Post-Closure Plan

Warner-Lambert Company LLC Former Manufacturing Facility (MID 006 013 643)

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Abbreviations

BGS	Below Ground Surface
BPW	City of Holland Board of Public Works
CMIP	Corrective Measures Implementation Plan
GSI	Ground Water-Surface Water Interface
GSIP	Ground Water-Surface Water Interface Protection
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCS	Hydraulic Containment System
HDPE	High Density Polyethylene
HSWA	Hazardous and Solid Waste Amendments
IRM	Interim Response Measure
LNAPL	Light Non-Aqueous Phase Liquid
EGLE	Michigan Department of Energy, Great Lakes, and the Environment
MMD	Materials Management Division (of EGLE)
MSU	Michigan State University
MWD	Macatawa Warehouse Development
NGVD	National Geodetic Vertical Datum
NREPA	Natural Resources and Environmental Protection Act
O&M	Operations and Maintenance
PCP	Post-Closure Plan
PMP	Performance Monitoring Plan
POTW	Publicly Owned Treatment Works
R&D	Research and Development
RA	Risk Assessment
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SWMU	Solid Waste Management Unit
TSD	Treatment, Storage and Disposal
TSDF	Treatment, Storage and Disposal Facility
U.S. EPA	United States Environmental Protection Agency
UIC	Underground Injection Control

1 General Information/Facility Background

This Post-Closure Plan (PCP) describes post-closure care and corrective action activities required to address historical releases of hazardous waste, hazardous waste constituents, and/or hazardous substances on or emanating from the Warner-Lambert Company LLC's (Warner-Lambert) former manufacturing operations in Holland, Michigan (MID 006 013 643).

1.1 Property Location

Property associated with Warner-Lambert's former manufacturing operations is located in Holland Township, Ottawa County, Michigan (T5N, R15W, portions of Sections 19, 20, 29, and 30). The property is located on the north shore of the Macatawa River near the river's confluence with Lake Macatawa (Figure 1).

1.2 Property Description and Ownership

Property holdings associated with Warner-Lambert's former operations in Holland consist of numerous parcels acquired over time and for different purposes. The parcels are designated as follows: (1) a 24-acre former pharmaceutical manufacturing plant (*Plant Site*) with a principal street address of 188 Howard Avenue; (2) a former Research & Development (R&D) property with a principal street address of 242 Howard Avenue consisting of an approximately 2.5-acre in-holding located adjacent to the northwest corner of the Plant Site (*R&D South Parcel*); (3) a 3.7 acre area north of Howard Avenue utilized as a parking area and greenspace for the former R&D operations (*R&D North Parcel*); (4) approximately 8-acres of undeveloped, riparian land located east of the bayou and south of Howard Avenue (referred to as the *Greenbelt*); (5) approximately 6.8 acres of property located north of the Plant Site which was used for employee/visitor parking and greenspace (*North* Parcels); and (6) 1.8 acres of property located east of Jefferson Street between Douglas and Howard Avenue that was used for greenspace (Northeast Parcel). These areas are depicted on Figure 2. The total acreage of property formerly associated with Warner-Lambert's Holland Operations is approximately 46 acres.

Properties historically involved in the Holland operations are currently owned by Pfizer Inc. or Parke, Davis & Company LLC (Parke Davis)[1], with the exception of the former R&D parcels (North and South) which were donated to Michigan State University in 2007.

In addition to the properties associated with the Holland operations, two contiguous properties not involved in historical operations and not ever under the ownership or control of Warner-Lambert and/or its corporate affiliates have been affected by releases from historical operations and are subject to certain corrective action requirements specified herein. These include: (1) the Macatawa Warehouse

[1] Warner-Lambert Company LLC acquired Parke Davis in 1970. Pfizer Inc. acquired Warner-Lambert in 2000. Warner-Lambert is the entity that operated the permitted Treatment Storage, and Disposal Facility (TSDF) and with whom the Michigan Department of Energy, Great Lakes, and the Environment (EGLE) executed a Post-Closure Plan/Corrective Action Consent Order in February 2002. Warner-Lambert Company LLC is a wholly owned subsidiary of Pfizer Inc. and Parke Davis & Company LLC is a wholly owned subsidiary of Pfizer International LLC.

Development property, a marina property owned by association members that abuts the Plant Site to the west (principal street address of 260 Howard Avenue); and (2) the western portion of the Howard B. Dunton Park, a public park owned and operated by Holland Charter Township that abuts the MWD property to the west (principal street address of 290 Howard Avenue). These are also depicted in Figure 2.

1.3 Use History/Regulatory Status

This section provides a brief description of the use history and regulatory status of the properties involved in Warner-Lambert's former Holland Manufacturing operations and other contiguous properties on which post-closure care and/or corrective action activities are being implemented.

1.3.1 Holland Operations

Plant Site

Tannery operations were historically conducted in older structures located on the northern portion of the Plant Site by a succession of companies from the late 1800's until 1950. In the 1950's the Army Corps of Engineers dredged the Macatawa River (then the Black River) and deposited the dredge spoils along the shoreline extending the Plant Site property to the south and establishing the approximate boundary of the shoreline as it exists today. Pharmaceutical manufacturing operations at the Plant Site commenced in 1951. Initially, primary manufacturing operations were located in the Chem A building. The location of this structure is shown on Figure 3.

In 1960, Parke Davis completed construction of the Chem B building (also shown on Figure 3). Manufacturing operations in Chem A were subsequently discontinued, and Chem B became the primary manufacturing structure until January 2007. The Plant Site manufactured bulk active pharmaceutical ingredients and isolated intermediates, which were mostly processed and/or packaged off-site at other facilities. These chemicals were manufactured by batch processes that typically included charging raw materials, chemical synthesis in reactors and other equipment, separation, drying, and packaging of bulk products and intermediates. Hazardous and non-hazardous wastes generated, stored, and/or managed at the Plant Site primarily consisted of used solvents, aqueous wastes and waste waters, filter cakes and filtrates, and distillation residues. **The Plant Site lies within both the Treatment, Storage, and Disposal Facility (TSDF) boundary and the Corrective Action Facility boundary**. A site map showing closed regulated units and historical SWMUs is provided as Figure 3.

Manufacturing activities on the Plant Site ceased in the first quarter of 2007 and the Plant Site was decommissioned in 2007. Demolition of structures on the Plant Site was completed in early 2009. The Plant Site is currently vacant and devoid of improvements except for structures housing the two deep injection wells and a structure (Building #91) housing remedial infrastructure. Access to the property is restricted by a perimeter fence.

R&D Parcels

The former R&D properties consist of two parcels: the R&D South Parcel and the R&D North Parcel.

R&D South Parcel

The R&D South Parcel consists of an approximately 2.5-acre parcel of land located on the northwest corner of the Plant Site. The R&D South Parcel, which lies within the corrective action facility boundary, was used by Warner-Lambert for laboratory-scale research and a pilot plant for commercial scale-up and process development. It was in residential use from approximately 1889 until 1963. Parke Davis acquired the R&D South Parcel in the early 1960's and the first structure associated with pharmaceutical research and development was constructed in 1965. The R&D building was comprised of a primary structure which is subdivided into four building designations (i.e., Buildings 100, 200, 300, and 400), and two smaller single story structures (i.e., Buildings 53 and 81) which housed ancillary equipment associated with cooling towers and heat transfer media systems, respectively. Hazardous and non-hazardous wastes generated on the R&D-South Parcel during its active life, consisting primarily of used solvents and aqueous wastes and waste waters, were conveyed to the Plant Site for management. **The R&D South Parcel lies within both the TSDF boundary and the Corrective Action Facility boundary.**

R&D operations on the South Parcel were terminated in 2003. This property, along with the R&D North Parcel (described below), was donated to MSU in December 2007 for a bioeconomy research institute. MSU took occupancy in 2008 after completion of certain infrastructure projects necessary to separate the building on the R&D-South Parcel from reliance on utilities historically shared with the adjacent Plant Site.

In July 2018, the EGLE issued a determination that no further corrective action was warranted or anticipated at the MSU (R&D South) Parcel and indicated that performance standards had been achieved pursuant to Parts 111 of Act 451/RCRA corrective action obligations (CA900CR, Corrective Action Performance Standards Attained – Control Required). A copy of the letter is provided in Appendix D.

R&D North Parcel

The R&D North Parcel consists of approximately 3.7 acres of land located directly north of Howard Avenue and the R&D South Parcel. It was formerly the location of a public school and three private residences prior to its acquisition to provide parking and greenspace for the R&D operations. The parking area was utilized by employees of the R&D facility located on the R&D South parcel until 2003 when operations were ceased on that parcel.

No manufacturing or regulated waste activities occurred on this property during Warner-Lambert's operations and it is, therefore, not included within either the TSDF boundary or the corrective action facility boundary. As a result, the R&D North Parcel is not addressed further in this Post-Closure Plan.

Greenbelt

The Greenbelt was acquired in 1984 to provide additional green space around the manufacturing operations. This property was undeveloped land prior to its acquisition. Significant landscaping improvements to establish the current grade and shoreline stabilization in the form of placement of coarse rip-rap was completed subsequent to acquisition of the property. The Greenbelt Area was not

used to support site manufacturing operations or for regulated waste management activities. No SWMUs have been identified on the parcel. **The Greenbelt is not part of the historical TSDF, but does lie within the Corrective Action Facility boundary by virtue of its contiguity to the Plant Site (part of the TSDF) pursuant to Rule 299.9103(r) of Part 111.**

North Parcels

The North Parcels consist of several smaller parcels that were acquired over time as they became available to provide for employee parking and green space. The North Parcels were historically occupied by several residences, a restaurant, a bank, a well field, and a supply house. The largest parcel was acquired in 1950 for employee parking and continued use as a water supply well field. A rail spur formerly ran through the North Parcels to serve the Plant Site. The remaining properties within the North Parcels were acquired from 1985 through 2001. The water supply wells located on the North Parcels supplied the Plant Site from the initiation of manufacturing operations in 1951 to about 1981 when the Plant Site was connected to the municipal water supply. Bulk raw materials were historically delivered to the Plant Site via the rail spur on the North Parcels until approximately 1985 when it was taken out of service.

The pavement and curbing associated with the parking areas on the North Parcels were removed in 2008 during plant demolition activities and these parcels were converted to green space.

The North Parcels are part of the corrective action facility by virtue of their contiguity to the Plant Site (part of the TSDF) pursuant to Rule 299.9103(r) of Part 111, but have no history of regulated waste management activities nor have any SWMUs been identified on the parcels. Warner-Lambert submitted available documentation regarding use history and environmental conditions on these parcels to the EGLE in September 2012. The EGLE approved a No Further Action (NFA) Determination Request (CA999-NFA) on June 19, 2013. The NFA terminates corrective action activities on this parcel and, as a result, the North Parcels are not addressed further in this Post-Closure Plan. A copy of the NFA letter from the EGLE is contained in Appendix D.

Northeast Parcels

The Northeast Parcels were historically used for mixed residential/light commercial activities until their acquisition as greenspace. No manufacturing or regulated waste activities associated with Warner-Lambert's manufacturing operations occurred on this property. The Northeast Parcels are not incorporated in the TSD or corrective action facility boundary and, as a result, are not addressed further in this Post-Closure Plan.

1.3.2 Contiguous Properties

This section provides a description and use history of two contiguous properties that may have been impacted by releases from the Holland Operations that are subject to corrective action activities.

Macatawa Warehouse Development

The Macatawa Warehouse Development (MWD) property is located at 260 Howard Avenue and adjoins the western boundary of the Plant Site (Figure 2). The MWD property is used as a private marina and boat storage complex. The MWD property is occupied by a 60,000 square foot building and a boat slip area. The building is used for boat storage/maintenance and houses an office for marina employees. The boat slip is used to launch and remove boats from the lake.

The MWD property was developed as a private marina by DFMJ partners in 1991. The marina is operated as a marina condominium and thus has multiple owners. Prior to acquisition and development of the property into a marina, the property was used by Chris Craft. Chris Craft used the MWD property to launch boats for testing purposes. It is not known whether Chris Craft used the MWD property for other purposes. Improvements to the shoreline in the form of slip construction to facilitate launching of large cruisers manufactured by Chris Craft took place in the 1960's. This property was low lying marshland prior to development/filling by Chris Craft.

Dunton Park

Dunton Park is located at 290 Howard Avenue and adjoins the western boundary of the MWD property (Figure 2). Dunton Park consists of approximately 14 acres that supports a variety of recreational uses, including a beach area, picnic area, boat launch, hiking trail, and playground. The park is owned by Holland Charter Township. The easternmost portion of the park property, contiguous to the MWD property, was part of a low-lying marsh area prior to filling for development in the 1960's.

Facility-related constituents were detected in soil and ground water on the MWD and the eastern portion of the Dunton Park property during implementation of an interim response measure on the western perimeter of the Plant Site in 2003.

1.4 Regulatory Background

1.4.1 RCRA/Part 111 Permitting History

The Plant Site and the MSU (Former R&D-South) Parcel were historically operated as a permitted TSDF under Part 111 and RCRA. The boundary of the historical TSD is depicted on Figure 4. Warner-Lambert filed a Part A Application/Notice of Regulated Waste Activity in 1980 as required by RCRA. The application notified the United States Environmental Protection Agency (U.S. EPA) and the Michigan Department of Environmental Quality (EGLE) that it generated, stored, and treated solid wastes at the TSDF that met the definition of hazardous waste under RCRA. The TSDF and Corrective Action Facility boundaries were clarified in 2007 through submittal of a revised Site Identification Form (EQP 5150), a copy of which is provided in Appendix A.

The U.S. EPA and the EGLE jointly issued a Hazardous and Solid Waste Amendments (HSWA) Permit and RCRA Part B/Act 64 (now known as Part 111) Operating License to Warner-Lambert in October 1990. The operating license regulated the generation, treatment, storage, and disposal of hazardous wastes at several regulated units, including: (1) two hazardous waste container storage areas (formerly located in

Buildings #10 and #38); (2) hazardous waste storage and treatment tanks associated with the former Chemical Waste Treatment System (T-1/1A, T-2/2A, T-3/3A, T-4/4A, and T-5; and (3) waste solvent storage tanks (T-103, T-729, T-533/533A, T-534/534A, and T-760).

Warner-Lambert operated the permitted TSDF until 1998 when the EGLE promulgated changes to Part 111 administrative rules that provided a generator treatment exemption that allowed facilities treating only process wastes generated on-site to be excluded from the permitting requirements applicable to treatment, storage and disposal facilities. Warner-Lambert commenced closure of the regulated hazardous waste management units in 1998. A closure certification report, documenting closure of these regulated units, was submitted to the EGLE on November 25, 1998. On September 14, 1999, the EGLE approved the closure certifications. A copy of the closure certification approval letter is included in Appendix B. Although the EGLE determined through its review of the closure certification reports that the hazardous waste management units at the TSDF were closed, it also determined that remaining soil and ground water contamination at the Plant Site required continued long-term management, monitoring, and corrective action.

A Post-Closure Plan, specifying site maintenance and monitoring requirements and facility wide corrective action activities, was approved by the EGLE on September 28, 2001. It was subsequently modified in May 2007, October 2009, June 2013, and February 2015 to address changes in site use, modifications to the remedial program, and/or changes to the ground water monitoring program and contingency procedures. A Corrective Action Consent Order (CACO) was executed in February 2002 with Warner-Lambert as the mechanism to enforce these continuing obligations. A copy of the CACO is provided in Appendix C.

1.4.2 HSWA/Part 111 Corrective Action Status

As described above, the U.S. EPA issued Warner-Lambert a HSWA permit in October 1990, concurrent with the state's issuance of a RCRA Part B/Act 64 (now known as Part 111) Operating License. The HSWA permit required Warner-Lambert to undertake activities to investigate and implement corrective action to address historical releases at seven SWMUs identified on the TSDF during a RFA conducted by the U.S. EPA in 1987. SWMU locations are identified on Figure 3. All are located on the Plant Site. Detailed descriptions of the SWMUs, as well as relevant soil and ground water characterization data, are supplied in the Final RFI Report (*WW Engineering & Science, 1993*) which was approved by EGLE in 1999.

SWMU A - Former Underground Fuel Oil Storage Tanks: Three 30,000-gallon underground storage tanks were used from 1951 until 1989 to store No. 6 fuel oil for an industrial boiler. Fuel oil contamination was documented in the soils and ground water in March 1989 and the tanks were removed in May 1989.

SWMU B - Former Biological Treatment System and Rainwater Collection Tank: A biological treatment system was formerly located immediately east of the old Chemical Waste Treatment System. The system was in use from 1951 until 1992. The system consisted of five tanks and a clarifier for the treatment of sanitary wastes and floor washings from manufacturing buildings. The biological treatment system containment area was also formerly occupied by Tank 1. Tank 1 was used to collect rainwater from the roof of Chem B and maintained as a backup treatment tank for the Chemical Waste Treatment System.

The biological treatment system and the old Chemical Waste Treatment System shared a common secondary containment system. Investigations have identified the presence of soil and ground water contamination beneath the shared secondary containment system.

SWMU C - Underground Injection Wells: Two deep injection wells (IW-1 and IW-2), used to inject treated aqueous chemical pharmaceutical wastes, which were completed at depths of 1,643 and 1,946 feet respectively, were plugged in 1978 and 1981 in accordance with Underground Injection Control (UIC) regulations. Three new UIC permitted deep injection wells (IW-3, IW-4, and IW-5), completed at depths of 5,945 feet, 5,946 feet, and 6,027 feet respectively, were subsequently installed. Injection of process wastewater into these three wells was terminated in 2008 following the cessation of manufacturing activities. It was then restarted in 2010 to accommodate remedial wastewater. IW-3 was plugged in 2021. IW-4 and IW-5 remain active and are used to manage ground water extracted from within the Hydraulic Containment System. No surficial releases from these wells have been documented. The two active deep wells are subject to annual Mechanical Integrity Testing pursuant to applicable UIC permits to assure there is no significant leak in the annulus/well casing.

SWMU D - Former Used Equipment Storage Area: The former used equipment storage area was an unpaved area of approximately 10,000 square feet where reusable equipment was stored from 1951 until the mid-1970's. Chemical materials were not stored in this area, but contaminated equipment may have been stored in this area. Releases were not documented in this area during its operational history.

SWMU E - Former Underground Solvent Storage Tank Farm: Solvents were stored in 18 underground storage tanks, with capacities from 2,000 to 15,000 gallons, from 1951 until July 1988 when the tanks were emptied and removed. Soil and ground water impacts associated with the historical operation of these tanks have been identified.

SWMU F - Solvent Recovery Tank Farm: The solvent recovery tank farm, located south of Building 7 and adjacent to the Chemical Waste Treatment system, consists of 34 aboveground tanks with capacities of 2,000 to 15,000 gallons. These tanks were used to store spent process solvents for less than 90 days prior to recovery on-site via distillation and fractionation in Building 7. Recovered solvents were also stored in this tank farm. Investigations have identified the presence of soil and ground water contamination in the area of the former Solvent Recovery Tank Farm.

SWMU G - Historical Industrial Use and Fill Areas: Based on historical aerial photographs and the results of soil investigations, fill material of varying thickness is present on approximately the southern two-thirds of the Plant Site. Investigations indicate that at least two types of solid wastes (bark residue from the extraction of tannic acid and lime cake from the neutralization of hides) were buried in various locations on the site during its use as a tannery between the early 1900's and 1950. Similarly, dredge spoils were placed on the site during dredging activities conducted by the U.S. Army Corps of Engineers in the 1950's. Investigations have identified the presence of soil and ground water contamination in this area of the Plant Site.

In addition to these seven solid waste management units, corrective action also addresses the hazardous waste management units that were closed on the Plant Site under RCRA/Part 111 in 1999. These were approved as "ground up" closures with environmental conditions beneath the units deferred for management under the ongoing corrective action work.

Investigations

Warner-Lambert conducted a RCRA Facility Investigation (RFI) from 1989 to 1991 and submitted a Draft RFI Report to EGLE and U.S. EPA in March 1992. EGLE provided conditional approval of the Draft RFI Report on February 17, 1993. A Final RFI Report, addressing the EGLE's conditions and comments, was submitted on April 21, 1993. EGLE approved the Final RFI Report on September 15, 1999.

Beginning in 2001, a supplemental investigation was conducted to further characterize conditions at the corrective action facility and the two contiguous properties to the west (MWD and Dunton Park properties). Site-related constituents were identified on the MWD and Dunton Park properties that abut the Plant Site to the west. A Current Conditions Report, updating the Final RFI Report, was submitted to EGLE in 2009.

Interim Response Measures

Warner-Lambert implemented a number of interim response measures (IRMs) on the Plant Site property between 2001 and 2013 to address conditions at the site while it was an active manufacturing facility. These IRMs included: (1) installation and operation of a perimeter air sparging/vapor recovery system along the downgradient property line in 2002; (2) excavation to remove impacted soil impacts located on the western perimeter of the Plant Site and the MWD property to the west in 2003; (3) removal of PCB-impacted soil in the area of SWMUs B and E prior to construction of a wastewater steam stripper in 2003; (4) installation of a cut off wall on the eastern perimeter of the site to divert ground water for treatment at the air sparging system in 2004; (5) shoreline stabilization work in 2004 and 2005 to address erosion along the southeastern portion of the shoreline; (6) targeted soil excavation to remove impacted soil located at the eastern terminus of the sparging system in 2006; and (7) removal of PCB-impacted soils in the northeastern corner of the Plant Site in 2010 to address conditions in the proposed line of the Hydraulic Containment System (HCS) barrier wall.

Final Corrective Action

Manufacturing activities ceased at the Plant Site in 2007. Following completion of decommissioning and demolition activities in 2009, a series of final corrective actions commenced. These included construction of a Hydraulic Containment System (HCS) in 2010. The HCS, which serves to prevent off-site migration of constituents in ground water from the Plant Site, consists of a subsurface ground water flow barrier wall fully encircling the perimeter of the Plant Site, a series of five ground water extraction wells that withdraw water from within the wall to maintain an inward gradient, and a deep well injection system where the extracted water is disposed. It was approved by EGLE as an IRM in 2009 and subsequently incorporated into the Final RAP/CMIP so that it could be approved as part of the final remedy for the site.

A Remediation Plan to address polychlorinated biphenyls ("PCBs") detected in soil on the Plant Site and Greenbelt was submitted to EGLE in September 2012. EGLE forwarded the plan to the US EPA with a Notice of Intent to Approve in November 2012 pursuant to the Coordinated Approval process described in 40 CFR 761.77. The PCB Remediation Plan described remedial response measures designed to address human health and ecological risks associated with this class of compounds. The PCB Remediation Plan was approved by EGLE on May 3, 2013 and the US EPA on June 20, 2013 pursuant to the Coordinated Approval process described in 40 CFR 761.77 in the Toxics Substances Control Act (15 USC 2601 et seq.). Targeted PCB-impacted soil removal activities described in this plan were completed in December 2013. A Remedial Completion Report for this work was submitted to EGLE in March 2014 and approved on May 23, 2014 subject to emplacement of restrictive covenants specified in the approved PCB Remediation Plan as well as in the Final RAP/CMIP. The restrictive covenant was subsequently emplaced on the deed of the property and is provided in Appendix F.

A Final RAP/CMIP, which incorporated both the HCS and the PCB Remediation Plan as elements of the final remedy, was approved by EGLE on June 20, 2014. It addressed cleanup requirements on all parcels located within the Corrective Action Facility boundary as well as at the two contiguous properties.

The Final RAP/CMIP described remedial measures to address human health and ecological risks associated with hazardous substances detected in soil, sediment, and groundwater on the Plant Site and Greenbelt, on the MSU Bioeconomy Institute (Former R&D South Parcel) as well as at the two adjacent properties, the Macatawa Warehouse Development (MWD) boat storage/marina operation and Dunton Park. The RAP/CMIP was completed in fulfillment of the Facility's corrective action obligations as specified in the Hazardous and Solid Waste Amendments of 1984 (42 USC 6901 et. seq.), Parts 111 and 201 of Michigan's Natural Resources and Environmental Protection Act (Public Act 451 of 1994, as amended), regulations and guidance promulgated pursuant to these statutes.

Corrective measures for the Plant Site and Greenbelt included: (1) final site grading and installation of an earthen cover on the Plant Site consisting of a minimum of 25 cm (10 inches) of clean soil with vegetative cover over areas of the site evidencing hazardous substances at concentrations exceeding generic residential criteria; (2) shoreline stabilization on the Plant Site; (3) continuation of existing site management/access controls on the Plant Site and Greenbelt; (4) inspection and maintenance of the cap/cover and implementation of an ecological protection plan on the Plant Site and Greenbelt; (5) continued operation, maintenance, and performance monitoring of the HCS on the Plant Site; (6) implementation of a post-sparge monitoring program to assess ground water quality in one well located outside the HCS barrier wall;[2] (7) implementation of a LNAPL monitoring and management plan (LMMP)

[2] EGLE approved termination of the post-sparge monitoring program in a letter dated, December 21, 2018 based on six consecutive sampling rounds showing that concentrations of constituents of concern were below applicable criteria and the completion of a benthic toxicity assessment showing no adverse effects. A copy of the approval letter is provided in Appendix D.

on the Plant Site;[3] (8) re-alignment of perimeter fence in the northeastern corner of the Greenbelt; and (9) emplacement of land/resource use restrictions in a restrictive covenant on the deeds on the Plant Site and Greenbelt.

Corrective measures at the MSU (Former R&D South) Parcel and the two contiguous properties (MWD and Dunton Park) include: (1) implementation of subsurface worker health and safety and residual management protocols; (2) conduct of a Ground Water Monitoring and Assessment Program (or GWMAP which included implementation of a PCOI Risk Assessment Framework to identify parameters that needed to continue to be assessed in off-site ground water)[4]; and (3) land and resource use restrictions.

Subsequent to approval of the Final RAP/CMIP and PCB Remediation Plan, Pfizer elected to enhance the earthen cover with a composite liner consisting of 40-mil HDPE overlain by geotextile fabric to reduce infiltration of precipitation within the HCS. This upgrade is not a required element of the approved Final RAP/CMIP and PCB Remediation Plan, but rather was voluntarily implemented to assist with water management within the barrier wall. Pfizer may elect, at its discretion, to alter or modify the liner system to accommodate future reuse of the site provided that the change does not affect its ability to achieve the remedial performance objective for the HCS (i.e., maintenance of an inward gradient as outlined in the PMP). EGLE will be notified of any such modification.

A copy of EGLE's letter granting final approval of the RAP/CMIP is contained in Appendix D. Final site grading, cap/cover installation, and shoreline stabilization work commenced in July 2014 and were completed in October 2014. A Remedial Completion Report was submitted to EGLE in 2016.

Performance monitoring of the HCS conducted since start-up of the system in 2010 has documented that it is meeting all remedial performance objectives specified in the approved Final RAP/CMIP.

In April 2021, Pfizer requested approval from EGLE to modify the Final RAP/CMIP to provide for an alternate method for managing water extracted from within the HCS. The request was made to provide for supplementation of the existing deep well system due to the age and costs associated with operating and maintaining the deep well infrastructure. The request included a 95% design package for an alternate Ground Water Treatment System (GWTS) that would provide for pre-treatment of extracted ground water prior to discharge to the City of Holland Board of Public Work's (BPW) Publicly-Owned Treatment Works (POTW). The request also included discharge permit approval from the City of Holland BPW.

The alternate GWTS will not change the overall performance objective for the HCS (i.e., maintenance of an inward gradient to prevent off-site migration of impacted ground water). Rather it simply modifies how

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[3] EGLE approved modifications to the LMMP in a letter dated July 27, 2020 based on the results of an LNAPL recoverability analysis that showed no or low potential for recovery under confined aquifer conditions. A copy of the approval letter is provided in Appendix D.

[4] The PCOI RA was completed and EGLE approved modification to the GWMAP in a letter dated, April 21, 2016. EGLE also approved the elimination of several wells on June 7, 2016. The GWMAP was modified again in 2022 to move from semi-annual to annual frequency with EGLE approval (letter dated, February 3, 2022). Copies of the approval letters are provided in Appendix D.

and where extracted water is managed and ultimately discharged. The alternate GWTS will provide an additional management option for extracted groundwater from the HCS beyond the deep wells in the short-term and may replace them in the long-term.

EGLE granted approval of the alternate GWTS on August 25, 2021 subject to the following conditions:

(1) Submittal of a formal RAP/Modification Request
(2) Amendment of the Post-Closure Plan
(3) Documentation of BPW's activation of the discharge permit prior to commencing operation of the system.

A copy of EGLE's conditional approval letter is contained in Appendix D.

This Post-Closure Plan amendment addresses the second condition presented in EGLE's approval letter as it describes changes in post-closure care activities that will be associated with the new GWTS.

1.4.3 Scope, Objective, and Applicability

The objective of this Post-Closure Plan is to describe post-closure care and corrective action activities associated with Warner-Lambert's former manufacturing operations and to provide an administrative mechanism for implementing these obligations. This Post-Closure Plan is the vehicle for implementing the remaining corrective action and post-closure requirements specified under the Resource Conservation and Recovery Act and Part 111 of Michigan's Natural Resource and Environmental Protection Act (P.A. 451, as amended). The Plan also specifies the costs associated with the activities and a method by which financial assurance will be provided for the conduct of the described activities.

The post-closure care activities described herein will be implemented to manage/control residual hazardous waste and/or hazardous waste constituents associated with closed regulated waste management units and solid waste management units within the former TSD Facility boundary, i.e., on the Plant Site and the MSU (Former R&D South) Parcel (shown on Figure 4). Corrective action activities described herein will be implemented to address conditions on, or emanating from, the TSD Facility within the Corrective Action Facility boundary, the Greenbelt and two contiguous off-site parcels (MWD and Dunton Park properties).

2 General Facility Description

This section provides a brief description of physical characteristics of the Plant Site, Greenbelt, and MSU (Former R&D-South) Parcel that are relevant to understanding the structure and purpose of the post-closure care and corrective action activities described later in this Plan.

2.1 Land Use

As shown on the zoning map in Appendix E, the Plant Site, the Greenbelt, and the MSU (Former R&D South) Parcel are zoned for "General Industrial" uses. These properties are bounded on the north by Howard Avenue, on the east by River Avenue, on the west by the MWD property and Dunton Park, and on the south by the Macatawa River (formerly the Black River). The Holland Board of Public Works Power Plant, coal and aggregate storage piles, and a scrap metal yard are located on the opposite shore of the Macatawa River. The adjacent properties are all zoned for General Commercial and General Industrial land use.

2.2 Physical Description

This section provides a brief description of the physical condition of the Plant Site, Greenbelt, and MSU (Former R&D South) Parcel. Additional details are available in the Final RAP/CMIP (June 2014).

Site Geology: The Plant Site, Greenbelt, and the MSU (Former R&D South) Parcel overlie unconsolidated sediments derived predominantly from glacial and Holocene lacustrine and fluvial processes. Approximately the southern two-thirds of the Plant Site were filled with miscellaneous fill material during the course of more than 100 years of industrial activity on the property. The lacustrine and fluvial sediments are comprised of sand, silt, clay and peat. The upper hydrogeologic sequence consists of the following lithology (from bottom to top):

- a thick glacial till;
- a basal aquitard variably comprised of clay, silt and/or peat;
- an isolated lower sand aquifer within the basal aquitard along the southern portion of the site;
- an upper sand aquifer typically ranging in thickness from approximately 10 feet to 30 feet; and,
- peat, organic clay and variable fill material over and within the sand aquifer as a result of either historic wetland depositional environments, dredge spoils from the river, or other miscellaneous filling activities.

The results of extensive site investigative activities have identified impact to the upper sand aquifer and peat, organic clay and variable fill materials over much of the Plant Site. Less significant impact has been identified in the upper sand aquifer on the Greenbelt and MSU (Former R&D South) Parcel. Impact on the Greenbelt appears to be related to historical fill placement (construction debris/rubble). Impact on the

MSU (Former R&D South) Parcel is largely confined to the southern and eastern border of the property and appears to have been caused by migration of constituents from source areas on the Plant Site.

Site Hydrogeology: Groundwater within the sand aquifer flows toward the south and discharges into the Macatawa River. A Hydraulic Containment System was installed in 2010 around the perimeter of the Plant Site to prevent off-site migration of impacted ground water.

Surface Topography: Surface topography in the region is characterized by relatively low relief. This topography is the result of historic glacial lake levels which previously covered the region. Fluvial erosion and the establishment of the Macatawa River valley have altered the land surface in the vicinity of the Site. Elevations on the properties relative to mean sea level range from roughly 579 feet along the river to 605 feet on the northern portion of the Site atop the crest of the river valley. Site topography is depicted on Figure 5.

Surface Waters: The properties are situated adjacent to the mouth of the Macatawa River where the river empties into Lake Macatawa. Lake Macatawa flows into Lake Michigan approximately 5 miles west of the Plant Site. Apart from the bayou located on the east side of the Plant Site, substantially all of the shoreline along the Plant Site and Greenbelt are girded with rip rap (see Figure 5).

Flood Plain: A portion of the southern area of the Plant Site and Greenbelt lie within the 100-year flood plain established at an elevation of 585 feet (NGVD '29) by the Federal Emergency Management Agency. The portion of the Plant Site and Greenbelt located within the 100-year flood plain is depicted in Figure 5.

2.3 Current design and operation of the Plant Site, Greenbelt, and MSU (Former R&D South) Parcel

The Plant Site and Greenbelt are vacant except for several small buildings located on the Plant Site that house three deep injection wells and a treatment building (Building #91) that houses the infrastructure and controls for the HCS. The MSU property is occupied by the former R&D infrastructure (offices, lab and pilot plant) which is now being used as a bioeconomy research institute. The boundaries and general layout of these properties are illustrated in Figure 5.

Surface Cover: A cap is present over the majority of the Plant Site. It consists of a 40-mil high density polyethylene (HDPE) textured geomembrane overlain by a 16 ounce per square yard geotextile which is overlain by 8 inches of sand and 4 inches of topsoil. The Greenbelt is covered by grass and other vegetation. The MSU (Former R&D South) Parcel is largely paved or covered with buildings, with the exception of two lawn/landscaped areas which lie to the southwest of the building and along the Howard Avenue frontage. The nature of surface cover on the Plant Site, Greenbelt, and MSU (Former R&D South) Parcel is depicted on Figure 5.

Waste Management: The only solid wastes generated at the Plant Site relate to remedial activities. These include filter media used to filter solids from extracted ground water prior to deep well injection as well as small quantities of light non-aqueous phase liquid (LNAPL) generated from a series of product observation wells located in the southwest portion of the site. Sampling and analysis of the LNAPL

indicate that it is primarily comprised of aliphatic hydrocarbons, with some aromatic hydrocarbons, including common solvents. This material is containerized and shipped off-site for disposal in accordance with applicable laws. The Plant Site is a Conditionally Exempt Small Quantity Generator (CESQG) under RCRA/Part 111. The MSU facility is a Large Quantity Generator (LQG).

Injection and Withdrawal Wells: There are no withdrawal wells for a water supply on the Plant Site, Greenbelt, or MSU (Former R&D South) Parcel. There are two active Class I (hazardous) deep disposal wells (UIC Permit No. MI-139-1W-004 and MI-139-1W-005) present on the Plant Site. These injection wells are permitted under the EPA's Underground Injection Control (UIC) program and are being used for disposal of remedial wastewater from the HCS. The locations of the deep wells are depicted on Figure 5.

Storm Water Management: Storm water from the Plant Site and Greenbelt drain via engineered swales and/or sheet flow to the Macatawa River. (There are some subsurface laterals located above the HDPE liner on the Plant Site designed to convey stormwater to the ditches/swales.) Runoff and roof drains from the MSU (Former R&D South) Parcel are discharged via a sealed piped conveyance across the Plant Site to the Macatawa River. The piped conveyance is also used to discharge water collected in a foundation drain beneath the MSU building. This discharge is authorized under a NPDES permit secured by MSU.

Sanitary and Process Sewers: With the exception of a sanitary line servicing a bathroom in Building #91, there are no active sanitary or process sewers at the Plant Site. All old sanitary and process sewers were removed or abandoned in place when the manufacturing infrastructure was demolished in 2008. The MSU (Former R&D South) Parcel has active sanitary sewers which convey sanitary wastewater as well as (periodically) process wastewater from the pilot plant to the sanitary sewer in Howard Avenue.

2.4 Existing Deed Notices/Land & Resource Use Restrictions

The following notices and land/resource use restrictions have been recorded on the deeds of properties used for hazardous waste management activities and/or which are subject to corrective action. The portions of the properties covered under these various deed notices/restrictions are depicted on Figure 7.

2.4.1 Deed Notices

The purpose of the deed notices is to provide a reliable mechanism by which all potential purchasers or future owner/operators may be notified in perpetuity of prior hazardous waste management activities at the Plant Site and MSU (Former R&D South) Parcel and the associated restrictions and post-closure requirements.

Notice of Hazardous Waste Management Activities/Corrective Action Obligations

Pursuant to R299.9525 of Part 111 of Michigan's Natural Resource and Environmental Protection Act (P.A. 451, as amended), a notice was originally filed on the deed of the Plant Site in October 2000 identifying that the property was used for hazardous waste management and is subject to corrective action requirements under RCRA and Part 111. A revised deed notice was filed in May 2008 to amend the legal

description of the Corrective Action Facility boundary following consultation with EGLE and to reflect transfer of ownership of the R&D South Parcel to MSU.

Notice of Post-Closure Care for Hazardous Waste Disposal Units

A deed notice was filed to satisfy the requirements of 40 CFR 264.119 [as incorporated by reference in R 299.9508(3)] in November 2001. The deed notice specified under 40 CFR 264.119 identified by survey the location of closed hazardous waste disposal units subject to post-closure requirements and other restrictions under 40 CFR Subpart G regulations and recorded the type and quantity of hazardous wastes disposed in each unit based on best available knowledge.

Notice Regarding Closure of Underground Injection Control Well (IW-3)

A deed notice was filed in 2021 documenting the closure (plugging) of IW-3 pursuant to Title 40 (Protection of Environment), Part 146 (Underground Injection Control Program: Criteria and Standards); Section 72 (Post Closure Care), 40 C.F.R. § 146.72, and Section G.8 of the Underground Injection Control Permit: Class I Hazardous Waste, issued by the United States Environmental Protection Agency to the Warner-Lambert Company effective December 15, 2014.

Copies of these registered deed notices are contained in Appendix F.

2.4.2 Land/Resource Use Restrictions

Land and resource use restriction have been recorded on the deed of the Plant Site and Greenbelt, the Former R&D South (MSU) Property, and Dunton Park. The restrictive covenants filed on the deeds of these properties specify allowable land uses and restrict activities that could create unacceptable exposures based on documented environmental conditions and/or disrupt/interfere with the long-term integrity of the remedial actions. These covenants were approved as part of the June 2014 Final RAP/CMIP. Copies of the restrictive covenants are provided in Appendix F.

2.5 Permanent Markers

Permanent markers have been installed at the site to indicate the locations of the three closed deep wells (IW-1, IW-2, and IW-3). In addition, a permanent marker is installed in the "No Dig Area". The No Dig Area, which is depicted on Figure 5, encompasses the former Building #70 Area where LNAPL (and associated VOC mass in soils) have been identified and the "PCB Remediation Waste Area" where total PCBs in excess of 100 ppm remain at depth. The boundaries of these areas are also surveyed and documented in the Restrictive Covenant (see Section 4.6.2). In accordance with the Restrictive Covenant, digging, excavation, and/or disturbance of surface cover within the areas depicted on the map are prohibited without prior approval for EGLE.

2.6 Site Contact

Thomas Donohue is the designated representative and contact person for this facility. Mr. Donohue may be reached by phone at (908) 901-7395 or by e-mail at thomas.donohue@pfizer.com. His mailing address is as follows:

Mr. Thomas Donohue, Director
Pfizer Inc.
100 Route 206 North
Peapack, New Jersey 07977

3 Post-Closure Care

This section describes the activities that will be undertaken to satisfy the post-closure care requirements specified in Rule 299.9613 and those portions of 40 CFR 264 Subpart G adopted by reference in Rule 299.11003 of Part 111. The post-closure care activities described here are applicable to the Plant Site and MSU (Former R&D South) Parcel, given their historical status as part of the TSDF.

The objective of post-closure care is to manage hazardous waste and/or hazardous waste constituents present at closed regulated units and solid waste management units so that the potential for release is controlled, minimized, or eliminated to the extent necessary to protect public health and the environment. This will be accomplished through: (1) continued operation, maintenance, and monitoring of the Hydraulic Containment System on the Plant Site; ; (2) implementation of the site inspection, maintenance, and ecological protection plan to preserve the integrity of direct contact exposure barriers on the Plant Site and Greenbelt; (3) implementation of worker health and safety and residual management protocols to prevent exposure to, or exacerbation of, impacted media on the Plant Site, Greenbelt, and MSU (Former R&D South) Parcel; and (4) compliance with land and resource use restriction emplaced on the deeds of the Plant Site, Greenbelt and MSU (Former R&D South) Parcel.

3.1 Plant Site

3.1.1 Operation and Maintenance of the HCS

The HCS is designed to prevent off-site migration of regulated constituents in ground water from both the upper and lower sand aquifers at the Plant Site. It currently consists of the following primary elements:

- A subsurface ground water flow barrier wall at the perimeter of the Plant Site that intersects both the upper and lower sand aquifers;
- A network of five ground water extraction wells and transmission piping to convey extracted ground water from the wells to a treatment system;
- A ground water pretreatment system to filter the water to remove solids;
- A pump to discharge treated ground water to two on-site deep injection wells permitted by the U.S. EPA under the UIC program;
- Appurtenant equipment, including instruments, process controls, power supply, valves and piping, as necessary to facilitate operation of the above-referenced equipment (housed in a groundwater treatment building designated "Building #91"); and,
- A network of 11 piezometer pairs designed to demonstrate and monitor the effectiveness of the hydraulic containment remedy.

As previously described in Section 1.4.2, a request (*Addendum to the Final RAP/CMIP)* was submitted to EGLE in May 2022 seeking approval to modify the HCS to provide for an alternate method for management of ground water extracted from within the HCS. This alternate ground water treatment system (GWTS) will provide for discharge of extracted fluids to the City of Holland BPW's POTW after pre-treatment in an on-site treatment system. The layout of the components of the HCS, including the new

building addition that will house the new GWTS as well as the force main and sampling manhole necessary to lift the wastewater to the sanitary sewer in Howard Avenue, is illustrated in Figure 6.

As described in the Addendum to the RAP/CMIP, the alternate GWTS will not change the overall performance objective for the HCS. It is intended to solely provide an additional management option for extracted groundwater from the HCS. The deep wells will remain operational in the near term to provide redundant management options. In the long-term, the deep well system may be phased out and the alternate GWTS may become the primary extracted water management system.

Until that time, both systems will be available to manage/dispose of extracted water pursuant to their respective permits (EPA UIC permit in the case of the deep wells and industrial user discharge authorization issued by the City of Holland BPW for the alternate GWTS). Both systems will utilize the same ground water extraction system but will be managed by a separate set of controls and a separate human machine interface (HMI) and programmable logic controller (PLC). Selection of which system to operate at any given time will be at the discretion of the operator and will depend on a variety of factors (operating conditions, cost, routine maintenance events, upset conditions, etc.). The systems will be operated according to separate operation and maintenance manuals depending on which extracted water management system is being utilized. These manuals are provided in Appendices G and M.

The purpose of these O&M Manuals is to assure that the HCS is operated and maintained in a manner that assures: (1) that the remedial objective is achieved (i.e. no off-site migration); (2) the terms and conditions associated with the UIC and BPW permits are met; and (3) the long-term mechanical integrity of the system is preserved. The manuals provide the following information:

- A description of the ground water extraction, treatment and discharge operation, including relevant engineering design plans, technical specifications and a sequence of system operations;
- A description of routine operation and maintenance of the system, including a summary of the specific tasks to be performed to maintain normal system operation and the schedule for performing these tasks;
- A summary of relevant regulatory permit and reporting requirements associated with the ground water extraction, treatment and discharge operation;
- A description of the potential for operating problems and possible corresponding causes as well as troubleshooting guidelines;
- A description of the corrective measures to be taken in the event that performance standards associated with the ground water extraction, treatment and discharge are not met; and,
- A description of health and safety protocols to be taken by operation personnel, emergency response measures, and emergency contacts.

The O&M Manuals are maintained in Building #91 along with additional equipment specifications and manuals.

3.1.2 Performance Monitoring of the HCS

Regardless of the method utilized for management of extracted ground water, the effectiveness of the HCS is monitored in accordance with the methods specified in the Performance Monitoring Plan (PMP) contained in Appendix H. The PMP describes the monitoring required to evaluate the effectiveness of the remedy, and to demonstrate that the remedy meets the primary performance objective: the maintenance of an inward ground water flow gradient (i.e., intragradient) across the barrier wall. Under the PMP, routine water level measurements are collected at 9 piezometer pairs installed in the shallow aquifer located around the perimeter of the barrier wall and two piezometers installed in the deep aquifer. The *target gradient condition* is 1 foot. The PMP includes a description of contingent evaluative and remedial measures to be implemented in the event that an inward gradient is not maintained. Contingencies are initiated in the event that a *reduced gradient condition* is observed (< 0.5 ft). The measures begin with evaluative measures to identify the source or cause of the condition and escalate to remedial or corrective measures, if warranted by the observed conditions. Contingency procedures are also specified in the event that repeated seasonal occurrences of gradient differentials of <0.1 foot are observed for more than 51 days in duration for two consecutive years.

3.1.3 Site Inspection, Maintenance, and Ecological Protection

Inspections of the cap/cover on the Plant Site are completed on an annual basis for any signs of failure due to frost heaving, mechanical disruption, or erosion in accordance with the Inspection, Maintenance, and Ecological Protection Plan (IMEPP) contained in Appendix I. The IMEPP provides for:

- Routine inspection and maintenance of existing site access controls/restrictions (i.e., perimeter fencing and gates).
- Routine inspection and maintenance of the cap/cover.
- Routine inspection and maintenance of shoreline protection and stormwater management systems (i.e., riprap).

As described in the IMEPP, the inspection and maintenance activities are focused on engineering controls designed to mitigate soil-related exposure/migration pathways.

The routine inspection and maintenance procedures assure the long-term efficacy of the: (1) cap/cover; (2) storm water management/erosion control measures; and (3) shoreline stabilization system installed on the banks of the Macatawa River.

The ecological protection elements of the IMEPP include monitoring/deterrence of burrowing animals, repair/restoration of soil barrier or shoreline protection system due to burrowing animal activities, and active maintenance of the site to maintain habitat less attractive to burrowing animals.

Inspection log forms are maintained on-site in Building #91 by the site contact and/or his designee(s). Building #91 is the document repository for the site.

3.1.4 Subsurface Worker Health & Safety Protocols

Subsurface excavation at the Plant Site, or other subsurface activity that could involve contact with environmental media, is conducted in conformance with appropriate health and safety procedures. A copy of the subsurface worker health and safety protocol for the Plant Site is contained in Appendix J. The protocol requires the development of a job-specific worker health & safety plan (HASP) for work conducted below the cap. The HASP will address OSHA/MIOSHA requirements applicable and relevant to the job scope, including HAZWOPER requirements specified in 29 CFR 1910.120. A master health and safety compilation has been prepared to assist contractors in the preparation of job-specific health and safety plans. The compilation includes a tabular summary of hazardous substances documented in prior investigations to be present in soil and ground water at the Plant Site, maximum detected concentrations in each media, and potentially applicable occupational exposure guidelines. The compilation also incorporates a figure depicting locations where hazardous substances have been detected in soil and/or ground water above direct contact criteria and/or where free phase liquids have been observed. A copy of the compilation is maintained in Building #91 and is updated on a periodic basis to reflect new information regarding site conditions.

3.1.5 Residual Management Protocols

Environmental media and/or debris generated during the course of work activities at the Plant Site will be characterized and managed in accordance with applicable state and federal solid and hazardous waste laws, the provisions of Section 20120c of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), and/or other guidance received from EGLE's Materials Management Division (MMD) or U.S. EPA. Section 20120c permits relocation of soils within the facility boundary subject to certain conditions. A copy of a residual management protocol for the Plant Site is contained in Appendix J. The protocol requires the development of a job-specific residual management plan for work conducted below the cap. A copy of the protocol is maintained in Building #91 and is updated on a periodic basis to reflect new information regarding site conditions.

Waste characterization data and relevant disposal documentation (e.g., manifests) related to the management of residuals generated during invasive activities will be maintained in Building #91 by the site contact and/or his designee(s).

3.2 Greenbelt

Existing cover and access restrictions (i.e., perimeter fence) on the Greenbelt will be maintained.

The Greenbelt is subject to the same Inspection, Maintenance, and Ecological Protection program (Appendix I) and Worker Health & Safety/Residual Management protocols (Appendix J) as the Plant Site.

3.3 MSU (R&D South) Parcel

The MSU (Former R&D-South Parcel) is largely paved or covered with buildings, with the exception of two lawn areas to the southwest of the R&D building and on the northern perimeter of the property along

Howard Avenue. The existing cover will be maintained and allowable land uses restricted pursuant to the land and resource use restrictions specified in the restrictive covenant contained in Appendix F.

3.3.1 Subsurface Worker Health & Safety Protocols

MSU maintains a below grade work permit program that requires development of location- and activity-specific health and safety plans (HASP) and prior approval by Environmental Control before proceeding with the work activity. Each HASP will address OSHA/MIOSHA requirements applicable and relevant to the job scope, including HAZWOPER requirements specified in 29 CFR 1910.120. MSU's subsurface worker health and safety precautions are contained in Appendix J.

3.3.2 Residual Management Protocols

MSU's below grade work permit program also covers residual characterization and disposal requirements associated with subsurface work activities. MSU maintains waste characterization data and relevant disposal documentation (e.g., manifests) associated with the management of residuals generated during invasive activities. MSU's residual management protocols are described in Appendix J.

3.4 Contiguous Properties (MWD/Dunton Park)

The owners of the MWD and Dunton Park properties have been provided with worker health and safety plans and residual management protocols that specify precautions to be implemented when invasive work activities are conducted. These are also outlined in the restrictive covenant recorded on the deed of Dunton Park.

3.4.1 Subsurface Worker H&S Protocols

Subsurface excavation at depths greater than 3 feet below current ground surface (approximately 582 msl) on the MWD and Dunton Park properties, or other subsurface activity that could involve contact with impacted media, will be conducted in conformance with appropriate worker health and safety procedures. These procedures include the development of location- and activity-specific health and safety plans (HASP). Each HASP will address OSHA/MIOSHA requirements applicable and relevant to the job scope, including HAZWOPER requirements specified in 29 CFR 1910.120. Subsurface worker health and safety precautions are described in Appendix J.

3.4.2 Residual Management Protocols

Impacted media (soil and/or ground water) generated during the course of work activities on the MWD and Dunton Park properties at depths greater than 3 feet below current ground surface must be characterized and managed in accordance with applicable state and federal solid and hazardous waste laws, the provisions of Section 20120c of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), and/or other guidance received from EGLE or US EPA. Waste characterization data and relevant disposal documentation (e.g., manifests) related to the management of residuals generated during invasive activities will be maintained. Residual management protocols for these properties are described in Appendix J.

3.5 Post-Closure Use/Disturbance

EGLE will be notified 60 days prior to any material change in the current use of the Plant Site, Greenbelt, and/or the MSU (Former R&D South) Parcel that has the potential to disturb remedial components. In accordance with R 299.9613 and 40 CFR §264.117(c), which is adopted by reference in R 299.11003, no uses of the properties will be allowed that will disturb the integrity of remedial components, including, but not limited to, the cap/cover, access restrictions, the HCS, or associated performance monitoring systems during the post-closure care period unless the disturbance is:

- consistent with the current use of the property and will not increase the potential hazard to human health or the environment; or
- necessary to reduce a threat to human health or the environment.

Deep rooted trees may be planted at the Plant Site in the future to increase transpiration of precipitation, thereby reducing the volume of groundwater requiring extraction, treatment, and disposal by the HCS. Such modifications may assist in phytohydraulic control of site groundwater within the contained volume. The introduction of such additional vegetation will be carefully coordinated with other remediation and site management activities within the groundwater flow barrier and in a manner that assures continued compliance with the remedial performance objective of maintaining an inward gradient as described in the PMP.

4 Corrective Action

This section describes remaining corrective action activities approved for implementation to address identified conditions within the Corrective Action Facility and contiguous facilities pursuant to Rule 299.9629 of Part 111 of Michigan's Natural Resource and Environmental Protection Act (P.A. 451 of 1994, as amended).

4.1 Plant Site

In addition to the post closure care activities described in Section 3.1 and 3.2 above, the following corrective action activities will be implemented on the Plant Site.

4.1.1 LNAPL Monitoring & Management

A LNAPL Monitoring and Management Plan (LMMP) will continue to be implemented to assess and, if warranted, respond to evidence of changes in the mobility and migration of LNAPL. A copy of the LMMP is contained in Appendix K. The LMMP provides a description of the monitoring and management procedures that will be employed in the former Building #70 Area to allow for the reliable assessment of potential LNAPL accumulation in the immediate vicinity of the HCS barrier wall and ground water extraction system to ensure that any such condition, if identified, does not compromise the integrity and/or operational efficacy of the Hydraulic Containment System.

4.2 Greenbelt

No additional corrective actions are warranted or anticipated in the Greenbelt Area.

4.3 MSU (Former R&D South) Parcel

No additional corrective actions are warranted or anticipated to address conditions on the MSU (Former R&D South) Parcel.

As indicated in Section 1.3.1, EGLE issued a determination in July 2018 that performance standards had been achieved pursuant to Part 111 of Act 451 and HSWA (CA900CR, Corrective Action Performance Standards Attained – Control Required) and no further corrective action was warranted or anticipated at the site provided that the HCS continued to operate and all land and resource restrictions specified in the restrictive covenant filed on the deed of the property were followed. A copy of the letter is provided in Appendix D.

4.4 Contiguous Properties (MWD/Dunton Park)

4.4.1 Ground Water Monitoring & Assessment Program

The Ground Water Monitoring & Assessment Plan contained in Appendix L will be implemented to continue to assess ground water quality on the MWD and Dunton Park Properties.

4.4.2 Restrictive Covenant

All restrictive covenants approved as part of the June 2014 Final RAP/CMIP have been recorded except for the one proposed for the MWD parcel. Pfizer will continue to expend efforts to obtain property owner consent to record the restrictive covenant on the MWD property provided in Appendix N, or an alternate institutional control mechanisms approved by EGLE.

4.5 Remaining Tasks

The following corrective action activities remain to be completed to address environmental conditions on, or emanating from, the Corrective Action Facility.

4.5.1 Construction of Alternate GWTS

Based on EGLE's August 25, 2021 letter approving the final design documentation, construction of the alternate GWTS can commence at any time based on Pfizer's sole discretion; however, startup of the system may not be initiated until the following conditions are satisfied:

(1) An Addendum to the Final RAP/CMIP describing the alternate GWTS system has been approved by EGLE;

(2) This PCP amendment is approved by EGLE; and

(3) Documentation is forwarded to EGLE that the City of Holland has activated the POTW discharge permit approved in August 2021.

4.5.2 Remedial Completion Report

A Remedial Completion Report will be prepared and submitted to EGLE within 120 days of completion of the construction of the GWTS. The Remedial Completion Report will include the following information:

- site plans, including final surveys documenting the horizontal and vertical locations of the building addition, the monitoring manhole, and the re-aligned stormwater pipeline and newly installed sampling manhole;
- a description of site grading activities and cover and cap replacement and repair activities, including implementing contractors, fill quantities, and survey/topographic control data evidencing that minimum cover thicknesses have been achieved;
- identification of sources of imported material for excavation backfill/site grading and associated clearance testing results; and
- as-built drawings of the completed GWTS building, process equipment, and monitoring manhole.
- deviations from final engineering plans/specifications, if any.

The survey information contained in the Remedial Completion Report will be used to document that cover conditions prescribed in the Restrictive Covenant recorded on the deed for the Plant Site have been restored following construction of the alternate GWTS.

4.5.3 Progress Reports

Progress reports will be prepared and submitted to EGLE semi-annually after the end of the second and fourth calendar quarters (in January and July). The progress reports will: (1) describe the activities undertaken during the semi-annual reporting period; (2) summarize the findings of activities undertaken during the reporting period; (3) identify problems or potential problems identified during the reporting period, if any; (4) describe actions taken to rectify the problem or potential problem, if any; (5) summarize contacts with the State or local groups; and (6) describe work projected to be conducted in the next reporting period.

4.6 Schedule of Remaining Tasks

The remaining corrective action tasks will be completed in accordance with the following schedule.

Schedule-Remaining Corrective Action Activities

Task	Schedule
Submit to EGLE an Addendum to Final RAP/CMIP describing Proposed Alternate GWTS	May 2022
Commence construction of GWTS	At Pfizer's discretion
Start Up of GWTS	Upon approval of RAP/CMIP Addendum, Post-Closure Plan, and Activation of Approved POTW Discharge Permit by City of Holland BPW
Alternate GWTS Construction Completion Report	Within 120 days of construction completion of GWTS
LNAPL Monitoring and Management Program	Ongoing
Off-Site Ground Water Monitoring Plan	Ongoing
Implement land/resource use restrictions on the MWD Parcel via recording of Restrictive Covenant or execution of an EGLE-approved alternate institutional control mechanism l	Ongoing

5 Post-Closure Care Cost Estimate

Pursuant to Rules 299.9702 and 299.9712, the development of cost estimates for implementation of post-closure care and corrective action obligations are required. The cost estimates, which are to be developed in accordance with 40 CFR 264.142 and 40 CFR 264.144, are based on current job rates of hiring a third party to perform the post-closure and corrective action activities. This section provides estimates of costs for the implementation of the post-closure care elements described in this plan as well as the currently known and available corrective action costs.

5.1 Post-Closure Care Activities

Post-closure care consists of the following activities at the Plant Site and Greenbelt.

- operation and maintenance of the HCS;
- performance monitoring of the HCS;
- inspection and maintenance of access restrictions and exposure/migration controls (cap/cover, shoreline improvements, and storm water management structures);
- implementation of an ecological protection plan; and
- implementation of site management practices such as worker health and safety and residual management protocols.

The cost to implement these post-closure care activities is estimated to be **$10,060,000** for the thirty-year post closure period. This post-closure care estimate is based on third party costs to perform the post-closure work. Worksheets providing the basis for these post-closure cost estimates are provided in Appendix O. A breakdown of the post-closure care costs is provided below:

Post-Closure Care Cost Estimate

Post-Closure Activity	Estimated Cost
Operation & Maintenance of the HCS (Plant Site) via either the deep well system or the alternate GWTS (see Table 1-1a and 1-1b in Appendix O)[5]	**$8,790,000**
Performance Monitoring of HCS (Plant Site) (see Table 1-2 in Appendix O)	**$400,000**
Site Inspection, Maintenance, and Ecological Protection Plan and Subsurface Worker H&S/ Residual Management Protocols (Plant Site and Greenbelt) (see Table 1-3 in Appendix O)	**$870,000**
TOTAL	**$10,060,000**

5.2 Corrective Action Activities

The remaining corrective action activities consist of the following activities.

- Plant Site:
  - LNAPL Monitoring and Management Program
- Contiguous Properties (MWD/Dunton Park):
  - Ground Water Monitoring and Assessment Program.
  - Emplacement of restrictive covenant on deed of the MWD parcel (or alternate institutional control mechanism approved by EGLE)

The cost to implement the remaining corrective action activities specified above is estimated to be **$94,000**. This corrective action estimate is based on third party costs to perform the corrective action activities. Worksheets providing the basis for these post-closure cost estimates are provided in Appendix O. A breakdown of the corrective action costs is provided below:

[5] As detailed in Appendix O, the costs presented here are sufficient to operate and maintain the HCS with management of extracted ground water via either the existing deep well system or the new GWTS.

