%
TOTAL VOLATILE ORGANICS	UNABLE TO RESOLVE WITHOUT MASS SPEC IDENTIFICATION

A (-) SIGN DENOTES A 'LESS THAN' VALUE.

C-1-S(-8)

*UNITS ARE EXPRESSED IN MG/L UNLESS OTHERWISE STATED

9/13/83
DATE

David Kilakowski
LABORATORY SUPERVISOR

LH

INDUSTRIES

INTER-OFFICE CORRESPONDENCE

Date: June 8, 1981

From: C. M. Babka

To: M. Scheerbaum
Oak Creek Plant

Location: Springdale R&D

Subject: Oak Creek Aqueous Treatment Sludge

File: Waste Analysis

Sample Date: February 4, 1981

Toxic Extraction Results: 4/13/81

Parameter	TEP	RCRA TEP Limit
Units	µg/ml ≅ ppm	mg/l ≅ ppm
Arsenic	<.03	5
Barium	<5	100
Cadmium	<0.1	1
Chromium (Total)	0.2	5
Chromium (+6)	0.02	(5 proposed)
Lead	2.0	5
*Mercury	0.4	0.2
Selenium	<.02	1
Silver	.075	5

* - Exceeds RCRA TEP Limit.

This waste is an EP Toxic Hazardous waste due to Mercury (D009).

C. M. Babka

C. M. Babka

/n

cc: L. N. Streff/File

C-1-S(-9)

FORM 503-A REV 6-1-70

ENVIRONMENTAL SAMPLE RESULTS SHEET

K 183

Date Submitted: 4-16-81

Date Completed:

Date Released:

I.H. Sample #:

Submitted By: C. M. Bahlen

Extension: 337

Result To: C. M. Bahlen

Source: F 1526 Oak Creek Aqueous Waste Extract 4-13-81

Parameter		Date	Result	Reference
Arsenic (As)	X	11 May	<0.03	AA81-42
Barium (Ba) ②	X	8 May	<5	-40
Cadmium (Cd)	X	28 Apr	<0.1	-34
Calcium (Ca)				
Chromium (Tot.) (Cr)	X	23 Apr	0.2	-31
Chromium +6 (Cr)	X	12 May	0.02	IM3 -108
Copper (Cu)				
Iron (Fe)				
Lead (Pb) *	X	23 Apr	1.0	AA81 -29
Magnesium (Mg)				
Manganese (Mn)				
Mercury (Hg)	X	13 May	0.4	-43
Nickel (Ni)				
Selenium (Se)	X	11 May	<0.02	-43
Silver (Ag)	X	8 May	0.075	-41
Sodium (Na)				
Solids; suspended				
Solids; dissolved				
Solids; total				
% Ash @ 550°C				
Zinc (Zn)				

Parameter	Date	Result	Reference
Acetone			
Methyl Ethyl Ketone			
Methyl, i-Butyl Ketone			
Toluene			
i-Butanol			
n-Butanol			
Ethyl Benzene			
Xylene (Tot.)			
Styrene			
Cellosolve Acetate			
Ethyl Cellosolve			
Butyl Cellosolve			
Benzene			
i-propanol			

RECEIVED
MAY 26 1981
ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

* Sample Fixed w/ H_2SO_4
Acetate dissolution Pb = 2.0 mg/l

② Acetate dissolution

Laboratory/Supervisor/Director: Kirkbell

C-1-S(-10)

Date: 5/20/81

Rexnord

LABORATORY REPORT

TO: Mr. Martin Scheerbaum
PPG Industries
10800 South 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

DATE: 5/29/81

PURCHASE ORDER NO.: 19354 REXNORD WORK ORDER NO.: FG41435

Analysis of Aqueous ~~sludge~~ treatment sludge sample submitted on April 24, 1981.

Solids %

Total Solids	8.36%
Volatile Solids	2.21%
Non-Volatile Solids	6.5%

Metals mg/l

As	0.073	pb	9.0
Ba	31	Mg	5.0
Cd	0.15	Mn	3.5
Ca	140	Hg	6.3
Cr^{+3}	1.6	Ni	0.5
Cr^{+6}	<0.1	Se	<0.5
Cu	1.6	Ag	<0.01
Fe	195	Na	1950
		Zn	230

% Solvents (1.607% identified)

Butyl Cellosolve	.021%
Xylene (Total)	1.08%
MIBK	.126%
n-butanol	.018%
i-butanol	.079%
Toluene	.018%
Cellosolve Acetate	.016%
Benzene	.005%
Styrene	.015%
MEK	.220%
Acetone	.009%

Flash Point:	>212°F
Density:	1.013 lbs/gal.
Viscosity:	46 cp

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& CONTROL DEPARTMENT

Thank you for your order.

C-1-S(-11)

Steve Galewski

Steve Galewski

Rexnord

LABORATORY REPORT

TO: Mr. Martin Scheerbaum
PPG Industries
10800 S. 13th Street
Oak Creek, WI 53154

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

DATE: 5/26/81

PURCHASE ORDER NO.: 19291 REXNORD WORK ORDER NO.: FG 41427

Analysis of Aqueous Waste Stream from Wate Treatment Center.

Treatment Sludge

Sample Identification	Parameter						
	Lead	Titanium	Chromium	Zinc	Mercury	pH	TOC
816 - 014 Before Treatment	76	6	51	52	0.600	10.9	4400
816 - 014 Decant Top	1.8	4	11	0.22	0.036	10.9	2000
✓ 816 - 014 After Treatment (Sludge)	68	<0.5	47	43	2.560	10.8	5000
816 - 014 Decant Bottom	1.2	2.5	7.2	0.17	0.112	9.2	2700
817 - 025 Before Treatment	40	5	24	41	4.300	11.3	6400
817 - 025 Decant Top	1.7	<0.5	12	0.22	0.162	11.3	4500
✓ 817 - 025 After Treatment (Sludge)	57	6.5	27	58	2.440	11.3	6000
817 - 025 Decant Bottom	1.8	<0.5	8.7	0.33	0.085	9.6	8300

(continued page 2)

Thank you for your order.

C-1-S(-12)

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Rexnord

LABORATORY REPORT

Corporate Research & Development Group
Environmental Research Center
5103 West Beloit Road
P. O. Box 2022
Milwaukee, WI 53201
414/643-2761

TO: Mr. Martin Scheerbaum
PPG Industries
10800 S. 13th Street
Oak Creek, WI 53154

DATE: 5/26/81

PURCHASE ORDER NO.: 19291 REXNORD WORK ORDER NO.: FG 41427

Parameter

Sample Identification	Lead	Titanium	Chromium	Zinc	Mercury	pH	TOC
816 - 815 Before Treatment	16	2	3.55	27	1.220	9.9	2400
816 - 815 Decant Top	8.4	0.5	2.16	1.5	0.077	9.8	1700
816 - 815 After Treatment Sludge	21	2.5	5.1	23	1.460	9.8	2200
816 - 815 Decant Treatment	5.4	<0.5	1.79	2.7	0.140	9.5	1800

All results in mg/ℓ except pH. Samples submitted on 5/6/81.

Thank you for your order.

C-1-S(-13) Steve Galewski

File -
Oak Creek
Water Analyses

ANALYTICAL LABORATORY FINAL REPORT
SPRINGDALE WET LAB

TO: BABKA

DATE: 3/ 3/81

SAMPLE	CODE	CHG	TEST		RESULT	DATE DONE
22058	E 1220	83	17	WATER	83.2	2/26/81
	O.C. Aqueous Waste 2/4/81		18	WGT/GAL	9.02	2/25/81
			19	FL PT PM	103 F	3/ 3/81
22059	E 1221	83	17	WATER	63.7	2/26/81
	Delaware W-B Flammable Paint Waste Jan-Feb. 1981.		18	WGT/GAL	8.90	2/25/81
			19	FL PT PM	91 F	3/ 3/81
22060	E 1222	83	17	WATER	96.8	2/26/81
	Dev. Centr. Caustic 8/80		18	WGT/GAL	8.98	2/25/81
			19	FL PT PM	124 F	3/ 3/81
22061	E 1223	83	17	WATER	0.59	2/26/81
	Spr. Still Sludge 2/19/81		18	WGT/GAL	9.33	2/25/81
			19	FL PT PM	71 F	3/ 3/81
22062	E 1224	83	17	WATER	94.3	2/26/81
	Spr. Resin Plant Caustic Washwater OK of 2/11/81		18	WGT/GAL	8.84	2/25/81
			19	FL PT PM	144 F	3/ 3/81

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& CONTROL DEPARTMENT

PENN ENVIRONMENTAL CONSULTANTS, INC.
FORT PITT PROFESSIONAL BUILDING
1517 WOODRUFF STREET
PITTSBURGH, PA. 15220
412-381-1133

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 151 COLFAX STREET
SPRINGDALE, PA 15144

PEC PROJECT NO: 0165-00
PEC JOB NUMBER: 0371
PEC SAMPLE NO: 59451

REPORT DATE: 10.06.80

ATTENTION: MR. JIM DIXON

DATE RECEIVED: 09.19.80

SAMPLE IDENTIFICATION: O.C. AQUEOUS WASTE 4-27

PARAMETER	SYMBOL	RESULTS	UNITS
BARIUM	BA	5.7	MG/L
CADMIUM	CD	1.6	MG/L
CALCIUM	CA	52800	MG/L
CHROMIUM	CR	26.8	MG/L
COPPER	CU	6.7	MG/L
TOTAL IRON	FE TOTAL	4440	MG/L
MAGNESIUM	MG	740	MG/L
MANGANESE	MN	162	MG/L
MERCURY (COLD VAPOR METHOD)	HG CV	10200	UG/L
NICKEL	NI	5.1	MG/L
ZINC	ZN	5700	MG/L
ARSENIC	AS(LOW)	0.464	MG/L
SELENIUM	SE(LOW)	< .020	MG/L
ACID DIGESTION	ACID DIG		

COMMENTS:

C-1-S(-15)

Reviewed and Approved by:

cc: MS. CHRIS BAEKA

File-O.C.
Waste Analy

PENN ENVIRONMENTAL CONSULTANTS, INC.
FORT PITT PROFESSIONAL BUILDING
1517 WOODRUFF STREET
PITTSBURGH, PA. 15220
412-381-1133

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 151 COLFAX STREET
SPRINGDALE, PA 15144

PEC PROJECT NO: 0165-00
PEC JOB NUMBER: 9650
PEC SAMPLE NO: 55133

REPORT DATE: 06.09.80

ATTENTION: MR. JIM DIXON

DATE RECEIVED: 05.21.80

SAMPLE IDENTIFICATION: OAK CREEK AQUEOUS WASTE 4-27-80

PARAMETER	SYMBOL	RESULTS	UNITS
BIOCHEMICAL OXYGEN DEMAND, 5 DAY	BOD-5	28000	MG/L
TOTAL ORGANIC CARBON	TOC	26000	MG/L
CHEMICAL OXYGEN DEMAND	COD	3175	MG/L
CHLORIDE	CL	100	MG/L
TOTAL CYANIDE	CN	0.20	MG/L
FLUORIDE DISTILLATION	F, DIST	6.5	MG/L
AMMONIA NITROGEN, DISTILLATION	NH3-N D	53	MG/L
PHENOLS	PHENOL	3.1	MG/L

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JUN 11 1980

COMMENTS:

C-1-S(-16)

Reviewed and Approved by:

cc: MS. CHRIS BABKA

File O.C.
Waste Analysis

ANALYTICAL LABORATORY FINAL REPORT
SPRINGDALE WET LAB

TO: BABKA

DATE: 5/22/80

SAMPLE	CODE	CHG	TEST	RESULT	DATE DONE
7500	E 1197 Del-Still Sludge	83	19 FL PT PM	74'F	5/22/80
7501	E 1198 Cleveland Still Waste	83	15 ASH	.15%	5/22/80
			17 WATER	92.3	5/21/80
			18 WGT/GAL	8.48	5/21/80
			19 FL PT PM	101'F	5/22/80
			PH per G. Kirsch		6/20/80
7502	E 1199 O.C. Aqueous Waste	83	15 ASH	22.0%	5/22/80
			17 WATER	65.7	5/21/80
			18 WGT/GAL	9.96	5/21/80
			19 FL PT PM	136'F	5/22/80
7503	E 1200 O.C. Still Sludge	83	15 ASH	13.47%	5/22/80
			17 WATER	8.93	5/21/80
			18 WGT/GAL	8.85	5/21/80
			19 FL PT PM	82'F	5/22/80

PPG INDUSTRIES, INC.
10800 South 13th St.
POB 28
Oak Creek, Wisconsin 53154
(414) 764-6000

EPA ID#: WID059972935
Facility Contact: Dan Scudder,
Environmental Engineer

Aqueous Treatment Sludge

Generation Rate: 5000 gallons/week

Total Solids	6-35% (Normal 10-15%)
Total Suspended Solids	5-30%
Total Dissolved Solids	1- 5%
Total Volatile Solids	1- 5%
Total Non-Volatile Solids (%Ash @ 550°C)	5-30%

As	< .5ppm	Ca	< 6%
Ba	< 50ppm	Cu	< 10ppm
Cd	< 2ppm	Fe	< .5%
Cr	<100ppm	Mg	< .1%
Cr+6	< 30ppm	Mn	<200ppm
Pb	<200ppm	Ni	< 5ppm
Hg	<200ppm	Na	< .5%
Se	< .5ppm	Zn	< 1%
Ag	< 1ppm		

Total Volatiles	65-94%
%Water	64-91%
%Solvent	<1-3%
Butyl Cellosolve	< .1%
Methyl Ethyl Ketone	< .3%
Xylene	<1.1%
Toluene	< .2%
Ethyl Benzene	<.01%
i-Butanol	<.1%
n-Butanol	< .1%
Ethyl Cellosolve	<.005%
Methyl IsoButyl Ketone	<.2
Cellosolve Acetate	<.02%
Styrene	<.02%
Benzene	<.04%
Acetone	<.02,

BOD_5	<30000ppm
COD	< 5000ppm
TOC	<30000ppm
NH_3-N	< 100ppm
Chlorides	< 100ppm
Fluorides	< 10ppm
Total Cyanide	< .5ppm
Phenols	< 5ppm

Wt/gal	8.4-9.9LB/gal.
Flashpoint	100->212°F
pH	7-11
Viscosity	100-3000CPS

DOT Shipping Name: Hazardous Waste, Liquid, NOS.
DOT Hazard Class: ORM-E
DOT Code: NA 9189
EPA Waste Codes: D001, D007, D008, D009.

Revision No: 1
March 22, 1991

C-1-T(-1)

ATTACHMENT VI-B-20

Paint Plant Caustic Sludge
(D005, D006, D007, D008)
Possibly D001

General Description:

Sludge

Flash Point	Possibly <140 F - >200 F
Heating Value	>5,000 BTU/LB
Total Resin Solids	5 - 20%
Total Pigment Solids	10 - 30%
Solvents	1 - 5%
Water	50 - 70%
Weight/Gallon	9 - 11 LB/GAL

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the waste and similar wastes from other PPG facilities. Tested for ignitability and corrosivity.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
ATTENTION: MS. CHRIS BABKA

REPORT DATE: 07/02/85

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040560
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/07/85

SAMPLE IDENTIFICATION: OC-85-0070-03 - Caustic Sludge

TEST	DETERMINATION	RESULTS	UNITS	
I270	RCRA METALS			
M030	Arsenic (As)	0.29	mg/l	
I040	Barium (Ba)	33	mg/l	
M090	Cadmium (Cd)	0.73	mg/l	
I140	Chromium (Cr)	20	mg/l	
M200	Lead (Pb)	37	mg/l	
I250	Mercury (Hg)	9.6	mg/l	
M290	Selenium (Se)	< 0.08	mg/l	
I300	Silver (Ag)	0.2	mg/l	
M050	Beryllium (Be)	0.03	mg/l	
I110	Calcium (Ca)	260	mg/l	
M141	Chromium, Hexavalent(Cr+6)	< 10	mg/l	Rev.
I150	Cobalt (Co)	6.8	mg/l	
M160	Copper (Cu)	8.9	mg/l	
I190	Iron,total (Fe)	730	mg/l	
M230	Magnesium (Mg)	140	mg/l	
I240	Manganese (Mn)	3.1	mg/l	
M270	Nickel (Ni)	5.3	mg/l	
I310	Sodium (Na)	34000	mg/l	
M320	Strontium (Sr)	17	mg/l	
I390	Zinc (Zn)	83	mg/l	
OF05	2-butanone	< 400	mg/l	
IF08	4-methyl-2-pentanone	< 400	mg/l	
OM48	Maleic Anhydride	< 5000	mg/l	
IV06	Carbon Tetrachloride	< 200	mg/l	
OV22	Methylene Chloride	< 200	mg/l	
IV25	Toluene	< 200	mg/l	
OV30	Trichlorofluoromethane	< 200	mg/l	
S010	Ammonia, distillation (N)	26	mg/l	
S040	British Thermal Units	WNC		
S064	Chlorine, Organic	< 0.1	%	
S080	Cyanide, Total (CN)	< 0.1	mg/l	

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NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
REPORT DATE: 05/16/85
ATTENTION: CHRIS BARKA

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040560
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/07/85

SAMPLE IDENTIFICATION: OC-85-0070-03 - Caustic Sludge

TEST	DETERMINATION	RESULTS	UNITS
S098	Fluorine, Organic	< 0.01	%
S125	Nitrogen, Kjeldahl (N)	< 50	mg/l
S126	Nitrogen, Organic (N)	< 50	mg/l
S168	Specific Weight	9.3	lb/gal
S174	Sulfide by H2 generation (S)	< 2	mg/l
S195	% Water (Karl Fisher)	68.3	% - recheck 79 %
S210	Viscosity	28	CP
S950	Acid Digestion		
S971	Ashing		
S980	Oxygen Bomb Preparation		
W022	Alkalinity, Total (CaCO3)	71000	mg/l
W500	Phenolics	32	mg/l
W590	Solids, dissolved at 180 C	INT	
W610	Solids, suspended at 103 C	INT	
W625	Solids, vol total at 550 C	180000	mg/l

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& CONTROL DEPARTMENT

COMMENTS: INT for solids because sample would not filter. WNC indicates that the sample will not combust.
Chromium and hexavalent chromium results were rechecked. Sample matrix interference causes high Cr^{+6} results. < means detection limit

Reviewed and Approved by: JMC C-1-T(-3)

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/31/85

ATTENTION: CHRIS BABKA

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041481
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: OC-85-0070-03A - Caustic Sludge Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.25	mg/l
I040	Barium (Ba)	14	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	0.5	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.28	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

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JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: Linear detection limit

C-1-T(-4)

Reviewed and Approved by: JMC

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

SAMPLE #: OC-95 0070.00 LOCATION: OAK CREEK

DATE REC'D: 3-8-85 DATE SAMPLED: 12-19-85

ANALYSIS	DATE	RESULTS					
T.E.P.	4-8-85	SOLIDS	110gm	INIT. DiH_2O	1760ml	FINAL DiH_2O	0 ml
	used	ACID SOLN.	440ml	INIT. pH	12.4	FINAL pH	5.0
F.PT.			88°F				
% SOLIDS			____				
C.O.D.			____ mg/l				

OTHER:
pH 4-5-85 13.3

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MAY 14 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)
ASTM D-93-71 (FLASH POINT)
HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

C-1-T(-5)

Signed: James D. Robinson Date: 5-13-85

PPG INDUSTRIES
P.O.# 24645

CAUSTIC SLUDGE WASTE
$250.00

SPECIAL WASTE ANALYSIS REPORT

SALES	CODE
CWD	A64309 N

WASTE PROFILE SHEET CODE

LABORATORY: CONTROLLED WASTE DIVISION

PROFILE SHEET RECEIVED ON: 9/13/82 REPRESENTATIVE SAMPLE RECEIVED ON: 9/13/82

CERTIFICATE OF REP. SAMPLE RECEIVED: 9/13/82 SAMPLE TAKEN: 6/23/82

PROPOSED TREATMENT/DISPOSAL FACILITY:

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (*).

DATE OF ANALYSIS: 10/1/82 LAB MANAGER:

Test	As Received	Leachate	Analyst Initials	Test	As Received	Leachate	Analyst Initials
Specific Gravity	1.34						
pH	11.55						
Acidity, % as							
Alkalinity, % as	1.30%			Phenols, mg/l	ND		
C O D, mg/l				Cyanides, as CN, Total, mg/l			
B O D, mg/l				Cyanides, as CN, Free, mg/l	<5		
Total Solids @ 105° C	32.38%						
Total Dissolved Solids, mg/l				Nitrogen, Ammonia as N, mg/l			
Total Suspended Solids, mg/l				Nitrogen, Organic as N, mg/l			
Residue on Evaporation @ 180°C				Total Kjeldahl Nitrogen, as N, mg/l			
Flash Point, °F	>140			Total Alkalinity (P), as CaCO, mg/l			
Ash Content, % (gravimetric)				Total Alkalinity (M), as CaCO, mg/l			
Heating Value, BTU/lb				Total Hardness, as CaCO, mg/l			
Acid Scrub, gNaOH/l				Calcium Hardness, as CaCO, mg/l			
				Magnesium Hardness, as CaCO, mg/l			
Arsenic, as As, mg/l	0.24						
Barium, as Ba, mg/l	33268						
Boron, as B, mg/l				Oil and Grease, mg/l			
Cadmium, as Cd, mg/l	<0.05						
Chromium, Total as Cr, mg/l							
Hexavalent Chromium, as Cr, mg/l	<0.05			Aldrin, mg/l			
Copper, as Cu, mg/l	0.356			Chlordane, mg/l			
Iron, Total as Fe, mg/l				DDT's, mg/l			
Iron, dissolved, as Fe, mg/l				Dieldrin, mg/l			
Lead, as Pb, mg/l	44.31			Endrin, mg/l			
Manganese, as Mn, mg/l				Heptachlor, mg/l			
Magnesium, as Mg, mg/l				Lindane, mg/l			
Mercury, as Hg, mg/l	19			Methoxychlor, mg/l			
Nickel, as Ni, mg/l	<0.05			Toxaphene, mg/l			
Selenium, as Se, mg/l	<0.05			Parathion, mg/l			
Silver, as Ag, mg/l	<0.05			2, 4, D, mg/l			
Zinc, as Zn, mg/l	13.25			2, 4, 5, TP (Silvex), mg/l			
				PCB's, mg/l			
Bicarbonates, as HCO, mg/l				Layered	—		
Carbonates, as CO, mg/l				Physical State			
Chlorides, as Cl, mg/l							
Fluorides, as F, mg/l				Color			
Nitrates, as NO, mg/l							
Fluoride, as NO, mg/l				Odor			
Phosphate, as P, mg/l							
Sulfate, as SO, mg/l							
Sulfides, as S, mg/l							

THIS REPORT HAS BEEN PREPARED FOR THE EXCLUSIVE USE AND BENEFIT OF WASTE MANAGEMENT OF [illegible]. NO REPRESENTATION, WARRANTY OR ANALYTICAL [illegible] HEREBY MADE TO ANY OTHER PERSON RECEIVING THIS REPORT. [illegible] SAMPLE VALIDITY AND COMPLETENESS IS [illegible]

C-1-T(-6)

E-A ENVIRO-ANALYSTS, INC.
1300 S. Green Bay Rd.
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No. 3026

To Dan Scudder
PPG Industries

Subject EP Toxicity Test: Caustic
Sludge sample

Date 8/20/82

P.O. # Scudder

Sample 6/23/82

	Caustic mg/l
Arsenic	< 0.01
Barium	41.0
Cadmium	< 0.01
Chromium	2.50
Lead	10.08
Mercury	0.41
Selenium	< 0.01
Silver	0.06
Copper	0.21
Zinc	2.68
Nickel	0.10

C-1-T(-7)

LAB MANAGER: R E Schlosser

CBC AQUASEARCH
MILWAUKEE, WISCONSIN 764-7005 ~~821-7020~~

LABORATORY NUMBER	DATE	PAGE
2920,2921	10/9/81	1

2922

LABORATORY REPORT

DATE RECEIVED	DATE COLLECTED
9/23/81	9/23/81
SAMPLE NAME	
Sludge	
ACCOUNT NUMBER	
# 771	

PPG INDUSTRIES
10800 South 13th Street
Oak Creek, Wisconsin 53154

ATTN: M. SCHEERBAUM

REFERENCE METHOD:

- [X] STANDARD METHODS, APHA, 14th EDITION, 1975.
- [X] METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE, EPA, 1979.
- [ ] TEST METHODS FOR THE EVALUATION OF SOLID WASTE, PHYSICAL, CHEMICAL METHODS, EPA, 1980.
- [ ]

PARAMETER	Caustic Powder SAMPLE	Caustic Rinse SAMPLE	Caustic Sludge SAMPLE
MERCURY	-0.002	0.091	4.6
% Na_2OH (Alkalinity)	82.6%	4%	10.6%

(-) means 'less than' value.

RECEIVED
OCT 16 1981
ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

C-1-T(-8)

* UNITS ARE EXPRESSED IN MG/L UNLESS OTHERWISE STATED.

10-9-81
DATE

Robert E Whitmore
LABORATORY SUPERVISOR

CBC AQUASEARCH
MILWAUKEE, WISCONSIN

764-7005
~~321-7020~~

LABORATORY NUMBER	DATE	PAGE
2922	10/9/81	2
COMPANY NAME		
PPG INDUSTRIES		

PARAMETER	EP TOXICITY	EP TOXICITY LIMIT
CADMIUM	0.039	1.0
CHROMIUM	1.2	5.0
LEAD	1.6	5.0
BARIUM	48	100
SILVER	0.01	5.0
ARSENIC	-0.001	5.0
SELENIUM	-0.01	1.0
MERCURY	0.33	0.2

(-) means 'less than' value.

C-1-T(-9)

* UNITS ARE EXPRESSED IN MG/L UNLESS OTHERWISE STATED

10-9-81
DATE

Brent E. Whitman
LABORATORY SUPERVISOR

E-A ENVIRO-ANALYSTS, INC.
1300 S Green Bay Rd
Racine, Wisconsin 53406

LABORATORY REPORT
WASTE WATER EXAMINATION

Report No 2221

To Martin Scheerbaum
PPG Industries
Oak Creek

Subject Revised laboratory analysis of caustic waste stream samples dated 4/11/81.

Date 9/1/81

P.O # pending

Sample Rec'd 5/15/81

Total Solids	28.8%
% Ash	22.7%
% Volatile Solids (by calculation)	6.1%

Metals (ppm) (approximately 6.0% identified)

Arsenic	<0.1	Magnesium	137.3	Iron	1823.8
Barium	670.0	Manganese	50.1		
Cadmium	1.0	Mercury	150.0		
Chromium, total	22.1	Nickel	10.2		
Chromium +6	<1.0	Silver	0.5		
Copper	19.6	Selenium	<10.0		
Lead	10.2	Zinc	55.4		

Total Volatiles(calculated)	71.2%	
% water	69.5%	
% Solvents(calculated)	1.7%	0.2%(identified)*
Xylene	0.060%	
Butyl Cellosolve	0.014%	
Methyl isobutly ketone	0.012%	
u-butanol	0.029%	
toluene	0.001%	
cellosolve acetate	0.021%	
benzene	0.052%	
methylethyl ketone	0.017%	
styrene	0.001%	
acetaone	0.002%	
isobutanol	0.005%	
% NaOH	3.3%	

* Matrix interferences may have caused incomplete recovery. These values are average values from three analytical runs.

C-1-T(-10)

LAB MANAGER R. E. Schlosser

Revision No: 1
March 22, 1991

C-1-U(-1)

ATTACHMENT VI-B-21

Floor Sweepings
(D005, D006, D007, D008)

General Description:

Solid floor sweeping compound contaminated with dry raw material pigment and resin residues. This waste is usually collected with waste filters and used as an additional absorbent material as filters are added to the drum.

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the waste.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/15/85

ATTENTION: CHRIS BABKA

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040566
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0076-03 - Floor Sweepings

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.61	mg/kg
I040	Barium (Ba)	190	mg/kg
M090	Cadmium (Cd)	0.5	mg/kg
I140	Chromium (Cr)	370	mg/kg
M200	Lead (Pb)	2300	mg/kg
I250	Mercury (Hg)	0.48	mg/kg
M290	Selenium (Se)	< 0.4	mg/kg
I300	Silver (Ag)	< 1.0	mg/kg
M050	Beryllium (Be)	< 0.2	mg/kg
I110	Calcium (Ca)	2200	mg/kg
M141	Chromium, Hexavalent(Cr+6)	< 10	mg/kg
I150	Cobalt (Co)	< 1.0	mg/kg
M160	Copper (Cu)	1.0	mg/kg
I190	Iron,total (Fe)	33000	mg/kg
M230	Magnesium (Mg)	330	mg/kg
I240	Manganese (Mn)	73	mg/kg
M270	Nickel (Ni)	< 3.0	mg/kg
I310	Sodium (Na)	90	mg/kg
M320	Strontium (Sr)	10	mg/kg
I390	Zinc (Zn)	27	mg/kg
S015	% Ash @ 550 C	37	%
S040	British Thermal Units	7600	BTU/lb
S120	% Moisture (As received)	7.4	%
S165	% Solids, total at 103 C	92.8	%
S170	Specific Gravity	INT	
S950	Acid Digestion		
S955	Water Digestion		
I490	pH	6.9	

RECEIVED MAY 16 1985 ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-U(-2)

Reviewed and Approved by: JHC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BABKA

REPORT DATE: 05/31/85

NUS CLIENT NO: 320201
NUS SAMPLE NO: 15041484
VENDOR NO: 01831711
WORK ORDER NO: 55830
DATE RECEIVED: 04/19/85

SAMPLE IDENTIFICATION: OC-85-0076-03A - Floor Sweepings Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.52	mg/l
I040	Barium (Ba)	1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	1.0	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.0003	mg/l
M290	Selenium (Se)	< 0.04	mg/l
I300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

RECEIVED
JUN 05 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-U(-3)

Reviewed and Approved by: JMC

C-1-V(-1)

ATTACHMENT VI-B-22

Floor Cleaning Solution
(D005, D006, D008 and/or F003, F005)
Possibly D001 if solvent solution

General Description:

Liquid	Usually a solvent mixture
Flash Point	Possibly <140 F
Heating Value	1,000 - 16,000 BTU/LB
Total Resin Solids	.5 - 1%
Total Pigment Solids	<.5%
Solvents	95 - 99% if solvent solution <5% if water solution
Water	1 - 5% if solvent solution 95 -99% if water solution
Weight/Gallon	7.3 - 8.5 LB/GAL

Solvent solution waste is added to Paint Plant Dirty Solvent waste to be recycled. Water solution waste is added to Paint Plant Washwater to be treated.

Basis for hazardous designation:

Assumed TCLP Toxic characteristics based on knowledge of the waste. If solvent solution, spent solvents are listed. Ignitability characteristic applies for solvents not listed.

