South Dayton Dump & Landfill Site - Moraine, Ohio
Site Use History and Development of Ohio Landfill Closure Requirements
August 27, 2014

I. Introduction

An understanding of the history of the use and commercial development of the parcels of property which comprise the South Dayton Dump & Landfill Site (the "Site")[1], is essential to the identification and evaluation of Applicable or Relevant and Appropriate Requirements ("ARAR's") to be considered as part of the Remedial Investigation/Feasibility Study ("RI/FS") required by the USEPA Administrative Settlement Agreement and Order on Consent ("ASAOC") with an effective date of August 15, 2006. A comprehensive analysis of historical Site use confirms that distinct portions of the Site have been used for well-defined periods of time dating back to the early 1900's for agricultural production, sand and gravel mining, transportation and access, the production of asphalt, the development and use of light industrial buildings and offices, and the incineration or disposal of primarily non-putrescible waste materials including construction and demolition debris, residual wastes, industrial wastes, household wastes, and paper.

USEPA recently requested a concise history of fill[2] activity and waste disposal at the Site specifically identifying areas of the Site which accepted (or did not accept) waste materials at various times and the character of the fill or waste material deposited in these areas. In response, Conestoga-Rovers & Associates ("CRA") completed a comprehensive review of all available and relevant sources of information including historical aerial photos, sworn deposition testimony, real estate title records, Montgomery County Health District ("MCHD") and Ohio EPA historical records, and CRA's comprehensive site investigations including visual observations, and the evaluation of numerous test trenches, test pits and soil borings throughout the site. CRA's detailed findings are provided in the attached memorandum dated August 27, 2014 (the "CRA Memorandum").

The following summarizes the facts established through CRA's comprehensive evaluation. Notably, the majority of the Site either did not accept wastes at all or ceased to accept wastes well before the effective date of Ohio's landfill operation and closure requirements. In fact, much of the Site was developed and in commercial/industrial use prior to the effective date of Ohio's first landfill regulations. These areas are not subject to current Ohio landfill closure requirements and those requirements cannot be considered as ARAR's for these areas in the context of preparation of the RI/FS.

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[1] The boundaries of the Site have been established by the terms of the ASAOC.

[2] A variety of generally inert material have been used as fill at portions of the Site including cleanfill, construction and demolition debris and residual wastes, industrial wastes and ash from the incineration of these wastes.

The Site as presently defined includes all or portions of over fifteen (15) separate parcels of property which are not and have never been under common ownership. Current Site use includes asphalt production, light industrial and offices, and vacant, undeveloped land. As further described in the CRA Memorandum, much of the Site was quarried for sand and gravel beginning in the 1940's. Over time, material including industrial and residual wastes, landscaping wastes, construction and demolition debris (C&DD), and non-putrescible household waste was brought on-Site to bring mined-out areas up to grade to allow for development. As further described below, much of this fill activity occurred prior to the 1969 effective date of Ohio's initial landfill licensing or closure requirements. Substantial areas of the Site were filled, covered, and in commercial/industrial use well before Ohio's landfill licensing and closure requirements were enacted.

Ohio's first sanitary landfill regulations were promulgated in 1968 and took effect in 1969 (see Ohio's Sanitary Code Chapter HE-24). These regulations, which remained in effect until 1976, provided that upon cessation of operations in an area:

> The completed sanitary landfill shall be graded to serve its intended purpose and in accordance with the approved plans and specifications. HE-24-09(G).

These rather simple landfill closure requirements remained in effect until 1976 and were replaced by new closure standards for sanitary landfills set forth in EP-20-10 which established requirements to place two feet of cover and to properly cover, grade and seed the waste disposal area. (EP-20-10(L)) As noted below, only a small portion of the central area of the Site accepted fill materials after 1976 and the materials were limited to only C&DD, industrial waste, and residual waste. During this period, no portion of the Site was operated as a sanitary (or municipal) landfill and the Site operators were not authorized to accept commercial/household wastes. Moreover, there is no record of <u>any</u> commercial residential waste haulers taking waste to the Site.

II. <u>Areas of No Waste Disposal</u>

Although the history of Site use is admittedly complex, CRA has confirmed, based upon multiple lines of evidence, that portions of the Site have never been operated as a landfill or otherwise accepted waste material. These areas are demarcated on Figure 1. As described in the CRA Memorandum, the evidence confirms that these areas did not accept waste material. Accordingly, Ohio's landfill closure requirements are not applicable or relevant and appropriate to these areas.

III. <u>Disposal Fill Activity Prior to 1945</u>

At the northern end of the Site, historical reports indicate that the "Cinn Dump" operated from the early 1900's until sometime before 1935. The approximate location of the "Cinn Dump" is shown on Figure 1. Historical aerial photos confirm that all disposal at the Cinn Dump

had ceased and the area was covered with vegetation by 1945. This area was never a licensed landfill and Ohio landfill closure requirements are not applicable or relevant and appropriate to the area of the Cinn Dump. Areas of the Site which did not accept waste or fill materials after 1945 are demarcated on Figure 2.