Corrective Action Implementation Costs

Corrective Action Activity	Estimated Cost
LNAPL Monitoring & Management (Plant Site) (See Table 2-1 in Appendix O)	$44,000
Off-Site Ground Water Monitoring and Assessment (MWD and Dunton Park) (See Table 2-2 in Appendix O)	$50,000
TOTAL	**$94,000**

5.3 PERIODIC UPDATE OF ESTIMATES

The financial assurance cost estimate for the Corrective Action Facility will be updated annually to account for inflation, dependent on the annual inflation index, or at any other time where changes in facility design/operation affect the plan.

6 Financial Assurance Instrument

This section describes the instrument that will be used to provide the State of Michigan with assurance of financial capability to conduct the post-closure care and corrective action activities described in this Plan. Part 7 of the administrative rules promulgated pursuant to Part 111 requires the owner/operator of a facility subject to post-closure care requirements and/or corrective action obligations to establish suitable financial assurance for the cost of performance of these activities by a third party. Financial assurance may be provided through one or more instruments, including: a trust fund, surety bond, letter of credit, certificate of deposit or other time deposit account, insurance, or financial test. The financial assurance instrument must be adjusted periodically to reflect increases (due to inflation or other factors) or decreases (due to completion of activities and/or reduced level of operation at the facility) in the estimated cost of post-closure care and/or corrective action.

6.1 Post-Closure Care

As noted in Section 5.1, the cost for post-closure care of the Plant Site is estimated to be $10,060,000 for the thirty-year post closure period. This cost is based on third party estimates. It includes costs to inspect and maintain site controls (i.e., access restrictions and exposure controls), implement worker H&S and residual management protocols, and to operate, maintain, and monitor the Hydraulic Containment System.

6.2 Corrective Action

As noted in Section 5.2, the cost for implementing remaining corrective action activities to address conditions on or emanating from the corrective action facility is estimated to be $94,000. This cost is based on third party estimates. It includes costs to continue LNAPL monitoring and management, the off-site ground water monitoring, and emplacement of a restrictive covenant on the MWD property (or an alternate institutional control mechanism approved by EGLE).

6.3 Financial Assurance Instrument

Financial assurance for post-closure care and corrective action activities at the Site is provided to the State of Michigan by means of a letter of credit specified under R 299.9706 and 40 CFR 264.145(d). Documentation regarding the financial assurance instrument that is currently in place for the facility is contained in Appendix P. Pursuant to R299.5708(11) and 40 CFR 264.145(e)(10), Pfizer will submit updated financial test information to the Director of EGLE and US EPA Administrator within 90 days of the close of its fiscal year or on or before March 30, 2023 to reflect the revised post-closure care and corrective action cost estimates contained in this PCP modification. Pfizer will update its financial assurance mechanism annually thereafter on the same schedule (within 90 days of the close of its fiscal year) to provide updated information regarding the cost of post-closure care and corrective action activities and/or to account for the effect of inflation on the cost estimates for these activities.

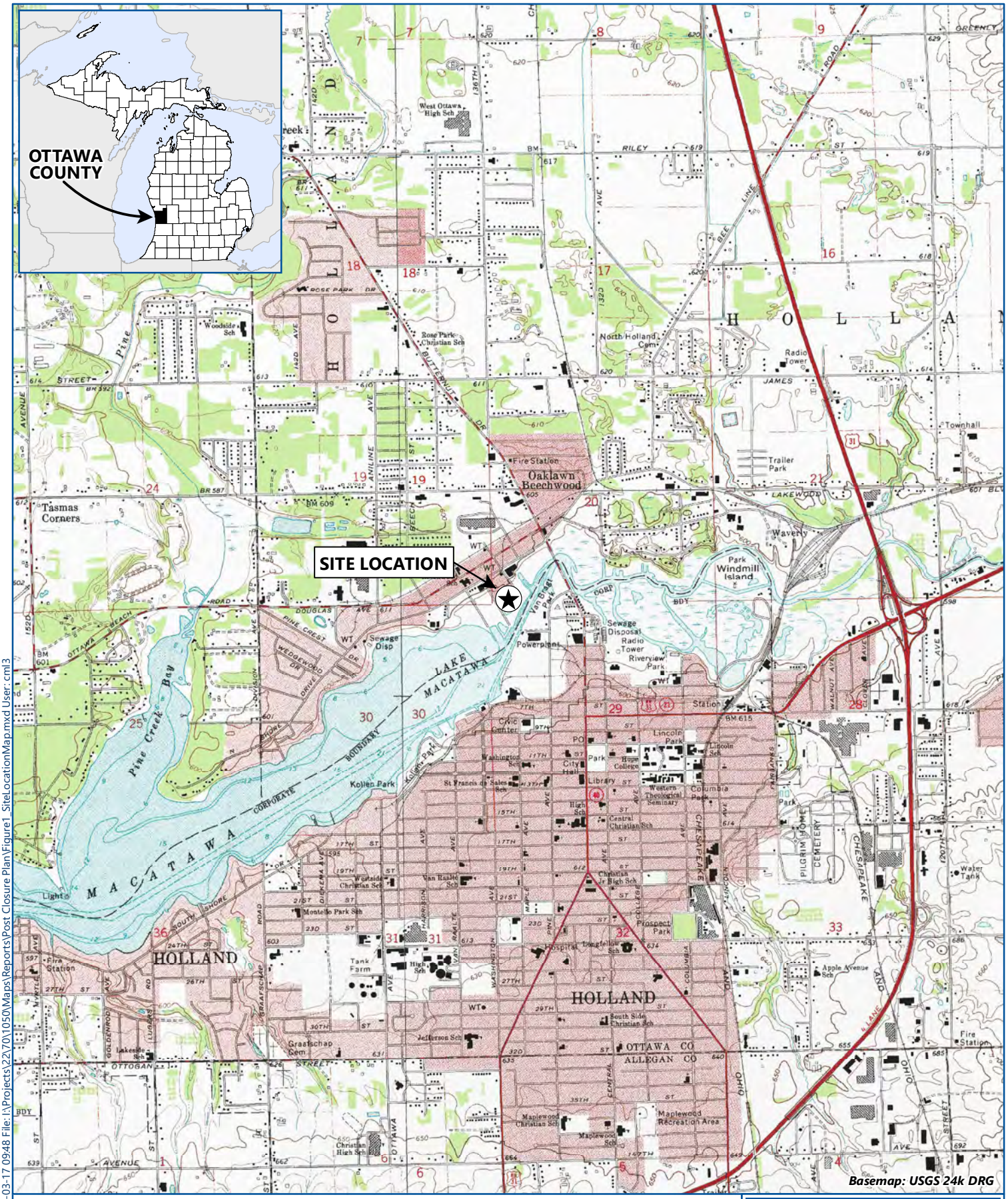
7 Amendment Procedures

This Post-Closure Plan may require periodic amendment to assure that it continues to address the corrective action and post-closure care activities associated with the facility and contiguous properties. Periodic amendment may be necessary to:

- amend post-closure care provisions to address changes in facility design and/or operation that would affect the approved PCP;
- address changes in the expected year of final closure or events which occur at the facility that affect the scope of activities described in the PCP; and/or
- update post-closure care and corrective action cost estimates to account for completion/changes in the post-closure care or corrective action work elements.

Amendments to this plan will be made in accordance with the procedures described in 40 CFR 264.118 and adopted by reference in Rule 299.11003. As specified in these regulations, a written notification/request will be submitted to the Director or his/her designee for a modification at least 60 days prior to a proposed material change in facility design and/or operation, or no later than 60 days after knowledge of an unexpected event which has occurred that has the potential to affect the scope of the PCP. The written notification/request will include a copy of the amended PCP. The Director or his/her designee may request changes to the amended PCP under the conditions described in 40 CFR 264.118(d)(2) in which case this PCP must be revised or amended and resubmitted to the Director within 60 days of the request. Any modifications requested by the Director or his/her designee will be approved, disapproved, or modified in accordance with 40 CFR 124 and 270.

Figures



★ Site Location

N

0 3,000

Feet

BARR

SITE LOCATION MAP

WARNER-LAMBERT FORMER MANUFACTURING SITE

Holland, MI

FIGURE 1

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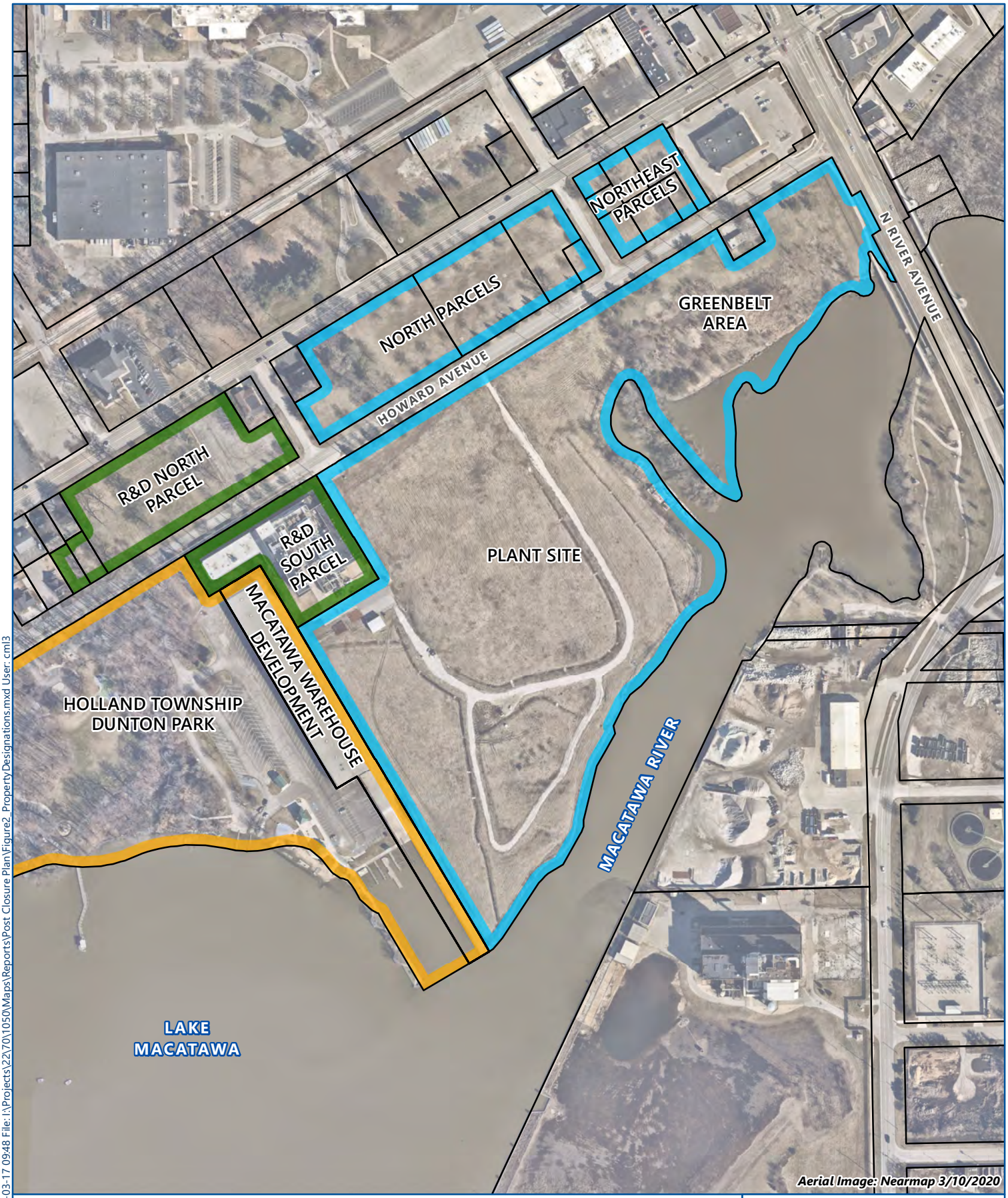


Parcel Boundary
MSU Property
Pfizer or Pfizer Subsidiary Property
Contiguous Properties

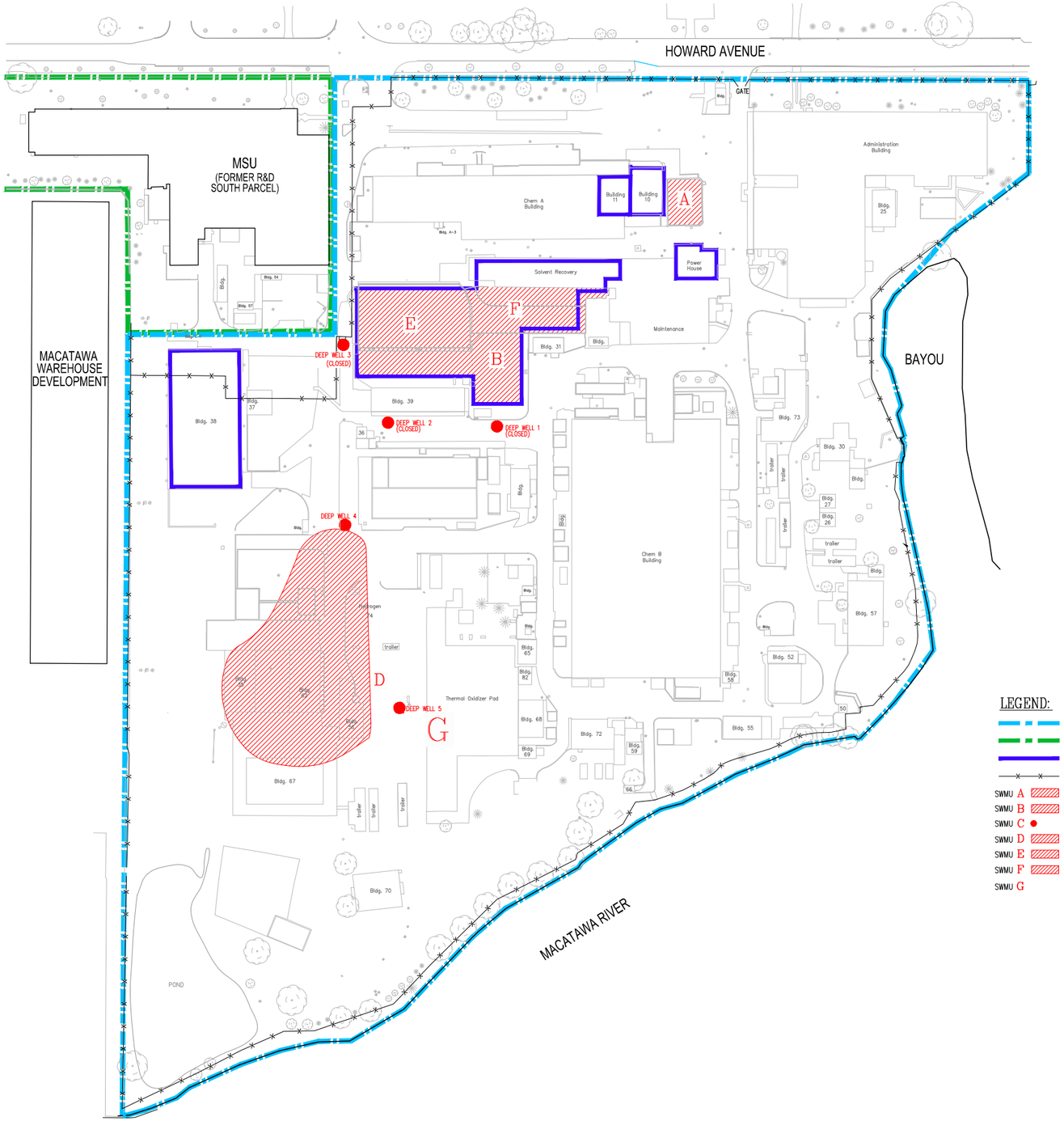
N

0 350
Feet

PROPERTY DESIGNATIONS
WARNER-LAMBERT FORMER MANUFACTURING SITE
Holland, MI

FIGURE 2

Barr Footer: ArcGIS 10.8.1, 2022-03-17 09:48 File: I:\Projects\22\70\1050\Maps\Reports\Post Closure Plan\Figure2_Property Designations.mxd User: cml3



LEGEND:

- PFIZER OR PFIZER SUBSIDIARY PROPERTY BOUNDARY
- MSU PROPERTY BOUNDARY
- RCRA REGULATED UNITS
- CHAIN LINK FENCE
- SWMU A – FORMER UNDERGROUND FUEL OIL STORAGE TANKS
- SWMU B – FORMER BIOLOGICAL TREATMENT SYSTEM AND RAINWATER COLLECTION TANK
- SWMU C – UNDERGROUND INJECTION WELLS (DW-1 THROUGH DW-5)
- SWMU D – FORMER USED EQUIPMENT STORAGTE AREA
- SWMU E – FORMER UNDERGROUND SOLVENT STORAGE TANK FARM
- SWMU F – SOLVENT RECOVERY TANK FARM
- SWMU G – HISTORICAL INDUSTRIAL USE AND FILL AREAS (APPROX.)

NORTH

PLANT NORTH

PFIZER HOLLAND

0 80 160
SCALE IN FEET

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
-	-	-	-	—— ——	-

	A	B	C	0	1	2	3
CLIENT							
BID							
CONSTRUCTION							
RECORD							
RELEASED TO/FOR	DATE RELEASED						

BARR

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Minneapolis, Minnesota
Ph: 1-800-632-2277

Project Office:
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GRAND RAPIDS, MI 49512

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Fax: (616) 554-3211
www.barr.com

Scale	AS SHOWN
Date	--/--/--
Drawn	---
Checked	---
Designed	---
Approved	---

WARNER-HOLLAND LLC
HOLLAND, MICHIGAN

PLANT SITE - CLOSED REGULATED
UNITS AND SWMUs

BARR PROJECT No. 22701050.09
CLIENT PROJECT No.
DWG. No. FIGURE 3
REV. No.

CADD USER: JACOB M. DAIRE FILE: \\BARR.COM\PROJECTS\GRAND RAPIDS_HEC\USERS\LVANPROOYEN\DWGS\PFZ0116\PFZ0116F04-BARR.DWG PLOT SCALE: 1:2 PLOT DATE: 3/16/2022 1:33 PM

RCRA Corrective Action Facility Boundary

Parcel Boundary

TSD Facility Boundary

NFA Determination (June 2013)

Corrective Action Complete-Performance Standards Attained (2018)

N

0 350

Feet

BARR

TSDF AND RCRA CORRECTIVE ACTION FACILITY BOUNDARIES

WARNER-LAMBERT FORMER MANUFACTURING SITE

Holland, MI

FIGURE 4

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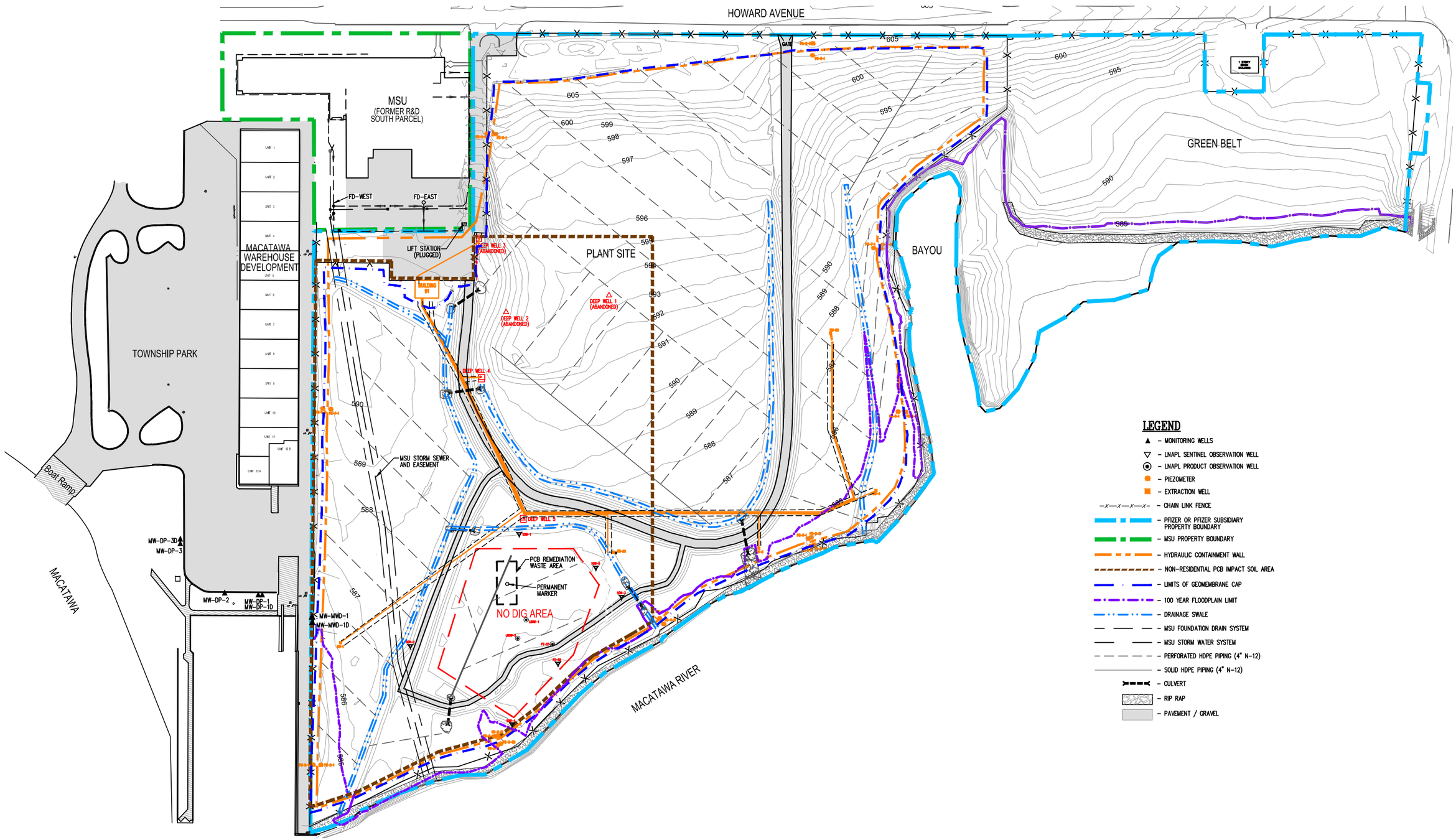

PFIZER HOLLAND

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CLIENT								
BID								
CONSTRUCTION								
RECORD								
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	DATE RELEASED							

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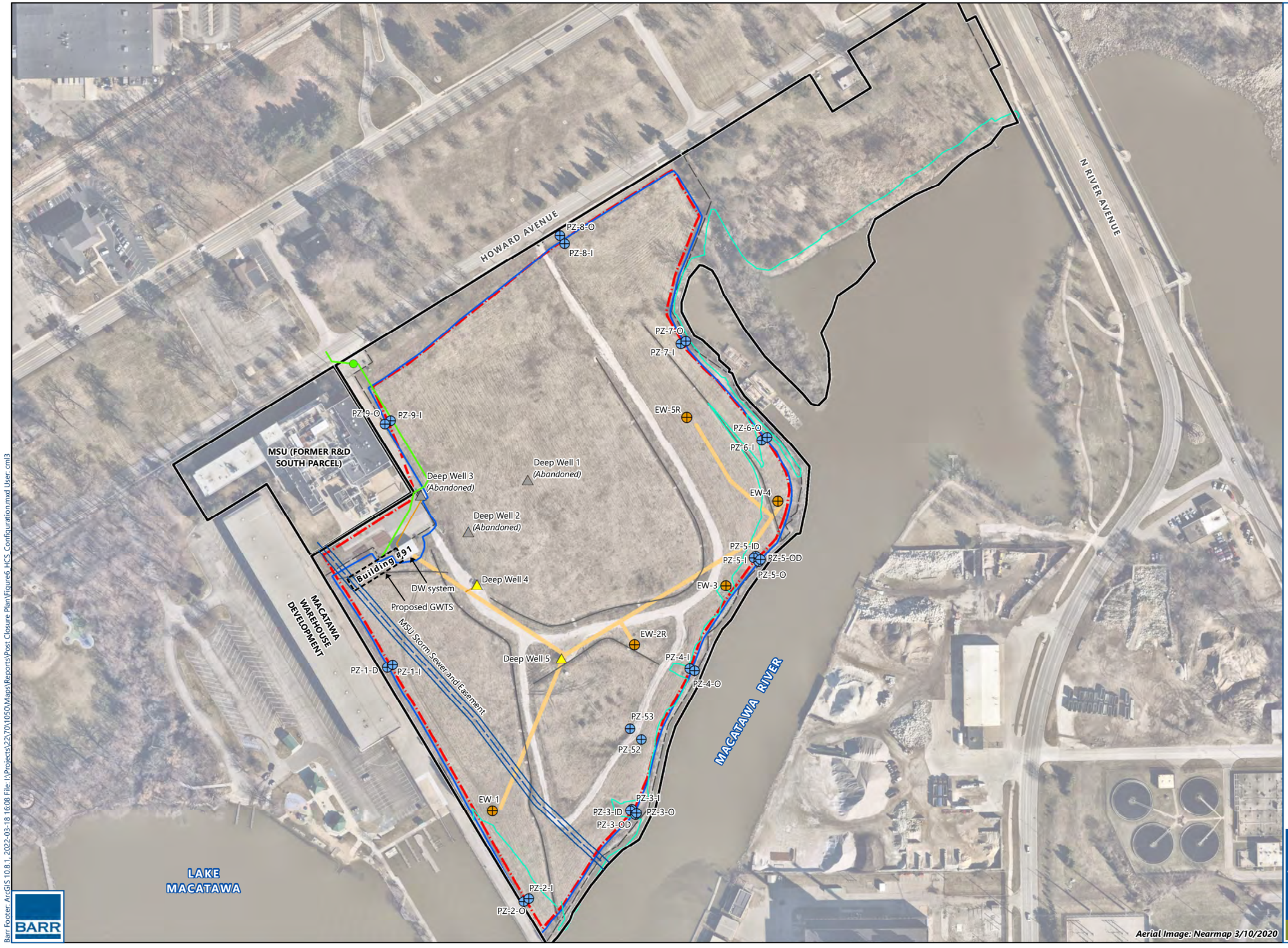
www.barr.com

Scale	AS SHOWN
Date	–/–/–
Drawn	––
Checked	––
Designed	––
Approved	––

WARNER-HOLLAND LLC
HOLLAND, MICHIGAN

CURRENT CONDITIONS

BARR PROJECT No. 22701050.09
CLIENT PROJECT No.
DWG. No. FIGURE 5
REV. No.



Property Boundary
Hydraulic Containment Wall
Geomembrane Cap
Extraction Well Transmission Line
Deep Well Transmission Line
Drainage Swale
100-Year Floodplain Limit
Fence
Force main to sanitary sewer discharge
Discharge Monitoring Manhole
Deep Well
Abandoned Deep Well
Extraction Well
Piezometer
GWTS Building Expansion

N

0 200
Feet

HCS CONFIGURATION (WITH PROPOSED GWTS)
WARNER-LAMBERT FORMER MANUFACTURING SITE
Holland, MI

FIGURE 6

BARR

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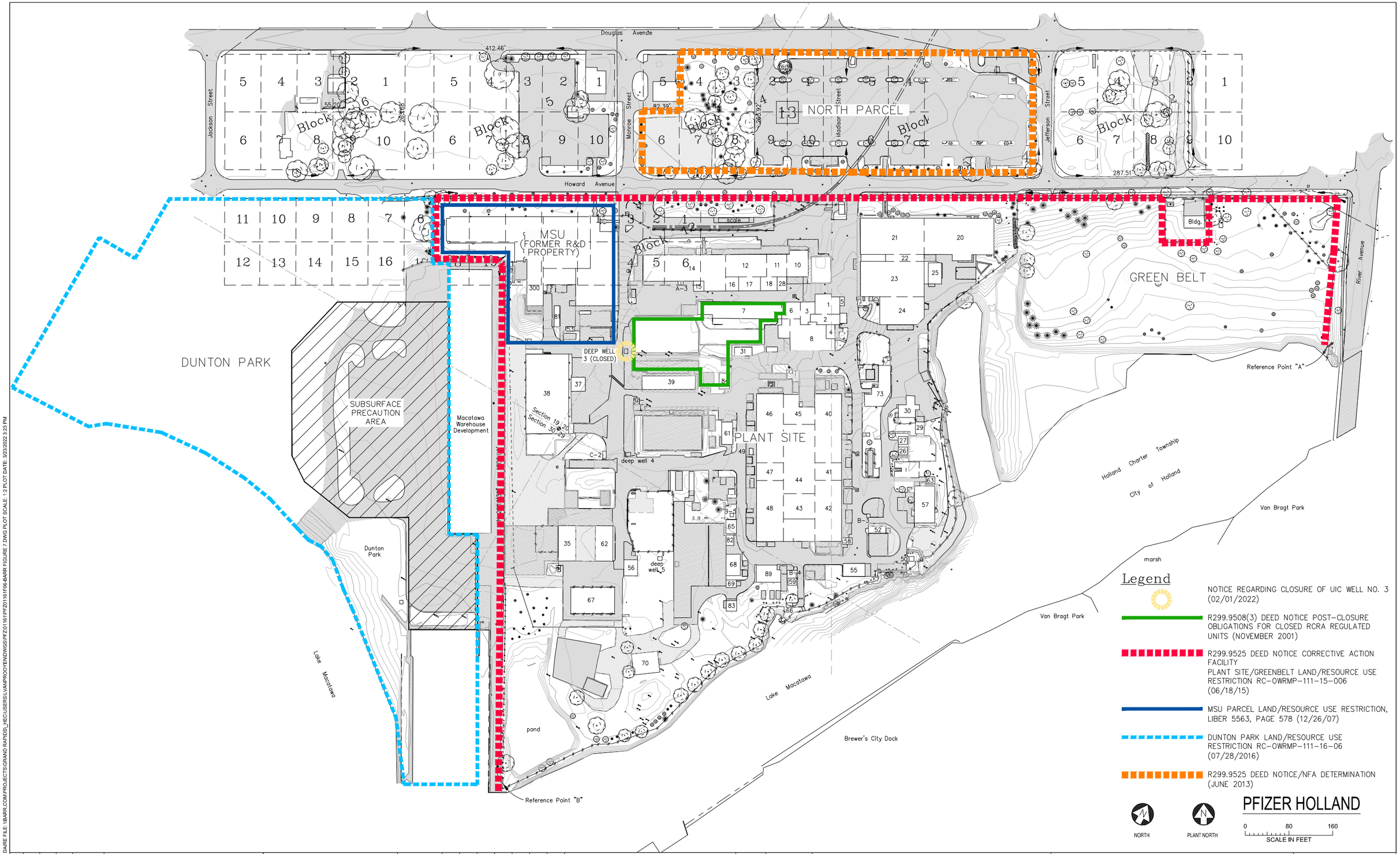

CADD USER: JACOB M. DAIRE FILE: \\BARR.COM\PROJECTS\GRAND RAPIDS_HEC\USERS\LVANPROOYENDWGS\PFZ01161\PFZ01161F06-BARR FIGURE 7.DWG PLOT SCALE: 1:2 PLOT DATE: 3/23/2022 3:23 PM

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CLIENT							
BID							
CONSTRUCTION							
RECORD							
	DATE RELEASED						

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Designed	--
Approved	--

WARNER-LAMBERT LLC
HOLLAND, MICHIGAN

EXISTING DEED NOTICES
LAND/RESOURCE USES RESTRICTION

BARR PROJECT No. 22701050.09
CLIENT PROJECT No.
DWG. No. FIGURE 7
REV. No.

Appendices

Appendix A

TSD/Corrective Action Facility Boundary Documentation

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

November 21, 2007

Mr. Brett Gampper, Manager
Site Remediation and Due Diligence
Pfizer Global Engineering
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Gampper:

SUBJECT: Approval of Clarification and Delineation of Facility Boundaries; Pfizer Global Manufacturing (Pfizer), Holland, Michigan; MID 006 013 643

The Department of Environmental Quality (DEQ), Waste and Hazardous Materials Division (WHMD), has completed a review of your letter dated October 1, 2007, regarding clarification and delineation of facility boundaries at the Pfizer manufacturing site in Holland, Michigan that was submitted in follow up to a conference call held on September 20, 2007. Your letter superseded and replaced a letter on the same topic that was submitted on May 18, 2007. As part of this review, the WHMD has also taken into consideration the background information contained in your e-mail to me dated October 3, 2007.

Based upon this review, the WHMD has determined that Pfizer adequately corrected the error in the delineation of the treatment/storage/disposal facility boundary that was made in the original 1980 "Part A Permit Application" map and subsequent related documents (even though the facility is now in postclosure/corrective action status). The corrective action facility boundary was also revised as discussed during our conference call.

In order to officially submit the updated "Part A" map, Pfizer must complete and provide the DEQ an updated Michigan Site Identification Form (EQP5150; see http://www.michigan.gov/documents/deq/deq-whm-hwp-EQP5150_214510_7.pdf and the directions at http://www.michigan.gov/documents/deq/deq-whm-hwp-EQP5150-directions-with-form_214511_7.pdf). An explanation regarding the submittal of the revised "Part A" map and anticipated closure/disposition of the facility should be provided in Item XII, Comments, of the EQP5150 Form. The attached map should include a reference in the title block to the EQP5150 Form. Until such time as the DEQ determines that corrective action is complete (without controls or with institutional controls), any future owner(s) of the property, or portions thereof, are required to submit an EQP5150 Form and a map that accurately describes and depicts the portion(s) of the facility that they own.

Additionally, the revised corrective action facility boundary map that is submitted under R 299.9525 of the administrative rules promulgated pursuant to Part 111, Hazardous

Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, should include a reference to the R 299.9525 deed notice in the title block for clarity purposes.

Please submit the revised EQP5150 Form and verification of the recording of the deed notice by December 21, 2007. The WHMD also requests that you submit a copy of the agreement between Pfizer and Michigan State University regarding corrective action liability associated with the former Research and Development property slated for donation to the university within 30 days of signing that document.

Thank you for your cooperation in this matter. Should you have any questions regarding this letter, please contact me.

Sincerely,

Cheryl Howe

Cheryl Howe, Environmental Engineering Specialist
Hazardous Waste Management Unit
Hazardous Waste Section
Waste and Hazardous Materials Division
517-373-9881

cc: Mr. Allen Reilly, Horizon Environmental
Mr. Bill Davidson, Horizon Environmental
Ms. De Montgomery, DEQ
Mr. Steve Buda, DEQ
Mr. Dale DeKraker, DEQ
Dr. Kay Fritz, DEQ
Mr. Art Ostaszewski, DEQ
Mr. David Slayton, DEQ
Corrective Action File

Required under authority of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Failure to submit this information may result in civil or criminal penalties.	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY Waste and Hazardous Materials Division **SITE IDENTIFICATION**	DEQ

I. The form is being submitted CHECK CORRECT BOX(ES) If submitting a subsequent notification you can contact the MDEQ-WHMD District or Lansing office for a pre-populated form. For locations and phone numbers go to www.michigan.gov/deq.	☐ **as initial notification:** to notify as a new site or new owner for the site: Mail this form and the user charge fee with either a receipt from paying the $50.00 fee on-line using a Master Card, VISA, or Discover Card (https://www.thepayplace.com/mi/deq/siteid) or by check made payable to the State of Michigan. Mail to MDEQ Revenue Office - HWUC, PO Box 30657, Lansing, MI 48909-8157 OR X **as subsequent notification:** to change, update, or verify site information for an existing owner of a site with a previously issued Site ID number: Mail directly to WHMD-MDEQ at WHMD-MDEQ, Notification Unit, PO Box 30241, Lansing, MI 48909-4797 if a fee is not required. Otherwise submit to MDEQ Revenue Office (see above). AND ANY OF THE FOLLOWING ☐ as a component of a Hazardous Waste Permit Part A (submit to WHMD-MDEQ) ☐ as a component of the Hazardous Waste (biennial) Report (submit to WHMD-MDEQ)
II. Site's ID Number	A. Site's Identification (ID) Number: MID 006 013 643
III. Name of Site TYPE OR PRINT CLEARLY	A. Legal Company Name: Warner-Lambert Company LLC B. Site Specific Name (d/b/a): Warner-Lambert Company LLC, Former Manufacturing Site
IV. NAICS for this Site	A. 562910 B. C. D.
V. Site Location Address and Other Site Information TYPE OR PRINT CLEARLY	Street Address line 1 : 188 Howard Avenue Address line 2 / City, Town, or Village: Holland State, Province or Subdivision (2 letters): MI / Country: USA County Name (MI only): Ottawa / Zip or Postal Code: 49424 Tax Number: 22-1598912 / Approx / Ave Number of Employees: 15
VI. Site Mailing Address TYPE OR PRINT CLEARLY	Street Address line 1 or PO Box: 100 Route 206 North Address line 2: MS 610 City, Town, or Village: Peapack / State, Province or Subdivision (2 letters): NJ Country: USA / Zip or Postal Code: 07977
VII. Site Contact Person TYPE OR PRINT CLEARLY	First Name: Brett / MI: / Last Name: Gampper Phone Number: (908) 901-7151 / Phone number extension: email address: brett.gampper@pfizer.com / Fax number: (646) 441-6816
VIII. Indian Reservation	Facility on Indian Reservation Land ☐yes X no

IX Owner of the site and/or Operator of Site	A. (check applicable box(es))	Approx date became owner or operator: 1950
TYPE OR PRINT CLEARLY	X Owner Operator	Approx date ceased as owner or operator: See explanation in Comment Section XII
	Name: Parke, Davis & Company LLC	
	Type (check one): X Private ▫ County ▫ District ▫ Federal ▫ Indian ▫ Municipal ▫ State ▫ Other	
	B. (check applicable box(es))	Approx date became owner &/or operator: 1972
	Owner X Operator	Approx date ceased as owner &/or operator: See explanation in Comment Section XII.
	Name: Warner-Lambert Company LLC	
	Type (check one): X Private ▫ County ▫ District ▫ Federal ▫ Indian ▫ Municipal ▫ State ▫ Other	
Add any additional owners or operators on the comment page. The property owner is not required unless said property owner also acts as the owner or operator of the activity that generates the waste	C. (check applicable box(es))	Approx date became owner or operator: 2007
	X Owner ▫ Operator	Approx date ceased as owner or operator: See explanation in Comment Section XII.
	Name: Michigan State University	
	Type (check one): ▫ Private ▫ County ▫ District ▫ Federal ▫ Indian ▫ Municipal X State ▫ Other	

X. Type of Regulated Waste Activity
Mark 'X' in the appropriate box(es) for the activity on-site as of the date signed or the date entered in comment section XII.

A. Hazardous Waste Activity(ies) **at this location**

1. Generator of hazardous waste (can only choose one of the following three categories a-c)

X a. LQG: Greater than 1,000 kg/mo (2,200 lbs.) of non-acute hazardous waste; or
▫ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs.) of non-acute hazardous waste; or
▫ c. CESQG: Less than 100 kg/mo of non-acute hazardous waste

For items 2 through 8, check all that apply

2. Transporter of hazardous waste
▫ a. Transport hazardous waste
▫ b. Commingle waste
▫ c. Offloads during transportation
[may require a permit & registration]

3. Designated facility (hazardous waste received from off-site)
▫ a. Treats or treated waste on-site at this location
▫ b. Stores or stored waste on-site at this location
▫ c. Disposes of or disposed of waste on-site at this location
▫ d. Recycles recyclable materials on-site at this location
[requires submittal of Part A & permit]

X 4. Underground injection well on-site at this location
▫ 5. Import agent for hazardous waste
▫ 6. Generates mixed radioactive waste on-site at this location
▫ 7. Accepts hazardous waste from CESQG & accumulates over 1,000kg on-site at this location

8. Exempt boiler and/or Industrial Furnace on-site at this location
▫ a. Smelting, melting, and refining furnace exemption
▫ b. Small quantity on-site burner exemption

B. Polychlorinated biphenyls (PCBs) generated at this location.

X Generated an item, product, or material containing a concentration equal to or greater than 100 ppm of PCB

X. Type of Regulated Waste Activity - CONTINUED
Mark 'X' in the appropriate box(es) for the activity on-site as of the date signed or the date entered in comment section XII.

C. Used Oil Activities **at this location,** check all that apply: (used oil generator only - go to E.) [see comments for additional information]

1. Used Oil Fuel Marketer
   - ☐ a. Marketer who directs shipments of off-specification used oil to used oil burner.
   - ☐ b. Marketer who first claims the used oil meets the specifications.

☐ 2. Off-specification Used Oil Burner

3. Used Oil Transporter (check one only)
   - ☐ a. Transporter only
   - ☐ b. Transporter with transfer facility **[requires a permit & registration]**

☐ 4. Used Oil Processor
☐ 5. Used Oil Re-refiner
☐ 6. Used Oil Collection or Aggregation Point
☐ 7. Collection Center or Aggregation Point that accepts DIY Used Oil

D Universal Waste Activities **at this location,** check all that apply:

1. Large Quantity Handler: check the box(es) for the universal wastes generated or accumulated

type of universal waste	generating	accumulating over 5,000kg
a. Batteries	☐	☐
b. Thermostats	☐	☐
c. Mercury Thermometers	☐	☐
d. Devices containing elemental mercury	☐	☐
e. Mercury Switches	☐	☐
f. Pesticides	☐	☐
g. Electric Lamps	☐	☐
h. Pharmaceuticals	☐	☐
i. Consumer Electronics	☐	☐

☐ 2. Destination Facility of Universal Waste (a hazardous waste permit may be required for this activity)

E. Liquid Industrial Waste Activities at this location, check all that apply: (not hazardous waste activity)

☐ 1. Liquid Industrial Waste Transporter **[requires a permit & registration]**
☐ 2. Transporting own waste
X 3. Liquid Industrial Waste Generator
☐ 4. Liquid Industrial Waste Designated Facility

F. All generation of waste has ceased at this location and/or any other regulated waste activity specified in Section X. Check one box and enter in a date using this format (mm/dd/yyyy):

X 1. still in business at this location
☐ 2. out of business at this location

Date ceased: Manufacturing activities ceased in the 1st quarter of 2007; however, regulated wastes will continue to be generated as part of demolition and remedial work

XI. **Certification:** I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Signature of owner, operator, or authorized representative	**Name and Official Title (type or print)**	**Date Signed (mm-dd-yyyy)**
	William Freckman Site Leader	

XII. Comments:

If there is a change in the activity status under Section X.A. 1.a-c or Section X.C. 1, 2, 4, or 5, from the previously reported regulated waste activity at this site, the actual data of the change could impact the user fee. Please indicate below the actual date of the regulated waste activity change(s) at this site and add an explanation. Otherwise, the effective date of the regulated waste activity(ies), specified in Section X, will become effective on the certification date (Section XI). To determine the current waste activity at this location please log into to the public website at http://www.deqstate.mi.us/wdspi

This form is submitted only for the purpose of modifying the historical boundary of the Treatment, Storage, and Disposal (TSD) Facility associated with Parke, Davis & Company's land holdings in Holland, Michigan and to document a change in ownership of a portion of this property.

Parke, Davis & Company, filed a Notice of Regulated Waste Activity (Part A Permit) for the Holland site in 1980. A copy of the figure from the Part A Permit Application is attached to this form. The figure submitted with the Part A application appears to indicate that property located to the north of Howard Avenue and to the west of the former Madison Street was included in the historical boundary of the TSD facility.

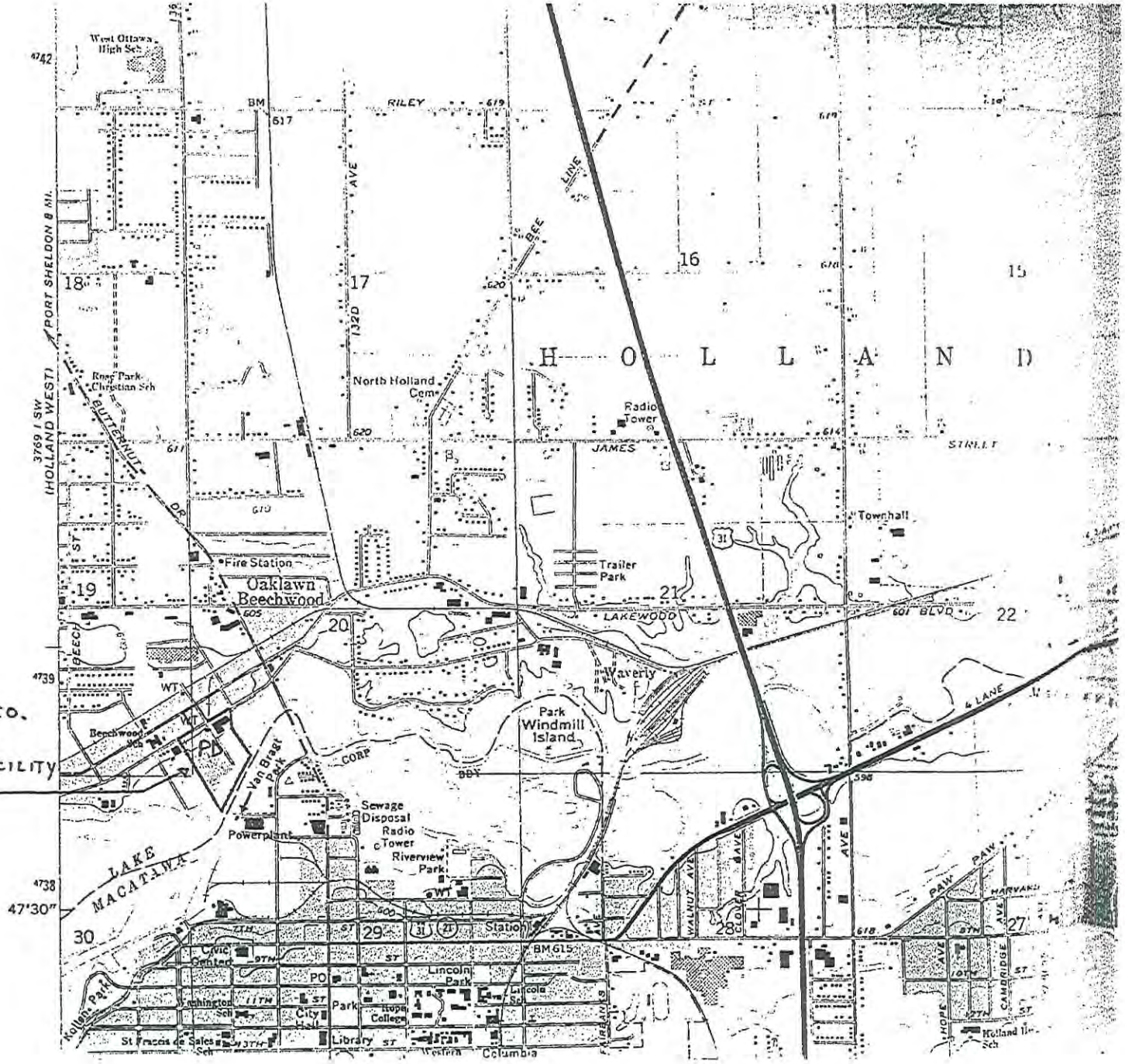
Warner Lambert Company[1] operated portions of the site as a TSD until 1998 when the site shifted to generator status (in accordance with generator treatment exemptions promulgated pursuant to rule 299.9503(1)(i) of the Part 111 administrative rules). Closure certifications were prepared for all treatment and storage units in November 1998. The MDEQ approved these closure certifications on September 14, 1999.

Pfizer Inc., the corporate parent to Parke, Davis & Company and Warner-Lambert Company, issued correspondence to the MDEQ on October 1, 2007 documenting that the historical boundary of the TSD facility should not include property located to the north of Howard Avenue because no hazardous or nonhazardous waste management activities took place on this property. The MDEQ approved this clarification and delineation of the historical boundary of the TSD facility in a letter, dated November 21, 2007. Accordingly, the submittal of this EQP5150 form is intended to formalize modification of the historical boundary of the TSD facility as shown on the attached Figure 1.

As shown on Figure 1, the R&D property is located within the TSD facility boundary. Parke, Davis & Company donated the R&D Property to Michigan State University (MSU) on December 21, 2007. MSU is the owner of the R&D property. The R&D property is currently being leased by Parke, Davis & Company, for the purpose of completing certain infrastructure improvements, abatement of building materials, and providing office space for staff engaged in the demolition of the adjacent former manufacturing plant site. Upon completion of the activities described above, Parke, Davis & Company will no longer be an operator of this property and will submit an EQP 5150 form to this effect. MSU will develop and submit a new EQP5150 form identifying it as both owner AND operator of the former R&D property and addressing waste generation/management activities associated with its operations at the site.

1 Parke, Davis & Company was acquired by the Warner Lambert Company, which is a wholly owned subsidiary of Pfizer Inc.

PARKE-DAVIS + CO.
FOR ADDITIONAL
DETAILS SEE FACILITY
DRAWING



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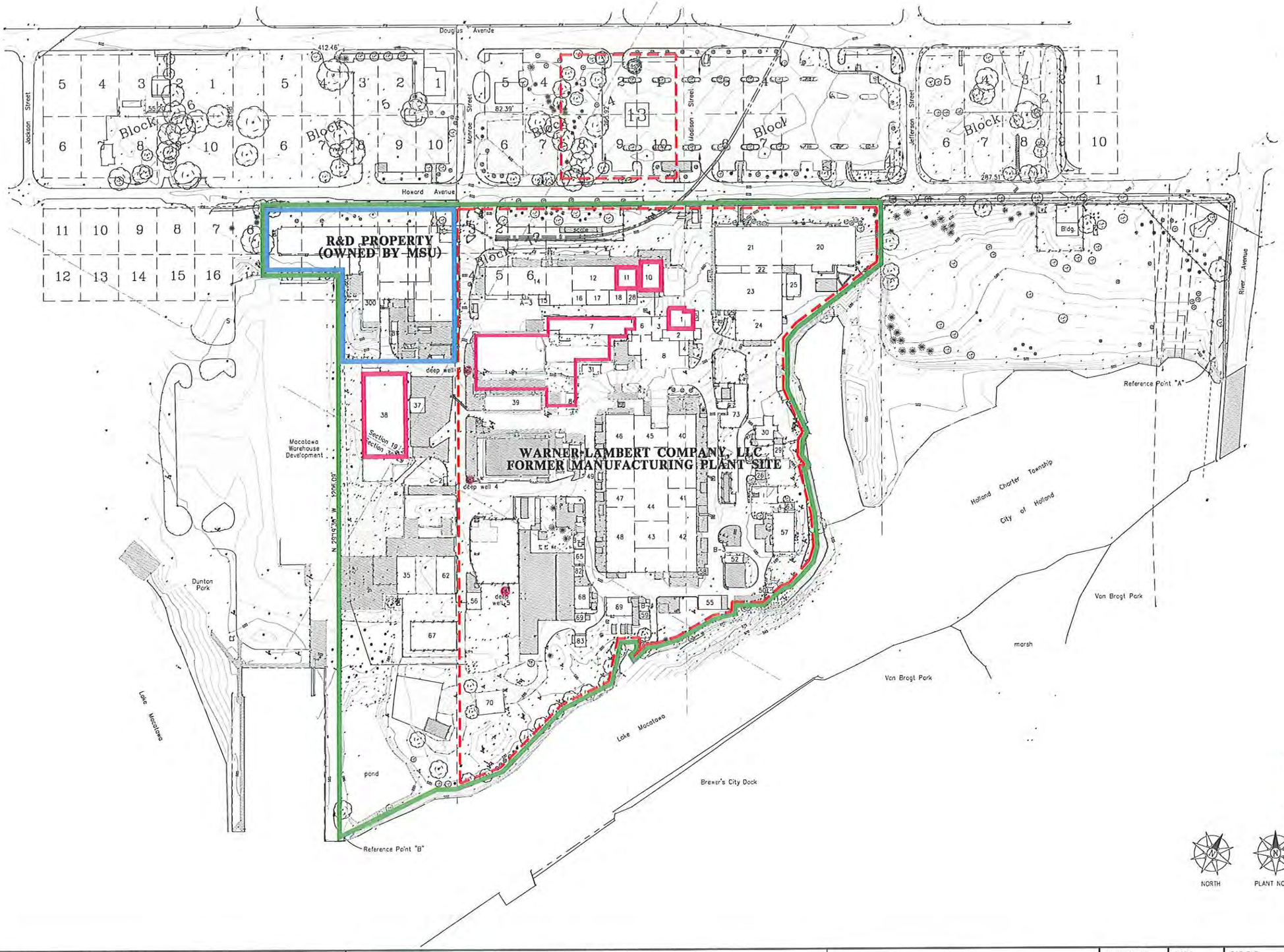

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HORIZON ENVIRONMENTAL
4771 50th STREET SE, SUITE ONE - GRAND RAPIDS, MI 49512
616 554.3210 - FAX 616 554.3211 - www.HORIZONENV.com

WARNER-LAMBERT LLC
HOLLAND, MICHIGAN

RCRA FACILITY BOUNDARY
EQP 5150 FORM

NO.	REVISIONS	DATE

DESIGNED BY: KH	DATE: MAR 2007	CAD FILE: PFZ01100F05	PROJECT NUMBER PFZ-01100
DRAWN BY: CWN	DATE: MAR 2007	LAST EDIT: JSC022107	SCALE 1" = 100'
CHECKED BY:	DATE:	PLOT SCALE: 1:1	SHEET NUMBER: 1

Pfizer Global Engineering
Pfizer Inc
100 Route 206 North
Peapack, NJ 07977
Tel 908 901 8000

Pfizer Global Manufacturing

October 1, 2007

Ms. Cheryl Howe
Hazardous Waste Permits and Technical Support Unit
Waste and Hazardous Materials Division
Michigan Department of Environmental Quality
Constitution Hall, Lower Level
PO Box 30241
Lansing, Michigan 48909-7741

RE: CLARIFICATION AND DELINEATION OF FACILITY BOUNDARY(IES)
PFIZER GLOBAL MANUFACTURING, HOLLAND, MICHIGAN (MID 006 013 643)

Dear Cheryl:

Pfizer has prepared this letter to seek clarification of the "facility" boundary(ies) applicable to the real estate holdings associated with its manufacturing operations in Holland, Michigan. These holdings are shown on Figure 1. This letter has been prepared to supersede and replace the May 18, 2007 transmittal on this same topic.

As discussed during our meeting on April 24, 2007 and the teleconference on September 20, 2007, the purpose of this letter is to confirm with the Michigan Department of Environmental Quality (MDEQ) the geographic extent of the historical *boundary of the treatment, storage and disposal* (TSD) *facility* and the *corrective action facility boundary* as those terms are defined under R. 299.9103(r) of Part 111.

BACKGROUND & PERMITTING HISTORY

Parke-Davis & Company[1], filed a Notice of Regulated Waste Activity (Part A Permit) for the Holland site in 1980. A copy of the Part A Permit Application is provided in Attachment A.

Subsequent to the filing of the Part A, Parke-Davis submitted an initial application for a RCRA Part B permit/Act 64 (now Part 111) operating license in 1985. A revised Part B/Act 64 permit application was submitted to the Michigan Department of Natural Resources and the U.S. EPA in August 1988. The U.S. EPA conducted a RCRA Facility Assessment (RFA) in April 1989 in preparation for issuance of a permit pursuant to the Hazardous and Solid Waste Amendments (HSWA). Seven Solid Waste Management Units (SWMUs) were identified during the RFA.

[1] Parke-Davis & Company was acquired by the Warner-Lambert Company LLC which is a wholly owned subsidiary of Pfizer Inc

The U.S. EPA and MDEQ jointly issued a HSWA Permit and RCRA Part B/Act 64 (Part 111) operating license to the facility in October 1990. The Treatment, Storage, and Disposal (TSD) facility boundary was depicted in these permits as shown in the documentation provided in Attachment B of this letter. The figure provided in Attachment B was submitted with the Act 64 operating license application and was incorporated into the license as an attachment. The figure identifies the permitted hazardous waste treatment and storage areas at the site. Additionally, the solid waste management units (SWMUs) identified during the RFA are located within the boundary of the TSD facility described in this figure and the other Act 64 operating license application materials.

The original hazardous waste treatment and storage tanks (T-1, T-2, T-3, T-4, T-5, T-533 and T-534) regulated under the Part B/Act 64 operating license were closed in 1992 following construction of a new Chemical Wastewater Treatment System. A Closure Certification Report for these units was filed with the MDNR on April 23, 1993.

In 1998, Parke-Davis closed the remaining regulated hazardous waste treatment and storage units at the site and moved to generator status following promulgation of new regulations under Rule 299.9503(1)(i) of Part 111. The units closed in 1998 included hazardous waste storage and treatment tanks (T-1A, T-2A, T-3A, T-4A, T-533A, T-534A, T-103, T-729, and T-760) and hazardous waste container storage areas in Buildings 10 and 38. A Closure Certification Report was filed with the MDEQ on November 25, 1998.

The MDEQ's Waste Management Division approved both the April 23, 1993 and November 25, 1998 closure certifications in a letter dated, September 14, 1999. A copy of the letter is provided in Attachment C. The closure certifications released Parke-Davis from its closure responsibilities and associated financial capability requirements under Part 111 for the units, but indicated that soil and ground water contamination from these units remained for which long-term monitoring and corrective action would be required. These ground water monitoring and corrective action obligations were incorporated into a Post-Closure Plan (PCP) and Corrective Action Consent Order (CACO) on September 30, 2001. The depictions of the facility boundary presented in the PCP are identical to those presented in the RCRA Part B/Part 111 Operating License and HSWA permit.

REGULATORY ANALYSIS

The following sections present our analysis of the regulatory provisions relevant to the delineation of the RCRA/Part 111 and corrective action "facility" boundaries applicable to Pfizer's land holdings in Holland, Michigan. We are seeking concurrence from the MDEQ of this analysis.

TSD FACILITY BOUNDARY

R. 299.9103(r) of Part 111 defines the "facility" boundary for the purposes of licensing and other regulated hazardous waste management activities to include *all contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste.*

Based on this definition, review of the relevant background information, and our ongoing interactions, we have defined the TSD facility boundary as illustrated on Figure 2. This boundary incorporates property occupied by the previously permitted hazardous waste treatment and storage areas associated with site operations.

It is our position that the TSD facility boundary should exclude property located to the north of Howard Avenue. The hand drawn figure submitted with the original Part A application seemingly includes property located to the north of Howard Avenue and to the west of the former Madison Street. The intention behind this is unclear, as Parke-Davis did not own the property delineated by this figure in 1980 when the Part A was filed.

Parke-Davis did, however, own a parcel of property of similar dimension north of Howard Avenue and east of the former Madison Street, as well as a parcel of property north of Douglas Avenue, both of which were utilized as parking lots and water supply well fields. The well fields were in-place at the time of acquisition of the property by Parke-Davis in the early 1950s and were comprised of 40 individual well points connected to a suction gang system. This original well field system was abandoned and replaced by a total of four vertical wells in 1961, across the two well fields, and utilized by the plant for potable and process water until approximately 1981, when the site was connected to the municipal water supply. A rail spur, which was historically utilized by the manufacturing facility, transected the parcel located immediately north of Howard Avenue and east of the former Madison Street.

The properties north of Howard and Douglas Avenues have, to the best of Pfizer's knowledge, no identified history of use for regulated hazardous waste management activities, for non-hazardous waste management activities, or for manufacturing activities. In addition to institutional knowledge of the facility, this conclusion is further supported by review of historical facility drawings; Sanborn Fire Insurance maps; aerial photography for years 1938, 1950, 1955, 1959, 1968, 1973, 1978, 1984, 1992, 1994, and 1999; and information derived from City Directories between 1931 and 2004. This conclusion was also corroborated during the RFA in 1989.

The exclusion of the properties north of Howard Avenue is consistent with the TSD boundary described in the facility's RCRA Part B permit/Part 111 operating license, HSWA permit, closure documents, and Post-Closure Plan.