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101
ATTENTION: CHRIS BARKA

REPORT DATE: 05/15/85

NUS CLIENT NO: 322245
NUS SAMPLE NO: 15040567
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/09/85

SAMPLE IDENTIFICATION: OC-85-0073-03 - Floor Cleaning Solution

TEST	DETERMINATION	RESULTS	UNITS
M270	RCRA METALS		
M030	Arsenic (As)	0.065	mg/l
M040	Barium (Ba)	8	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
M140	Chromium (Cr)	5.7	mg/l
M200	Lead (Pb)	14	mg/l
M250	Mercury (Hg)	0.05	mg/l
M290	Selenium (Se)	< 0.04	mg/l
M300	Silver (Ag)	< 0.1	mg/l
M050	Beryllium (Be)	< 0.01	mg/l
M110	Calcium (Ca)	11	mg/l
M141	Chromium, Hexavalent(Cr+6)	INT	
M150	Cobalt (Co)	< 0.1	mg/l
M160	Copper (Cu)	0.7	mg/l
M190	Iron,total (Fe)	150	mg/l
M230	Magnesium (Mg)	6.0	mg/l
M240	Manganese (Mn)	15	mg/l
M270	Nickel (Ni)	< 0.7	mg/l
M310	Sodium (Na)	11	mg/l
M320	Strontium (Sr)	5	mg/l
M390	Zinc (Zn)	5.2	mg/l
0F01	Xylenes	77000	mg/l
0F04	Acetone	< 9000	mg/l
0F05	2-butanone	22000	mg/l
0F08	4-methyl-2-pentanone	96000	mg/l
0F09	Styrene	< 4000	mg/l
0M32	Butyl Cellosolve	28000	mg/l
0M58	i-Butanol	290000	mg/l
0M79	Cellosolve Acetate	< 1000	mg/l
0V03	Benzene	< 4000	mg/l
0V22	Methylene Chloride	< 4000	mg/l
S040	British Thermal Units	16000	BTU/lb

RECEIVED MAY 16 1985 ENVIRONMENTAL ENGINEERING & CONTROL DEPARTMENT

C-1-V(-2)

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: 260 KAPPA DRIVE
PITTSBURGH, PA 15238
REPORT DATE: 07/02/85
ATTENTION: MS. CHRIS BABKA

NUS CLIENT NO: 320245
NUS SAMPLE NO: 15040563
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/08/85

SAMPLE IDENTIFICATION: OC-85-0073-03 - Floor Cleaning Solution

TEST	DETERMINATION	RESULTS	UNITS
S064	Chlorine, Organic	0.7	%
S098	Fluorine, Organic	0.01	%
S168	Specific Weight	7.3	lb/gal
S190	Sulfur, total	< 0.05	%
S195	% Water (Karl Fisher)	1.4	%
S210	Viscosity	6.0	CP
S950	Acid Digestion		
S971	Ashing		
S980	Oxygen Bomb Preparation		
W022	Alkalinity, Total (CaCO3)	100	mg/l
W032	Ammonia as N (distillation)	1.4	mg/l
W050	BOD, 5-day (O2)	INT	
W120	COD (O2)	INT	
W270	Cyanide, total (CN)	0.1	mg/l
W435	Nitrogen, Kjeldahl (N)	120	mg/l
W440	Nitrogen, Organic (N)	120	mg/l
W500	Phenolics	9.8	mg/l
W590	Solids, dissolved at 180 C	5190	mg/l
W610	Solids, suspended at 103 C	900	mg/l
W625	Solids, vol total at 550 C	6600	mg/l

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& CONTROL DEPARTMENT

COMMENTS: INT on analyses because sample was not water soluble. REVISED DISSOLVED AND SUSPENDED SOLIDS DATA.
< means detection limit. Benzene and chlorinated compounds are much less than detection limits.

C-1-V(-3)

Reviewed and Approved by: JMC

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: PPG INDUSTRIES, INC.
ADDRESS: ROSANNA DRIVE
ALLISON PARK, PA 15101

REPORT DATE: 05/31/85

ATTENTION: MS. C. BABKA

NUS CLIENT NO: 320237
NUS SAMPLE NO: 15041217
VENDOR NO: 01831710
WORK ORDER NO: 55830
DATE RECEIVED: 04/17/85

SAMPLE IDENTIFICATION: OC-85-0073-03A - Floor Cleaning Solution Extract

TEST	DETERMINATION	RESULTS	UNITS
I270	RCRA METALS		
M030	Arsenic (As)	0.32	mg/l
I040	Barium (Ba)	< 1	mg/l
M090	Cadmium (Cd)	< 0.05	mg/l
I140	Chromium (Cr)	0.1	mg/l
M200	Lead (Pb)	< 0.3	mg/l
I250	Mercury (Hg)	0.009	mg/l
M290	Selenium (Se)	0.22	mg/l
I300	Silver (Ag)	< 0.1	mg/l
S950	Acid Digestion		
S971	Ashing		

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JUN 05 1985
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& CONTROL DEPARTMENT

COMMENTS: < means detection limit

C-1-V(-4)

Reviewed and Approved by: JMC

PPG Industries, Inc. Rosanna Drive P.O. Box 9 Allison Park, Pennsylvania 15101 (412) 487-4500

Research Center
Coatings and Resins Division

PPG ENVIRONMENTAL LAB REPORT

SAMPLE #: OC 85-0073-00 LOCATION: OAK CREEK

DATE REC'D: 3.8.85 DATE SAMPLED: 12.18.85 ~~12.19.85~~ ~~5.9.85~~

ANALYSIS	DATE	RESULTS					
T.E.P.	4.10.85	SOLIDS	110 gm	INIT. DiH_2O	1760 ml	FINAL DiH_2O	4350 ml
	used	ACID SOLN.	1 ml	INIT. pH	5.0	FINAL pH	4.5
F.PT.			42°F				
% SOLIDS							
C.O.D.			____ mg/l				
OTHER:							
pH	4.18.85		7.8				

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MAY 14 1985
ENVIRONMENTAL ENGINEERING
& CONTROL DEPARTMENT

PROCEDURES AND COMMENTS:

EPA SW-846 METHOD 1310 (TEP)
ASTM D-93-71 (FLASH POINT)
HACH METHOD (EPA ACCEPTED) MODEL 16500 (COD)

NAME: [signature] DATE: 5.13.85

C-1-W(-1)

ATTACHMENT VI-B-23

Discarded or Spilled Raw Materials
(P000 - U000 - D000 Codes)

General Description:

See attached Table for list of chemicals and their physical properties. These materials are only wastes if discarded or spilled.

Basis for hazardous designation:

Listed and/or characteristic if discarded or spilled. Physical properties can be obtained from Material Safety Data Sheets or Raw Material Suppler information.

C-1. Attachment H. Discarded or Spilled Raw Materials

EPA Waste Code	Chemical Name	PPG Code	PHYSICAL PROPERTIES							
			f.pt., °F	wt/gal	b.pt., °F	V.P., mm Hg	Physical State	% Solids	% Ash	Other
P092	Phenylmercuric acetate	AMC-207	240	10.40	—	—	Liquid	30	12.1	18% Hg metal
U002	Acetone	SKG-71	0	6.61	134	186	Liquid			
U007	Acrylamide Acrylamide briquettes	KMQ-1932 KMV-4909		9.11 9.11			Solid Solid?			
U008	Acrylic acid	KMX-9393	130	8.79	287	4.0	Liquid			
U031	n-butyl alcohol	SAA-38	84	6.75	243	5.5	Liquid			
U056	Cyclohexane	SLE-1509	0	6.52	179	78	Liquid			
U057	Cyclohexanone	SKP-905	111	7.91	313	3.4	Liquid			
U069	di-n-butyl phthalate	FQJ-3089	340	8.73	635		Solid			
U080	Dichloromethane	75-10								paint stripper
U107	di-n-octyl phthalate	FQE-158	425	8.21			Solid			
U112	Ethyl acetate	SSE-255	24	7.51	171	76	Liquid			
U113	Ethyl acrylate	KMA-285	48	7.7	211	31	Liquid			
U122	Formaldehyde	KZL-1893	166	8.13	219	22	Liquid			40% dissolved in n-butanol
U123	Formic acid	KMB-5274	122	10.1	213	33	Liquid			
U140	Isobutyl alcohol	SAM-49	82	6.68	225	8	Liquid			
U147	Maleic anhydride	KMK-377	215	12.31	395	0.15	Solid			
U154	Methanol	SAE-95	52	6.62	147	97	Liquid			
U159	Methyl ethyl ketone	SKF-74	16	6.71	176	71.2	Liquid			
U161	Methyl isobutyl ketone	SKI-8690	64	6.68	244	16	Liquid			
U162	Methyl methacrylate	KMJ-398	50	7.89	212	29	Solid			
U190	Phthalic anhydride	KMA-254	305	12.75	543	<1	Solid			
U197	p-benzoquinone	KJV-953		11		0.1	Solid			
U220	Toluene	SRT-87	40	7.21	231	22.4	Liquid			
U223	Toluene diisocyanate	KQX-747	270	10.17	484	0.01	Solid			
U239	Xylene	SRC-75	81	7.16	281	6.3	Liquid			

C-1-X(-1)

ATTACHMENT VI-B-24

Off-site Wastes

General Description:

Off specification or obsolete products and/or wastes are occasionally returned to PPG Oak Creek from offsite PPG product distribution centers. The materials are returned in small containers, and consolidated with other PPG Oak Creek wastes. These materials may consist of the same categories of waste that PPG Oak Creek generates:

Solvent Base Paint Waste

Water Base Paint Waste

Dirty Solvent

Washwater

The majority of the wastes come from small quantity generators.

Basis for hazardous designation:

Assumed TCLP Toxic characteristics and/or ignitable based on knowledge of the wastes and similarity to other PPG wastes.

C-1-Z(-1)

ATTACHMENT VI-B-26

Laboratory Paint and Resin Wastes
(Possibly D001, D002, D003, D004, D005, D006, D007, D008)

General Description:

Quality control samples taken from the production processes are discarded after analysis is complete and they are no longer needed. Samples are segregated by type, e.g. paint, resin, raw material, and by compatibility, e.g. corrosive versus flammable. These wastes are handled in the same manner as similar production wastes.

Basis for hazardous designation:

Assumed hazardous based on knowledge of products and raw materials.

C

SOIL BORING LOGS

C1 - LAYNE-WESTERN COMPANY, INC., 1973
C2 - WARZYN ENGINEERING, INC., 1981
C3 - O.H. MATERIALS CORP., 1987
C4 - GERAGHTY & MILLER, 1987
C5 - WARZYN INC., 1992

C1

LAYNE - WESTERN COMPANY INC., 1973

DRAWING NO.

RECORD OF SUBSURFACE EXPLORATION

BORING B17 CONTRACT C-671X

FOREMAN Pagenkopf LOGGED BY Pagenkopf DATE STARTED 1/24/73 DATE COMPLETED 1/24/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp	Qu	MC	D	ELEV.	DESCRIPTION	DEPTH
								120.7	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	1.0
	SS	1	3-5-6						Brown clayey silt soft.	4.0
	SS	2	2-3-4						Brown and gray silty clay, with some gravel - soft.	8.5
	3T	3								
	SS	4	5-9-70/2"						Brown clayey silt, with some gravel - occasional cobbles medium.	11.5
	SS	5	3-6-10						Gray silty clay, with some gravel stiff.	16.0
	SS	6	2-4-8							
	SS	7	2-4-6						Gray sandy silt loose.	19.5
*2 medium dense.	SS	8	10-11-9						Gray silt, with gravel - occasional sand layers *2	21.5
	SS	9	4-5-8						Gray silty clay, with some gravel stiff.	23.0
									Bottom of boring @ 25.0'.	

Water level during drilling @ 4.0'.
Water level at completion of boring 23.0'.
Water level 1/26 4.0'.
Note: Well point set at 20.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B18 CONTRACT C-671X

FOREMAN Pagenkopf LOGGED BY Pagenkopf DATE STARTED 1/23/73 DATE COMPLETED 1/23/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp	Qu	MC	D	ELEV.	DESCRIPTION	DEPTH
								122.3	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
	SS	1	4-5-9						Brown silty clay, with gravel - stiff.	11.0
	SS	2	4-6-9							
	SS	3	4-9-13							
	SS	4	7-10-15						Brown silt, trace of sand - medium dense.	12.5
	SS	5	4-9-12						Gray silty clay, with some gravel very stiff.	16.0
	SS	6	4-5-6						Gray silty clay, with gravel - stiff.	18.0
	3T	7							Gray silty clay, with gravel and occasional layers of fine sand - medium dense.	21.7
	SS	8	7-13-16						Gray silty sand medium dense.	
									Bottom of boring @ 22.0'.	

Water level during drilling @ 9.5'.
Water level at completion of boring 19.0'.
Water level 1/26 4.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B19 CONTRACT C-671X

FOREMAN Pagenkopf LOGGED BY Pagenkopf DATE STARTED 1/23/73 DATE COMPLETED 1/23/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp	Qu	MC	D	ELEV.	DESCRIPTION	DEPTH
								119.2	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
									Brown sandy clay.	2.5
	SS	1	2-4-8							
	SS	2	7-7-12						Brown silty clay, with sand and gravel.	10.5
	SS	3	5-13-16							
	SS	4	5-6-7							
	SS	5	3-6-10						Gray silty clay, with some gravel stiff.	21.5
	SS	6	3-7-10							
	SS	7	5-7-8							
	SS	8	3-6-8						Gray silt - medium dense.	24.0
									Bottom of boring @ 24.0'.	

Dry at completion of boring.
Water level 1/26 18.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B20 CONTRACT C-671X

FOREMAN Pagenkopf LOGGED BY Pagenkopf DATE STARTED 1/25/73 DATE COMPLETED 1/25/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp	Qu	MC	D	ELEV.	DESCRIPTION	DEPTH
								124.1	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
	SS	1	4-5-8						Brown silty clay, with some gravel stiff.	4.7
	SS	2	6-9-11						Brown silty sand medium dense.	6.5
	SS	3	5-12-14						Brown silty clay, with silt seams and some gravel - stiff.	13.0
	SS	4	8-11-14						Gray silty clay, with gravel - occasional sand seams stiff.	16.0
	SS	5	4-8-10							
	SS	6	5-10-14						Gray silty sand medium dense.	21.
	SS	7	6-10-10							
									Bottom of boring @ 21.0'.	

Water level during drilling @ 5.0'.
Water level at completion of boring 6.5'.
Water level 1/26 10.0'.
Note: Well point set @ 15.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B21 CONTRACT C-671X

FOREMAN Pagenkopf LOGGED BY Pagenkopf DATE STARTED 1/24/73 DATE COMPLETED 1/24/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp	Qu	MC	D	ELEV.	DESCRIPTION	DEPTH
								124.6	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
	SS	1	3-3-5						Brown silty clay, with some gravel.	12.0
	SS	2	4-7-9							
	SS	3	4-11-15							
	SS	4	4-6-9						Gray silty clay stiff.	19.0
	SS	5	2-5-5							
	SS	6	4-6-6							
	SS	7	4-9-11						Gray clayey silt, with some gravel.	23.0
	SS	8	5-8-14							
									Bottom of boring @ 25.0'.	

Water level during drilling @ 16.0'.
Water level at completion of boring 23.0'.
Water level 1/26 3.5'.
Note: Well point set @ 20.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B22 CONTRACT C-671X

FOREMAN Pagenkopf LOGGED BY Pagenkopf DATE STARTED 1/24/73 DATE COMPLETED 1/24/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp	Qu	MC	D	ELEV.	DESCRIPTION	DEPTH
									SURFACE	0.0
	SS	1	3-6-7						Brown clayey silt topsoil.	1.5
	SS	2	1-2-3						Brown silt - loose.	5.0
	3T	3								
	SS	4	6-9-15						Brown clayey silt, with gravel - stiff.	15.0
	SS	5	3-6-6							
	SS	6	4-6-7							
	SS	7	3-5-6						Gray silty clay, with some gravel.	20.5
	SS	8	4-6-7							
									Bottom of boring @ 20.5'.	

Water level during drilling @ 7.5'.
Water level at completion of boring 15.0'.
Water level 1/26 3.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B23 CONTRACT C-671X

FOREMAN Pagenkopf LOGGED BY Pagenkopf DATE STARTED 1/25/73 DATE COMPLETED 1/25/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp	Qu	MC	D	ELEV.	DESCRIPTION	DEPTH
								121.1	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
	SS	1	1-2-3						Brown sandy clayey silt - soft.	4.0
	SS	2	4-6-7							
	SS	3	4-8-8						Brown silty clay, with some gravel stiff.	12.5
	SS	4	4-5-7							
	SS	5	3-5-5						Gray silty clay stiff.	19.0
	3T	6								
	SS	7	4-5-7							
	SS	8	4-6-8						Gray silty clay, with sand and gravel layers.	22.0
									Bottom of boring @ 22.0'.	

Water level during drilling @ 19.5'.
Water level at completion of boring 17.0'.
Water level 1/26 3.9'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

REVISED	PRIME NO.	COMPONENT	AREA OR PROCESS	DWG. CLASS	WORK NO.

COATINGS AND RESINS DIVISION
CHICAGO REGION FACILITY
BORING LOGS - SH #2

PPG INDUSTRIES

THIS PRINT SUPERSEDES ALL PRINTS DATED PRIOR TO 4-12-73

DO NOT SCALE THIS PRINT | SCALE | DRAWN BY TH | DATE 4-12-73 | CHECKED BY RL | DATE 5-1-73 | DRAWING NO. CR-7201-SK-10

RECORD OF SUBSURFACE EXPLORATION

BORING B24 CONTRACT C-671X

FOREMAN Rabenkolf LOGGED BY Rabenkolf DATE STARTED 1/24/73 DATE COMPLETED 1/24/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp.	Qu.	MC	D	ELEV.	DESCRIPTION	DEPTH
								124.8	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
									Brown clayey silt soft.	2.0
	SS	1	1-3-4						Brown clayey silt, with sand and gravel medium.	
	ST	2								5.0
	SS	3	3-6-9						Brown silty clay, with some gravel very stiff.	
	SS	4	5-8-13							
	SS	5	7-8-14							13.5
	SS	6	5-8-10						Gray silty clay, with some gravel. Sand and gravel seam at 15.5'.	16.0
									Bottom of boring @ 16.0'.	

Water level during drilling @ 7.5'.

Dry at completion of boring.

Water level 1/26 2.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B25 CONTRACT C-671X

FOREMAN Rabenkolf LOGGED BY Rabenkolf DATE STARTED 1/24/73 DATE COMPLETED 1/24/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp.	Qu.	MC	D	ELEV.	DESCRIPTION	DEPTH
								109.0	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
	SS	1	2-5-7							
	SS	2	5-9-13						Brown silty clay, with some gravel very stiff.	
	SS	3	6-12-17							
	SS	4	9-12-16							13.5
*2 stiff.	SS	5	3-6-8						Gray silty clay, with some gravel *2	15.0
									Bottom of boring @ 15.0'.	

Dry at completion of boring.

Water level 1/26 13.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B26 CONTRACT C-671X

FOREMAN Rabenkolf LOGGED BY Rabenkolf DATE STARTED 1/25/73 DATE COMPLETED 1/26/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp.	Qu.	MC	D	ELEV.	DESCRIPTION	DEPTH
									SURFACE	0.0
*1 topsoil.	SS	1	5-5-5						Brown clayey silt *1	0.5
									Brown silty clay, with some gravel very stiff.	
	SS	2	4-6-10							5.5
	SS	3	6-14-14						Brown sandy silt medium dense.	
	SS	4	15-24-18							11.5
	SS	5	6-11-15						Gray silt - medium dense.	
*2 medium dense.	SS	6	6-6-6							15.5
									Gray fine sand *2	16.3
									Gray silty clay with some gravel.	16.5
									Bottom of boring @ 16.5'.	

Water level during drilling @ 11.5'.

Water level at completion of boring 12.0'.

Water level 1/26 3.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B27 CONTRACT C-671X

FOREMAN Rabenkolf LOGGED BY Rabenkolf DATE STARTED 1/26/73 DATE COMPLETED 1/26/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp.	Qu.	MC	D	ELEV.	DESCRIPTION	DEPTH
								126.3	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.4
	SS	1	2-6-12							
	SS	2	6-11-16						Brown silty clay, with some gravel very stiff.	
	SS	3	5-10-14							
	SS	4	8-10-11							12.5
	SS	5	4-5-7						Gray silty clay, with gravel - stiff.	
	SS	6	4-6-10							18.5
	SS	7	3-4-7						Gray clayey silt stiff.	
	ST	8								23.0
	SS	9	10-11-12						Gray fine silty sand, with gravel - medium dense.	25.0
									Bottom of boring @ 25.0'.	

Dry at completion of boring.

Dry on 1/26.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B28 CONTRACT C-671X

FOREMAN Rabenkolf LOGGED BY Rabenkolf DATE STARTED 1/25/73 DATE COMPLETED 1/25/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp.	Qu.	MC	D	ELEV.	DESCRIPTION	DEPTH
								121.0	SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	1.0
	SS	1	3-5-7						Brown silty clay, with some gravel stiff.	
	SS	2	6-12-12							7.0
	SS	3	6-13-14						Brown silt with sand seams - medium dense.	9.2
	SS	4	2-4-6							
	SS	5	5-6-8						Gray silty clay, with some gravel stiff.	
	SS	6	4-5-7							
	SS	7	4-4-7							22.0
	SS	8	6-9-12						Gray clayey silt very stiff.	23.5
	SS	9	5-8-21						Gray sandy silt medium dense.	27.5
	SS	10	9-17-25						Gray silty clay, with gravel - dense.	30.0
									Bottom of boring @ 30.0'.	

Water level during drilling @ 7.0'.

Water level at completion of boring 25.0'.

Water level 1/26 7.5'.

Note: Well point set at 20.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B29 CONTRACT C-671X

FOREMAN Rabenkolf LOGGED BY Rabenkolf DATE STARTED 1/25/73 DATE COMPLETED 1/25/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp.	Qu.	MC	D	ELEV.	DESCRIPTION	DEPTH
									SURFACE	0.0
*1 topsoil.									Brown clayey silt *1	0.5
	SS	1	3-5-10							
	SS	2	7-9-15						Brown silty clay with some gravel.	
	SS	3	4-9-15							
	SS	4	6-8-12							13.5
	SS	5	8-6-6						Gray silty clay with gravel - stiff.	
	SS	6	4-8-8							
	SS	7	3-3-5							20.3
*2 sand seams loose.									Gray silt with *2	21.0
									Bottom of boring @ 21.0'	

Water level during drilling @ 11.0'.

Water level at completion of boring 16.0'.

Water level 1/26 3.9'.

Note: Well point set at 17.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

RECORD OF SUBSURFACE EXPLORATION

BORING B30 CONTRACT C-671X

FOREMAN Rabenkolf LOGGED BY Rabenkolf DATE STARTED 1/23/73 DATE COMPLETED 1/23/73
LOCATION Oak Creek, Wisconsin BORING METHOD 4" Continuous Auger CASING None

NOTES	TYPE	NO.	N	Qp.	Qu.	MC	D	ELEV.	DESCRIPTION	DEPTH
								120.3	SURFACE	0.0
*1 silt topsoil.	SS	1	6-6-4						Dark brown clayey *1	0.5
									Brown clayey silt stiff.	2.5
									Brown sand and gravel medium dense. Wet	4.3
*2 stiff.	SS	2	7-6-7						Brown silty clay *2	5.0
									Bottom of boring @ 5.0'.	

Water level during drilling @ 3.0'.

Water level at completion of boring 3.0'.

GROUND WATER DEPTH AT COMPLETION ____ AFTER ____ HRS. ____ AFTER ____ HRS. ____
SCALE 1" = 4'

LAYNE-WESTERN COMPANY, INC.

REVISED	FRAME NO.	COMPONENT	AREA OR PROCESS	DWG. CLASS	WORKS NO.

COATINGS AND RESINS DIVISION
CHICAGO REGION FACILITY

BORING LOGS SH. #3

PPG INDUSTRIES

THIS PRINT SUPERSEDES ALL PRINTS DATED PRIOR TO 4/12/73

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C2

WARZYN ENGINEERING INC., 1981

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: PPG Industries, Inc.

Location: Oak Creek, Wisconsin

Boring No.: TW-1
Surface Elevation: 715.2
Job No.: C 10021
Sheet: 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	qu	W	LL	PL	D
						3" Black Topsoil					
1	SS	X	M	14		Brown Clayey SILT (FILL) (ML)					
2	SS	X	M	9	5						
3	SS	X	M	22							
4	SS	X	M	14	10	Brown Clayey SILT Little to Some Sand Trace Gravel (ML)					
5	SS	X	W	29	15	Stiff Brown Silty CLAY Trace to Little Sand Trace Gravel (CL)					
6	SS	X	W	39	20	End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling

Time After Drilling	¼ hour	1 hour	3 hours	12 hours	
Depth to Water	14'	7.4'	7'	10'	
Depth to Cave In					

GENERAL NOTES

Start 7/1/81 Complete 7/1/81
Crew Chief JVS Rig 550
Drilling Method FA 0-20'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: PPG Industries, Inc

Location: Oak Creek, Wisconsin

Boring No.: TW-2
Surface Elevation: 114.5
Job No.: C 10021
Sheet: 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu	W	LL	PL	D
1	SS	X	M	22		Brown Clayey SILT (FILL) (ML)					
2	SS	X	M	14	5						
3	SS	X	M	42		Stiff Brown Silty CLAY Trace Sand and Gravel (CL)					
4	SS	X	M	14	10						
5	SS	X	W	15	15						
6	SS	X	W	23	20						
7	SS	X	W	44	25						
						End Boring at 25'					
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling					
Upon Completion of Drilling					
Time After Drilling	¼ hour	12 hours	18 hours		
Depth to Water	19'	9'	9'		
Depth to Cave In					

GENERAL NOTES

Start 7/1/81 Complete 7/1/81
Crew Chief JVS Rig 550
Drilling Method FA 0-25'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project PPG Industries, Inc.

Location Oak Creek, Wisconsin

Boring No. TW-3
Surface Elevation 115.4
Job No. C 10021
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	qu	W	LL	PL	D
						4" Crushed Rock					
1	SS	X	M	14		Brown Clayey SILT (FILL) (ML)					
2	SS	X	M	17	5						
3	SS	X	M	21		Brown Silty CLAY Little to Some Sand Trace Gravel (CL,CL-ML)					
4	SS	X	M	15	10						
5	SS	X	M	10	15						
6	SS	X	M	12	20	End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling

Time After Drilling	¼ hour	6 hours			
Depth to Water	16'6"	16'6"M			
Depth to Cave In					

GENERAL NOTES

Start 7/2/81 Complete 7/2/81
Crew Chief JVS Rig 550
Drilling Method FA 0-20'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: PPG Industries, Inc.

Location: Oak Creek, Wisconsin

Boring No. TW-4
Surface Elevation 714.9
Job No. C 10021
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery ↓	Moisture ↓	N	Depth	VISUAL CLASSIFICATION and Remarks	Qu	W	LL	PL	D
						6" Crushed Rock					
1	SS	X	M	8		Brown Clayey SILT (FILL) (ML)					
2	SS	X	M	22	5						
3	SS	X	M	42		Stiff Brown Silty CLAY Trace Sand and Gravel (CL)					
4	SS	X	M	29	10						
5	SS	X	M	12	15						
6	SS	X	W	15	20	End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 7/2/81 Complete 7/2/81
Crew Chief JVS Rig 550
Drilling Method FA 0-20'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: PPG Industries, Inc.

Location: Oak Creek, Wisconsin

Boring No.: TW-5
Surface Elevation: 124.0
Job No.: C 10021
Sheet: 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	qu	W	LL	PL	D
						2" Topsoil					
1	SS	X	M	18							
2	SS	X	M	29	5						
3	SS	X	M	25		Brown Silty CLAY Little to Some Sand Trace Gravel (CL,CL-ML)					
4	SS	X	M	36	10						
5	SS	X	M	18	15						
6	SS	X	M	21	20						
						End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling: ¼ hour
Depth to Water: 20' Dry
Depth to Cave In

GENERAL NOTES

Start: 7/2/81 Complete: 7/2/81
Crew Chief: JVS Rig: 550
Drilling Method: FA 0-20'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: PPG Industries, Inc.

Location: Oak Creek, Wisconsin

Boring No.: TW-6
Surface Elevation: 129.1
Job No.: C-10021
Sheet: 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery ↓	Moisture ↓	N	Depth	VISUAL CLASSIFICATION and Remarks	qu	W	LL	PL	D
						3" Crushed Limestone					
1	SS	X	M	24		Stiff Brown Silty CLAY Trace Sand and Gravel (CL)					
2	SS	X	M	23	5						
3	SS	X	M	55							
4	SS	X	M	45	10						
5	SS	X	W	16	15						
6	SS	X	W	-		Gray Silty Fine to Medium SAND Trace to Little Clay (SM)					
7	SS	X	W	17	20	Gray Silty CLAY Trace Sand and Gravel (CL)					
8	SS	X	W	17							
					25	End Boring at 23'					
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling: ¼ hour
Depth to Water: 21.8'
Depth to Cave In

GENERAL NOTES

Start: 8/6/81 Complete: 8/6/8
Crew Chief: LS Rig: 55-2
Drilling Method: FA 0-23'

W1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project PPG Industries, Inc.

Location Oak Creek, Wisconsin

Boring No. TW-7
Surface Elevation 119.0
Job No. C 10021
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu	W	LL	PL	D
1	SS	X	M	24							
2	SS	X	M	28	5	Stiff Brown Silty CLAY Trace Sand and Gravel (CL)					
3	SS	X	M	44		Gray Color, More Moist					
4	SS	X	M	13	10						
5	SS	X	W	14	15	Gray Silty Fine to Medium SAND Trace to Little Clay (SM)					
6	SS	X	W	18							
					20	End Boring at 18'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling ½ hour
Depth to Water
Depth to Cave In 18' Wet

GENERAL NOTES

Start 8/6/81 Complete 8/6/8
Crew Chief LS Rig 55-2
Drilling Method FA 0-18'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: PPG Industries, Inc.