IV. History of the Northern and Southern Portions of the Site

Subsurface sand and gravel deposits supported quarrying operations through substantial portions of the Site for over 50 years. Generally, quarrying progressed from the north to the south of the Site. To the extent that the quarried areas were reclaimed, clean fill and certain types of waste materials were used to bring the excavated areas up to grade for subsequent development or other use. The Site is bisected by an access road and electric transmission lines. The area of the access road has never been quarried or filled. The access road is identified on Figure 1. In light of the substantial differences in the periods of use and the character of the fill activities to the north and the south of this access road, these areas are separately identified and discussed in the CRA Memorandum as the Northern Parcels and the Southern Parcels. These areas are also demarcated on each of the Figures.

A. The Northern Parcels

Starting in 1945, portions of the Northern Parcels accepted clean fill material, C&DD, residual wastes, industrial wastes, along with limited quantities of non-putrescible household wastes. Deposition testimony confirms that wastes were generally burned and the ash used for fill until the MCHD ordered open burning at the landfill to cease in 1969.

The placement of wastes generally followed the sand and gravel mining as it moved south. The mined-out areas were filled to grade and covered (sometimes with foundry sand) and the area was then developed for other purposes. By 1968, waste management activity was limited to an approximately twenty-five (25) acre area located primarily on Parcel 5177. Aerial photos, sworn deposition testimony, and CRA investigation results confirm that by 1968 other areas of the Northern Parcels had been covered and were in use for a large car salvage lot, asphalt production, and light industrial buildings. Given that Ohio first implemented landfill licensing and rudimentary closure requirements in 1968, Ohio's landfill closure requirements are not applicable or relevant and appropriate to the areas which did not accept regulated waste after 1968. Figure 3 demarcates the areas of the Northern Parcel which did not accept waste material after 1968.

On December 31, 1968, the lessee of the relevant portion of the Northern Parcels, Alcine Grillot, applied for a license to operate a solid waste disposal site for commercial and industrial wastes on the only unfilled active portion of the Northern Parcels (primarily parcel 5177). The MCHD approved the application on January 3, 1969 without reference to plans or specifications. As confirmed by correspondence referenced in the CRA Memorandum, the MCHD considered the operation to be an industrial waste disposal site and required that wastes be compacted and covered with two feet of earth or foundry sand at the conclusion of disposal activities.

Between 1969 and 1976, an approximately twenty-five (25) acre area of Parcel 5177 accepted C&DD, residual wastes, industrial wastes, and landscaping wastes pursuant to annual licenses issued by the MCHD and, in 1975, the MCHD on behalf of the Ohio EPA. The MCHD licenses identified operations on the site as "sanitary landfill" or "incineration."[3] During this period the Site was not licensed to accept for disposal "household waste" or putrescible material and the 1975 and subsequent licenses issued by the MCHD limited waste acceptance to "only dry inert industrial, commercial or household material" and further noted that "any garbage or other solid waste that requires daily cover must be rejected."[4]

A January 9, 1975 list of Miami County Landfills identifies the "Grillot Disposal Site" as "closed". The area of the Northern Parcels (primarily Parcel 5177) where fill and waste material were placed between 1969 and 1975 did not accept sanitary landfill wastes and this area was closed and covered consistent with then-applicable regulations. Site investigations confirm that the relevant area is overlain by two feet or greater of inert materials consistent with then applicable landfill closure standards. Accordingly, current landfill closure standards are not applicable or relevant and appropriate to the areas filled prior to 1976 as demarcated on Figure 4.

From 1976 until 1980, a relatively small portion of the Parcel 5177 continued to accept limited types of wastes for disposal and incineration pursuant to annual Licenses to Operate issued by the MCHD. The licenses authorized accepting wood for burning, paper for salvaging, metal, fly ash, bottom ash, and sewage solids/semi-solids. Only dry inert industrial, commercial, or household material were to be accepted for disposal.

After 1980, only residual waste and C&DD were disposed at the Site. Only C&DD material was accepted from 1990 to 1996.[5] The area of the Northern Parcels which accepted waste material after 1975 is demarcated on Figure 5. This area was never operated as a sanitary or municipal landfill and CRA's investigation confirms that only industrial and residual wastes (prior to 1990), C&DD, and clean hard fill were accepted. The MCHD confirmed that the area was "closed" in a letter dated January 8, 1990 which directed Mr. Grillot to cease placing fly ash and C&DD on a portion of the existing closed landfill in accordance with OAC 3745-27-13(A). The letter also noted that "there was no evidence of any solid waste on the site." The fly ash and C&DD simply served as additional cover material to the closed landfill and did not disturb the existing cover material.