RCRA CORRECTIVE ACTION FACILITY BOUNDARY

For the purposes of implementing corrective action, R. 299.9103(r) defines the corrective action facility boundary more broadly to include *all contiguous property under the control of the [TSD] owner or operator.*

As we discussed at the recent meeting, the concept of contiguity incorporated in the definition in R. 299.9103(r) appears to require that the corrective action facility boundary cover not only the historical boundaries of the TSD facility, but also all contiguous property under the control of Pfizer during its tenure as a TSD. This represents substantially all of Pfizer's land holdings south of Howard, including the R&D site and the Greenbelt Area.

Based on our discussions, it is our understanding that the rail spur transecting the parcel of property between Howard and Douglas Avenues represents a connection that renders this property a part of the Corrective Action Facility based on the concept of contiguity.[2] This rail spur, which is shown on Figure 3, was historically utilized by the site. Therefore, we propose that the boundary of the RCRA corrective action facility be defined as depicted on Figure 3.

The remaining parcels north of Howard Avenue have been excluded from the corrective action facility boundary because they do not possess, or have not historically possessed, a similar infrastructure link to the TSD. As indicated previously, these properties were not previously within the permitted TSD boundary; not used for hazardous waste or non-hazardous waste management activities; and were not used for manufacturing-related activities.

SUMMARY AND CONCLUSION

The operational use and permitting history associated with Pfizer's land holdings in Holland, Michigan, has been reviewed to establish the geographic extent of the RCRA/Part 111 facility boundary and the corrective action facility boundary as those terms are defined under R. 299.9103(r) of Part 111. Based on an analysis of the pertinent regulatory definitions, these boundaries have been established as depicted on Figures 2 and 3, respectively.

Upon obtaining MDEQ concurrence on these boundary delineations, Pfizer will prepare and record with the Ottawa County Register of Deeds a revised Notice Regarding Statutory Obligations Applicable to Property pursuant to Rule 299.9525 of Part 111 for the property within the corrective action facility boundary. Additionally, Pfizer will file an MDEQ Form EQ5150 to clarify the former TSD boundary.

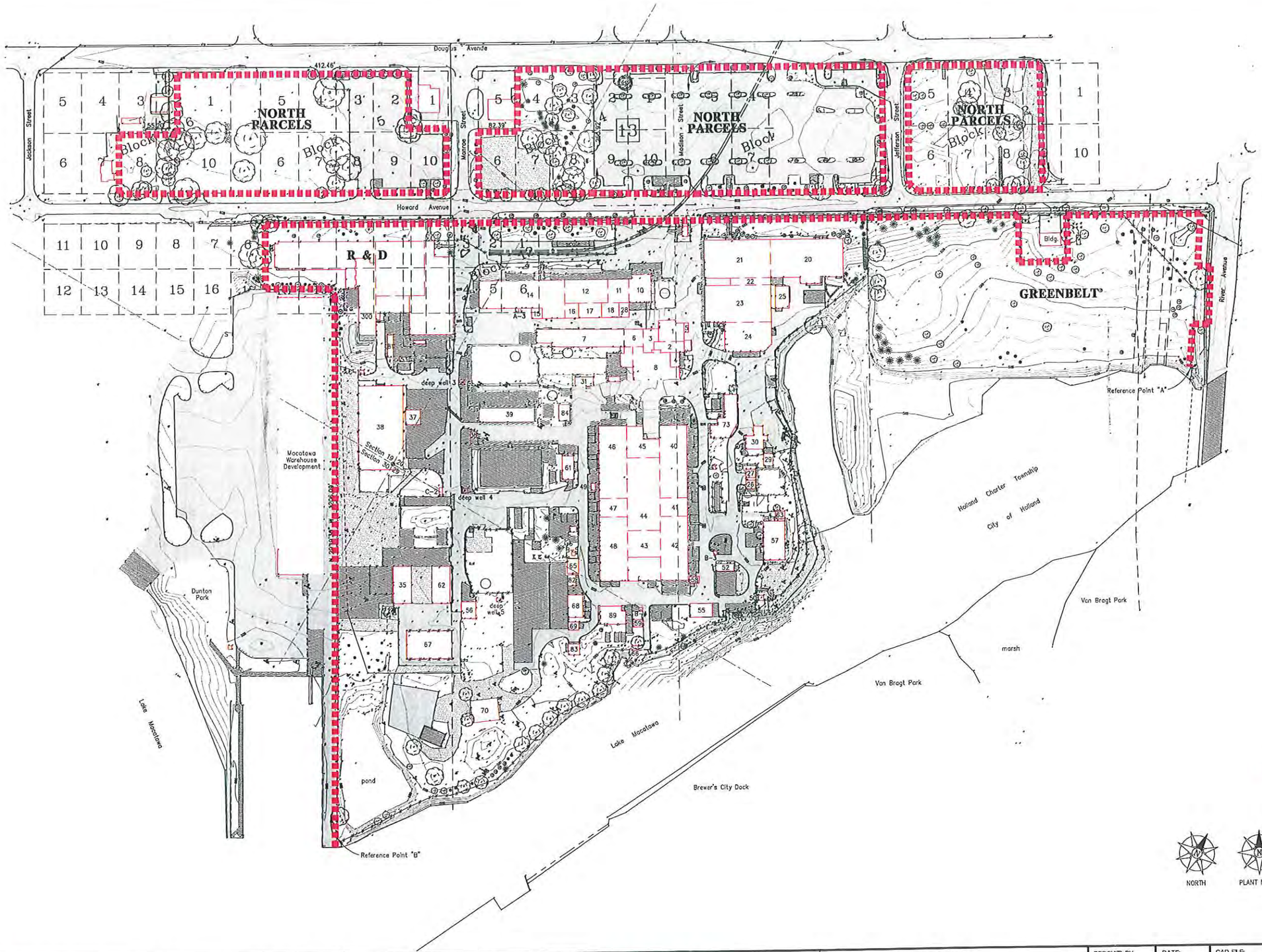
If you have any questions regarding this letter, please contact me at 908-901-7151.

Sincerely,

Brett Gampper
Manager, Site Remediation & Due Diligence

cc: Allen Reilly, Horizon

[2] The large structure located north-of-Howard and west of Monroe Street is the former Beechwood School, a public school building that was razed in 1985 when purchased by Parke-Davis. The property was then converted to a greenspace.



Legend

- CONTROL POINT
- BENCHMARK
- SIGN
- POWER POLE
- LIGHT POLE
- GUY
- HYDRANT
- WATER VALVE
- MONITORING WELL
- GAS VALVE
- GAS METER
- TELEPHONE PEDESTAL
- UTILITY SIGN
- SANITARY MANHOLE
- STORM MANHOLE
- CATCH BASIN
- SECTION CORNER
- ASPHALT
- CONCRETE
- GRAVEL
- CHAIN LINK FENCE
- WOOD FENCE
- WIRE FENCE
- OVERHEAD ELECTRIC AND/ OR TELEPHONE LINES
- FLOOD CONTOUR (585.0' NGVD-29)
- PROPERTY BOUNDARY

NORTH

PLANT NORTH

PFIZER HOLLAND

1"=100'

HORIZON ENVIRONMENTAL

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PFIZER GLOBAL MANUFACTURING

HOLLAND, MICHIGAN

PFIZER LAND HOLDINGS

REVISIONS		
NO.		DATE

DESIGNED BY: KH	DATE: MAR 2007	CAD FILE: PFZ01100F01A	PROJECT NUMBER PFZ-01100	SHEET NUMBER: 1
DRAWN BY: CWN	DATE: MAR 2007	LAST EDIT: JSC022107	SCALE 1" = 100'	
CHECKED BY:	DATE:	PLOT SCALE: 1:1		

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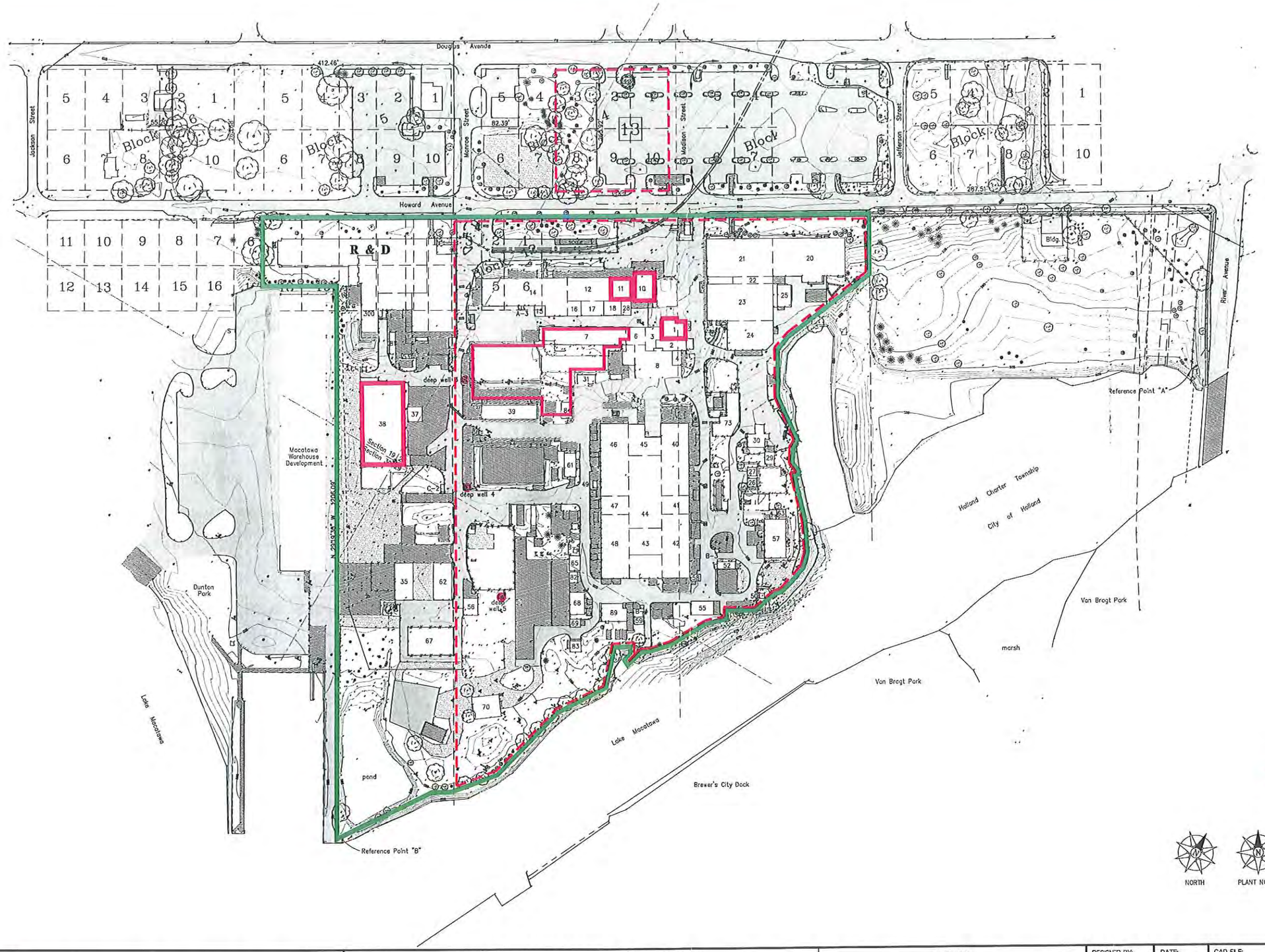

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- MONITORING WELL
- GAS VALVE
- GAS METER
- TELEPHONE PEDESTAL
- UTILITY SIGN
- SANITARY MANHOLE
- STORM MANHOLE
- CATCH BASIN
- SECTION CORNER
- ASPHALT
- CONCRETE
- GRAVEL
- CHAIN LINK FENCE
- WOOD FENCE
- WIRE FENCE
- OVERHEAD ELECTRIC AND/ OR TELEPHONE LINES
- FLOOD CONTOUR (585.0' NGVD-29)
- RCRA REGULATED UNITS
- RCRA FACILITY BOUNDARY
- APPARENT TSD FACILITY BOUNDARY AS DEPICTED ON PART A SUBMITTED ON NOVEMBER 18, 1980

NORTH

PLANT NORTH

PFIZER HOLLAND

1"=100'

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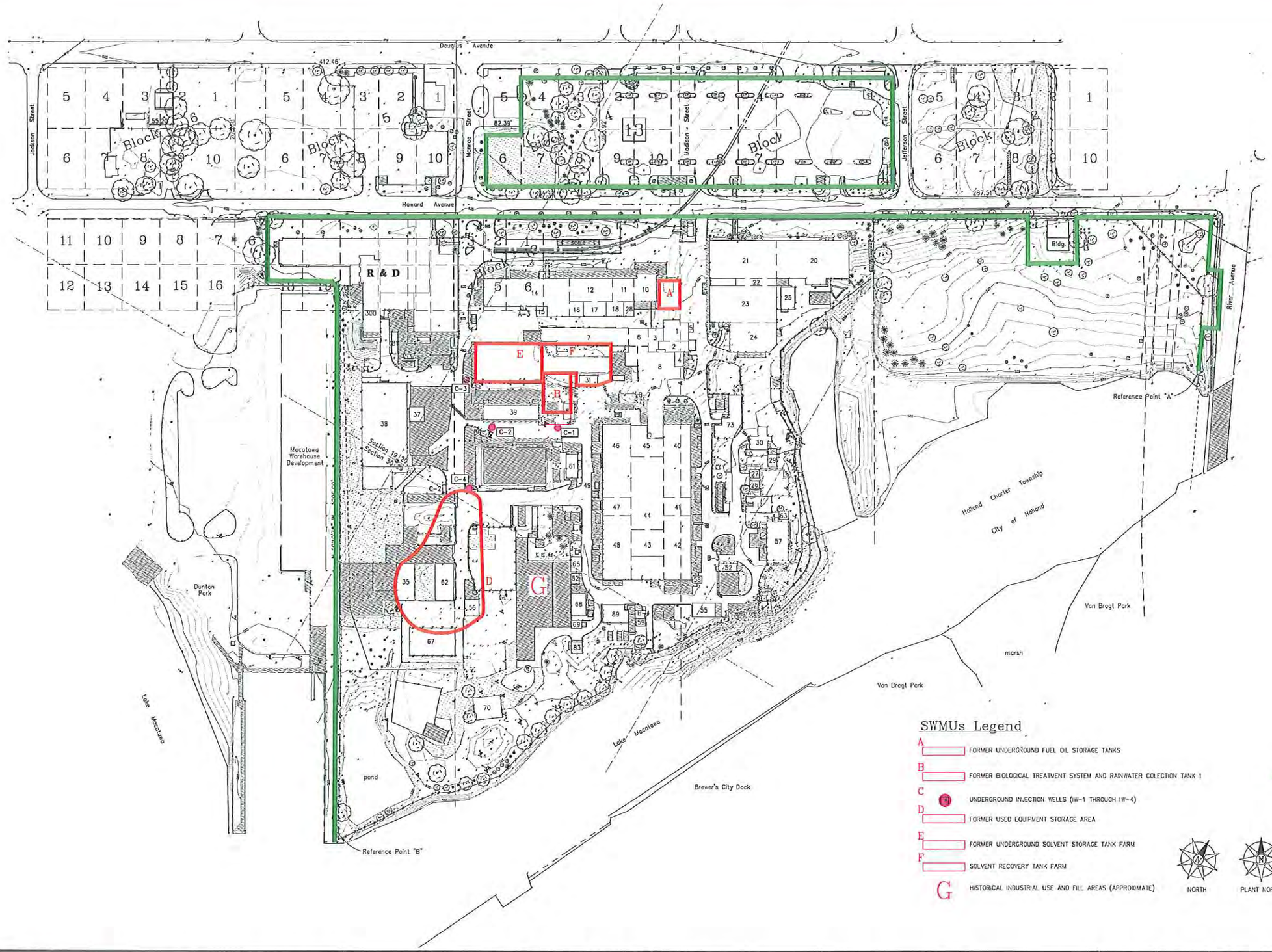
PFIZER GLOBAL MANUFACTURING

HOLLAND, MICHIGAN

RCRA FACILITY BOUNDARY

NO.	REVISIONS	DATE

DESIGNED BY: KH	DATE: MAR 2007	CAD FILE: PFZ01100F02	PROJECT NUMBER PFZ-01100
DRAWN BY: CWN	DATE: MAR 2007	LAST EDIT: JSC022107	SCALE 1" = 100'
CHECKED BY:	DATE:	PLOT SCALE: 1:1	SHEET NUMBER: 2



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616 554.3210 - FAX 616 554.3211 - www.HORIZONENV.com

PFIZER GLOBAL MANUFACTURING
HOLLAND, MICHIGAN

RCRA CORRECTIVE ACTION FACILITY BOUNDARY
R 299.9525 DEED NOTICE

NO.	REVISIONS	DATE

DESIGNED BY: KH	DATE: MAR 2007	CAD FILE: PFZ01100FIG04	PROJECT NUMBER PFZ-01100	SHEET NUMBER: 3
DRAWN BY: CWN	DATE: MAR 2007	LAST EDIT: CWN032307	SCALE 1" = 100'	
CHECKED BY:	DATE:	PLOT SCALE: 1:1		

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ATTACHMENT A

PART A PERMIT APPLICATION

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

379

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

EPA

ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F M I D 0 0 6 0 1 3 6 4 3 D

LABEL ITEMS

I. EPA I.D. NUMBER	MID006013643
III. FACILITY NAME	PARK DAVIS & CO
V. FACILITY MAILING ADDRESS	182 HOWARD AVE HOLLAND, MI 49423
VI. FACILITY LOCATION	182 HOWARD AVE HOLLAND, MI 49423

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	X		
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP PARKE-DAVIS AND COMPANY

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 AMAYA JOHN GENERAL MANAGER	616 392 2375

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 182 HOWARD AVENUE

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 HOLLAND	MI	49423

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 182 HOWARD AVENUE

B. COUNTY NAME

OTTAWA

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 HOLLAND	MI	49423	70

NOV 20 1980

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
2830 (specify) DRUGS	(specify) N.A.
C. THIRD	**D. FOURTH**
(specify) N.A.	(specify) N.A.

VIII. OPERATOR INFORMATION

A. NAME: WARNER-LAMBERT COMPANY

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☒ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box; if "Other", specify.)*
F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC *(other than federal or state)*, O = OTHER *(specify)*: P (specify)

D. PHONE *(area code & no.)*: A 201 540 2000

E. STREET OR P.O. BOX: 201 TABOR ROAD

F. CITY OR TOWN: MORRIS PLAINS | G. STATE: NJ | H. ZIP CODE: 07950

IX. INDIAN LAND
Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*: N MI0004715	D. PSD *(Air Emissions from Proposed Sources)*: P
B. UIC *(Underground Injection of Fluids)*: U MI129-744-870	E. OTHER *(specify)*: MI130-744-870 (specify) UIC
C. RCRA *(Hazardous Wastes)*: R N.A.	E. OTHER *(specify)*: MI8-737-870 (specify) UIC

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

Manufacture of Pharmaceuticals

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
D. E. O'Neill, Vice President, President HCG	MAK 11/13/80 D. E. O'Neill	11/18/80

COMMENTS FOR OFFICIAL USE ONLY

C

Please print or type in the unshaded areas only
(fill—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004 379

FORM 3 RCRA

EPA

ENVIRONMENTAL PROTECTION AGENCY
HAZARDOUS WASTE PERMIT APPLICATION
Consolidated Permits Program
(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER: F M I D 0 0 6 0 1 3 6 4 3 — T/A: I

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*: YR. 5 1, MO. 1 2, DAY 0 1

[ ] 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN: YR. ___, MO. ___, DAY ___

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES — CODES AND DESIGN CAPACITIES

A. PROCESS CODE — Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY — For each code entered in column A enter the capacity of the process.
1. AMOUNT — Enter the amount.
2. UNIT OF MEASURE — For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	[illegible]
LANDFILL	D80	[illegible] that [illegible]
LAND APPLICATION	D81	[illegible]
OCEAN DISPOSAL	D82	[illegible]
SURFACE IMPOUNDMENT	D83	[illegible]

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	O	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C — DUP — T/A: I

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5				
X-2	T03	20	E		6				
1	S01	12000	G		7				
2	S02	14000	G		8				
3	D79	330,000	U		9				
4	T01	195,000	U		10				

Continued from the front:

III. PROCESSES *(continued)*

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES *(code "T04")* FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

IV. DESCRIPTION OF HAZARDOUS WASTES

A. **EPA HAZARDOUS WASTE NUMBER** — Enter the four—digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four—digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. **ESTIMATED ANNUAL QUANTITY** — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non—listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. **UNIT OF MEASURE** — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES:**
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non—listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non—listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. **PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non—listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
X-1	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
X-4	D002				*included with above*

 CONTINUE ON PAGE 3

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

379

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W M I D 0 0 6 0 1 3 6 4 3 T/A C 1	W DUP T/A C 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)				D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	F003	700,000	P	S02				
2	F005	700,000	P	S02				
3	U003	20,000	P	D79				
4	U044	3,000	P	D79				
5	U056	3,000	P	S02				
6	U080	300,000	P	T01	D79			
7	U122	2,000	P	T01	D79			
8	U123	2,400	P	D79				
9	U201	2,000	P	T01	D79			
10	U213	5,000	P	D79				
11	D002	162,000	T	T01	D79			
12	D001							included with above
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

EPA Form 3510-3 (6-80)

CONTINUE ON REVERSE

(enter "A", "B", "C", etc. behind the "3" to identify photocopied pages)

Continued from the front.

IV. DESCRIPTION OF HAZARDOUS WAS (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

F MID006013643 6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

VI. PHOTOGRAPHS

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)
42 47 51	86 06 52

VIII. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code & no.)
E Parke, Davis & Company	616-392-2375

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
F 182 Howard Avenue	G Holland	MI	49423

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
D. E. O'Neill	D. E. O'Neill	11/18/80

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
D. E. O'Neill	D. E. O'Neill	11/18/80

Form Approved OMB No. 158-S80004

3 of 9

V. FACILITY DRAWING *(see page 4)*

See Attached

Holland

DRAFT AUTHORIZATION LETTER

(M)

Parke Davis + Co.

Director of Enforcement
Environmental Protection Agency
Region V
Federal Building
230 South Dearborn
Chicago, IL 60604

Re: Authorization for EPA Reports
NPDES No. MI 0004715

Director of Enforcement:

Pursuant to 45 CFR Section 122.6, I hereby authorize the

General Manager of Holland to prepare and submit all
Position (Plant Manager, etc.)

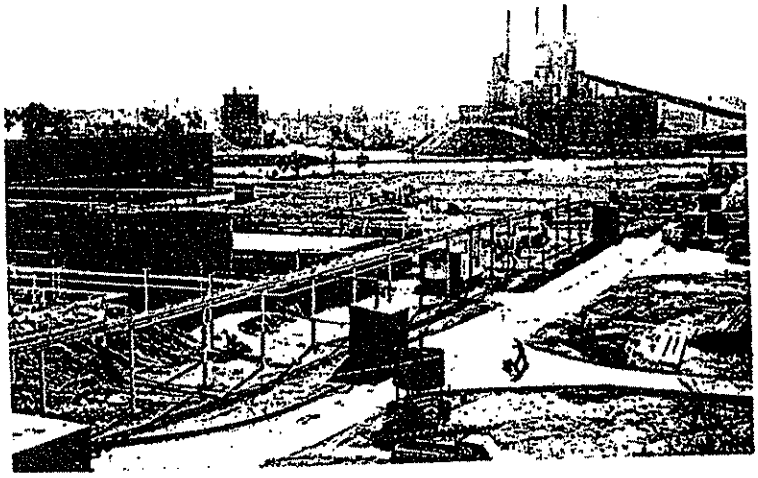
appropriate reports to the Environmental Protection Agency as required

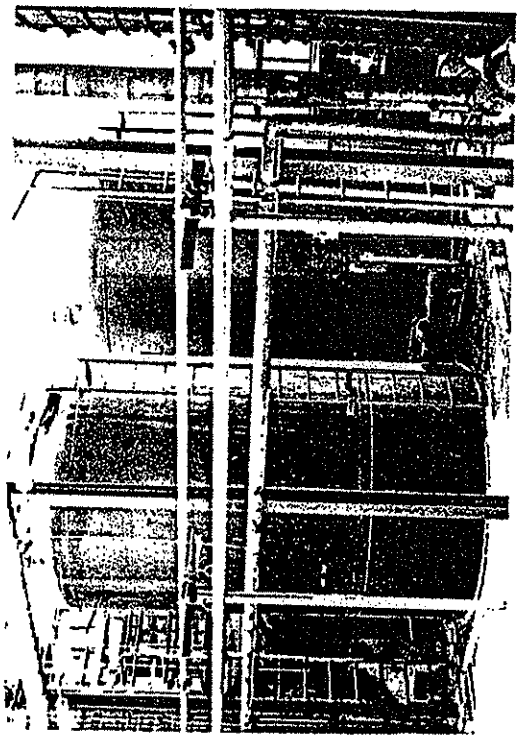
by law.

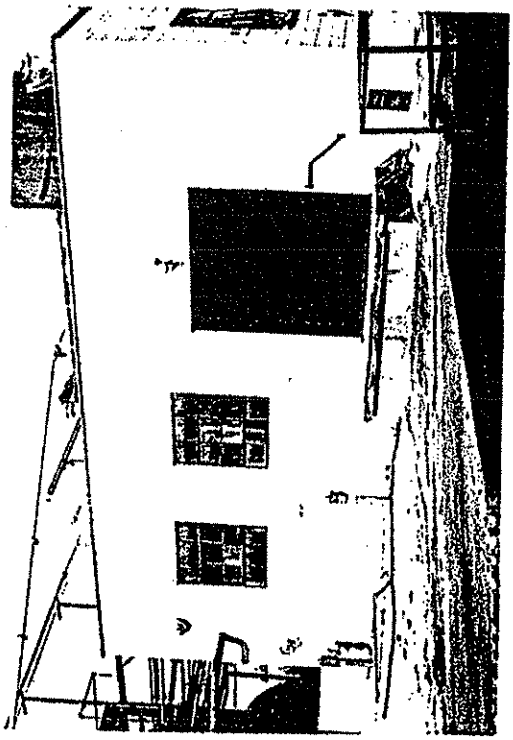
Very truly yours,

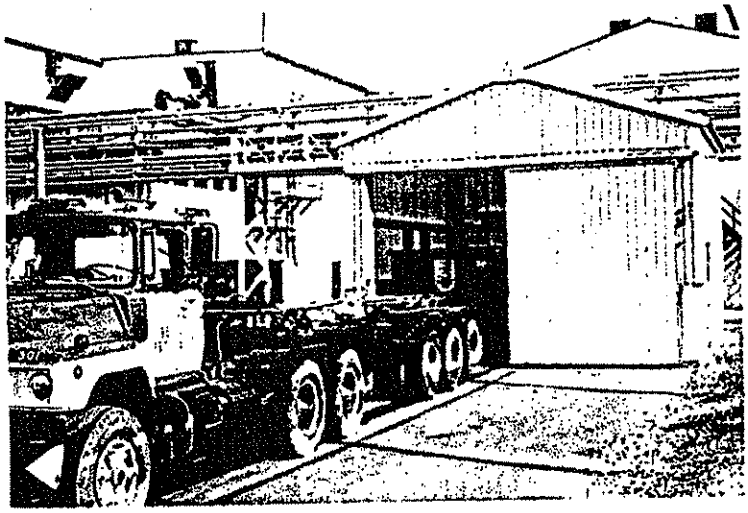
D E O'Neill

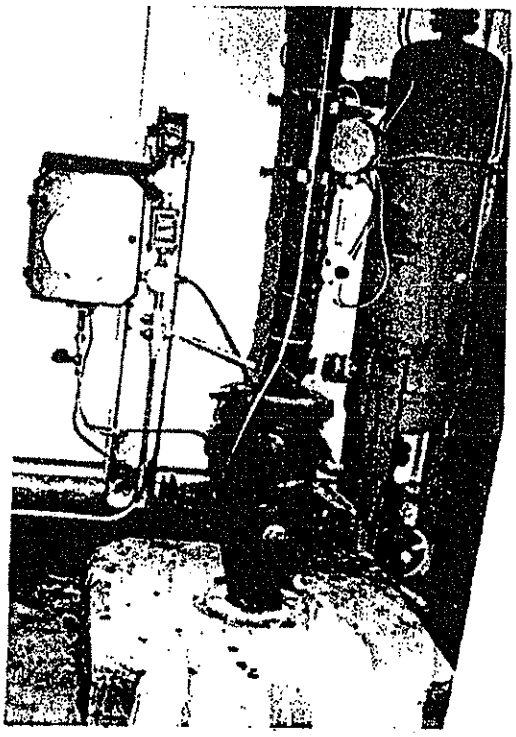
D. E. O'Neill

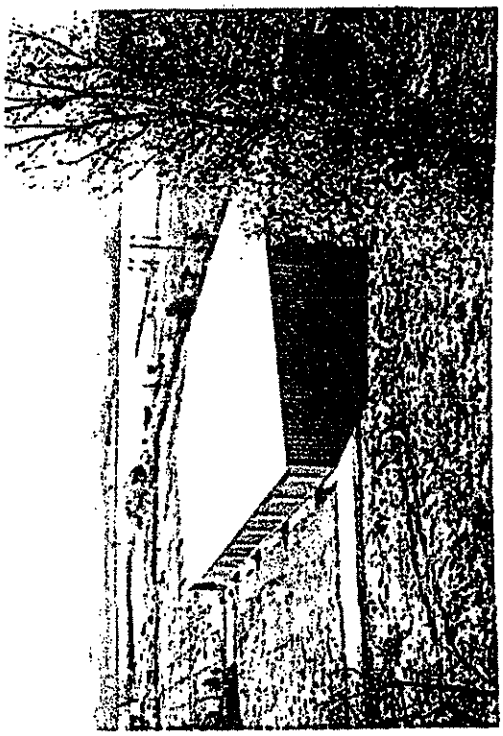


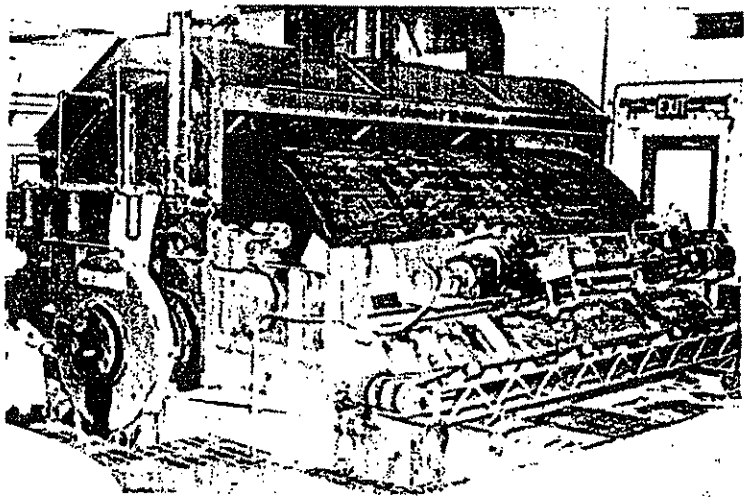


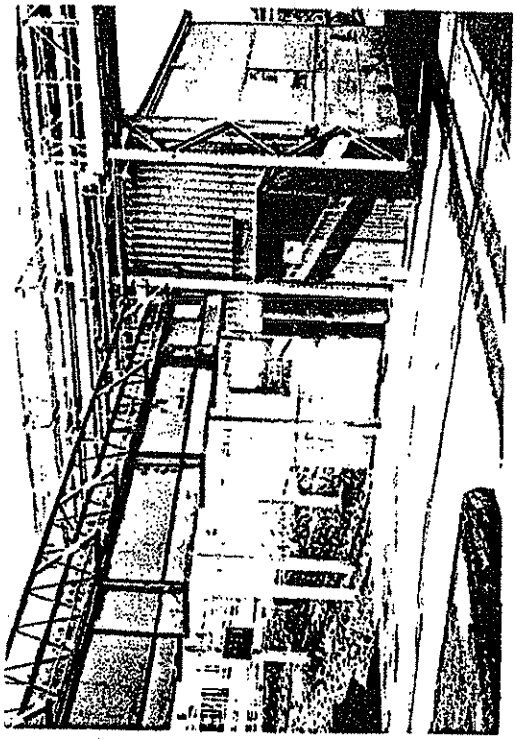


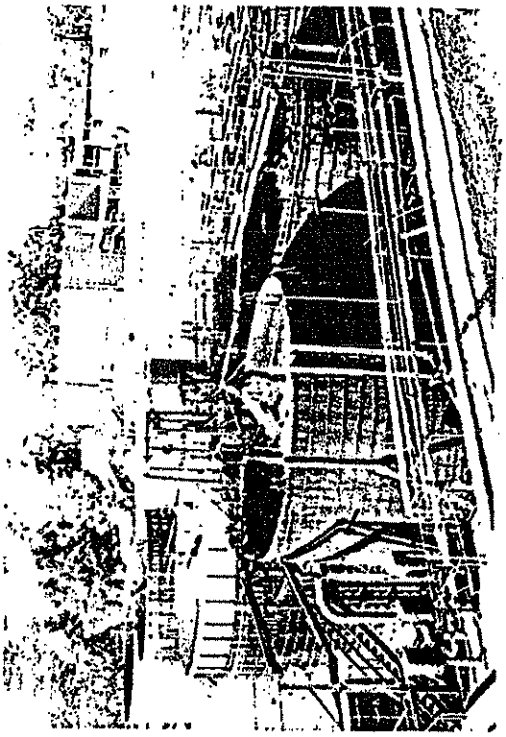




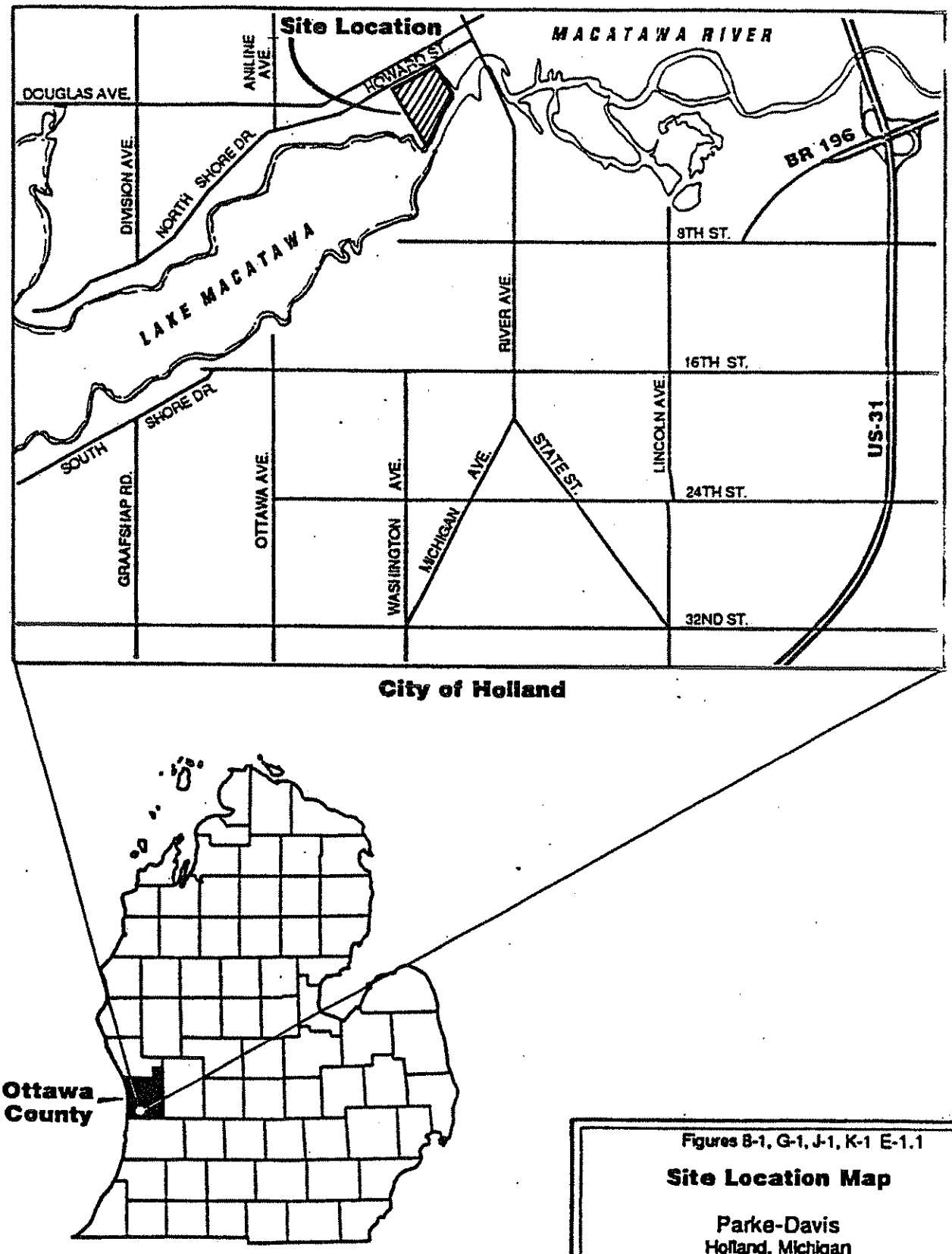








HSWA PERMIT AND RCRA PART B/ACT 64 (PART 111) OPERATING LICENSE BOUNDARIES



Figures B-1, G-1, J-1, K-1 E-1.1

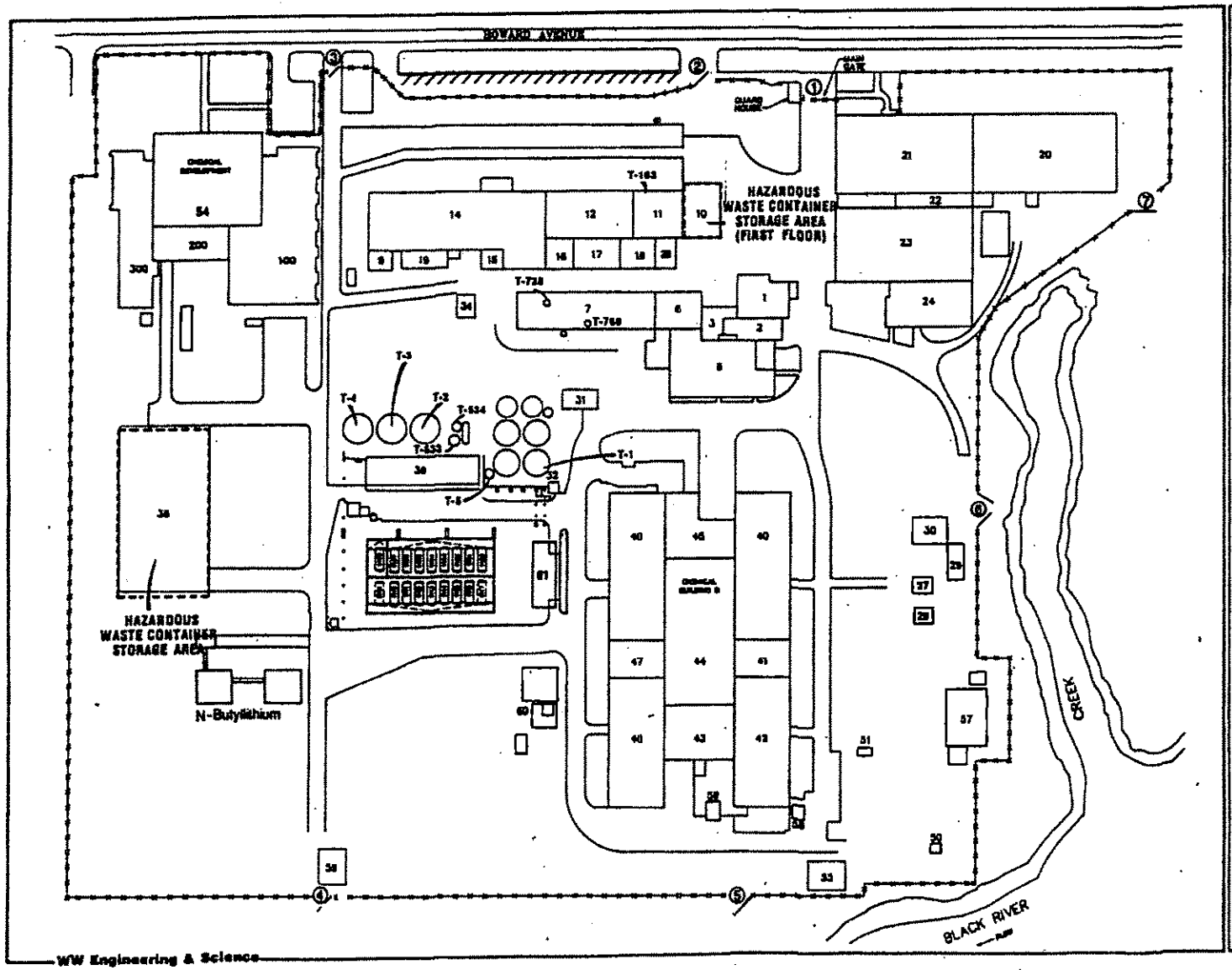
Site Location Map

Parke-Davis
Holland, Michigan

April, 1990

2093

EDI Engineering & Science



Building	Activity
1,2	Power (Boiler) House
3	Electrical Shop
6, 8	Maintenance Shops
7	Solvent Recovery
10	Hazardous Waste Container Storage Area
11, 28	Hazardous Waste Treatment
12	Currently Unused
14	Chemical Manufacture
17	Rest Rooms
20-24	Administration
27, 29, 30	Cooling Water Pump Area
31	Deep Well Pump House
32	Compressor House
36	Hazardous Waste Container Storage Area
39	Solvent Storage Building
40-48	Chemical Manufacturing
55	Cooling Pad (Refrigeration)
57	Dryer Room
58	Phosgene Shed
60	Thermal Oxidizer
61	Fire Barn (Station)

TANKS	HAZARDOUS WASTE TREATMENT/STORAGE
T-1,2,3,4,5, 103,729,760	Treatment
T-533,534	Storage

0 50 100 200
Scale in feet

Figures B-2, D-1, G-2, I-1, K-4

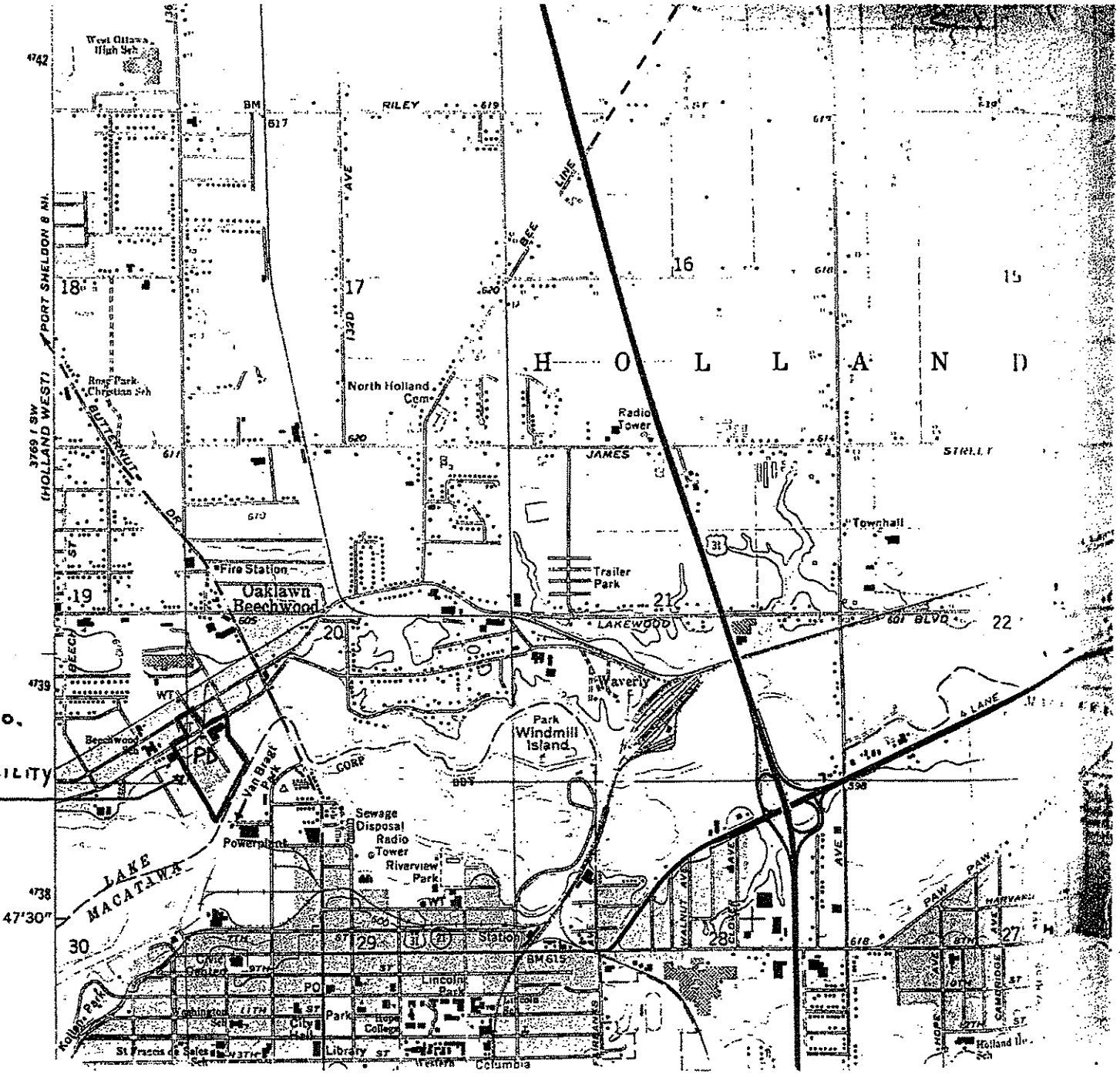
Hazardous Waste Container Storage Areas and Hazardous Waste Storage and Treatment Tanks

Parke-Davis Holland Facility
Holland, Michigan

April, 1990 20937

WW Engineering & Science

PARKE-DAVIS + CO.
FOR ADDITIONAL
DETAILS SEE FACILITY
DRAWING



ATTACHMENT C

CLOSURE CERTIFICATION LETTER

STATE OF MICHIGAN

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
"Better Service for a Better Environment"
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us
RUSSELL J. HARDING, Director

REPLY TO:
WASTE MANAGEMENT DIVISION
PO BOX 30241
LANSING MI 48909-7741

September 14, 1999

Mr. John A. Voreis, Environmental Engineer
Parke-Davis Division of Warner-Lambert Company
188 Howard Avenue
Holland, Michigan 49424

Dear Mr. Voreis:

SUBJECT: Hazardous Waste Container Storage Area and Tank Closure Certifications
Parke-Davis Division of Warner-Lambert Company, Holland, Michigan
MID 006 013 643

The Department of Environmental Quality (DEQ), Waste Management Division (WMD), has reviewed the November 25, 1998 closure certification for the Building 10 and 38 hazardous waste container storage areas and the hazardous waste storage and treatment tanks (T-1A, T-2A, T-3A, T-4A, T-533A, T-534A, T-103, T-729, and T-760), and the April 23, 1993 closure certification for the original hazardous waste storage and treatment tanks (T-1, T-2, T-3, T-4, T-5, T-533, and T-534), that were submitted by the Parke-Davis Division of Warner-Lambert Company (Parke-Davis). In addition, the WMD has reviewed the revised owner/operator signatures on the certification statements submitted on September 2, 1999 for the T-729 and T-760 closure certifications. The WMD has determined that the hazardous waste management units are closed, but soil and groundwater contamination remains that requires continued long-term groundwater monitoring and corrective action. Based on this review, Parke-Davis is hereby released from its closure responsibilities under Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Parke-Davis is, therefore, no longer required to demonstrate financial capability for closure and liability coverage for the facility.

Financial Capability

Parke-Davis demonstrates financial assurance for closure by use of the financial test. In accordance with R 299.9703(5) of the Part 111 administrative rules, this acceptance of the certification of closure constitutes a release from the requirement to maintain financial assurance for closure. Parke-Davis is no longer required to include the closure cost estimate for the facility in the updated financial test information submitted each year.

Financial responsibility for liability coverage is demonstrated by a financial test from Parke-Davis. In accordance with R 299.9710(18), this acceptance of the certification of closure constitutes a release from the requirement to maintain such liability coverage.

Parke-Davis is no longer required to include liability coverage for the facility in the updated financial test information submitted each year.

Parke-Davis must demonstrate financial assurance for corrective action of the remaining soil and groundwater contamination. Until such time as a more accurate cost estimate for corrective action is developed, the former closure cost estimate of $474,316.00 may be used. This cost estimate must be shown in paragraph 11 of the financial test.

Facility Status

With this acceptance of the certification of closure, the Parke-Davis facility can no longer be operated as a hazardous waste treatment, storage, or disposal facility. If hazardous waste is generated at the facility, it must be managed in accordance with all applicable generator requirements in R 299.9301 - R 299.9311 of the Part 111 administrative rules. If on-site generated hazardous waste is treated at the facility, it must be managed in accordance with the generator treatment operating license exemption pursuant to R 299.9503(1)(l) of the Part 111 administrative rules.

Corrective Action Responsibilities

This acceptance of the certification of closure does not constitute a release from any corrective action responsibilities Parke-Davis may have under Part 111 of Act 451 or the federal Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 for this facility. In addition to the responsibility to close regulated hazardous waste management units, owners and operators are responsible for conducting corrective actions for releases of hazardous wastes and hazardous constituents at waste management units.

If you have questions regarding this letter, please contact Ms. Cheryl Howe, Hazardous Waste Program Section, WMD, at 517-373-9861, or you may contact me.

Sincerely,

Jim Sygo

Jim Sygo, Chief
Waste Management Division
517-373-9523

cc: Mr. Charles Carey, Warner-Lambert Company
Mr. Richard Saffee, Parke-Davis
Mr. Tom Bauer, Parke-Davis
Mr. Robert Newberger, Horizon Environmental Corporation
Mr. Allen Reilly, Horizon Environmental Corporation
Mr. Ken Burda, DEQ/Operating License File
Mr. Steve Buda, DEQ
Ms. De Montgomery/Mr. Dave Slayton/Mr. John McCabe, DEQ
Mr. Dale DeKraker, DEQ - Grand Rapids
Ms. Cheryl Howe, DEQ
Mr. Steve Sliver, DEQ

Appendix B

Hazardous Waste Container Storage Area and Tank Closure Certification

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

WASTE MANAGEMENT DIVISION
PO BOX 30241
LANSING MI 48909-7741

September 14, 1999

Mr. John A. Voreis, Environmental Engineer
Parke-Davis Division of Warner-Lambert Company
188 Howard Avenue
Holland, Michigan 49424

Dear Mr. Voreis:

SUBJECT: Hazardous Waste Container Storage Area and Tank Closure Certifications
Parke-Davis Division of Warner-Lambert Company, Holland, Michigan
MID 006 013 643

The Department of Environmental Quality (DEQ), Waste Management Division (WMD), has reviewed the November 25, 1998 closure certification for the Building 10 and 38 hazardous waste container storage areas and the hazardous waste storage and treatment tanks (T-1A, T-2A, T-3A, T-4A, T-533A, T-534A, T-103, T-729, and T-760), and the April 23, 1993 closure certification for the original hazardous waste storage and treatment tanks (T-1, T-2, T-3, T-4, T-5, T-533, and T-534), that were submitted by the Parke-Davis Division of Warner-Lambert Company (Parke-Davis). In addition, the WMD has reviewed the revised owner/operator signatures on the certification statements submitted on September 2, 1999 for the T-729 and T-760 closure certifications. The WMD has determined that the hazardous waste management units are closed, but soil and groundwater contamination remains that requires continued long-term groundwater monitoring and corrective action. Based on this review, Parke-Davis is hereby released from its closure responsibilities under Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA451, as amended (Act 451). Parke-Davis is, therefore, no longer required to demonstrate financial capability for closure and liability coverage for the facility.

Financial Capability

Parke-Davis demonstrates financial assurance for closure by use of the financial test. In accordance with R 299.9703(5) of the Part 111 administrative rules, this acceptance of the certification of closure constitutes a release from the requirement to maintain financial assurance for closure. Parke-Davis is no longer required to include the closure cost estimate for the facility in the updated financial test information submitted each year.

Financial responsibility for liability coverage is demonstrated by a financial test from Parke-Davis. In accordance with R 299.9710(16), this acceptance of the certification of closure constitutes a release from the requirement to maintain such liability coverage.

Parke-Davis is no longer required to include liability coverage for the facility in the updated financial test information submitted each year.

Parke-Davis must demonstrate financial assurance for corrective action of the remaining soil and groundwater contamination. Until such time as a more accurate cost estimate for corrective action is developed, the former closure cost estimate of $474,316.00 may be used. This cost estimate must be shown in paragraph 11 of the financial test.

Facility Status

With this acceptance of the certification of closure, the Parke-Davis facility can no longer be operated as a hazardous waste treatment, storage, or disposal facility. If hazardous waste is generated at the facility, it must be managed in accordance with all applicable generator requirements in R 299.9301 - R 299.9311 of the Part 111 administrative rules. If on-site generated hazardous waste is treated at the facility, it must be managed in accordance with the generator treatment operating license exemption pursuant to R 299.9503(1)(i) of the Part 111 administrative rules.

Corrective Action Responsibilities

This acceptance of the certification of closure does not constitute a release from any corrective action responsibilities Parke-Davis may have under Part 111 of Act 451 or the federal Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 for this facility. In addition to the responsibility to close regulated hazardous waste management units, owners and operators are responsible for conducting corrective actions for releases of hazardous wastes and hazardous constituents at waste management units.

If you have questions regarding this letter, please contact Ms. Cheryl Howe, Hazardous Waste Program Section, WMD, at 517-373-9881, or you may contact me.

Sincerely,

Jim Sygo

Jim Sygo, Chief
Waste Management Division
517-373-9523

cc: Mr. Charles Carey, Warner-Lambert Company
Mr. Richard Saffee, Parke-Davis
Mr. Tom Bauer, Parke-Davis
Mr. Robert Newberger, Horizon Environmental Corporation
Mr. Allen Reilly, Horizon Environmental Corporation
Mr. Ken Burda, DEQ/Operating License File
Mr. Steve Buda, DEQ
Ms. De Montgomery/Mr. Dave Slayton/Mr. John McCabe, DEQ
Mr. Dale DeKraker, DEQ - Grand Rapids
Ms. Cheryl Howe, DEQ
Mr. Steve Sliver, DEQ

Appendix C

Corrective Action Consent Order

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE MANAGEMENT DIVISION

In the matter of: WMD Order No. 111-02-02

WARNER-LAMBERT COMPANY, a corporation
organized under the laws of the State of Delaware
with a manufacturing plant located in Holland, Michigan

MID 006 013 643

_____/

CONSENT ORDER

This Consent Order ("Consent Order") is being entered into between Warner-Lambert Company ("Warner-Lambert") and the Michigan Department of Environmental Quality ("MDEQ") pursuant to Section 11115a of Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended ("NREPA"), MCL 324.1101 *et seq.*, the rules promulgated thereunder and the authority vested in the MDEQ as an authorized state under the federal Resource Conservation and Recovery Act ("RCRA"), 42 USC 6926.

I. STATEMENT OF PURPOSE

1.1 In entering this Consent Order, the mutual objectives of the parties are:

a. To provide a mechanism for Warner-Lambert to reimburse the MDEQ a specified annual sum for the costs incurred for oversight of the post-closure and corrective action activities conducted by Warner-Lambert and its agents ("Oversight Costs"); and

b. To resolve the MDEQ's claims for Oversight Costs.

II. JURISDICTION

2.1 Pursuant to its authority under Part 111 of the NREPA, the MDEQ has promulgated administrative rules pertinent to the identification, generation, treatment, storage, disposal, and transportation of hazardous wastes in Michigan. These rules are set forth in the Michigan Administrative Code, R 299.9101 – R 299.11107.

2.2 On October 30, 1986, the State of Michigan was granted final authorization by the Administrator of the U.S. EPA, pursuant to Section 3006(b) of RCRA, 42 USC 6926(b), to administer a hazardous waste program in Michigan in lieu of the federal program, 40 CFR Part 272, Subpart X, 51 Federal Register 36804 (October 16, 1986). This authorization is periodically updated to maintain authorization. Section 3008 of RCRA, 42 USC 6928, provides that the U.S. EPA may enforce state regulations in those states authorized to administer a hazardous waste program.

2.3 This Consent Order is entered into with Warner-Lambert, a wholly owned subsidiary of Pfizer, Inc. The current owner and operator of the Holland plant located at 188 Howard Avenue, City of Holland, County of Ottawa, State of Michigan, is Warner-Lambert.

2.4 Warner-Lambert consents and agrees to the issuance and entry of this Consent Order and stipulates that the resolution of this matter by a final order to be entered as a Consent Order is proper and acceptable. This Consent Order, thus, shall be considered a final order of the MDEQ and shall become effective on the date it is signed by the Chief of the Waste Management Division, designee of the Director of the MDEQ.

2.5 Warner-Lambert further consents to and agrees not to contest the MDEQ's jurisdiction and authority to issue this Consent Order and to enforce its terms. In addition, Warner-Lambert will not contest the MDEQ's jurisdiction and authority to: compel compliance with this Consent Order in any subsequent enforcement proceedings, either administrative or judicial; require full or interim compliance by Warner-Lambert with the terms of this Consent Order; or impose sanctions for violations of this Consent Order.

2.6 Warner-Lambert and the MDEQ agree that the signing of this Consent Order is for settlement purposes only and does not constitute an admission by Warner-Lambert that any law has been violated or an admission by Warner-Lambert of any factual allegation or legal conclusion stated or implied in this Consent Order. Warner-Lambert expressly reserves all rights it may have in law or in equity to maintain or defend against any claim brought by or against any person.

III. PARTIES BOUND

3.1 The provisions of this Consent Order shall apply to and be binding upon the parties to this action and their successors and assigns.

3.2 No change in ownership of the Holland plant will in any way alter the responsibility of Warner-Lambert under this Consent Order unless agreed to in writing between the MDEQ and Warner-Lambert.

3.3 Warner-Lambert shall give notice of this Consent Order to the transferee prior to transfer of ownership or operation of the Holland plant, and shall notify the MDEQ in writing no later than fourteen (14) days prior to such scheduled transfer.

IV. FINDINGS OF FACT

4.1 Warner-Lambert is a person as defined by Section 324.301(g) of the NREPA and R 299.9106(i).

4.2 Warner-Lambert is the current owner and/or operator of the Holland plant that generated, treated, and/or stored hazardous waste. Warner-Lambert is a wholly owned subsidiary of Pfizer, Inc., a Delaware corporation, located at 235 East 42nd Street, New York, New York.

4.3 On November 18, 1980, Parke-Davis filed a Notification of Hazardous Waste Activity form with the U.S. EPA pursuant to Section 3010 of RCRA. The Holland plant's U.S. EPA Identification Number is MID 006 013 643. In its notification, Warner-Lambert indicated that the Holland plant generated, treated, and stored hazardous waste.

4.4 On July 31, 2000, the Holland plant submitted a letter notifying the MDEQ of the name change to Pfizer Global Manufacturing, Holland Plant, new ownership by Pfizer, Inc. of Warner-Lambert, additional waste codes, and continuing generator treatment of hazardous waste and hazardous waste accumulation at the Holland plant.

4.5 On July 3, 2001, Pfizer submitted a Post-Closure Plan to the MDEQ for review.

4.6 On September 28, 2001, the MDEQ approved the Post-Closure Plan.

4.7 The MDEQ and Warner-Lambert agree that the Hazardous and Solid Waste Amendments Permit and the RCRA Part B/Act 64 (now Part 111) Operating License issued to the Holland plant in October 1990 both expired or terminated

prior to the date of this Consent Order and that the hazardous waste units were closed.