Location: Oak Creek, Wisconsin

Boring No.: TW-8
Surface Elevation: 113.8
Job No.: C 10021
Sheet: 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu	W	LL	PL	D
						Brown Clayey SILT (FILL) (ML)					
1	SS	X	M	15		Stiff Brown Silty CLAY Trace Sand and Gravel (CL)					
2	SS	X	M	27	5	Mottled at 5'					
3	SS	X	M	34							
4	SS	X	M	27	10	Gray Color at 9'					
5	SS	X	M	15							
					15	End Boring at 13'					
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling: ½ hour
Depth to Water: 12'0"
Depth to Cave In: --

GENERAL NOTES

Start: 8/6/81 Complete: 8/6/81
Crew Chief: LS Rig: 55-2
Drilling Method: FA 0-13'

C3

O.H. MATERIALS CORP., 1987

PART 1

OHM

PAGE 1 OF 1

JOB NO. 4885

BORE HOLE NO. A-1

PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME-55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/4/87 1000	DATE FINISH/TIME 6/4/87
SURFACE ELEVATION	TOTAL DEPTH 12.0'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPH LOG
1	1	4 5 7		SAND: Medium-coarse, brown, compactable, slightly silty (SW)	1000 Moist	
5	2	7 15 16 28		SAND: Brown, very gravelly, slightly silty (SW)	Moist Strong odor	
10	3	7 2 4 4		SAND: Brown, very gravelly, slightly silty, slightly clayey (SW)	Strong odor Wet	

PART 1

JOB NO. 4885

OHM

BORE HOLE NO. A-2

PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME-55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/3/87 1110	DATE FINISH/TIME 6/3/87 1220
SURFACE ELEVATION	TOTAL DEPTH 26.5'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPH LOG
1	1	12 13 14		GRAVEL: Sandy, medium brown, pebbles (GC)	1110 Dry (fill)	
2						
3						
4						
5	2	14 9 9 9		CLAY: Light brown, very pebbly, friable, nonplastic (CL)	1115 Dry	
6						
7						
8						
9						
10	3	2 2 1 3		CLAY: Olive green to gray, very plastic, some pebbles (CL)	Wet	
11						

PART 2

OHM

PAGE 2 OF 2

JOB NO 4885

BORE HOLE NO. A-2

PROJECT PPG

LOCATION Oak Creek, Wisconsin

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV - ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPH LOG
13						
14						
15		9		CLAY: Olive green, some large pebbles to 1", plastic (CL)	Wet	
	4	11				
16		14				
		19				
17						
19						
20		10		CLAY: Olive green (CL)	1200	
	5	20		SILT: Olive green, some large cobbles, clayey, very stiff, brittle (ML)	Wet	
21		25				
		31				
22						
23						
24						
25		20		SILT: Clayey, olive green-gray, many pebbles throughout, stiff, very tight, brittle, non-plastic (ML)	1210 Wet	
	6	27				
		33				
27						

PART 1

OHM

JOB NO. 4885	BORE HOLE NO. A-3
PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME-55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/5/87 0910	DATE FINISH/TIME 6/3/87 1015
SURFACE ELEVATION	TOTAL DEPTH 26.5'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	20 14 13		GRAVEL: Sand fill, medium brown, silt, some clayey lenses (GM)	0910 Strong odor at sample No high reading at borehole surface (0-5 ppm)	
2						
3						
4						
5	2	16 4 6 9		CLAY: Medium-light brown, large pieces of gravel, slightly plastic (CL)	0920 Dry	
6						
7						
8						
9						
10	3	4 4 5 7		CLAY: Medium brown, many pebbles, slightly silty, slightly plastic, gravel and sand lenses approximately 1' thick (CL)	0935 Wet	
11						

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BORE HOLE NO. A-3

OJECT PPG

LOCATION Oak Creek, Wisconsin

MARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
13						
14						
15	4	3 3 7 10		CLAY: Medium brown, to light brown, very silty, plastic, few pebbles up to ½" (CL)	0945 Moist	
16						
17						
18						
19						
20	5	5 8 13 27		CLAY: Olive green, very silty, few small pebbles (CL)	0955 Moist	
21						
22						
23						
24						
25	6	11 13 19		CLAY: Olive green, slightly silty, very plastic, (hit large rock thus only half a sample, but enough) (CL)	1005 Moist	
26						
27						

PART 1

OHM

BORE HOLE NO. A-4

JOB NO. 4885	
PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME-55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/2/87 1600	DATE FINISH/TIME 6/2/87 1720
SURFACE ELEVATION	TOTAL DEPTH 26.5'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	20 33 22		SAND: Gravel fill, gravel up to 1", coarse sand, silt, medium brown (GM)	Fill - 1600 Very hard material Grabbed hand sample Odor 0-50 ppm	
2						
3						
4						
5	2	6 5 5 7		GRAVEL FILL: Sandy, silty pebbles, up to ½" (GM)	1610 Dry Odor 0-70 ppm	
6				CLAY: Brown, slightly silty (CL)		
7						
8						
9						
10	3	9 7 2 2		CLAY: Reddish brown, gravelly, very plastic, few pebbles (CL)	Not enough sample retrieved, will try again	
11						

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OHM

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JOB NO 4885

BORE HOLE NO. A4

PROJECT PPG

LOCATION Oak Creek, Wisconsin

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
13						
14						
15		5		CLAY: Reddish-brown, homogenous, few pebbles, stiff but plastic (CL)	1630 Moist	
16	4	8 11				
17		16				
18						
19						
20		11		CLAY: Reddish-brown, very plastic, very gravelly up to ½", sl. sandy, sl. silty (CL)	1640 Moist Made 3 attempts before obtaining spoon	
21	5	14 16				
22		17				
23						
24						
25		13		SILT - CLAY: Fine grained, very stiff, friable, fractures, few pebbles to ½" (ML)	Moist	
26	6	20				
27		25				

PART 1

OHM

JOB NO. 4885

BORE HOLE NO. A5

PROJECT: PPG	LOCATION: Oak Creek, Wisconsin
DRILLING CONTRACTOR: STS	DRILLING EQUIPMENT: CME-55
HYDROGEOLOGIST: Greg Brown	DRILLER: Joe Crestler
DATE START/TIME: 6-2-87 1345	DATE FINISH/TIME: 6-2-87 1500
SURFACE ELEVATION:	TOTAL DEPTH: 26.5'
WELL CASING:	SCREEN TYPE:
LENGTH:	SLOT:

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	7 7 8		SAND: Med. coarse, med. brown, very gravelly - up to ½" pebbles (SW)	1350 Dry (fill)	
5	2	4 4 7 8		SAND: Med - coarse, sl. clayey, pebbles up to ½", brown (SW)	1400 Dry	
6				CLAY: Olive green - gray, sl. plastic (CL)		
10	3	4 6 7 8		CLAY: Mottled - brown - green - gray, sl. sandy, sl. silty (CL)	1415	
11				CLAY: - More plastic, less mottled, some pebbles (CL)		

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JOB NO 4885

BORE HOLE NO. A5

PROJECT PPG

LOCATION Oak Creek, Wisconsin

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV - ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
13						
14						
15		2		CLAY: Olive green to gray, very plastic, some pebbles throughout spoon (CL)	1420 Moist	
16	4	2 3				
17		5				
19						
20		3		CLAY: Med. brown - gray, sl. silty, plastic, pebbles throughout sample, some iron oxides (CL)	1430 Moist	
21	5	5 6				
22		10				
23						
24						
25		8		CLAY: Olive green - gray, plastic, sl. silty, few pebbles (CL)	1445 Moist - Wet	
	6	12				
27		23				

PART 1

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BORE HOLE NO. A-6

JOB NO. 4885	
PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME-55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/3/87 1350	DATE FINISH/TIME 6/3/87 1450
SURFACE ELEVATION	TOTAL DEPTH 26.5'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	9 12 8		GRAVEL: Sand mixture, clayey, pebbles up to 1", medium-dark brown, slightly silty, friable (GC)	1350 Moist (fill)	
2						
3						
4						
5		3		GRAVEL: Sand mixture as above (GC)	1400	
6	2	1 3 7		CLAY: Medium brown, slightly silty, very gravelly, slightly plastic (CL)	Moist	
7						
8						
9						
10		6		CLAY: Tan brown, mottled with gray, very gravelly, slightly silty, slightly plastic (CL)	1410 Moist	
11	3	7 7 11				

PART 2

OHM

JOB NO 4885

BORE HOLE NO. A-6

PROJECT PPG

LOCATION Oak Creek, Wisconsin

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPH LOG
13						
14						
15	4	3 4 5 8		CLAY: Medium brown to gray, sand very coarse, slightly silty, few pebbles (CL)	1420	
16						
17						
18						
19						
20	5	5 8 8 10		CLAY: Gray-greenish, very pebbley, plastic, slightly silty (CL)	1435 Moist Not wet	
21						
22						
23						
24						
25	6	2 4 7		CLAY: Gray-green (CL)	1450	
26						
27						

OHM

PART 1

PAGE 1 OF 2

JOB NO. 4885	BORE HOLE NO. A-7
PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME-55
HYDROGEOLOGIST Greg Brown	DRILLER Joe Wojnavowicz
DATE START/TIME 6/2/87 0855	DATE FINISH/TIME 6/2/87
SURFACE ELEVATION	TOTAL DEPTH
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	15 8 9		CLAY: Medium brown, very gravelly - gravel layer at surface, non-plastic, pebbles up to 1" (GC)	0900 Dry Delay 10-20 mins. due to thunder-showers	
2						
3						
4						
5	2	5 4 9 8		GRAVELLY CLAY: Medium brown, pebbles up to ½", non-plastic (GC)	0935	
6				CLAY: Medium brown, slightly silty, slightly plastic, few small pebbles (CL)	Dry	
7						
8						
9						
10	3	4 3 4 8		CLAY: Medium brown, slightly plastic, slightly silty, slightly sandy	0955 Wet	
11				CLAY: Mottled gray-brown, slightly plastic (fill) (CL)		

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ROJECT PPG

REMARKS

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BORE HOLE NO. A-7

LOCATION Oak Creek, Wisconsin

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
13						
14					Wet	
15	4	3 7 10		CLAY: Slightly sandy, slightly silty, reddish-brown, plastic (CL)		
16				SAND: Medium-coarse, slightly clay-ey, slightly gravelly (SW)		
17						
18						
19						
20	5	5 5 10		CLAYEY GRAVEL: Many pebbles up to 1" (GC)		
21		12		CLAY: Gray, slightly plastic, slightly silty (CL)		
22						
23						
24						
25	6	6 6 13 15		CLAY: Very plastic and elastic, reddish-brown, nearly homogenous, small layer brown, slightly silty clay (CL)		
26						
27						

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JOB NO. 4885

BORE HOLE NO. B 1

PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME - 55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/4/87 1445 / DATE FINISH/TIME 6/4/87 1515	SURFACE ELEVATION / TOTAL DEPTH 12.0'
WELL CASING / SCREEN TYPE	LENGTH / SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV -ERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	4 8 10		CLAY - med. brown, sl. sand, sl. plastic few pebbles (CL)	Dry 1450	
2						
3						
4						
5						
6	2	11 14 18 25		CLAY - med. brown, gray mottles, sl. plastic, few pebbles, sl. silty (CL)	Moist 1455	
7						
8						
9						
10	3	5 8 8 13		CLAY - med. brown, some iron oxide stains, plastic, few pebbles, (CL)	Moist 1505	
11						

OHM

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JOB NO. 4885

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BORE HOLE NO. B2

PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME - 55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/4/87 1640	DATE FINISH/TIME 6/4/87 1700
SURFACE ELEVATION	TOTAL DEPTH 12.0'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0		12		TOPSOIL - Clay, dk. brown-black, sl. sandy, gravelly (CL)	1640	
1	1	11 6		CLAY - med. brown, stiff, non plastic gravelly (CL)	Dry	
2						
3						
4						
5	2	7 8		CLAY - med. tan brown, much gravel, up to ½" (CL)	1645	
6		8 9		CLAY - med. brown, very plastic, sl. silty, sl. sandy (CL)	Moist	
7						
8						
10	3	4 5 5		CLAY - brown and gray mottled sl. silty, sl. sandy, few pebbles (CL)	1655 Moist	

PART 1

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JOB NO. 4885	BORE HOLE NO. B3
PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME - 55
HYDROGEOLOGIST Greg Brown	DRILLER Joe
DATE START/TIME 6/4/87 1545	DATE FINISH/TIME 6/11/87
SURFACE ELEVATION	TOTAL DEPTH 12.0'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH (ft)	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1			CLAY - SAND - TOPSOIL, silty, med. brown, few pebbles (CL)	1545 Dry	
2						
3						
4						
5						
6	2	9 11 13		CLAY - med. brown, very stiff, sl. silty, few pebbles, sl. plastic (CL)	1555 Two split spoons needed to obtain enough sample Dry	
7						
8						
9						
10						
11	3	10 13 14		CLAY - gray-brown mottled, very stiff, sl. plastic, sl. silty, few pebbles sl. sandy? (CL)	1605	

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BORE HOLE NO. B4

PROJECT: PPG	LOCATION: Oak Creek, Wisconsin
DRILLING CONTRACTOR: STS	DRILLING EQUIPMENT: CME-55
HYDROGEOLOGIST: Greg Brown	DRILLER: Joe
DATE START/TIME: 6-3-87 1530 / DATE FINISH/TIME: 6-3-87 1555	SURFACE ELEVATION: / TOTAL DEPTH: 12.0'
WELL CASING: / SCREEN TYPE:	LENGTH: / SLOT:

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	4 4 4		TOPSOIL: Brown - sand, clay mixture few pebbles, organics (CL).	1530 Dry	
2						
3						
4						
5					1535	
6	2	10 15 17 20		CLAY: Reddish-brown, sl. plastic, sl. silty, few pebbles, iron oxides (CL).	Dry	
7						
8						
10						
11	3	4 6 7 8		CLAY: Gray, mottled brown (iron stains) very plastic, few pebbles (CL).	1545 Wet	

PART 1

OHM

JOB NO. 4885

BORE HOLE NO. BS

PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME 55
HYDROGEOLOGIST Greg Brown	DRILLER Joe Wojnavowicz
DATE START/TIME 6/1/87 1430	DATE FINISH/TIME 6/1/87 1500
SURFACE ELEVATION	TOTAL DEPTH 12.0'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAP LOG
1	1	10 9 5		CLAY - med. brown, very gravelly, non plastic, some organic material (CL)	1440 Dry	
2						
3						
4						
5						
6	2	8 7 12 17		CLAY - Tan to med. brown, sl. silty, sl. plastic, friable, iron oxides, few pebbles (CL)	1450 Dry	
7						
8						
9						
10						
11	3	10 10 20		CLAY - tan brown grading into gray, sl. plastic grading into semiplastic, some pebbles (CL)	1500 Dry	

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J. NO. 4885

BORE HOLE NO. B6

PROJECT: PPG	LOCATION: Oak Creek, Wisconsin
DRILLING CONTRACTOR: STS	DRILLING EQUIPMENT: CME-55
HYDROGEOLOGIST: Greg Brown	DRILLER: Joe
DATE START/TIME: 6/1/87	DATE FINISH/TIME: 6/1/87
SURFACE ELEVATION:	TOTAL DEPTH: 12.0'
WELL CASING:	SCREEN TYPE:
LENGTH:	SLOT:

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	1	3 5 8		Clay - brown - medium, slightly silty, some organics, slightly gravelly, friable, non-plastic (CL).	1540 Dry	
2						
3						
4						
5	2	4 6 10 14		Clay - med. brown, sl. silty, sl. plastic (CL).	1550 Dry	
6						
7						
8						
					1600 Wet	
10	3	4 11 10 12		Clay - med. brown, sl. silty, sl. gravelly, sl. plastic (CL).		
11						

PART 1

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JOB NO. 4885	BORE HOLE NO. B - 7
PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME 55
HYDROGEOLOGIST Greg Brown	DRILLER Joe Wojnavowicz
DATE START/TIME 6/1/87 1000	DATE FINISH/TIME 6/1/87 1045
SURFACE ELEVATION	TOTAL DEPTH 12.0'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPH LOG
1	1	6 6 5 7		CLAY - Tan brown, stiff, organics, sl. plastic (CL)	10:15 Dry	
2						
3						
4						
5						
6	2	5 9 11		CLAY - Brown, tan, yellowish, sl. silty, sl. sandy, some organics, stiff, sl plastic (CL)	10:30 Slightly moist	
7						
8						
9						
10						
11	3	5 6 8 9		CLAY - Reddish brown, sand lenses, coarse, gray, black, sl. plastic (CL)	10:43 H_2O @ 9'	

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B NO. 4885

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BORE HOLE NO. B8

PROJECT: PPG	LOCATION: Oak Creek, Wisconsin
DRILLING CONTRACTOR: STS	DRILLING EQUIPMENT: CME-55
HYDROGEOLOGIST: Greg Brown	DRILLER: Joe
DATE START/TIME: 6-1-87	DATE FINISH/TIME: 6-1-87
SURFACE ELEVATION:	TOTAL DEPTH: 12.0'
WELL CASING:	SCREEN TYPE:
LENGTH:	SLOT:

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRA LC
1	1	4 7 12		Clay brown - yellowish, red streaks Brittle, sl. silty	1135 Dry	
2				organics, small pebbles (CL).		
3						
4						
5					1145	
6	2	6 8 11		Clay greenish brown at top grading to a reddish brown sl. plastic, sl. silty, few organics, some pebbles (CL)	Dry	
7		13				
8						
9						
10					1150 Wet	
11	3	4 7 22 26		Clay reddish brown, sl. silty, sl. plastic (CL) Gravel - clay - pebbles up to 3/4" sl.	Possibly hit obstruction	

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JOB NO. 4885	BORE HOLE NO. B-9
PROJECT PPG	LOCATION Oak Creek, Wisconsin
DRILLING CONTRACTOR STS	DRILLING EQUIPMENT CME-55
HYDROGEOLOGIST Greg Brown	DRILLER Joe Wojnavowicz
DATE START/TIME 6-1-87 1335	DATE FINISH/TIME 6-1-87 1430
SURFACE ELEVATION	TOTAL DEPTH 12.0'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb.	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPH LOG
1	1	4 5 7		Clay, brown - med. very dry friable non-plastic, many organic roots, sm pebbles to ¼" (CL).	1340 Dry	
5	2	5 6 12 17		Clay - tan brown, sl. silty, sl. plastic, some pebbles, trace organics (CL).	1350 Dry	
10	3	6 7 8 12		Clay - tan brown to reddish brown to grey brown, increasing plasticity (CL).	1400 Moist	
				Sand - coarse grained, ironoxides - reddish		

C4

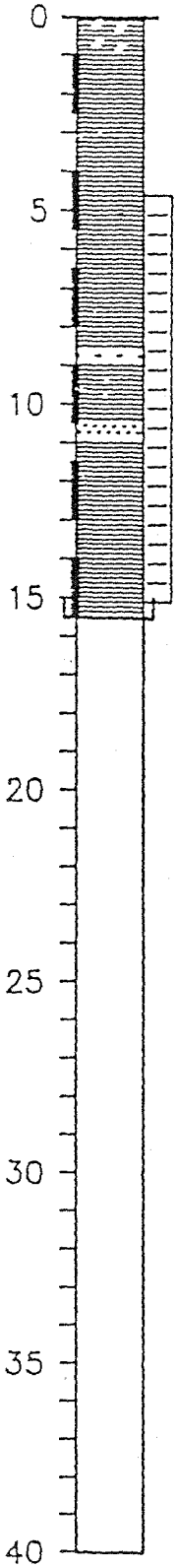
GERAGHTY & MILLER, 1987

Geraghty & Miller, Inc.

WELL LOG

DEPTH FT.

EL 695.36



DESCRIPTION

TOP SOIL (A)

CLAY (B)

SAND (C)
CLAY (D)
SILT (E)

CLAY (F)

(A) GRASS, ROOTS, CLAY, GRAVEL

(B) BROWN CLAY WITH TRACE FINE GRAVEL, SOME IRON STAINING AND MOTTLING

(C) SAND AND GRAVEL

(D) BROWN CLAY WITH TRACE FINE GRAVEL AND IRON STAINING

(E) GRAY SILT, LOOSE

(F) GRAY CLAY, VERY DENSE TO LOOSE NEAR BOTTOM

WELL ID MW9

LEGEND

Core Sample

Well Screen

Well Bottom

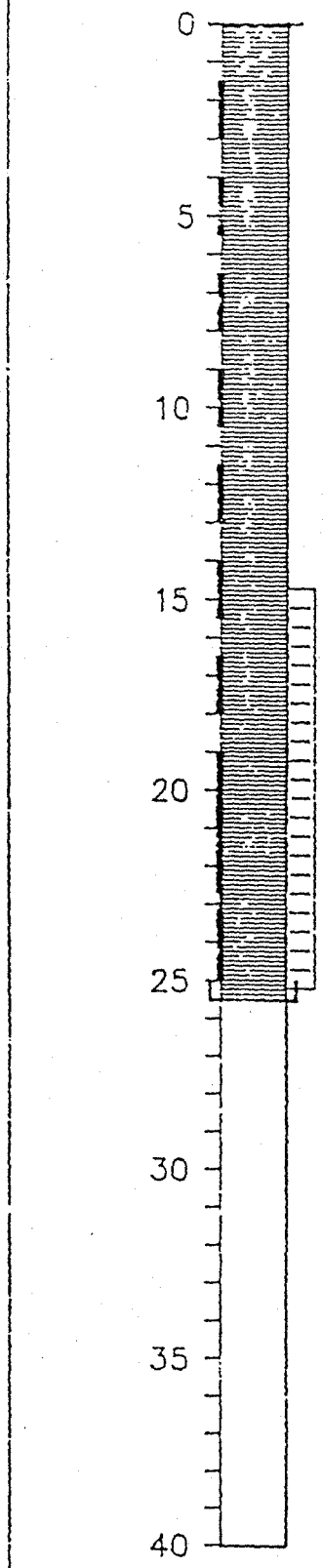
DATE LOGGED 1-20-87

LOGGED BY DMB

INTERPRETED BY DMB

Geraghty & Miller, Inc.

WELL LOG



DESCRIPTION

TOP SOIL (A)

CLAY (B)

CLAY (C)

CLAY (D)

(A) GRASS, ROOTS, CLAY, GRAVEL

(B) BROWN SILTY CLAY, WITH SOME FINE GRAVEL. VERY DENSE, SOME IRON STAINING

(C) DENSE GRAY CLAY WITH TRACE FINE TO MEDIUM GRAVEL

(D) WET GRAY CLAY WITH THIN LENSES OF SILT, SANDY SILT, AND TRACES OF GRAVEL

WELL ID MW10

LEGEND

Core Sample

Well Screen

Well Bottom

DATE LOGGED 1-21-87

LOGGED BY DMB

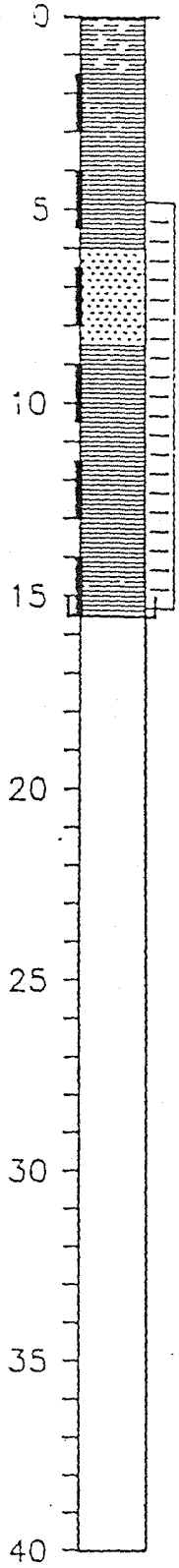
INTERPRETED BY DMB

Geraghty & Miller, Inc.

WELL LOG

DEPTH FT.

EL 689.15



DESCRIPTION

TOP SOIL (A)

CLAY (B)

SILT (C)

CLAY (D)

CLAY (E)

(A) GRASS, ROOTS, CLAY, GRAVEL

(B) BROWN SANDY CLAY, WET, WITH THIN SEAM OF SILTY SAND, SOME MOTTLING

(C) BROWN SILT WITH VERY FINE SAND AND CLAY

(D) VERY DENSE BROWN CLAY, WITH TRACE GRAVEL, SOME IRON STAINING

(E) VERY DENSE GRAY CLAY, SOME COBBLE AT ~12–13 FEET, MOIST

WELL ID MW11

LEGEND

Core Sample

Well Screen

Well Bottom

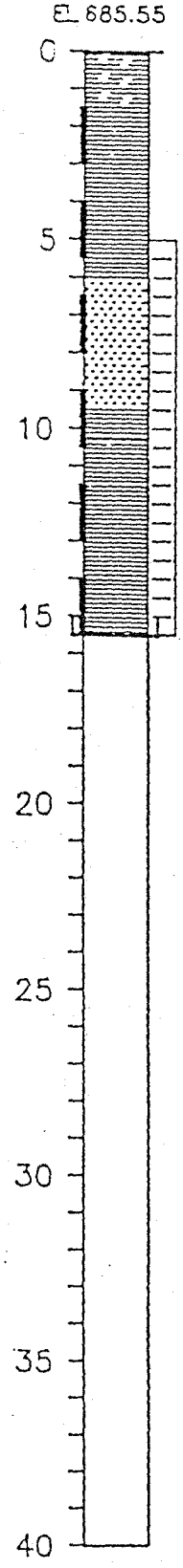
DATE LOGGED 1–21–87

LOGGED BY DMB

INTERPRETED BY DMB

Geraghty & Miller, Inc.

WELL LOG



DEPTH FT.	DESCRIPTION	
0	TOP SOIL (A)	(A) GRASS, ROOTS, CLAY, GRAVEL
5	CLAY (B)	(B) BROWN CLAY WITH TRACE GRAVEL AND COBBLE
	SILT (C)	(C) VERY FINE BROWN SAND AND SILT
10	CLAY (D)	(D) BROWN SILTY CLAY WITH SOME FINE GRAVEL
	CLAY (E)	(E) GRAY CLAY WITH TRACE SILT AND FINE GRAVEL
15		
20		
25		
30		
35		
40		

WELL ID MW12

LEGEND

Core Sample

Well Screen

Well Bottom

DATE LOGGED 1-22-87

LOGGED BY DMB

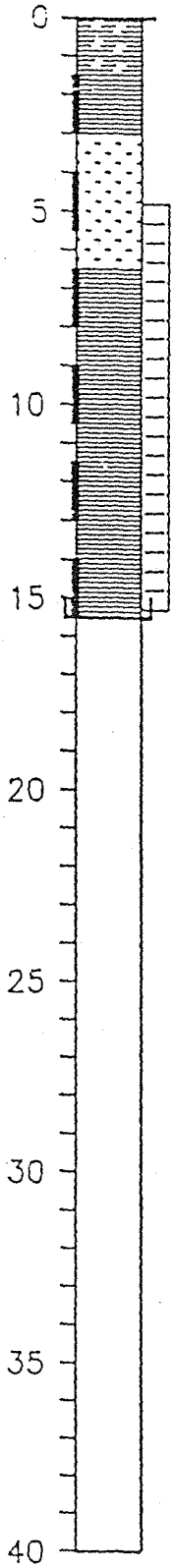
INTERPRETED BY DMB

Geraghty & Miller, Inc.

WELL LOG

DEPTH FT. EL

DESCRIPTION



TOP SOIL (A)

CLAY (B)

SAND (C)

CLAY (D)

CLAY (E)

(A) GRASS, ROOTS, GRAVEL, CLAY

(B) BROWN CLAY, WITH LITTLE GRAVEL

(C) BROWN FINE GRAINED SAND AND SILT WITH OCCASIONAL COBBLE

(D) BROWN SILTY CLAY WITH TRACE FINE TO COARSE GRAVEL, AND FINE SAND AT TOP

(E) BROWN TO GRAY CLAY, VERY DENSE, WITH FINE TO COARSE GRAVEL

WELL ID MW13

LEGEND

Core Sample

Well Screen

Well Bottom

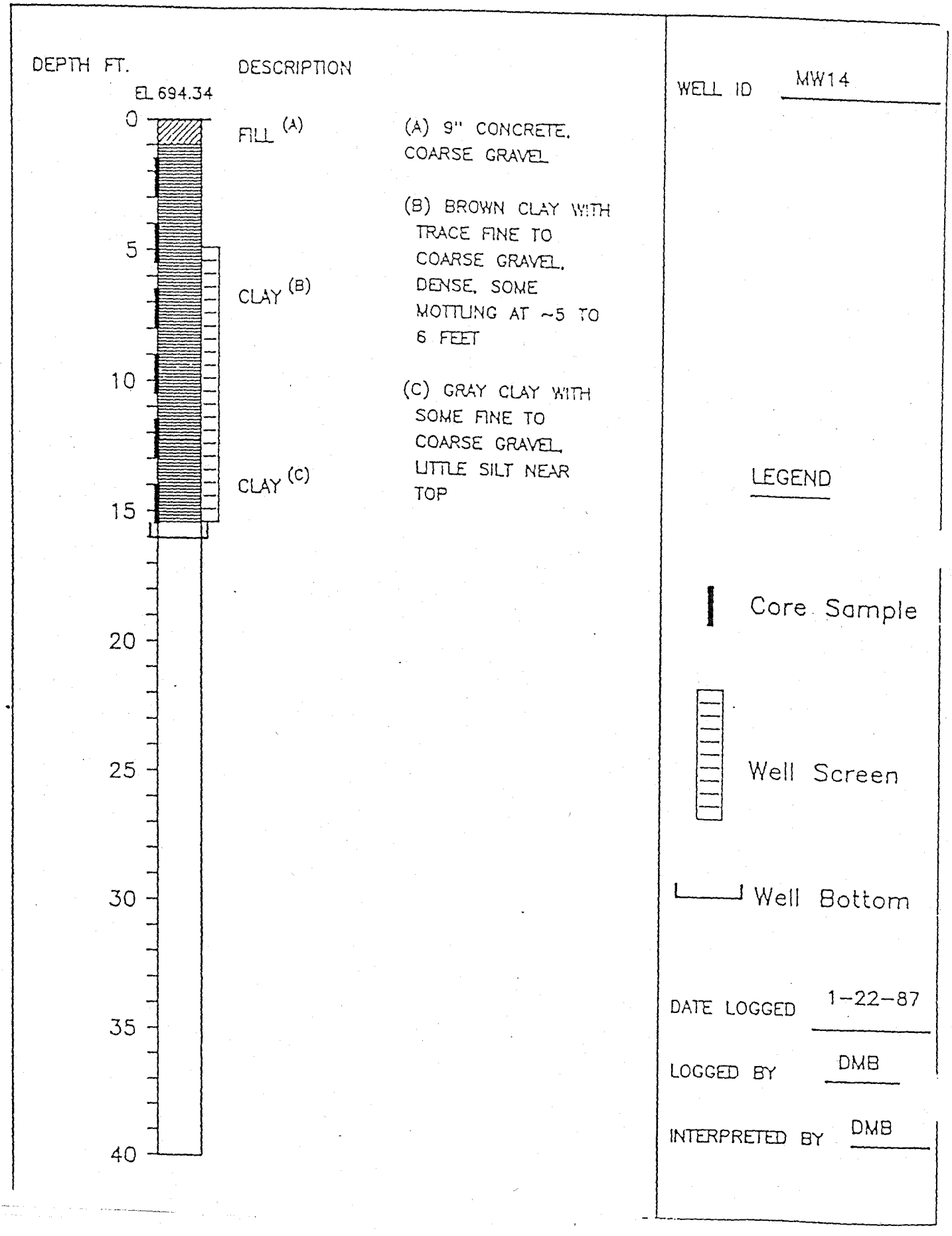
DATE LOGGED 1-22-87

LOGGED BY DMB

INTERPRETED BY DMB

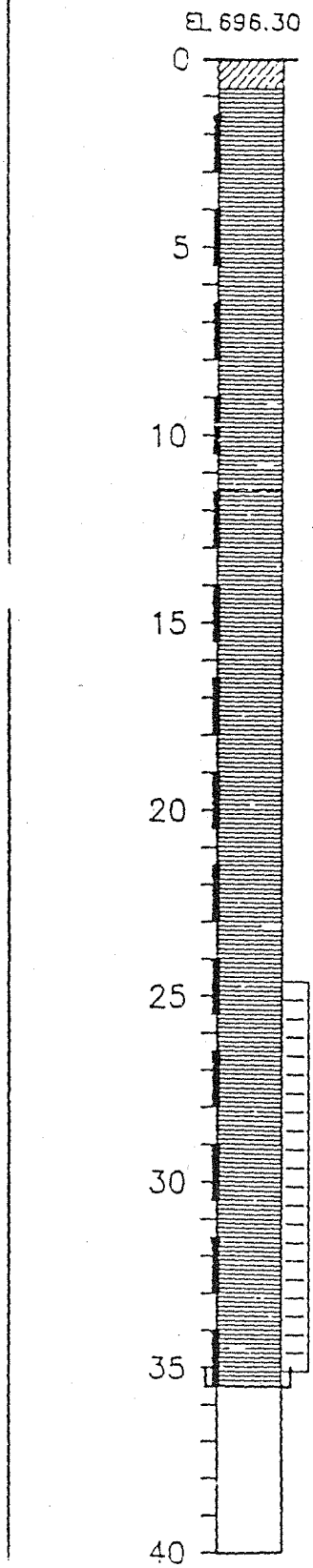
Geraghty & Miller, Inc.