Accordingly, although a portion of Parcel 5177 operated under a series of licenses issued by the MCHD and/or the MCHD on behalf of the Ohio EPA after 1976, the municipal, residual

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[3] Sanitary landfill, in HE-24-01(K) was defined as amethod of disposing of "solid waste." Solid wasteincluded "residual solid or semisolid material as results from industrial commercial, agricultural and community operations including earth or material from construction, mining or demolition operations and slag or other substances which is not inimical to public health…" HE-24-01(M)

[4] An April 10, 1969 MCHD inspection report identifiedgarbage, paint thinner and furniture in the area of waste disposal. However, these were not permitted wastematerials and subsequent inspection reports specifically noted that these materials were not identified at the waste disposal area.

[5] The MCHD authorized Delco to place fly ash on the active area until April 1990 while it identified alternative disposal sites. This further confirms the limitedwaste materials which could be accepted.

or industrial landfill closure requirements set forth in OAC Chapter 3745-27 are not applicable or relevant and appropriate to any remediation activity of this area because only C&DD and residual wastes were accepted.[6]

B. The Southern Parcels

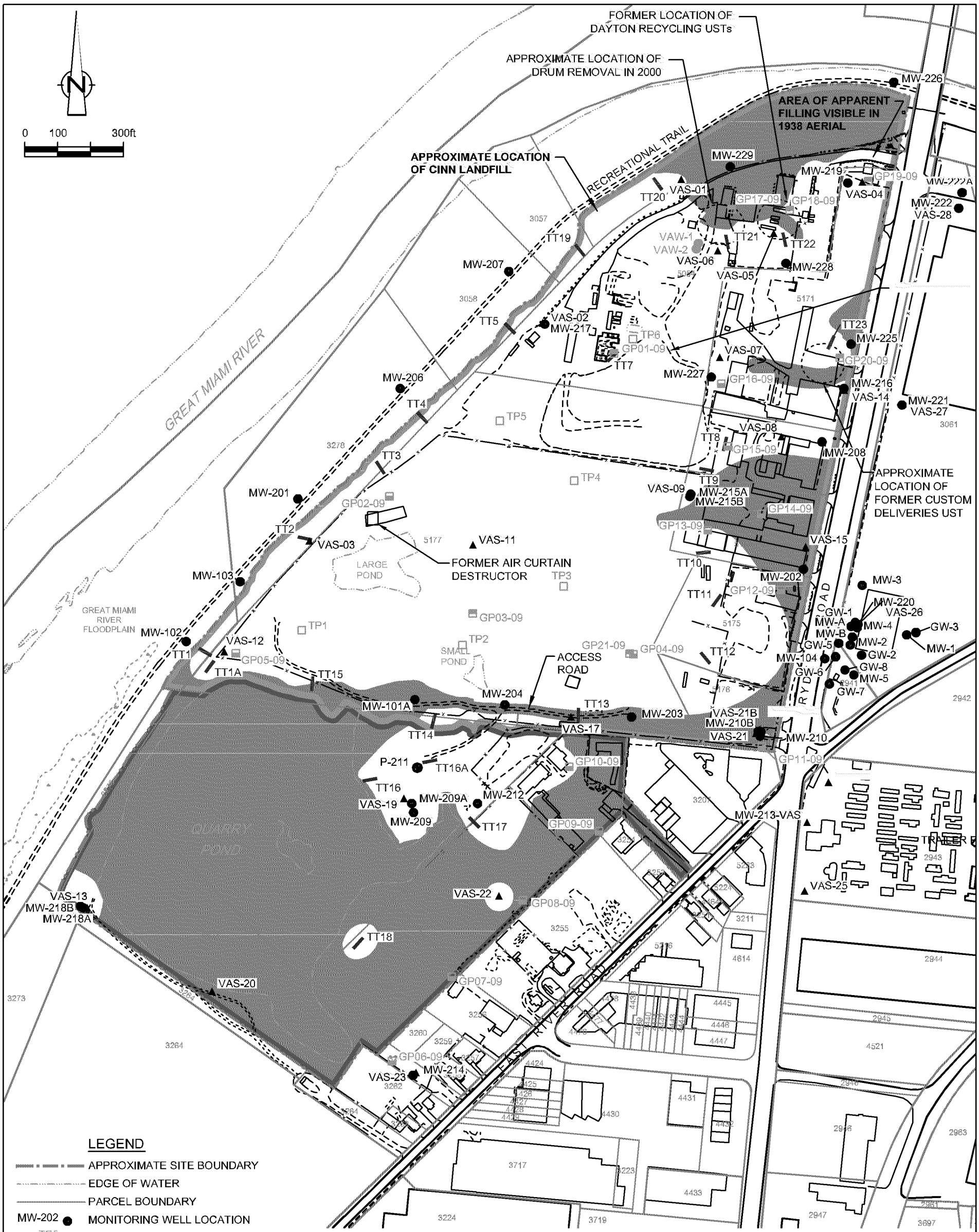
A small area of the southern portion of the Site is believed to have accepted only residual waste and C&DD and only between 1981 and 1990. No putrescible wastes were disposed of on the Southern Parcels. The affected area is adequately covered and is vegetated. Ohio's residual waste landfill regulations were first promulgated in 1992, after disposal had ceased and the area was covered. Figure 6 demarcates the area of the Southern Parcels which accepted residual and C&DD materials. The remainder of the Southern Parcels did not accept such materials. Neither Ohio's municipal landfill nor residual waste landfill closure requirements are applicable or relevant and appropriate to any portion of the Southern Parcels.