V. PROJECT COORDINATOR

5.1 Unless the MDEQ is otherwise notified in writing, the Project Coordinator for Warner-Lambert shall be Mr. Tom Bauer. The MDEQ Project Coordinator shall be Ms. Cheryl Howe, Senior Environmental Engineer, unless Warner-Lambert is notified otherwise in writing. The Project Coordinators shall be responsible for overseeing the implementation of this Consent Order. To the maximum extent practicable, all communications between Warner-Lambert and MDEQ, and all documents, reports, approvals, and other correspondence concerning the performance pursuant to this Consent Order, shall be directed through the Project Coordinators.

VI. COSTS

6.1 Warner-Lambert shall reimburse the MDEQ for Oversight Costs incurred while performing oversight of activities conducted by Warner-Lambert under the Post-Closure Plan and this Consent Order by paying to the MDEQ the sum of Two Thousand Dollars ($2,000) within thirty (30) days after the annual anniversary of the effective date of this Consent Order. Such annual $2,000 payments shall resolve the MDEQ's claim for Oversight Costs for each year that payment is made and payments shall continue each year until a Notice of Termination is issued pursuant to Section XI.

6.2 Warner-Lambert shall pay the above Oversight Costs by certified or cashier's check, made payable to the "State of Michigan – Environmental Response Fund," and mailed to the Michigan Department of Environmental Quality, Revenue Control Unit, P.O. Box 30657, Lansing, Michigan 48909-8157, or hand

delivered to MDEQ, Revenue Control Unit, 525 West Allegan, Fifth Floor, South Tower, Lansing, Michigan 48933. To ensure proper credit, all payments made pursuant to this Consent Order must include the Payment Identification Number WMD 2013. All payments shall reference the Holland plant, Warner-Lambert's name and address, and this Consent Order number. A copy of the transmittal letter and the check shall be provided simultaneously to the Chief, Enforcement Section, Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909, and to the Assistant Attorney General in Charge at the address listed in the Signatory section of this Consent Order. Oversight Costs recovered pursuant to this Section shall be deposited into the Environmental Response Fund in accordance with the provisions of Section 20108(3) of NREPA.

6.3 If Warner-Lambert fails to make the payment to the MDEQ, as specified in Paragraph 6.1 of this Consent Order, Warner-Lambert shall pay an interest penalty each time it fails to make a complete or timely payment. Interest shall begin to accrue on the unpaid balance at the rate specified in Section 20126a(3) of the NREPA on the day after payment was due until the date upon which Warner-Lambert makes the required principal payment and the accrued interest to the MDEQ.

6.4 Warner-Lambert shall pay the above interest to the General Fund of the State of Michigan by certified or cashier's check, made payable to the "State of Michigan" and mailed to the MDEQ, Revenue Control Unit, P.O. Box 30657, Lansing, Michigan 48909-8157, or hand delivered to the MDEQ, Revenue Control Unit, 525 West Allegan, Fifth Floor, South Tower, Lansing, Michigan 48933. To ensure proper credit, all payments made pursuant to this Consent Order must include the Payment Identification Number noted in Paragraph 6.2. All payments shall reference the name of the Holland plant, Warner-Lambert's name and address, and the Consent Order number.

VII. SUBSEQUENT MODIFICATION

7.1 This Consent Order may be amended only by mutual agreement of the MDEQ and Warner-Lambert. Such amendments shall be in writing, shall be signed by both parties, shall have as their effective date the date on which they are signed by MDEQ, and shall be incorporated into this Consent Order.

IIIV. RESERVATION OF RIGHTS.

8.1 The MDEQ reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to the failure of Warner-Lambert to comply with any of the requirements of this Consent Order, including, without limitation, the assessment of penalties under Section 11151 of Part 111 of the NREPA, MCL 324.11151. The Consent Order shall not be construed as a covenant not to sue, release, waiver, or limitation of any rights, remedies, powers, and/or authorities, civil or criminal, which the MDEQ has under Part 111 of the NREPA, or any other statutory, regulatory, or common law enforcement authority of the State of Michigan with respect to the failure of Warner-Lambert to comply with this Consent Order.

8.2 The MDEQ and Warner-Lambert each consent to enforcement of this Consent Order in the same manner and by the same procedures for all final orders entered pursuant to Part 111 of the NREPA, MCL 324.11101 – 324.11152.

8.3 This Consent Order in no way affects the responsibility of Warner-Lambert to comply with any other applicable state, federal, or local laws or regulations.

IX. OTHER CLAIMS AND PARTIES

9.1 Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action, or demand in law or equity against any person, firm, partnership, or corporation who is not a party to this Consent Order for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release, or disposal of any contaminants found at, taken to, or taken from the Holland plant.

X. SEVERABILITY

10.1 If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstances is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties or circumstances and the remainder of the Consent Order shall remain in force and shall not be affected thereby.

XI. TERMINATION

11.1 This Consent Order shall remain in full force and effect until expressly terminated by a written Notice of Termination issued by the Chief of the Waste Management Division of the MDEQ. Warner-Lambert may request that the Chief issue a written Notice of Termination at any time after the Remedial Action Plan referred to in the Post-Closure Plan is approved by the MDEQ. The Chief of the Waste Management Division shall issue a Notice of Termination upon the submittal of such certification and the approval of the Remedial Action Plan.

Signatories

The undersigned certify that they are fully authorized by the party they represent to enter into this Consent Order to comply by consent and to execute and legally bind that party to it.

Warner-Lambert Company

By: _____

Title: David Reid
Vice President

Date: 2/13/02

Department of Environmental Quality

Russell J. Harding, Director

By: _____
Jim Sygo, Chief
Waste Management Division

Date: 2/25/02

APPROVED AS TO FORM:

Jennifer M. Granholm
Attorney General

By: Robert P. Reichel
Robert P. Reichel
Assistant Attorney General
Natural Resources Division and
Environmental Quality Division
5th floor, South Tower
Constitution Hall
525 West Allegan
Lansing, Michigan 48933

Date: 2/25/02

Appendix D

Key EGLE Communications

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

June 20, 2014

Mr. Thomas Donohue
Senior Manager
Pfizer Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: Approval of Final Remedial Action Plan/Corrective Measures Implementation Plan (Final RAP/CMIP); Pfizer, Inc./Warner-Lambert Company, LLC (Warner-Lambert), Holland, Michigan; MID 006 013 643

The Michigan Department of Environmental Quality (MDEQ), Office of Waste Management and Radiological Protection (OWMRP), has reviewed the Final RAP/CMIP dated April 21, 2014, as revised through June 12, 2014. The Final RAP/CMIP was reviewed for compliance with the requirements of the Revised Post Closure Plan approved on December 21, 2009, and Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and its administrative rules, and the applicable sections of Part 201, Environmental Remediation, of Act 451. A public meeting was held on the Final RAP/CMIP on May 14, 2014. No public comments were received during the public comment period that ran from April 22, 2014, to June 5, 2014.

Based on this review, the OWMRP hereby approves the Final RAP/CMIP, subject to the following requirements:

1. The Post Closure Plan must be modified to reflect the implementation needs and post closure care activities associated with the final selected remedial actions following this approval of the Final RAP/CMIP, including those required under the PCB Remediation Plan Coordinated Approval. Accordingly, a revised draft Post Closure Plan shall be submitted to the OWMRP for review and approval by September 30, 2014.

2. Any changes to the corrective action financial assurance cost estimate and instrument shall be made when the Post Closure Plan is modified.

Please be advised that this approval does not constitute a release from any corrective action responsibilities that Warner-Lambert or any future owners or operators may have for the facility under Part 111 or the federal Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984. At this time, the OWMRP is not aware of the existence of any other contamination beyond those identified and remediated as a part of the approved Final RAP/CMIP. This approval does not preclude the MDEQ from requiring further corrective action at the facility at a later date if new information or subsequent analysis indicates that a release or potential release of a hazardous waste from the facility may pose a threat to public health, safety, welfare, or the environment.

If you have any questions regarding this approval, please contact Ms. Cheryl Howe, Hazardous Waste Section, OWMRP, at 517-284-6561; howec@michigan.gov; or MDEQ, OWMRP, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Bryce Feighner, P.E., Chief
Office of Waste Management and
Radiological Protection
517-284-6551

cc: Mr. Allen Reilly, Horizon Environmental
Ms. DeLores Montgomery/Ms. Virginia Himich, MDEQ
Dr. Deb MacKenzie-Taylor//Mr. Art Ostaszewski, Mr. David Slayton MDEQ
Corrective Action File

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

June 19, 2013

Mr. Thomas Donohue
Senior Manager
Pfizer Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: No Further Interest (NFI) Determination Summary for the North Parcels, Pfizer, Inc./Warner-Lambert Company, LLC (Warner-Lambert), Holland, Michigan; MID 006 013 643

The Michigan Department of Environmental Quality (MDEQ), Office of Waste Management and Radiological Protection, has reviewed the NFI Determination Summary that was dated September 2012 and the draft Restrictive Covenants received May 8, 2013, from Horizon Environmental on behalf of Warner-Lambert. The review was conducted pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, since the North Parcels are subject to Part 111/Resource Conservation and Recovery Act of 1976 (RCRA) corrective action as noted in the MDEQ letter of November 21, 2007, regarding Approval of Clarification and Delineation of Facility Boundaries.

Based on that review, the MDEQ does not currently plan or anticipate pursuing any further corrective action for the North Parcels that are defined in Figures 2 and 3 of the NFI Determination Summary and as described in the draft Restrictive Covenants. Although the request was for NFI, it has been determined that the appropriate regulatory approach is a No Further Action determination. Therefore, the MDEQ is able to issue this No Further Action letter relative to Part 111/RCRA corrective action obligations for the North Parcels. Please note, however, that this determination does not preclude the MDEQ from undertaking any action at the facility at a later date if information is obtained indicating that such action is necessary to protect human health, welfare, or the environment.

Once the Restrictive Covenants have been filed and the MDEQ receives copies of the recorded documents, a Corrective Action Process Terminated – No Further Action event code will be entered for these specific parcels into our Waste Data System database. Subsequently, that information will be transmitted to the EPA RCRAInfo database as well.

Should you have any questions regarding this review, please contact me at howec@michigan.gov; or DEQ, OWMRP, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Cheryl Howe

Cheryl Howe
Environmental Engineer Specialist
Hazardous Waste Section
Office of Waste Management and
Radiological Protection
517-373-9881

cc: Mr. Allen Reilly, Horizon Environmental
Ms. DeLores Montgomery/Ms. Virginia Himich, MDEQ
Dr. Deb MacKenzie-Taylor/Mr. David Slayton/Mr. Art Ostaszewski, MDEQ
Corrective Action File

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

C. HEIDI GRETHER
DIRECTOR

July 13, 2018

Mr. Thomas Donohue
Senior Manager
Pfizer, Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: Michigan State University Research & Development South Parcel Corrective Action Complete with Controls; Warner-Lambert Company, LLC; Holland, Michigan; MID 006 013 643

The Michigan Department of Environmental Quality (MDEQ), Waste Management and Radiological Protection Division (WMRPD), has reviewed the *Screening Level Vapor Intrusion Pathway Assessment* dated May 23, 2018, submitted by Barr Engineering (Barr) on behalf of Pfizer, Inc. (Pfizer). The review was conducted pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the federal Resource Conservation and Recovery Act of 1976, as amended (RCRA); and the approved Post Closure Plan dated May 8, 2015.

Based on that review, the MDEQ agrees that the volatilization to indoor air pathway can be concluded to not be of concern for the former Research & Development South Parcel, currently owned by Michigan State University (MSU R&D South Parcel).

Additionally, the MDEQ does not currently plan or anticipate pursuing any further corrective action for the MSU R&D South Parcel.

Previous remediation activities at the MSU R&D South Parcel have consisted of excavation of polychlorinated biphenyl-contaminated soils and construction of a soil-bentonite containment wall (as part of a hydraulic containment system) to isolate the MSU R&D South Parcel from sources of soil and groundwater contamination in the former plant site.

Because controls are still necessary, it has been determined that the appropriate regulatory designation for the MSU R&D South Parcel is an event code of CA900CR, Corrective Action Performance Standards Attained – Control Required, as a restrictive covenant has been filed to control land use as only nonresidential, prohibit groundwater use and creation of surface water features in communication with groundwater.

Therefore, the MDEQ is able to issue this determination for the MSU R&D South Parcel (CA900CR, Corrective Action Performance Standards Attained – Control Required) relative to Part 111 of Act 451/RCRA corrective action obligations as long as restrictive covenant obligations, as well as the hydraulic containment system at the former plant site, are maintained.

Please note, however, that this determination does not preclude the MDEQ from undertaking any action at the facility at a later date if information is obtained indicating that such action is necessary to protect human health, welfare, or the environment.

Should you have any questions regarding this information, please contact Mr. Andrew Bertapelle, Environmental Engineer, Hazardous Waste Section, WMRPD, at 517-284-6561; bertapellea1@michigan.gov; or MDEQ, WMRPD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Allan B. Taylor

Allan B. Taylor, Manager
Hazardous Waste Section
Waste Management and Radiological
Protection Division
517-614-7335

cc: Mr. Allen Reilly, Barr
Ms. Virginia Himich, MDEQ
Mr. Joseph Rogers, MDEQ
Mr. Art Ostaszewski, MDEQ
Mr. Andrew Bertapelle, MDEQ
Ms. Nicole Sanabria, MDEQ
Corrective Action File

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

C. HEIDI GRETHER
DIRECTOR

December 21, 2018

Mr. Thomas Donohue
Senior Manager
Pfizer Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: *Post-Sparge System Groundwater Monitoring Results at PZ-3-O*; Warner-Lambert Company, LLC, Holland, Michigan; MID 006 013 643

The Michigan Department of Environmental Quality (MDEQ), Waste Management and Radiological Protection Division (WMRPD), has reviewed the *Post-Sparge System Groundwater Monitoring Results at PZ-3-O* (Report) dated October 22, 2018, that was submitted pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the approved Post-Closure Plan.

The Report also included a request to terminate the post-sparge groundwater monitoring program at piezometer PZ-3-O. As indicated in the Report, chlorobenzene concentrations have remained below the mixing zone-based groundwater/surface water interface and the final acute value criteria for the last six semi-annual sampling events. Furthermore, a benthic toxicity assessment at the site, done in accordance with the former Department of Natural Resources and Environment (now the MDEQ), Remediation and Redevelopment Division, Operational Memorandum 4, Attachment 3, concluded that none of the site's sediment samples exhibited biologically significant responses for *Chironomus* survival, *Chironomus* growth, or *Hyalella* survival, including those near PZ-3-0 (MDEQ approval of *Final Sediment Assessment Report*, March 17, 2010).

Based on the WMRPD's review, the Report is hereby approved, including the request to terminate the post-sparge groundwater monitoring program.

Should you have any questions regarding this review, please contact me at 517-284-6561; bertapellea1@michigan.gov; or MDEQ, WMRPD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Andrew Bertapelle, Environmental Engineer
Permit and Corrective Action Unit
Hazardous Waste Section
Waste Management and Radiological
Protection Division

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

July 27, 2020

VIA E-MAIL AND U.S. MAIL

Mr. Thomas Donohue
Senior Manager
Pfizer, Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: LNAPL Monitoring and Management Plan (LMMP) Modification Request and Summary of Results for the 4th Quarter (May 2019 – July 2019) of Year 5; Warner-Lambert Company Former Manufacturing Site; Holland, Michigan; MID 006 013 643; Waste Data System Number 393958

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has reviewed the August 6, 2019, letter (Report) summarizing the light non-aqueous phase liquid (LNAPL), monitoring and management activities completed during the 4th quarter of Year 5 (May 2019 – July 2019), at the Warner-Lambert Company former manufacturing site located in Holland, Michigan. The review was conducted to assess compliance with Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and its administrative rules; and the LMMP, contained in Appendix N of the approved Final Remedial Action Plan/Corrective Measures Implementation Plan as revised on June 12, 2014, as well as in Appendix K of the approved Post-Closure Plan, as revised on February 4, 2015.

In addition to reporting on the LMMP activities performed, the Report requests a modification to the LMMP (Request). The Request would suspend the quarterly inspections of the LNAPL sentinel observation wells (SOW), until site hydraulic conditions shift such that LNAPL migration is possible. According to the conceptual site model (CSM), groundwater elevations greater than 577 feet above mean sea level (AMSL), are understood to result in hydrogeologic confinement of LNAPL, disallowing its migration. The Request suggests monitoring groundwater elevation alone, as is performed in quarterly events pursuant to the Performance Monitoring Plan for the Plant Site's hydraulic containment system

The MMD has determined that the Report meets the monitoring and reporting requirements of the LMMP. In addition, with regards to the Request, the MMD has determined that a reduction of SOW monitoring frequency to annual is appropriate, instead of a complete suspension of such monitoring. This modification will allow for some reasonable burden reduction, while still allowing for periodic confirmation of the site CSM. This LMMP modification to reduce SOW monitoring event frequency to annual is hereby approved, with the following conditions:

- Condition #1: Groundwater Elevation Change Contingency. Should groundwater elevation drop below 577 feet AMSL, thereby allowing for the potential of LNAPL unconfinement and subsequent migration, inspection of SOWs and LNAPL body observation wells shall be reinitiated on a monthly basis.

- Condition #2: LMMP Flowchart Update. Pfizer must submit an updated LMMP Flowchart to incorporate this modification to the LMMP, and reiterating Condition #1, above. Please submit this updated LMMP Flowchart within 60 days of receipt of this letter.

The next LMMP monitoring event is due to be performed by the end of the 4th quarter of Year 6 (May 2020 – July 2020).

Should you have any questions regarding this review, please contact Mx. Andrew Bertapelle, Environmental Engineer, Permit and Corrective Action Unit, Hazardous Waste Section, at 517-290-3813; BertapelleA1@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Allan B. Taylor

Allan B. Taylor, Manager
Hazardous Waste Section
Materials Management Division
517-614-7335

cc: Mr. Allen Reilly, Senior Environmental Scientist, Barr Engineering Co.
Mr. Rick Bethel, Senior Project Manager, Quantum Management Group
Mr. Joe Warburton, Geologist, Brown and Caldwell
Mr. Fred Sellers, EGLE
Ms. Kimberly Tyson, EGLE
Mr. Art Ostaszewski, EGLE
Mx. Andrew Bertapelle, EGLE
Ms. Nicole Sanabria, EGLE
Corrective Action File

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

Keith Creagh
DIRECTOR

April 21, 2016

Mr. Thomas Donohue
Senior Manager
Pfizer, Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: Revised Ground Water Monitoring and Assessment Plan for Macatawa Warehouse Development and Dunton Park Properties; Pfizer, Inc./ Warner-Lambert Company, LLC, Holland, Michigan; MID 006 013 643

The Michigan Department of Environmental Quality (MDEQ), Office of Waste Management and Radiological Protection (OWMRP) received the revised Ground Water Monitoring and Assessment Plan dated March 2016 (Plan). The Plan is a revision of the May 2014 version incorporated into the Final Remedial Action Plan (RAP)/Corrective Measures Implementation Plan (CMIP) approved by the MDEQ on June 20, 2014. The Plan has been revised based on groundwater monitoring data gathered on the Macatawa Warehouse Development (MWD), Dunton Park and Michigan State University Bioeconomy Research Institute (MSU) properties during a one year initial assessment monitoring period. The Plan was reviewed pursuant to the CMIP, and Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

The Plan is hereby approved. With this approval, and once Restrictive Covenants (RCs) are filed and recorded, the MWD, Dunton Park and MSU properties will have achieved a risked-based closure with controls, contingent on continued implementation of the Plan and complying with the CMIP and conditions of the RCs.

Should you require further information, please contact me at 517-284-6571; slaytond@michigan.gov; or MDEQ, OWMRP, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

David Slayton

David Slayton, Acting Unit Chief
Management & Tracking Unit
Hazardous Waste Section
Office of Waste Management and
Radiological Protection

cc: Mr. Don Komejan, Manager, Holland Charter Township
Mr. Allen Reilly, Barr Engineering
Mr. Fred Sellers, MDEQ
Ms. DeLores Montgomery, MDEQ
Ms. Virginia Himich, MDEQ
Dr. Deb MacKenzie-Taylor, MDEQ
Dr. Kristen Kellock, MDEQ
Mr. Art Ostaszewski, MDEQ
Corrective Action File

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

KEITH CREAGH
DIRECTOR

June 7, 2016

Mr. Thomas Donohue
Senior Manager
Pfizer, Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: Request to Abandon Monitoring Wells; Warner-Lambert Company, LLC, Former Manufacturing Facility, Holland, Michigan; MID 006 013 643

The Michigan Department of Environmental Quality (MDEQ), Office of Waste Management and Radiological Protection (OWMRP), received the Warner-Lambert Company's Request to Abandon Monitoring Wells dated May 20, 2016 (Request). The request proposes to abandon wells MW-MWD-2, MW-DP-4, MW-DP-5, MW-47 and TW-N-42. The Request was reviewed pursuant to the Corrective Measure Implementation Plan, and Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

The Request is hereby approved. Should you require further information, please contact me via e-mail at slaytond@michigan.gov; telephone at 517-284-6571; or DEQ, OWMRP, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

David Slayton

David Slayton, Geologist
Hazardous Waste Section
Office of Waste Management and
Radiological Protection

cc: Mr. Allen Reilly, Barr Engineering
Mr. Fred Sellers, MDEQ
Ms. DeLores Montgomery, MDEQ
Ms. Virginia Himich, MDEQ
Dr. Deb MacKenzie-Taylor, MDEQ
Dr. Kristen Kellock, MDEQ
Mr. Art Ostaszewski, MDEQ
Corrective Action File

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

February 3, 2022

VIA E-MAIL

Mr. Thomas Donohue, Senior Manager
Pfizer, Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: Review of Offsite Groundwater Monitoring, and Approval of Reduction in Monitoring Frequency; Warner Lambert Company, LLC Former Plant Site; Holland, Michigan; MID 006 013 643; Waste Data System Number 393958

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD) has reviewed the July 20, 2021, *Groundwater Monitoring Results for the Macatawa Warehouse Development and Dunton Park Properties Adjacent to the Warner Lambert Company, LLC, Former Plant Site in Holland, Michigan (MID 006 013 643)* Submittal (Report), summarizing the results of a semi-annual groundwater monitoring event conducted on May 25, and 26, 2021, at the Macatawa Warehouse Development (MWD) and Howard B. Dunton Park properties adjacent to Warner-Lambert Company's former plant site in Holland, Michigan (facility). The review was conducted to assess compliance with Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 461, as amended, and its rules, and the approved 2015 modified Post-Closure Plan (PCP).

Based on the MMD's review, the Report meets the requirements of the PCP, and as expressed in MMD's October 20, 2021, communication, Pfizer, Inc. may reduce the frequency of monitoring for chlorobenzene and phenytoin at the offsite parcel locations from semi-annually to annually.

After an additional period of time, Pfizer, Inc. may petition MMD for a further reduction in locations and frequency based on rationale provided by the facility. In endorsing such a determination, MMD would consider statistical trends, confidence intervals, and the hydraulic containment and inward gradient status submittals.

Should you have any questions regarding this review, please contact Mr. Arthur Ostaszewski, Environmental Quality Specialist, Technical Support Unit, Hazardous Waste Section, MMD, at 517-936-7991; OstaszewskiA@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Kimberly M. Tyson

Kimberly M. Tyson, P.E., Manager
Hazardous Waste Section
Materials Management Division
517-388-2797

cc: Mr. Allen Reilly, Barr Engineering
Mr. Rick Bethel, Quantum Management Group
Mr. Joe Warburton, Brown and Caldwell
Mr. Dale Bridgford, EGLE
Mr. Arthur Ostaszewski, EGLE
Ms. Nicole Sanabria, EGLE
Corrective Action File

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

August 25, 2021

VIA E-MAIL

Mr. Thomas Donohue, Senior Manager
Pfizer, Inc.
100 Route 206 North
Peapack, New Jersey 07977

Dear Mr. Donohue:

SUBJECT: Conditional Approval for Construction of Proposed Treatment System for Plant Site Extracted Groundwater - Treatment System and Discharge; Warner-Lambert Company LLC Former Manufacturing Facility; Holland, Michigan; MID 006 013 643; Waste Data System Number 393958

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has received the documents listed below (Documents) from Barr Engineering Co. (Barr) on behalf of Pfizer, Inc. (Pfizer), pertaining to their former manufacturing site (facility) located at 188 Howard Avenue, Holland, Michigan. These Documents were reviewed by the MMD to assess compliance with Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the administrative rules.

- Extracted Groundwater Treatment System (GWTS) Final (95%) Design Plans, dated March 7, 2021, and submitted to the MMD by Barr on April 8, 2021.

- Wastewater Discharge Permit Number HT-2021-WLC-24, initially authorized by the City of Holland's Board of Public Works (BPW) on May 27, 2021, with an effective date of June 1, 2021, and submitted to the MMD by Barr on June 8, 2021.

- Revised Wastewater Discharge Permit Number HT-2021-WLC-24, authorized by the City of Holland's BPW to be "activated upon request", and provided to the MMD by Barr on June 15, 2021.

The Documents pertain to Pfizer's letter of August 31, 2020, (Proposal) requesting modifications to the facility's approved Remedial Action Plan/Corrective Measures Implementation Plan (RAP/CMIP), and Post-Closure Plan (PCP). The RAP/CMIP and the PCP describe Pfizer's current post-closure and corrective action obligations.

In the Proposal and the Documents, Pfizer suggests changes to how contaminated groundwater extracted from within the Plant Site's hydraulic containment system would be managed. Specifically, Pfizer is proposing to shift from on-site deep well disposal to on-site pretreatment with subsequent discharge to the BPW's Holland Area Water

Reclamation Facility (WRF) sewer system. The on-site pretreatment of the extracted groundwater would consist primarily of a biologically active granular activated carbon treatment system.

Based on the MMD's review of the Documents, Pfizer may proceed with construction of the proposed on-site GWTS. However, prior to discharging to the BPW WRF's sewer system, Pfizer must:

1) Submit a request for formal modifications of the RAP/CMIP and the PCP. This request must include the revised sections of the RAP/CMIP and the PCP, for review by the MMD.

2) Provide an updated copy of the Wastewater Discharge Permit from the City of Holland's BPW, once activated. This updated copy must include the issued date, effective date, and the expiration date.

Should you have any questions regarding this matter, please contact me at 517-290-3813; BertapelleA1@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, Michigan 48909-7741.

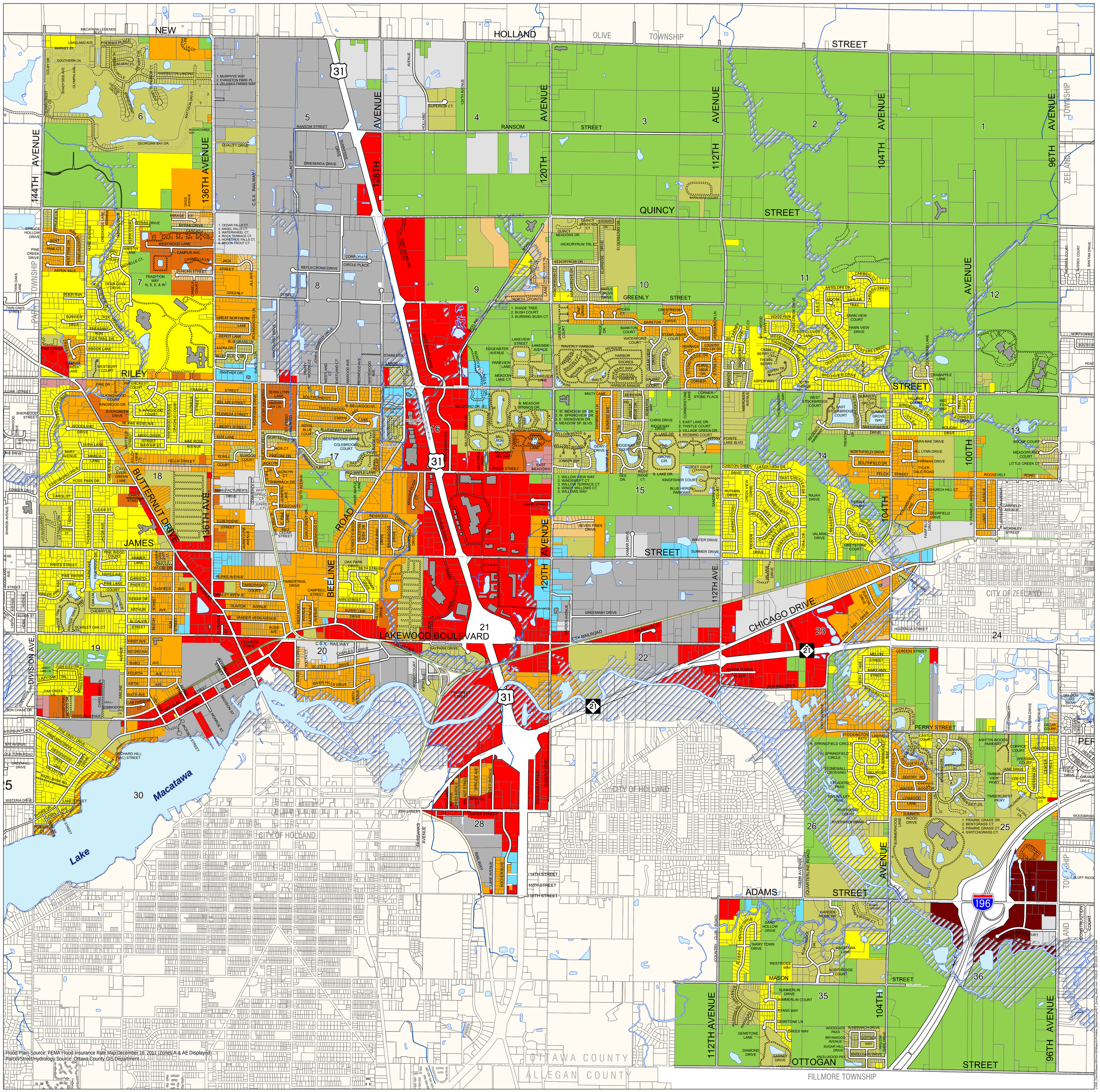
Sincerely,

Andrew Bertapelle, Environmental Engineer
Permit and Corrective Action Unit
Hazardous Waste Section
Materials Management Division
517-290-3813

cc: Mr. Allen Reilly, Senior Environmental Scientist, Barr
Ms. Kimberly Tyson, EGLE
Mr. Fred Sellers, EGLE
Mr. Dale Bridgford, EGLE
Mr. Art Ostaszewski, EGLE
Ms. Nicole Sanabria, EGLE
Corrective Action File

Appendix E

Zoning Map



LEGEND

- Flood Plain
- Macatawa Residential Setback Overlay
- AG - Agricultural District
- R-1 - Low Density Residential District
- R-2 - Moderate Density Residential District
- R-2A - Medium Density Residential District
- R-3 - High Density Residential District
- C-1 - Neighborhood Commercial District
- C-2 - Community Commercial District
- C-3 - Highway Commercial District
- O-S - Office and Service District
- I-1 - Light Industrial District
- I-2 - General Industrial District
- Planned Unit Development

0 1,000 2,000 4,000 Feet

SCALE: 1" = 1000'

Holland Charter Township

Ottawa County, Michigan

ZONING

September 2020

Prein&Newhof

This map is intended for reference only. Holland Charter Township and Prein&Newhof are not liable for errors or omissions.
2200108

Part II Zoning Districts

Article 2 **Zoning Districts and Map**
Article 3 **Agricultural Districts**
Article 4 **Residential Districts**
Article 5 **Commercial and Office Districts**
Article 6 **Industrial Districts**
Article 7 **Overlay Districts**

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Article 2. Zoning Districts and Map

Section 2.1 Zoning Districts

The township is divided into the following zoning districts:

Table 2.1 Zoning Districts		
Abbreviation	**District Name**	**Regulated In**
Agricultural District		
AG	Agricultural District	*Article 3*
Residential Districts		
R-1	Low Density Residential District	*Article 4*
R-2	Moderate Density Residential District	
R-2A	Medium Density Residential District	
R-3	High Density Residential District	
Commercial and Office Districts		
C-1	Neighborhood Commercial District	*Article 5*
C-2	Community Commercial District	
C-3	Highway Commercial District	
O-S	Office and Service District	
Industrial Districts		
I-1	Light Industrial District	*Article 6*
I-2	General Industrial District	
Overlay Districts		
FP	Floodplain Overlay District	*Article 7*
GW	Gateway Overlay District	

Section 2.2 Zoning Map

The location and boundaries of the zoning districts are established as shown upon a map entitled "Zoning Map of Holland Charter Township," as amended from time to time. The zoning map shall be kept on public display at the township hall.

Section 2.3 Interpretation of Zoning District Boundaries

A. *Map Interpretation*. Where uncertainty exists as to the boundaries of zoning districts shown on the zoning map, the following rules of construction and interpretation shall apply:

1. Boundaries indicated as approximately following the centerlines of streets or alleys shall be construed to follow such centerlines.
2. Boundaries indicated as approximately following platted lot lines shall be construed as following those lot lines.
3. Boundaries indicated as approximately following township boundaries shall be construed as following township boundaries.
4. Boundaries indicated as following the shorelines of lakes, rivers, creeks or lake, river, or creek beds shall be construed as following such shoreline, and in the event of natural change in the location of a shoreline, shall be construed as moving with such shoreline.
5. Lines parallel to streets without indication of depth from the street line shall be construed as having a depth of 150 feet from the center of the street right-of-way.
6. Boundaries indicated as approximately following property lines, section lines, or other lines of the

government survey shall be construed as following such property lines as of the effective date of this ordinance or applicable amendment.

B. *Areas Not Included Within a Zoning District*. In every case where land has not been specifically included within a zoning district, the land shall be included in the Agricultural Zoning District. In the case of land annexed to the township, such land shall be included in the zoning district which most closely approximates the zoning applicable to such land prior to its annexation.

C. *Zoning of Vacated Areas*. Whenever any street, alley, or other public way is vacated by official action, the zoning district adjoining each side of such public way shall automatically be extended to the center of such vacation, and all area included shall be subject to all applicable regulations of the district in which it is located.

D. *Boundaries Dividing a Lot of Record.* Where a zoning boundary line divides a property, each use, building, and structure on the lot of record shall comply with the requirements of the applicable district for where it is placed on the property.

Section 2.4 Similar Land Use Determination

A. *Intent*. Since every potential land use cannot be addressed in the Zoning Ordinance, each district may accommodate similar uses, as referenced in this section.

B. *Determination*. All applications for a use not specifically addressed in a zoning district, or inquiries concerning a use, shall be submitted to the Zoning Administrator for review and a determination.

1. Factors. The Zoning Administrator shall base the determination on the following factors:

   a. The proposed use is not listed as a permitted or special land use in any other zoning district.

   b. The use is consistent with the district purpose.

   c. The use is similar to other allowed uses relative to its character, scale, and overall compatibility.

   d. The use is not expected to create objectionable impacts to public health, safety, and welfare if it were established in the applicable zoning district.

   e. The use would not be more appropriate within a different zoning district.

2. Zoning Board of Appeals. The Zoning Administrator may, in their sole discretion, submit a proposed use to the Zoning Board of Appeals for a similar use determination if consideration of the review factors does not lead to a clear conclusion.

C. *Compliance*. If a proposed use is determined to be similar to a permitted use within the district, the similar use shall comply with all the standards or requirements associated with the permitted use. If the named use is a special land use within the applicable zoning district, the similar use shall be reviewed and approved per the applicable requirements for the named use.

D. *Determination*. The determination of whether a proposed use is similar to another listed use shall be considered as an interpretation of the use regulations and is not determined to be a use variance. Once a use has been determined to be similar, it shall be specifically determined to be the named use with which it shares similarities.

E. *Prohibited Use*. If a use is not specifically listed anywhere in this ordinance and is not determined to be similar to any other specifically listed uses, the use is prohibited.

F. *Accessory Uses*. Accessory uses are permitted in conjunction with all permitted and special land uses. The Administrator shall review and determine allowable accessory uses to ensure they are customarily associated with the permitted or special land use and are incidental and subordinate to the principal use.

Article 3. Agricultural District

Section 3.1 Intent and Purpose

This article outlines the Agricultural Zoning District and contains basic information pertaining to the land use regulation and spatial requirements for buildings and lots of record.

A. *Agricultural District (AG)*. The AG District is primarily intended for large tracts of land used for farming or which are idle. It is not intended for any use except agricultural, very low-density, single-family residential use, and other specialized rural uses requiring large tracts of land.

Section 3.2 Schedule of Uses

Land and/or buildings in the Agricultural District shall only be used in accordance with *Table 3.2*.

A. *Permitted Use (P)*. This use is authorized by-right, subject to all other applicable provisions of the Zoning Ordinance.

B. *Special Land Use (S)*. This use is subject to review and permitting in accordance with *Article 15*.

C. *Other*. See referenced section for additional requirements.

Table 3.2 Schedule of Uses: Agricultural District

Use	AG	Other
Agribusiness conducted in conjunction with a farm	S	
Agricultural labor camp	S	*9.2*
Agritourism, ancillary uses and activities	S	
Amateur radio and over-the-air reception devices	P/S	*9.3*
Animal services, kennel, rescue or shelter	S	
Aviation	S	
Banquet barn	S	
Bed and breakfast	S	*9.4*
Cemetery	S	
Commercial stable	S	
Day care, family day care (1-6 children)	P	
Day care, group day care home (7+ children)	S	*9.5*
Dwelling, accessory	S	*9.6*
Dwelling, single-family	P	*9.8*
Earth-sheltered building	S	*9.9*
Farmers market	P	*9.10*
Farms and farm operations	P	*9.10*
Foster care, adult foster care family home (1-6 adults)	P	
Foster care, foster family home (children)	P	
Government facility	P	
Home occupation	S	*9.13*
Keeping of farm animals, chickens, and bees	P	*9.14*
Offices and services, temporary office	P	*9.18*
Outdoor display, sales, yard and garage sales	P	*9.21*
Place of worship	S	
Public utility facility	S	*9.23*
Recreation facility, campground	S	*9.24*

Table 3.2 Schedule of Uses: Agricultural District		
Use	**AG**	**Other**
Recreation facility, community-based, public, outdoor	P	
Recreational facility, golf course	S	*9.24*
Roadside stand	P	
School, college or university and private	S	
Solar energy collector, building-mounted	P	*9.26*
Solar energy collector, ground-mounted	S	*9.26*
Solar energy, commercial solar energy system	S	*9.26*
Special events	P	*9.27*
Wind energy	S	*9.28*
Wind energy- anemometer	P	*9.28*
Wind energy- MWET, LWET	S	*9.28*
Wind energy- SSMWET, STMWET	S	*9.28*
Wireless communications	S	*9.29*
Wireless communications, collocation/limited increases	P	*9.29*

Section 3.3 Spatial Requirements

All lots of record shall meet the minimum area and width requirements of *Table 3.3A*. New lots of record shall not be created, except in conformance with these requirements. All placement of buildings shall conform to the minimum spatial and dimensional requirements listed in *Table 3.3B.*

Table 3.3A Lot Requirements: Agricultural District		
Requirement		**AG**
Min. Area (acres)	Single-Family	5
	Non-Residential[1]	5
Min. Width (ft.)	Single-Family	325
	Non-Residential[1]	325

[1] Non-residential means any permitted or special land use that is not a dwelling.

Table 3.3B Principal Building Requirements: Agricultural District		
Requirement		**AG**
Min. Front Setback (ft.)	Single-Family	50
	Non-Residential[2]	100
Min. Side Setback (ft.)	Single-Family	25
	Non-Residential[2]	60
Min. Rear Setback (ft.)	Single-Family	50
	Non-Residential[2]	100
Maximum Building Coverage	Single-Family	35%
	Non-Residential[2]	35%
Maximum Lot Coverage	Single-Family	50%
	Non-Residential[2]	65%
Maximum Front Yard Driveway Coverage		50%
Min. Floor Area (s.f.)	Single-Family total	1,000
	Single-Family first floor	750
	Non-Residential[2]	-
Max. Height (ft.)		35

[2] Non-residential means any permitted or special land use that is not a dwelling. Agricultural buildings shall require an affidavit stating that use will be limited to agricultural purposes.

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Article 4. Residential Districts

Section 4.1 Intent and Purpose

This article outlines the Residential Zoning Districts and contains basic information pertaining to the land use regulation and spatial requirements for buildings and lots of record.

A. *Low Density Residential District (R-1)*. The R-1 District is the most restrictive residential zoning district and is primarily intended for single-family dwellings, and certain assembly and educational facilities.

B. *Moderate Density Residential District (R-2)*. The R-2 District is primarily intended for single-family dwellings and two-family dwellings.

C. *Medium Density Residential District (R-2A)*. The R-2A District is primarily intended for single-family dwellings, two-family dwellings and apartments in a more limited scale.

D. *High Density Residential District (R-3)*. The R-3 District is primarily intended for two-family and multiple-family dwellings.

Section 4.2 Schedule of Uses

Land and/or buildings in the Residential Districts shall only be used in accordance with *Table 4.2*.

A. *Permitted Use (P)*. This use is authorized by-right, subject to all other applicable provisions of the Zoning Ordinance.

B. *Special Land Use (S)*. This use is subject to review and permitting in accordance with *Article 15*.

C. *Not Permitted*. A blank cell indicates that a use is not permitted.

D. *Other Requirements*. See referenced section for additional requirements.

Table 4.2 Schedule of Uses: Residential Districts

Use	R-1	R-2	R-2A	R-3	Other
Amateur radio and over-the-air reception devices	P/S	P/S	P/S	P/S	*9.3*
Bed and breakfast	S	S	S		*9.4*
Day care, family day care (1-6 children)	P	P	P		
Day care, group day care home (7+ children)	S	S	S		*9.5*
Dwelling, accessory	P	P			*9.6*
Dwelling, multi-family, single-family attached			P	P	*9.7*
Dwelling, single-family	P	P			*9.8*
Dwelling, two-family		P	P	P	*9.8*
Earth-sheltered building	S	S	S		*9.9*
Foster care, adult foster care family home (1-6 adults)	P	P	P		
Foster care, adult foster care group home (7+ adults)		S			*9.12*
Foster care, foster family homes (children)	P	P	P		
Government facility	P	P	P	P	
Home occupation	S	S	S		*9.13*
Housing- independent, assisted, convalescent and nursing			S	S	

Table 4.2 Schedule of Uses: Residential Districts					
Use	**R-1**	**R-2**	**R-2A**	**R-3**	**Other**
Manufactured home community and associated offices and services	S	S	S		*9.15*
Offices and services, temporary office	P	P	P	P	*9.18*
Outdoor display, sales, yard and garage sales	P	P	P	P	*9.21*
Place of worship	S	S	S	S	
Public utility facility	S	S	S	S	*9.23*
Recreation facility, community-based, public, indoor	S	S	S	S	
Recreation facility, community-based, public, outdoor	P	P	P	P	
Recreational facility, golf course	S	S	S	S	*9.24*
Roadside stand	S	S			
School, college, university, and private	S	S	S	S	
Solar energy collector, building-mounted	P	P	P	P	*9.26*
Solar energy collector, ground-mounted	S	S	S	S	*9.26*
Special events	P	P	P	P	*9.27*
Wind energy- anemometer	P	P	P	P	*9.28*
Wind energy- SSMWET, STMWET	S	S	S	S	*9.28*
Wireless communications	S	S	S	S	*9.29*
Wireless communications, collocation/limited increases	P	P	P	P	*9.29*

Section 4.3 Spatial Requirements

All lots of record shall meet the minimum area and width requirements of *Table 4.3A*. New lots of record shall not be created, except in conformance with these requirements. All placement of buildings shall conform to the minimum spatial and dimensional requirements listed in *Table 4.3B.*

Table 4.3A Lot Requirements: Residential Districts					
Requirement		**R-1**	**R-2**	**R-2A**	**R-3**
Min. Area (s.f.)	Single-Family	10,500	8,400	7,200	-
	Two-Family	-	8,800	8,800	8,400
	Multi-Family (per dwelling)	-	-	4,000	3,630
	Non-Residential	10,500	10,500	10,500	10,500
Min. Width (ft.)	Single-Family	70	64	60	-
	Two-Family	-	80	80	70
	Multi-Family	-	-	80	80
	Non-Residential	70	70	70	70

Table 4.3B Principal Building Requirements: Residential Districts					
Requirement		**R-1**	**R-2**	**R-2A**	**R-3**
Min. Front Setback (ft.)	Single-Family	35	35	35	-
	Two-Family	-	35	35	35
	Multi-Family	-	-	35	35
	Non-Residential[1]	35	35	35	35
Min. Side Setback (ft.)	Single-Family	7	7	20	-
	Two-Family	-	7	7	5
	Multi-Family	-	-	20	20
	Non-Residential[1]	20	20	20	20
Min. Rear Setback (ft.)	Single-Family	35	25	25	-
	Two-Family	-	25	25	25
	Multi-Family	-	-	25	25
	Non-Residential[1]	50	50	50	50
Macatawa Waterfront		See *Section 8.10 D*			
Maximum Building Coverage	Residential	35%			
	Non-Residential[1]	35%			
Maximum Lot Coverage	Residential	50%			
	Non-Residential[1]	65%			
Maximum Front Yard Driveway Coverage		50%			
Min. Floor Area (s.f.)	Single-Family total	1,200	864	864	-
	Single-Family first floor	900	645	645	-
	Two-Family first unit	-	864	864	864
	Two-Family second unit	-	720	720	720
	Multi-Family per unit (Studio)	-	-	550	550
	Multi-Family per unit (1 bdrm. or more)	-	-	720 plus 150 square feet per bdrm over 1	640 plus 150 square feet per bdrm over 1
	Non-Residential[1]	-	-	-	-
Max. Height (ft.)		35	35	45	60

[1] Non-residential means any permitted or special land use that is not a dwelling.

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Article 5. Commercial and Office Districts

Section 5.1 Intent and Purpose

This article outlines the Commercial and Office Zoning Districts and contains basic information pertaining to the land use regulation and spatial requirements for buildings and lots of record.

A. *Neighborhood Commercial District (C-1)*. The C-1 District is primarily intended for neighborhood convenience shopping where retail business or service establishments supply commodities or perform services to meet the daily needs of the neighborhood.

B. *Community Commercial District (C-2)*. The C-2 District is primarily intended for a general commercial district containing uses which include the sale of commodities or performance of services for the entire community.

C. *Highway Commercial District (C-3)*. The C-3 District is primarily intended for lands located adjacent to or near interstate highways, expressways, or other major thoroughfares.

D. *Office and Service District (O-S)*. The O-S District is primarily intended to provide a location for office parks, office services, institutional facilities, research laboratories, and similar facilities which, while needing easy access to and from major traffic routes, are noncommercial and nonindustrial in character.

Section 5.2 Schedule of Uses

Land and/or buildings in the Commercial and Office Districts shall only be used in accordance with *Table 5.2*.

A. *Permitted Use (P)*. This use is authorized by-right, subject to all other applicable provisions of the Zoning Ordinance.

B. *Special Land Use (S)*. This use is subject to review and permitting in accordance with *Article 15*.

C. *Not Permitted*. A blank cell indicates that a use is not permitted.

D. *Other Requirements*. See referenced section for additional requirements.

Table 5.2 Schedule of Uses: Commercial and Office Districts

Use	C-1	C-2	C-3	O-S	Other
Amateur radio and over-the-air reception devices	P/S	P/S	P/S	P/S	*9.3*
Animal services- animal clinic/hospital, kennel, rescue or shelter		S		S	
Banquet hall		P	P		
Community cultural facility	P	P	P		
Contractors facility		S	S		
Day care, child care center	P	P		P	
Dwelling over commercial or office use	S	S			
Food processing, small scale	P	P			
Food truck	P	P	P	P	*9.11*
Funeral home	S	S		S	
Governmental facility	P	P	P	P	
Greenhouses and nursery, accessory landscape business (indoor)		S			
Hotel/motel		S	P		
Housing- independent, assisted, convalescent and nursing				S	
Marina and boat storage		S			

Table 5.2 Schedule of Uses: Commercial and Office Districts					
Use	**C-1**	**C-2**	**C-3**	**O-S**	**Other**
Medical services, clinics and medical offices	P	P	P	P	
Medical services, hospital				S	
Meeting facility	P	P	P	P	
Mini-warehouse/self-storage		S			*9.17*
Offices and services	P	P	P	P	
Offices and services, temporary office	P	P	P	P	*9.18*
Offices and services with a drive through facility		P	P	P	
Outdoor display, sales, not including vehicle and equipment sales		S	S		*9.19*
Outdoor display, sales, temporary	P	P	P	P	*9.20*
Parking facility, public or commercial		S	S		
Place of worship		P	P	S	
Public utility facility	S	S	S	S	*9.23*
Recreation facility, commercial, indoor		S	S		*9.24*
Recreation facility, commercial, outdoor		S	S		*9.24*
Recreation facility, community-based, public, indoor	P	P	P		
Recreation facility, community-based, public, outdoor	P	P	P		
Restaurant	P	P	P	P	
Restaurant with drive-through	S	P	P	P	
Restaurant with micro-brewery, small distillery or small winery	P	P			
Retail	P	P	P		
School- college, university, private, and specialized/training	P	P	P	P	
Service station		S	P		
Sexually oriented business			S		*9.25*
Solar energy collector, building-mounted	P	P	P	P	*9.26*
Solar energy collector, ground-mounted	S	S	S	S	*9.26*
Special events	P	P	P	P	*9.27*
Theater		S	S		
Vehicle repair		S	S		
Vehicle wash		S	S		
Vehicle, recreational equipment, manufactured homes, heavy equipment sales and rental		S	S		*9.19*
Warehousing		S	S		
Wind energy- anemometer	P	P	P	P	*9.28*
Wind energy- SSMWET, STMWET	S	S	S	S	*9.28*
Winery, small; distillery, small; micro-brewery; tavern	S	P	P	S	
Wireless communications	S	S	S	S	*9.29*
Wireless communications, collocation	P	P	P	P	*9.29*

Section 5.3 Spatial Requirements

All lots of record shall meet the minimum area and width requirements of *Table 5.3A*. New lots of record shall not be created, except in conformance with these requirements. All placement of buildings shall conform to the minimum spatial and dimensional requirements listed in *Table 5.3B.*

Table 5.3A Lot Requirements: Commercial and Office Districts

Requirement	C-1	C-2	C-3	O-S
Min. Area (s.f.)	12,500	15,000	21,780	15,000
Min. Width (ft.)	90	90	120	120

Table 5.3B Principal and Accessory Building Requirements: Commercial and Office Districts

Requirement		C-1	C-2	C-3	O-S
Min. Front Setback (ft.)	Side lot lines abutting residential	35	50	50	50
	All other cases	10	50	50	50
Min. Side Setback (ft.)	Abutting residential	50	50	50	50
	All other cases	15	15	15	15
Min. Rear Setback (ft.)	Abutting residential	50	50	50	50
	All other cases	25	25	25	25
Maximum Building Coverage		25%	25%	25%	35%
Max. Height (ft.)[1]		35	50	50	50
Rooftop equipment setback from edge of roof (unless screened)		10	10	10	10
Setbacks for portions of buildings over 35 ft.		-	Increase of front, side, and rear setbacks of one (1) foot for each foot, or fraction of a foot, of building height over 35 feet.		

[1] Upper portions and upper stories of buildings over 35 ft. in height shall be subject to a greater setback. This does not apply to exceptions described in *Section 8.6 B*.

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Article 6. Industrial Districts

Section 6.1 Intent and Purpose

This article outlines the Industrial Zoning Districts and contains basic information pertaining to the land use regulation and spatial requirements for buildings and lots of record.

A. *Light Industrial District (I-1)*. The I-1 District is primarily intended to provide a location for industrial concerns and activities, and for facilities and operations involved in business, industrial, scientific and technological research, development and related testing, and production activities. This zoning district is not intended to provide a location for heavy manufacturing and processing of raw materials.

B. *General Industrial District (I-2).* The I-2 District is primarily intended to provide a location for the manufacture, compounding, assembling or treatment of articles or materials including the processing of raw materials and heavy manufacturing.

Section 6.2 Schedule of Uses

Land and/or buildings in the Industrial Districts shall only be used in accordance with *Table 6.2*.

A. *Permitted Use (P)*. This use is authorized by-right, subject to all other applicable provisions of the Zoning Ordinance.

B. *Special Land Use (S)*. This use is subject to review and permitting in accordance with *Article 15*.

C. *Not Permitted*. A blank cell indicates that a use is not permitted.

D. *Other Requirements*. See referenced section for additional requirements.

Table 6.2 Schedule of Uses: Industrial Districts

Use	I-1	I-2	Other
Agribusiness	P	P	
Amateur radio and over-the-air reception devices	P/S	P/S	*9.3*
Aviation	S		
Brewery, winery, distillery	P	P	
Contractors facility	S	S	
Food processing	P	P	
Food truck	P	P	*9.11*
Funeral home	S	S	
Governmental facility	P	P	
Liquefied petroleum gas (LPG) sales	P	P	
Manufacturing, processing and packaging, heavy		P	
Manufacturing, processing and packaging, light	P	P	
Marina and boat storage	P	P	
Mini-warehouse/self-storage	S	S	*9.17*
Offices and services, temporary office	P	P	*9.18*
Outdoor storage (related to a principal use)	S	S	*9.22*
Public utility facility	P	P	*9.22*
Recreation facility, commercial, indoor	S	S	*9.24*
Salvage and impound operation		P	
School, specialized/training	P	P	
School, driving and truck instruction	P	P	
Solar energy collector, building-mounted	P	P	*9.26*
Solar energy collector, ground-mounted	S	S	*9.26*
Solar energy, commercial solar energy system	S	S	*9.26*

Table 6.2 Schedule of Uses: Industrial Districts			
Use	**I-1**	**I-2**	**Other**
Vehicle repair	S		
Vehicle wash	P	P	
Warehousing, wholesale, and distribution	P	P	
Waste management facility		P	
Wind energy- anemometer	P	P	*9.28*
Wind energy- SSMWET, STMWET	S	S	*9.28*
Wireless communications	S	S	*9.29*
Wireless communications, collocation	P	P	*9.29*

Section 6.3 Spatial Requirements

All lots of record shall meet the minimum area and width requirements of *Table 6.3A*. New lots of record shall not be created, except in conformance with these requirements. All placement of buildings shall conform to the minimum spatial and dimensional requirements listed in *Table 6.3B.*

Table 6.3A Lot Requirements: Industrial Districts		
Requirement	**I-1**	**I-2**
Min. Area	40,000 s.f.	2 acres
Min. Width (ft.)	150	200

Table 6.3B Principal and Accessory Building Requirements: Industrial Districts			
Requirement		**I-1**	**I-2**
Min. Front Setback (ft.)		50	75
Min. Side Setback (ft.)	Abutting Agricultural and Residential Districts	50	100
	All other cases	20	30
Min. Rear Setback (ft.)	Abutting Agricultural and Residential Districts	50	100
	All other cases	25	50
Maximum Building Coverage		40%	40%
Max. Height (ft.)		45	45
Rooftop equipment setback from edge of roof (unless screened)		10	10

Article 7. Overlay Districts

Section 7.1 Intent and Purpose

A. *Applicability*. This article outlines the Overlay Districts and contains basic information pertaining to the land use regulation and spatial requirements for buildings and lots of record. An overlay zoning district is applied over one or more previously established “base” zoning districts, establishing additional or stricter standards, or may be more permissive, than the requirements of the underlying base zoning district.

B. *Floodplain Overlay District (FP)*. The FP permits agricultural and recreational uses but prohibits any type of residential, commercial, or industrial use. It is intended to be applied to those areas along the lakes, rivers, and streams, or other designated areas subject to flood inundation.

C. *Gateway Overlay District (GW)*. The GW zoning district is intended to establish regulations pertaining to land uses adjacent to gateways. The regulations specifically pertain to community signs and community art which will strengthen the overall visual identity of the township. The GW is comprised of gateways that create a sense of arrival and connection to the township, and establish the township's image and initial impression. The location of the GW has been determined by selecting key transportation corridors based on the following factors: location of the jurisdictional boundaries, current and anticipated traffic volumes along those corridors, and current and planned land uses adjacent to the corridors.

Section 7.2 Floodplain Overlay District

A. *Applicability*. The boundaries of the FP Overlay District will vary and are subject to changes to the National Flood Insurance Program (NFIP) mapping within the township and any applicable Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR).

B. *Use Restrictions*. Land, buildings, or structures in the FP may be used for the following purposes only:

1. Agriculture, farm, buildings and roadside stands, subject to the same conditions, restrictions, and requirements as are provided in the AG zoning district.
2. Boat landings, docks, or mooring for pleasure or fishing boats only; provided, however, that the boat landings, docks, or moorings shall be utilized by the land owner only and shall not be leased or otherwise made available to other persons.
3. Parks, golf courses, playgrounds, fair grounds, community centers, and other recreational facilities which are both owned and operated by a governmental agency. Private recreational facilities and uses of this nature are permitted when authorized by the Planning Commission as a special land use. In considering such authorization, the Planning Commission shall consider the following standards, in addition to the standards in Section 15.3:
    a. The necessity for the proposed use for the surrounding neighborhood;
    b. The proximity of the proposed use to adjoining properties, specifically including proximity to occupied dwellings;
    c. The size, nature, and character of the proposed use;
    d. Potential traffic congestion which might be occasioned by the proposed use;
    e. Parking facilities to be provided for the proposed use; and
    f. The effect of the proposed use on adjoining properties and the surrounding neighborhood.
4. No building or structure shall be erected or used for dwelling purposes.

C. *Construction Requirements*. All buildings and structures shall be designed and constructed to have a low flood damage potential. Buildings and structures shall be erected so as to offer the minimum obstruction

to floodwaters by construction with the longitudinal axis parallel to the direction of flood flow and by placement on the same flood flow lines as adjoining buildings and structures. All buildings and structures shall be firmly anchored to prevent damage to other buildings and structures and restricted bridge openings and stream cross sections.

Section 7.3 Gateway Overlay District

A. *Applicability*. The applicable area includes the rights-of-way of the following key transportation corridors, plus 75 feet on both sides of the boundaries of the key transportation corridors. This GW does not change the underlying zoning district of the property. The following is a description of the key transportation corridors:

1. US-31 from Ransom Street to New Holland Street.
2. US-31 from East 8th Street to Lakewood Boulevard.
3. Chicago Drive from US-31 to Fairbanks Avenue/City of Holland jurisdictional boundary.
4. Chicago Drive from the City of Zeeland jurisdictional boundary to Burton Drive.
5. Business Loop 196 from 106th Avenue/Paw Paw Drive to City of Zeeland jurisdictional boundary.
6. 112th Avenue from Business Loop 196 to East Lakewood Boulevard/Chicago Drive.
7. River Avenue from the City of Holland jurisdictional boundary to Lakewood Boulevard.
8. Douglas Avenue from North Division Ave/Park Township jurisdictional boundary to Aniline Avenue.
9. 120th Avenue from Chicago Drive to East Lakewood Boulevard.
10. Butternut Drive from 144th Avenue/Park Township jurisdictional boundary to Riley Street.
11. Riley Street from 144th Avenue/Park Township jurisdictional boundary to Butternut Drive.
12. 144th Avenue extending 600 feet south from the New Holland Street/Olive Township jurisdictional boundary.
13. 120th Avenue extending 600 feet south from the New Holland Street/Olive Township jurisdictional boundary.
14. 96th Avenue extending 600 feet south from the New Holland Street/Olive Township jurisdictional boundary.
15. Adams Street from 96th Avenue/Zeeland Charter Township jurisdictional boundary to 104th Avenue.
16. 96th Avenue extending 600 feet north from the Ottogan Street/Fillmore Township jurisdictional boundary.

B. *Additional Permitted Uses*. In addition to the uses authorized by the underlying zoning district, the following uses are also permitted:

1. Community art; and
2. Community signs.

C. *Procedures*. An application for site plan review shall be submitted in accordance with *Article 14*, for any community art or community sign. The Planning Commission shall conduct a preliminary review and hold a public hearing to consider each application. Notice of this public hearing shall be in accordance with *Section 18.4*. Upon receipt of the Planning Commission's report and recommendation, the Township Board shall review the proposed use and grant or deny the request on the basis of the same standards considered by the Planning Commission.