WELL LOG



Geraghty & Miller, Inc.

WELL LOG



DESCRIPTION

(A) COARSE GRAVEL

(B) DENSE BROWN CLAY WITH TRACE FINE TO MEDIUM GRAVEL, DENSE, SOME IRON STAINING

(C) BROWN CLAY AND SILT WITH FINE TO COARSE GRAVEL, THIN LENSES OF GRAVEL AND SILT, VERY WET

(D) GRAY SILTY CLAY WITH SOME FINE SAND AND GRAVEL, VERY WET

(E) DENSE GRAY CLAY WITH TRACE FINE TO MEDIUM GRAVEL

WELL ID MW15

LEGEND

Core Sample

Well Screen

Well Bottom

DATE LOGGED 1-26-87

LOGGED BY DMB

INTERPRETED BY DMB

C5

WARZYN INC., 1992

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B1
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	ENVIRONMENTAL DATA PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 4-6 Inches Brown (7.5YR 5/4) Fine to Medium Sand, Some Gravel.					
1		24	M	19		Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Gravel; Trace Fine Sand (CL).		ND	ND		
2		24	M	10	5			ND	ND		
3		24	M	4		NOTE: Becoming Soft and Plastic at Approximately 6 ft.		ND	ND		
		24	M	5	10			ND	ND		
5		24	M	16	▽	Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Gravel (CL). Note: Thin Sand and Gravel Seam at Approximately 13 ft.		ND	ND		
*6		24	M-W	14	15	Brown (7.5YR 5/4) Fine to Medium SAND; Trace Gravel (SP).		ND	ND		
7		24	M	9		Light Brownish Gray (10YR 6/2) Mottled Lean CLAY; Trace Gravel (CL). NOTE: Mottling not observed from 16.5 to 22.5 ft. Clay Becoming Soft and Plastic at Approximately 18.5 ft. Thin Fine to Medium Sand Seams Observed From 18.5 to 22.5 ft.		ND	0.3		
8		24	M-W	8	20			ND	ND		

WATER LEVEL OBSERVATIONS

While Drilling ▽ 13.0 Upon Completion of Drilling
Time After Drilling 25 hrs.
Depth to Water 7.85'
Depth to Cave in 27'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/30/91 End 7/30/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4 ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B1
Surface Elevation
Job No. 27350.01
Sheet 2 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
9		24	M	54				ND	ND		
10		24	M	32		Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		ND	ND		
11		24	M	16	25	Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine to Medium Sand; Trace Gravel (CL).		ND	ND		
12		24	M	16		NOTE: Thin Silt Seams From Approximately 28.5 to 33 ft. Less Fine to Medium Sand Observed From 26 to 32.5 ft.		ND	ND		
13		24	M-W	30	30			ND	ND		
14		24	M	23		Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		ND	ND		
					35	Stiff Weak Red (2.5YR 4/2) Lean CLAY; Trace Gravel (CL)		ND	ND		
						End of Boring at 35.5 ft ND=Non Detected * = Laboratory Analysis					
					40						

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LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B2
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
						FILL: 4-6 Inches Coarse Gravel.					
*1		18	M	16		Brown (7.5YR 5/4) Lean Clay, Some Medium to Coarse Sand and Gravel.		50.0	50.0		
2		14	M	12	5	Stiff Brown (7.5YR 4/3) Lean CLAY; Little Gravel; Trace Fine Sand (CL).		1.0	ND		
3		24	M	22				ND	ND		
		24	M	18		NOTE: Mottling Observed From Approximately 8 to 9 ft.					
					10	Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Gravel (CL).		ND	ND		
5		24	M	10				ND	ND		
*6		24	M	18		NOTE: Solvent or Sweet Odor Noted From 13.5 to 15.5 ft. Thin Sand and Gravel Seam at 15.5 ft. Fine Sand and Silt Seam (0.5 ft) at Approximately 17.5 ft.		70.0	4.0		
					15						
7		24	M	19		▽		0.5	1.0		
8		24	M	42		Light Brownish Gray (10YR 6/2) Fine SAND; Trace Silt (SP).		1.0	0.5		
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 17.5 Upon Completion of Drilling
Time After Drilling 22 hrs
Depth to Water 8.5' ▽
Depth to Cave in 18'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/30/91 End 7/30/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4 ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B2
Surface Elevation
Job No. 27350.01
Sheet 2 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	Type	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).					
*9		19	M	139		Brown (7.5YR 5/4) Fine to Medium Sand; Trace Gravel (SP).		ND	ND		
10		24	M	90	25			ND	ND		
						Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).					
11		24	M	49		Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Fine Sand and Gravel (CL).		0.5	ND		
					30	Light Brownish Gray (10YR 6/2) SILT; Little Clay and Fine Sand (ML).					
*12		24	M	21		Weak Red (2.5YR 4/2) Lean CLAY; Trace Gravel (CL).		0.5	ND		
					35	End of Boring at 35 ft ND=Non Detected * = Laboratory Analysis					
					40						

LOG OF TEST BORING

MARZYN

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B3
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						8 Inches CONCRETE. NOTE: 2 Inches Brown (7.5YR 5/4) Fine to Medium Sand and Gravel Fill.					
1		24	M	12		Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Gravel; Trace Fine Sand (CL).		ND	ND		
2		20	M	9	5	NOTE: Becoming Soft and Plastic at Approximately 4.5 ft. No Mottling Observed From Approximately 6 to 9 ft.		ND	ND		
3		24	M	11				ND	ND		
		24	M	7	10	Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Gravel (CL).		ND	ND		
5		24	M	12		NOTE: Thin Fine Sand Seams Observed From 11 to 13 ft and one 3 Inch Sand Seam at Approximately 15 ft.		ND	ND		
*6		24	M-W	14	15			ND	ND		
7		24	M-W	12		Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		ND	ND		
8		24	M-W	19		NOTE: Additional Fine Sand Observed From Approximately 18.5 to 22 ft.		ND	ND		
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 13.0 Upon Completion of Drilling
Time After Drilling 4.5 HRS
Depth to Water 14.1' ▽
Depth to Cave in 19.8'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/31/91 End 7/31/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4 ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B3
Surface Elevation
Job No. 27350.01
Sheet 2 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	SAMPLE TYPE	SAMPLE Rec (in.)	SAMPLE Moist	SAMPLE N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
9		24	M	23	25	Stiff Brownish Gray (10YR 6/2) Lean CLAY; Trace Fine Sand And Gravel (CL). NOTE: Thin Silt and Fine Sand Seams From 23 to 29 ft.		ND	ND		
10		24	M	18	30	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		ND	ND		
11		24	M	18	35	Weak Red (2.5YR 4/2) Lean CLAY; Trace Gravel (CL). NOTE: Thin Fine Sand Seams Observed.		ND	ND		
					40	End of Boring at 35 ft ND= Non Detected * = Laboratory Analysis					

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B4
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						8 Inches CONCRETE .					
1		20	M	13		FILL: 2 Inches Brown (7.5YR 5/4) Fine To Medium Sand and Gravel Stiff Yellowish Brown (10YR 5/6) Mottled Lean Clay; Some Fine Sand; Little Gravel		ND	ND		
2		16	M	0	5	NOTE: Black Plastic Fibers Observed.		ND	ND		
3		24	M	0		Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Gravel; Trace Fine Sand (CL).		ND	ND		
4		24	M	13	10	NOTE: Thin Fine to Medium Sand Seams From Approximately 8.5 to 11.5 ft.		ND	ND		
5		24	M	9		Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Gravel (CL).		ND	ND		
*6		24	M-W	12	15	NOTE: Medium to Coarse Sand and Gravel Seam (3 Inches) at Approximately 14.5 ft. Trace Fine Sand From Approximately 16 to 20 ft. Clay Becoming Soft and Plastic at Approximately 18.5 ft.		ND	ND		
7		24	M	13				ND	ND		
8		24	M	11	20			ND	ND		

WATER LEVEL OBSERVATIONS

While Drilling ▽ 14.5 Upon Completion of Drilling
Time After Drilling 2 HRS
Depth to Water 12.4' ▼
Depth to Cave in 33'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/31/91 End 7/31/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4 ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B4
Surface Elevation
Job No. 27350.01
Sheet 2 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
9		24	M-W	12	25			ND	ND		
10		24	M-W	8	30	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		ND	ND		
11		24	M	19	35	Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Gravel (CL). NOTE: Silt Observed in Clay from Approximately 33 to 34 ft.		ND	ND		
					40	End of Boring at 35 ft ND=Non Detected * = Laboratory Analysis					

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B5
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 4 to 6 Inches Coarse Gravel.					
1		24	M	27		Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.		12.0	ND		
2		24	M	16	5	NOTE: Color Changing to Gray at Approximately 4.5 ft.		6.0	ND		
3		24	M	4				12.0	ND		
*4		24	M	10	10	Stiff Light Brownish Gray (10YR 6/2) Mottled Lean CLAY; Trace Gravel (CL). NOTE: Mottling Not Observed From 9.5 to 10.5 ft.		0.5	ND		
						End of Boring at 10.5 ft					

ND=Non Detected

* = Laboratory Analysis

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave in ▼

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/1/91 End 8/1/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4 ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B6
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 4 to 6 Inches Coarse Gravel.					
1		18	M	14		Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.		20.0	1.5		
2		24	M	16	5	NOTE: Color Grading To Gray at Approximately 3.5 ft. Strong Solvent Odor Noted Including Black Staining Observed at Approximately 3.5 ft.		200.0	190.0		
*3		24	M	16				230.0	200.0		
4		24	M	22	10			200.0	180.0		
						Stiff Light Brownish Gray (10YR 6/2) Mottled Lean CLAY; Trace Gravel (CL).					
5		24	M	14		NOTE: Mottling Not Observed From 11 to 19.5 ft. Silt Observed Within Clay From 18.5 to 19.5 ft.		110.0	13.0		
6		24	M	13	15			1.0	2.0		
7		24	M	11				ND	ND		
*8		24	M	18				0.5	ND		
					20	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).					
						End of Boring at 20.5 ft.					
						ND=Non Detected					
						* = Laboratory Analysis					

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling

Time After Drilling				
Depth to Water				▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/1/91 End 8/1/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4 ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B7
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 4 to 6 Inches Coarse Gravel.					
1		24	M	7		18 Inches Brown (7.5YR 4/3) Mottled Lean Clay, Trace Sand and Gravel. 6 Inches Yellowish Brown (10YR 5/4) Fine to Medium Sand, Trace Gravel.		1.0	ND		
2		24	M	6		12 Inches Brown (7.5YR 4/3) Mottled Lean Clay, Trace Gravel and Sand.		140.0	130.0		
3		24	M	17	5	Yellowish Brown (10YR 5/4) Fine to Medium Sand, Trace Gravel.		170.0	110.0		
*4		24	M	12		NOTE: Color Grading into Gray with Black Staining Observed at Approximately 8.5 ft. Solvent Odor Noted.		200.0	150.0		
		24	M	8	10	NOTE: 8 Inch Thin Clay Lens at Approximately 12.5 ft.		190.0	170.0		
6		24	M	3				210.0	200.0		
7		24	M	17	15			70.0	20.0		
*8		24	M	24				12.0	5.0		
					20	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).					
						End of Boring at 20.5 ft.					

ND=Non Detected
* = Laboratory Analysis

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/1/91 End 8/1/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4 ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B8
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 4 to 6 Inches Coarse Gravel.					
*1	I	24	M	8		Brown (7.5YR 4/3) Mottled Lean Clay, Some Fine to Medium Sand, Trace Gravel.		250.0	40.0		
2	I	0	M	4	5			225.0	17.0		
3	I	24	M	8				6.0	8.0		
4	I	24	M	4	10	NOTE: Color Grading Into Gray at Approximately 8.5 ft. Thin Sand Seam at Approximately 10 ft.		5.0	6.0		
5	I	24	M	4				0.5	0.5		
6	I	24	M	7	15	NOTE: Thin Sand and Gravel Seams From 13.5 to 15.5 ft.		0.5	0.5		
7	I	24	M	13		Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		0.5	0.5		
*8	I	24	M	11	20	Weak Red (2.5YR 4/2) Lean CLAY, Trace Gravel (CL).		ND	ND		
						End of Boring at 20.5 ft ND=Non Detected * = Laboratory Analysis					

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/1/91 End 8/1/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B9
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
						FILL: 4 to 6 Inches Coarse Gravel.					
*1		24	M	8		Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.		140.0	60.0		
2		24	M	14	5			80.0	20.0		
3		24	M	16				120.0	30.0		
4		24	M	11	10	NOTE: Color Grading to Gray at Approximately 12 ft. Very Strong Solvent Odor Noted. White Mist Observed Emitting From Borehole.		180.0	80.0		
5		24	M	16				200.0	200.0		
*6		24	M	13	15	NOTE: Sand and Gravel Seam Observed at 13.5 ft. Brown to Gray Clay Observed at Approximately 15 ft. Black Staining and Strong Solvent Odor Noted.		225.0	----		
						End of Boring at 15.5 ft ND=Non Detected * = Laboratory Analysis					

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave in ▼

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/1/91 End 8/1/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B10
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 4 to 6 Inches Coarse Gravel.					
1		24	M	19		Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.		120.0	110.0		
2		10	M	9	5			105.0	22.0		
*3		24	M	10		NOTE: Color Grading to Gray at Approximately 6.5 ft. Strong Solvent Odor Noted. Some Black Staining and Clay Nodules Observed From 8.5 to 10 ft.		150.0	140.0		
4		24	M	4	10			150.0	150.0		
5		24	M	15				130.0	140.0		
*6		24	M	7	15	NOTE: Thin Gravel Seam Noted at 13 ft. Additional Clay Observed at Approximately 14 ft.		160.0	150.0		
						End of Boring at 15.5 ft ND=Non Detected * = Laboratory Analysis					
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/2/91 End 8/2/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B11
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 4 to 6 Inches Coarse Gravel.					
1		24	M	10		12 to 14 Inches Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel. 4 Inches Light Brownish Gray (10YR 6/2) Silt, Trace Fine Sand.		1.0	ND		
*2		24	M	7	5	Brown (7.5YR 4/3) Mottled Lean Clay, Little Gravel.		140.0	20.0		
3		24	M	6		NOTE: Black Staining Noted From Approximately 3.5 to 10 ft.		3.5	5.0		
4		24	M	8	10	Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel From 10 to 11 ft.		80.0	20.0		
*5		24	M	2		Brown to Light Brownish Gray (10YR 6/2) Clay, Some Fine to Medium Sand, Little Gravel. NOTE: Strong Solvent Odor Noted and Black Staining Observed From 11 to 13 ft.		150.0	150.0		
6		24	M-W	6	15 ▽			1.0	1.0		
7		24	M	11		Yellowish Brown (10YR 5/4) Fine to Medium SAND; Trace Gravel (SP).		1.0	ND		
					20	Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Gravel (CL). End of Boring at 18 ft					

ND=Non Detected
* = Laboratory Analysis

WATER LEVEL OBSERVATIONS

While Drilling ▽ 15.0 Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/2/91 End 8/2/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B12
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
						6 Inches CONCRETE FILL: 6 Inches Sand and Gravel					
*1		24	M	11		Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Gravel, Trace Fine Sand (CL). NOTE: Thin Silt and Fine Sand Seams Observed From 2 ft to 5 ft.		250.0	80.0		
2		24	M	15				2.0	3.0		
					5	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).					
3		24	M	13		Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Fine Sand and Gravel (CL).		2.0	3.0		
4		24	M	8		NOTE: Thin Sand and Silt seams Observed From 6 to 8 ft. Gravel seam Observed at 7.5 ft.		1.5	1.0		
					10						
5		24	M	16		NOTE: Clay Becoming Soft and Plastic at Approximately 11.5 ft.		0.5	ND		
6		24	M	12				0.5	ND		
					15	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML). NOTE: Trace Clay Observed From 16 to 17.5 ft.					
7		24	M	15				ND	ND		
						Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Some Fine to Coarse Sand; Trace Gravel (CL).					
8		24	M	25		NOTE: Thin Gravel Seam Observed at		1.0	ND		
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 0.2 Upon Completion of Drilling
Time After Drilling 10 min
Depth to Water 2 "
Depth to Cave in 33 '

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/5/91 End 8/5/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B12
Surface Elevation
Job No. 27350.01
Sheet 2 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
						Approximately 19 ft. Thin Silt Seams Observed From 21 to 23 ft.					
9		24	M	29				0.5	ND		
*10		24	M	11	25			ND	ND		
11		24	M	19				ND	ND		
12		24	M	22	30			ND	ND		
					35	End of Boring at 35 ft					
						ND=Non Detected					
						* = Laboratory Analysis					
					40						

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B13
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
						4 Inches Top Soil and Sod					
1		24	M	14		FILL: Very Dark Grayish Brown (10YR 3/2) Lean Clay, Some Fine Sand and Silt, Trace Gravel from 0.5 to 3 ft.		ND	ND		
*2		24	M	13	5	Stiff Brown (7.5YR 4/3) Mottled Lean Clay, Little Fine Sand, Trace Gravel From 3 to 7 ft.		1.0	ND		
3		24	M	17		Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Fine Sand, Trace Gravel (CL).		ND	ND		
4		24	M	15	10	NOTE: Two Inch Silt Seam and Thin Sand Seam Observed at Approximately 10 ft.		ND	ND		
5		24	M	25		Light Brownish Gray (10YR 6/2) Lean CLAY; Trace Fine Sand and Gravel (CL).		ND	ND		
6		24	M	14	15	NOTE: Three Inch Sand Seam Noted at Approximately 12.5 ft. Thin Silt Seams From 13.5 to 16 ft. Clay Becoming Soft and Plastic at Approximately 13.5 ft.		ND	ND		
7		24	M	14				ND	ND		
8		24	M	19	20			ND	ND		

WATER LEVEL OBSERVATIONS

While Drilling ▽ 11.5 Upon Completion of Drilling
Time After Drilling 28 hrs
Depth to Water 7.4'
Depth to Cave in 19.9'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/5/91 End 8/5/91
Driller MW Chief EL Rig CMF
Logger KRK Editor KRK 45
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B13
Surface Elevation
Job No. 27350.01
Sheet 2 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Hoist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).					
*9		24	M	70		NOTE: Thin Fine Sand Seams Observed From 23 to 25 ft.		0.5	ND		
					25						
						Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Some Fine to Coarse Sand; Trace Gravel (CL).					
10		24	M	19		NOTE: Thin Gravel Seam Observed at Approximately 29 ft. Thin Silt and Fine Sand Seams Observed From Approximately 33 to 35 ft.		ND	ND		
					30						
11		24	M	16				ND	ND		
					35						
						End of Boring at 35 ft.					
						ND=Non Detected					
						* = Laboratory Analysis					
					40						

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B14
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
						FILL: 3 to 6 Inches Coarse Gravel.					
1		24	M	20		Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.		350.0	300.0		
*2		24	M	9	5	Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Fine Sand; Trace Gravel (CL). Note: Slight Solvent Odor Detected From Surface to Approximately 8.0 ft.		300.0	150.0		
3		24	M	13	▽			250.0	170.0		
4		24	M	14		Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand; Trace Gravel (CL).		12.0	13.0		
5		24	M	19	10	NOTE: Three Inch Silt Seam Observed at Approximately 8 ft. Thin Fine Sand, Silt and Gravel Seams Observed From Approximately 8.5 to 14.5 ft. Additional Coarse Gravel Observed Within Clay From Approximately 11 to 14 ft.		3.0	3.0		
6		24	M	16				3.5	2.0		
7		24	M	20	15	Light Brownish Gray (10YR 6/2) Fine SAND; Some Silt (SP).		0.5	ND		
*8		24	M	74		Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML). NOTE: Thin Fine Sand Seams Observed From Approximately 16.5 to 18 ft.		0.5	0.5		
					20	Light Brownish Gray (10YR 6/2) Very Stiff SILT; Some Fine to Medium Sand; Trace Gravel (ML).					
						End of Boring at 20.5 ft					
						ND=Non Detected					
						* = Laboratory Analysis					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 7.0 Upon Completion of Drilling
Time After Drilling 23 hrs
Depth to Water 5.1'
Depth to Cave in 10.9'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/5/91 End 8/5/91
Driller MW Chief EL Rig CMF
Logger KRK Editor KRK 45
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B15
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						FILL: 3 to 4 Inches Coarse Gravel.					
1		24	M	10		14 to 15 Inches Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.					
						Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Fine Sand; Trace Gravel (CL).		180.0	5.0		
2		24	M	21							
					5			30.0	1.0		
*3		24	M	19		Note: Slight Solvent Odor Detected From Surface to Approximately 8.0 ft.					
								90.0	3.0		
4		24	M	13							
					10			ND	ND		
5		24	M	24	▽						
						Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand; Trace Gravel (CL).		80.0	20.0		
						NOTE: Thin Gravel Seam Observed at Approximately 12 ft. Fine Sand Seams Observed From 11 to 13 ft. Thin Silt Seams Observed From 12.5 to 18 ft.					
6		0	--	7							
					15			----	----		

WATER LEVEL OBSERVATIONS

While Drilling ▽ 11.5 Upon Completion of Drilling
Time After Drilling 7 hrs
Depth to Water 7.5'
Depth to Cave in 13.3'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/6/91 End 8/6/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B16
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist.	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Meth-ane %LEL	Mono-tox ppm
						FILL: 3 to 4 Inches Coarse Gravel					
1		24	M	11		8 to 9 Inches Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.		ND	ND		
*2		24	M	18		Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Fine Sand; Trace Gravel (CL).		0.5	ND		
3		24	M	18	5			ND	ND		
4		24	M	11				ND	ND		
5		24	M	13	10	Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand; Trace Gravel (CL).		ND	ND		
*6		24	M	12		NOTE: Silt Observed Within Clay at Approximately 13.5 ft. Thin Silt Seams Observed From 16 to 19 ft.		3.0	0.5		
7		24	M	9	15			ND	ND		
8		24	M	24				ND	ND		
					20	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		ND	ND		
						Light Brownish Gray (10YR 6/2) SAND; Some Silt (SP).					
						End of Boring at 20.5 ft					
						ND=Non Detected					
						* = Laboratory Analysis					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽		Upon Completion of Drilling		
Time After Drilling				
Depth to Water				▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/6/91 End 8/6/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B17
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						8 Inches CONCRETE.					
*1		24	M	8		FILL: Yellowish Brown (10YR 5/4) Fine to Medium Sand, Some Gravel.					
						Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Fine Sand; Trace Gravel (CL).		160.0	13.0		
2		24	M	14	5			4.0	3.0		
						NOTE: Mottling Not Observed at 5.5 ft. Slight Solvent Odor Noted From Surface to Approximately 5.0 ft.					
3		24	M	23				0.5	ND		
						Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand; Trace Gravel (CL).					
*4		24	M	10	10			ND	ND		
5		24	M	6		NOTE: Thin Silt Seams Observed From Approximately 8.5 to 11 ft. Sand and Gravel Lens at 10 ft.		ND	ND		
6		24	M	6	15			ND	ND		
7		24	M	7		NOTE: Thin Silt Seams Observed From 16.5 to 18.5 ft. Thin Sand Seams Observed at 16.5 and 17.5 ft.		ND	ND		
8		24	M	9	20	Light Brownish Gray (10YR 6/2) SILT; Little Fine Sand (ML).		ND	ND		
						NOTE: Thin Sand Seams Observed From 18.5 to 20.5 ft.					
					25	End of Boring at 20.5 ft.					

ND=Non Detected
* = Laboratory Analysis

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling
Time After Drilling 4 hrs
Depth to Water NONE ▼
Depth to Cave in 18.2'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/6/91 End 8/6/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B18
Surface Elevation
Job No. 27350.01
Sheet 1 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						9 Inches CONCRETE. FILL: Yellowish Brown (10YR 5/4) Sand and Gravel.					
1		24	M	7		Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Fine Sand; Trace Gravel (CL).		ND	ND		
*2		24	M	10	5	Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand; Trace Gravel (CL).		ND	ND		
3		24	M	9		NOTE: Sand Lens Observed at Approximately 5 ft.		ND	ND		
4		24	M	12	10			ND	ND		
5		24	M	10				ND	ND		
6		24	M	13		NOTE: Thin Fine Sand Seams Observed From 13.5 to 17 ft.		ND	ND		
					15						

WATER LEVEL OBSERVATIONS

	While Drilling ▽	Upon Completion of Drilling		
Time After Drilling	2 hrs			
Depth to Water	NONE			▼
Depth to Cave in	17.7'			

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/6/91 End 8/6/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

WARZYN

LOG OF TEST BORING

Project PPG INDUSTRIES INC.

Location Oak Creek, Wisconsin

Boring No. B18
Surface Elevation
Job No. 27350.01
Sheet 2 of 2

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
7		24	M	25		Light Brownish Gray (10YR 6/2) SILT; Some Fine Sand (ML). NOTE: Thin Fine Sand Seams from 17 to 18.5 ft.		ND	ND		
8		24	M	19	20	Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand; Trace Gravel (CL).					
						Light Brownish Gray (10YR 6/2) SILT; Some Fine to Medium Sand (ML).		ND	ND		
					25	End of Boring at 20.5 ft.					
						ND=Non Detected					
						* = Laboratory Analysis					
					30						

WARZYN

LOG OF TEST BORING

Project: PPG INDUSTRIES INC.

Location: Oak Creek, Wisconsin

Boring No. B19
Surface Elevation
Job No. 27350.01
Sheet 1 of 1

11925 WEST LAKE PARK DRIVE SUITE 200, MILWAUKEE, WIS. 53224 TEL.(414)359-1144

SAMPLE No.	TYPE	Rec (in.)	Hoist	N	Depth	VISUAL CLASSIFICATION and Remarks	ENVIRONMENTAL DATA qu (qa) (tsf)	PID/FID Head Space ppm	PID/FID Field ppm	Methane %LEL	Monotox ppm
						8 Inches CONCRETE.					
1	SS	10	M	5		FILL: Yellowish Brown (10YR 5/4) Sand and Gravel.					
						Stiff Brown (7.5YR 4/3) Mottled Lean CLAY; Little Fine Sand; Trace Gravel (CL).		1.0	ND		
2	SS	24	M	8				ND	ND		
					5	Stiff Light Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand, Trace Gravel (CL).					
*3	SS	24	M	7		NOTE: Six Inch Black Sand And Gravel Seam Observed at Approximately 7.0 ft. Strong Sweet Solvent Odor Detected.		150.0	3.0		
4	SS	24	M	12				4.0	12.0		
					10	NOTE: Thin Fine Sand Seam Observed at Approximately 10 ft. Thin Fine Silt Seams Observed From 11 to 13.5 ft.					
5	SS	24	M	13				2.0	3.0		
6	SS	24	M	18				ND	ND		
					15						
7	SS	24	M	16		Light Brownish Gray (10YR 6/2) SILT; Some Fine Sand (ML). NOTE: Thin Fine Sand Seams Observed From 16.5 to 17.5 ft.		0.5	0.5		
*8	SS	24	M	6		Stiff Brownish Gray (10YR 6/2) Lean CLAY; Little Fine Sand; Trace Gravel (ML). NOTE: Thin Silt Seams Observed From 18 to 20.5 ft.		0.5	ND		
					20	End of Boring at 20.5 ft					
						ND=Non Detected					
						* = Laboratory Analysis					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 8.0 Upon Completion of Drilling
Time After Drilling 10 min
Depth to Water 6' ▼
Depth to Cave in 17.3'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/6/91 End 8/6/91
Driller MW Chief EL Rig CME 45
Logger KRK Editor KRK
Drill Method HSA 2 1/4" ID

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
G INDUSTRIES INC. 27350.03		LW1

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing/Eugene Lehman	12/6/91	12/6/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LW1	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (In.)	Sample Blow Counts	Depth In Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/ Comments
				10" Concrete										
				Blind Drilled LM1 to 15 Ft. See LW1 Log for Boring Lithology.										
			5					ND						
			10					ND						
			15					ND						
				ND = Non Detect Note: PID Readings Recorded From Auger Cuttings.										

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Lehman JEG / JEG Firm: WARZYN INC.

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Word 3/91

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
PPG INDUSTRIES INC. 27350.03		LW2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/6/91	12/6/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LW2	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N | Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W | Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (in.)	Sample Blow Counts	Depth in Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				6" Crushed Stone Fill										
1	20	16		Probable FILL: Brown (7.5 Yr 5/4) Lean Clay, Little Sand and Gravel, Occasional Sand Pockets.	4.5+			ND						SS
2	15	8	5		1.75			ND						SS
3	6	9			0.75			ND						SS
4	8	2	10		0.25			ND						SS
				Very Stiff, Brownish Gray (10 YR 6/2) Lean CLAY; Little Sand and Gravel, Occasional Thin Sand Seams (CL).										
5	12	6	15		2.25			ND						SS
				End of Boring at 15.5 Ft. ND = Non Detect										

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Signature: John E. Gerlach JEG / JEG | Firm: WARZYN INC.