V. Conclusion

A careful review of the facts confirms that no portion of the Site operated as a licensed sanitary or municipal landfill after the effective date of Ohio's landfill licensing program. Only a well-defined area on the Northern Parcels operated under a series of solid waste disposal facility licenses after 1968 and this area accepted only industrial and residual wastes, landscaping and other wastes for burning, and C&DD. The remainder of the Site either did not accept waste, ceased accepting waste and was covered well prior to the implementation of Ohio's landfill licensing requirements or never required a solid waste disposal facility license (i.e. accepted only C&DD and/or residual wastes).

Ohio EPA has suggested the landfill closure requirements which apply to today's municipal waste, residual waste or industrial waste landfills could be directly applicable to most if not all of the 80 acre Site, including long closed areas of waste disposal and areas which were never known to accept wastes. Ohio EPA has referred to an undated and unattributed tax map found in MCHD files to support the position that the entire 80-acre Site was and is a licensed landfill which must be closed according to 2014 standards. Based on the information documented in CRA's comprehensive investigations and summarized in the CRA Memorandum, the facts confirm that the undated and unattributed tax map cannot support the Ohio EPA's position that the landfill closure requirements set forth in OAC Chapter 3745-27 are ARAR's which must be evaluated in the development of the RI/FS. The goal of the participating potentially responsible parties is to work with USEPA and Ohio EPA toward the development of environmentally protective and sustainable remedial options. This must be and can be accomplished without imposing inapplicable, costly, and unnecessary 2014 landfill closure requirements on the Site.

[6] Residual waste and industrial landfill regulationswere first effective in 1992 and 1994, respectively.



LEGEND

- APPROXIMATE SITE BOUNDARY
- EDGE OF WATER
- PARCEL BOUNDARY
- MW-202 ● MONITORING WELL LOCATION
- TP5 □ TEST PIT LOCATION
- TT1 ▬ TEST TRENCH LOCATION
- VAS01 ▲ VAS SAMPLING LOCATION
- P-211 ⊕ PIEZOMETER LOCATION
- GP21-09 SHALLOW LANDFILL GAS PROBE
- GP04-09 DEEP LANDFILL GAS PROBE
- APPROXIMATE AREA WHERE NO WASTE DISPOSAL HAS OCCURRED BASED ON THE AVAILABLE EVIDENCE
- NORTHERN PARCELS
- SOUTHERN PARCELS

SOURCES:
THE PAYNE FIRM, INC., PROJECT 0279.44.05, FIGURE 1, DATED 9/12/05;
TETRA TECH EM INC., PROJECT L0312006-SOUTH DAYTON DUMP, FIGURE 2, SITE LAYOUT, 05/25/2004;
CITY OF MORAINE.
ABRAMS AERIAL SURVEY INC. PROJECT 38443, AASI 29610, 04/02/2008

figure 1

AREAS WHERE NO WASTE DISPOSAL HAS OCCURRED BASED ON THE AVAILABLE EVIDENCE
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-15(DORA001)GN-WA001 AUG 18/2014