D. *Standards of Approval*. The Planning Commission shall consider the following standards in making its report and recommendation to the Township Board:

1. Whether the proposed use is consistent with and promotes the intent and purpose of this ordinance;

2. Whether the proposed use is compatible with adjacent uses of land and the natural environment; and
3. Whether the proposed use is consistent with the public health, safety, and welfare of the Township.

E. *Requirements*.

1. Community Signs. Community signs shall be required to meet all standards of *Article 13*, with the exception of the following:
   a. Community signs may be located within the public right-of-way if approval is obtained from the Ottawa County Road Commission.
   b. Community signs may not exceed 75 square feet in area.
   c. Community signs may display sponsorship names of organizations or individuals, but may not contain commercial messages, words, logos, trademarks, or graphic representations of any person, product, or service for the purpose of advertising, other than to simply identify the organization or individual as a sponsor.
   d. Electronic changeable message signs are not permitted under this section.
   e. Community signs shall not count against the signs that are permitted in the underlying zoning district.
2. Community Art. Community art installments are subject to the following requirements:
   a. Community art may be located within the public right-of-way if approval is obtained from the Ottawa County Road Commission.
   b. Community art shall not be considered a building or structure.
   c. Community art shall not be constructed or located in a manner that would cause a hazard to vehicle or pedestrian traffic, including, without limiting the foregoing, visual hazard caused by flashing lights or glare where the visual hazard impairs vision or is unreasonably distracting.
   d. Lighting used in conjunction with community art shall not shine directly on adjoining property or any street.

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Appendix F

Existing Deed Notices/Land and Resource Use Restrictions

2 2WNW4

0027607
Filed/ Sealed For Record In
Ottawa County, MI
Gary Scholten R.O.D.
07/08/2008 At 11:44:09 A.M.
NOTICE $29.00
Liber 005686 Page 00535

NOTICE REGARDING STATUTORY OBLIGATIONS APPLICABLE TO PROPERTY

This Notice Regarding Statutory Obligations Applicable to Property is being filed with the Office of the Register of Deeds in Ottawa County in accordance with Rule 299.9525 of Part 111 of Michigan's Natural Resources and Environmental Protection Act (1994 Public Act 451, as amended), MCL 324.11101 et seq. ("Part 111"). This Notice applies to the Property described in the attached Exhibits A and B. It supercedes and replaces in its entirety a similar notice filed on November 3, 2000 for the Property, entered into the deed record at Liber 2922, Page 798. This Notice corrects the legal description in the November 3, 2000 notice and reflects a transfer of ownership of a portion of the Property from Parke, Davis & Company LLC, a subsidiary of Pfizer International LLC, to Michigan State University.

The portion of the Property described in Exhibit B ("Exhibit B Property") was donated by Parke, Davis & Company LLC to Michigan State University via an Agreement to Donate Property dated December 19, 2007. The Exhibit B Property has been used to manage hazardous waste, but hazardous waste management activities were limited to "generator" activities as provided in Part 111. The Exhibit B Property is adjacent to the property described in Exhibit A ("Exhibit A Property"). Except for the portion of the Exhibit A Property north of Howard Street, the Exhibit A Property has been used to manage hazardous waste, including waste management activities requiring a license under Part 111. No hazardous waste management activities occurred on the portion of the Exhibit A Property north of Howard Street. Because all of the Property was either historically used to manage hazardous waste or is contiguous to property that was historically used to manage hazardous waste, it is subject to the corrective action requirements of Part 111 and the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6901 et seq., as amended by the 1984 Hazardous and Solid Waste Amendments.

The undersigned persons executing this Notice are the Owners, or have the express written permission of the Owners, and represent and certify that they are duly authorized and have been empowered to execute and deliver this Notice.

OCROD 07 03 2008-1

OCROD 07 08 2008

For Exhibit A Property:

The said Owner of the above-described Exhibit A Property has caused this Notice to be executed on this 16th day of May, 2008.

PARKE, DAVIS & COMPANY LLC

By: _____
Signature

William Freckman
Print

Site Leader
Title

STATE OF MICHIGAN)
)ss.
COUNTY OF Ottawa)

The foregoing instrument was acknowledged before me in Ottawa County, Michigan on May 16, 2008 by William Freckman, its Site Leader of Parke, Davis & Company LLC, a Michigan limited liability company, having an address at 235 East 42nd Street, New York, New York, 10017, for the company.

Signed: Kimberly A Tinnolt
Print Name: Kimberly S. Tinnolt

Notary Public, Ottawa County, Michigan
My Commission Expires: 8-11-2011
Acting in the County of Ottawa

For Exhibit B Property:

The said Owner of the above-described Exhibit B Property has caused this Notice to be executed on this 20th day of June, 2008.

MICHIGAN STATE UNIVERSITY

By: _____
Signature

Fred Poston
Print

Vice President for Finance + Operations, Treasurer
Title

STATE OF MICHIGAN)
)ss.
COUNTY OF INGHAM)

The foregoing instrument was acknowledged before me in Ingham, County, Michigan on June 20th, 2008 by Fred Poston, its VICE PRESIDENT FOR FINANCE & OPERATIONS, TREASURER of Michigan State University, a constitutional corporation, having an address at 450 Hannah Administration Building, East Lansing, Michigan 48824-1046, for the corporation.

Signed: _____

Print Name: STEPHEN JOHN STOFFLET

Notary Public, EATON County, Michigan

My Commission Expires: 10/03/2014

Acting in the County of INGHAM

STEPHEN JOHN STOFFLET
Notary Public, State of Michigan
County of Eaton
My Commission Expires Oct. 03, 2014
Acting in the County of INGHAM

INGHAM

Prepared by and when recorded return to:
Daniel DeWitt, Esq.
Warner Norcross & Judd LLP
900 Fifth Third Center
111 Lyon Street NW
Grand Rapids, Michigan 49503-2487
616.752.2000
#1518804v2

EXHIBIT "A"
(RESEARCH AND DEVELOPMENT PARCEL)

A PARCEL OF LAND BEING PART OF BLOCK 11, BLOCK 12 AND RESERVATION NO. 2, HOWARD'S ADDITION TO THE CITY OF HOLLAND, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 1 OF PLATS, PAGE 105, OTTAWA COUNTY RECORDS, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF LOT 5, OF SAID BLOCK 11; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, ALONG THE NORTHERLY LINE OF BLOCK 11 AND BLOCK 12, A DISTANCE OF 423.90 FEET; THENCE SOUTH 29 DEGREES 38 MINUTES 32 SECONDS EAST, PARALLEL WITH AND 2.00 FEET EASTERLY OF (PERPENDICULAR MEASURE) THE EASTERLY WALL OF AN EXISTING BUILDING, A DISTANCE OF 332.36 FEET; THENCE SOUTH 60 DEGREES 41 MINUTES 25 SECONDS WEST, A DISTANCE OF 260.33 FEET TO THE SOUTHERLY EXTENSION OF THE WEST LINES OF LOTS 3 AND 20 IN SAID BLOCK 11; THENCE NORTHERLY ALONG THE SOUTHERLY EXTENSION OF THE WEST LINES OF LOTS 3 AND 20, BLOCK 11, AND THE WEST LINE OF LOT 20, BLOCK 11, NORTH 29 DEGREES 19 MINUTES 30 SECONDS WEST, A DISTANCE OF 199.18 FEET; THENCE SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST, PARALLEL WITH THE NORTH LINE OF BLOCK 11, A DISTANCE OF 165.54 FEET TO THE WEST LINE OF LOT 18, BLOCK 11; THENCE ALONG THE WEST LINE OF LOT 18, BLOCK 11 AND THE WEST LINE OF LOT 5, BLOCK 11, NORTH 29 DEGREES 16 MINUTES 03 SECONDS WEST, A DISTANCE OF 132.00 FEET TO THE POINT OF BEGINNING.

(PER HOLLAND ENGINEERING, INC. REFERENCE SURVEY, JOB NUMBER 07-11-041, DATED 12/19/2007 AND SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.)

EXHIBIT "B"
(REMAINDER PARCEL)

LOTS 1-10, BLOCK 3 (BEING THE ENTIRE BLOCK 3), LOTS 1, 2, 3, 4, 6, 7, 8, 9 AND 10, BLOCK 4, AND MADISON STREET LYING BETWEEN DOUGLAS STREET AND HOWARD STREET, HOWARD'S ADDITION TO THE CITY OF HOLLAND, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 1 OF PLATS, PAGE 105, OTTAWA COUNTY RECORDS.

AND

PART OF HOWARD'S ADDITION AS RECORDED IN LIBER 1 OF PLATS, ON PAGE 105, BEING PART OF SECTIONS 19, 20, 29 AND 30, TOWN 5 NORTH, RANGE 15 WEST, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF LOT 5, BLOCK 11, SAID POINT BEING DISTANT NORTH 00 DEGREES 53 MINUTES 55 SECONDS EAST 609.94 FEET ALONG THE WEST LINE OF SECTION 20 AND SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST 596.25 FEET ALONG THE SOUTH LINE OF HOWARD STREET FROM THE SOUTHWEST CORNER OF SECTION 20 AND THEN PROCEEDING NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 423.90 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE CONTINUE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST 979.46 FEET ALONG THE SOUTH LINE OF HOWARD STREET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 270.67 FEET ALONG THE SOUTH LINE OF HOWARD STREET TO A POINT DISTANT SOUTH 60 DEGREES 27 MINUTES 31 SECONDS WEST 460.00 FEET ALONG THE CENTERLINE OF HOWARD STREET AND SOUTH 29 DEGREES 32 MINUTES 29 SECONDS EAST 33.00 FEET FROM THE INTERSECTION OF THE CENTERLINES OF HOWARD STREET AND RIVER AVENUE; THENCE SOUTH 29 DEGREES 32 MINUTES 29 SECONDS EAST 100.00 FEET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 100.00 FEET; THENCE NORTH 29 DEGREES 32 MINUTES 29 SECONDS WEST 100.00 FEET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 297.18 FEET ALONG THE SOUTH LINE OF HOWARD STREET; THENCE SOUTH 24 DEGREES 59 MINUTES 28 SECONDS EAST 54.07 FEET ALONG THE WEST LINE OF RIVER AVENUE, SAID WEST LINE BEING DISTANT 60.00 FEET WESTERLY OF, MEASURED AT RIGHT ANGLES, THE CENTERLINE OF RIVER AVENUE; THENCE SOUTH 24 DEGREES 53 MINUTES 09 SECONDS EAST 65.93 FEET ALONG THE WEST LINE OF RIVER AVENUE, SAID WEST LINE BEING DISTANT 60.00 FEET WESTERLY OF, MEASURED AT RIGHT ANGLES, THE CENTERLINE OF RIVER AVENUE; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 27.09 FEET; THENCE SOUTH 24 DEGREES 53 MINUTES 09 SECONDS EAST 120.00 FEET ALONG THE WEST LINE OF RIVER AVENUE, SAID WEST LINE BEING DISTANT 33.00 FEET WESTERLY OF, MEASURED AT RIGHT ANGLES, THE CENTERLINE OF RIVER AVENUE; THENCE SOUTH 60 DEGREES 27 MINUTES 31 SECONDS WEST 27.09 FEET; THENCE SOUTH 24

DEGREES 53 MINUTES 09 SECONDS EAST 100.00 FEET TO REFERENCE POINT "A" ALONG THE WEST LINE OF RIVER AVENUE, SAID WEST LINE BEING DISTANT 60.00 FEET WESTERLY OF, MEASURED AT RIGHT ANGLES, THE CENTERLINE OF RIVER AVENUE; THENCE SOUTH 24 DEGREES 53 MINUTES 09 SECONDS EAST ALONG THE WEST LINE OF RIVER AVENUE TO THE CENTERLINE OF THE CHANNEL OF LAKE MACATAWA; THENCE SOUTHWESTERLY ALONG THE CENTERLINE OF THE CHANNEL OF LAKE MACATAWA TO THE INTERSECTION WITH THE LINE BEARING SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST FROM REFERENCE POINT "B", SAID REFERENCE POINT "B" BEING ON THE EXTENSION OF THE WEST LINE OF LOTS 3 AND 20 OF BLOCK 11 AND ON THE EAST LINE OF MACATAWA WAREHOUSE DEVELOPMENT AS RECORDED IN LIBER 1342, PAGE 177 AND BEING DISTANT SOUTH 32 DEGREES 29 MINUTES 49 SECONDS WEST 2132.28 FEET FROM REFERENCE POINT "A"; THENCE NORTH 29 DEGREES 19 MINUTES 30 SECONDS WEST TO REFERENCE POINT "B" ALONG THE EXTENSION OF THE WEST LINE OF LOTS 3 AND 20 OF BLOCK 11 AND THE EXTENSION OF THE EAST LINE OF MACATAWA WAREHOUSE DEVELOPMENT; THENCE NORTH 29 DEGREES 19 MINUTES 30 SECONDS WEST 1006.91 FEET ALONG THE EXTENSION OF THE WEST LINE OF LOTS 3 AND 20 OF BLOCK 11 AND ALONG THE EAST LINE OF MACATAWA WAREHOUSE DEVELOPMENT; THENCE NORTH 60 DEGREES 41 MINUTES 25 SECONDS EAST 260.33 FEET; THENCE NORTH 29 DEGREES 38 MINUTES 32 SECONDS WEST, PARALLEL WITH AND 2.00 FEET EASTERLY OF (PERPENDICULAR MEASURE) THE EASTERLY WALL OF AN EXISTING BUILDING, A DISTANCE OF 332.36 FEET TO THE POINT OF BEGINNING.

(SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.)

RECORDED

2001 NOV 30 PM 12:46

REGISTER OF DEEDS
OTTAWA COUNTY, MI

Post-Closure Notice Regarding Hazardous Waste Disposal

This Post-Closure Notice is being filed with the Office of the Register of Deeds in Ottawa County in accordance with Rule 299.9508(3) of Part 111 of Michigan's Natural Resource and Environmental Protection Act (1994 Public Act 451, as amended) and 40 CFR 264.119. This Notice applies to the property described and depicted in Exhibit 1.

The property has been used to manage hazardous wastes and its use is restricted under 40 CFR Subpart G regulations. The property has supported the following units that were used to manage hazardous wastes: two chemical wastewater treatment systems, and other specific hazardous waste treatment and storage tanks. During the operation of these units, hazardous substances were or may have been released, resulting in impact to environmental media. The following types and concentrations of hazardous substances have been detected in soil and/or ground water below the units and were or may have been managed in these units (concentrations are highest detected):

Type	Concentration	
	Soil	Ground Water
Acetone	25 mg/Kg	3,700 mg/L
Benzene	13 mg/Kg	61 mg/L
Chlorobenzene	45 mg/Kg	43 mg/L
Dimethylformamide	Not detected	74 mg/L
Ethylbenzene	460 mg/Kg	32 mg/L
Hexane	Not detected	7.3 mg/L
Isopropanol	160 mg/Kg	2,900 mg/L
Methanol	6 mg/Kg	9.1 mg/L
3/4Methylphenol	Not analyzed	32 mg/L
Phenol	Not analyzed	7.1 mg/L
Phenytoin	Not analyzed	24 mg/L
Toluene	1100 mg/Kg	240 mg/L
Xylene	450 mg/Kg	63 mg/L

$17.00 MISC DEED
Receipt #140318
$1.00 PHOTO
Receipt #140318

The undersigned person executing this Notice is the Owner, or has the express written permission of the Owner, and represents and certifies that he or she is duly authorized and has been empowered to execute and deliver this Notice.

In witness whereof, the said Owner of the above-described Property has caused this Notice to be executed on this 30th day of November, 2001.

Richard A. Saffee
Plant Manager
Pfizer Global Manufacturing
188 Howard Avenue
Holland, Michigan

Signed in the presence of the following witnesses:

Signed: Yvonne Jahzer
Print Name: Yvonne Jahzer

Signed: Philip Kamps
Print Name: Philip Kamps

STATE OF MICHIGAN
COUNTY OF OTTAWA

The foregoing instrument was acknowledged before me this 30 day of November, 2001 by Richard A. Saffee, Plant Manager of the Pfizer Global Manufacturing Holland Plant that is owned by Warner-Lambert, a wholly owned subsidiary of Pfizer, Inc., a Delaware corporation, located at 235 East 42nd Street, New York, New York.

Signed: Philip Kamps
Print Name: Philip Kamps
Notary Public, Ottawa County, Michigan
My Commission Expires: September 24, 2002

PHILIP C. KAMPS
NOTARY PUBLIC - OTTAWA COUNTY, MI
MY COMMISSION EXPIRES SEPTEMBER 24, 2002

Prepared by: Karen M. Hathaway
Senior Project Toxicologist
Horizon Environmental Corporation
4595 Broadmoor SE, Suite 200
Grand Rapids, Michigan 49512

Exhibit 1

Survey and Legal Description of Property

LIBER 3280 PG 251

To: Horizon Environmental

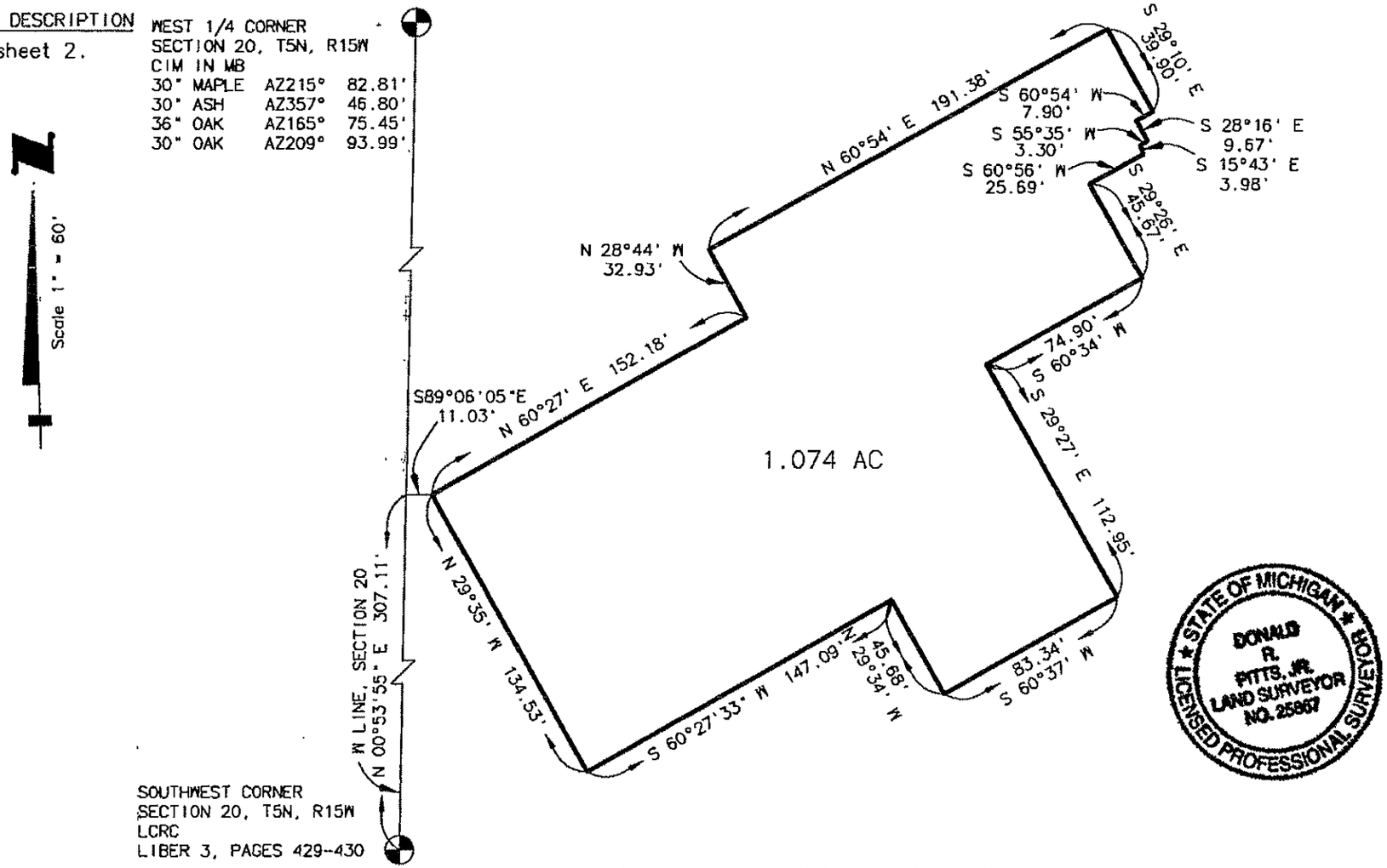
I, Donald R. Pitts, Jr., a Registered Surveyor in the State of Michigan, hereby certify that I have surveyed the parcel(s) of land described and delineated hereon: that said plat is true representation of the survey as performed by me; that there are no encroachments other than as shown hereon; that said survey was performed with an error of closure not greater than 1 in 5000; and that I have fully complied with the requirements of Section 3, Act #132, P.A. 1970. This survey was made from the attached legal description. The description was given to us by the person certified to, or was prepared by us from information or documents given to us by the person certified to, and should be compared with the Abstract of Title or Title insurance policy for accuracy, easements or exception. This survey was based on the title description of this property and any written or unwritten rights of adjoiners are unknown unless specifically noted. The Surveyor's liability for any and all claims, including but not limited to those arising out of the Surveyor's professional services, negligence, gross misconduct, warranties or misrepresentations shall be deemed limited to an amount no greater than the service fee.

LEGAL DESCRIPTION

See sheet 2.

WEST 1/4 CORNER
SECTION 20, T5N, R15W
CIM IN MB

30" MAPLE	AZ215°	82.81'
30" ASH	AZ357°	46.80'
36" OAK	AZ165°	75.45'
30" OAK	AZ209°	93.99'



SOUTHWEST CORNER
SECTION 20, T5N, R15W
LCRC
LIBER 3, PAGES 429-430

STATE OF MICHIGAN
DONALD R. PITTS, JR.
LAND SURVEYOR
NO. 25867
LICENSED PROFESSIONAL SURVEYOR

If the seal is not violet colored, this drawing is a copy that should be assumed to contain unauthorized alterations. The certifications contained on this document shall not apply to any copies.

LEGEND

- O Set steel bar
- □ Set wood stake
- ● Found iron stake
- ■ Found concrete monument
- P Plat dimension
- M Measured dimension
- D Description dimension
- C Calculated dimension
- —P— Power line
- Fence
- Concrete
- Asphalt
- Wood decking
- Brick paving

Horiz. Datum	Vertical Datum

HOLLAND ENGINEERING
CONSULTANTS • ENGINEERS • SURVEYORS
418 East 8th St.
Holland, MI 49423-3751
Ph: 616-392-5938 Fax: 616-392-2116
email: www.hollandengineering.com

Date	Sheet 1 of 2
10-31-01	

Drawn By	Checked By	Surveyed By
JEV	DRP	SL

S-T-R
Section 20, T5N, R15W

Twp. or City
Holland City

Job No.
01-10-219

Professional Land Surveyor
No. 25867

To: Horizon Environmental

I, Donald R. Pitts, Jr., a Registered Surveyor in the State of Michigan, hereby certify that I have surveyed the parcel(s) of land described and delineated hereon: that said plat is true representation of the survey as performed by me; that there are no encroachments other than as shown hereon; that said survey was performed with an error of closure not greater than 1 in 5000; and that I have fully complied with the requirements of Section 3, Act #132, P.A. 1970. This survey was made from the attached legal description. The description was given to us by the person certified to, or was prepared by us from information or documents given to us by the person certified to, and should be compared with the Abstract of Title or Title insurance policy for accuracy, easements or exception. This survey was based on the title description of this property and any written or unwritten rights of adjoiners are unknown unless specifically noted. The Surveyor's liability for any and all claims, including but not limited to those arising out of the Surveyor's professional services, negligence, gross misconduct, warranties or misrepresentations shall be deemed limited to an amount no greater than the service fee.

LEGAL DESCRIPTION

Part of Howard's Addition (as recorded in Liber 1 of Plats, on Page 105, Ottowa County Records) and being part of the Southwest 1/4 of Section 20, Town 5 North, Range 15 West, Holland Township, Ottawa County, Michigan, described as: Beginning at a point distant North 00 degrees 53 minutes 55 seconds East 307.11 feet along the West line of Section 20 and South 89 degrees 06 minutes 05 seconds East 11.03 feet from the Southwest corner of Section 20 and proceeding thence North 60 degrees 27 minutes East 152.18 feet; thence North 28 degrees 44 minutes West 32.93 feet; thence North 60 degrees 54 minutes East 191.38 feet; thence South 29 degrees 10 minutes East 39.90 feet; thence South 60 degrees 54 minutes West 7.90 feet; thence South 28 degrees 16 minutes East 9.67 feet; thence South 55 degrees 35 minutes 3.30 feet; thence South 15 degrees 43 minutes East 3.98 feet; thence South 60 degrees 56 minutes West 25.69 feet; thence South 29 degrees 26 minutes East 45.67 feet; thence South 60 degrees 34 minutes West 74.90 feet; thence South 29 degrees 27 minutes East 112.95 feet; thence South 60 degrees 37 minutes West 83.34 feet; thence North 29 degrees 34 minutes West 45.68 feet; thence South 60 degrees 27 minutes 33 seconds West 147.09 feet; thence North 29 degrees 35 minutes West 134.53 feet to the point of beginning. Subject to easements, restrictions and rights-of-way of record.

STATE OF MICHIGAN
DONALD R. PITTS, JR.
LAND SURVEYOR
NO. 25867
LICENSED PROFESSIONAL SURVEYOR

If the seal is not violet colored, this drawing is a copy that should be assumed to contain unauthorized alterations. The certifications contained on this document shall not apply to any copies.

LIBER 3280 PG 252

LEGEND

- O Set steel bar
- □ Set wood stake
- ● Found iron stake
- ■ Found concrete monument
- P Plat dimension
- M Measured dimension
- D Description dimension
- C Calculated dimension
- —P— Power line
- Fence
- Concrete
- Asphalt
- Wood decking
- Brick paving

Horiz. Datum	Vertical Datum

HOLLAND ENGINEERING
CONSULTANTS • ENGINEERS • SURVEYORS
418 East 8th St.
Holland, MI 49423-3751
Ph: 616-392-5938 Fax: 616-392-2116
email: www.hollandengineering.com

Date	Sheet
10-31-01	2 of 2

Drawn By	Checked By	Surveyed By
JEV	DRP	SL

S-T-R
Section 20, T5N, R15W

Twp. or City
Holland City

Job No.
01-10-219

Professional Land Surveyor
No. 25867

NOTICE REGARDING
UNDERGROUND INJECTION CONTROL (UIC) WELLS

This Notice Regarding Underground Injection Control (UIC) Wells (Notice) is being filed with the Office of the Register of Deeds in Ottawa County in accordance with Title 40 (Protection of Environment), Part 146 (Underground Injection Control Program: Criteria and Standards), Section 72 (Post Closure Care), 40 C.F.R. § 146.72, and Section G.8 of the Underground Injection Control Permit: Class I Hazardous Waste, issued by the United States Environmental Protection Agency to the Warner-Lambert Company effective December 15, 2014. This Notice applies to the property shown and described on the Certificate of Survey attached as Exhibit A (Property), and, in particular, to UIC Well No. 3 shown on the Survey.

The Property is part of or is associated with a former Warner Lambert manufacturing facility, and has been used to manage hazardous waste including through disposal on site in UIC wells. This Notice is being filed because UIC Well No. 3 has been plugged, abandoned, and closed, and is therefore subject to post-closure care requirements, including the filing of this Notice. At the time of this filing, two other UIC wells (Nos. 4 and 5) were still in operation.

1. The Type of Waste Injected in Well No. 3.

When the facility operated as a manufacturing plant, wastewaters included, but were not limited to: pharmaceutical manufacturing process and wastewater; housekeeping, cleaning, and wash water; steam jet condensate; de-ionizer regeneration fluids; wastes derived from process development activities and off-specification products; wastes derived from air pollution control equipment; and storm water. UIC well injectate during manufacturing operations consisted generally of a mixture of these wastewaters. In 2007, manufacturing operations ceased.

In 2010, UIC Well Nos. 3, 4, and 5 were restarted to manage wastewater generated from groundwater remediation activities at the Property. The remediation injectate consisted primarily of recovered groundwater with lesser amounts of storm water.

The following hazardous waste codes were approved for injection into the wells, including Well No. 3:

D Codes:	D001	D002	D004	D005	D006	D007	D008	D009	D010
	D011	D018	D019	D021	D022	D023	D024	D025	D035
	D037	D038	D039	D040	D043				
F Codes:	F002	F003	F005						
P Codes:	P030	P095	P102						
U Codes	U002	U003	U004	U012	U019	U029	U037	U043	U044
	U048	U056	U057	U080	U112	U122	U147	U151	U154
	U159	U188	U190	U196	U210	U211	U213	U220	U228
	U239	U404							

2. The Amount of Waste Injected in Well No. 3.

Approximately 526,691,721 gallons of waste has been injected into Well No. 3.

3. The Depth of the Injection Zone for Well No. 3.

Well No. 3: Mt. Simon Sandstone, 5,080-5,945 feet (Kelly Bushing)

4. The Period over which Injection Occurred.

Well No. 3: 1976 - July, 2019

5. Governmental Filings.

Required filings (including plat/Certificate of Survey) have been made with:

Ottawa County Register of Deeds
12220 Fillmore Street
West Olive, MI 49460

With a copy to:

Underground Injection Control Branch
US EPA, Region 5
UIC Section, (WU-16J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590
Attention: Mr. Stephen M. Jann, Chief

EGLE, Oil, Gas, Minerals Division
Constitution Hall, South Tower, 1st Floor
525 W. Allegan Street
Lansing, MI 48933
Attention: Mr. Ray Vugrinovich

The Owner of the Property has caused this Notice to be executed this 1st day of February, 20___.

Authorized Representative Signature

Laurie S. Rothenberg
Name (Print or Type) President

Parke, Davis & Company LLC
235 East 42nd Street
New York, New York 10017

State of NJ
County of Somerset

The foregoing instrument was acknowledged before me this 1st day of Feb., 2022, by Laurie S. Rothenberg on behalf of Parke, Davis & Company LLC.

Notary Public Signature

Christa E. Knoll
Name (Print or Type)

My commission expires: 12/19/2022

CHRISTA E. KNOLL
NOTARY PUBLIC
ID # 50073794
COMMISSION EXPIRES 12/19/2022
STATE OF NEW JERSEY

Prepared by and return to:

Daniel K. DeWitt
Warner Norcross + Judd LLP
150 Ottawa Ave NW, Suite 1500
Grand Rapids, Michigan 49503

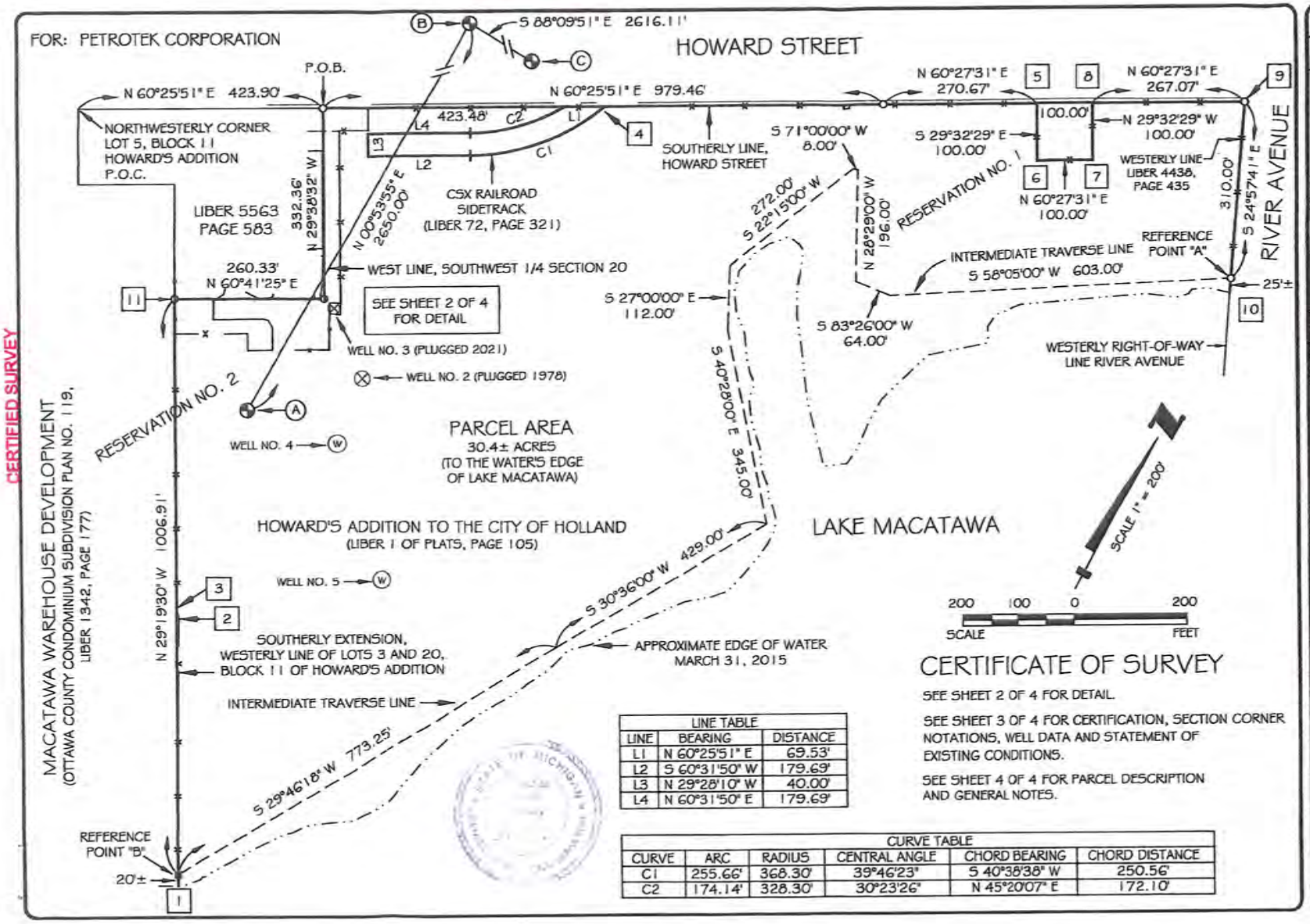
22700216v1

Exhibit A

Certificate of Survey

CERTIFIED SURVEY

FOR: PETROTEK CORPORATION



CERTIFICATE OF SURVEY

SEE SHEET 2 OF 4 FOR DETAIL.

SEE SHEET 3 OF 4 FOR CERTIFICATION, SECTION CORNER NOTATIONS, WELL DATA AND STATEMENT OF EXISTING CONDITIONS.

SEE SHEET 4 OF 4 FOR PARCEL DESCRIPTION AND GENERAL NOTES.

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 60°25'51" E	69.53'
L2	S 60°31'50" W	179.69'
L3	N 29°28'10" W	40.00'
L4	N 60°31'50" E	179.69'

CURVE TABLE

CURVE	ARC	RADIUS	CENTRAL ANGLE	CHORD BEARING	CHORD DISTANCE
C1	255.66'	368.30'	39°46'23"	S 40°38'38" W	250.56'
C2	174.14'	328.30'	30°23'26"	N 45°20'07" E	172.10'

Date revised	By
04-18-15	DJL / MVM
10-27-21	DJL

LEGEND

- SET 1/2" STEEL ROD W/ CAP #37279
- FOUND 1/2" STEEL ROD W/ CAP #37279
- FOUND CONCRETE MONUMENT
- SET PK NAIL
- —— x —— CHAIN LINK FENCE
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- EXISTING WELL
- PLUGGED WELL

P.O.C. - POINT OF COMMENCEMENT
P.O.B. - POINT OF BEGINNING
REMON. - REMONUMENTATION
L.C.R.C. - LAND CORNER RECORDATION CERTIFICATE

Horiz. Datum: HEI-96 | Vertical Datum: N/A

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ENGINEERING | SURVEYING | PIPELINE SERVICES
220 Hoover Boulevard, Suite 2
Holland, Michigan 49423-3766
www.hollandengineering.com
T 616-392-5938 F 616-392-2116

Date: 04-06-15 | Sheet 1 of 4

Drawn By: MVM | Checked By: DJL | Surveyed By: SL

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No.: 19-09-045

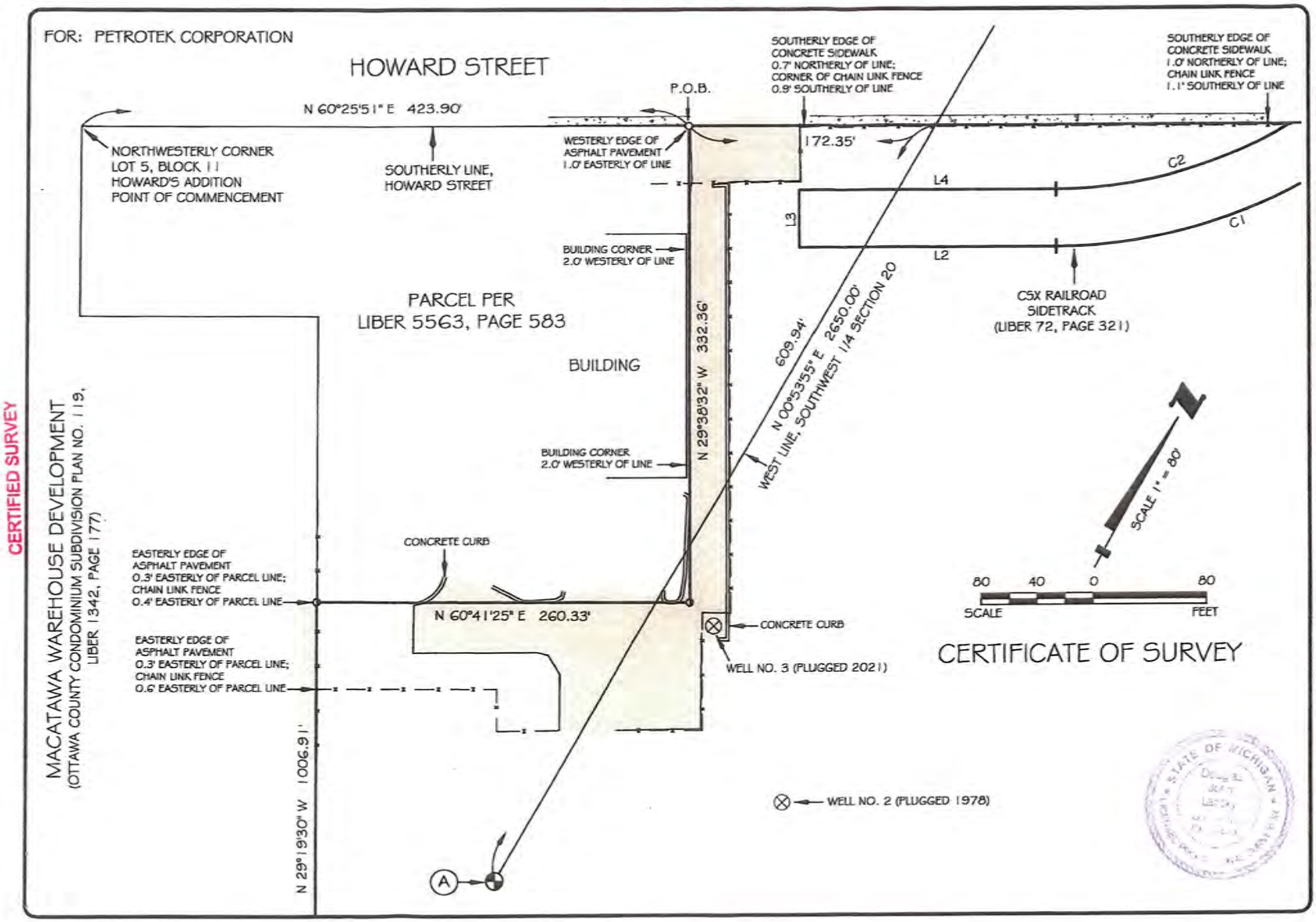
Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #4001045500

CERTIFIED SURVEY

CERTIFIED SURVEY

FOR: PETROTEK CORPORATION



CERTIFICATE OF SURVEY

Date revised	By
04-18-15	DJL / MVM
10-27-21	DJL

LEGEND

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P.O.C. - POINT OF COMMENCEMENT
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Date	Sheet 2 of 4
04-06-15	

Drawn By	Checked By	Surveyed By
MVM	DJL	SL

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No. 19-09-045

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #4001045500

CERTIFIED SURVEY

CERTIFIED SURVEY

FOR: PETROTEK CORPORATION

CERTIFICATE OF SURVEY

(A) SOUTHWEST CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 3, PAGES 429-430

(B) WEST 1/4 CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 2, PAGE 92

(C) CENTER POST SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 5, PAGES 577-578

STATEMENT OF EXISTING CONDITIONS

1. END OF CHAIN LINK FENCE 1.3' WESTERLY OF SUBJECT PARCEL LINE.
2. CHAIN LINK FENCE 3.7' EASTERLY OF SUBJECT PARCEL LINE.
3. CHAIN LINK FENCE 0.7' EASTERLY OF SUBJECT PARCEL LINE.
   EASTERLY EDGE OF ASPHALT PAVEMENT 0.2' EASTERLY OF SUBJECT PARCEL LINE.
4. CHAIN LINK FENCE 1.1' SOUTHERLY OF SUBJECT PARCEL LINE.
   SOUTHERLY EDGE OF CONCRETE SIDEWALK 0.7' NORTHERLY OF SUBJECT PARCEL LINE.
5. CORNER OF CHAIN LINK FENCE 0.3' SOUTHERLY OF SUBJECT PARCEL CORNER.
   SOUTHERLY EDGE OF CONCRETE SIDEWALK 2.0' NORTHERLY OF SUBJECT PARCEL CORNER.
6. CORNER OF CHAIN LINK FENCE 0.2' WESTERLY AND 0.0' NORTHERLY OF SUBJECT PARCEL CORNER.
7. CORNER OF CHAIN LINK FENCE 0.0' WESTERLY AND 0.5' NORTHERLY OF SUBJECT PARCEL CORNER.
8. CORNER OF CHAIN LINK FENCE ON SUBJECT PARCEL CORNER.
   SOUTHERLY EDGE OF CONCRETE SIDEWALK 2.3' NORTHERLY OF SUBJECT PARCEL CORNER.
9. CORNER OF CHAIN LINK FENCE 0.6' SOUTHERLY AND 0.2' WESTERLY OF SUBJECT PARCEL CORNER.
10. CHAIN LINK FENCE 0.9' WESTERLY OF SUBJECT PARCEL LINE.
11. CHAIN LINK FENCE 0.4' EASTERLY OF SUBJECT PARCEL LINE.
    EASTERLY EDGE OF ASPHALT PAVEMENT 0.3' EASTERLY OF SUBJECT PARCEL LINE.

I, DOUGLAS J. LANSKY, A LICENSED PROFESSIONAL SURVEYOR IN THE STATE OF MICHIGAN, HEREBY CERTIFY THAT I HAVE SURVEYED THE PARCEL OF LAND DESCRIBED AND DELINEATED HEREON; THAT THE SURVEY MAP IS A TRUE REPRESENTATION OF THE SURVEY AS PERFORMED BY ME; THAT SAID SURVEY WAS PERFORMED RESULTING WITH A RELATIVE POSITIONAL PRECISION AT EACH BOUNDARY CORNER SHOWN HEREON WITHIN LIMITS ACCEPTED BY THE PRACTICE OF PROFESSIONAL SURVEYING; AND THAT I HAVE FULLY COMPLIED WITH THE REQUIREMENTS OF 1970 PUBLIC ACT 132, MCL 54.213, AS AMENDED. THIS SURVEY WAS MADE FROM THE ATTACHED LEGAL DESCRIPTION. THE DESCRIPTION WAS GIVEN TO US BY OTHERS, OR WAS PREPARED BY US FROM INFORMATION OR DOCUMENTS GIVEN TO US BY OTHERS, AND SHOULD BE COMPARED WITH THE ABSTRACT OF TITLE OR TITLE INSURANCE POLICY FOR ACCURACY, EASEMENTS OR EXCEPTIONS.

HOLLAND ENGINEERING, INC.
220 HOOVER BOULEVARD
HOLLAND, MI 49423
616-392-5938

Douglas J. Lansky

DOUGLAS J. LANSKY
MICHIGAN PROFESSIONAL SURVEYOR #4001045500

E-MAIL: dlansky@hollandengineering.com

WELL DATA				
WELL I.D.	NORTHING	EASTING	ELEVATION (NAVD '88)	ELEVATION (NGVD '29)
WELL NO. 3 (MI-139-1W-0003)	478,004.66	12,653,630.73	584.12	584.61
WELL NO. 2 (MDNR #BD-114)	477,921.95	12,653,733.35	591.37	591.86
WELL NO. 4 (MI-139-1W-0004)	477,801.92	12,653,749.77	591.18	591.67
WELL NO. 5 (MI-139-1W-0005)	477,631.30	12,653,933.22	589.09	589.58

THE HORIZONTAL DATUM IS BASED ON THE MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83.
NAVD '88 = NORTH AMERICAN VERTICAL DATUM OF 1988.
NGVD '29 = NATIONAL GEODETIC VERTICAL DATUM OF 1929.

Date revised	By
04-18-15	DJL / MVM
10-27-21	DJL

LEGEND
- SET 1/2" STEEL ROD W/ CAP #37279
- FOUND 1/2" STEEL ROD W/ CAP #37279
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- ASPHALT PAVEMENT
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P.O.C. - POINT OF COMMENCEMENT
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Horiz. Datum	Vertical Datum
HEI-96	N/A

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Date	Sheet
04-06-15	3 of 4

Drawn By	Checked By	Surveyed By
MVM	DJL	SL

Plat: HOWARD'S ADDITION
Twp. or City: HOLLAND TOWNSHIP
Job No.: 19-09-045

CERTIFIED SURVEY

CERTIFIED SURVEY

FOR: PETROTEK CORPORATION

CERTIFICATE OF SURVEY

DESCRIPTION:

PART OF HOWARD'S ADDITION AS RECORDED IN LIBER 1 OF PLATS ON PAGE 105 AND PART OF SECTIONS 19, 20, 29 AND 30 OF TOWN 5 NORTH, RANGE 15 WEST, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWESTERLY CORNER OF LOT 5, BLOCK 11 OF SAID HOWARD'S ADDITION; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST (BASIS OF BEARINGS NAD83 MICHIGAN SOUTH) 423.90 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET TO THE NORTHEASTERLY CORNER OF A PARCEL OF LAND DESCRIBED AND RECORDED IN LIBER 5563, PAGE 583 AND BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED, SAID POINT OF BEGINNING BEING DISTANT NORTH 00 DEGREES 53 MINUTES 55 SECONDS EAST 609.94 FEET ALONG THE WEST LINE OF THE SOUTHWEST 1/4 OF SECTION 20 AND SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST 172.35 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET FROM THE SOUTHWEST CORNER OF SAID SECTION 20; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST 979.46 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 270.67 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET TO A POINT DISTANT SOUTH 60 DEGREES 27 MINUTES 31 SECONDS WEST 460.00 FEET ALONG THE CENTERLINE OF HOWARD STREET AND SOUTH 29 DEGREES 32 MINUTES 29 SECONDS EAST 33.00 FEET FROM THE INTERSECTION OF THE CENTERLINES OF HOWARD STREET AND RIVER AVENUE; THENCE SOUTH 29 DEGREES 32 MINUTES 29 SECONDS EAST 100.00 FEET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 100.00 FEET; THENCE NORTH 29 DEGREES 32 MINUTES 29 SECONDS WEST 100.00 FEET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 267.07 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET TO THE NORTHWESTERLY CORNER OF THE LAND DESCRIBED AND RECORDED IN LIBER 4438 PAGE 435; THENCE SOUTH 24 DEGREES 57 MINUTES 41 SECONDS EAST 310.00 FEET ALONG THE WESTERLY LINE OF THE LAND DESCRIBED AND RECORDED IN LIBER 4438 PAGE 435 (ALSO BEING THE WESTERLY RIGHT-OF-WAY LINE OF RIVER AVENUE) TO REFERENCE POINT "A", SAID POINT BEING AT THE INTERSECTION OF THE WESTERLY RIGHT-OF-WAY LINE OF SAID RIVER AVENUE AND THE INTERMEDIATE TRAVERSE LINE OF LAKE MACATAWA; THENCE SOUTHWESTERLY ALONG SAID INTERMEDIATE TRAVERSE LINE ON THE FOLLOWING NINE (9) COURSES: SOUTH 58 DEGREES 05 MINUTES 00 SECONDS WEST 603.00 FEET; THENCE SOUTH 83 DEGREES 26 MINUTES 00 SECONDS WEST 64.00 FEET; THENCE NORTH 28 DEGREES 29 MINUTES 00 SECONDS WEST 196.00 FEET; THENCE SOUTH 71 DEGREES 00 MINUTES 00 SECONDS WEST 8.00 FEET; THENCE SOUTH 22 DEGREES 15 MINUTES 00 SECONDS WEST 272.00 FEET; THENCE SOUTH 27 DEGREES 00 MINUTES 00 SECONDS EAST 112.00 FEET; THENCE SOUTH 40 DEGREES 28 MINUTES 00 SECONDS EAST 345.00 FEET; THENCE SOUTH 30 DEGREES 36 MINUTES 00 SECONDS WEST 429.00 FEET; THENCE SOUTH 29 DEGREES 46 MINUTES 18 SECONDS WEST 773.25 FEET TO THE INTERSECTION OF SAID INTERMEDIATE TRAVERSE LINE AND THE SOUTHERLY EXTENSION OF THE WESTERLY LINE OF LOTS 3 AND 20 OF BLOCK 11 OF SAID HOWARD'S ADDITION AND THE EASTERLY LINE OF MACATAWA WAREHOUSE DEVELOPMENT AS RECORDED IN LIBER 1342, PAGE 177; THENCE NORTH 29 DEGREES 19 MINUTES 30 SECONDS WEST 1006.91 FEET ALONG SAID SOUTHERLY EXTENSION OF THE WESTERLY LINE OF LOTS 3 AND 20 OF BLOCK 11 AND THE EASTERLY LINE OF MACATAWA WAREHOUSE DEVELOPMENT TO THE SOUTHWESTERLY CORNER OF A PARCEL OF LAND DESCRIBED AND RECORDED IN LIBER 5563, PAGE 583; THENCE NORTH 60 DEGREES 41 MINUTES 25 SECONDS EAST 260.33 FEET ALONG THE SOUTHERLY LINE OF SAID PARCEL OF LAND; THENCE NORTH 29 DEGREES 38 MINUTES 32 SECONDS WEST 332.36 FEET ALONG THE EASTERLY LINE OF SAID PARCEL OF LAND TO THE POINT OF BEGINNING, SAID PARCEL CONTAINING 30.4 ACRES, MORE OR LESS. THE SIDELINES OF THIS OVERALL SURVEYED AND DESCRIBED PARCEL EXTEND TO THE WATER'S EDGE OF LAKE MACATAWA WITH FULL RIPARIAN RIGHTS THEREON.

EXCEPT THEREFROM THE CSX RAILROAD SIDETRACK LAND AS DESCRIBED AND RECORDED IN LIBER 72, PAGE 321 (SEE CSX RAILROAD SIDETRACK DETAIL ON THE CERTIFICATE OF SURVEY, SHEET 1 OF 4).

GENERAL NOTES:

THIS SURVEY WAS PREPARED FOR THE LANDS AS DESCRIBED HEREIN WITHOUT THE BENEFIT OF CURRENT TITLE WORK. IT IS NOT A CERTIFICATION OF TITLE, ZONING OR FREEDOM OF ENCUMBRANCES.

ONLY IMPROVEMENTS ALONG THE PERIMETER OF THE SUBJECT PROPERTY WERE LOCATED UNDER THE SCOPE OF THIS SURVEY.

BEARINGS ARE BASED ON THE MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 AND HAVING A BEARING OF NORTH 00°53'55" EAST ALONG THE WEST LINE OF THE SOUTHWEST 1/4 OF SECTION 20.

DID NOT SET IRON STAKES AT THE CORNERS OF THE 100' X 100' EXCEPTION DUE TO THE EXISTING FENCE AND CORNER POSTS.

PER PETROTEK CORPORATION, WELL NUMBERS 3, 4 AND 5 WERE HISTORICALLY USED TO MANAGE HAZARDOUS WASTE. THE DATE OF THE PLUGGED WELLS WERE ALSO PROVIDED BY PETROTEK CORPORATION.

DATE OF FIELD SURVEY: MARCH 31, 2015.

ADDED WELL LOCATIONS / WELL DATA: SEPTEMBER 22, 2021 AND OCTOBER 20, 2021.

Date revised	By
04-18-15	DJL / MVM
10-27-21	DJL

LEGEND

- SET 1/2" STEEL ROD W/ CAP #37279
- FOUND 1/2" STEEL ROD W/ CAP #37279
- FOUND CONCRETE MONUMENT
- SET PK NAIL
- —— x —— CHAIN LINK FENCE
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- (W) EXISTING WELL
- (⊗) PLUGGED WELL

P.O.C. - POINT OF COMMENCEMENT
P.O.B. - POINT OF BEGINNING
REMON. - REMONUMENTATION
L.C.R.C. - LAND CORNER RECORDATION CERTIFICATE

Horiz. Datum	HEI-96	Vertical Datum	N/A

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Holland, Michigan 49423-3766
www.hollandengineering.com
T 616-392-5938 F 616-392-2116

Date	Sheet 4 of 4
04-06-15	

Drawn By	Checked By	Surveyed By
MVM	DJL	SL

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No.: 19-09-045

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #4001045500

CERTIFIED SURVEY

22

8 5 9 0 5 4 7
Tx:4263388
6/18/2015 10:11:00 AM

2015-0022202
FILED/SEALED FOR RECORD IN
OTTAWA COUNTY, MI
JUSTIN F. ROEBUCK
COUNTY CLERK/REGISTER OF DEEDS
06/18/2015 AT 10:11 AM
RESTRICTIVE COVENANT 77.00

DECLARATION OF RESTRICTIVE COVENANT

MDEQ Reference No.: RC-OWMRP-111-15-006
Facility MID Number: MID 006 013 643
MDEQ Approval Date: June 5, 2015

This Declaration of Restrictive Covenant ("Restrictive Covenant") has been recorded to protect public health, safety, welfare and the environment pursuant to the provisions of Part 111, Hazardous Waste Management, MCL 324.11101 et seq. (Part 111), Part 201, Environmental Remediation, MCL 324.20101 et seq. (Part 201) of the Natural Resources and Environmental Protection Act ("NREPA"), 1994 PA 451, as amended, and 40 CFR §761.61 of the Toxic Substances Control Act ("TSCA") regulations.

This Restrictive Covenant has been recorded with the Ottawa County Register of Deeds for the purpose of prohibiting or restricting certain uses/activities that could result in unacceptable exposure to soil and ground water contamination and to prevent damage or disturbance of access restrictions and exposure controls that will be relied upon to restrict exposures at the property legally described in Exhibit 1 and located at 188 Howard Avenue, Holland Township, Ottawa County ("Property"). The Property is part of or is associated with the Warner-Lambert Company LLC former manufacturing facility (MID 006 013 643) and is subject to regulation under Part 111. It is also a "facility" as that term is defined in Section 20101(1)(s) of Part 201 of NREPA due to the presence of hazardous substances in soil and ground water at concentrations greater than those allowed for unrestricted residential use as defined in Part 201. A list of hazardous substances detected in soil and groundwater at the Property is provided in Exhibit 2.

Hazardous substances in soil and ground water at the Property have been remediated in accordance with a remediation plan titled *Remedial Action Plan/Corrective Measures Implementation Plan, Warner Lambert Company LLC Former Manufacturing Facility, 188 Howard Avenue, Holland Township, Michigan (April 21, 2014 as revised through June 12, 2014)* which was approved by the Michigan Department of Environmental Quality ("MDEQ") on June 20, 2014 pursuant to Parts 111 and 201 of NREPA and a *Remediation Plan for PCBs in Soil, Warner Lambert Company LLC Former Manufacturing Facility, 188 Howard Avenue, Holland Township, Michigan (September 2012)* which was approved by the MDEQ and U.S. EPA on June 20, 2013 pursuant to the Coordinated Approval process described at 40 CFR §761.77.

The remediation activities implemented at the Property include: 1) installation and operation of a hydraulic containment system designed to prevent off-site migration of ground water; 2) excavation and off-site disposal of certain soils containing PCBs at concentrations greater than 1,000 mg/kg; 3) placement of a cap/cover of a minimum thickness of 2 feet in an area of the site ("PCB Remediation Waste Disposal Area") where PCBs remain at concentrations greater than 100 mg/kg; 4) placement of a cap/cover with a minimum thickness of 10 inches over areas of the site where PCBs and other hazardous substances remain at concentrations greater than their respective generic non-residential direct contact criteria; 5) inspection and maintenance of the cap/cover, including implementation of an ecological protection plan; 6) shoreline stabilization; 7) designation of a "No Dig/LNAPL Area" in an area of the site where LNAPL and inherently waste-like materials remain; 8) placement of a permanent marker identifying the "PCB Remediation Waste Area" and "No Dig/LNAPL Area"; and, 9) filing of this Restrictive Covenant containing land and resource use restrictions.

The land and resource use restrictions contained in this Restrictive Covenant are based upon information available at the time the remediation was completed. Discovery of environmental conditions that were not accounted for during completion of the remediation or use of the Property in a manner inconsistent with the restrictions described herein may result in risks to public health, safety, and welfare.

The Exhibits to this Restrictive Covenant include a survey and legal description of the subject Property (Exhibit 1); a list of the hazardous substances detected in soil and ground water on the Property (Exhibit 2); a survey and legal description of the area of the Property (termed the "Non-Residential PCB Impacted Soil Area") where PCBs remain at concentrations equal to or greater than 16 mg/kg (Exhibit 3); a survey and legal description of an area of the Property where waste-like materials remain and excavation is prohibited termed the "No Dig/LNAPL Area" (Exhibit 4); a survey and legal description of an area where PCBs remain at concentrations greater than 100 mg/kg termed the "PCB Remediation Waste Disposal Area" (Exhibit 5); and a figure that depicts the Property boundaries, the buildings present on the Property, extent of cover; perimeter fence, as well as the boundaries of the Non-Residential PCB Impacted Soil Area, the PCB Remediation Waste Disposal Area, and the No Dig/LNAPL Area (Exhibit 6).

Definitions

"Hazardous Substance" means hazardous waste as defined under Part 111, hazardous substances as defined under Part 201 and CERCLA (42 USC 9601 to 9675), and petroleum as defined under Part 213.

"MDEQ" means the Michigan Department of Environmental Quality, its successor entities, and those persons or entities acting on its behalf.

"Owner" means at any given time the then current title holder of the Property or any portion thereof.

"No Dig/LNAPL Area" means the area of the property described in Exhibit 4 where LNAPL and waste-like materials remain and where activities (e.g., excavation) that may result in breaching or damage to the cap/cover or disturbance of the underlying soils are prohibited without prior MDEQ approval.

"Non-Residential PCB Impacted Soil Area" means the areas of the Property described in Exhibit 3 where soils containing PCBs at concentrations equal to or greater than 16 mg/kg (Part 201 generic non-residential direct contact criterion) are present. A cap/cover consisting of a minimum of 10 inches of fill has been placed over PCB-impacted soils in the Non-Residential PCB Impacted Soil Area. The Non-Residential PCB Impacted Soil Area encompasses approximately 10 acres of the Property.

"Part 111" means Part 111, Hazardous Waste Management, of NREPA, 1994 PA 451, as amended, MCL 324.11101 et seq.