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
G INDUSTRIES INC. 27350.03		LW3

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/4/91	12/4/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LW3	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N | Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W | Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (In.)	Blow Counts	Depth In Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/ Comments
				9" Concrete, 2" Brown Silty Sand and Gravel Base Coarse.										
				Blind Drilled to 15.0 Ft. See Boring Log LP3 for Lithologic Descriptions.										
			5					ND						
			10					ND						
			▽											
			15					ND						
				End of Boring at 15.0 Ft. ND = Non Detect PID Readings Obtained From Auger Cuttings.										

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Gulf JEG / JEG | Firm: WARZYN INC.

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
PPG INDUSTRIES INC. 27350.03		LW4A

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/3/91	12/3/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LW4A	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N | Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W | Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (in.)	Blow Counts	Depth In Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD / Comments
				10" Concrete										
1	10	16		FILL: Light Brownish-Gray (10 YR 6/2) Silty Sand, Some Gravel.	—			3.0						SS
2	14	8	5	Stiff to Very Stiff, Brown (7.5 YR 4/3) Lean CLAY; Little Sand and Gravel (CL).	1.5			15.0						SS
3	24	11		Slight Chemical Odor in 6 - 8 Ft Sample.	2.5			300.0						SS
				End of Boring at 8.0 Ft. Note: Boring Abandoned Due to Elevated PID Readings										

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Signature John E. Gulf JEG / JEG Firm WARZYN INC.

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
PPG INDUSTRIES INC. 27350.03		LW4B

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/3/91	12/3/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LW4B	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N | Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W | Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (in.)	Blow Counts	Depth in Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				10" Concrete										
1	14	15		FILL: Light Brown (7.5 YR 5/4) Silty Sand, Some Gravel.				ND						SS
2	7	11	5	Stiff to Very Stiff, Brown (7.5 YR 4/3) Lean CLAY; Little Sand and Gravel (CL).	1.75			ND						SS
3	8	6			2.25			ND						SS
4	8	5	10		3.0			ND						SS
5	16	17	15	Medium Dense, Brownish-Gray (10 YR 6/2) Silty SAND; Little Gravel (SM). Chemical Odor.				20.0						SS
6	14	19	20	Very Stiff, Gray (10 YR 6/2) SILT; Some Fine Sand, Little Gravel (ML). Chemical Odor.	3.5			20.0						SS
				End of Boring at 20.5 Ft. ND = Non Detect										

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Signature John E. Gehl JEG / JEG Firm WARZYN INC.

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
PPG INDUSTRIES INC. 27350.03		LW4C

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/3/91	12/3/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LW4C	Feet MSL	Feet MSL	8.2 inches

Boring Location
State Plane _____ N, _____ E S/C/N | Lat ___ ___ ___
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W | Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (in.)	Blow Counts	Depth in Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				10" Concrete										
1	12	12		FILL: Gray to Brown (10 YR 6/2) Silty Sand, Some to and Gravel.				3.0						SS
2	14	9	5					10.0						SS
3	12	20		Stiff, Brown (7.5 YR 4/3) Lean CLAY; Little Sand and Gravel (CL).	1.5			1.0						SS
4	12	9	10	Stiff to Very Stiff, Brownish-Gray (10 YR 6/2) Lean CLAY; Little Sand and Gravel (CL).	1.5			1.0						SS
5	16	11	15		2.25			ND						SS
6	10	29	20	Very Stiff, Brownish-Gray (10 YR 6/2) SILT; Some Fine Sand (ML).	3.0			ND						SS
				End of Boring at 20.5 Ft. ND = Non Detect										

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I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature John E. Gulf JEG / JEG | Firm WARZYN INC.

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Form 4/91

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
G INDUSTRIES INC. 27350.03		LW4D

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/6/91	12/6/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LW4D	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N | Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W | Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (in.)	Blow Counts	Depth In Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				10" Concrete										
1	16	18		FILL: Brown to Gray (10 YR 6/2) Silty Sand, Some Gravel.				45.0						SS
2	20	15	5	Possible FILL: Brown (7.5 YR 4/3) Lean Clay; Little Sand and Gravel.				160.0						SS
				Possible FILL: Brownish-Gray (10 YR 6/2) Medium Grained Sand, Little Silt.										
3	16	7		Stiff to Hard, Brownish-Gray (10 YR 6/2) Lean CLAY; Little Sand and Gravel Occasional Thin Silty Sand Seams (CL).	4.5+			15.0						SS
4	10	4	10		1.25			6.0						SS
5	6	12	▽ 15	Medium Dense, Brownish-Gray (10 YR 6/2) Clayey SAND; Some Gravel, Little Silt (SC).				125.0						SS
				End of Boring at 15.0 Ft.										

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Gerlach JEG / JEG | Firm: WARZYN INC.

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
PPG INDUSTRIES INC. 27350.03		LP1

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/5/91	12/5/91	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LP1	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N | Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W | Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (in.)	Blow Counts	Depth In Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/ Comments
				10" Concrete										
1	10	13		FILL: Brown (7.5 YR 5/4) Silty Sand, Some Gravel.	—			ND						SS
2	1	14	5	Stiff to Very Stiff, Brown (7.5 YR 4/3) Slightly Mottled Lean CLAY; Little Sand and Gravel (CL).	—			ND						SS
3	8	11			2.5			ND						SS
4	20	4	10		2.0			ND						SS
				Stiff to Hard, Brownish Gray (10 YR 6/2) Lean CLAY; Little to Some Sand, Little Gravel (CL). Apparent Wet Sand Layer at 13 Ft (Based on Auger Cuttings).										
5	24	14	15		2.0			ND						SS
6	20	25	20		4.5+			ND						SS
7	24	25	25		4.5+			ND						SS
8	24	28	30	Very Stiff, Brownish Gray SILT (10 YR 6/2); Little to Some Fine Sand (ML).	2.5			ND						SS
9	20	36	35		2.5			ND						SS
				End of Boring at 35.5 Ft. ND = Non Detect										

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Signature JEG / JEG Firm WARZYN INC.

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
G INDUSTRIES INC. 27350.03		LP3

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
J&J Soil Testing-Eugene Lehman	12/4/91	12/4/91	4 1/4" ID ESA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		LP3	____ Feet MSL	____ Feet MSL	8.2 inches

Boring Location
State Plane ____ N, ____ E S/C/N | Lat ____ ____ ____
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ E/W | Long ____ ____ ____

Local Grid Location (if applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/or Village
Milwaukee	41	Oak Creek

Sample Number	Sample Length Recovered (in.)	Blow Counts	Depth In Ft	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	22	11		9" Concrete, 2" Brown Sand and Gravel Base Coarse.										
				Very Stiff, Brown (7.5 YR 4/3) Lean CLAY; Little Sand and Gravel (CL).	3.5			ND						SS
2	3	7	5		2.75			ND						SS
3	20	11		Very Stiff to Stiff, Brownish-Gray (10 YR 6/2) Lean CLAY; Little Sand and Gravel (CL).	2.75			ND						SS
4	24	8	10		1.25			ND						SS
5	24	8	15	2" Wet Silty Sand Layer at 14.5 Ft.	1.5			ND						SS
6	24	21	20	Hard, Brownish-Gray (10 YR 6/2) SILT; Little to Some Fine Sand (ML).	4.5			ND						SS
7	2	21	25	Brownish-Gray (10 YR 6/2) Lean CLAY; Trace to Little Sand and Gravel (CL). Pushed Rock with Split-Spoon; Ribbon for Sample.	—			ND						SS
8	22	9	30	Very Stiff, Light Brownish-Gray (10 YR 6/2) SILT; Little to Some Fine Sand (ML).	2.25			ND						SS
9	22	24	35	Very Stiff to Hard, Weak Red (2.5 YR 4/2) Lean CLAY; Little Sand and Gravel (CL).	4.5+			ND						SS
				End of Boring at 35.0 Ft. ND = Non Detect										

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Signature John E. Graf JEG / JEG | Firm WARZYN INC.

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GEO-TECHNOLOGY INC.
PO BOX 51661
NEW BERLIN, WI 53151
414-821-1285

LOG OF BORING

PROJECT Proposed Tank Farm
PPG Industries, Inc.
Oak Creek, Wisconsin

BORING NO GTB1
ELEVATION 118.6
DATE 02FEB92
PROJECT 12007

SAMPLE INFO						USCS AND DESCRIPTION	PROPERTIES		
Smpl No.	Smpl Type	Recv (in)	Mois.	SPT 'N'	Depth (ft)		qu (tsf)	Moist. (%)	Other
						10" Crushed Stone			
1	Ss	18	M	12		Very Stiff - Hard Mottled Brown Lean CLAY; Trace Sand & Gravel (CL)	4.5+*	16.0	
2	Ss	18	M	23	5		4.5+* 7.34	21.3	DD=108pcf
3	Ss	18	M	17			4.4*	23.5	
4	Ss	7	M	28	10		3.8* 4.4*		
						Stiff - Very Stiff Gray Lean CLAY; Trace Sand & Gravel (CL)			
5	Ss	18	M	15	15	Occasional Silt Seams & Layers	2.5*	14.9	
6	Ss	18	M	11	20		1.6*	13.8	
						Hard Brown/Gray Lean CLAY; Some fine Sand, Trace Gravel (CL)			
7	Ss	18	M	52	25	Few Cobbles & Boulders			
						Medium Dense Gray SILT;			
8	Ss	18	W	29	30	Trace Sand & Gravel (ML)			
						End of Boring – 30.0 feet Backfilled with Bentonite Chips			
					35				
					40				

WATER LEVEL DURING DRILLING, FT.	12
WATER LEVEL AFTER COMPLETION:	26.5
TIME AFTER COMPLETION:	0.25 Hours
DEPTH TO CAVE-IN, FT.	26.5

DRILLING METHOD
CME 45 Rig
2.25" HSA

Note: Soil stratification lines are approximate & transitions may be gradual.

GEO-TECHNOLOGY INC.
PO BOX 51661
NEW BERLIN, WI 53151
414-821-1285

PROJECT Proposed Tank Farm
PPG Industries, Inc.
Oak Creek, Wisconsin

ELEVATION 118.8
DATE 02FEB92
PROJECT 12007

SAMPLE INFO						USCS AND DESCRIPTION	PROPERTIES		
Smpl No.	Smpl Type	Recv (in)	Mois.	SPT 'N'	Depth (ft)		qu (tsf)	Moist. (%)	Other
1	G	6	M	–		FILL: Dark Brown Clayey Topsoil	1.8*		
2	Ss	12	M	10			2.5*	25.0	
						FILL: Brown Lean Clay; Trace Sand & Gravel			
3	Ss	18	M	8	5		1.5*	23.2	
4	Ss	18	M	15		Hard Mottled Brown Lean CLAY; Trace Sand & Gravel (CL)	4.5+*	15.6	
5	Ss	18	M	24	10		4.5+*	22.8	
						Stiff - Very Stiff Gray Silty CLAY; Little Sand & Trace Gravel (CL)			
6	Ss	18	M/W	10	15	Occasional Silt and Sand Seams & Layers	2.3*	17.9	
7	Ss	18	M	9	20		1.3*	14.8	
8	Ss	18	M	11	25		1.8*		
9	Ss	18	M	10	30		1.3*	15.8	
						End of Boring – 30.0 feet Backfilled with Bentonite Chips			
					35				
					40				

		DRILLING METHOD
WATER LEVEL DURING DRILLING, FT.	13	CME 45 Rig
WATER LEVEL AFTER COMPLETION:	25.0	2.25" HSA
TIME AFTER COMPLETION:	0.25 Hours	
DEPTH TO CAVE-IN, FT.	28.0	

Note: Soil stratification lines are approximate & transitions may be gradual.

LOG OF BORING

GEO-TECHNOLOGY INC.
PO BOX 51861
NEW BERLIN, WI 53151
414-821-1285

PROJECT Proposed Tank Farm
PPG Industries, Inc.
Oak Creek, Wisconsin

ELEVATION 114.8
DATE 02FEB92
PROJECT 12007

SAMPLE INFO						USCS AND DESCRIPTION	PROPERTIES		
Smpl No.	Smpl Type	Recv (in)	Mois.	SPT "N"	Depth (ft)		qu (tsf)	Moist. (%)	Other
1	Ss	12	M	8		FILL: Brown Mottled Lean Clay; Trace Sand & Gravel	2.3*	15.6	
2	Ss	18	M	31	5	Very Stiff - Hard Mottled Brown Lean CLAY; Trace Sand & Gravel (CL)	4.5+*	15.6	
3	Ss	18	M	15			4.3* 4.43	26.0	DD=99 pcf
4	Ss	12	M/W	12	10	Medium Dense Brown SAND; with Gravel (SW) (Strong Solvent Odor)			
						Medium - Stiff Gray Lean CLAY; Trace Sand & Gravel (CL)	1.3*		
5	Ss	6	M	9	15	Occasional Silt Seams & Layers	1.0*		
6	Ss	18	M	12	20		1.5*		
						Dense Gray SILT; Trace Sand & Gravel (ML)			
7	Ss	18	M	32	25				
8	Ss	18	W	30	30	Some Gray Clay Seams & Layers			
						End of Boring – 30.0 feet Backfilled with Bentonite Chips			
					35				
					40				

WATER LEVEL DURING DRILLING, FT.	8	DRILLING METHOD
WATER LEVEL AFTER COMPLETION:	6.0	CME 45 Rig
TIME AFTER COMPLETION:	0.25 Hours	2.25" HSA
DEPTH TO CAVE-IN, FT.	27.5	

Note: Soil stratification lines are approximate & transitions may be gradual.

GEO-TECHNOLOGY INC.
PO BOX 51661
NEW BERLIN, WI 53151
414-821-1285

LOG OF BORING

PROJECT Proposed Tank Farm
PPG Industries, Inc.
Oak Creek, Wisconsin

BORING NO GTB4
ELEVATION 114.4
DATE 02FEB92
PROJECT 12007

SAMPLE INFO						USCS AND DESCRIPTION	PROPERTIES		
Smpl No.	Smpl Type	Recv (In)	Mois.	SPT "N"	Depth (ft)		qu (tsf)	Moist. (%)	Other
1	G	6	M	–		Dark Brown Clayey Topsoil			
2	Ss	18	M	11		FILL: Mottled Brown Lean Clay, Trace Sand & Gravel	2.3*	22.4	
3	Ss	18	M	19	5	Very Stiff - Hard Mottled Brown Lean CLAY; Trace Sand & Gravel (CL) Occasional Brown Fine-Medium Sand Seams	3.5* 4.0*	16.2	
4	Ss	18	M	22			4.5+*	16.0	
5	Ss	18	M/W	23	10		3.8*		
6	Ss	18	M/W	10	15	Stiff - Very Stiff Gray Lean CLAY; Trace Sand & Gravel (CL) Occasional Silt Seams & Layers	1.5*	13.1	
7	Ss	18	M	14	20		3.7* 4.3*		
8	Ss	18	M	19	25		4.5*	13.1	
9	Ss	18	M	15	30		2.5* 2.79	20.4	DD=110pcf
					35	End of Boring – 30.0 feet Backfilled with Bentonite Chips			
					40				

WATER LEVEL DURING DRILLING, FT.	9.5	DRILLING METHOD
WATER LEVEL AFTER COMPLETION:	25.0	CME 45 Rig
TIME AFTER COMPLETION:	0.25 Hours	2.25" HSA
DEPTH TO CAVE-IN, FT.	27.5	

Note: Soil stratification lines are approximate & transitions may be gradual.

GEO-TECHNOLOGY INC. PO BOX 51881 NEW BERLIN, WI 53151 414-821-1285	PROJECT Proposed Tank Farm PPG Industries, Inc. Oak Creek, Wisconsin	ELEVATION 114.9 DATE 02FEB92 PROJECT 12007

SAMPLE INFO						USCS AND DESCRIPTION	PROPERTIES		
Smpl No.	Smpl Type	Recv (in)	Mois.	SPT "N"	Depth (ft)		qu (tsf)	Moist. (%)	Other
						FILL: Brown Lean Clay; Trace Sand & Gravel Trace Topsoil			
1	Ss	18	M	11			4.3+	18.1	
2	Ss	18	M	10	5		3.3+	18.0	
3	Ss	18	M	20		Very Stiff - Hard Brown Lean CLAY; Trace Sand & Gravel (CL)	4.5+*	15.6	
4	Ss	18	M	21	10		4.5+* 6.55	21.1	OD=107
						Gray Lean CLAY; Trace Sand & Gravel (CL)			
5	Ss	1	M	16	15				
						Medium Dense - Dense Gray SILT; Little Sand, Trace Gravel (ML)			
6	Ss	18	M	21	20				
7	Ss	18	M	42	25	Some Gray Clay Seams & Layers			
						Stiff Gray Lean CLAY; Trace Sand & Gravel (CL)			
8	Ss	18	M	15	30		1.2+ 2.0+	15.3	
						End of Boring – 30.0 feet Backfilled with Bentonite Chips			
					35				
					40				

WATER LEVEL DURING DRILLING, FT.	28	DRILLING METHOD
WATER LEVEL AFTER COMPLETION:	24.0	CME 45 Rig
TIME AFTER COMPLETION:	0.25 Hours	2.25" HSA
DEPTH TO CAVE-IN, FT.	27.0	

Note: Soil stratification lines are approximate & transitions may be gradual.

D

GEOLOGIC CROSS SECTIONS

D1 - WARZYN ENGINEERING, INC., 1981
D2 - WARZYN INC., 1992

D1

WARZYN ENGINEERING, INC., 1981

LEGEND

- TW1 107.54 — GROUNDWATER MONITORING WELL, NUMBER AND GROUNDWATER ELEVATION
- B24 — SOIL BORING AND NUMBER
- EXISTING GROUND CONTOUR
- —114— WATER TABLE CONTOUR
- PPG PROPERTY LINE
- SURFACE WATER
- PRIVATE WATER SUPPLY WELLS
- DIRECTION OF GROUNDWATER FLOW
- A A — GEOLOGIC CROSS-SECTION LOCATION
- DIRECTION OF SURFACE WATER FLOW

NOTES

1) GROUNDWATER MONITORING WELLS TW-1 THROUGH TW-5 INSTALLED BY WARZYN ENGINEERING INC., DURING JULY, 1981, AND TW-6 THROUGH TW-8 DURING AUGUST, 1981.

2) LOCATION AND ELEVATION SURVEYS PERFORMED ON GROUNDWATER MONITORING WELLS BY WARZYN ENGINEERING, JULY 13, 1981 (WELLS TW1 - TW5) AND AUGUST 17, 1981 (WELLS TW6 - TW8).

3) SOIL BORINGS 1 THROUGH 30 PERFORMED BY ACKENHEIL AND ASSOCIATES GEO SYSTEMS, PITTSBURGH, PENNSYLVANIA DURING 1973. REFERENCE REPORT, FOUNDATION EXPLORATION, GEOLZER FARM AND THE A.J. KERBER PORTION OF JOHN KERBER, SR. FARM, OAK CREEK, WISCONSIN, PROJECT CR 7201.

4) WATER TABLE MAP REFLECTS MEASUREMENTS COLLECTED ON SEPTEMBER 3, 1981.

5) BASE MAP COMPILED FROM TOPOGRAPHIC MAPS PROVIDED BY THE CITY OF OAK CREEK PLANNING DEPARTMENT; SW 1/4, SECTION 32, NW 1/4, SECTION 32, SE 1/4, SECTION 31; AND NE 1/4, SECTION 31.

6) TO CONVERT EXISTING GROUND ELEVATIONS AND WATER TABLE ELEVATIONS TO USGS DATUM, ADD 590.56 FEET.

7) SURFACE WATER ELEVATIONS OF ROOT RIVER AND SPILL INTERCEPTOR MEASURED ON 7-13-81

TW6 119.31
TW5 109.23
TW7 112.24
TW4 111.23
TW3 104.10
TW2 106.86
TW8 106.35
TW1 107.54

ADMINISTRATION OFFICE
LAB
DRUM STORAGE AREA
PAINT MANUFACTURING
RESIN PLANT
TANK FARM
PPG PROPERTY LINE
SPILL INTERCEPTOR
SURFACE WATER ELEVATION = 111.3
SURFACE WATER ELEVATION = 81.6
DIRECTION OF FLOW
UNNAMED DRAINAGE DITCH
ROOT RIVER
WISCONSIN ELECTRIC POWER COMPANY
CHICAGO NORTH WESTERN TRANSPORTATION COMPANY

north

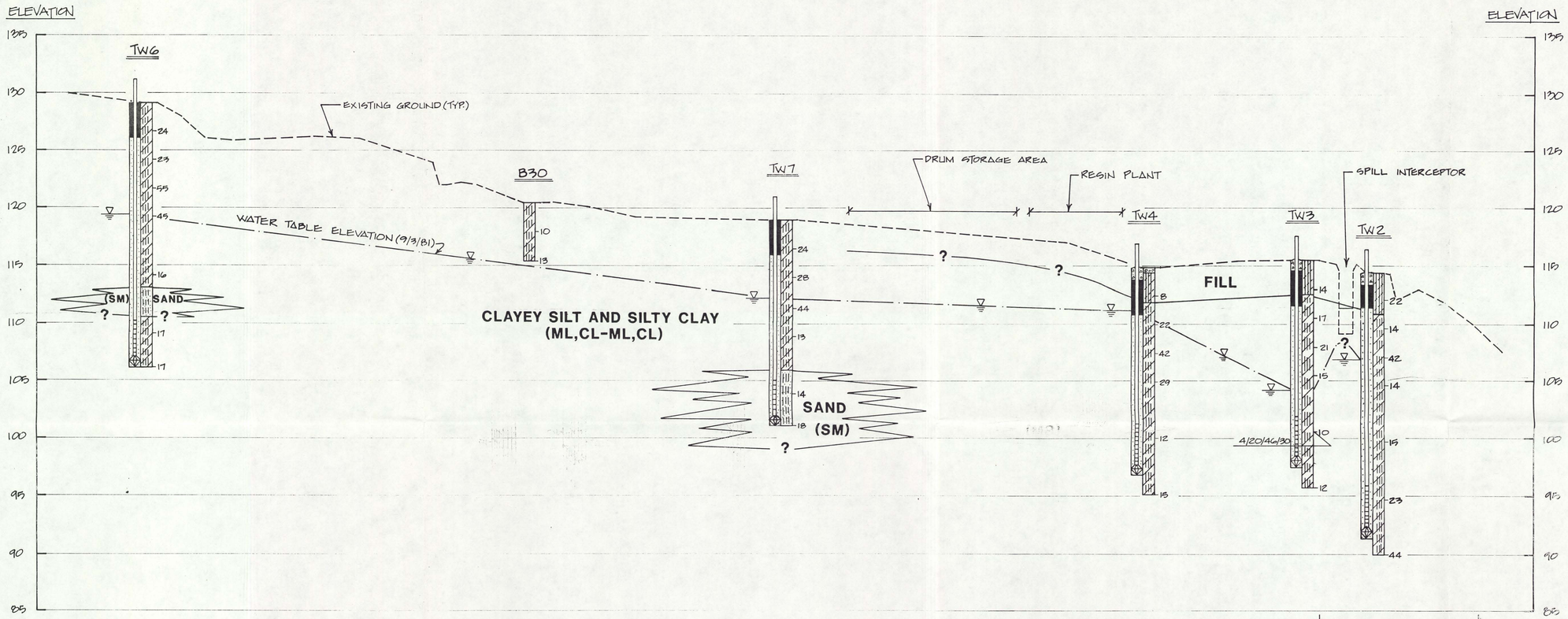
NO.	BY	DATE	REVISION	APP'D

WATER TABLE MAP (9-3-81)

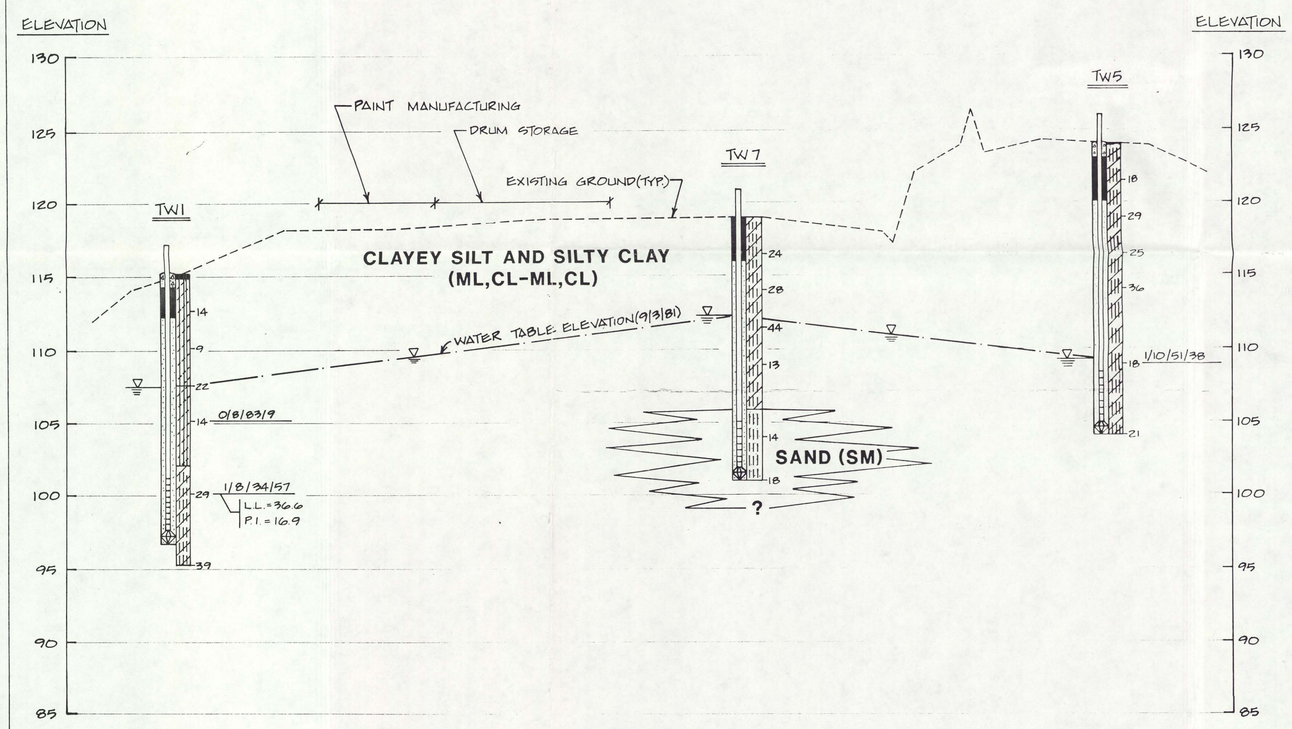
PRELIMINARY HYDROGEOLOGIC INVESTIGATION
PPG INDUSTRIES, INC.
SW 1/4 SECTION 32 T5N R22E
OAK CREEK MILWAUKEE CO. WISCONSIN

WARZYN ENGINEERING INC

DRAWN MAS, TDH	SCALE 1"=200'	SHEET 1 OF 2
CHECKED AJS	DATE 11/14/81	DRAWING NO. C10021 - 2
APPROVED Dan L. W. Hall		
REFERENCE		PRINTED OCT 20 1981



SECTION A-A



SECTION B-B

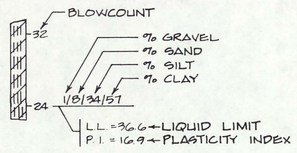
CROSS SECTION SCALE
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 100'
SECTIONS EXAGGERATED VERTICALLY 20 TIMES

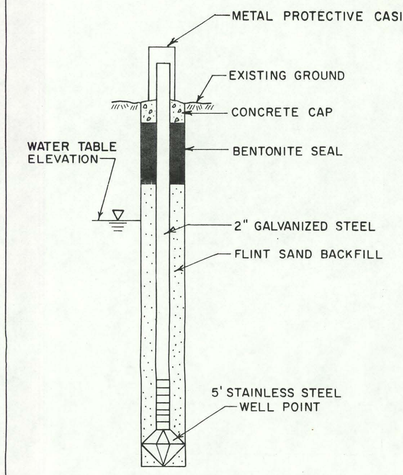
LEGEND

- TOPSOIL
- BROWN CLAYEY SILT (FILL MATERIAL) (ML)
- BROWN CLAYEY SILT, LITTLE TO SOME SAND, TRACE GRAVEL (ML)
- SILTY CLAY, TRACE TO LITTLE SAND, TRACE GRAVEL (CL) (CL-ML)
- SILTY FINE TO MEDIUM SAND, TRACE TO LITTLE CLAY (SM)
- CRUSHED STONE
- APPROXIMATE WATER TABLE ELEVATION

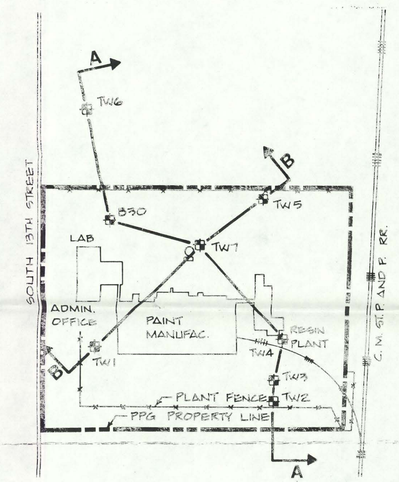
NOTES

1. THE GEOLOGIC CROSS SECTIONS ARE GENERAL IN NATURE AND DO NOT PURPORT TO BE AN EXACT REPRESENTATION OF SUB-SURFACE CONDITIONS BETWEEN INDIVIDUAL BORINGS.
2. THE WATER TABLE ELEVATION IS BASED ON OBSERVATIONS OF 9/3/81.
3. THE CROSS SECTION LOCATIONS ARE SHOWN ON DRAWING C 10021-2.
4. TO CONVERT GROUND ELEVATIONS AND WATER TABLE ELEVATIONS TO USGS DATUM, ADD 580.50 FEET.
5. GRAIN SIZE ANALYSIS AND BLOW COUNTS:





TYPICAL WELL INSTALLATION DETAIL



CROSS SECTION LOCATION MAP

NO.	BY	DATE	REVISION	APP'D

GEOLOGIC CROSS SECTIONS

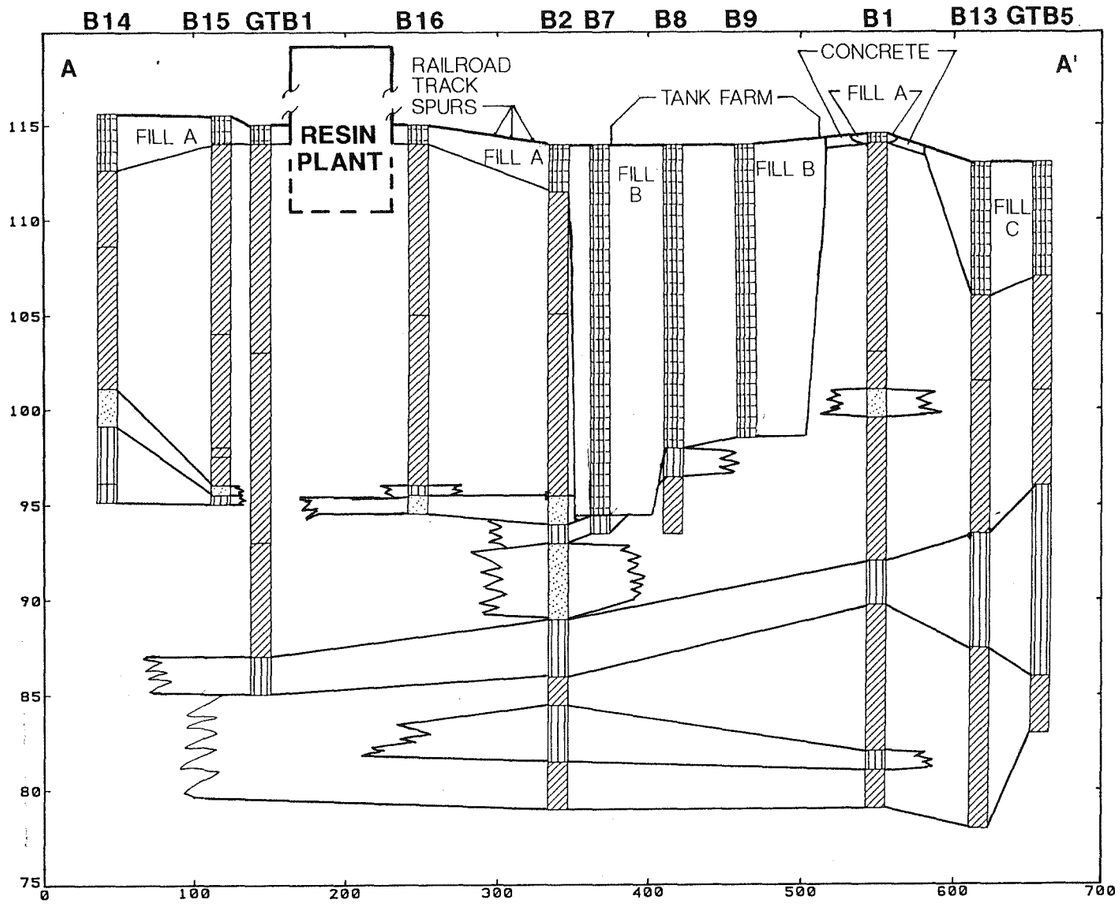
PRELIMINARY HYDROGEOLOGIC INVESTIGATION
PPG INDUSTRIES, INC.
SW 1/4 SECTION 32 T5N R22E
OAK CREEK MILWAUKEE CO. WISCONSIN

WARZYN ENGINEERING INC

DRAWN MAS, TDH	SCALE AS SHOWN	SHEET 2	OF 2
CHECKED AJS	DATE 12/14/81	DRAWING NO	C10021-3
APPROVED Richard W. Hall		PRINTED	OCT 20 1982
REFERENCE			

D2

WARZYN INC., 1992



HORIZONTAL SCALE 1" = 100'
VERTICAL SCALE 1" = 8'
VERTICAL EXAGGERATION = 1.25x

LEGEND

- FILL A: 3 TO 6 INCHES COARSE GRAVEL OVERLYING FINE TO MEDIUM SAND WITH SOME GRAVEL
- FILL B: 4 TO 6 INCHES COARSE GRAVEL OVERLYING SAND AND CLAY
- FILL C: 4 INCHES TOPSOIL AND SOD OVERLYING CLAY, SAND AND GRAVEL
- LEAN CLAY
- FINE SAND
- SILT

NOTES

1. CROSS-SECTION IS GENERAL IN NATURE AND DOES NOT PURPORT TO BE AN EXACT REPRESENTATION OF SUBSURFACE CONDITIONS.
2. ELEVATIONS ARE RELATIVE TO SITE BENCHMARK DATUM IN FEET AS SURVEYED BY NATIONAL SURVEY ON APRIL 24, 1992. REFER TO FIGURE 2 (DRAWING # 27350-D1) FOR BENCHMARK LOCATION.
3. ALL HORIZONTAL DISTANCES ARE MEASURED WITH RESPECT TO THE CENTER OF EACH SOIL BORING. REFER TO FIGURE 2 (DRAWING #27350-D1) "BORING AND MONITORING WELL LOCATION PLAN" FOR LOCATION OF CROSS-SECTION. BORINGS INFERRED PERPENDICULAR TO CROSS-SECTION LINE A – A' AS BEST FIT.

FIGURE 3

QUALITY CONTROL | Graphic Standards CCM 4-30-92 | Lead Professional KRK 4-30-92 | Technical Review | Project Manager | Management Review | Other

Developed By: KRK | Drawn By: CCM | Approved By: | Date: | Reference: | Revisions:

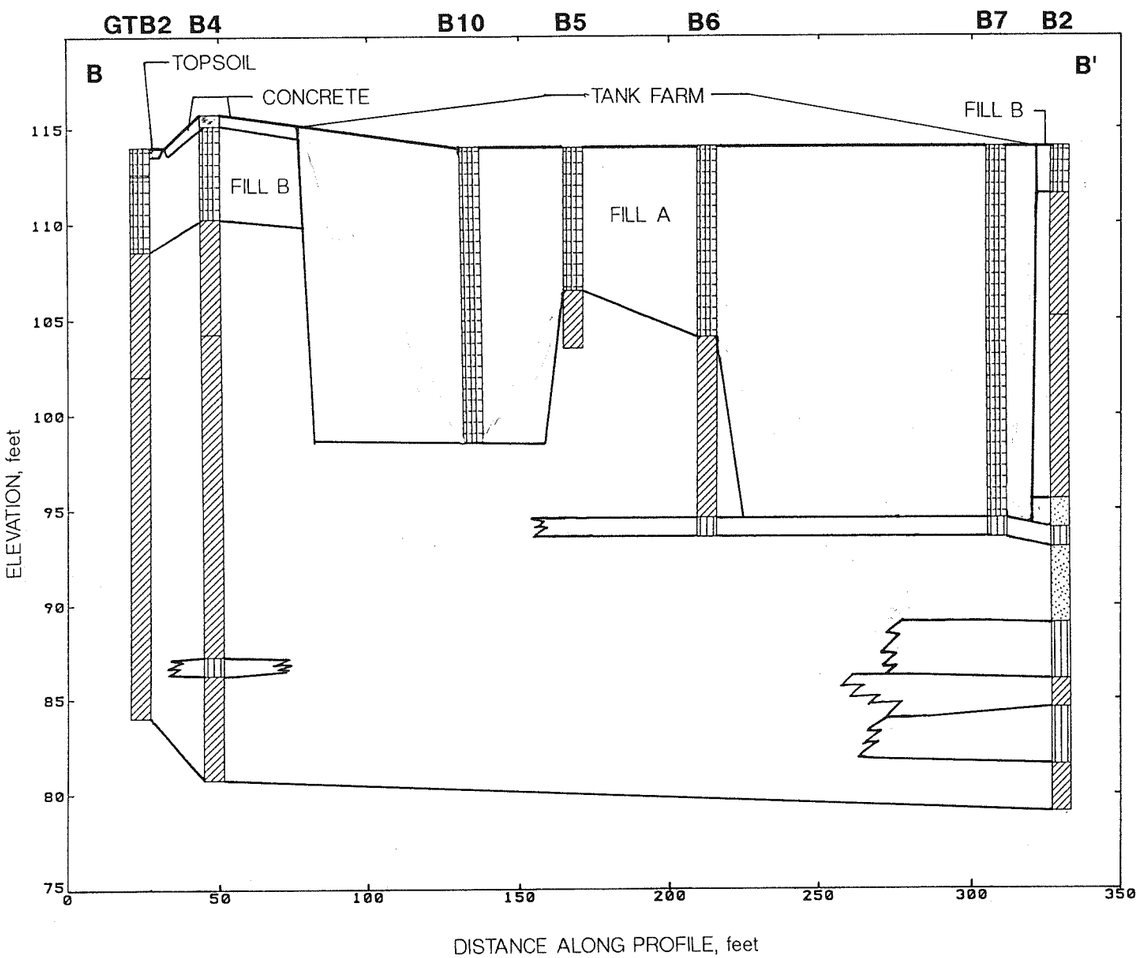
GEOLOGIC CROSS-SECTION A - A'

SOIL AND GROUNDWATER ASSESSMENT
PPG INDUSTRIES INC.
OAK CREEK, WISCONSIN FACILITY

Drawing Number 27350 B4

WARZYN

WARZYN INC.



HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 8'
VERTICAL EXAGGERATION = 6.25x

LEGEND

- FILL A: 4 TO 6 INCHES COARSE GRAVEL OVERLYING FINE TO MEDIUM SAND AND GRAVEL
- FILL B: 4 TO 6 INCHES COARSE GRAVEL OVERLYING CLAY, SAND AND GRAVEL
- LEAN CLAY
- FINE SAND
- SILT

NOTES

1. CROSS-SECTION IS GENERAL IN NATURE AND DOES NOT PURPORT TO BE AN EXACT REPRESENTATION OF SUBSURFACE CONDITIONS.
2. ELEVATIONS ARE RELATIVE TO SITE BENCHMARK DATUM IN FEET AS SURVEYED BY NATIONAL SURVEY ON APRIL 24, 1992. REFER TO FIGURE 2 (DRAWING # 27350-D1) FOR BENCHMARK LOCATION.
3. ALL HORIZONTAL DISTANCES ARE MEASURED WITH RESPECT TO THE CENTER OF EACH SOIL BORING. REFER TO FIGURE 2 (DRAWING #27350-D1) "BORING AND MONITORING WELL LOCATION PLAN" FOR LOCATION OF CROSS-SECTION. BORINGS INFERRED PERPENDICULAR TO CROSS-SECTION LINE A - A' AS BEST FIT.

FIGURE 4

QUALITY CONTROL | Graphic Standards | Lead Professional KR
CCM 4-30-92
Technical Review | Project Manager
1.30.92
Management Review | Other

Developed By: KRK
Drawn By: CCM
Approved By:
Date:
Reference:
Revisions:

GEOLOGIC CROSS-SECTION B - B'

SOIL AND GROUNDWATER ASSESSMENT
PPG INDUSTRIES INC.
OAK CREEK, WISCONSIN FACILITY

Drawing Number
27350 B5

WARZYN

WARZYN INC.

E

MONITORING WELL CONSTRUCTION DETAILS

E1 - WARZYN ENGINEERING, INC., 1981
E2 - GERAGHTY & MILLER, 1987
E3 - WARZYN INC., 1992

E1

WARZYN ENGINEERING, INC., 1981

WELL DETAIL INFORMATION SHEET

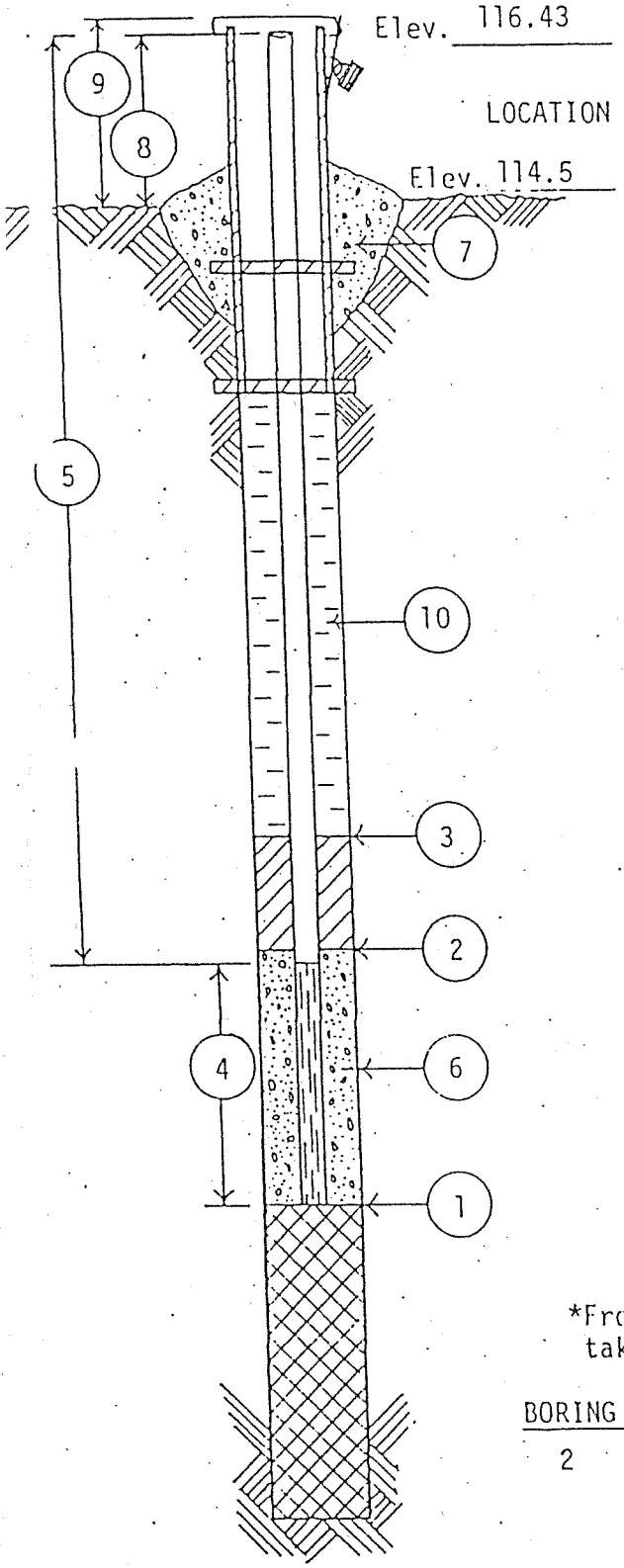
JOB NO. C 10021

BORING NO. TW-2

DATE 7/1/81

CHIEF JS

LOCATION PPG Industries, Inc., Oak Creek, Wisconsin



All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

(1) DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 23 FEET.

(2) DEPTH OF BOTTOM OF SEAL (if installed) 3 FEET.

(3) DEPTH TO TOP OF SEAL (if installed) 1 FEET.

(4) LENGTH OF (WELL POINT), PVC WELL SCREEN, OR SLOTTED PIPE 4'6" FEET. (Circle One)

(5) TOTAL LENGTH OF PIPE 20.5 FEET @ 2 IN. DIAMETER.

(6) TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand.

(7) CONCRETE CAP, (YES) NO (Circle One)

(8) HEIGHT OF WELL CASING ABOVE GROUND 2 FEET.

(9) PROTECTIVE CASING? (YES) NO (Circle One)
HEIGHT ABOVE GROUND 2.
LOCKING CAP? (YES) NO (Circle One)

(10) TYPE OF BACKFILL: Flint Sand

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
2	7/1/81	¼ hour	19'	
	7/2/81	12 hours	9'	

WARZYN ENGINEERING INC

WELL DETAIL INFORMATION SHEET

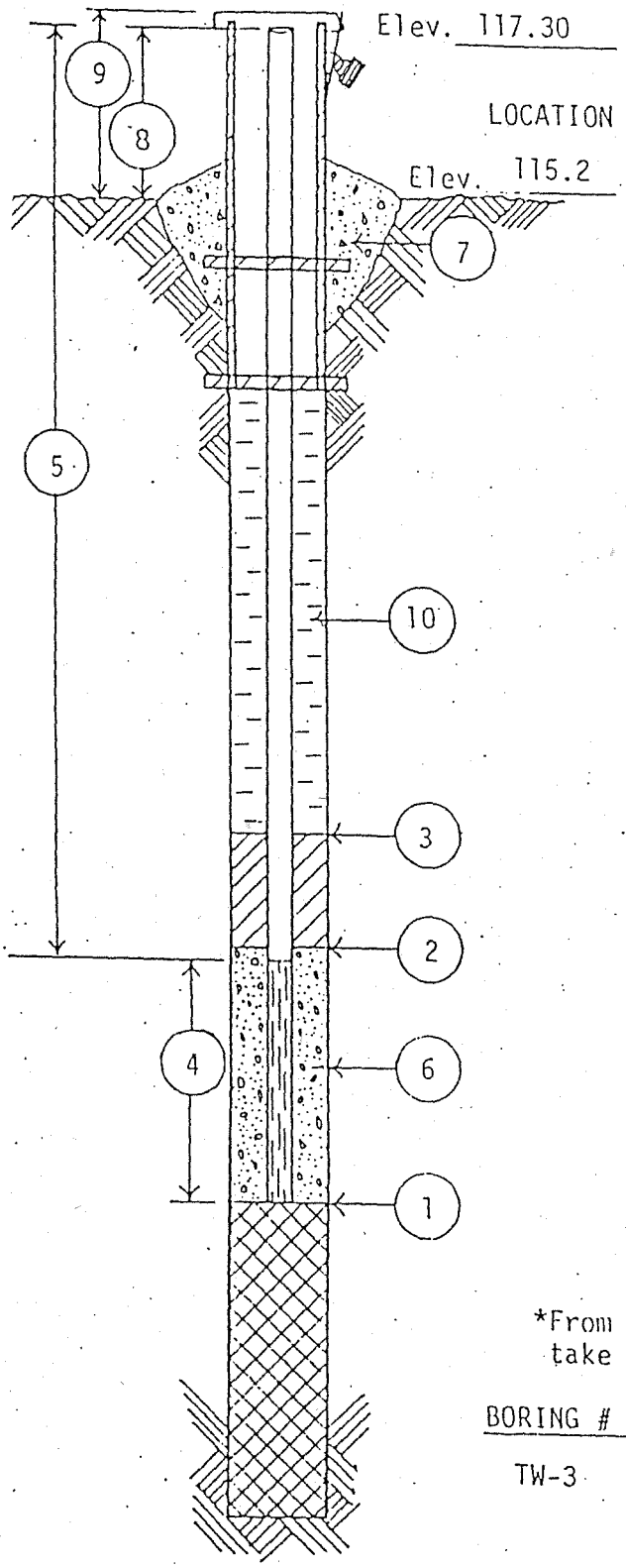
JOB NO. C 10021

BORING NO. TW-1

DATE 7/1/81

CHIEF JS

LOCATION PPG Industries, Inc., Oak Creek, Wisconsin



All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 18.5 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 3 FEET.
3. DEPTH TO TOP OF SEAL (if installed) 1 FEET.
4. LENGTH OF (WELL POINT) PVC WELL SCREEN, OR SLOTTED PIPE 4'6" FEET. (Circle One)
5. TOTAL LENGTH OF PIPE 16 FEET @ 2 IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand.
7. CONCRETE CAP, (YES) NO (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 2 FEET.
9. PROTECTIVE CASING? (YES) NO (Circle One)
   HEIGHT ABOVE GROUND 2.
   LOCKING CAP? (YES) NO (Circle One)
10. TYPE OF BACKFILL: Flint Sand

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
TW-3	7/1/81	3 hours	4'	
	7/2/81	12 hours	10'	

WARZYN ENGINEERING INC

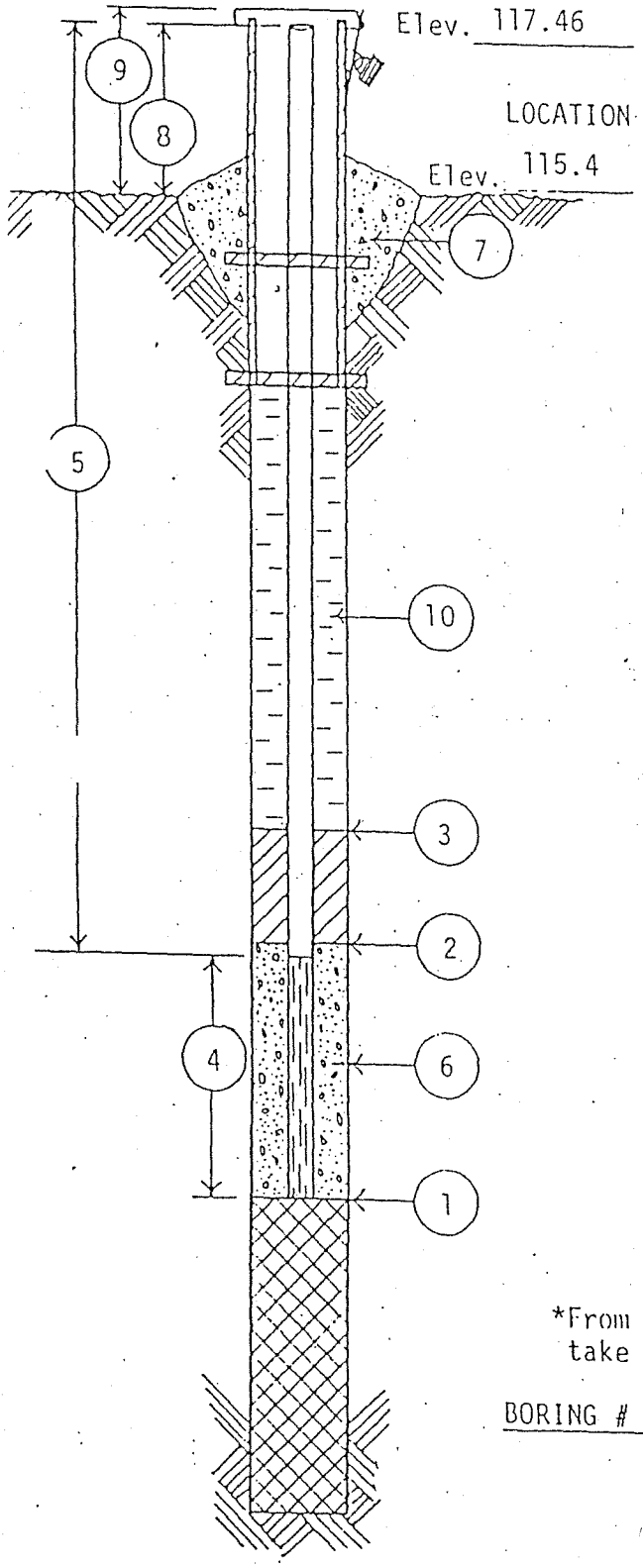
WELL DETAIL INFORMATION SHEET

JOB NO. C 10021

BORING NO. TW-3

DATE 7/2/81

CHIEF JS



LOCATION PPG Industries, Inc., Oak Creek, Wisconsin

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

(1) DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 18 FEET.

(2) DEPTH OF BOTTOM OF SEAL (if installed) 4 FEET.

(3) DEPTH TO TOP OF SEAL (if installed) 1 FEET.

(4) LENGTH OF (WELL POINT), PVC WELL SCREEN, OR SLOTTED PIPE 4'6" FEET. (Circle One)

(5) TOTAL LENGTH OF PIPE 15'6" FEET @ 2 IN. DIAMETER.

(6) TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand.

(7) CONCRETE CAP, (YES) NO (Circle One)

(8) HEIGHT OF WELL CASING ABOVE GROUND 2 FEET.

(9) PROTECTIVE CASING? (YES) NO (Circle One)
HEIGHT ABOVE GROUND 2.
LOCKING CAP? (YES) NO (Circle One)

(10) TYPE OF BACKFILL: Flint Sand

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN ENGINEERING INC

WELL DETAIL INFORMATION SHEET

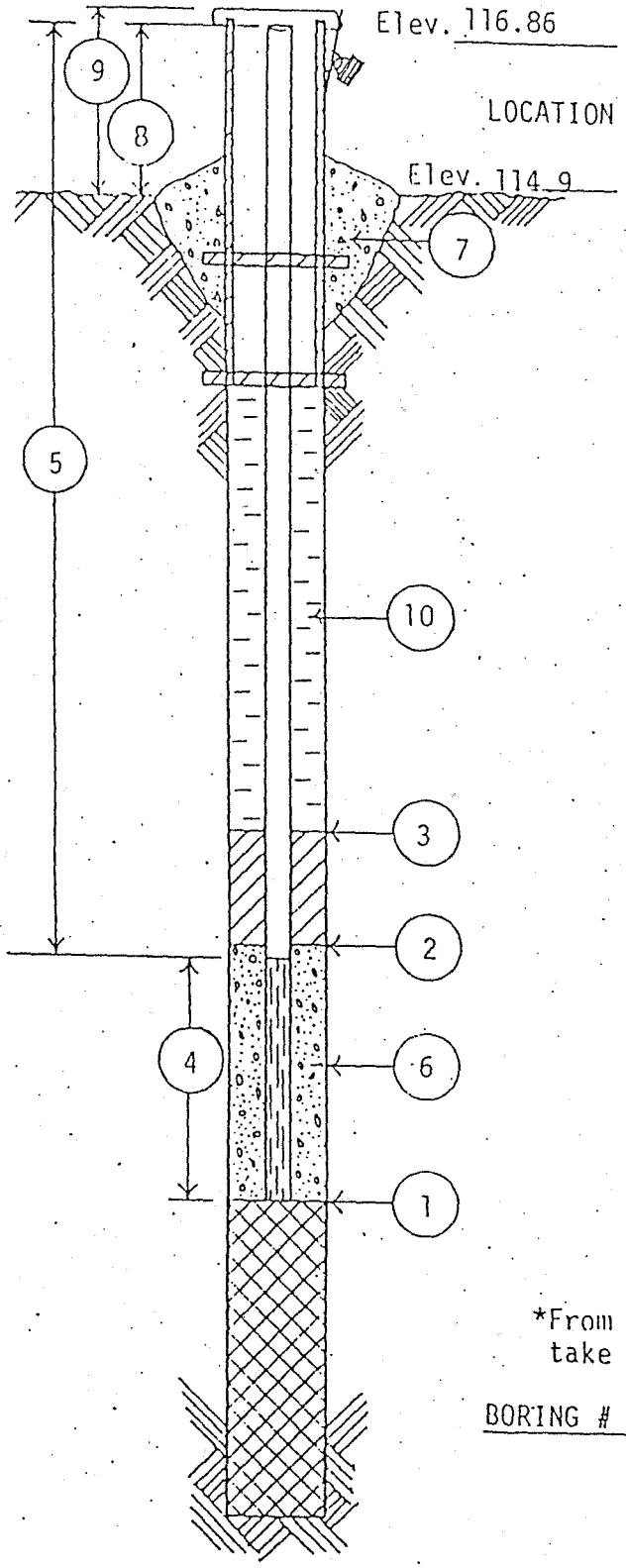
JOB NO. C 10021

BORING NO. TW-4

DATE 7/2/81

CHIEF JS

LOCATION PPG Industries, Inc., Oak Creek, Wisconsin



All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

(1) DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 18 FEET.

(2) DEPTH OF BOTTOM OF SEAL (if installed) 4 FEET.

(3) DEPTH TO TOP OF SEAL (if installed) 1 FEET.

(4) LENGTH OF (WELL POINT) PVC WELL SCREEN, OR SLOTTED PIPE 4'6" FEET. (Circle One)

(5) TOTAL LENGTH OF PIPE 15'6" FEET @ 2 IN. DIAMETER.

(6) TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand.

(7) CONCRETE CAP, (YES) NO (Circle One)

(8) HEIGHT OF WELL CASING ABOVE GROUND 2 FEET.

(9) PROTECTIVE CASING? (YES) NO (Circle One)
HEIGHT ABOVE GROUND 2'.
LOCKING CAP? (YES) NO (Circle One)

(10) TYPE OF BACKFILL: Flint Sand

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN ENGINEERING INC

E2

GERAGHTY & MILLER, 1987

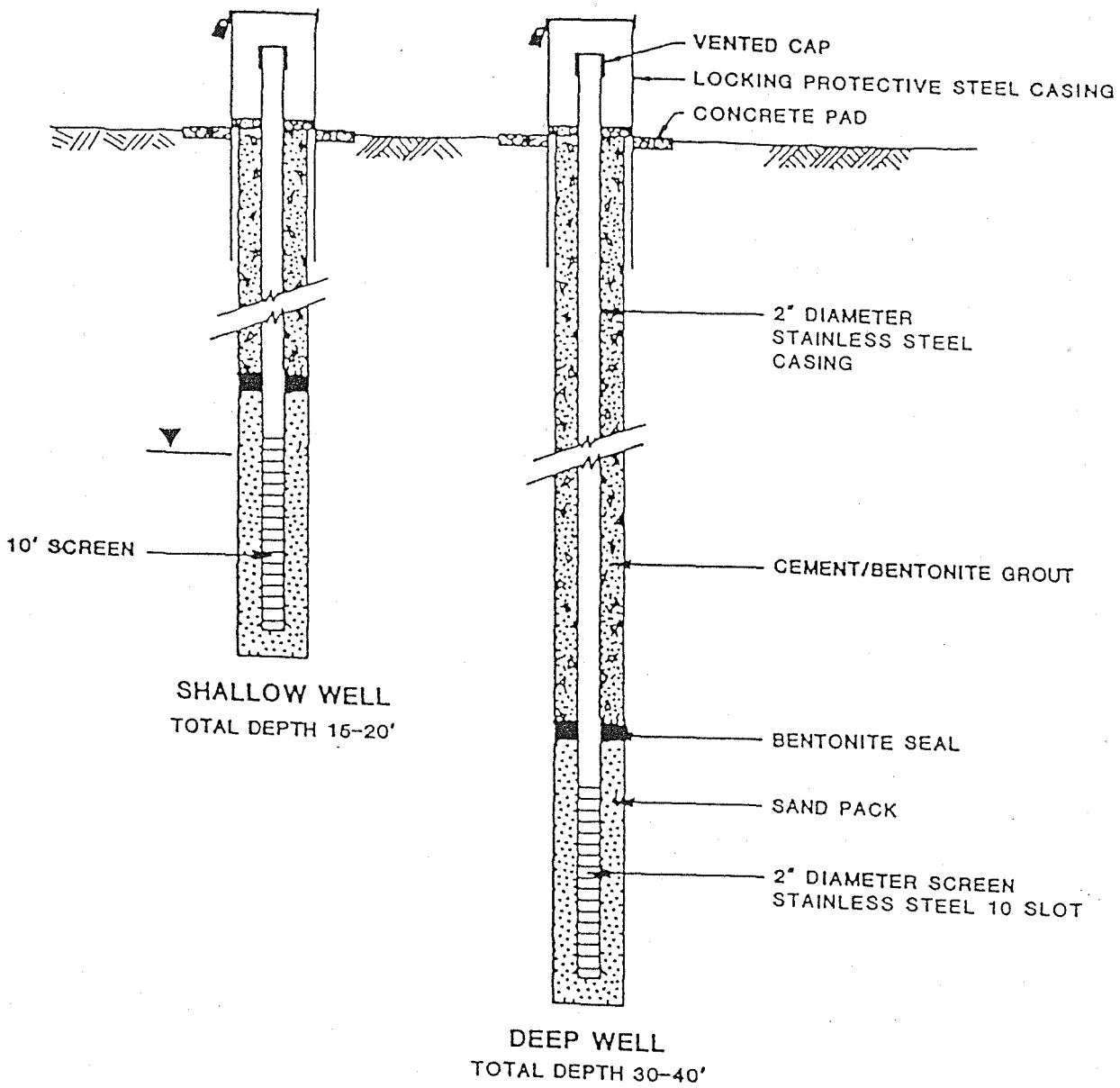


FIGURE 3
MONITORING WELL
CONSTRUCTION DETAILS MW-9
GROUND-WATER ASSESSMENT THRU
PPG INDUSTRIES
OAK CREEK, WISCONSIN MW-16

GERAGHTY & MILLER, INC.
Ground-Water Consultants

E3

WARZYN INC., 1992

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: PPG Industries	Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W	Well Name: LW-1
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N. _____ ft. E.	Wis. Unique Well Number / DNR Well Number: _____ / _____
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location of Waste/Source: ___1/4 of ___1/4 of Sec. ___, T. ___ N, R. ___ ☐E. ☐W.	Date Well Installed: 12/06/91 (m m d d y y)
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Eugene Lehman; J&J Soil Testing Ltd.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ _____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top _____ ft. MSL or 1.5 ft.
F. Fine sand, top _____ ft. MSL or 3.5 ft.
G. Filter pack, top _____ ft. MSL or 4.0 ft.
H. Screen joint, top _____ ft. MSL or 5.0 ft.
I. Well bottom _____ ft. MSL or 15.0 ft.
J. Filter pack, bottom _____ ft. MSL or 15.0 ft.
K. Borehole, bottom _____ ft. MSL or 15.0 ft.
L. Borehole, diameter 8.2 in.
M. O.D. well casing 2.40 in.
N. I.D. well casing 2.00 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe: Flush Mount
a. Inside diameter: 8.5 in.
b. Length: 10 ft.
c. Material: Aluminum; Steel ☐ 04; Other ☒
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Sand; Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 0.67 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 03
6. Bentonite seal: a. Bentonite granules ☒ 32
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 33
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint Filter Sands & Gravels #45 – #55
b. Volume added 0.17 ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint Filter Sands & Gravels #30
b. Volume added 3.66 ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ _____
10. Screen material: Flush Threaded PVC Schedule 40
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 12; Other ☐ _____
b. Manufacturer: TIMCO
c. Slot size: 0.010 in.
d. Slotted length: 10. ft.
11. Backfill material (below filter pack): None ☒; Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Hull | Firm: Warzyn Inc.