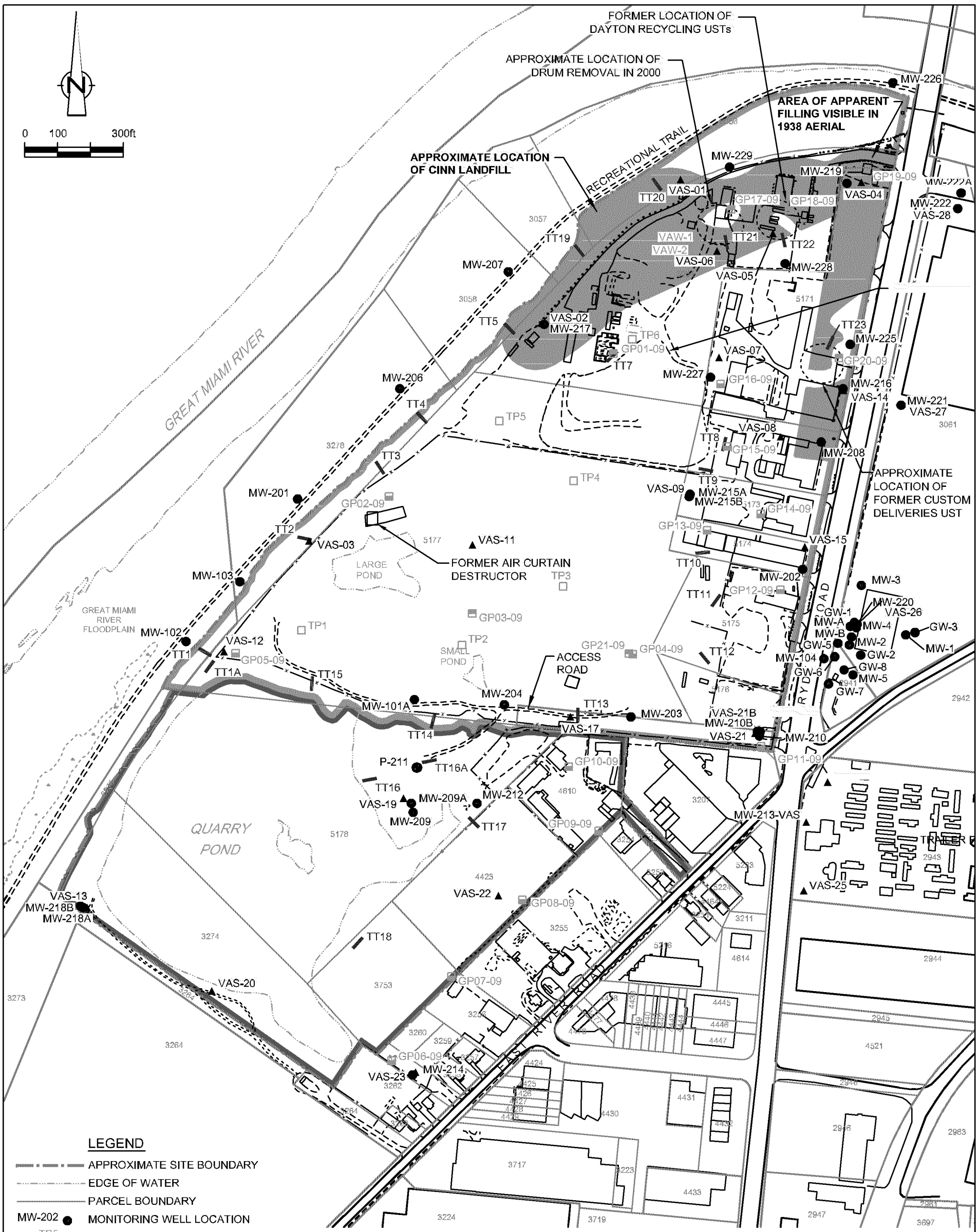


figure 2

AREAS WHERE ALL WASTE DISPOSAL/ FILLING CEASED PRIOR TO 1945
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

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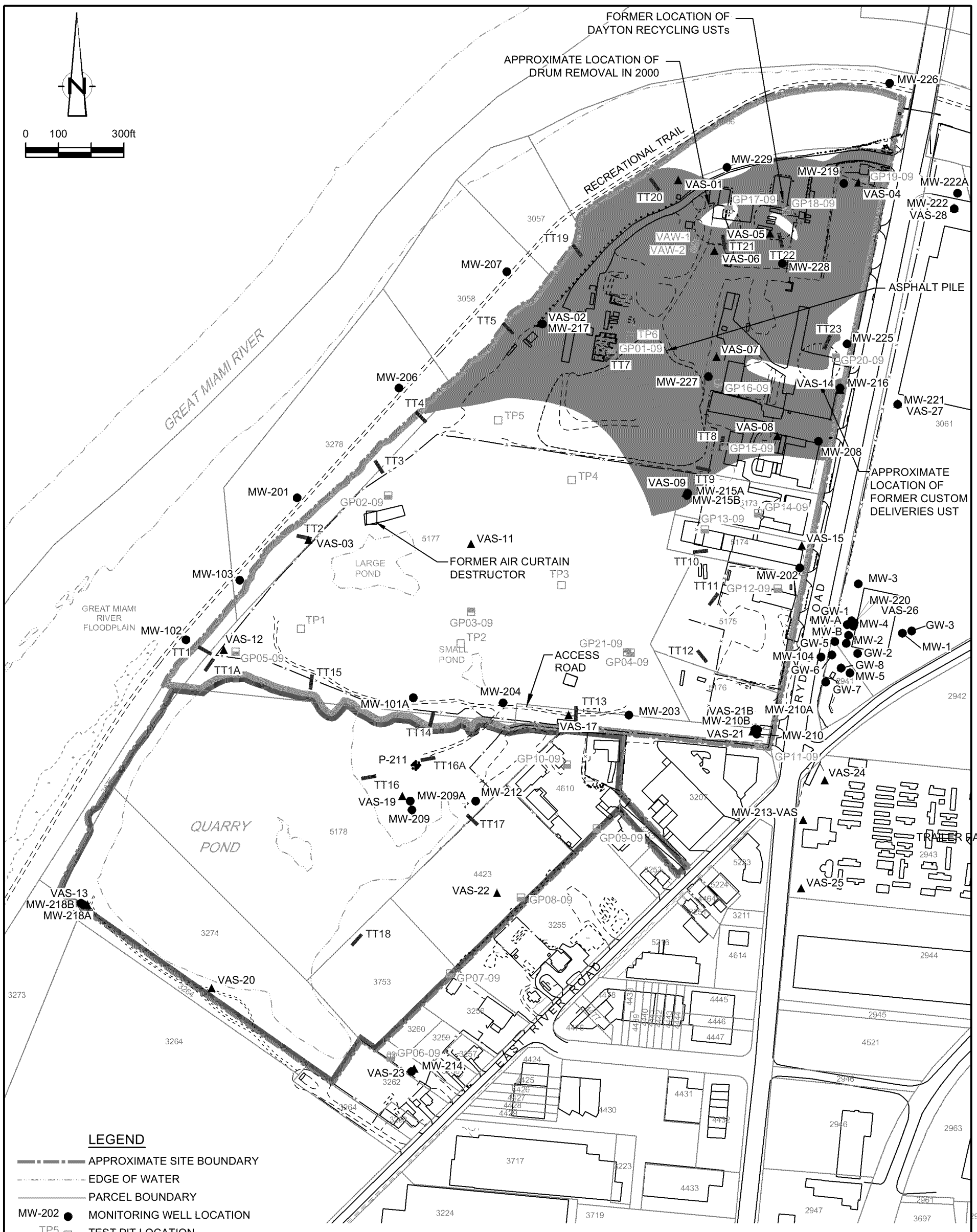