"Part 201" means Part 201, Environmental Remediation, of NREPA, 1994 PA 451, as amended, MCL 324.20101 et seq.

"PCB" means polychlorinated biphenyls.

"PCB Remediation Waste Disposal Area" means the area of the Property described in Exhibit 5 where soils containing PCBs at concentrations greater than 100 mg/kg are present. A cap/cover consisting of a minimum of two feet of clean fill has been placed over PCB-impacted soils in the PCB Remediation Waste Disposal Area. The PCB Remediation Waste Disposal Area encompasses approximately 0.04 acres of the Property.

"Property" means the land area that is subject to this Restrictive Covenant as described in Exhibit 1.

"TSCA" means the Toxic Substances Control Act PCB regulations at 40 CFR Part 761.

"U.S. EPA" means the United States Environmental Protection Agency, its successor entities, and those persons or entities acting on its behalf.

Declaration of Use Restrictions

NOW THEREFORE, Parke, Davis & Company LLC, a Michigan Limited Liability Company, having an address at 235 East 42nd Street, New York, New York, hereby imposes, pursuant to Parts 111 and 201 of NREPA and 40 CFR §761.61(8) of TSCA, the following restrictions on the Property and covenants and agrees that:

1. Land Use Restriction. The Owner shall restrict all of the Property to those uses compatible with the limited non-residential land use category as defined in Section 20120a(1)(d) of Part 201 of NREPA, as amended, or other uses that are consistent with the assumptions and bases for the cleanup criteria established pursuant to 20120a(1)(d). Without limiting the foregoing, the following uses are expressly prohibited: single family homes, mobile homes, multi-family apartments or condominiums, day care centers, nursing homes, schools for children, hospitals, and campgrounds.

2. Exposure Barriers and Access Restrictions, Generally. Exposure barriers on the Property (such as pavement, gravel, building floor slabs, soil cover, etc.) and access restrictions (the perimeter fence) which exist as of the date of execution of this covenant, and which are depicted and labeled in Exhibit 6, shall be maintained on the Property in order to protect against direct contact with, and erosion from, contaminated soil. The Owner shall be responsible for conducting routine inspections of the exposure barriers and access restrictions and completing any repairs necessary to maintain the integrity of these features. The Owner shall also maintain the landscape at the Property in a manner that deters the presence of burrowing animals and shall conduct periodic inspections for surface evidence of burrowing animal activity. If such activity is identified, the Owner shall take actions to remove the burrowing animal(s) and repair any resultant damage to the earthen cover or other exposure barriers.

3. Subsurface Worker Health and Safety Precautions. All subsurface work shall be conducted pursuant to a location- and task-specific health and safety plan describing the precautions (training, personal protective equipment, air monitoring, etc.) to be implemented during subsurface work to prevent unacceptable exposures to impacted media in compliance with applicable OSHA/MIOSHA regulations and the requirements of Section 20107a of NREPA.

4. PCB Remediation Waste Disposal Area and No Dig/LNAPL Areas. The Owner shall maintain the integrity of the cap/cover in the PCB Remediation Waste Disposal and No Dig/LNAPL Areas depicted in Exhibits 4 and 5, including prohibiting activities (e.g., excavation) that may result in breaching or damage to the cap/cover. The Owner shall be responsible for conducting routine inspections of the cap/cover and completing any repairs necessary to maintain the integrity of the cap. No excavation or disruption of the soils in these areas will be permitted without prior approval of the MDEQ. The PCB Remediation Waste Disposal Area is restricted to use as a low occupancy area as defined in 40 CFR §761.3 of the TSCA PCB regulations, i.e., occupancy for any individual not wearing dermal and respiratory protection for a calendar year shall be less than 335 hours (an average of 6.7 hours per week).

5. Permanent Marker. The Owner shall not remove, cover, obscure, or otherwise alter or interfere with the permanent marker placed at the location noted in Exhibit 6. The Owner shall keep vegetation and other materials clear of the marker to ensure that it is readily visible.

6. Wells Prohibited. The Owner shall prohibit the construction of wells or other devices on the Property to extract ground water for consumption, irrigation, or any other use. This provision does not prohibit installation of wells for: environmental study, monitoring, or remediation, or dewatering of excavations, provided the installation and operation of such wells is in compliance with applicable federal, state, and local laws and regulations and the fluids are managed in accordance with the requirements of Section 20107a of NREPA and other applicable local, state and federal laws and regulations.

7. Construction of Surface Water Features Prohibited. The Owner shall prohibit the construction of surface water features (e.g., ponds, wetlands, storm water detention basins, etc.) that are in hydrologic communication with ground water on the Property.

8. Soil Vapor Management: The Owner shall not construct on the Property any structure at or below grade that is intended for occupancy without first completing one of the following: (1) an assessment of soil and ground water quality in the area of the proposed building footprint to determine, with MDEQ concurrence, that conditions comply with applicable Part 201 indoor air inhalation criteria in effect at the time of such new construction with respect to volatile chemicals of concern at the Property; or (2) the installation and maintenance of a vapor mitigation system. This prohibition does not apply to short-term occupancy of a building for purposes of construction, renovation, repair, or other short-term activities provided that appropriate health and safety precautions are followed in compliance with Section 20107a of the NREPA.

9. Contaminated Soil Management. The Owner shall manage contaminated soils, media or debris and all other soils located on the Property in accordance with the requirements of Part 111, Subtitle C of RCRA (42 USC Section 6901 et seq.), Section 20120c of Part 201 and other applicable state and federal solid and hazardous waste laws.

10. Interference with Remedial Activities. The Owner shall restrict activities at the Property that may interfere with any remedial action/corrective action activities, or the operation and maintenance, monitoring, or other measures necessary to assure the effectiveness and integrity of any remedial action/corrective action activities.

11. Access. The Owner shall grant to Pfizer Inc., the US EPA and MDEQ and its designated representatives the right to enter the Property at reasonable times for the purpose of determining and monitoring compliance with this Restrictive Covenant, taking groundwater and soil samples, and inspecting remedial/corrective action activities.

12. Notice of Intent to Convey Interest. The Owner shall provide notice to the MDEQ of the Owner's intent to convey any interest in the Property 14 days prior to consummating the conveyance. A conveyance of title, an easement, or other interest in the Property shall not be consummated by the Property Owner without adequate and complete provision for compliance with the terms and conditions of this Covenant.

13. Term and Enforcement of Restrictive Covenant. This Restrictive Covenant shall run with the Property and shall be binding on the Owner, future owners, and all current and future successors, lessees, easement holders, their assigns, and their authorized agents, employees, or persons acting under their direction and control. This Restrictive Covenant is enforceable by MDEQ, US EPA, or Pfizer Inc. by an action seeking specific performance or other legal remedy in a court of competent jurisdiction against Owners of all or part of the Property. All remedies available hereunder shall be in addition to any and all other remedies at law or equity.

14. Severability. If any provision of this Restrictive Covenant is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions hereof, and all such other provisions shall continue unimpaired and in full force and effect.

15. Authority to Execute Restrictive Covenant. The undersigned person executing this Restrictive Covenant is the Owner, or has the express written permission of the Owner and all other holders of a legal interest whose interest is materially affected by this Restrictive Covenant and represents and certifies that he or she is duly authorized and has been empowered to execute and deliver this Restrictive Covenant.

16. Modification. The Owner may request in writing to MDEQ modifications to, or rescission of, this instrument, based on the performance of additional remedial/corrective action activities on the Property, changes to cleanup criteria or standards, or changes in use. This Restrictive Covenant may be modified or rescinded only with written approval of the MDEQ. Any modification or rescission shall be filed with the Ottawa County Register of Deeds by the Owner and a certified copy shall be provided to MDEQ.

IN WITNESS WHEREOF,

The said Owner of the Property has caused this restrictive covenant, RC-OWMRP-111-15-006 to be executed on this 10th day of JUNE, 2015.

Authorized Representative Signature

6/10/2015
Date

WILLIAM C. LONGA
Name (Type or Print Name)

Parke, Davis & Company LLC
235 East 42nd Street
New York, New York 10017

STATE OF NEW YORK

COUNTY OF NEW YORK

The foregoing instrument was acknowledged before me this 10th day of JUNE, 2015, by WILLIAM C. LONGA on behalf of Parke, Davis & Company LLC.

Notary Public

Sean F. Kelley
(Print or type name)

My Commission Expires: 12/09/2017

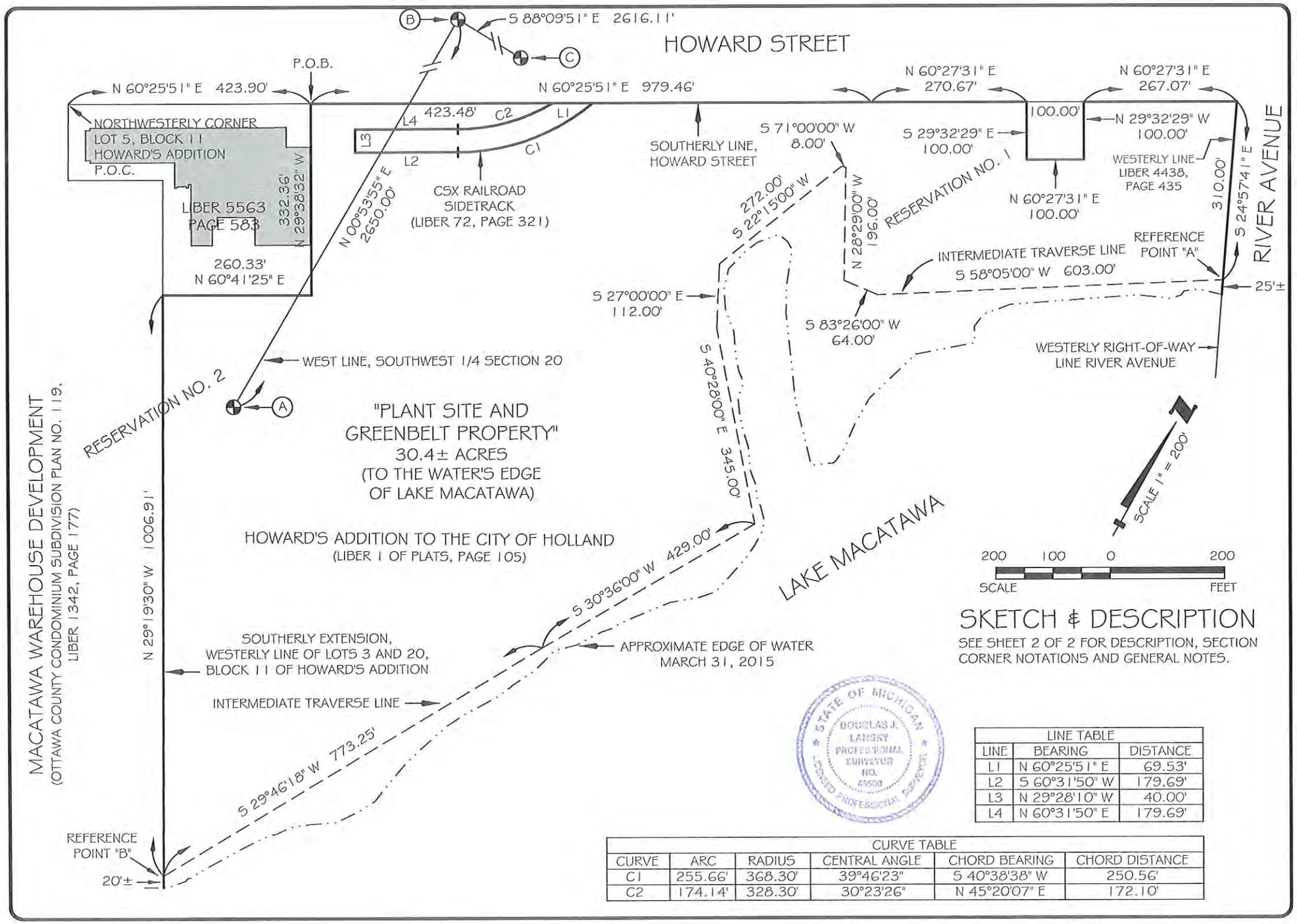
SEAN F. KELLEY
Notary Public, State of New York
No. 01KE6293500
Qualified in New York County
Commission Expires 12/09/2017

PREPARED BY AND RETURN TO:

Allen J. Reilly, Jr.
Horizon Environmental
4771-50th St., SE
Grand Rapids, Michigan 49512

EXHIBIT 1

SURVEY/LEGAL DESCRIPTION OF PROPERTY



SKETCH & DESCRIPTION

SEE SHEET 2 OF 2 FOR DESCRIPTION, SECTION CORNER NOTATIONS AND GENERAL NOTES.

STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
NO. 45500
LICENSED PROFESSIONAL SURVEYOR

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 60°25'51" E	69.53'
L2	S 60°31'50" W	179.69'
L3	N 29°28'10" W	40.00'
L4	N 60°31'50" E	179.69'

CURVE TABLE					
CURVE	ARC	RADIUS	CENTRAL ANGLE	CHORD BEARING	CHORD DISTANCE
C1	255.66'	368.30'	39°46'23"	S 40°38'38" W	250.56'
C2	174.14'	328.30'	30°23'26"	N 45°20'07" E	172.10'

Date revised	By
Date revised 05-15-15	By MVM / DJL

LEGEND

P.O.B. - POINT OF BEGINNING
P.O.C. - POINT OF COMMENCEMENT

EXISTING BUILDING

Horiz. Datum HEI-96 | Vertical Datum N/A

HOLLAND ENGINEERING
ENGINEERING | SURVEYING | PIPELINE SERVICES
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Holland, Michigan 49423-3766
www.hollandengineering.com
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Date 11-19-14 | Sheet 1 of 2

Drawn By MVM | Checked By DJL | Surveyed By N/A

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No. 14-11-012

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

SKETCH & DESCRIPTION

DESCRIPTION:

"PLANT SITE AND GREENBELT PROPERTY"

PART OF HOWARD'S ADDITION AS RECORDED IN LIBER 1 OF PLATS ON PAGE 105 AND PART OF SECTIONS 19, 20, 29 AND 30 OF TOWN 5 NORTH, RANGE 15 WEST, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWESTERLY CORNER OF LOT 5, BLOCK 11 OF SAID HOWARD'S ADDITION; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST (BASIS OF BEARINGS NAD83 MICHIGAN SOUTH 2113) 423.90 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET TO THE NORTHEASTERLY CORNER OF A PARCEL OF LAND DESCRIBED AND RECORDED IN LIBER 5563, PAGE 583 AND BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED, SAID POINT OF BEGINNING BEING DISTANT NORTH 00 DEGREES 53 MINUTES 55 SECONDS EAST 609.94 FEET ALONG THE WEST LINE OF THE SOUTHWEST 1/4 OF SECTION 20 AND SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST 172.35 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET FROM THE SOUTHWEST CORNER OF SAID SECTION 20; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST 979.46 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 270.67 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET TO A POINT DISTANT SOUTH 60 DEGREES 27 MINUTES 31 SECONDS WEST 460.00 FEET ALONG THE CENTERLINE OF HOWARD STREET AND SOUTH 29 DEGREES 32 MINUTES 29 SECONDS EAST 33.00 FEET FROM THE INTERSECTION OF THE CENTERLINES OF HOWARD STREET AND RIVER AVENUE; THENCE SOUTH 29 DEGREES 32 MINUTES 29 SECONDS EAST 100.00 FEET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 100.00 FEET; THENCE NORTH 29 DEGREES 32 MINUTES 29 SECONDS WEST 100.00 FEET; THENCE NORTH 60 DEGREES 27 MINUTES 31 SECONDS EAST 267.07 FEET ALONG THE SOUTHERLY LINE OF HOWARD STREET TO THE NORTHWESTERLY CORNER OF THE LAND DESCRIBED AND RECORDED IN LIBER 4438 PAGE 435; THENCE SOUTH 24 DEGREES 57 MINUTES 41 SECONDS EAST 310.00 FEET ALONG THE WESTERLY LINE OF THE LAND DESCRIBED AND RECORDED IN LIBER 4438 PAGE 435 (ALSO BEING THE WESTERLY RIGHT-OF-WAY LINE OF RIVER AVENUE) TO REFERENCE POINT "A", SAID POINT BEING AT THE INTERSECTION OF THE WESTERLY RIGHT-OF-WAY LINE OF SAID RIVER AVENUE AND THE INTERMEDIATE TRAVERSE LINE OF LAKE MACATAWA; THENCE SOUTHWESTERLY ALONG SAID INTERMEDIATE TRAVERSE LINE ON THE FOLLOWING NINE (9) COURSES: SOUTH 58 DEGREES 05 MINUTES 00 SECONDS WEST 603.00 FEET; THENCE SOUTH 83 DEGREES 26 MINUTES 00 SECONDS WEST 64.00 FEET; THENCE NORTH 28 DEGREES 29 MINUTES 00 SECONDS WEST 196.00 FEET; THENCE SOUTH 71 DEGREES 00 MINUTES 00 SECONDS WEST 8.00 FEET; THENCE SOUTH 22 DEGREES 15 MINUTES 00 SECONDS WEST 272.00 FEET; THENCE SOUTH 27 DEGREES 00 MINUTES 00 SECONDS EAST 112.00 FEET; THENCE SOUTH 40 DEGREES 28 MINUTES 00 SECONDS EAST 345.00 FEET; THENCE SOUTH 30 DEGREES 36 MINUTES 00 SECONDS WEST 429.00 FEET; THENCE SOUTH 29 DEGREES 46 MINUTES 18 SECONDS WEST 773.25 FEET TO THE INTERSECTION OF SAID INTERMEDIATE TRAVERSE LINE AND THE SOUTHERLY EXTENSION OF THE WESTERLY LINE OF LOTS 3 AND 20 OF BLOCK 11 OF SAID HOWARD'S ADDITION AND THE EASTERLY LINE OF MACATAWA WAREHOUSE DEVELOPMENT AS RECORDED IN LIBER 1342, PAGE 177; THENCE NORTH 29 DEGREES 19 MINUTES 30 SECONDS WEST 1006.91 FEET ALONG SAID SOUTHERLY EXTENSION OF THE WESTERLY LINE OF LOTS 3 AND 20 OF BLOCK 11 AND THE EASTERLY LINE OF MACATAWA WAREHOUSE DEVELOPMENT TO THE SOUTHWESTERLY CORNER OF A PARCEL OF LAND DESCRIBED AND RECORDED IN LIBER 5563, PAGE 583; THENCE NORTH 60 DEGREES 41 MINUTES 25 SECONDS EAST 260.33 FEET ALONG THE SOUTHERLY LINE OF SAID PARCEL OF LAND; THENCE NORTH 29 DEGREES 38 MINUTES 32 SECONDS WEST 332.36 FEET ALONG THE EASTERLY LINE OF SAID PARCEL OF LAND TO THE POINT OF BEGINNING, SAID PARCEL CONTAINING 30.4 ACRES, MORE OR LESS. THE SIDELINES OF THIS OVERALL SURVEYED AND DESCRIBED PARCEL EXTEND TO THE WATER'S EDGE OF LAKE MACATAWA WITH FULL RIPARIAN RIGHTS THEREON.

EXCEPT THEREFROM THE CSX RAILROAD SIDETRACK LAND AS DESCRIBED AND RECORDED IN LIBER 72, PAGE 321 (SEE CSX RAILROAD SIDETRACK DETAIL ON THE CERTIFICATE OF SURVEY, SHEET 1 OF 4).

SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.

GENERAL NOTES:

THIS SKETCH AND DESCRIPTION WAS PREPARED FOR THE LANDS AS DESCRIBED HEREIN WITHOUT THE BENEFIT OF CURRENT TITLE WORK. IT IS NOT A CERTIFICATION OF TITLE, OWNERSHIP, ZONING OR FREEDOM OF EASEMENTS OR ENCUMBRANCES.

NO IMPROVEMENTS, UTILITIES, DITCHES, DRIVES AND / OR FENCES WERE DEPICTED UNDER THE SCOPE OF THIS SKETCH AND DESCRIPTION.

BEARINGS ARE BASED ON THE SOUTHERLY RIGHT-OF-WAY LINE OF HOWARD STREET BETWEEN JACKSON STREET AND MONROE STREET AS BEING: NORTH 60°25'51" EAST.

EASEMENTS HAVE NOT BEEN DEPICTED UNDER THE SCOPE OF THIS SKETCH AND DESCRIPTION.

THE SURVEYOR'S LIABILITY FOR ANY AND ALL CLAIMS, INCLUDING BUT NOT LIMITED TO THOSE ARISING OUT OF THE SURVEYOR'S PROFESSIONAL SERVICES, NEGLIGENCE, GROSS MISCONDUCT, WARRANTIES OR MISREPRESENTATIONS SHALL BE DEEMED LIMITED TO AN AMOUNT NO GREATER THAN THE SERVICE FEE.

Ⓐ SOUTHWEST CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 3, PAGES 429-430

Ⓑ WEST 1/4 CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 2, PAGE 92

Ⓒ CENTER POST SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 5, PAGES 577-578

STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
NO. 45500
LICENSED PROFESSIONAL SURVEYOR

Date revised	By
Date revised 05-15-15	By MVM / DJL

LEGEND
P.O.B. - POINT OF BEGINNING
P.O.C. - POINT OF COMMENCEMENT

EXISTING BUILDING

Horiz. Datum	HEI-96	Vertical Datum	N/A

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T 616-392-5938 F 616-392-2116

Date	Sheet 2 of 2
11-19-14	

Drawn By	Checked By	Surveyed By
MVM	DJL	N/A

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No. 14-11-012

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

EXHIBIT 2

HAZARDOUS SUBSTANCES DETECTED IN SOIL/GROUNDWATER ON THE PROPERTY

List of hazardous substances detected on the former manufacturing plant property. "X" indicates substance was detected on one or more occasion(s).

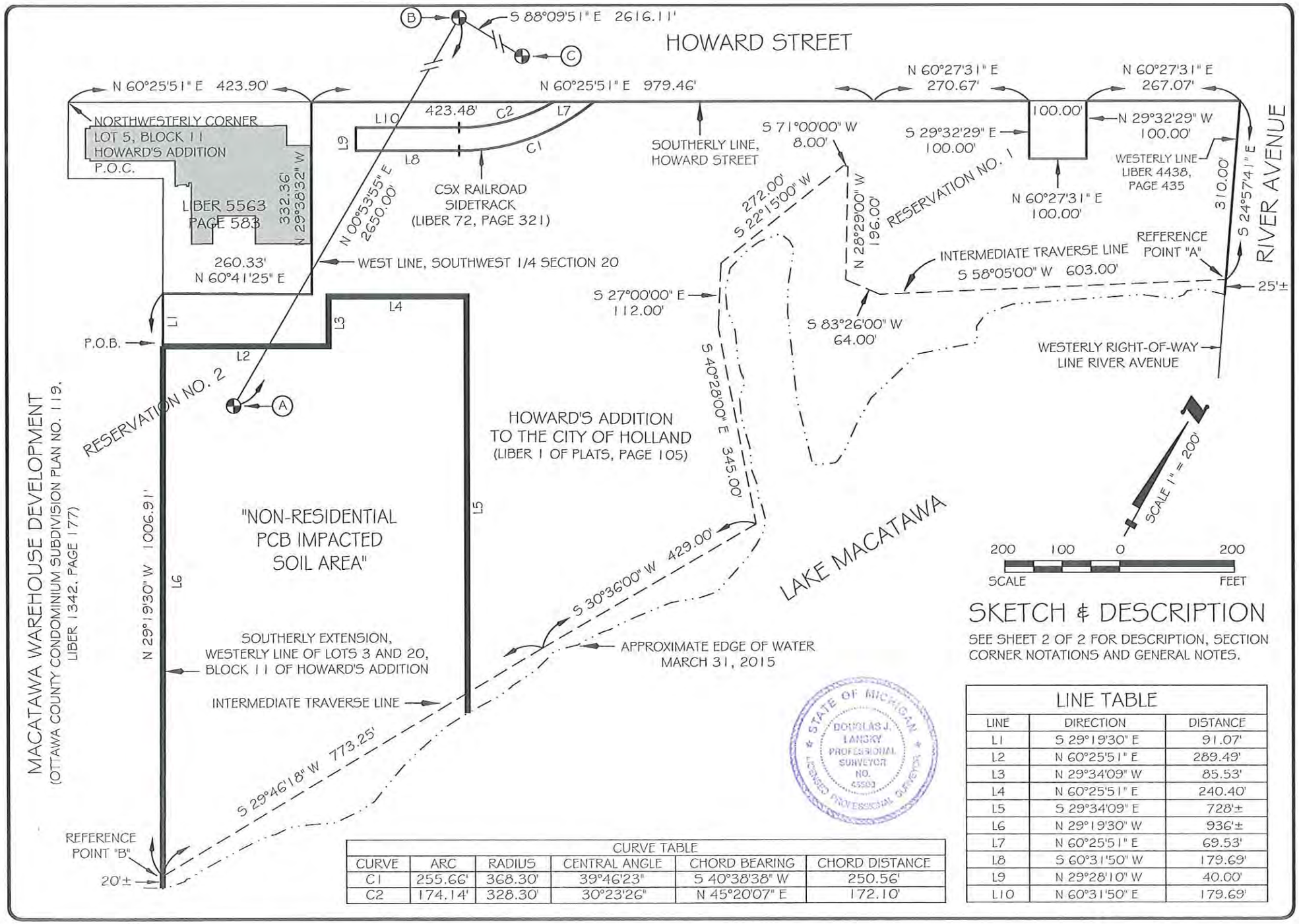
Hazardous Substance	CAS Number	Soil	Ground Water
Arsenic	7440-38-2	X	X
Barium	7440-39-3	X	X
Cadmium	7440-43-9	X	X
Chromium, Total	7440-47-3	X	X
Copper	7440-50-8	X	X
Lead	7439-92-1	X	X
Mercury (Inorganic)	7439-97-6	X	X
Nickel	7440-02-0	X	-
Selenium	7782-49-2	X	-
Silver	7440-22-4	X	-
Zinc	7440-66-6	X	X
Cyanide	57-12-5	X	-
Isopropyl alcohol	67-63-0	X	-
Methanol	67-56-1	X	-
Sulfide	18496-25-8	-	X
Nitrogen, Ammonia	7664-41-7	X	X
Nitrogen, Nitrate	14797-55-8	-	X
Acenaphthene	83-32-9	X	-
Acenaphthylene	208-96-8	X	-
Aniline	62-53-3	X	-
Anthracene	120-12-7	X	-
Benzo(a)anthracene	56-55-3	X	-
Benzo(a)pyrene	50-32-8	X	-
Benzo(b)fluoranthene	205-99-2	X	-
Benzo(g,h,i)perylene	191-24-2	X	-
Benzo(k)fluoranthene	207-08-9	X	-
Benzophenone	119-61-9	X	X
bis(2-Ethylhexyl)phthalate	117-81-7	X	-
Carbazole	86-74-8	X	-
4-Chloroaniline	106-47-8	X	X
2-Chlorophenol	95-57-8	X	X
Chrysene	218-01-9	X	-
Dibenzo(a,h)anthracene	53-70-3	X	-
Dibenzofuran	132-64-9	X	-
1,2-Dichlorobenzene	95-50-1	X	X

Hazardous Substance	CAS Number	Soil	Ground Water
1,4-Dichlorobenzene	106-46-7	X	X
3,3'-Dichlorobenzidine	91-94-1	X	-
Dimethylformamide	68-12-2	X	-
2,4-Dimethylphenol	105-67-9	X	X
Di-n-butyl phthalate	84-74-2	X	-
5,5-Diphenylhydantoin	57-41-0	X	X
Fluoranthene	206-44-0	X	X
Fluorene	86-73-7	X	-
Indeno(1,2,3-cd)pyrene	193-39-5	X	-
Isophorone	78-59-1	X	-
2-Methylnaphthalene	91-57-6	X	-
2-Methylphenol	95-48-7	X	-
3-Methylphenol	108-39-4	X	-
4-Methylphenol	106-44-5	X	X
Naphthalene	91-20-3	X	-
Nitrobenzene	98-95-3	X	-
Pentachlorophenol	87-86-5	X	-
Phenanthrene	85-01-8	X	X
Phenol	108-95-2	X	X
Pyrene	129-00-0	X	-
Acetone	67-64-1	X	-
Benzene	71-43-2	X	X
Bromoform	75-25-2	X	-
2-Butanone (MEK)	78-93-3	X	-
Chlorobenzene	108-90-7	X	X
Chloroform	67-66-3	X	X
Chloromethane	74-87-3	X	-
1,1-Dichloroethane	75-34-3	-	X
1,2-Dichloroethane	107-06-2	X	X
1,1-Dichloroethylene	75-35-4	X	-
cis-1,2-Dichloroethylene	156-59-2	X	X
1,2-Dichloroethylene, Total	156-60-5	X	X
trans-1,2-Dichloroethylene	156-60-5	-	X
Ethyl acetate	141-78-6	X	-
Ethylbenzene	100-41-4	X	X
Hexane	110-54-3	X	-
2-Hexanone	591-78-6	X	-
Isopropyl alcohol	67-63-0	X	-
Isopropyl benzene	98-82-8	X	-
Methanol	67-56-1	X	-

Hazardous Substance	CAS Number	Soil	Ground Water
Methylene chloride	75-09-2	X	-
4-Methyl-2-pentanone (MIBK)	108-10-1	X	-
n-Propylbenzene	103-65-1	X	-
Styrene	100-42-5	X	-
1,1,2,2-Tetrachloroethane	79-34-5	X	-
Tetrachloroethylene	127-18-4	X	-
Toluene	108-88-3	X	X
1,1,1-Trichloroethane	71-55-6	X	X
1,1,2-Trichloroethane	79-00-5	X	-
Trichloroethylene	79-01-6	X	X
1,2,4-Trimethylbenzene	95-63-6	X	-
1,3,5-Trimethylbenzene	108-67-8	X	-
Vinyl chloride	75-01-4	-	X
Xylenes	1330-20-7	X	X
PCB, Aroclor 1016	12674-11-2	X	-
PCB, Aroclor 1242	53469-21-9	X	-
PCB, Aroclor 1248	12672-29-6	X	-
PCB, Aroclor 1254	11097-69-1	X	-
PCB, Aroclor 1260	11096-82-5	X	-

EXHIBIT 3

SURVEY/LEGAL DESCRIPTION OF NON-RESIDENTIAL PCB-IMPACTED SOIL AREA



SKETCH & DESCRIPTION

SEE SHEET 2 OF 2 FOR DESCRIPTION, SECTION CORNER NOTATIONS AND GENERAL NOTES.

STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
NO. 45500
LICENSED PROFESSIONAL SURVEYOR

CURVE TABLE					
CURVE	ARC	RADIUS	CENTRAL ANGLE	CHORD BEARING	CHORD DISTANCE
C1	255.66'	368.30'	39°46'23"	S 40°38'38" W	250.56'
C2	174.14'	328.30'	30°23'26"	N 45°20'07" E	172.10'

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	S 29°19'30" E	91.07'
L2	N 60°25'51" E	289.49'
L3	N 29°34'09" W	85.53'
L4	N 60°25'51" E	240.40'
L5	S 29°34'09" E	728'±
L6	N 29°19'30" W	936'±
L7	N 60°25'51" E	69.53'
L8	S 60°31'50" W	179.69'
L9	N 29°28'10" W	40.00'
L10	N 60°31'50" E	179.69'

Date revised	By
Date revised 05-15-15	By MVM / DJL

LEGEND

P.O.B. - POINT OF BEGINNING
P.O.C. - POINT OF COMMENCEMENT

EXISTING BUILDING

Horiz. Datum HEI-96 | Vertical Datum N/A

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Date 11-19-14 | Sheet 1 of 2

Drawn By MVM | Checked By DJL | Surveyed By N/A

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No. 14-11-012

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

SKETCH & DESCRIPTION

DESCRIPTION:

"NON-RESIDENTIAL PCB IMPACTED SOIL AREA"

PART OF HOWARD'S ADDITION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 1 OF PLATS, ON PAGE 105, PUBLIC RECORDS OF OTTAWA COUNTY, MICHIGAN, AND BEING PART OF SECTIONS 19, 20, 29 AND 30, TOWN 5 NORTH, RANGE 15 WEST, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF LOT 5, BLOCK 11, SAID HOWARD'S ADDITION BEING DISTANT NORTH 00 DEGREES 53 MINUTES 55 SECONDS EAST 609.94 FEET ALONG THE WEST LINE OF SECTION 20 AND SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST 596.25 FEET ALONG THE SOUTH LINE OF HOWARD STREET FROM THE SOUTHWEST CORNER OF SECTION 20 AND THEN PROCEEDING NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 423.90 FEET; THENCE SOUTH 29 DEGREES 38 MINUTES 32 SECONDS EAST, PARALLEL WITH AND 2.00 FEET EASTERLY OF (PERPENDICULAR MEASURE) THE EASTERLY WALL OF AN EXISTING BUILDING, A DISTANCE OF 332.36 FEET; THENCE SOUTH 60 DEGREES 41 MINUTES 25 SECONDS WEST, A DISTANCE OF 260.33 FEET; THENCE SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST, A DISTANCE OF 91.07 FEET ALONG THE SOUTHERLY EXTENSION OF THE WEST LINE OF LOTS 3 AND 20 OF BLOCK 11 AND ALONG THE EAST LINE OF MACATAWA WAREHOUSE DEVELOPMENT AS RECORDED IN LIBER 1342, PAGE 177 TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 289.49 FEET; THENCE NORTH 29 DEGREES 34 MINUTES 09 SECONDS WEST, A DISTANCE OF 85.53 FEET; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 240.40 FEET; THENCE SOUTH 29 DEGREES 34 MINUTES 09 SECONDS EAST, A DISTANCE OF 728 FEET, MORE OR LESS, TO THE WATER'S EDGE OF LAKE MACATAWA; THENCE SOUTHWESTERLY ALONG THE WATER'S EDGE OF LAKE MACATAWA TO THE INTERSECTION WITH THE LINE BEARING SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST FROM THE AFORESAID POINT OF BEGINNING; THENCE NORTH 29 DEGREES 19 MINUTES 30 SECONDS WEST, A DISTANCE OF 936 FEET, MORE OR LESS, ALONG THE SOUTHERLY EXTENSION OF THE WEST LINE OF LOTS 3 AND 20 OF BLOCK 11 AND ALONG THE EAST LINE OF MACATAWA WAREHOUSE DEVELOPMENT TO THE POINT OF BEGINNING. CONTAINING 10.46 ACRES OF LAND, MORE OR LESS.

SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.

GENERAL NOTES:

THIS SKETCH AND DESCRIPTION WAS PREPARED FOR THE LANDS AS DESCRIBED HEREIN WITHOUT THE BENEFIT OF CURRENT TITLE WORK. IT IS NOT A CERTIFICATION OF TITLE, OWNERSHIP, ZONING OR FREEDOM OF EASEMENTS OR ENCUMBRANCES.

NO IMPROVEMENTS, UTILITIES, DITCHES, DRIVES AND / OR FENCES WERE DEPICTED UNDER THE SCOPE OF THIS SKETCH AND DESCRIPTION.

BEARINGS ARE BASED ON THE SOUTHERLY RIGHT-OF-WAY LINE OF HOWARD STREET BETWEEN JACKSON STREET AND MONROE STREET AS BEING: NORTH 60°25'51" EAST.

EASEMENTS HAVE NOT BEEN DEPICTED UNDER THE SCOPE OF THIS SKETCH AND DESCRIPTION.

THE SURVEYOR'S LIABILITY FOR ANY AND ALL CLAIMS, INCLUDING BUT NOT LIMITED TO THOSE ARISING OUT OF THE SURVEYOR'S PROFESSIONAL SERVICES, NEGLIGENCE, GROSS MISCONDUCT, WARRANTIES OR MISREPRESENTATIONS SHALL BE DEEMED LIMITED TO AN AMOUNT NO GREATER THAN THE SERVICE FEE.

(A) SOUTHWEST CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 3, PAGES 429-430

(B) WEST 1/4 CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 2, PAGE 92

(C) CENTER POST SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 5, PAGES 577-578

STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
NO. 45500
LICENSED PROFESSIONAL SURVEYOR

Date revised	By
Date revised 05-15-15	By MVM / DJL

LEGEND

P.O.B. - POINT OF BEGINNING
P.O.C. - POINT OF COMMENCEMENT

EXISTING BUILDING

Horiz. Datum	HEI-96	Vertical Datum	N/A

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Date	Sheet 2 of 2
11-19-14	

Drawn By	Checked By	Surveyed By
MVM	DJL	N/A

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

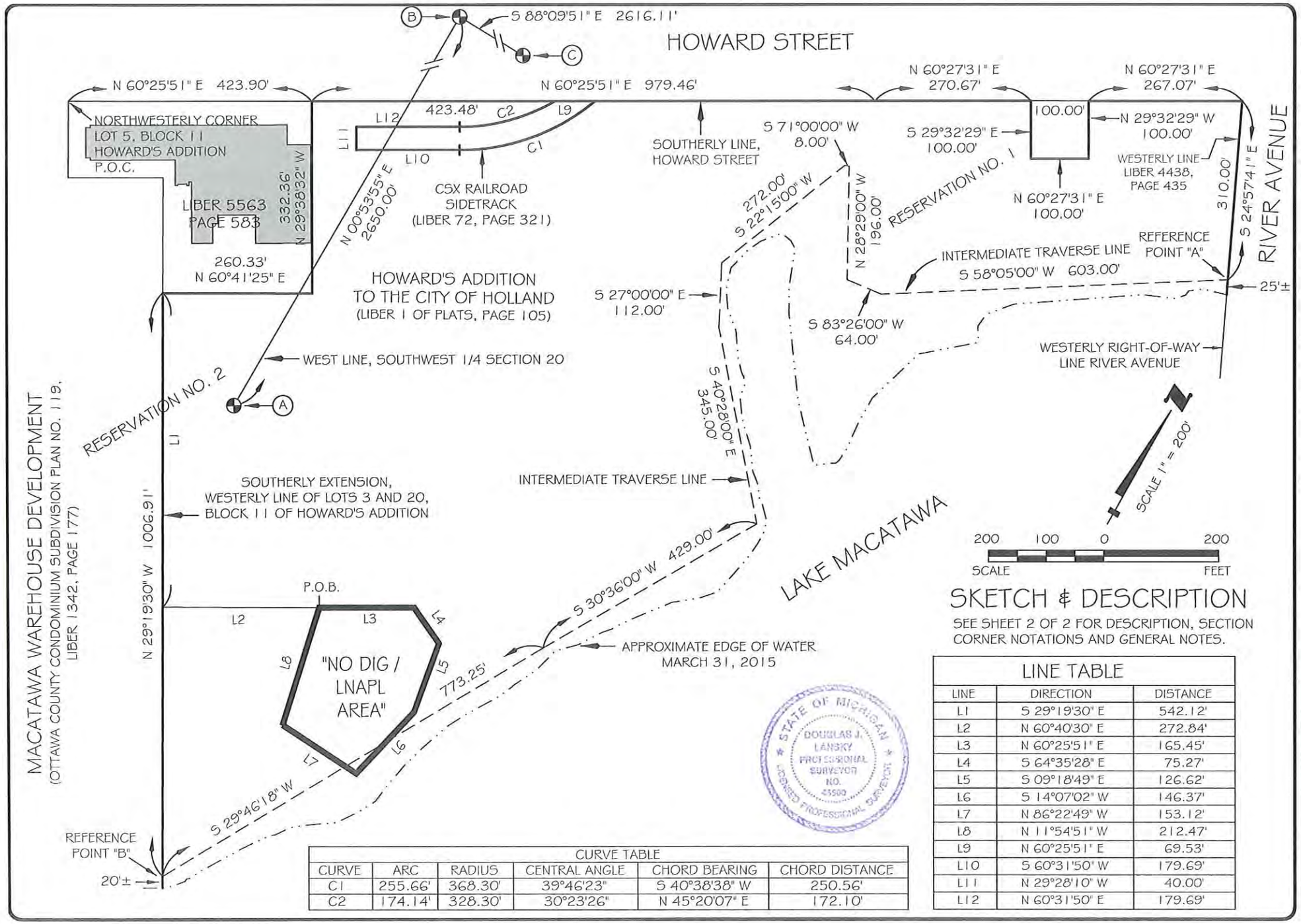
Job No. 14-11-012

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

EXHIBIT 4

SURVEY/LEGAL DESCRIPTION OF NO DIG/LNAPL AREA



SKETCH & DESCRIPTION

SEE SHEET 2 OF 2 FOR DESCRIPTION, SECTION CORNER NOTATIONS AND GENERAL NOTES.

STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
NO. 45500
LICENSED PROFESSIONAL SURVEYOR

LINE TABLE

LINE	DIRECTION	DISTANCE
L1	S 29°19'30" E	542.12'
L2	N 60°40'30" E	272.84'
L3	N 60°25'51" E	165.45'
L4	S 64°35'28" E	75.27'
L5	S 09°18'49" E	126.62'
L6	S 14°07'02" W	146.37'
L7	N 86°22'49" W	153.12'
L8	N 11°54'51" W	212.47'
L9	N 60°25'51" E	69.53'
L10	S 60°31'50" W	179.69'
L11	N 29°28'10" W	40.00'
L12	N 60°31'50" E	179.69'

CURVE TABLE

CURVE	ARC	RADIUS	CENTRAL ANGLE	CHORD BEARING	CHORD DISTANCE
C1	255.66'	368.30'	39°46'23"	S 40°38'38" W	250.56'
C2	174.14'	328.30'	30°23'26"	N 45°20'07" E	172.10'

Date revised	By
Date revised 05-15-15	By MVM / DJL

LEGEND

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P.O.C. - POINT OF COMMENCEMENT

EXISTING BUILDING

Horiz. Datum HEI-96 | Vertical Datum N/A

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Date 11-19-14 | Sheet 1 of 2

Drawn By MVM | Checked By DJL | Surveyed By N/A

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No. 14-11-012

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

SKETCH & DESCRIPTION

DESCRIPTION:

"NO DIG / LNAPL AREA"

PART OF HOWARD'S ADDITION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 1 OF PLATS, ON PAGE 105, PUBLIC RECORDS OF OTTAWA COUNTY, MICHIGAN, AND BEING PART OF SECTIONS 19, 20, 29 AND 30, TOWN 5 NORTH, RANGE 15 WEST, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF LOT 5, BLOCK 11, SAID HOWARD'S ADDITION, BEING DISTANT NORTH 00 DEGREES 53 MINUTES 55 SECONDS EAST 609.94 FEET ALONG THE WEST LINE OF SECTION 20 AND SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST 596.25 FEET ALONG THE SOUTH LINE OF HOWARD STREET FROM THE SOUTHWEST CORNER OF SECTION 20 AND THEN PROCEEDING NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 423.90 FEET; THENCE SOUTH 29 DEGREES 38 MINUTES 32 SECONDS EAST, PARALLEL WITH AND 2.00 FEET EASTERLY OF (PERPENDICULAR MEASURE) THE EASTERLY WALL OF AN EXISTING BUILDING, A DISTANCE OF 332.36 FEET; THENCE SOUTH 60 DEGREES 41 MINUTES 25 SECONDS WEST, A DISTANCE OF 260.33 FEET; THENCE SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST, A DISTANCE OF 542.12 FEET ALONG THE SOUTHERLY EXTENSION OF THE WEST LINE OF LOTS 3 AND 20 OF BLOCK 11 AND ALONG THE EAST LINE OF MACATAWA WAREHOUSE DEVELOPMENT AS RECORDED IN LIBER 1342, PAGE 177; THENCE NORTH 60 DEGREES 40 MINUTES 30 SECONDS EAST, A DISTANCE OF 272.84 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 165.45 FEET; THENCE SOUTH 64 DEGREES 35 MINUTES 28 SECONDS EAST, A DISTANCE OF 75.27 FEET; THENCE SOUTH 09 DEGREES 18 MINUTES 49 SECONDS EAST, A DISTANCE OF 126.62 FEET; THENCE SOUTH 14 DEGREES 07 MINUTES 02 SECONDS WEST, A DISTANCE OF 146.37 FEET; THENCE NORTH 86 DEGREES 22 MINUTES 49 SECONDS WEST, A DISTANCE OF 153.12 FEET; THENCE NORTH 11 DEGREES 54 MINUTES 51 SECONDS WEST, A DISTANCE OF 212.47 FEET TO THE POINT OF BEGINNING. CONTAINING 1.20 ACRES OF LAND, MORE OR LESS.

SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.

GENERAL NOTES:

THIS SKETCH AND DESCRIPTION WAS PREPARED FOR THE LANDS AS DESCRIBED HEREIN WITHOUT THE BENEFIT OF CURRENT TITLE WORK. IT IS NOT A CERTIFICATION OF TITLE, OWNERSHIP, ZONING OR FREEDOM OF EASEMENTS OR ENCUMBRANCES.

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BEARINGS ARE BASED ON THE SOUTHERLY RIGHT-OF-WAY LINE OF HOWARD STREET BETWEEN JACKSON STREET AND MONROE STREET AS BEING: NORTH 60°25'51" EAST.

EASEMENTS HAVE NOT BEEN DEPICTED UNDER THE SCOPE OF THIS SKETCH AND DESCRIPTION.

THE SURVEYOR'S LIABILITY FOR ANY AND ALL CLAIMS, INCLUDING BUT NOT LIMITED TO THOSE ARISING OUT OF THE SURVEYOR'S PROFESSIONAL SERVICES, NEGLIGENCE, GROSS MISCONDUCT, WARRANTIES OR MISREPRESENTATIONS SHALL BE DEEMED LIMITED TO AN AMOUNT NO GREATER THAN THE SERVICE FEE.

Ⓐ SOUTHWEST CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 3, PAGES 429-430

Ⓑ WEST 1/4 CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 2, PAGE 92

Ⓒ CENTER POST SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
HOLLAND TOWNSHIP
OTTAWA COUNTY, MICHIGAN
REMON. L.C.R.C. LIBER 5, PAGES 577-578

STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
NO. 45500
LICENSED PROFESSIONAL SURVEYOR

Date revised	By
Date revised 05-15-15	By MVM / DJL

LEGEND
P.O.B. - POINT OF BEGINNING
P.O.C. - POINT OF COMMENCEMENT
EXISTING BUILDING

Horiz. Datum	HEI-96	Vertical Datum	N/A

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Date	Sheet 2 of 2
11-19-14	

Drawn By	Checked By	Surveyed By
MVM	DJL	N/A

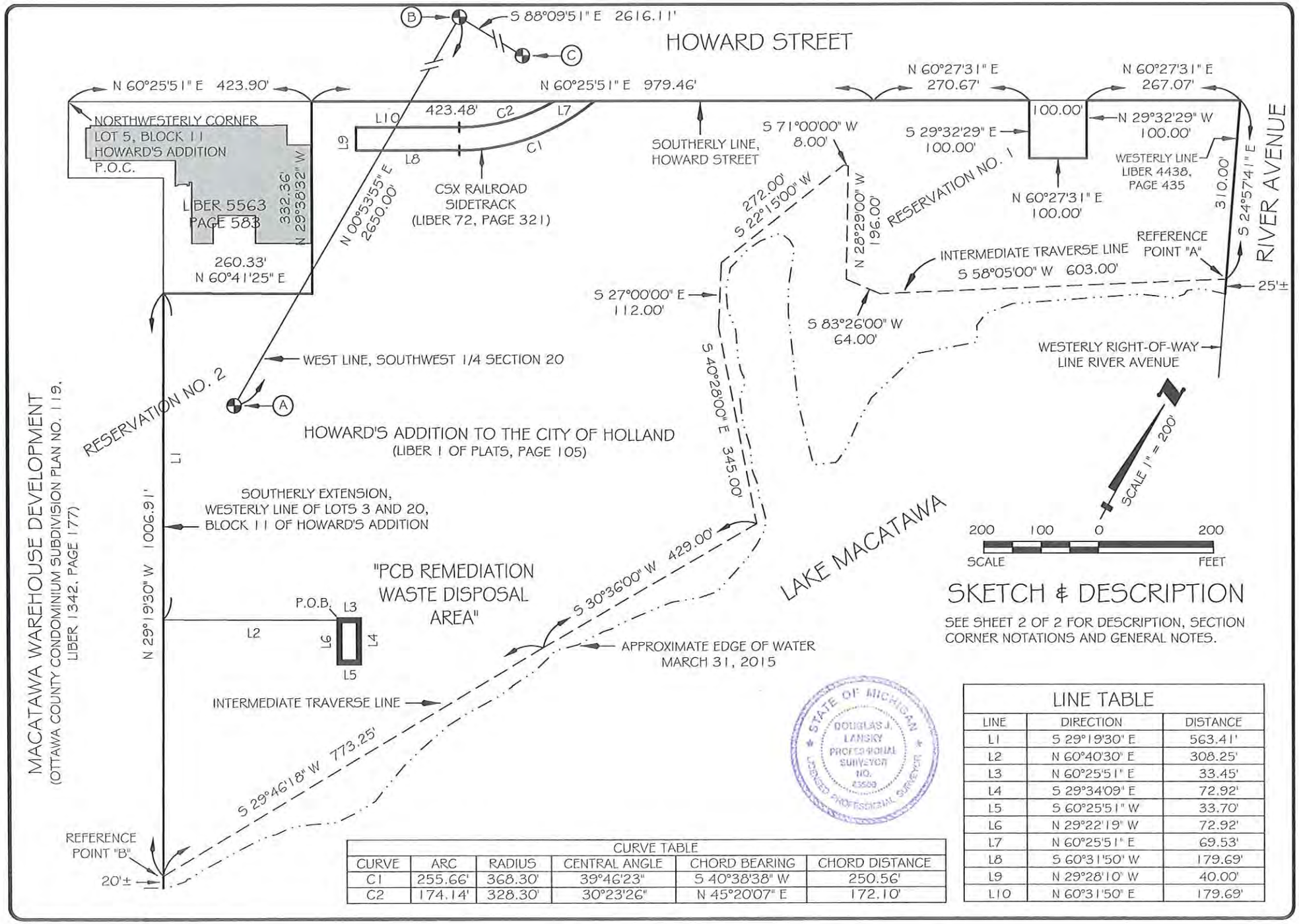
Plat: HOWARD'S ADDITION
Twp. or City: HOLLAND TOWNSHIP
Job No. 14-11-012

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

EXHIBIT 5

SURVEY/LEGAL DESCRIPTION OF PCB REMEDIATION WASTE DISPOSAL AREA



SKETCH & DESCRIPTION

SEE SHEET 2 OF 2 FOR DESCRIPTION, SECTION CORNER NOTATIONS AND GENERAL NOTES.

STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
NO. 45500
LICENSED PROFESSIONAL SURVEYOR

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	S 29°19'30" E	563.41'
L2	N 60°40'30" E	308.25'
L3	N 60°25'51" E	33.45'
L4	S 29°34'09" E	72.92'
L5	S 60°25'51" W	33.70'
L6	N 29°22'19" W	72.92'
L7	N 60°25'51" E	69.53'
L8	S 60°31'50" W	179.69'
L9	N 29°28'10" W	40.00'
L10	N 60°31'50" E	179.69'

CURVE TABLE					
CURVE	ARC	RADIUS	CENTRAL ANGLE	CHORD BEARING	CHORD DISTANCE
C1	255.66'	368.30'	39°46'23"	S 40°38'38" W	250.56'
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Date 11-19-14 | Sheet 1 of 2

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Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No. 14-11-012

Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

SKETCH & DESCRIPTION

DESCRIPTION:

"PCB REMEDIATION WASTE DISPOSAL AREA"

PART OF HOWARD'S ADDITION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 1 OF PLATS, ON PAGE 105, PUBLIC RECORDS OF OTTAWA COUNTY, MICHIGAN, AND BEING PART OF SECTIONS 19, 20, 29 AND 30, TOWN 5 NORTH, RANGE 15 WEST, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF LOT 5, BLOCK 11, SAID HOWARD'S ADDITION BEING DISTANT NORTH 00 DEGREES 53 MINUTES 55 SECONDS EAST 609.94 FEET ALONG THE WEST LINE OF SECTION 20 AND SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST 596.25 FEET ALONG THE SOUTH LINE OF HOWARD STREET FROM THE SOUTHWEST CORNER OF SECTION 20 AND THEN PROCEEDING NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 423.90 FEET; THENCE SOUTH 29 DEGREES 38 MINUTES 32 SECONDS EAST, PARALLEL WITH AND 2.00 FEET EASTERLY OF (PERPENDICULAR MEASURE) THE EASTERLY WALL OF AN EXISTING BUILDING, A DISTANCE OF 332.36 FEET; THENCE SOUTH 60 DEGREES 41 MINUTES 25 SECONDS WEST A DISTANCE OF 260.33 FEET; THENCE SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST, A DISTANCE OF 563.41 FEET ALONG THE SOUTHERLY EXTENSION OF THE WEST LINE OF LOTS 3 AND 20 OF BLOCK 11 AND ALONG THE EAST LINE OF MACATAWA WAREHOUSE DEVELOPMENT AS RECORDED IN LIBER 1342, PAGE 177; THENCE NORTH 60 DEGREES 40 MINUTES 30 SECONDS EAST, A DISTANCE OF 308.25 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 33.45 FEET; THENCE SOUTH 29 DEGREES 34 MINUTES 09 SECONDS EAST, A DISTANCE OF 72.92 FEET; THENCE SOUTH 60 DEGREES 25 MINUTES 51 SECONDS WEST, A DISTANCE OF 33.70 FEET; THENCE NORTH 29 DEGREES 22 MINUTES 19 SECONDS WEST, A DISTANCE OF 72.92 FEET TO THE POINT OF BEGINNING. CONTAINING 2448 SQUARE FEET OF LAND, MORE OR LESS.

SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.

GENERAL NOTES:

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Ⓐ SOUTHWEST CORNER SECTION 20
TOWN 5 NORTH, RANGE 15 WEST
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STATE OF MICHIGAN
DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR
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LICENSED PROFESSIONAL SURVEYOR

Date revised	By
Date revised 05-15-15	By MVM / DJL

LEGEND
P.O.B. - POINT OF BEGINNING
P.O.C. - POINT OF COMMENCEMENT
EXISTING BUILDING

Horiz. Datum	HEI-96	Vertical Datum	N/A

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Date	Sheet 2 of 2
11-19-14	

Drawn By	Checked By	Surveyed By
MVM	DJL	N/A

Plat: HOWARD'S ADDITION
Twp. or City: HOLLAND TOWNSHIP
Job No. 14-11-012

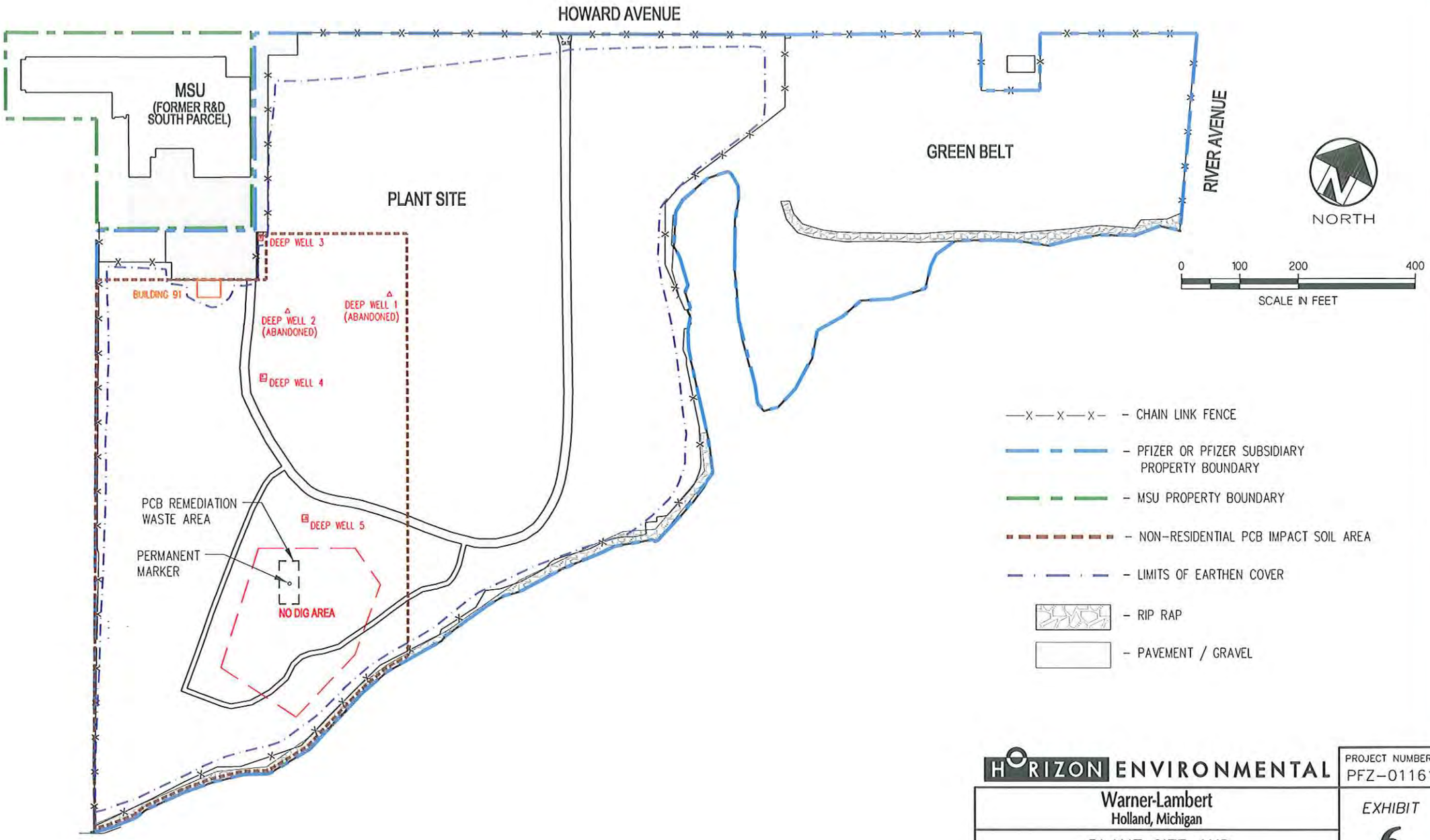
Douglas J. Lansky

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

EXHIBIT 6

GRAPHICAL DEPICTION SHOWING BOUNDARIES OF PROPERTY, THE BUILDINGS PRESENT ON THE PROPERTY, EARTHEN COVER, PERIMETER FENCE, NON-RESIDENTIAL PCB-IMPACTED SOIL AREA, NO DIG/LNAPL AREA, AND PCB REMEDIATION WASTE DISPOSAL AREA

PFZ01161F07R-MAY2015



HORIZON ENVIRONMENTAL

PROJECT NUMBER: PFZ-01161

Warner-Lambert
Holland, Michigan

PLANT SITE AND
GREENBELT PROPERTY

EXHIBIT
6

MAY 2015

J:\Lvanprooyen\ DWGS\PFZ\01161\PFZ01161F07R-MAY2015.dwg, 6/16/2015 2:45:51 PM, Ricoh Aficio MP C3500 PCL5c

5

CT-GV

0051324
Filed/ Sealed For Record In
Ottawa County, MI
Gary Scholten R.O.D.
12/26/2007 At 2:39:41 P.M.
RESTRICTIVE COVENANT $26.00
Liber 005563 Page 00578

DECLARATION OF RESTRICTIVE COVENANT

This Declaration of Restrictive Covenant ("Restrictive Covenant") has been recorded with the Ottawa County Register of Deeds for the purpose of protecting public health, safety, and welfare, and the environment by prohibiting or restricting activities that could result in unacceptable exposure to environmental contamination present at the former Parke, Davis & Company LLC Research and Development property located on Howard Avenue in the Charter Township of Holland, County of Ottawa, State of Michigan, as legally described in Exhibit A attached hereto ("Property"). The Property was associated with, and is located adjacent to, the Parke, Davis & Company LLC/Warner Lambert Company LLC manufacturing plant located at 188 Howard Avenue ("Manufacturing Property") which is undergoing corrective action pursuant to Part 111 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended ("NREPA"), MCL 324.11101 *et seq.* ("Part 111").