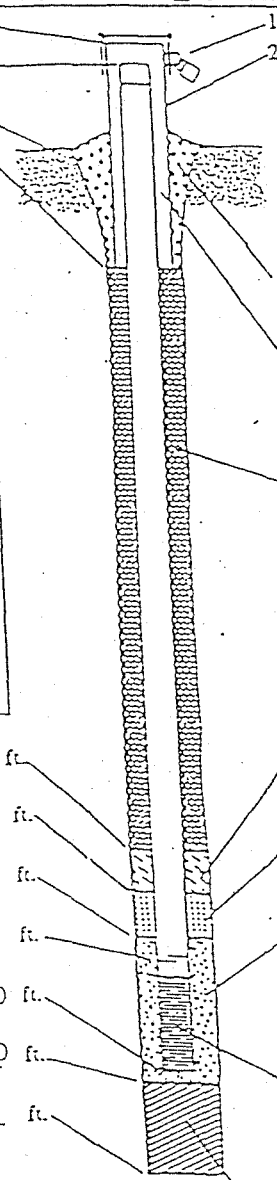
Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats. and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name	Local Grid Location of Well	Well Name
PPG Industries	_____ ft. ☐N ☐S _____ ft. ☐E ☐W	MW-2
Facility License, Permit or Monitoring Number	**Grid Origin Location**	**Wis. Unique Well Number / DNR Well Number**
_____	Lat. _____ Long. _____ or	
Type of Well Water Table Observation Well ☒ 11	St. Plane _____ ft. N, _____ ft. E.	**Date Well Installed** 12/06/91 (m m d d y y)
Piezometer ☐ 12	**Section Location of Waste/Source**	
Distance Well Is From Waste/Source Boundary	___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	**Well Installed By: (Person's Name and Firm)**
ft.	**Location of Well Relative to Waste/Source**	Eugene Lehman
Is Well A Point of Enforcement Std. Application?	u ☐ Upgradient s ☐ Sidegradient	J&J Soil Testing Ltd.
☐ Yes ☐ No	d ☐ Downgradient n ☐ Not Known	



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 15 ft.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe: Aboveground
   a. Inside diameter: 4.0 in.
   b. Length: 7.0 ft.
   c. Material: Steel ☒ 04 Other ☐ _____
   d. Additional protection? ☐ Yes ☒ No
   If yes, describe: _____
3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☒ 30 Annular space seal ☐ _____ Other ☐ _____
5. Annular space seal: a. Granular Bentonite ☒ 33
   b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
   c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
   d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
   e. 0.83 Ft³ volume added for any of the above
   f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 03
6. Bentonite seal: a. Bentonite granules ☒ 33
   b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
   c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
   a. Ped Flint Filter Sands & Gravels #45-#55
   b. Volume added 0.17 ft³
8. Filter pack material: Manufacturer, product name and mesh size
   a. Ped Flint Filter Sands & Gravels #30
   b. Volume added 3.50 ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ _____
10. Screen material: Flush Threaded PVC Schedule 40
    a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ _____
    b. Manufacturer: TIMCO
    c. Slot size: 0.010 in.
    d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐ _____

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 Hollow Stem Auger ☒ 41 Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis):
_____

E. Bentonite seal, top _____ ft. MSL or 15 ft.
F. Fine sand, top _____ ft. MSL or 40 ft.
G. Filter pack, top _____ ft. MSL or 45 ft.
H. Screen joint, top _____ ft. MSL or 50 ft.
I. Well bottom _____ ft. MSL or 150 ft.
J. Filter pack, bottom _____ ft. MSL or 150 ft.
K. Borehole, bottom _____ ft. MSL or 150 ft.
L. Borehole, diameter 8.2 in.
M. O.D. well casing 2.40 in.
N. I.D. well casing 2.00 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Graf
Firm: Warzyn Inc.

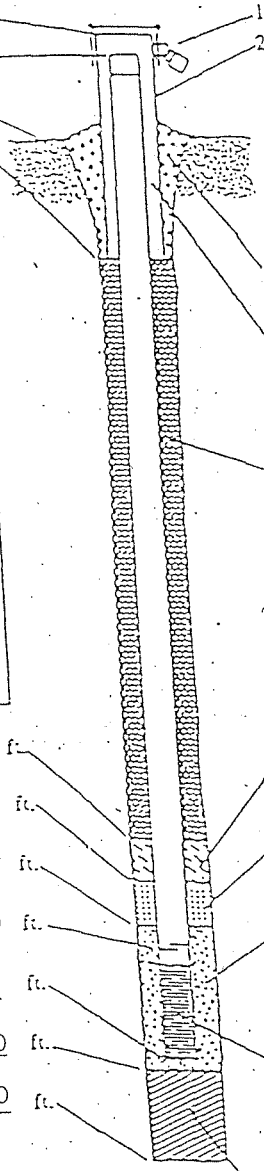
Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name	Local Grid Location of Well	Well Name
PPG Industries	_____ ft. ☐N ☐S _____ ft. ☐E ☐W	UH-3
Facility License, Permit or Monitoring Number	**Grid Origin Location**	**Wis. Unique Well Number / DNR Well Number**
_____	Lat. _____ Long. _____ or	
Type of Well Water Table Observation Well ☒ 11	St. Plane _____ ft. N, _____ ft. E.	**Date Well Installed** 12/04/91 (m m d d y y)
Piezometer ☐ 12	**Section Location of Waste/Source**	
Distance Well Is From Waste/Source Boundary	___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	**Well Installed By: (Person's Name and Firm)**
ft.	**Location of Well Relative to Waste/Source**	Eugene Lehman
Is Well A Point of Enforcement Std. Application?	u ☐ Upgradient s ☐ Sidegradient	J&J Soil Testing Ltd.
☐ Yes ☐ No	d ☐ Downgradient n ☐ Not Known	



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis):
_____

E. Bentonite seal, top _____ ft. MSL or 1.5 ft.
F. Fine sand, top _____ ft. MSL or 3.5 ft.
G. Filter pack, top _____ ft. MSL or 4.0 ft.
H. Screen joint, top _____ ft. MSL or 5.0 ft.
I. Well bottom _____ ft. MSL or 15.0 ft.
J. Filter pack, bottom _____ ft. MSL or 15.0 ft.
K. Borehole, bottom _____ ft. MSL or 15.0 ft.
L. Borehole, diameter 8.2 in.
M. O.D. well casing 2.40 in.
N. I.D. well casing 2.00 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe: Flush Mount
a. Inside diameter: 8.5 in.
b. Length: 1.0 ft.
c. Material: Steel ☐ 04
Aluminum Other ☒ [ ]
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
_____ Other ☐ [ ]
4. Material between well casing and protective pipe:
Bentonite ☐ 30
Annular space seal ☐ [ ]
Sand Other ☒ [ ]
5. Annular space seal: a. Granular Bentonite ☒ 35
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 0.67 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐ [ ]
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint Fitler Sands & Gravles #45-#55 [ ]
b. Volume added 0.17 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint Filter Sands & Gravels #30 [ ]
b. Volume added 3.66 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐ [ ]
10. Screen material: Flush Threaded PVC Schedule 40 [ ]
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 0[ ]
_____ Other ☐ [ ]
b. Manufacturer: TIMCO
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 1[ ]
_____ Other ☐ [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Warzyn | Firm: Warzyn Inc.

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats. and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name	Local Grid Location of Well	Well Name
PPG Industries	_____ ft. ☐N ☐S _____ ft. ☐E ☐W	MW-4D
Facility License, Permit or Monitoring Number	**Grid Origin Location**	**Well Unique Well Number / DNR Well Number**
_____	Lat. _____ Long. _____ or	_____
Type of Well Water Table Observation Well ☒ 11	St. Plane _____ ft. N, _____ ft. E.	**Date Well Installed** 12/06/91 (m m d d y y)
Piezometer ☐ 12	**Section Location of Waste/Source**	
Distance Well Is From Waste/Source Boundary	___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	**Well Installed By: (Person's Name and Firm)**
_____ ft.	**Location of Well Relative to Waste/Source**	Eugene Lehman
Is Well A Point of Enforcement Std. Application?	u ☐ Upgradient s ☐ Sidegradient	J&J Soil Testing Ltd.
☐ Yes ☐ No	d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☒ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

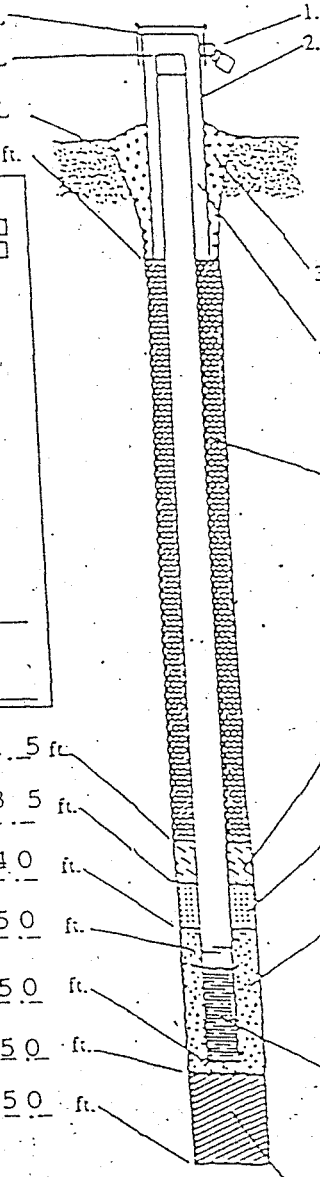
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
_____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis):
_____

E. Bentonite seal, top _____ ft. MSL or 1.5 ft.
F. Fine sand, top _____ ft. MSL or 35 ft.
G. Filter pack, top _____ ft. MSL or 40 ft.
H. Screen joint, top _____ ft. MSL or 50 ft.
I. Well bottom _____ ft. MSL or 150 ft.
J. Filter pack, bottom _____ ft. MSL or 150 ft.
K. Borehole, bottom _____ ft. MSL or 150 ft.
L. Borehole diameter 8.2 in.
M. O.D. well casing 2.40 in.
N. I.D. well casing 2.00 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe: Flush Mount
a. Inside diameter: 8.5 in.
b. Length: 1.0 ft.
c. Material: Aluminum Steel ☐ 04 Other ☒
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30 Annular space seal ☐ Sand Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 0.67 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint Filter Sands & Gravels #45-#55
b. Volume added 0.17 ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint Filter Sands & Gravels #30
b. Volume added 3.66 ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 25
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐
10. Screen material: Flush Threaded PVC Schedule 40
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01
_____ Other ☐
b. Manufacturer TIMCO
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 1
_____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Hurley Firm: Warzyn Inc.

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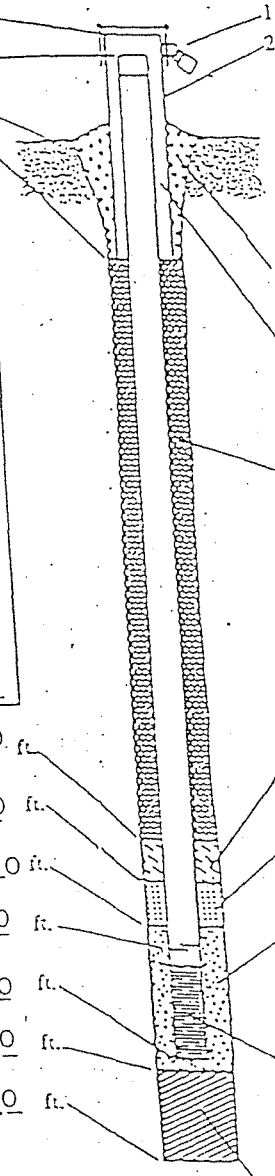
State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: PPG Industries	Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W	Well Name: LP-1
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number: DNR Well Number: _____
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location of Waste/Source: ___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Date Well Installed: 12/05/91 (m m d d y y)
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm): Eugene Lehman; J&J Soil Testing Ltd.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☒ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ _____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top _____ ft. MSL or 21.0 ft.
F. Fine sand, top _____ ft. MSL or 26.0 ft.
G. Filter pack, top _____ ft. MSL or 28.0 ft.
H. Screen joint, top _____ ft. MSL or 30.0 ft.
I. Well bottom _____ ft. MSL or 35.0 ft.
J. Filter pack, bottom _____ ft. MSL or 36.0 ft.
K. Borehole, bottom _____ ft. MSL or 36.0 ft.
L. Borehole, diameter 8.2 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe: Flush Mount
a. Inside diameter: 8.5 in.
b. Length: 1.0 ft.
c. Material: Aluminum; Steel ☐ 04; Other ☒
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; _____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Sand; Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 8.16 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 03
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite pellets ☒ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint Filter Sands & Gravels #45-#55
b. Volume added 0.67 ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint Filter Sands & Gravels #30
b. Volume added 2.66 ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; _____ Other ☐
10. Screen material: Flush Threaded PVC Schedule 40
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 0_; _____ Other ☐
b. Manufacturer: TIMCO
c. Slot size: 0.010
d. Slotted length: 5.0
11. Backfill material (below filter pack): None ☒ 1_; _____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Warzyn | Firm: Warzyn Inc.

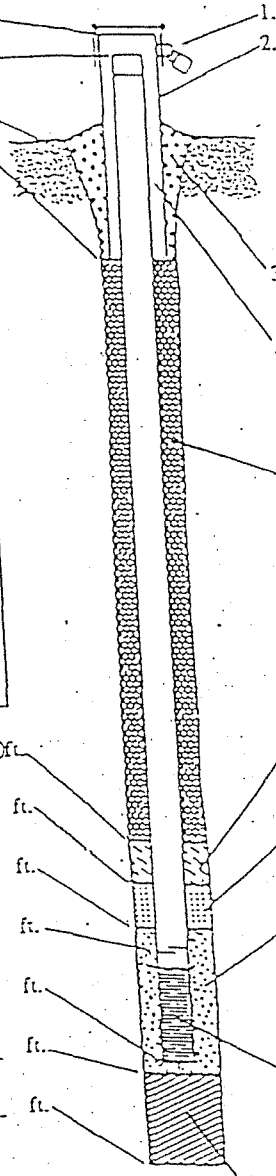
Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats. and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: PPG Industries	Local Grid Location of Well: ☐N ☐S _____ ft. ☐E ☐W _____ ft.	Well Name: LP-3
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number / DNR Well Number: _____
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location of Waste/Source: ___1/4 of ___1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Date Well Installed: 12/04/91 (m m d d y y)
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Eugene Lehman; J&J Soil Testing Ltd.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.5 ft.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe: Flush Mount
   a. Inside diameter: 8.5 in.
   b. Length: 1.0 ft.
   c. Material: Aluminum — Steel ☐ 04; Other ☒
   d. Additional protection? ☐ Yes ☒ No
   If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Sand — Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
   b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
   c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
   d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
   e. 6.49 Ft³ volume added for any of the above
   f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
   b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
   c. 3/8" Bentonite Chips — Other ☒
7. Fine sand material: Manufacturer, product name & mesh size
   a. Red Flint Filter Sands & Gravels #45-#55
   b. Volume added 0.67 ft³
8. Filter pack material: Manufacturer, product name and mesh size
   a. Red Flint Filter Sands & Gravels #30
   b. Volume added 2.33 ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; _____ Other ☐
10. Screen material: Flush Threaded PVC Schedule 40
    a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐
    b. Manufacturer TIMCO
    c. Slot size: 0.010 in.
    d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; _____ Other ☐

E. Bentonite seal, top _____ ft. MSL or 21 ft.
F. Fine sand, top _____ ft. MSL or 260 ft.
G. Filter pack, top _____ ft. MSL or 280 ft.
H. Screen joint, top _____ ft. MSL or 300 ft.
I. Well bottom _____ ft. MSL or 350 ft.
J. Filter pack, bottom _____ ft. MSL or 350 ft.
K. Borehole, bottom _____ ft. MSL or 350 ft.
L. Borehole, diameter 8.2 in.
M. O.D. well casing 2.40 in.
N. I.D. well casing 2.00 in.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐
13. Sieve analysis attached? ☐ Yes ☒ No
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; _____ Other ☐
15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99
16. Drilling additives used? ☐ Yes ☒ No
Describe _____
17. Source of water (attach analysis): _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John E. Hall — Firm: Warzyn Inc.

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats. and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each

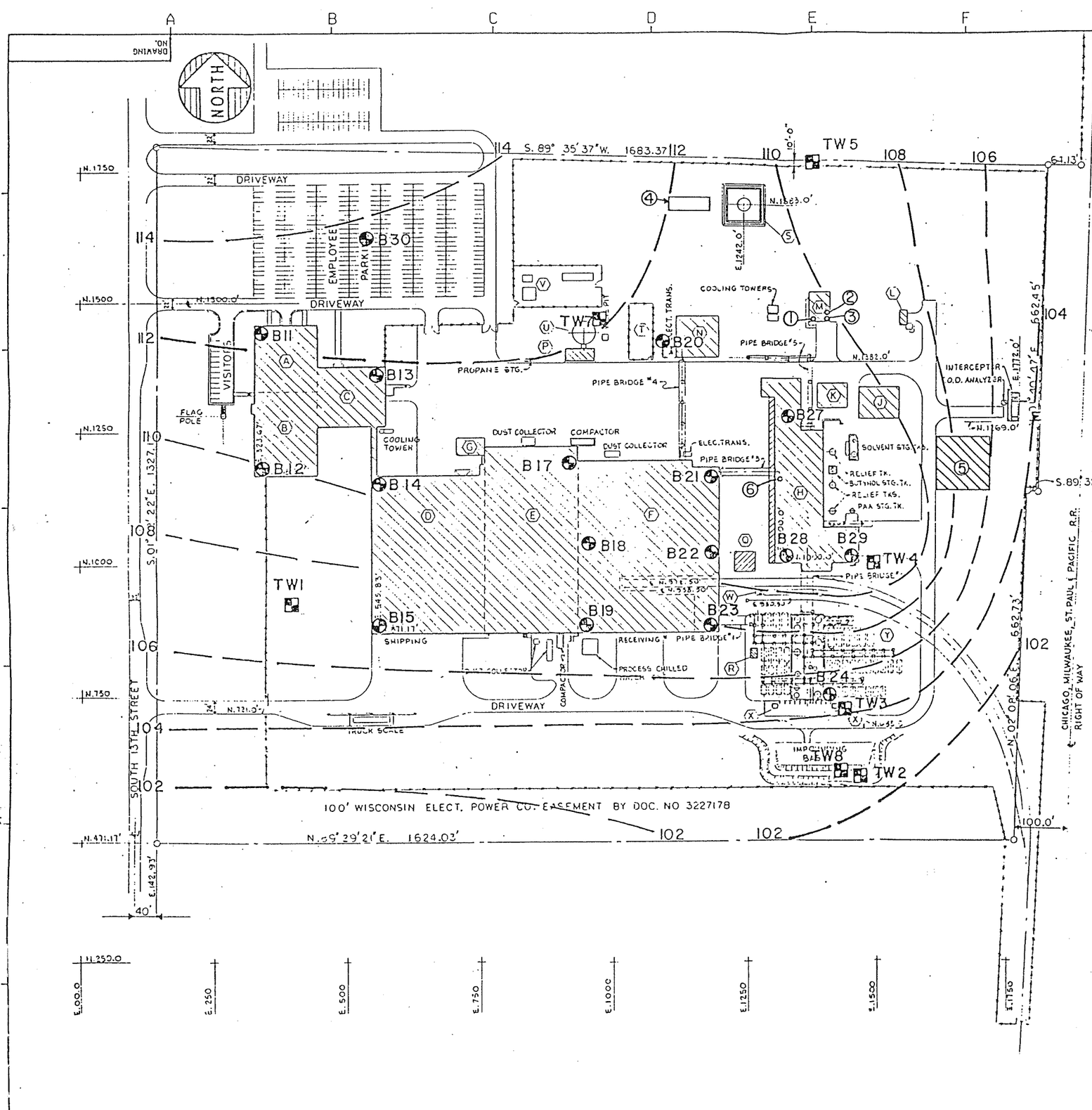
F

GROUNDWATER CONTOUR MAPS

F1 - WARZYN ENGINEERING, INC., 1981
F2 - GERAGHTY & MILLER, 1987

F1

WARZYN ENGINEERING, INC., 1981



LEGEND

A	LAB	N	POWERHOUSE
B	ADMINISTRATION OFFICE	P	PUMPHOUSE
C	EMPLOYEE SERVICES	Q	TANK TRUCK CAR UNLGD. STATION
D	FINISHED PRODUCT WHSE.	R	M.C.C.
E	PAINT MANUFACTURING	S	FUEL OIL STG. TANK
F	RAW MATERIAL WHSE.	T	ELECTRICAL SUBSTATION
G	TANK TRUCK LOADING STATION	U	WATER STG. TANK
H	RESIN PLANT	V	PAINT SAMPLE EXPOSURE AREA
J	STORAGE BLDG. & CONTRACTORS FAB SHOP	W	TANK CAR UNLDG. PLATFORM
K	TANK TRUCK LOADING STATION (CATIONIC)	X	TANK TRUCK UNLDG. PLATFORM
L	CATALYST STG. BLDG.	Y	TANK FARM
M	WASTE TREATMENT BLDG.		

HAZARDOUS WASTE MANAGEMENT UNITS

ITEM #	TITLE
①	WATER BASE WASTE TREATMENT TANK
②	ORGANIC WASTE TREATMENT TANK
③	ORGANIC WASTE TREATMENT TANK
④	WASTE FUEL STORAGE TANK
⑤	CONTAINER STORAGE AREA
⑥	ORGANIC WASTE TREATMENT TANK

PLOT BORINGS

- BORINGS B-11 THROUGH 15, 17 THROUGH 24, AND 27 THROUGH 30
- BORINGS TW-1 THROUGH TW-5, TW-7 AND TW-8
- WATER TABLE CONTOUR

NOTE: SOURCE OF SOIL BORINGS AND GROUNDWATER CONTOURS IS DRAWINGS NO. C10021-2, SHEET 1 OF 2 CONTAINED IN 1981 WARZYN REPORT

REF. THIS DWG. WITH DWG. OC-84-PP-002 PROPERTY & LOCATION PLANS.

FIGURE IV-A-1
SOIL BORINGS AND GROUNDWATER CONTOURS

DRAWN J L MCINTIRE	DATE 10/31/94	
CHECKED	DATE / /	
APPROVED	DATE / /	
SCALE 1"=200'	B.M.NO.	
CHARGE	SUB	
DWG. NO. OC-84-PP-001		REV.

F2

GERAGHTY & MILLER, 1987

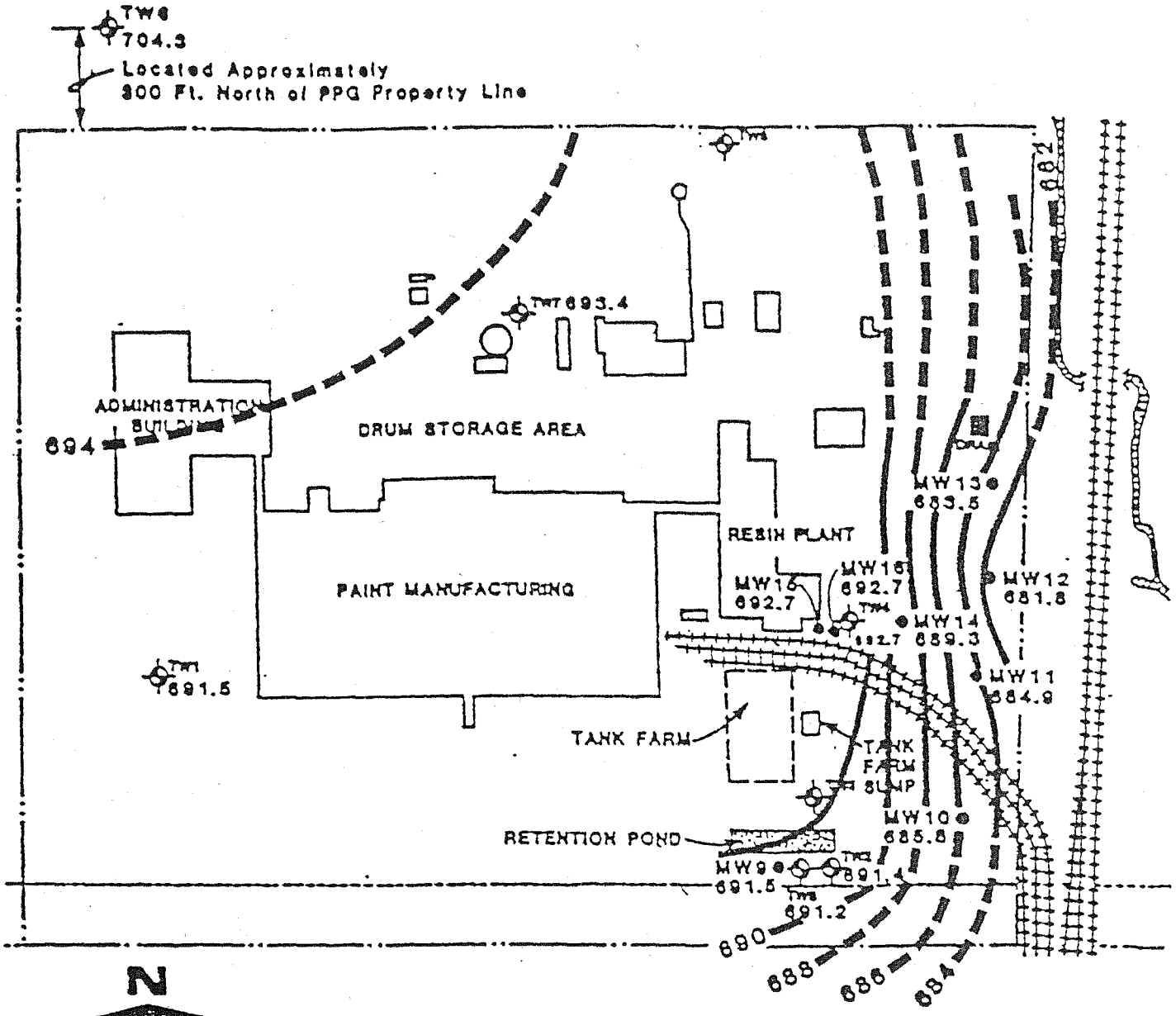


FIGURE 9.
PPG Plant - Monitoring Well Locations and Potentiometric Contours (Shallow Wells Only)

SOURCE: Geraghty & Miller, 1987

G

SUMMARY OF AVAILABLE SOIL AND GROUNDWATER INVESTIGATIONS

G1 - LAYNE-WESTERN COMPANY, INC., 1973
G2 - WARZYN ENGINEERING, INC., 1981
G3 - GERAGHTY & MILLER, 1986
G4 - O.H. MATERIALS CORP., 1987
G5 - GERAGHTY & MILLER, 1987
G6 - WARZYN INC., 1992
G7 - PERIODIC GROUNDWATER MONITORING

G1

LAYNE-WESTERN COMPANY, INC., 1973

Firm: Layne-Western Company, Inc.

Year: 1973

Type of Investigation:	Geotechnical Soil Borings
Scope of Work:	Conduct 17 soil borings (B11-B15, B17-B24, B27-B30) throughout the active portion of the facility to depths ranging from approximately 15 to 30 feet below ground surface to evaluate site subsoils for constructability.

G2

WARZYN ENGINEERING, INC., 1981

Firm: Warzyn Engineering, Inc.

Year: 1981

Type of Investigation: Preliminary Hydrogeologic Investigation

Scope of Work: Conduct eight soil borings in various locations at the site to depths ranging from 13 to 25 feet below ground surface. Soil samples were collected at 2.5 foot intervals to a depth of 10 feet and a 5 foot intervals thereafter. Representative samples were analyzed for grain size and Atterberg limits. Each boring was fitted with a water table well (TW1 to TW8). Water levels were measured and infield permeability testing was conducted. Six rounds of water samples were collected from five of the wells and three rounds of samples were collected from the remaining three wells. All water samples were analyzed for pH, specific conductivity, COD, total organic carbon, and mercury (constituent of some paints).