figure 3

AREAS WHERE ALL WASTE DISPOSAL CEASED BY THE END OF 1968
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

SOURCES:
THE PAYNE FIRM, INC., PROJECT 0279.44.05, FIGURE 1, DATED 9/12/05;
TETRA TECH EM INC., PROJECT L0312006-SOUTH DAYTON DUMP, FIGURE 2, SITE LAYOUT, 05/25/2004;
CITY OF MORAINE.
ABRAMS AERIAL SURVEY INC. PROJECT 38443, AASI 29610, 04/02/2008

38443-15(DORA001)GN-WA003 AUG 26/2014

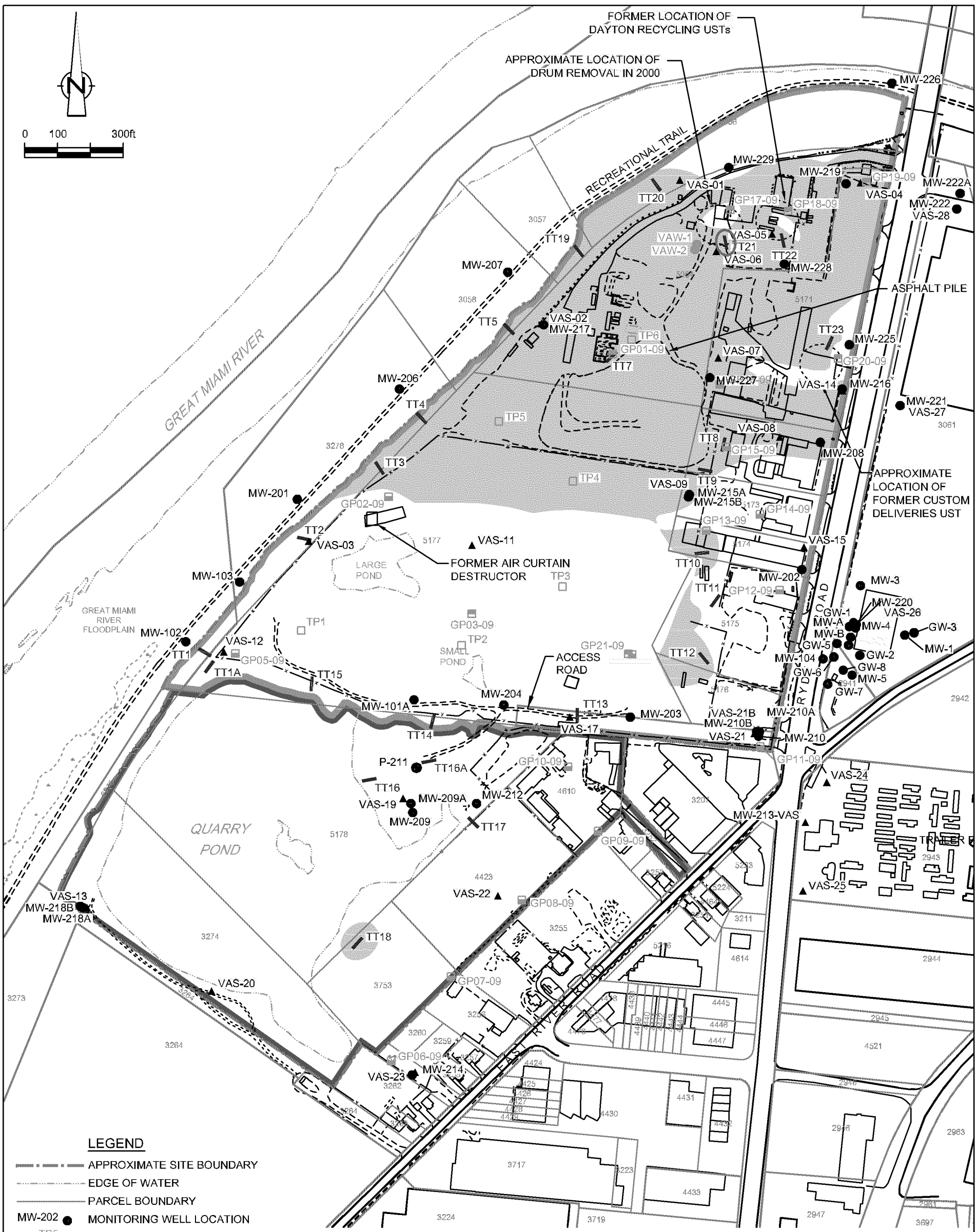