Because the portion of the Property located south of Howard Avenue is adjacent to and was under the same ownership as the Manufacturing Property, it is also subject to corrective action under Part 111. Hazardous substances, including arsenic, chromium, silver, mercury, methylene chloride, and chlorobenzene have been detected in soil and/or groundwater on the Property. Impacts to groundwater are believed to be the result of migration of chemical constituents from off-site sources, including the Manufacturing Property. Corrective action activities to be carried out on the Manufacturing Property are anticipated to include measures to address groundwater impacts emanating from the Manufacturing Property, including the migration of contamination onto the Property.

Definitions

"MDEQ" means the Michigan Department of Environmental Quality, its successor entities, and those persons or entities acting on its behalf.

"Owner" means at any given time the then current title holder of the Property or any portion thereof.

All other terms used in this document which are defined in Part 3, Definitions, of the NREPA; Part 201 of the NREPA; Part 111 of the NREPA; or the Part 201 or Part 111 MDEQ Administrative Rules, shall have the same meaning in this document as in those laws or regulations, as of the date of filing of this Restrictive Covenant.

OCROD 12 26 2007

Commercial
CTIC
Commercial

NOW THEREFORE,

Declaration of Land Use or Resource Use Restrictions

The Owner of the Property hereby declares and covenants that the Property shall be subject to the following restrictions and conditions:

1. The Owner shall prohibit all uses of the Property that are not compatible with limited commercial II, III, IV and industrial categories under Part 201 of NREPA, MCL 324.20101 *et seq*. No residential or commercial I uses shall be allowed. Scientific or secondary/post secondary educational uses are allowed if such uses do not require response activities to achieve residential or commercial I criteria.

2. The Owner shall prohibit the following activities that may result in exposures above acceptable levels applicable to the use of the Property:

(a) Any construction of wells or other devices to extract groundwater for consumption, irrigation, or any other use, except for wells or similar devices installed in furtherance of corrective action under Part 111 (e.g., monitoring wells).

(b) Any construction of a surface water feature that will be in communication with groundwater.

Access. The Owner shall grant to Parke, Davis & Company LLC, Warner Lambert Company LLC, Pfizer Inc., and MDEQ, and their designated representatives, the right to enter the Property at reasonable times for the purpose of carrying out and monitoring compliance with corrective action activities conducted pursuant to Part 111, including the right to take samples, inspect the operation of the corrective action, and perform any actions necessary to maintain compliance with Part 111.

Amendment. Upon request of Parke, Davis & Company LLC or Pfizer Inc., the Owner shall execute and record an amendment to this Restrictive Covenant in a form satisfactory to Parke, Davis & Company LLC or Pfizer Inc.

Notice. The Owner shall provide notice to Parke, Davis & Company LLC and MDEQ of the Owner's intent to transfer any interest in the Property at least fourteen (14) business days prior to consummating the conveyance. A conveyance of title, easement, or other interest in the Property shall not be consummated by the Owner without adequate and complete provision for compliance with the terms and conditions of this Restrictive Covenant. The notice required to be made to the MDEQ under this Paragraph shall be made to: Director, MDEQ, P.O. Box 30473, Lansing, Michigan 48909-7973; the notice to Parke, Davis & Company LLC shall be made to: President, Parke, Davis & Company LLC, c/o Pfizer Global Manufacturing, 235 East 42nd Street 685/5/4, New York, NY 10017-5755. A copy of this Restrictive Covenant shall be provided to all future owners, heirs, successors, lessees, easement holders, assigns, and transferees by the person transferring the interest.

Term and Enforcement of Restrictive Covenant. This Restrictive Covenant shall run with the Property and shall be binding on the Owner; future owners; and all current and future successors, lessees, easement holders, their assigns, and their authorized agents, employees, or persons acting under their direction and control. The State of Michigan, through the MDEQ, may enforce the restrictions set forth in this Restrictive Covenant by legal action in a court of competent jurisdiction.

Severability. If any provision of this Restrictive Covenant is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions hereof, and all such other provisions shall continue unimpaired and in full force and effect.

Authority to Execute Restrictive Covenant. The undersigned person executing this Restrictive Covenant is the Owner, or has the express written permission of the Owner, and represents and certifies that he or she is duly authorized and has been empowered to execute and deliver this Restrictive Covenant.

IN WITNESS WHEREOF, Parke, Davis & Company LLC has caused this Restrictive Covenant to be executed on this 18th day of December, 2007.

Parke, Davis & Company LLC

By: _____
Signature

Name: WILLIAM C. LONGA
Print or Type Name

Its: AUTHORIZED SIGNATORY
Title

STATE OF New York)
)
COUNTY OF New York)

The foregoing instrument was acknowledged before me this 18th day of December, 2007, by William C Longa, the Authorized Signatory of Parke, Davis & Company, LLC, a Michigan limited liability company, on behalf of the company.

_____
Notary Public

Acting in New York County, NY

My Commission Expires: _____

MARC BROTMAN
Notary Public, State of New York
No. 31-5021172
Qualified in New York County
Commission Expires December 6, 2009

This instrument drafted by:

Daniel K. DeWitt
Warner Norcross & Judd LLP
900 Fifth Third Center
111 Lyon Street NW
Grand Rapids, Michigan, 49503

EXHIBIT A

LEGAL DECRIPTION OF PROPERTY

Land located in the Charter Township of Holland, Ottawa County, State of Michigan, and described as follows:

Lots 2 through 10 inclusive, Block 5; Lots 1, 8, 9 and 10, Block 6; the East 55.00 feet of Lot 2, Block 6; the South 6 feet of Lot 2, Block 6, except the East 55.00 feet thereof and the South 6 feet of the East 27.5 feet of Lot 3, Block 6, Howard's Addition to the City of Holland, according to the Plat thereof as recorded in Liber 1 of Plats, Page 105, Ottawa County Records. Also vacated Adams Street lying between Douglas Street and Howard Street.

ALSO, A parcel of land being part of Block 11, Block 12 and Reservation No. 2, Howard's Addition to the City of Holland, according to the Plat thereof as recorded in Liber 1 of Plats, Page 105, Ottawa County Records, and being more particularly described as follows: Beginning at the Northwest corner of Lot 5, of said Block 11; thence North 60 degrees 25 minutes 51 seconds East, along the Northerly line of Block 11 and Block 12, a distance of 423.90 feet; thence South 29 degrees 38 minutes 32 seconds East, parallel with and 2.00 feet Easterly of (perpendicular measure) the Easterly wall of an existing building, a distance of 332.36 feet; thence South 60 degrees 41 minutes 25 seconds West, a distance of 260.33 feet to the Southerly extension of the West lines of Lots 3 and 20 in said Block 11; thence Northerly along the Southerly extension of the West lines of Lots 3 and 20, Block 11, and the West line of Lot 20, Block 11, North 29 degrees 19 minutes 30 seconds West, a distance of 199.18 feet; thence South 60 degrees 25 minutes 51 seconds West, parallel with the North line of Block 11, a distance of 165.54 feet to the West line of Lot 18, Block 11; thence along the West line of Lot 18, Block 11 and the West line of Lot 5, Block 11, North 29 degrees 16 minutes 03 seconds West, a distance of 132.00 feet to the point of beginning.

Also together with an ingress, egress and utility easement being a part of Block 12 and Reservation No. 2, Howard's Addition to the City of Holland, according to the Plat thereof as recorded in Liber 1 of Plats, Page 105, Ottawa County Records, and being more particularly described as follows:

Commencing at the Northwest corner of Lot 5, Block 11, said Howard's Addition to the City of Holland; thence North 60 degrees 25 minutes 51 seconds East, along the Northerly line of Block 11 and said Block 12, a distance of 423.90 feet to the point of beginning of the herein described easement; thence continue North 60 degrees 25 minutes 51 seconds East, along the Northerly line of Block 12, a distance of 28.00 feet; thence South 29 degrees 38 minutes 32 seconds East, a distance of 339.35 feet; thence South 60 degrees 41 minutes 25 seconds West, a distance of 19.84 feet; thence South 29 degrees 38 minutes 32 seconds East, a distance of 81.64 feet; thence South 60 degrees 41 minutes 25 seconds West, a distance of 90.00 feet; thence North 29 degrees 38 minutes 32 seconds West, a distance of 66.50 feet; thence South 60 degrees 41 minutes 25 seconds West, a distance of 178.61 feet to the Southerly extension of the West lines of Lots 3 and 20, Block 11, said Howard's Addition to the City of Holland; thence Northerly along the

Southerly extension of the West lines of Lots 3 and 20, Block 11, North 29 degrees 19 minutes 30 seconds West, a distance of 22.00 feet; thence North 60 degrees 41 minutes 25 seconds East, a distance of 260.33 feet; thence North 29 degrees 38 minutes 32 seconds West, parallel with and 2.00 feet Easterly of (perpendicular measure) the Easterly wall of an existing building, a distance of 332.36 feet to the point of beginning.

Tax parcel no: 70-16-19-477-012
Commonly known as: (no #) Howard Avenue

Tax parcel nos: 70-16-19-478-001,
Part of 70-16-20-355-018, and
Part of 70-16-20-355-019
Commonly known as: 182 Howard Avenue

Tax parcel no: 70-16-19-477-009 (W 55 ft Lot 8, Blk 6)
Commonly known as: 281 Holland Ave

Tax parcel no: 70-16-19-477-010 (S 6 ft of W 27.5 ft Lot2; S 6 ft of W 27.5 ft Lot 3; E 27.5 ft Lot 8 & W 27.5 ft Lot 9, Blk 6)
Commonly known as: 275 Howard Ave

IFT Tax parcel nos: 70-55-17-097-544,
70-55-17-094-131,
70-55-17-094-267,
70-55-17-095-619,
70-55-17-096-391,
70-55-17-096-392,
70-55-17-097-265,
70-55-17-098-376,
70-55-17-098-377,
70-55-17-100-475,
70-55-17-100-706, and
70-60-17-101-044.

13

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7/26/2016 3:04:00 PM

2016-0026737
FILED/SEALED FOR RECORD IN
OTTAWA COUNTY, MI
JUSTIN F. ROEBUCK
COUNTY CLERK/REGISTER OF DEEDS
07/26/2016 AT 3:05 PM
RESTRICTIVE COVENANT 50.00

DECLARATION OF RESTRICTIVE COVENANT

MDEQ Reference No.: RC-OWMRP-111-16-006
Facility MID Number: MID 006 013 643
MDEQ Approval Date: 6/10/16

This Declaration of Restrictive Covenant ("Restrictive Covenant") has been recorded to protect public health, safety, welfare and the environment pursuant to the provisions of Part 111, Hazardous Waste Management, MCL 324.11101 et seq. (Part 111), and Part 201, Environmental Remediation, MCL 324.20101 et seq. (Part 201) of the Natural Resources and Environmental Protection Act ("NREPA"), 1994 PA 451, as amended.

This Restrictive Covenant has been recorded with the Ottawa County Register of Deeds for the purpose of prohibiting or restricting certain uses/activities that could result in unacceptable exposure to soil and ground water contamination and to prevent damage or disturbance of exposure controls that will be relied upon to restrict exposures at the property legally described in Exhibit 1 and located at 290 Howard Avenue, Holland Township, Ottawa County ("Property"). A portion of the Property is a "facility" as that term is defined in Section 20101(1)(s) of Part 201 of NREPA due to the presence of hazardous substances in soil and ground water at concentrations greater than those allowed for unrestricted residential use as defined in Part 201. A legal description and a graphical survey of the portion of the Property where hazardous substances have been detected in soil/ground water at concentrations greater than generic residential cleanup criteria specified under Part 201 is provided in Exhibit 2. This area is referred to hereinafter as the "Subsurface Precaution Area". A listing of the hazardous substances detected in soil and ground water in the Subsurface Precaution Area is provided in Exhibit 3. The hazardous substances detected on the Property are located at least three feet below the ground surface and therefore do not pose an exposure risk for activities occurring above ground.

Hazardous substances in soil and ground water at the Property have been investigated and remediated in accordance with a remediation plan titled *Remedial Action Plan/Corrective Measures Implementation Plan, Warner Lambert Company Former Manufacturing Facility, 188 Howard Avenue, Holland Township, Michigan,* dated April 21, 2104 as revised through June 12, 2014 (the "Remediation Plan") which was approved by the Michigan Department of Environmental Quality ("MDEQ") on June 20, 2014 pursuant to Parts 111 and 201 of NREPA. The Remediation Plan may be obtained by contacting the MDEQ. The Remediation Plan includes recommended health and safety and residual management protocols for subsurface work at the Property.

The land and resource use restrictions contained in this Restrictive Covenant are based upon information available at the time the remediation was completed. Discovery of environmental conditions that were not accounted for during completion of the remediation or use of the Property in a manner inconsistent with the restrictions described herein may result in risks to public health, safety, and welfare.

The Exhibits to this Restrictive Covenant include a legal description and a graphical survey of the subject Property prepared by a licensed surveyor (Exhibit 1), and a legal description and a graphical survey of the portion of the Property where hazardous substances have been detected in soil/ground water at depths greater than three feet and at concentrations greater than generic residential cleanup criteria specified under

Part 201 (Exhibit 2), and a list of hazardous substances detected in soil and ground water at the site (Exhibit 3).

Definitions

"Existing Ground Surface" means the elevation of the pavement, top soil, lawn and landscaping that exists in the Subsurface Precaution Area as of the date of recording of this Declaration of Restrictive Covenant. The Existing Ground Surface is topographically depicted and labeled in Exhibit 2.

"Hazardous Substance" means hazardous waste as defined under Part 111, hazardous substances as defined under Part 201 and CERCLA (42 USC 9601 to 9675), and petroleum as defined under Part 213.

"MDEQ" means the Michigan Department of Environmental Quality, its successor entities, and those persons or entities acting on its behalf.

"Owner" means at any given time the then current title holder of the Property or any portion thereof.

"Part 111" means Part 111, Hazardous Waste Management, of NREPA, 1994 PA 451, as amended, MCL 324.11101 et seq.

"Part 201" means Part 201, Environmental Remediation, of NREPA, 1994 PA 451, as amended, MCL 324.20101 et seq.

"Property" means the land area that is subject to this Restrictive Covenant as described in Exhibit 1.

"Remediation Plan" means the *Remedial Action Plan/Corrective Measures Implementation Plan, Warner Lambert Company Former Manufacturing Facility, 188 Howard Avenue, Holland Township, Michigan* (April 21, 2014 as revised through June 12, 2014).

"Subsurface Precaution Area" means the area of the Property where hazardous substances have been detected in soil/ground water below the ground surface at concentrations exceeding generic residential criteria (described in Exhibit 2). This area encompasses approximately 4 acres of the Property.

Declaration of Use Restrictions

NOW THEREFORE, Holland Charter Township hereby imposes, pursuant to Parts 111 and 201 of NREPA, the following restrictions on the Property and covenants and agrees that:

1. Land Use Restriction. The Owner shall limit use of the Property to non-residential uses or other uses that are consistent with the exposure assumptions and bases specified in the MDEQ-approved Remediation Plan. Acceptable uses include use as a park or similar recreational uses. Without limiting the foregoing, the following uses are expressly prohibited: single family homes, mobile homes, multi-family apartments or condominiums, day care centers, nursing homes, schools for children, and hospitals.

2. Maintenance of Existing Surface Cover. The Owner shall maintain the level of the Existing Ground Surface in the Subsurface Precaution Area described in Exhibit 2 in order to protect against direct contact with, and erosion from, contaminated subsurface soil. Ground surface materials (pavement, topsoil, lawn, landscaping, etc.) may be supplemented, removed or replaced with the same or different materials, so long as the elevation of the Existing Ground Surface remains the same or is made higher.

3. Subsurface Worker Health and Safety Precautions. All subsurface work performed in the Subsurface Precaution Area described in Exhibit 2 at depths greater than three feet below the Existing Ground Surface shall be conducted pursuant to a location- and task-specific health and safety plan describing the precautions to be implemented during subsurface work to prevent unacceptable exposures to impacted media in compliance with applicable OSHA/MIOSHA regulations and the requirements of Section 20107a of NREPA. Use of basic personal protective equipment, such as long pants, long sleeve shirts, boots, and gloves, is recommended. A

recommended worker health and safety protocol for the Property is on file with the MDEQ (Appendix S to the Remediation Plan).

4. Wells Prohibited. The Owner shall prohibit the construction of wells or other devices in the Subsurface Precaution Area described in Exhibit 2 to extract ground water for consumption, irrigation, or any other use. This provision does not prohibit installation of wells for: environmental study, monitoring, or remediation, or dewatering of excavations, provided the installation and operation of such wells is in compliance with applicable federal, state, and local laws and regulations and the fluids are managed in accordance with the requirements of Section 20107a of NREPA and other applicable local, state and federal laws and regulations.

5. Construction of Surface Water Features Prohibited. The Owner shall prohibit the construction of surface water features (e.g., ponds, wetlands, storm water detention basins, etc.) in the Subsurface Precaution Area described in Exhibit 2 that are in hydrologic communication with ground water.

6. Contaminated Soil Management. The Owner shall manage soil excavated in the Subsurface Precaution Area described in Exhibit 2 in accordance with Section 20120c of Part 201 and the following additional site-specific requirements:

   a. Soil excavated from depths less than three feet below Existing Ground Surface may be: (i) returned to the excavation; or (ii) disposed off-site in accordance with the requirements of Part 111 and any other applicable state and federal laws;

   b. Soil excavated from depths greater than three feet below Existing Ground Surface may be: (i) returned to the excavation provided that they are covered with at least three feet of clean imported fill or soil previously removed from the top three feet of the excavation; or (ii) transported off-site for disposal in accordance with the requirements of Part 111 and any other applicable state and federal laws.

   c. Soil from any depth that evidences visual or olfactory indications of contamination must be managed off-site in accordance with the requirements of Part 111 and any other applicable state and federal laws.

   A recommended residual management protocol for the Subsurface Precaution Area is on file with the MDEQ (Appendix S to the Remediation Plan).

7. Interference with Remedial Activities. The Owner shall restrict activities at the Property that may interfere with any remedial action/corrective action activities required under the Remediation Plan, or the operation and maintenance, monitoring, or other measures necessary to assure the effectiveness and integrity of any such remedial action/corrective action activities on the condition that Pfizer Inc. and the MDEQ shall cooperate to minimize, to the extent reasonably feasible, interference with use of the Property as a public park.

8. Access. The Owner shall grant to Pfizer Inc., the MDEQ, and their designated representatives the right to enter the Property at reasonable times on 72-hours prior notice (except in a case of emergency) for the purpose of determining and monitoring compliance with this Restrictive Covenant, taking groundwater and soil samples, and inspecting remedial/corrective action activities on the condition that Pfizer Inc. and the MDEQ shall cooperate to minimize, to the extent reasonably feasible, interference with use of Property as a public park.

9. Notice of Intent to Convey Interest. The Owner shall provide notice to Pfizer Inc. and the MDEQ of the Owner's intent to convey any interest in the Property 14 days prior to consummating the conveyance. A conveyance of title, an easement, or other interest in the Property shall not be consummated by the Property Owner without adequate and complete provision for compliance with the terms and conditions of this Covenant.

10. Term and Enforcement of Restrictive Covenant. This Restrictive Covenant shall run with the Property and shall be binding on the Owner; future owners; and all current and future successors, lessees, easement holders, their assigns, and their authorized agents, employees, or persons acting under their direction and control. This Restrictive Covenant is enforceable by MDEQ or Pfizer Inc. by an action seeking specific performance or other legal remedy in a court of competent jurisdiction against Owners of all or part of the Property. All remedies available hereunder shall be in addition to any and all other remedies at law or equity.

11. Severability. If any provision of this Restrictive Covenant is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other

provisions hereof, and all such other provisions shall continue unimpaired and in full force and effect.

12. Authority to Execute Restrictive Covenant. The undersigned person executing this Restrictive Covenant is the Owner, or has the express written permission of the Owner and all other holders of a legal interest whose interest is materially affected by this Restrictive Covenant and represents and certifies that he or she is duly authorized and has been empowered to execute and deliver this Restrictive Covenant.

13. Modification. Pfizer Inc. and/or the Owner may request in writing to MDEQ modifications to, or rescission of, this instrument, based on the performance of additional remedial/corrective action activities on the Property, changes to cleanup criteria or standards, or changes in use. This Restrictive Covenant may be modified or rescinded only with written approval of the MDEQ. Any modification or rescission shall be filed with the Ottawa County Register of Deeds by the Owner and a certified copy shall be provided to MDEQ.

14. Notices. Any notice required to be made to Pfizer Inc. shall be made by certified letter or overnight delivery service (e.g., Federal Express) to:

President, Parke, Davis & Company LLC
c/o Pfizer Global Manufacturing
235 East 42nd Street 685/5/4
New York, NY 10017-5755

IN WITNESS WHEREOF,

The said Owner of the Property has caused this restrictive covenant, RC-OWRMP-111-16-006 to be executed on this 21st day of July, 2016.

Authorized Representative Signature

July 21, 2016
Date

Terry Nienhuis
Name (Type or Print Name)

Terry Nienhuis, Township Supervisor
Holland Charter Township, Michigan

Authorized Representative Signature

July 21, 2016
Date

Michael Dalman
Name (Type or Print Name)

Michael Dalman, Township Clerk
Holland Charter Township, Michigan

STATE OF MICHIGAN

COUNTY OF OTTAWA

The foregoing instrument was acknowledged before me this 21ST day of July, 2016, by Terry Nienhuis and Michael Dalman, on behalf of Holland Charter Township.

Laurie J. Slater
Notary Public

Laurie J Slater
(Print or type name)

My Commission Expires: 12-02-2021

LAURIE J. SLATER
Notary Public, State of Michigan
County of Ottawa
My Commission Expires Dec. 2, 2021
Acting in the County of Ottawa

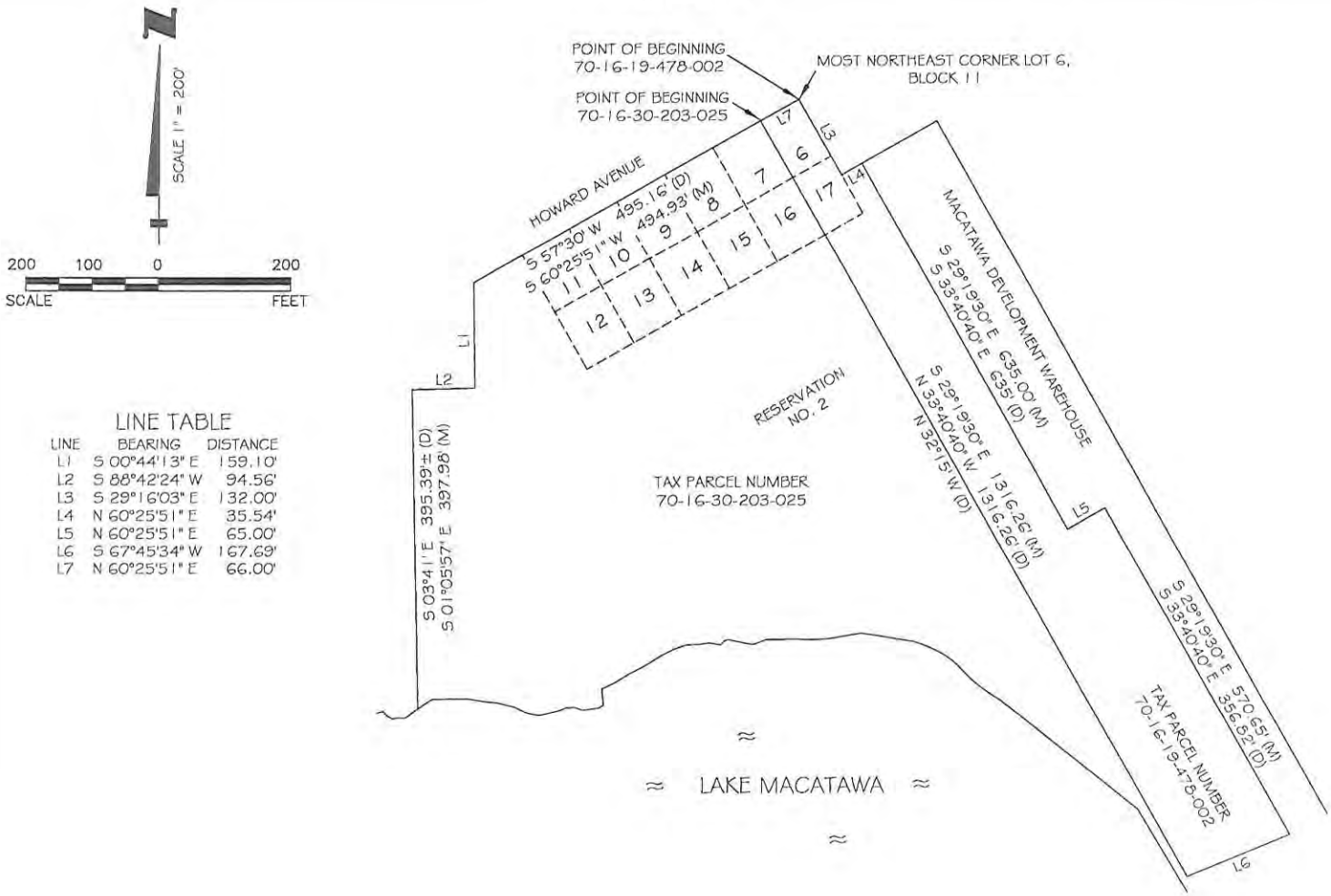
PREPARED BY AND RETURN TO:

Allen J. Reilly, Jr.
Barr Engineering
4771-50th St., SE
Grand Rapids, Michigan 49512

EXHIBIT 1

LEGAL DESCRIPTION/BOUNDARY SURVEY OF PROPERTY

EXHIBIT 1



LINE TABLE

LINE	BEARING	DISTANCE
L1	S 00°44'13" E	159.10'
L2	S 88°42'24" W	94.56'
L3	S 29°16'03" E	132.00'
L4	N 60°25'51" E	35.54'
L5	N 60°25'51" E	65.00'
L6	S 67°45'34" W	167.69'
L7	N 60°25'51" E	66.00'

Date revised	By
Date revised	By

LEGEND

(M) MEASURED DIMENSION
(D) DESCRIPTION DIMENSION
(C) CALCULATED DIMENSION

Horiz. Datum MI ST PL | Vertical Datum NGVD 29

HOLLAND ENGINEERING
ENGINEERING | SURVEYING | PIPELINE SERVICES
220 Hoover Boulevard, Suite 2
Holland, Michigan 49423-3766
www.hollandengineering.com
T 616-392-5938 F 616-392-2116

Date 05-25-16 | Sheet 1 of 2

Drawn By	Checked By	Surveyed By
MVM	DJL	N/A

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No. 16-04-034

DOUGLAS J. LAHSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

EXHIBIT 1

DESCRIPTIONS:

PER TAX DESCRIPTION FOR PARCEL NUMBER 70-16-30-203-025, OTTAWA COUNTY, MICHIGAN.

LOTS 7 THROUGH 16, BLOCK 11, HOWARD'S ADDITION. ALSO PART OF THE NORTHEAST 1/4 OF SECTION 30 AND SOUTHEAST 1/4 OF SECTION 19 COMMENCING AT THE NORTHEAST CORNER OF LOT 7, BLOCK 11, HOWARD'S ADDITION; THENCE SOUTH 57 DEGREES 30 MINUTES WEST 495.16 FEET; THENCE SOUTH 03 DEGREES 41 MINUTES EAST 159.1 FEET; THENCE SOUTH 86 DEGREES WEST 94.65 FEET; THENCE SOUTH 03 DEGREES 41 MINUTES EAST 395.39 FEET, MORE OR LESS, TO THE WATER'S EDGE OF LAKE MACATAWA; THENCE EASTERLY ALONG SAID WATER'S EDGE TO A POINT SOUTH 32 DEGREES 15 MINUTES EAST OF BEGINNING; THENCE NORTH 32 DEGREES 15 MINUTES WEST ALONG EXTENDED EAST LINE OF LOTS 7 AND 16, BLOCK 11 TO BEGINNING. SECTION 19 AND 30, TOWN 5 NORTH, RANGE 15 WEST AND HOWARD'S ADDITION, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN.

AND

PER TAX DESCRIPTION FOR PARCEL NUMBER 70-16-19-478-002, OTTAWA COUNTY, MICHIGAN.

LOTS 6, 17, PART OF 18, BLOCK 11 AND RESERVATION NO. 2 COMMENCING AT THE MOST NORTHERLY CORNER OF LOT 6; THENCE SOUTH 33 DEGREES 40 MINUTES 40 SECONDS EAST 132 FEET ALONG THE EASTERLY LINE OF LOTS 6 AND 17; THENCE NORTH 56 DEGREES 03 MINUTES 16 SECONDS EAST 35.56 FEET; THENCE SOUTH 33 DEGREES 40 MINUTES 40 SECONDS EAST 635 FEET; THENCE NORTH 56 DEGREES 03 MINUTES 16 SECONDS EAST 65 FEET; THENCE SOUTH 33 DEGREES 40 MINUTES 40 SECONDS EAST 356.82 FEET ALONG A LINE WHICH IS 65 FEET WEST OF AND PARALLEL TO THE EAST LINE OF LOT 19 EXTENDED; THENCE SOUTH 63 DEGREES 22 MINUTES 33 SECONDS WEST 167.83 FEET; THENCE NORTH 33 DEGREES 40 MINUTES 40 SECONDS WEST 1316.26 FEET ALONG THE EXTENSION OF THE WEST LINE OF LOTS 6 AND 17; THENCE NORTH 56 DEGREES 03 MINUTES 16 SECONDS EAST 66 FEET TO BEGINNING. HOWARD'S ADDITION TO THE CITY OF HOLLAND, HOLLAND TOWNSHIP, OTTAWA COUNTY, MICHIGAN.

GENERAL NOTES:

THIS EXHIBIT WAS PREPARED FOR THE LANDS AS DESCRIBED HEREIN. IT IS NOT A CERTIFICATION OF TITLE, ZONING OR FREEDOM OF ENCUMBRANCES.

ALL IMPROVEMENTS, UTILITIES, DITCHES, DRIVES, TWO-TRACKS AND/OR FENCES, IF ANY, WERE NOT LOCATED UNDER THE SCOPE OF THIS EXHIBIT.

BEARINGS ARE BASED ON THE MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83.

THIS EXHIBIT WAS PREPARED WITHOUT THE BENEFIT OF CURRENT TITLE WORK.

THE SURVEYOR'S LIABILITY FOR ANY AND ALL CLAIMS, INCLUDING BUT NOT LIMITED TO THOSE ARISING OUT OF THE SURVEYOR'S PROFESSIONAL SERVICES, NEGLIGENCE, GROSS MISCONDUCT, WARRANTIES OR MISREPRESENTATIONS SHALL BE DEEMED LIMITED TO AN AMOUNT NO GREATER THAN THE SERVICE FEE.

Date revised	By
Date revised	By

LEGEND
(M) MEASURED DIMENSION
(D) DESCRIPTION DIMENSION
(C) CALCULATED DIMENSION

Horiz. Datum MI ST PL | Vertical Datum NGVD 29

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Date 05-25-16 | Sheet 2 of 2

Drawn By	Checked By	Surveyed By
MVM	DJL	N/A

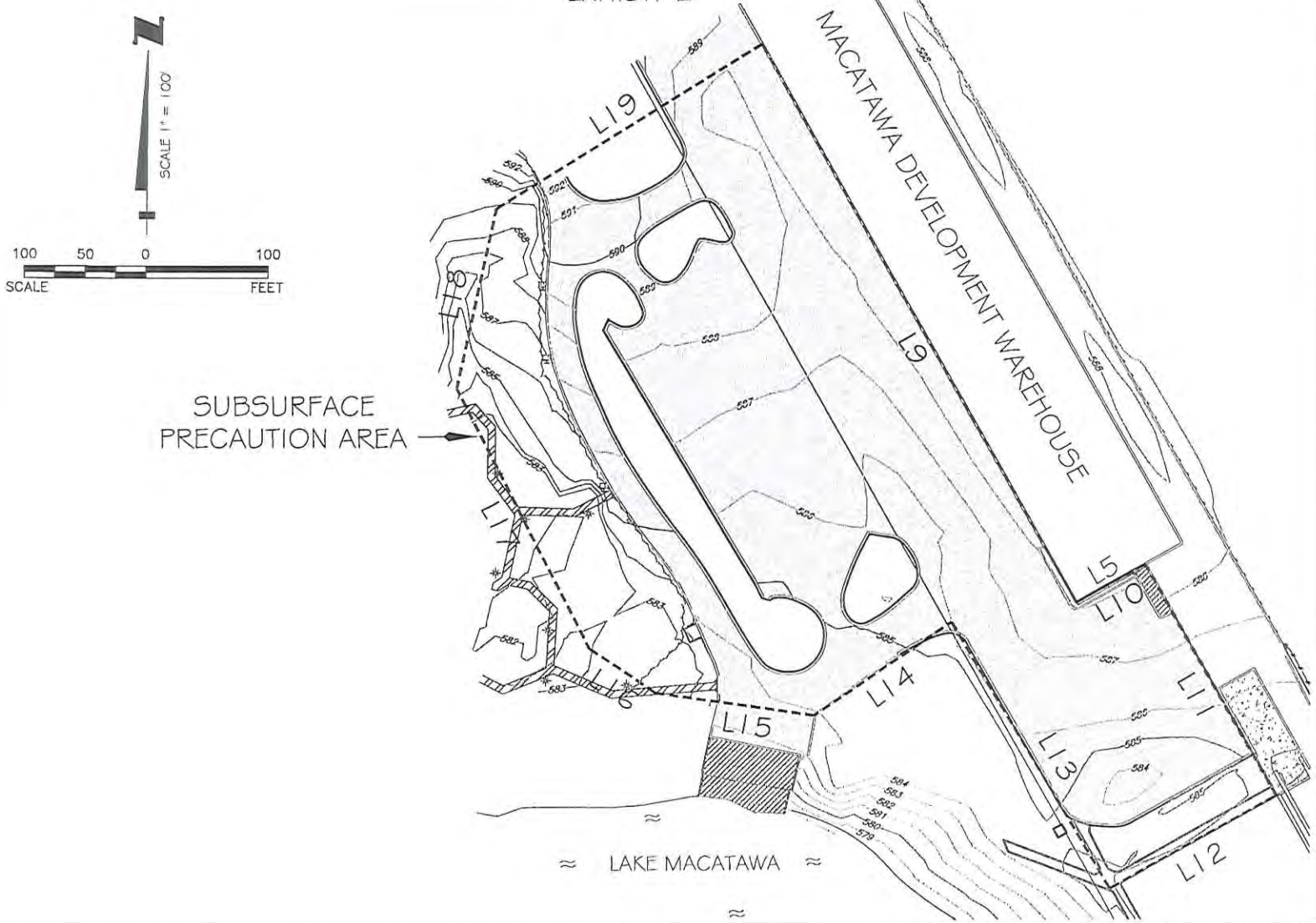
Plat: HOWARD'S ADDITION
Twp. or City: HOLLAND TOWNSHIP
Job No. 16-04-034

DOUGLAS J. LANSKY
PROFESSIONAL SURVEYOR #45500
NOT VALID UNLESS EMBOSSED WITH SEAL

EXHIBIT 2

LEGAL DESCRIPTION/BOUNDARY SURVEY SUBSURFACE PRECAUTION AREA

EXHIBIT 2



Date revised	By
Date revised	By

LEGEND

- LIGHT POLE
- SIGN
- TREE LINE
- CONCRETE
- ASPHALT
- WOOD DECKING
- SUBSURFACE PRECAUTION AREA

(M) MEASURED DIMENSION
(D) DESCRIPTION DIMENSION
(C) CALCULATED DIMENSION

Horiz. Datum: MI ST PL
Vertical Datum: NGVD 29

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05-25-16	2 of 3

Drawn By	Checked By	Surveyed By
MVM	DJL	N/A

Plat: HOWARD'S ADDITION

Twp. or City: HOLLAND TOWNSHIP

Job No.: 16-04-034

DOUGLAS J. LANSKY
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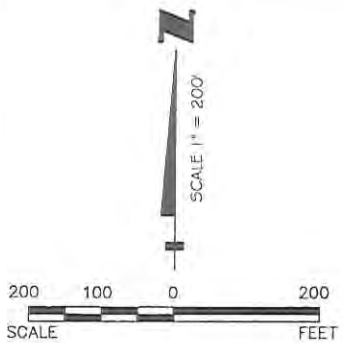
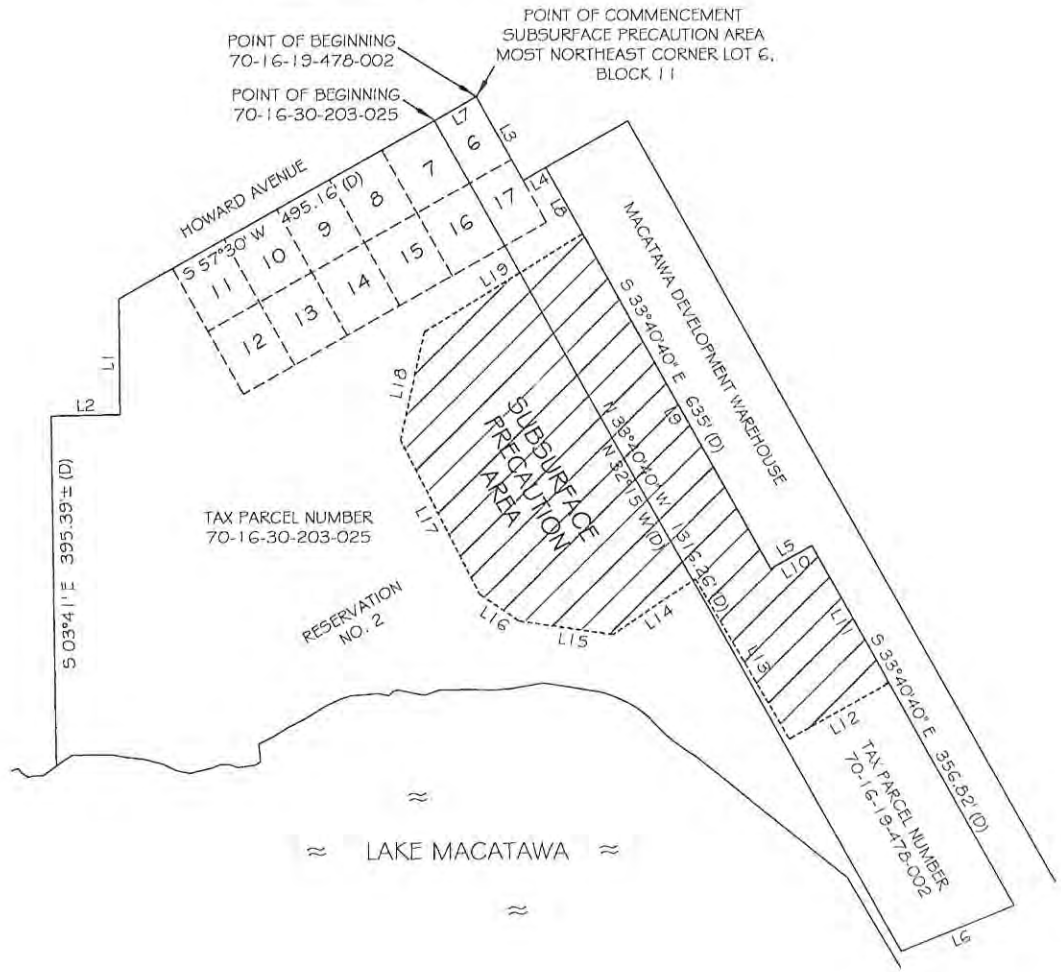
EXHIBIT 2





LINE TABLE

LINE	BEARING	DISTANCE
L1	S 00°44'13" E	159.10'
L2	S 88°42'24" W	94.56'
L3	S 29°16'03" E	132.00'
L4	N 60°25'51" E	35.54'
L5	N 60°25'51" E	65.00'
L6	S 67°45'34" W	167.69'
L7	N 60°25'51" E	66.00'
L8	S 29°19'30" E	104.40'
L9	S 29°19'30" E	530.60'
L10	N 60°25'51" E	65.00'
L11	S 29°19'30" E	218.18'
L12	S 60°55'48" W	157.26'
L13	N 30°30'00" W	256.28'
L14	S 55°41'54" W	136.52'
L15	N 81°37'13" W	131.02'
L16	N 55°39'11" W	65.23'
L17	N 26°50'38" W	240.70'
L18	N 12°10'45" E	151.63'
L19	N 58°15'13" E	255.43'

Date revised	By
Date revised	By

LEGEND

SUBSURFACE PRECAUTION AREA

(M) MEASURED DIMENSION
(D) DESCRIPTION DIMENSION
(C) CALCULATED DIMENSION

Horiz. Datum MI ST PL | Vertical Datum NGVD 29

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EXHIBIT 2

DESCRIPTION - SUBSURFACE PRECAUTION AREA:

A PARCEL OF LAND BEING PART OF RESERVATION NO. 2 OF HOWARD'S ADDITION TO THE CITY OF HOLLAND, HOLLAND TOWNSHIP, OTTAWA COUNTY MICHIGAN, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE MOST NORTHERLY CORNER OF LOT 6, BLOCK 11, HOWARD'S ADDITION TO THE CITY OF HOLLAND, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 1 OF PLATS, PAGE 105, PUBLIC RECORDS OF OTTAWA COUNTY, MICHIGAN; THENCE SOUTH 29 DEGREES 16 MINUTES 03 SECONDS EAST, ALONG THE EASTERLY LINE OF LOTS 6 AND 17, BLOCK 11, HOWARD'S ADDITION, A DISTANCE OF 132.00 FEET; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 35.54 FEET TO THE NORTHWEST CORNER OF MACATAWA DEVELOPMENT WAREHOUSE, AS RECORDED IN LIBER 1342, PAGE 177, PUBLIC RECORDS OF OTTAWA COUNTY, MICHIGAN; THENCE ALONG THE WESTERLY AND SOUTHERLY LINES OF MACATAWA DEVELOPMENT WAREHOUSE FOR THE FOLLOWING FOUR COURSES: THENCE SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST, A DISTANCE OF 104.40 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED AREA; THENCE CONTINUE SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST, A DISTANCE OF 530.60 FEET; THENCE NORTH 60 DEGREES 25 MINUTES 51 SECONDS EAST, A DISTANCE OF 65.00 FEET; THENCE SOUTH 29 DEGREES 19 MINUTES 30 SECONDS EAST, A DISTANCE OF 218.18 FEET; THENCE SOUTH 60 DEGREES 55 MINUTES 48 SECONDS WEST, A DISTANCE OF 157.26 FEET; THENCE NORTH 30 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 256.28 FEET; THENCE SOUTH 55 DEGREES 41 MINUTES 54 SECONDS WEST, A DISTANCE OF 136.52 FEET; THENCE NORTH 81 DEGREES 37 MINUTES 13 SECONDS WEST, A DISTANCE OF 131.02 FEET; THENCE NORTH 55 FEET 39 MINUTES 11 SECONDS WEST, A DISTANCE OF 65.23 FEET; THENCE NORTH 26 DEGREES 50 MINUTES 38 SECONDS WEST, A DISTANCE OF 240.70 FEET; THENCE NORTH 12 DEGREES 10 MINUTES 45 SECONDS EAST, A DISTANCE OF 151.63 FEET; THENCE NORTH 58 DEGREES 15 MINUTES 13 SECONDS EAST, A DISTANCE OF 255.43 FEET TO THE POINT OF BEGINNING. CONTAINING 4.66 ACRES OF LAND, MORE OR LESS.

GENERAL NOTES:

THIS EXHIBIT WAS PREPARED FOR THE LANDS AS DESCRIBED HEREIN. IT IS NOT A CERTIFICATION OF TITLE, ZONING OR FREEDOM OF ENCUMBRANCES.

ALL IMPROVEMENTS, UTILITIES, DITCHES, DRIVES, TWO-TRACKS AND/OR FENCES, IF ANY, WERE NOT LOCATED UNDER THE SCOPE OF THIS EXHIBIT.

BEARINGS ARE BASED ON THE MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83.

THIS EXHIBIT WAS PREPARED WITHOUT THE BENEFIT OF CURRENT TITLE WORK.

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Date revised	By

LEGEND

- LIGHT POLE
- SIGN
- TREE LINE
- CONCRETE
- ASPHALT
- WOOD DECKING
- SUBSURFACE PRECAUTION AREA

(M) MEASURED DIMENSION
(D) DESCRIPTION DIMENSION
(C) CALCULATED DIMENSION

Horiz. Datum MI ST PL | Vertical Datum NGVD 29

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EXHIBIT 3

LIST OF HAZARDOUS SUBSTANCES DETECTED WITHIN THE SUBSURFACE PRECAUTION AREA OF THE PROPERTY

("X" indicates substance was detected on one or more occasion)

Hazardous Subsance	CAS Number	Soil	Ground Water
Arsenic	7440-38-2	X	X
Barium	7440-39-3	-	X
Chromium, Total	7440-47-3	X	-
Copper	7440-50-8	X	-
Mercury (Inorganic)	7439-97-6	X	-
Selenium	7782-49-2	X	-
Silver	7440-22-4	X	X
Nitrogen, Ammonia	7664-41-7	-	X
Aroclor 1242	53469-21-9	X	-
Aroclor 1248	12672-29-6	X	-
Benzophenone	119-61-9	X	-
bis(2-Ethylhexyl)phthalate	117-81-7	-	X
Diphenhydramine	58-73-1	-	X
5,5-Diphenylhydantoin	57-41-0	X	X
Fluoranthene	206-44-0	X	-
Gemfibrozil	25812-30-0	-	X
Phenanthrene	85-01-8	X	-
Pyrene	129-00-0	X	-
Carbon disulfide	75-15-0	X	-
Chlorobenzene	108-90-7	X	X
cis-1,2-Dichloroethylene	156-59-2	-	X
1,2-Dichloroethene	156-60-5	-	X
Vinyl chloride	75-01-4	-	X

Appendix G

Hydraulic Containment System-Operation & Maintenance Manual (Deep Well System)

WARNER LAMBERT COMPANY HOLLAND

GROUNDWATER EXTRACTION & TREATMENT SYSTEM

OPERATION & MAINTENANCE

Version 1.2

Date 8/20/2014

Version 1.3

Date 9/27/2022

VERSION HISTORY

Version #	Implemented By	Revision Date	Reason
1.0	*Jeff Pratt, Parkway Electric* *Don McLeod, Brown and Caldwell*	*Draft*	*Initial version, prior to routine operation*
1.1	*Jeff Pratt, Parkway Electric* *Don McLeod, Brown and Caldwell*	*1-10-2011*	*Released for operation*
1.2	*Joe Warburton, Brown and Caldwell*	*8-20-2014*	*Update from operational experience*
1.3	*Joe Warburton, Brown and Caldwell*	*8-19-2022*	*Update from operational experience*

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LIST OF ACRONYMS & ABBREVIATIONS

CFR	Code of Federal Regulations
EW	Extraction Well
gpm	Flow, gallons per minute
GW	Groundwater
HASP	Health and Safety Plan
HMI	Human Machine Interface
MCC	MotorControlCenter
MOC	Management of Change
O&M	Operation and Maintenance
OJT	On-the-job (training)
OS	Operating System
OSHA	Occupational Safety and Health Administration
P&ID	Process and Instrumentation Drawing
PC	Personal Computer (IBM format)
PLC	Programable Logic Controller
PMP	Performance Monitoring Plan
PPE	Personal Protective Equipment
psi	Pressure, pounds per square inch
UIC	Underground Injection Control
UPS	Uninteruptable Power Supply
V	Volts
VFD	Variable Frequency Drive
VOC	Volatile Organic Compound
WAP	Waste Analysis Plan

1 INTRODUCTION

1.1 PURPOSE

This Operations & Maintenance (O&M) Manual is to be used as a reference in the operation and maintenance of the Groundwater Extraction & Treatment System at the former Warner Lambert Company, LLC facility located at 188 Howard Avenue, Holland Charter Township, Ottawa County, Michigan (MID 006 013 643). This manual contains the necessary O&M and emergency procedures for daily operations and compliance with applicable permits.

This version of the O&M Manual was revised following more than ten years of operating experience. This manual will continue to be updated as necessary and appropriate to reflect physical and procedural changes to the system. Also, it is intended this manual be used as a training tool for new employees and as a guide for qualified substitute operators.

1.2 SAFETY PRECAUTIONS

Only qualified personnel (as defined in Section 4.1) are to operate or service the Groundwater Extraction & Treatment System. Select specific hazards of the system are described in the following sections. Refer to the site-specific Health and Safety Plan for additional information on hazards, personal protective equipment (PPE) requirements, and health and safety policies.

1.2.1 Electrical

High voltage, alternating current electricity is present in the system. The transformer at Building 91 is fed from the utility by a 12,470-volt primary, stepped down to 480 volts to feed the motor control center (MCC) in the building. The MCC feeds the transformers that produce 120/240-volt power for the deep well buildings and lighting panels. In addition, low voltage (24 V) direct current is used for instrumentation.

Arc Flash is a hazard working with the voltages present in the MCC. A qualified electrician must be used for all electrical troubleshooting and service. Proper lock out/tag out procedures are to be implemented for all electrical work.

1.2.2 Chemical

Volatile organic compounds (VOCs), pharmaceutical compounds and perfluoroalkyl and polyfluoroalkyl substances (PFAS) have been detected in the groundwater. Avoid contact with or exposure to the groundwater, vapors from the groundwater, and materials and equipment that have been in contact with the groundwater.

1.2.3 Diesel Fuel

Diesel fuel was historically used in the annulus system at each injection well to prevent freezing and inhibit the rate of annulus tank degradation. Beginning in 2016, the annulus system fluid has been changed out to use inhibited tap water, but diesel may still be present in above ground annulus components as an artifact of historical use and well construction. Caution must be used when working with the diesel fuel to prevent exposure or fire hazards.

1.2.4 Mechanical

Rotating equipment is used in the process, for example, the injection pump. Guards must remain in place to prevent contact with the rotating equipment or entanglement of clothing or other items.

1.2.5 Pressure

The injection pump is capable of pressures exceeding 700 psi. Caution must be used when operating or servicing the injection system to prevent possible injury or damage to equipment. Prior to working with pressurized portions of the equipment, pressures will be reduced to safe levels and the levels verified prior to maintenance operations.

The deep well annulus system is capable of pressures exceeding 1000 psi. Caution must be used when servicing the annulus system to prevent possible injury or damage to equipment. Prior to working with pressurized portions pressures must be reduced to verified safe levels.

1.2.6 Nitrogen

Compressed nitrogen is used at each of the deep injection wells to pressurize the annulus fluid tanks. In the event of a significant nitrogen leak, the breathing zone in the deep well houses may become oxygen deficient. In the event of a suspected nitrogen leak, do not enter the deep well houses without ventilation and testing for oxygen.

1.2.7 Excavation

Any subsurface work, for example repair to underground piping, must address the potential for exposure to chemicals and vapors from impacted soils and groundwater.

1.2.8 Default Conditions

For both safety and compliance purposes, the default condition of the system will be to power down all extraction wells and the injection pump, and to secure all injection valves in a shut-in condition. Compliance and monitoring permit requirements remain in effect under all operating and shut-down conditions.

1.3 REFERENCES

1.3.1 Drawings

The following drawings, including the Process and Instrumentation Diagrams (P&IDs) are provided for reference in reduced 11” by 17” format in Appendix A.

Drawing No. GW-C-01.....Project Site Plan

Drawing No. GW-I-00.....Symbols – P&ID

Drawing No. GW-I-01.....P&ID – Extraction and Treatment

Drawing No. GW-I-02.....P&ID – Injection

Drawing No. GW-E-01.....Electrical Site Plan

Drawing No. GW-E-02.....Electrical One Line Diagram

1.3.2 Performance Monitoring Plan (PMP)

A *Performance Monitoring Plan* is in effect that defines monitoring requirements for the hydraulic remedy. The requirements include periodic measurements of water levels at the piezometer pairs located around the perimeter of the site. Refer to the PMP for specific requirements.

1.3.3 Human Machine Interface (HMI)

The Groundwater Extraction & Treatment System is operated through a personal computer (PC) running a Microsoft Windows® Operating System (OS) via a Human Machine Interface, or HMI. The Operator must be familiar with both the OS and the HMI. The HMI is FactoryTalk View Site Edition by Rockwell Automation. Operating instructions and help for using FactoryTalk View Site Edition can be found in the manual *FactoryTalk View Site Edition User's Guide Volume 1* available on-line at:

http://literature.rockwellautomation.com/idc/groups/literature/documents/um/viewse-um006_-en-e.pdf

2 DEEP INJECTION WELLS

Geologic and engineering information was carefully evaluated before the wells were permitted or deep well operation was authorized. Continuous protection of potentially usable groundwater located above the strata accepting the injectate is accomplished by rigid construction requirements which provide at least four separate layers of protection in addition to requiring annual testing and limiting waste types, disposal volumes and well pressures. Detailed records of wastes disposed and all site operations must be submitted to the EPA regulators and made available to the public. Both continuous and periodic monitoring is used to verify safe operation and permit compliance. Continuous monitoring provides data regarding how the well is operated and will document operational changes that could signal any change in the well condition. Periodic monitoring is used to validate the continuous monitoring, and to more thoroughly investigate well and disposal reservoir condition to verify waste containment.

Continuous monitoring requires electronic measurement of parameters such as flow rate, injection pressure, annulus pressure and differential pressure using the system discussed above. The automated control system compares operating data against limits for the purpose of alarms and automatic shutdown and is designed to generate a record of all operating data for engineering and compliance use. The system also evaluates operating data such as pump speed and temperature that are critical to operation but are not compliance requirements. Physical visits by field operating personnel are required to monitor site conditions, to collect samples, and perform regulatory required inspections of the facility.

Annual mechanical integrity testing (MIT) at each injection well is required by federal regulations. Part I MIT consists of a one (1) hour static annulus pressure test along with radioactive tracer survey logging at each deep well. In addition, a reservoir fall-off test is performed annually at one site deep well. The annulus pressure test measurements are recorded with a calibrated pressure gauge and may be witnessed by an EPA or EGLE inspector. A maximum three percent change in pressure is allowed during the one-hour test. Copies of gauge certifications will be included with the pressure test records and reports.

Part II periodic mechanical integrity testing is completed on a five (5) year cycle or as required by the federal permit. This testing consists of a temperature log to verify the adequacy of the bottom hole cement at the base of the long-string casing and to investigate vertical movement of fluids behind the pipe.

Primary compliance concerns include operating pressure differential and maximum operating pressure. Pressure in the annulus casing must be maintained at 100 psi above injection pressure at all times. In case of a leak, this pressure difference could be used to identify the problem, and any fluid movement would involve annulus fluid being injected into the disposal zone rather than waste fluid contacting the casing.

The maximum injection pressure cannot exceed 1,048 psig. Higher injection pressures could fracture formations used for containment of the fluid. Continuous monitoring data is imperative to provide documentation that such fracturing does not occur.

2.1 PERMITS

Each of the two injection wells is a permitted Class 1 Hazardous waste well subject to the conditions of the individual Underground Injection Control (UIC) permits listed below. The Operator must be familiar with the limitations and response and reporting requirements of those permits. Copies of the current permits shall be maintained in the control room for reference at all times.

Deep Well 4 .....UIC Permit No. MI-139-1W-0004

Deep Well 5 .....UIC Permit No. MI-139-1W-0005

2.1.1 Response

On-site response by field personnel **within 60 minutes**, weather permitting, is necessary to investigate automatic shut-downs due to compliance issues.

2.1.2 Waste Analysis Plan

The Waste Analysis Plan (WAP) which is part of the administrative record for the UIC permits, is provided in Appendix B. The WAP includes quarterly injectate sampling that must be performed in conjunction with operation of the deep injection wells.

3 FUNCTIONAL DESCRIPTION

3.1 PROCESS CONTROL

The P&IDs are presented on Drawings GW-I-01 and GW-I-02, and a single-line electrical drawing is presented on Drawing GW-E-02. The drawings can be found in Appendix A. Although Deep Well 3 was abandoned in September 2021, it may still appear on some drawings.

The groundwater system is controlled by a Programmable Logic Controller (PLC) using a Human Machine Interface (HMI). Both the PLC and the HMI are located in the control room of Building 91. Process instrumentation is shown on the P&IDs and listed by tag number in Table C-1. Process alarms and interlocks are discussed in Section 3.5. Information on the PLC and HMI programs is provided under separate cover in the *Groundwater Extraction & Treatment Instrumentation and Controls Manual.*

Screen shots of the HMI operating screens are presented in Appendix D. The principal operating screens include:

- Home Screen (Overview)
- Extraction Wells
- Filtration and Injection
- Injection Well #3
- Injection Well #4
- Injection Well #5
- Alarm Summary

3.2 EXTRACTION WELL NETWORK

Five groundwater extraction wells, EW-1 through EW-5, are spaced around the southern perimeter of the facility as shown in Drawing GW-C-01. EW-2 and EW-5 were abandoned and replaced by EW-2R and EW-5R in 2014. Each well is equipped with a submersible pump and a calibrated level transmitter to provide groundwater elevation information to the PLC. The level signal is used to avoid excessive drawdown that could damage the pump. To prevent freezing, the extraction well pumps are connected to a force main below ground by a pitless adaptor assembly. The extraction well logs are provided as Appendix E.

Groundwater from each of the extraction wells is conveyed to the treatment system by a dedicated buried force main. Inside the treatment building, each force main is equipped with a flow indicating transmitter and an automatic flow control valve to regulate flow.

3.3 PRETREATMENT SYSTEM

The treatment train consists of a bag filter, a 1000-gallon expansion tank, and a high-pressure injection pump with associated piping. The groundwater flow from each of the individual extraction wells is combined in a common header and flows to the bag filter. A pressure transmitter is installed at the inlet to the bag filter to monitor fouling of the bags.

The bag filter is a duplex unit to allow servicing the bags without interrupting the flow. Typically, nominal 1-micron-rated high-capacity filter bags will be used to protect the injection wells from suspended solids. In accordance with permit monitoring requirements, the pumped water passes a pH probe before being filtered.

The expansion tank serves to accommodate variations in flow between the extraction wells and the injection pump. The tank is equipped with a conservation vent that allows air to exit or enter the tank if the tank pressure is more than 2 psi positive pressure or less than 2 psi negative pressure (vacuum). The tank is also equipped with a water-filled seal leg, or trap, to allow minor fluctuations in level without the venting or intake of air. The seal leg and conservation vent are in place to restrict the flow of fresh air into the tank and thus minimize oxygen in the groundwater stream. Oxygen may cause precipitation of metals and subsequent fouling of the injection wells.

The injection pump is a positive displacement, progressive cavity pump capable of delivering approximately 50 gpm at 700 psi to the injection-well force mains. The pump is driven by a 30-HP motor powered from a constant-torque variable frequency drive (VFD). The flow of groundwater to the injection wells is controlled by varying the speed of the pump.

The injection pump must not be run dry, as severe damage to the internal components will occur. The automated controls are programmed to stop the pump if the water level in the expansion tank is too low and/or if the extraction well flow stops. The injection pump is equipped with a 750-psi pressure-relief valve, immediately at the discharge, to protect piping and equipment from excess pressure. This also prevents the system from ever injecting fluid at or near the maximum pressure of 1,048 psig. The pressure-relief valve is plumbed to discharge onto the ground outdoors to reduce the hazard from a high pressure release.

A sump and sump pump in the treatment building manages any water released during sampling and/or maintenance, as well as any leaks. The floor is sloped to the sump. The sump pump pumps water through a bag filter into the expansion tank based on level in the sump. The sump is fitted with a high-level switch that is interlocked to shutdown the process.