G3

GERAGHTY & MILLER, 1986

Firm: Geraghty & Miller

Year: 1986

Type of Investigation: Soil Gas Survey

Scope of Work: The Petrex Static Collection Technique was utilized to collect 86 soil gas samples in the southeast quarter of the facility near the impoundment basin, tank farm sump and along a portion of the the east and south property lines. Samples were analyzed for low molecular weight aromatic and alkyl aromatic compounds, C4 and greater alkyl alcohols, C2-C10 parent alkanes, and compounds having an alkyl group of C4 or more in its structure. Data was reported as fluxes (i.e., relative to background values) but has little qualitative relevance to the RFI.

G4

O.H. MATERIALS CORP., 1987

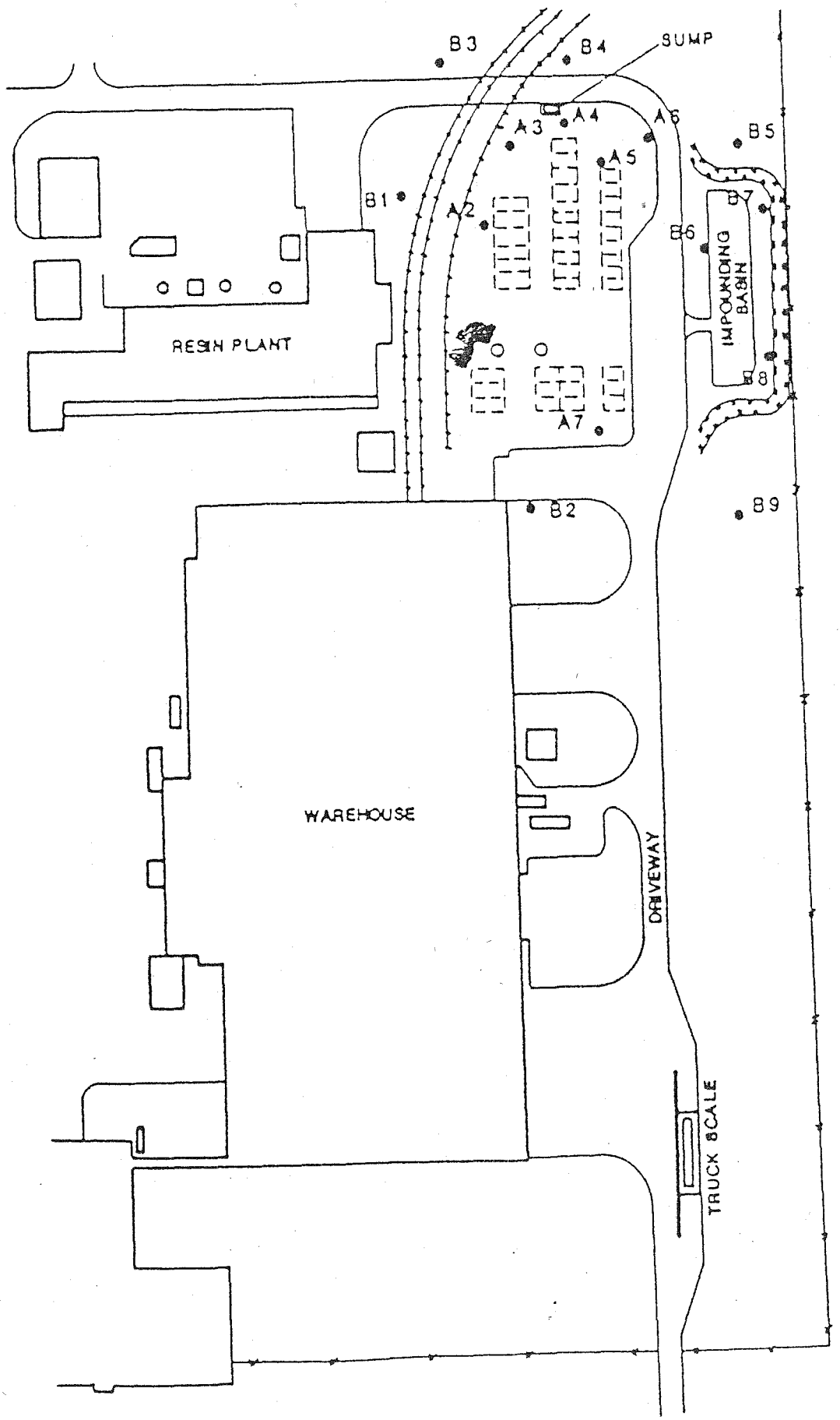
Firm: O.H. Materials Corp.

Year: 1987

Type of Investigation: Soil Boring and Sump Sampling

Scope of Work: Conduct seven soil borings to a depth of 26.5 feet (A1-A7) and nine soil borings (B1-B9) to a depth of 12 feet in the southeast quarter of the facility, primarily near the impoundment basin, the tank farm, and the tank farm sump. Soil samples were collected at ground surface and every five feet thereafter and field screened for volatile organic compounds (VOCs) with a photoionization detector (PID). Thirteen soil samples, primarily with high PID results and from the 0 to 7 foot depth range were analyzed for aromatic volatile organics (EPA Method 8020) using purge and introduction techniques (EPA Method 5030). One sample was also collected from the tank farm underdrain sump and analyzed for aromatic volatile organics (EPA Method 602).

Pictorial representation of the soil analytical results from this investigation have also been included in this Appendix.



TOLUENE	
BORING	CONCENTRA (ppm)
[illegible]	[illegible]
A2	BDL
A3	0.50
A4	BDL
A5	BDL
A7	BDL
B4	BDL
B7	BDL

TOTAL XYLENE	
BORING	CONCENTRA (ppm)
A1	1,800
A2	BDL
A3	1.05
A4	1.03
A5	BDL
A7	BDL
B4	BDL
B7	BDL

ETHYL BENZENE	
BORING	CONCENTRA (ppm)
A1	280
A2	BDL
A3	BDL
A4	BDL
A5	BDL
A7	BDL
B4	BDL
B7	BDL

FIGURE 2

TOLUENE, ETHYL BENZENE an
TOTAL XYLENE CONCENTRATIO
@ 5-7' DEPTH

Firm: Geraghty & Miller

Year: 1987

Type of Investigation: Groundwater Investigation

Scope of Work: Eight monitoring wells (MW9-MW16) were installed in the southeast quarter of the facility near the impoundment basin, the tank farm, the interceptor basin, and the southeast corner of the resin building. Six of the wells were water table wells, another well was screened from 25 to 35 feet, and the remaining well was completed at 25 feet. Water levels were measured and a slug test was performed. One round of water samples was collected and analyzed for priority pollutant volatiles and "Rexlist" compounds. Soil samples were collected at 2.5 ft intervals during installation of the monitoring wells and screened for VOCs with a total ionizable present (TIP) meter. Two soil samples were analyzed for priority pollutant volatiles and "Rexlist" compounds.

G5

GERAGHTY & MILLER, 1987

G6

WARZYN INC., 1992

Firm: Warzyn Inc.

Year: 1992

Type of Investigation: Soil and Groundwater Assessment

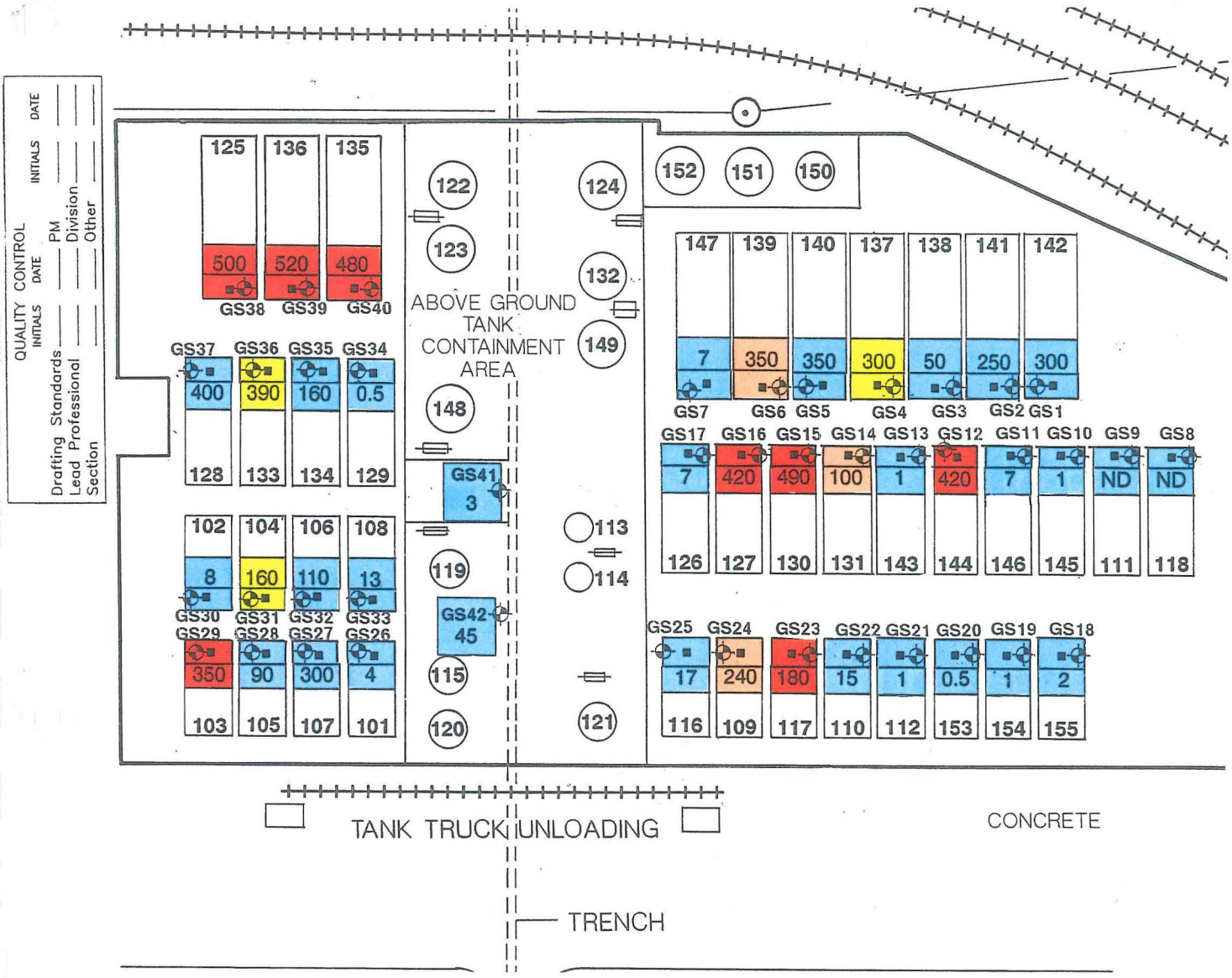
Scope of Work: Thirteen soil borings (B1-B4, LW1-LW4D, LP1, and LP3) to depths ranging from 8 to 35.5 feet were conducted along the exterior of the tank farm. Soil samples were collected at 2.5 feet intervals to 20 feet and every 5 feet thereafter and screened for the presence of VOCs with a PID. Seven soil samples were analyzed for VOCs (EPA Method 8240). Four borings were fitted with water table wells (LW1-LW4D) and two borings were fitted as piezometer wells screened from 30 to 35 feet below ground surface (LP1, LP3). Water levels were measured and in-situ hydraulic conductivities were conducted. One round of water samples was collected from the six newly installed wells as well as from one of the previously installed wells near the impoundment basin, and the sump. Samples were analyzed for total complex hydrocarbons (ASTM Method D-3328), total organic nitrogen (EPA Method 350.2 and 351.3), and VOCs (EPA Methods 8240, purge and trap; 8240, direct aqueous injection; and 8260, purge and trap).

Forty-two (42) hand-auger borings (GS1-GS42) to a depth of 2 feet and seven soil borings (B5-B11) to depths ranging from 10.5 to 20.5 feet were conducted within the tank farm area. Soil samples were collected at 2.5 foot intervals for the soil borings and at the 1.5 to 2 ft depth interval for the hand-auger borings and screened for VOCs with a PID. The grab samples from each hand-auger boring and thirteen samples from the soil borings were analyzed for VOCs (EPA Method 8240). Two samples of sand and gravel tank backfill were analyzed for grain size and one natural clay sample below the tank backfill was analyzed for transmissivity/permeability.

Twelve shallow soil borings (GS43-GS54) to a depth of 2 feet, two soil borings (B12, B13), to a depth of 35 feet and four geotechnical borings (GTB1-GTB4) to a depth of 30 feet were conducted in the vicinity of the impoundment basin. Soil samples were collected at 2.5 foot intervals to a depth of 20 feet and every 5 feet thereafter for the soil borings and as grab samples from the 1.5 to 2 feet depth interval for each shallow boring. Each grab sample and seven samples from the soil borings were analyzed for VOCs (EPA Method 8240).

Six soil borings (B14-B19) to a depth of 20.5 feet were conducted surrounding the resin plant. Soil samples were collected at 2.5 foot intervals to a depth of 20.5 feet and screened for VOCs with a PID. One geotechnical boring (GTB1) was also conducted to a depth of 30 feet with soil samples collected at 2.5 foot intervals to a depth of 20 feet and every 5 feet thereafter. Eleven soil samples and three duplicates from these borings were analyzed for VOCs (EPA Method 8240).

Pictorial representation of the soil analytical results from this investigation have also been included in this Appendix.



LEGEND

ND NO DETECT

CONSERVENT LOCATION GS29
GRAB SAMPLE
350 HEADSPACE PID READING, in ppm
103 TANK NUMBER

TOTAL VOCS

0-1 ppm	
1-10 ppm	
10-100 ppm	
100+ ppm	

TOTAL VOC CONCENTRATIONS FROM LABORATORY ANALYSIS OF SELECT SOIL SAMPLES

north

FIGURE 5

WARZYN

TANK FARM - SHALLOW GRAB SAMPLE RESULTS

SOIL AND GROUNDWATER ASSESSMENT
PPG INDUSTRIES INC.
OAK CREEK, WISCONSIN FACILITY

Drawn CAM Checked KRK App'd. GJK
Revisions Date 6/4/92
27350 A3

LEGEND

ND NO DETECT

TOTAL VOC'S

0-1 ppm
1-10 ppm
10-100 ppm
100+ ppm

TOTAL VOC CONCENTRATIONS FROM LABORATORY ANALYSIS RESULTS OF SELECT SOIL SAMPLES

HEADSPACE PID READING, in ppm
DEPTH INTERVAL, in ft.

250	1-3
2	3.5-5.5
2	6-8
1.5	8.5-10.5
0.5	11-13

1.0	1-3
140	3.5-5.5
170	6-8
200	8.5-10.5
190	11-13
210	13.5-15.5
70	16-18
12	18.5-20.5

50	1-3
1	3.5-5.5
ND	6-8
ND	8.5-10.5
ND	11-13
70	13.5-15.5
0.5	16-18
1	18.5-20.5
ND	21-23
ND	23.5-25.5
0.5	28.5-30.5
0.5	33-35

250	1-3
225	3.5-5.5
6	6-8
5	8.5-10.5
0.5	11-13
0.5	13.5-15.5
0.5	16-18
ND	18.5-20.5

ND	1-3
ND	3.5-5.5
ND	6-8
ND	8.5-10.5
ND	11-13
ND	13.5-15.5
ND	16-18
ND	18.5-20.5
ND	23-25
ND	28.5-30.5
ND	33-35

120	1-3
105	3.5-5.5
150	6-8
150	8.5-10.5
130	11-13
160	13.5-15.5

ND	1-3
ND	3.5-5.5
ND	6-8
ND	8.5-10.5
ND	11-13
ND	13.5-15.5
ND	16-18
ND	18.5-20.5
ND	23-25
ND	28-30
ND	33-35

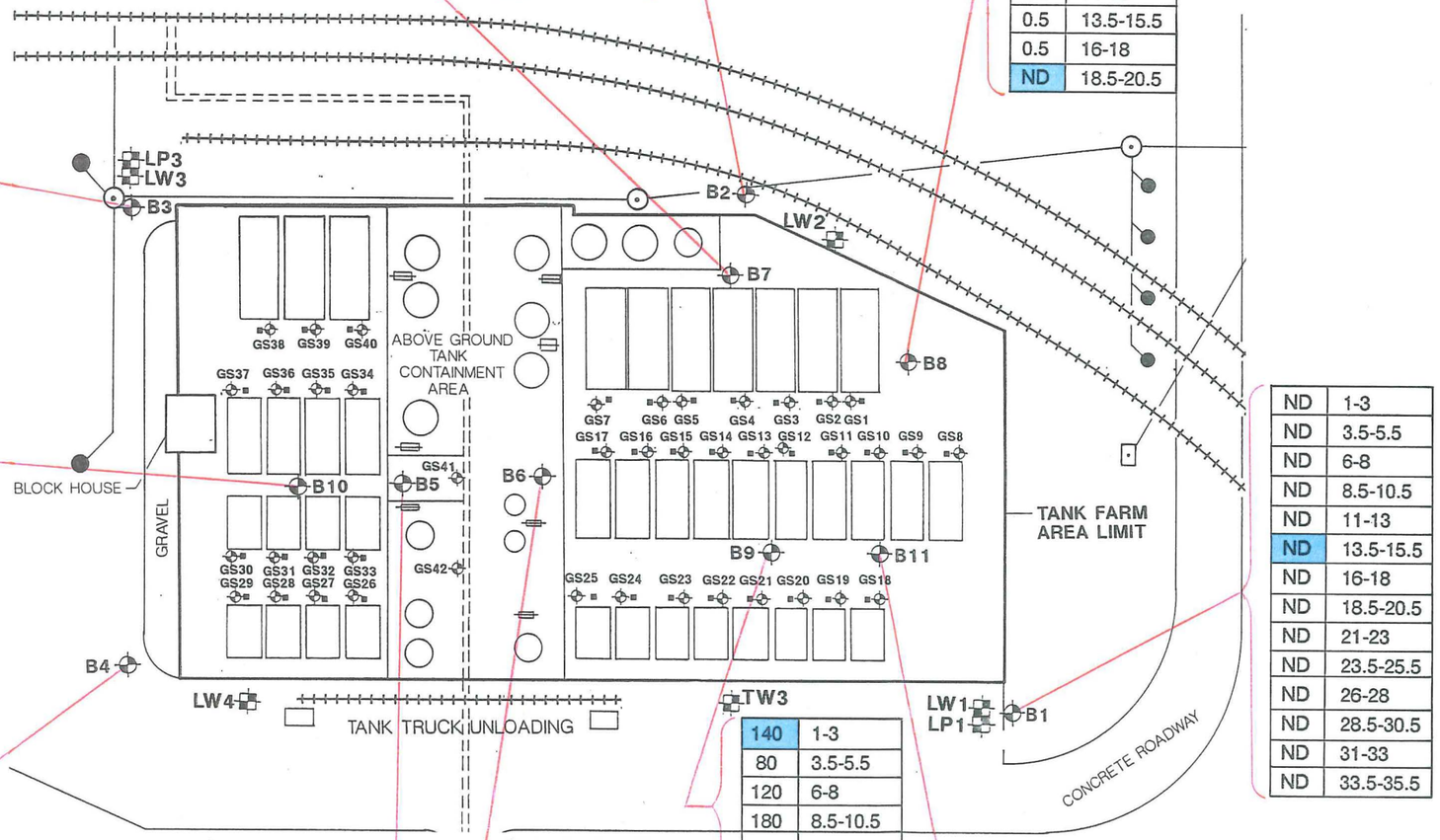
ND	1-3
ND	3.5-5.5
ND	6-8
ND	8.5-10.5
ND	11-13
ND	13.5-15.5
ND	16-18
ND	18.5-20.5
ND	21-23
ND	23.5-25.5
ND	26-28
ND	28.5-30.5
ND	31-33
ND	33.5-35.5

140	1-3
80	3.5-5.5
120	6-8
180	8.5-10.5
200	11-13
225	13.5-15.5

12	1-3
6	3.5-5.5
12	6-8
0.5	8.5-10.5

20	1-3
200	3.5-5.5
230	6-8
200	8.5-10.5
110	11-13
1.0	13.5-15.5
ND	16-18
0.5	18.5-20.5

1.0	1-3
140	3.5-5.5
3.5	6-8
80	8.5-10.5
150	11-13
1.0	13.5-15.5
1.0	16-18



north

FIGURE 6

Designed By
Drawn By CJM
Checked By KPK
Approved By
Date 6/19/02
Reference

Date • By • App'd

WARZYN ENGINEERING INC.
Madison • Milwaukee
Minneapolis • Chicago
Detroit

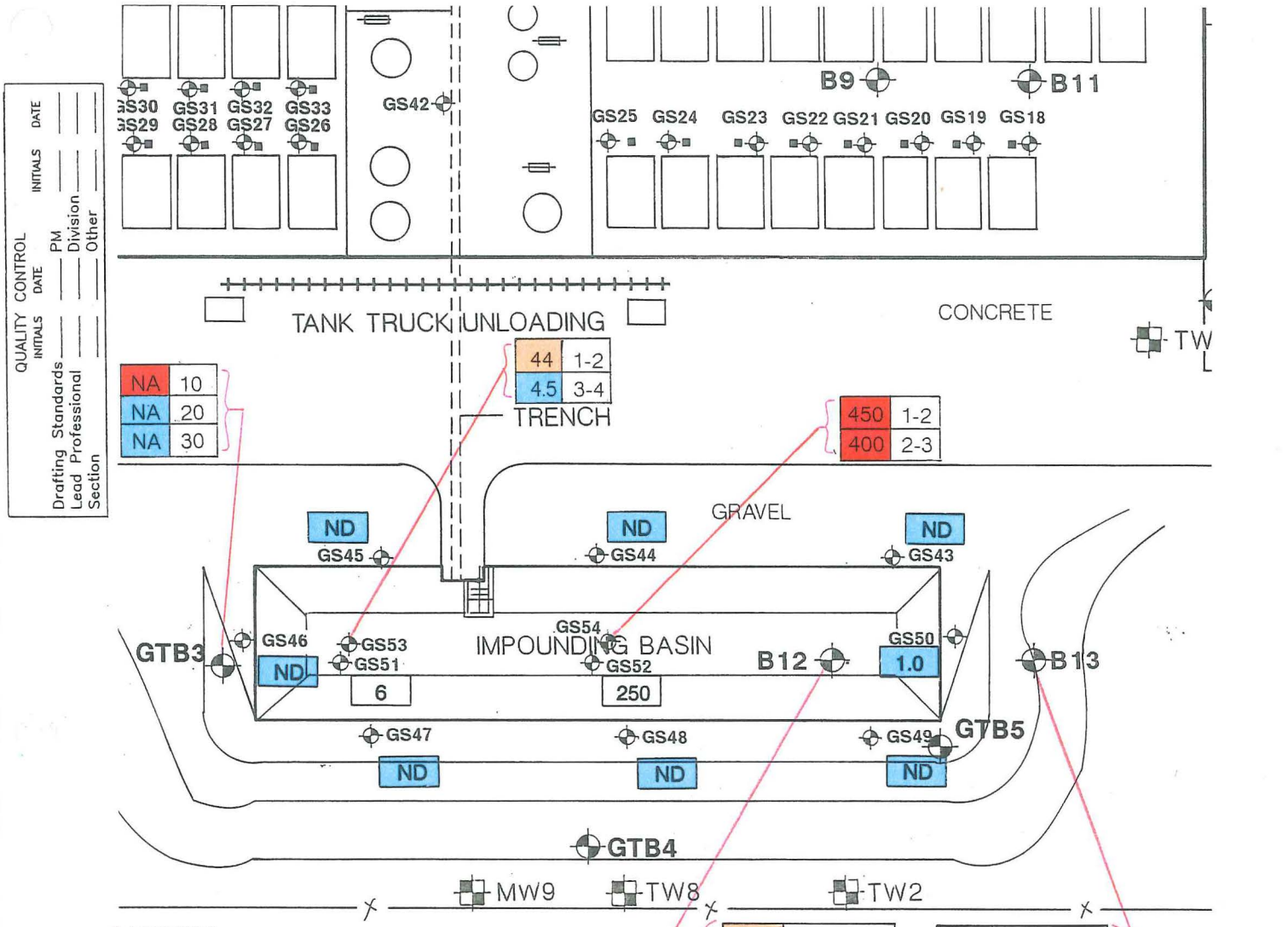
Revisions

TANK FARM - DEEP BORING RESULTS

SOIL AND GROUNDWATER ASSESSMENT
PPG INDUSTRIES INC.
OAK CREEK, WISCONSIN FACILITY

Sheet Number 0F
Project Number 27350 B3

WARZYN



250	1-3
2	3.5-5.5
2	6-8
1.5	8.5-10.5
0.5	11-13
ND	13.5-15.5
ND	16-18
1	18.5-20.5
0.5	21-23
ND	23.5-25.5
ND	28-30
ND	33-35

ND	1-3
1	3.5-5.5
ND	6-8
ND	8.5-10.5
ND	11-13
ND	13.5-15.5
ND	16-18
ND	18.5-20.5
0.5	23-25
ND	28-30
ND	33-35

LEGEND

ND NO DETECT

NA NOT ANALYZED

TOTAL VOC'S

0-1 ppm

1-10 ppm

10-100 ppm

100+ ppm

TOTAL VOC CONCENTRATIONS FROM LABORATORY ANALYSIS RESULTS OF SELECT SOIL SAMPLES

HEADSPACE PID READING, in ppm

DEPTH INTERVAL, in ft.

250	1-3
2	3.5-5.5
2	6-8
1.5	8.5-10.5
0.5	11-13

NOTES

GRAB SAMPLES GS51 AND GS52 WERE NOT SUBMITTED TO THE LABORATORY FOR ANALYSIS.

north

FIGURE 7

WARZYN

IMPOUNDMENT BASIN RESULTS

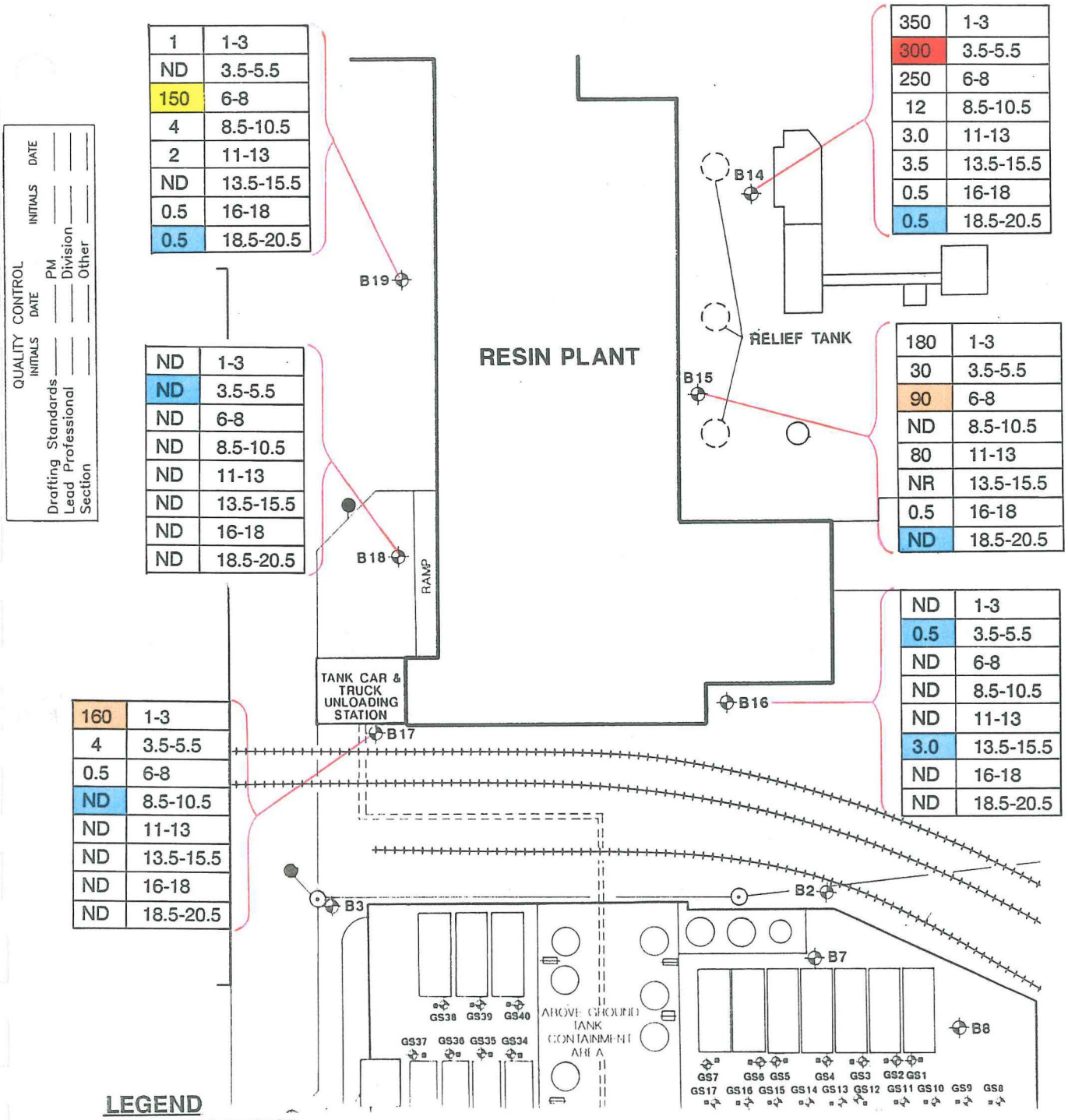
SOIL AND GROUNDWATER ASSESSMENT
PPG INDUSTRIES INC.
OAK CREEK, WISCONSIN FACILITY

Drawn cam Checked KRK App'd. GJK

Revisions

Date 6/4/92

27350 A2



LEGEND

ND NO DETECT
NR NO RECOVERY

TOTAL VOC'S

0-1 ppm
1-10 ppm
10-100 ppm
100+ ppm

TOTAL VOC CONCENTRATIONS FROM LABORATORY ANALYSIS RESULTS OF SELECT SOIL SAMPLES

HEADSPACE PID READING, in ppm
DEPTH INTERVAL, in ft.

250	1-3
2	3.5-5.5
2	6-8
1.5	8.5-10.5
0.5	11-13

north

FIGURE 8

WARZYN

RESIN PLANT RESULTS

SOIL AND GROUNDWATER ASSESSMENT
PPG INDUSTRIES INC.
OAK CREEK, WISCONSIN FACILITY

Drawn aam Checked KRK App'd. GJK
Revisions Date 6/14/92
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PERIODIC GROUNDWATER MONITORING

Firm: Geraghty & Miller, Warzyn

Year: 1988 to present

Type of Investigation: Periodic Groundwater Monitoring

Scope of Work: Periodic groundwater samples from various wells and the tank farm sump have been analyzed for various parameters over time. Analysis has included EPA Methods 602,624, 8240, 8260, 350.2 and 351.3. As well as ASTM Method D-3328.