figure 4

AREAS WHERE ALL WASTE DISPOSAL CEASED PRIOR TO 1976
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

SOURCES:
THE PAYNE FIRM, INC., PROJECT 0279.44.05, FIGURE 1, DATED 9/12/05;
TETRA TECH EM INC., PROJECT L0312006-SOUTH DAYTON DUMP, FIGURE 2, SITE LAYOUT, 05/25/2004;
CITY OF MORAINE.
ABRAMS AERIAL SURVEY INC. PROJECT 38443, AASI 29610, 04/02/2008

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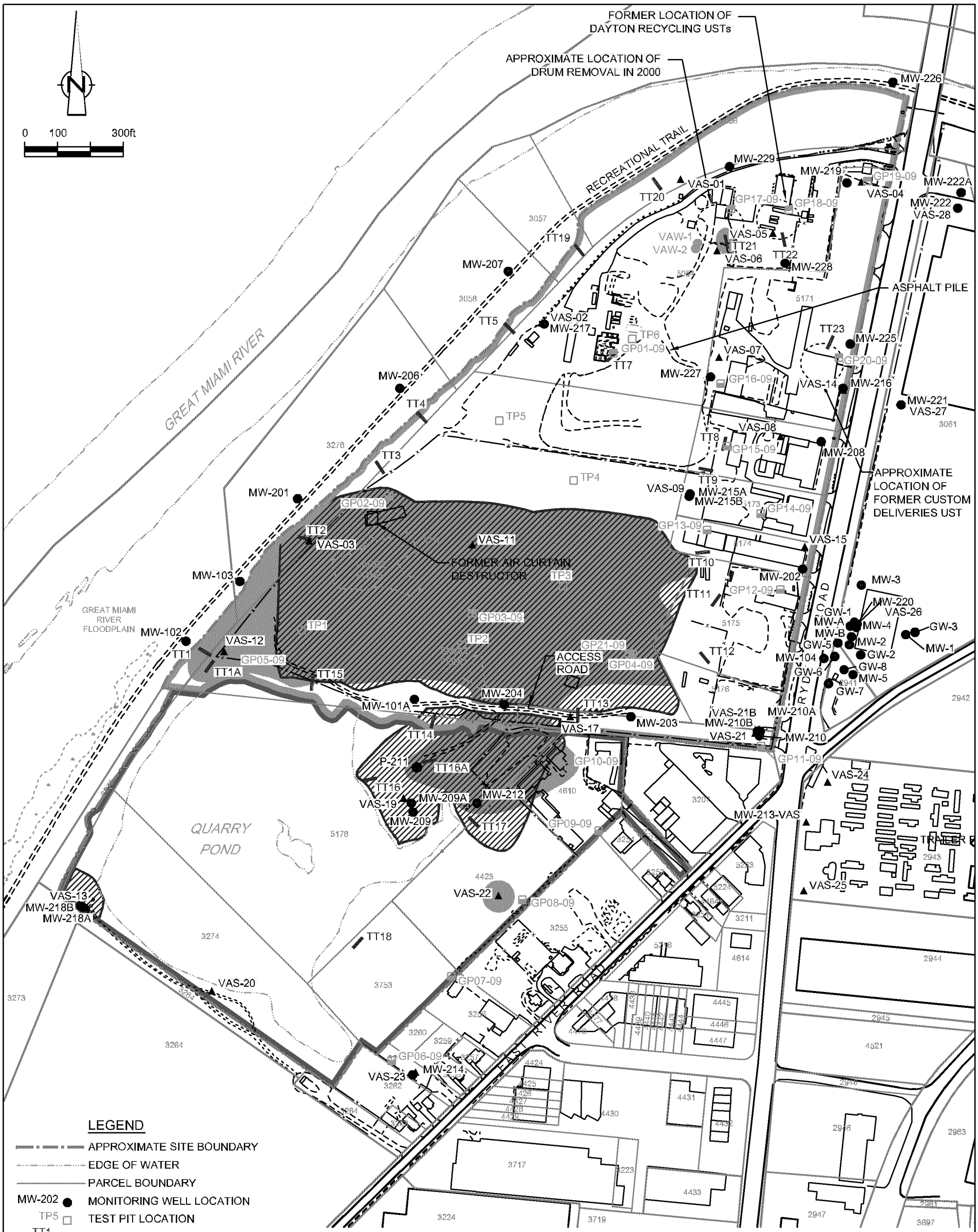