3.4 DEEP WELL INJECTION

Filtered, pressurized water from the expansion tank is routed to the two deep hazardous waste injection wells through buried force mains. The wells direct the water to a permitted rock formation located approximately one mile below the ground surface. Each deep injection well is located in a separate heated well house

At each well house, a flow transmitter, a check valve, and an automatic positive shutoff valve is installed on the injection tubing. The shutoff valve is fitted with limit switches to verify the position of the valve. The well annulus is filled with a dense fluid (potassium carbonate, topped with inhibited water) that must, by permit, be maintained at a pressure of at least 100 psi greater than that of the injection fluid. Each well has pressure transmitters on both the injection tubing and the annulus.

The annular fluid is pressurized using cylinders of compressed nitrogen and a manual pressure regulator. Transmitters monitor the injection tubing and annulus pressure and the level in the annular fluid expansion tank. Injection and building temperature are recorded at each well. Process variables are continuously recorded during both idle and injection periods to satisfy the deep well permit requirements. Interlocks are provided to prevent non-compliant operation of the deep wells.

3.5 ALARMS, INTERLOCKS AND CONTROL SET-POINTS

The system is designed to operate automatically, with minimal "hands-on" operator attention. If system parameters move outside of set values, the auto-dialer will notify the field operations staff of the condition. The operator can verify conditions remotely by login or may be required to physically go to the site. If critical system limits are reached or limits set to avoid permit compliance violations are reached, the system is automatically shut down and the operator is notified. On-site response by field personnel within 60 minutes, weather permitting, is necessary to investigate automatic shut-downs due to compliance issues.

3.5.1 Alarms

Table C-2 is a list of the alarms programmed into the control system along with the alarm set-points. Alarms will trigger all Operator notification by email and begin the autodialer sequence.

The autodialer will call the first of up to four programmed phone numbers. If the first phone call is not answered and the acknowledgement code entered then the system will call the next number and proceed through the list until an acknowledgement is received. Once the alarm is acknowledged the autodialer will end its sequence.

3.5.2 Interlocks

Table C-3 provides descriptions of the interlocks for the system: one for injection in general; one for each extraction well; and one for each of the two injection wells. An interlock shutdown will trigger Operator notification by email and/or mobile phone.

3.5.3 Process Control Set-point Limits

Table C-4 provides a listing of the process variables for which the Operator can input set-points. Included in Table C-4 are the minimum and maximum set-point limits the Operator can input.

The purpose of the minimum and maximum limits is to prevent operation outside of the normal equipment limitations and to prevent erroneous inputs. Attempts to input a value outside this range will not be accepted.

3.6 PROCESS EQUIPMENT

The manufacturer's information for the process components of the groundwater system is provided under separate cover in the *Groundwater Extraction & Treatment Mechanical Manual*.

4 OPERATING INSTRUCTIONS

The groundwater extraction system is designed to maintain a constant flow rate to the injection wells. During normal operations, one or two of the injection wells will be active (enabled) and target flow rates for each extraction well will be selected. The injection flow rate will be controlled by the system to match the total target extraction flow rate. The target flow rates for each of the extraction wells will be determined during startup and adjusted periodically based on groundwater level monitoring.

Prior to starting, the Operator must prepare for operation by completing the pre-startup steps (Section 4.2), enabling the injection wells and extraction wells to be used, and entering the process control set-points:

- Target flow for each extraction well; and
- Expansion Tank (Tank T1) level.

Depending on the level in Tank T1, either the injection pump or the extraction pumps may be started first. With normal operation and tank level, both pumps are started at the same time by starting the injection pump with the extraction wells and injection wells enabled in automatic mode. Extraction or injection wells may be operated independently in manual mode to adjust the tank level. The PLC will adjust the extraction well flow rates to balance extraction and injection flows. The adjustments will be based on the target flow set-points and the level in Tank T1.

When the extraction pumps are running, extracted groundwater will flow to the filters. Parallel filter operation is recommended to improve filtration and extend the life of the filter bags. The groundwater will flow through the filters, where suspended solids are retained on the filter bags, and accumulate in the expansion tank.

One or more injection wells must be enabled to begin injection. The injection pump may be started once Tank T1 level is above the low-level alarm. The injection pump motor is controlled by a constant-torque VFD, and will start slowly and ramp up to speed. Once the discharge pressure exceeds the minimum injection well pressure (180 psig), the block valves on the enabled injection wells will open allowing flow to the injection wells. The PLC will adjust the speed of the injection pump to achieve the set-point flow. The system is fully operational at this point.

The PLC will automatically adjust the flow from the extraction wells to keep the level in Tank T1 at the set-point level. Note that the level control for Tank T1 is based on proportional control only, thus the tank may operate at a level slightly different from the set-point.

4.1 OPERATOR REQUIREMENTS

4.1.1 Training

All Operators must complete the 40-hour Hazwoper training in accordance with OSHA 29 CFR 1910.120 Hazardous waste operations and emergency response and complete annual 8-hour refreshers. If the Operator will be overseeing contractors or other parties working on the site, he/she must also complete the 8-hour Hazwoper supervisor training.

In addition, each Operator must be familiar with the process, interfacing through the HMI system, this O&M Manual, the deep well permits, and all applicable safety procedures.

A minimum of 24 hours of on-the-job training (OJT) at the facility is required for any new Operator. The OJT may be done in the company of an experienced Operator, the Engineer, the O&M consultant, or the deep well consultant.

At least one operating team member must have a Michigan A-2g training certificate to operate hazardous deep injection well systems. Details on certification and testing are available on EGLE's website.

4.1.2 Responsibilities

The project field operations staff responsibilities will include the following:

- Daily operational monitoring;
- Twice-weekly site inspections, checklist completion and required equipment and monitoring system maintenance tasks;
- On-call response to system alarm conditions within 60 minutes of automated pager system call-out (weather permitting); and
- Field representation as necessary for third-party regulatory or owner project inspection and regular site maintenance activities.

Only properly trained personnel must perform operation or maintenance functions or any of the site facilities or system

4.2 OPERATOR PRE-STARTUP

Prior to start-up, the Operator must be familiar with the process, the HMI system, this O&M Manual, the deep well permits, applicable data collection and inspection forms and all applicable safety procedures.

1. Ensure the building sump is not at high-level.
2. Be sure that filter bags are installed correctly in the duplex bag filter and sump pump filter.
3. Inspect all equipment for leaks and serviceability.
4. Be sure the seal leg, or trap, on Tank T1, is filled with water.
5. Check that the annulus pressure (nitrogen pressure) at each deep injection well to be enabled is greater than the low alarm pressure setting and is a minimum of 150 psi above intended operating injection pressure.
6. Check that the annular fluid level at each deep injection well to be enabled is within the range of normal operating limits.
7. Check that the pH probe is in the normal (not maintenance) mode on the PLC. Calibrate if needed. For calibration procedures refer to the pH meter documentation in the Controls & Instrumentation manual.
8. Depress the Red Emergency Stop button located on the outside of the PLC Cabinet door, wait 5 seconds, and pull out. Then press the Green power on button, then the Yellow Reset button. This will clear all old alarms and ensure that no equipment is energized.

4.3 START-UP, SHUTDOWN, AND POST-SHUTDOWN PROCEDURES

To start-up the system, first complete the pre-start actions, Section 4.2, and then proceed as follows:

1. On the HMI, check that all alarms and interlocks are cleared. If not, take appropriate action to clear them. Acknowledge any cleared alarms. The alarm banner at the bottom of the HMI screen displays the most recent alarm conditions, and allows the operator to acknowledge individual alarms by highlighting the specific alarm and then pressing the acknowledge button (check mark). The alarm summary displays current alarms, and unacknowledged out of alarm conditions. This screen can be displayed by pressing the alarm summary button on the alarm banner. The yellow reset button on the control panel will acknowledge all alarms at once.
2. In Building 91:
   - close all drains and vents and open the block valves at the extraction well header for the extraction wells that will be used.
   - close all drains and vents and open the block valves at the bag filter.
   - open the 3-inch seal leg bypass valve, located above the seal leg, to allow the tank pressure to equalize.
   - close the drain and vent valve and open the 6-inch block valve at the injection pump suction.
   - open the block valves in the injection piping. One header feeds both Deep Wells 4 and 5.
3. In each Deep Well building to be used, close all drain valves and open all block valves.
4. At the MCC, energize the starters for all extraction wells that will be used and for the injection pump.
5. On the HMI Extraction Wells screen, enter the desired flow set point for each of the extraction wells to be run. The total of all extraction well set points that are enabled and in auto mode will make up the injection pump flow setpoint.
6. On the HMI Filter and Injection screen, enter the desired level set point for Tank T1.
7. On the HMI screen for each Injection (Deep) well to be used, **Enable** the well.
8. On the HMI Extraction Well screen, **Enable** and set to **Auto** the extraction wells.
9. When the level in Tank T1 is near the set point, open the bleed valve at the pressure gauge on the suction of injection pump P1 and bleed any air until water just starts to come out. Close the bleed valve.
10. On the HMI Filter and Injection screen, **Enable** and set to **Auto** and start injection pump P1.
11. Monitor pressures and flows throughout the system to ensure they are normal and controlled.
12. Inspect all piping and equipment in Building 91 and all Deep Well Buildings for leaks and proper valve arrangement. Check also any deep wells that are not enabled to ensure they remain isolated.
13. When the level in Tank T1 is stable, close the 3-inch block valve above the seal leg to isolate the tank from the atmosphere.

14. Continue to monitor all pressures, flows, equipment, and piping until the process is running smoothly.

4.4 NORMAL OPERATIONS

The Groundwater Extraction & Treatment system is automated to operate unattended, notifying the Operator in the event of an alarm condition, interlock shutdown, power failure, or failure of the HMI or PC.

Normal operation consists of monitoring the process routinely, performing Operator service (Section 4.6) as needed, and conducting routine inspections (Section 5.0). Extraction and injection flow set points may be adjusted as required in response to well conditions and groundwater elevations.

4.4.1 Remote Monitoring

The HMI is arranged to allow remote access for system monitoring. Only the following actions can be performed by the Operator from a remote PC:

1. View all HMI Operating Screens and alarms.
2. View database software, create excel spreadsheets displaying database information.

Startup of any equipment is not permitted from a remote location. In the event of an interlock shutdown, the Yellow Reset button located on the outside of the PLC Cabinet door must be pressed before the interlock can be cleared and operations resumed.

Remote monitoring is limited to two sessions at any given time. When done with a remote session, disconnect from the site computer or the connection will be left open and other users will not be able to establish remote connections. **Do not shutdown or logoff the site computer when working remotely or onsite.**

4.5 EMERGENCY OPERATIONS

The process is designed to shutdown in a safe manner in response to an emergency.

4.5.1 Emergency Shutdown

In the event it is necessary to shutdown the process in an emergency – severe weather, safety hazard, etc., shutdown can be accomplished quickly using either of the following methods:

- Depress the Red Emergency Stop button located on the outside of the PLC Cabinet door
- Stop P1 using the HMI
- Disable the injection pump and the five extraction pumps using the HMI.

4.5.2 Power Failure

In the event of a power failure, the process equipment will be de-energized and the pumps will stop pumping. An uninterruptable power supply (UPS) in the control room will continue to provide power to the PLC, HMI, the deep well instrumentation, and the backup autodialer for up to approximately one hour. Deep well data collection will continue throughout this period. Any equipment powered by 480V 3-phase will not operate during a power failure and will need to be started once power is restored.

4.6 OPERATOR SERVICE REQUIREMENTS

The Operator must perform the following services when needed.

4.6.1 Change Filter Bag(s)

The bag filters must be changed periodically (i.e., every 4-6 weeks or following EW cleanings) or when the inlet pressure reaches approximately 5 psi to prevent possible rupture of the bags or restriction in flow. The bags can be changed while the process is in operation by following the procedure below.

1. Close the inlet and outlet valve to the filter to be changed.
2. Drain the filter housing to the sump.
3. Carefully open the vent valve at the top of the filter.
4. Remove the cover and dispose of the used filter bag. Place the used filter bag in designated receptacle.
5. Properly install and seat the new filter bag.
6. Close the drain.
7. Fill the housing with clean water.
8. Close the filter housing and hand tighten.
9. Close the vent.
10. Slowly open the inlet and outlet valves.
11. If needed, repeat this procedure for the other bag.

With experience, it is expected that the Operator will be able to judge when the bags should be changed to minimize alarm notifications due to high filter inlet pressure.

4.6.2 Clean and Calibrate the pH Probe

1. Clean and calibrate a spare pH probe per the manufacturer's procedures.
2. On the HMI, place the pH controller in calibration mode.
3. Shutdown the extraction wells or stop the injection pump.
4. Close the valves into the duplex bag filter.
5. Close the valve to pump tank.
6. Remove the pH probe and place in Ph calibration solution.
7. Calibrate the probe and replace.
8. Open the valves into the duplex bag filter and pump tank.
9. Restart the extraction wells or start the injection pump.
10. On the HMI, place the pH controller back in Process mode.

4.6.3 Change Nitrogen Cylinders at a Deep Well

1. Close the nitrogen isolation valve to the annulus level tank.
2. Close the cylinder valve on the cylinder to be replaced.
3. Replace the cylinder.
4. Open the cylinder valve on the new cylinder.
5. Check for leaks.

6. Open the nitrogen isolation valve to the annulus level tank.

4.6.4 Add Fluid to an Annulus Level Tank

1. Close the nitrogen isolation valve to the annulus level tank.
2. Close valves to the annulus to isolate the well.
3. Carefully vent the pressure from the annulus tank.
4. Carefully open the fuel addition port to be certain there is no pressure in the tank.
5. Add inhibited water through the addition port to the desired level.
6. Record the quantity of fluid added.
7. Close the fuel addition port and close the vent.
8. Open the nitrogen isolation valve to the annulus level tank.
9. Monitor pressure until annulus tank reaches the desired (annulus) pressure.
10. Slowly open the block valves to the annulus.
11. Confirm all valves are positioned properly.

5 OPERATOR DUTIES

Routine Operator duties include, but are not limited to, the following, listed by suggested frequency.

5.1 ALARM RESPONSE

On-site response by field personnel **within 60 minutes**, weather permitting, is necessary to investigate automatic shut-downs due to compliance issues.

5.2 DAILY, OR AS NEEDED

1. Log in to automated system controller to verify operating conditions. Observe pumping conditions. Report any irregular circumstances to project operations manager. Record computer log-in and observations in remote terminal log book.
2. If automated system is not functional and the well is shut-in, record observed annulus and injection pressure, annulus fluid level and total volume injected in the logbook.
3. Verify checklist requirements for compliance and maintenance schedule. For example, pH and specific gravity measurements of the injectate are required on a periodic basis.

5.3 ON-SITE INSPECTION (FREQUENCY BASED ON OPERATIONAL CONDITIONS)

1. Visually inspect wellheads, pump, and storage tank for leaks. Inspect for vibration. Check mechanical gauge values for consistency with electronic readings.
2. Change the deep well circle charts (weekly)
3. Manually record observations including injection pressure, annulus pressure, daily-injected volume, cumulative injected volume.
4. Check injection pump speed is consistent with the flow and pressure of the injectate.
5. Check annulus fluid tank levels. Add fluid as appropriate per procedure provided in Section 4.6.4.
6. Check annulus system nitrogen supply. If nitrogen cylinder pressure is below 1000 psig for any well, replace the cylinder per the procedure provided in Section 4.6.3. Track cylinder inventory and usage, and order replacements as needed.
7. Visually confirm all instruments, transducers, etc. are functioning properly.
8. Inspect filters and replace filter bags as required, (see Section 4.6.1 for filter bag procedure).
9. Complete operations log located in Bldg. 91 control room.

5.4 MONTHLY

1. Prepare, review and submit the monthly report as required by existing UIC permit.
2. Check the P1 gearbox oil level.

5.5 QUARTERLY

Conduct necessary fluid sampling per the WAP, Appendix B. Prepare, review and submit quarterly monitoring report per the PMP. The 4th quarter (annual) PMP report includes data for the previous calendar year.

5.6 ANNUAL

Schedule and perform preventive maintenance activities, Section 7.1.

6 MANAGEMENT OF CHANGE

To ensure the integrity of the Groundwater Extraction & Treatment System, all modifications to controls, alarms, interlocks, equipment, and procedures other than "replacement in kind" must be managed through this management of change (MOC) procedure.

These changes need to be properly managed by identifying and reviewing them prior to implementation of the change. For example, the operating procedures contain the operating parameters (pressure limits, temperature ranges, flow rates, etc.) that allow for safe operation in compliance with the deep well permits. While the Operator must have the flexibility to maintain safe operation within the established parameters, any operation outside of these parameters requires review and written approval.

Management of change covers changes in process technology, changes to equipment and instrumentation. Changes in process technology can result from changes in rates, materials, experimentation, equipment unavailability, new equipment, and changes in operating conditions to improve efficiency or reliability. Equipment changes include, among others, change in materials of construction, equipment specifications, piping re-arrangements, experimental equipment, computer program revisions and changes in alarms, allowable set point ranges, and interlocks.

It is important that a time limit for temporary changes be established and monitored since, without control, these changes may tend to become permanent. Temporary changes are subject to the management of change provisions. In addition, the management of change procedure is used to ensure that the equipment and procedures are returned to their original or designed conditions at the end of the temporary change.

6.1 PROCEDURE

Prior to implementing a change, the requestor must obtain authorization using an MOC form. An example MOC form is provided in Appendix F. The request must include:

- a description and the purpose of the change;
- the technical basis for the change;
- safety and health considerations;
- documentation of changes for the operating procedures, maintenance procedures, inspection and testing, P&IDS, electrical classification, etc.;
- training and communication requirements;
- duration, if a temporary change;
- review and authorization to make the change; and
- authorization to startup the change.

Copies of all completed MOCs must be kept in an accessible location to ensure that design changes are available to operating personnel and other personnel for use when Site documentation is updated.

7 MAINTENANCE

7.1 PREVENTIVE MAINTENANCE SCHEDULE

Recommended maintenance procedures and frequencies are provided in the manufacturer's literature included in the *Groundwater Extraction & Treatment Mechanical Manual* and summarized below.

Equipment	Activity	Frequency
Deep Wells	Mechanical Integrity Test	Annual
Deep Wells	Alarm, Regulatory Inspection and Automatic Shutdown Test	Annual (30 day advance written notice to regulators required)
PRV206 Relief Valve	Certification	Annual
Annulus Tank Relief Valve (3)	Certification	Annual
PRV207 Conservation Vent	Inspect and clean	Annual
P1 Injection Pump	Replace drive coupling	As needed
P1 Injection Pump	Change reducer lubricant	Annual
Extraction Wells	Inspection (per the PMP)	Annual
Annulus Fluid Tanks (3)	Thickness Testing	Every 5 years

7.2 TROUBLESHOOTING GUIDE

Appendix G provides a troubleshooting guide with a listing of anticipated abnormal conditions, possible causes, and suggested corrective actions.

7.3 ALARM & INTERLOCK TESTING

Annually, critical alarms and interlocks will be tested and documented using the form provided in Appendix G. The critical alarms and interlocks are those relating to permit compliance and include, for each deep well:

1. Low differential pressure;
2. Low level, annulus fluid; and
3. Low pressure, annulus.

7.4 WIRING AND CONTROL DIAGRAMS

Wiring and control diagrams are provided in the *Groundwater Extraction & Treatment Instrumentation and Controls Manual.*

7.5 MAINTENANCE AND REPAIR PROCEDURES

Refer to the Manufacturer's literature provided in the vendor manuals.

7.6 SPARE PARTS

Recommended spare parts and vendor contact information is provided in the vendor manuals in the control room. Critical spare parts include:

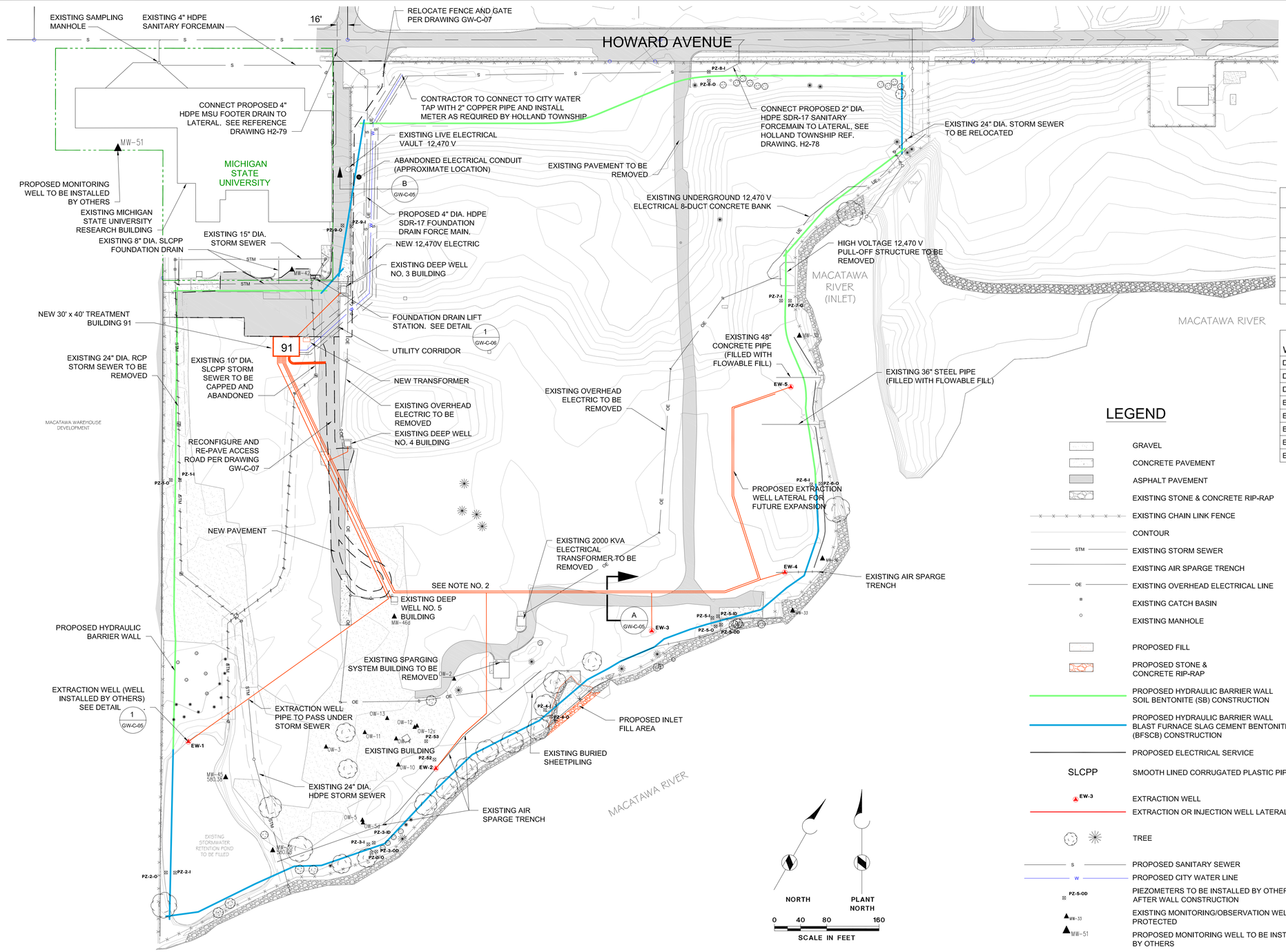
1. Extraction Pump – (Grundfos – 16S05-5) One complete assembly
2. Injection Pump and Motor
3. Extraction well flow control valve
4. pH Probe Assembly
5. Flow Meters – one each for extraction and injection
6. Deep well pressure transducer
7. Sump Pump – One complete assembly with float switch
8. Bag Filters
9. Garlock FlexSeal RWI gaskets with flexible graphite and 304 stainless steel rings.
    a. Class 600 flange gaskets – 1” and 2”
    b. Class 900 flange gasket – 3”
10. Body gaskets – ApolloSeries86B-400 class 600 three-piece ball valves – 1” and 2”

Tables:

- Table C-1. PLC 100 Interlocks
- Table C-2 PLC Alarm Setpoints
- Table C-3 Software Interlocks
- Table C-4 PLC Process Setpoint Limits

APPENDIX A: Process Drawings

Drawing No. GW-C-01.....Project Site Plan
Drawing No. GW-I-00.....Symbols – P&ID
Drawing No. GW-I-01.....P&ID – Extraction and Treatment
Drawing No. GW-I-02.....P&ID – Injection
Drawing No. GW-E-01.....Electrical Site Plan
Drawing No. GW-E-02.....Electrical One Line Diagram



EXTRACTION WELL LOCATION

WELL	SURFACE ELEVATION	MICHIGAN STATE PLANE COORDINATES		PLANT COORDINATE SYSTEM	
		NORTHING	EASTING	NORTHING	EASTING
EW-1	585.0	477286.73	12653766.65	4033.66	4294.05
EW-2	585.0	477437.87	12654116.17	3992.63	4672.63
EW-3	585.2	477783.81	12654299.57	4203.02	5002.86
EW-4	584.4	477962.10	12654432.46	4292.51	5206.42
EW-5	585.0	478213.31	12654300.46	4576.14	5215.57

WELL	APPROXIMATE DISTANCE FROM BUILDING 91 (FT)
DW3	120
DW4	217
DW5	406
EW1	785
EW2	840
EW3	852
EW4	1002
EW5	1320

LEGEND

- GRAVEL
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- EXISTING STONE & CONCRETE RIP-RAP
- EXISTING CHAIN LINK FENCE
- CONTOUR
- STM — EXISTING STORM SEWER
- EXISTING AIR SPARGE TRENCH
- OE — EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- PROPOSED FILL
- PROPOSED STONE & CONCRETE RIP-RAP
- PROPOSED HYDRAULIC BARRIER WALL SOIL BENTONITE (SB) CONSTRUCTION
- PROPOSED HYDRAULIC BARRIER WALL BLAST FURNACE SLAG CEMENT BENTONITE (BFSCB) CONSTRUCTION
- PROPOSED ELECTRICAL SERVICE
- SLCPP — SMOOTH LINED CORRUGATED PLASTIC PIPE
- EW-3 — EXTRACTION WELL
- EXTRACTION OR INJECTION WELL LATERAL
- TREE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED CITY WATER LINE
- PZ-5-OD — PIEZOMETERS TO BE INSTALLED BY OTHERS AFTER WALL CONSTRUCTION
- MW-33 — EXISTING MONITORING/OBSERVATION WELL TO BE PROTECTED
- MW-51 — PROPOSED MONITORING WELL TO BE INSTALLED BY OTHERS

NOTES

1. FIELD SURVEY PERFORMED BY HOLLAND ENGINEERING ON MARCH 26, 2009 WAS BASED ON NAD 83(1994) MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. CONTOUR ELEVATION LINES BASED ON NGVD '29.
2. EXTRACTION WELL LATERALS SHOWN SEPARATELY AND AT AN EXAGERATED OFFSET FOR DISPLAY PURPOSES ONLY.

BROWN AND CALDWELL
COLUMBUS, OHIO

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: DM, BK
DRAWN: BK
CHECKED: DM
CHECKED: RI
APPROVED:

EXTERNAL REFERENCES
alignment_5.dwg
STD22X34_no_grid.dwg
existing utilities.dwg

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.
	0	PRE- FINAL	DM	08/28/09	RI
	1	FINAL DESIGN	DM	10/16/09	RI
	2	ISSUED FOR BID	DM	11/13/09	RI
	3	ISSUED FOR CONSTRUCTION	DM	03/08/10	RI

ISSUED FOR CONSTRUCTION

GROUNDWATER EXTRACTION&TREATMENT
PROJECT SITE PLAN
WARNER-LAMBERT COMPANY, LLC
HOLLAND, MI

FILENAME C-01 SITE LAYOUT
BC PROJECT NUMBER 137875
CLIENT PROJECT NUMBER 148-N-1846717
DRAWING NUMBER GW-C-01
SHEET NUMBER 2 OF 23

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7/31/09

FUNCTIONAL IDENTIFICATION

MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A ANALYSIS		ALARM		
B BURNER, COMBUSTION				
C CONDUCTIVITY			CONTROL	CLOSE/CLOSED
D DENSITY, SPECIFIC GRAVITY	DIFFERENTIAL			
E VOLTAGE		PRIMARY ELEMENT		
F FLOW RATE	RATIO			FORWARD, FAULT
G FIRE, SMOKE		GLASS		
H HAND				HIGH
I CURRENT (ELEC)		INDICATE		
J POWER (ELEC)	SCAN			
K TIME, TIME SCHEDULE	TIME, RATE OF CHANGE		CONTROL STATION	
L LEVEL		LIGHT	LIMIT	LOW
M MOISTURE, HUMIDITY	MOMENTARY			MIDDLE, INTERMEDIATE
N EQUIPMENT STATUS				
O UNCLASSIFIED		ORIFICE		OPEN
P PRESSURE, VACUUM		POINT, (TEST) CONNECTION		
Q QUANTITY	INTEGRATE, TOTALIZE			
R RADIATION		RECORD	SWITCH	REVERSE
S SPEED, FREQUENCY	SAFETY		TRANSMIT	
T TEMPERATURE			MULTIFUNCTION	
U MULTIVARIABLE		MULTIFUNCTION	VALVE, DAMPER, LOUVER	MULTIFUNCTION
V VIBRATION				
W WEIGHT, FORCE, TORQUE		WELL		
X UNCLASSIFIED	X AXIS	SECONDARY ELEMENT		
Y EVENT, STATE, OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT	

INSTRUMENT LOOP IDENTIFICATION

P - 1 234

- LOOP NUMBER
- PLANT AREA
- MEASURED OR INITIATING VARIABLE LETTER; SEE TABLE THIS DRAWING

INSTRUMENT TAG NUMBERS

P D IT - 1 234 A

- SUFFIX - USED ONLY WHEN TWO OR MORE INSTRUMENTS WOULD OTHERWISE HAVE THE SAME TAG NUMBER
- LOOP NUMBER
- PLANT AREA
- SUCCEEDING LETTERS; READOUT OR PASSIVE FUNCTION AND/OR OUTPUT FUNCTION WITH MODIFIER WHEN REQUIRED
- MODIFIER LETTER, WHEN REQUIRED
- MEASURED OR INITIATING VARIABLE LETTER

FUNCTIONAL IDENTIFICATION SEE TABLE THIS DRAWING

EXAMPLE: PDIT 1234 A

INSTRUMENT AND FUNCTION SYMBOLS

- XXX XXXX — FIELD MOUNTED INSTRUMENT
- XXX XXXX — FACE MOUNTED INSTRUMENT ON MAIN PANEL, OPERATOR ACCESSIBLE
- XXX XXXX — INSTRUMENT MOUNTED ON OR IN MAIN PANEL, OPERATOR INACCESSIBLE
- XXX XXXX — FACE MOUNTED INSTRUMENT ON FIELD PANEL, OPERATOR ACCESSIBLE
- XXX XXXX — INSTRUMENT MOUNTED ON OR IN FIELD PANEL, OPERATOR INACCESSIBLE
- XXX XXXX — SCADA SYSTEM DISPLAY OR FUNCTION, OPERATOR ACCESSIBLE
- XXX XXXX — SCADA SYSTEM DISPLAY OR FUNCTION, OPERATOR INACCESSIBLE
- X — INTERLOCKING OR SEQUENTIAL CONTROL FUNCTION
- X — PROGRAMMABLE LOGIC CONTROLLER DISPLAY OR CONTROL FUNCTION

INSTRUMENT SIGNAL SYMBOLS

- ELECTRONIC SIGNAL
- ELECTRIC POWER
- ES 120 Vac J — ELECTRIC POWER SUPPLY
- MECHANICAL LINK
- SOFTWARE OR DATA LINK
- WS — WATER SUPPLY
- CAPILLARY TUBE OR FILLED SYSTEM
- THERMO COUPLE

PROCESS LINES

- PRIMARY PROCESS FLOW
- SECONDARY PROCESS FLOW
- TRIM AND UTILITY PROCESS FLOW
- EXISTING PRIMARY PROCESS FLOW
- EXISTING SECONDARY PROCESS FLOW
- EXISTING TRIM AND UTILITY PROCESS FLOW
- FUTURE PRIMARY PROCESS FLOW
- FUTURE SECONDARY PROCESS FLOW
- FUTURE TRIM AND UTILITY PROCESS FLOW
- EXISTING EQUIPMENT
- VENDOR PACKAGE BOUNDARY
- ENCLOSURE BOUNDARY

SWITCHING FUNCTIONS

ES	EMERGENCY STOP
HOA	HAND-OFF-AUTO
LF	LEAD-FOLLOW
LR	LOCAL-REMOTE
OAC	OPEN-AUTO-CLOSE
OC	OPEN-CLOSE
OO	ON-OFF
OOR	ON-OFF-REMOTE
OSC	OPEN-STOP-CLOSE
SS	START-STOP

TYPICAL INSTRUMENT IDENTIFICATION

OUTPUT — FUNCTIONAL IDENTIFICATION
OPERATING FUNCTION
ABC 1234 XX A — BASIC INSTRUMENT
SUFFIX
TAG NUMBER
INPUT

VALVE AND ACTUATOR SYMBOLS

- GATE VALVE (OPENED CLOSED)
- PLUG VALVE
- BALL VALVE
- GLOBE VALVE (G G)
- NEEDLE VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- DOUBLE LEAF CHECK VALVE
- BALL CHECK VALVE
- DIAPHRAGM VALVE
- KNIFE GATE VALVE (OPENED CLOSED)
- NEEDLE VALVE
- FLOAT VALVE
- BACKFLOW PREVENTER
- GAGE OR ROOT VALVE
- MOV 3-WAY GATE VALVE (M)
- MOV 3-WAY PLUG VALVE (M)
- THREE WAY VALVE
- STOP AND WASTE VALVE (D)
- ANGLE VALVE
- THREE WAY VALVE (W/TYPICAL FAIL POSITION) (F.O.)
- SOLENOID OPERATED VALVE (SOV) (S)
- MOTOR OPERATED VALVE (MOV) (M)
- FLAP GATE
- TELESCOPIC VALVE
- AIR RELIEF VALVE
- PRESSURE REDUCING OR PRESSURE REDUCING AND RELIEF VALVE
- PRESSURE SUSTAINING VALVE
- PRESSURE AND VACUUM RELIEF VALVE
- VACUUM RELIEF VALVE
- PRESSURE RELIEF VALVE
- AIR OPERATED DIAPHRAGM VALVE
- MUD VALVE
- PINCH VALVE SHOWN WITH HAND ACTUATOR
- UNION
- ORIFICE PLATE

N.O. NORMALLY OPENED
N.C. NORMALLY CLOSED
F.O. FAIL OPEN
F.C. FAIL CLOSED

PROCESS DEVICE SYMBOLS

- STRAINER - STANDARD OR BASKET
- HOSE BIB (HB)
- FLEX COUPLING
- DRAIN (D)
- HEAT TRACE CABLE (T ES)
- SEPARATOR
- SIGHT GLASS
- FILTER
- VENT (ATM)
- CAP OR PLUG
- INJECTOR
- BLIND FLANGE
- QUICK DISCONNECT COUPLING
- ROTAMETER
- HOSE / COUPLING CONNECTION
- FLEXIBLE CONNECTION/ EXPANSION JOINT
- THERMOWELL
- TANK (OR)
- ISOLATING DIAPHRAM
- PRESSURE REGULATOR (PR PR)
- INSTRUMENT BLOCK AND BLEED MANIFOLD
- REDUCER
- TOL THREAD-O-LET WOL WELD-O-LET

INPUT/OUTPUT SYMBOLS

- ANALOG INPUT
- PULSE INPUT
- DISCRETE INPUT
- ANALOG OUTPUT
- PULSE OUTPUT
- DISCRETE OUTPUT

MECHANICAL

- MOTOR (M)
- VARIABLE FREQUENCY DRIVE MOTOR (M)
- PUMP, CENTRIFUGAL
- PUMP, POSITIVE DISPLACEMENT
- PUMP, SUMP
- BAG OR CARTRIDGE FILTER
- TANK, NON-PRESSURE TYPE

BROWN AND CALDWELL
COLUMBUS, OHIO

SUBMITTED: _____ PROJECT MANAGER DATE: _____
APPROVED: _____ BROWN AND CALDWELL DATE: _____

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: DM
DRAWN: ADH
CHECKED:
CHECKED:
APPROVED:

EXTERNAL REFERENCES
STD22X34_no_grid.dwg

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.
	0	PRE- FINAL	DM	08/28/09	RI
	1	FINAL DESIGN	DM	10/16/09	RI
	2	ISSUED FOR BID	DM	11/13/09	RI
	3	ISSUED FOR CONSTRUCTION	DM	03/08/10	RI

ISSUED FOR CONSTRUCTION

GROUNDWATER EXTRACTION & TREATMENT
SYMBOLS - P&ID

WARNER-LAMBERT COMPANY, LLC - HOLLAND, MI

FILENAME 137875-I-0
BC PROJECT NUMBER 137875
CLIENT PROJECT NUMBER 148-N-1846717
DRAWING NUMBER GW-I-00
SHEET NUMBER 11 OF 23

Mar 04, 2010 - 4:38pm
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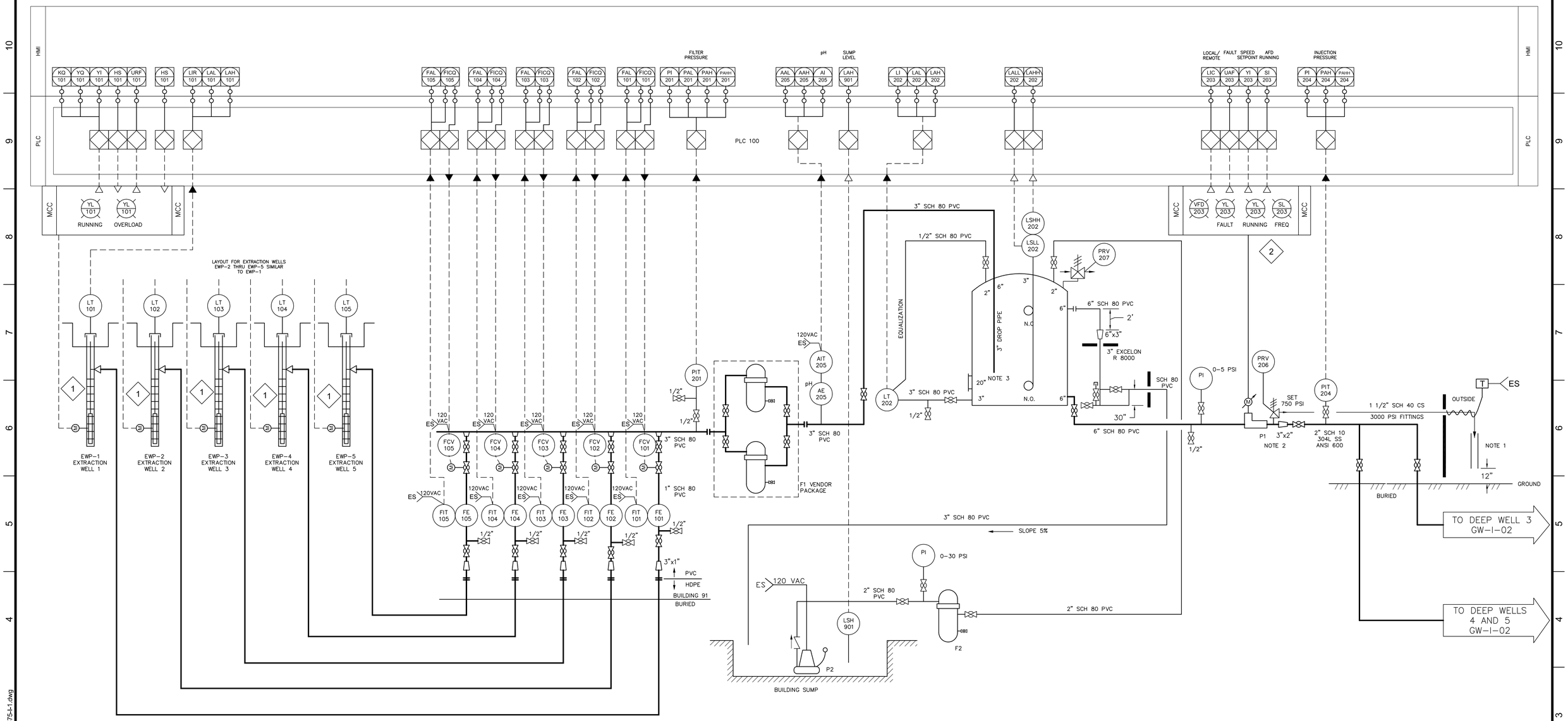

EQUIPMENT NO.	EWP-1	EWP-2	EWP-3	EWP-4	EWP-5	T1	P1	P2	F1	F2
NAME	EXTRACTION WELL PUMP	EXTRACTION WELL PUMP	EXTRACTION WELL PUMP	EXTRACTION WELL PUMP	EXTRACTION WELL PUMP	PUMP TANK	INJECTION PUMP	SUMP PUMP	DUPLEX BAG FILTER	BAG FILTER
MANUFACTURER	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	BELDING	NETZSCH	BERKELEY	ROSEDALE	ROSEDALE
MODEL NO.	16S05-5	16S05-5	16S05-5	16S05-5	16S05-5	C-CFV	NM045SY08S48V	EH750 (NOTE 4)	D8303F1150SESPB	8302F2150SESPB
MATERIAL	SS	SS	SS	SS	SS	FRP	304 SS/BUNA N	CAST IRON	304 SS/EPDM	304 SS/EPMD
SIZE	4" DIA., 1.25"NPT	4" DIA., 1.25"NPT	4" DIA., 1.25"NPT	4" DIA., 1.25"NPT	4" DIA., 1.25"NPT	60" DIA. X 84" SS	6" x 3" NOTE 2	2" NPT	2" 150#	2" 150#
CAPACITY	16 GPM	16 GPM	16 GPM	16 GPM	16 GPM	1000 GAL	50 GPM	20 GPM	30" BAGS	30" BAG
TEMP/PRESS	140' TDH	140' TDH	140' TDH	140' TDH	140' TDH	± 3 PSI	700 PSI	55' TDH	150 PSI	150 PSI
HP/V/RPM	0.5/480/3450	0.5/480/3450	0.5/480/3450	0.5/480/3450	0.5/480/3450		30/480/1800	0.5/120/3450		
WEIGHT	27	27	27	27	27	1000	1200	62	300	100

NOTES:

1. INSTALL 4" SCH 40 CS AS SHIELD TO 12" ABOVE GRADE. PAINT TO MATCH.
2. PUMP P1 HAS 6" CLASS 125 INLET FLANGE; 3" CLASS 900 OUTLET FLANGE.
3. INLET DROP PIPE TO HAVE 1/2± INCH ANTI-SYPHON HOLE
4. WITH FLOAT SWITCH WITH PIGGY BACK PLUG.
5. REFER TO SECTION 409400 FOR INTERLOCK DESCRIPTIONS.

BROWN AND CALDWELL
COLUMBUS, OHIO

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: DM
DRAWN: RNH
CHECKED: DM
CHECKED:
APPROVED:

EXTERNAL REFERENCES
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REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.
	0	PRE- FINAL	DM	08/28/09	RI
	1	FINAL DESIGN	DM	10/16/09	RI
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	3	ISSUED FOR CONSTRUCTION	DM	03/08/10	RI

ISSUED FOR CONSTRUCTION

GROUNDWATER EXTRACTION & TREATMENT
P&ID - EXTRACTION AND TREATMENT

WARNER-LAMBERT COMPANY, LLC - HOLLAND, MI

FILENAME 137875-I-1
BC PROJECT NUMBER 137875
CLIENT PROJECT NUMBER 148-N-1846717
DRAWING NUMBER GW-I-01
SHEET NUMBER 12 OF 23

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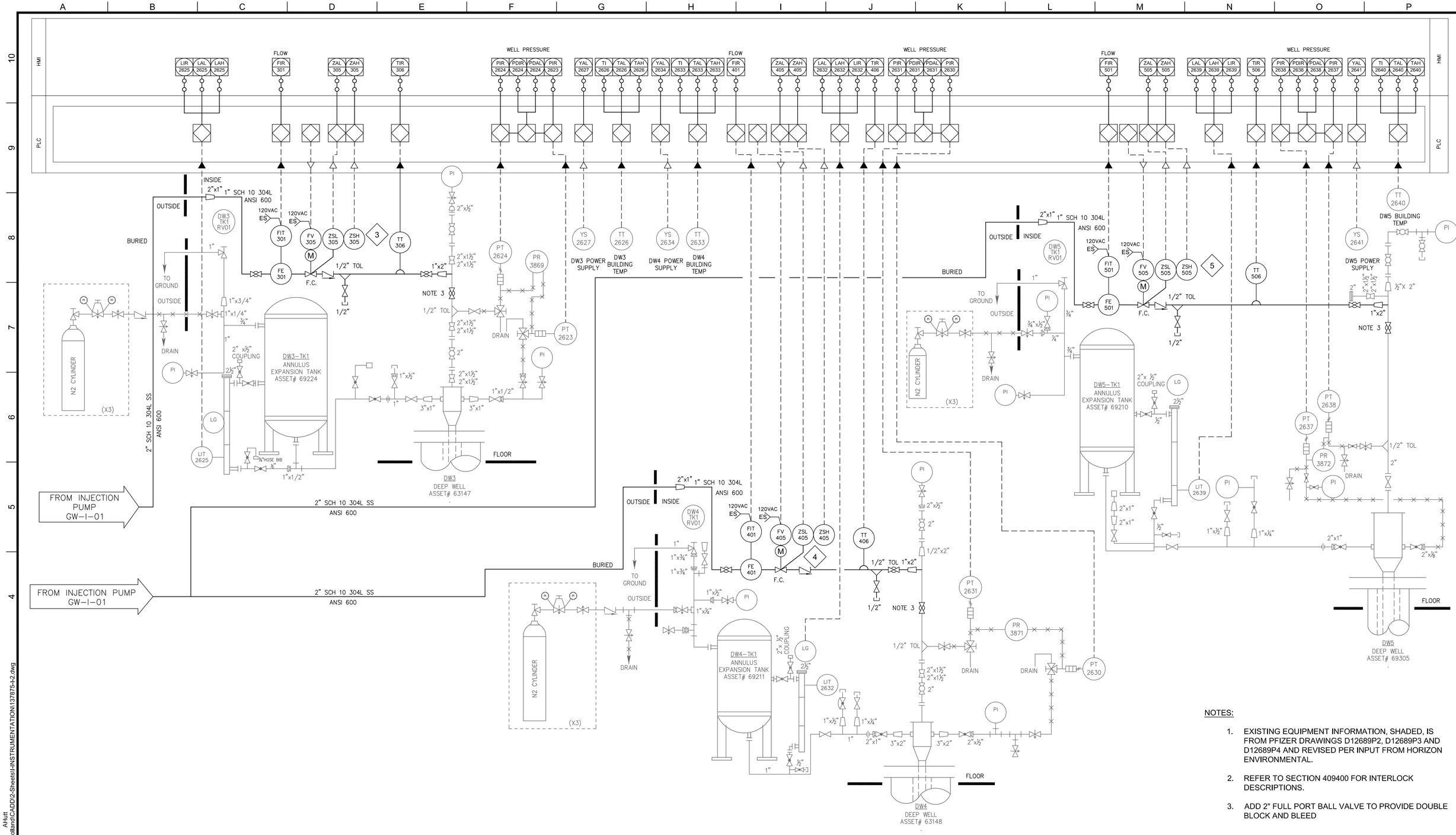

NOTES:

1. EXISTING EQUIPMENT INFORMATION, SHADED, IS FROM PFIZER DRAWINGS D12689P2, D12689P3 AND D12689P4 AND REVISED PER INPUT FROM HORIZON ENVIRONMENTAL.
2. REFER TO SECTION 409400 FOR INTERLOCK DESCRIPTIONS.
3. ADD 2" FULL PORT BALL VALVE TO PROVIDE DOUBLE BLOCK AND BLEED

BROWN AND CALDWELL
COLUMBUS, OHIO

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: DM
DRAWN: ADH
CHECKED: DM
CHECKED:
APPROVED:

EXTERNAL REFERENCES
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REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.
	0	PRE- FINAL	DM	08/28/09	RI
	1	FINAL DESIGN	DM	10/16/09	RI
	2	ISSUED FOR BID	DM	11/13/09	RI
	3	ISSUED FOR CONSTRUCTION	DM	03/08/10	RI

ISSUED FOR CONSTRUCTION

GROUNDWATER EXTRACTION &TREATMENT
P&ID - INJECTION

WARNER-LAMBERT COMPANY, LLC - HOLLAND, MI

FILENAME 137875-I-2
BC PROJECT NUMBER 137875
CLIENT PROJECT NUMBER 148-N-1846717
DRAWING NUMBER GW-I-02
SHEET NUMBER 13 OF 23

Mar 04, 2010 - 4:33pm
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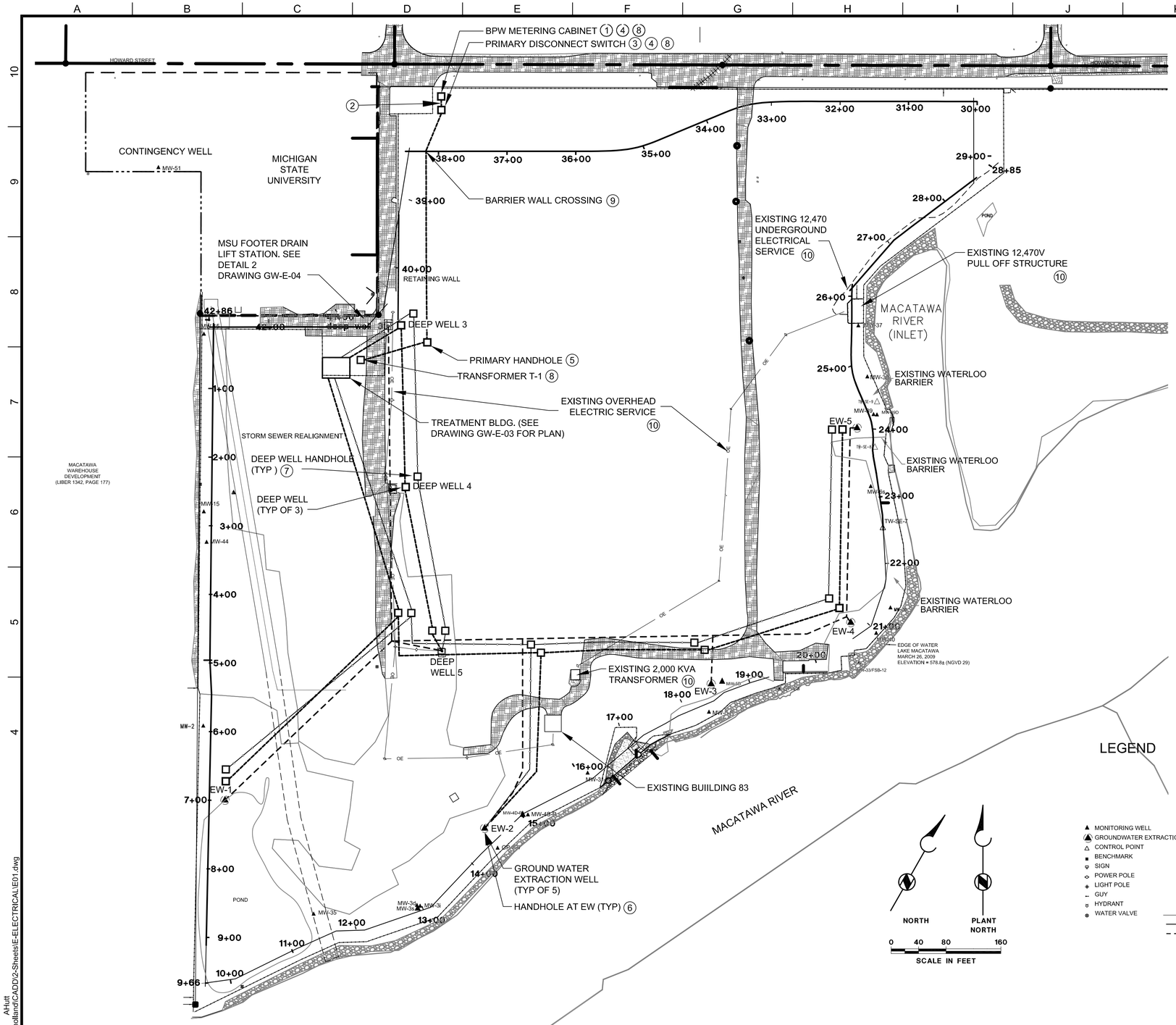

KEY NOTES:

1. BPW TO FURNISH AND INSTALL PRIMARY SERVICE AND METERING EQUIPMENT. PRIMARY SERVICE BY BPW SHALL INCLUDE RISER AT POLE AND UNDERGROUND CONDUCTORS TO METERING CABINET. BPW SHALL MAKE THE FINAL CONNECTION OF THE CUSTOMER'S TERMINATION TO BPW EQUIPMENT.
2. CONTRACTOR SHALL ROUTE UNDERGROUND PRIMARY FROM THE BPW METERING CABINET TO THE DISCONNECT SWITCH. PROVIDE A TWO HOLE NEMA STANDARD LUG FOR EACH CONDUCTOR AT SERVICE POINT.
3. PADMOUNTED SWITCH: PROVIDE SWITCH IN ACCORDANCE WITH BPW REQUIREMENTS. LOCATE ADJACENT TO BPW METERING CABINET AT A LOCATION THAT IS ACCESSABLE TO BPW PERSONNEL. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIRMENTS.
4. EQUIPMENT LOCATION SHOWN IS APPROXIMATE. CONTRACTOR SHALL COORDINATE EQUIPMENT LOCATION WITH OWNER AND BPW PRIOR TO BEGINNING CONSTRUCTION.
5. PRIMARY HAND HOLE: 36" WIDE X 60" LONG X 36" DEEP (MINIMUM). PROVIDE WITH H-20 RATED COVER WITH "HIGH VOLTAGE" LABEL. PROVIDE HAND HOLE AS MANUFACTURED BY QUAZITE OR EQUAL
6. DEEP WELL ELECTRICAL POWER HAND HOLE: 24" WIDE X 30" LONG X 24" DEEP (MINIMUM). PROVIDE WITH H-20 RATED COVER WITH "ELECTRIC" LABEL. PROVIDE HAND HOLE AS MANUFACTURED BY QUAZITE OR EQUAL.
7. GROUNDWATER EXTRACTION WELL HAND HOLE: 24" WIDE X 30" LONG X 24" DEEP (MINIMUM). PROVIDE WITH H-20 RATED COVER WITH "ELECTRIC" LABEL. PROVIDE HAND HOLE AS MANUFACTURED BY QUAZITE OR EQUAL.
8. PROVIDE CONCRETE PAD AND BURIED GROUND LOOP WITH GROUND RODS AT CORNERS.
9. ENCASE PRIMARY CONDUITS IN CONCRETE AT BARRIER WALL CROSSING, EXTENDING 2-FEET INSIDE AND OUTSIDE THE WALL. BACKFILL WITH COMPACTED CLAY OR SILTY-CLAY SOIL.
10. REMOVE EXISTING ELECTRICAL SERVICE. PULL-OFF STRUCTURE, 200KVA TRANSFORMER, OVERHEAD LINES, POLES AND UNDERGROUND CABLES

GENERAL NOTES:

1. PERFORM ALL ELECTRICAL WORK IN ACCORDANCE WITH ALL STATE AND LOCAL CODES, THE NATIONAL ELECTRICAL SAFETY CODE, AND THE NATIONAL ELECTRICAL CODE.
2. ALL UNDERGROUND CONDUIT ROUTES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE ALL ROUTES WITH NEW AND EXISTING UTILITIES AND STRUCTURES PRIOR TO BEGINNING WORK.
3. REFER TO ONE-LINE DIAGRAM ON DRAWING GW-E-02 AND CONTROL SYSTEM BLOCK DIAGRAM ON DRAWING GW-E-05 FOR UNDERGROUND CONDUIT AND WIRE SIZES AND QUANTITIES.
4. THE LOCAL ELECTRICAL UTILITY IS HOLLAND BOARD OF PUBLIC WORKS (BPW), www.hollandbpw.com, (616) 355-1520 (MAIN NUMBER).
5. UNDERGROUND ELECTRICAL CONDUITS SHALL BE SCHEDULE 80 PVC, LISTED FOR DIRECT BURIAL, UNLESS OTHERWISE INDICATED. WHERE SIZES ARE NOT INDICATED, SIZE PER NEC, ¾" MINIMUM. RIGID GALAVANIZED STEEL CONDUITS SHALL BE USED FOR UNDERGROUND INSTRUMENTATION AND ANALOG SIGNALS AS SHOWN. SEE DETAIL 1, DRAWING GW-E-03 FOR BURIAL DETAIL.
6. ABOVE GRADE CONDUITS SHALL BE RIGID GALVANIZED STEEL, UNLESS OTHERWISE INDICATED. WHERE SIZES ARE NOT INDICATED, SIZE PER NEC, ¾" MINIMUM.
7. PROVIDE CABLE WARNING TAPE WITH DETECTABLE METAL STRIP ABOVE ALL UNDERGROUND CONDUITS. BURY WARNING TAPE AT 12" BELOW GRADE.
8. PRIMARY WIRE: 15-KV, MV-105 COPPER CONDUCTOR, 133% EPR INSULATED WITH PVC-JACKET AND COPPER TAPE SHIELD. CABLE SHALL BE LISTED FOR DIRECT BURIAL. SIZES AS INDICATED.
9. 120 AND 480 VOLT WIRE: 600 V, COPPER CONDUCTOR. PROVIDE TYPE XHHW FOR ALL CIRCUITS ROUTED IN UNDERGROUND CONDUIT SYSTEM. WHERE SIZES ARE NOT INDICATED, SIZE PER NEC, NO. 12 AWG MINIMUM.
10. ALL UNDERGROUND CIRCUITS SHALL BE ROUTED IN CONDUITS. REFER TO DRAWING GW-E-04 FOR DIRECT BURIED RACEWAY DETAIL.

LEGEND

- MONITORING WELL
- GROUNDWATER EXTRACTION WELL
- CONTROL POINT
- BENCHMARK
- SIGN
- POWER POLE
- LIGHT POLE
- GUY
- HYDRANT
- WATER VALVE
- ELECTRICAL HANDHOLE
- UNDERGROUND CONTROLS
- UNDERGROUND ELECTRICAL
- BURIED TRANSMISSION LINE
- TELEPHONE PEDESTAL
- UTILITY SIGN
- SANITARY MANHOLE
- STORM MANHOLE
- CATCH BASIN
- SECTION CORNER
- LOCATION FOR GEOTECHNICAL BORING
- CHAIN LINK FENCE
- WOOD FENCE
- WIRE FENCE
- OVERHEAD ELECTRIC AND/ OR TELEPHONE LINES
- OE — FLOOD CONTOUR (585.0' NGVD-29)
- BARRIER WALL
- EXTRACTION/INJECTION WELL PIPING

BROWN AND CALDWELL
COLUMBUS, OHIO

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: RA
DRAWN: KL
CHECKED: DM
CHECKED:
APPROVED:

EXTERNAL REFERENCES
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	1	FINAL DESIGN	DM	10/16/09	RI
	2	ISSUED FOR BID	DM	11/13/09	RI
	3	ISSUED FOR CONSTRUCTION	DM	03/08/10	RI

ISSUED FOR CONSTRUCTION

GROUNDWATER EXTRACTION & TREATMENT
ELECTRICAL SITE PLAN
WARNER-LAMBERT COMPANY, LLC
HOLLAND, MI

FILENAME E01
BC PROJECT NUMBER 137875
CLIENT PROJECT NUMBER 148-N-1846717
DRAWING NUMBER GW-E-01
SHEET NUMBER 17 OF 23

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