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- GP21-09 ▣ SHALLOW LANDFILL GAS PROBE
- GP04-09 ▣ DEEP LANDFILL GAS PROBE
- APPROXIMATE INDUSTRIAL SOLID WASTE AREA
- APPROXIMATE RESIDUAL WASTE AREA
- APPROXIMATE CONSTRUCTION AND DEMOLITION DEBRIS AREA
- NORTHERN PARCELS
- SOUTHERN PARCELS

SOURCES:
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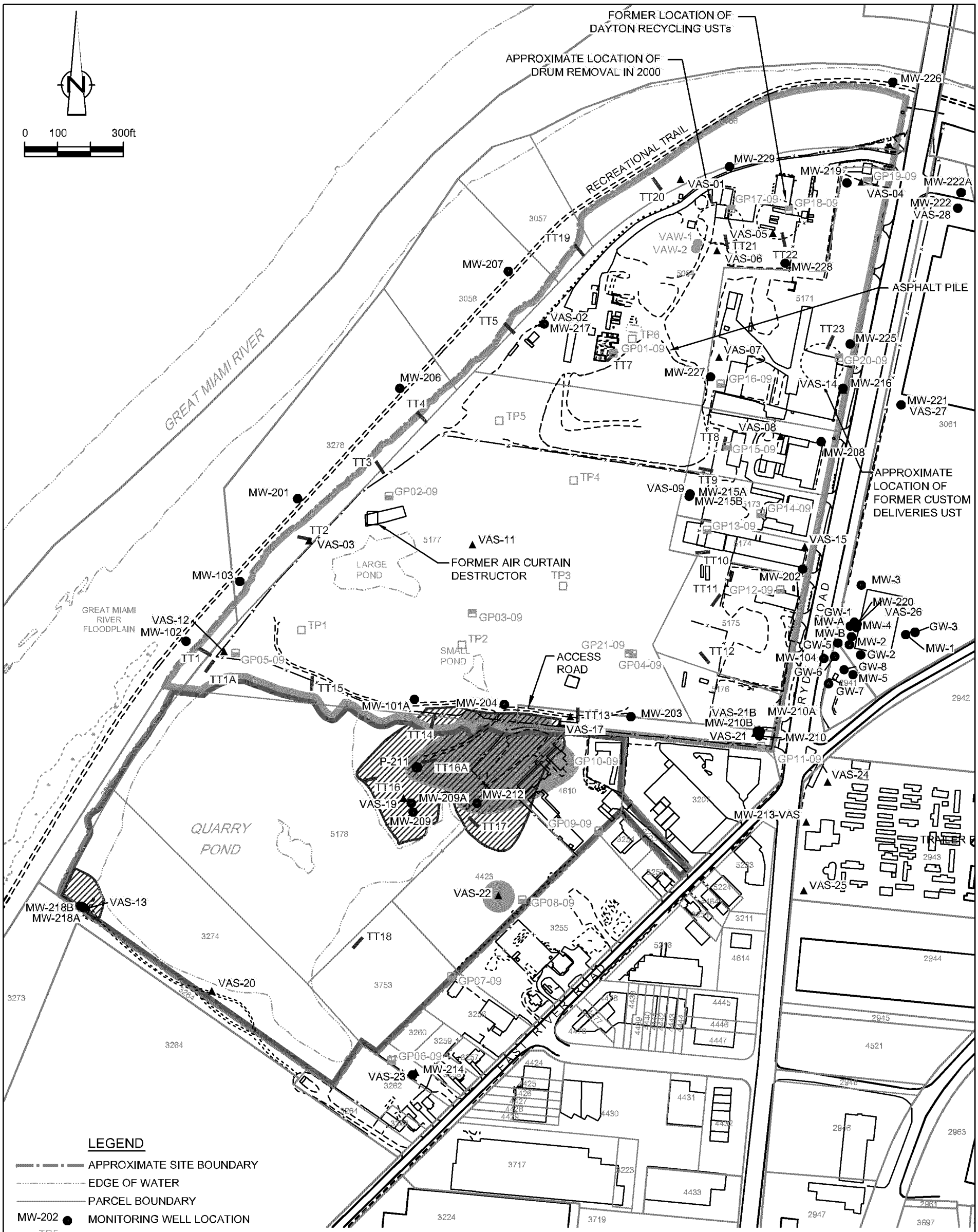
TETRA TECH EM INC., PROJECT L0312006-SOUTH DAYTON DUMP, FIGURE 2, SITE LAYOUT, 05/25/2004;
CITY OF MORAINE.
ABRAMS AERIAL SURVEY INC. PROJECT 38443, AASI 29610, 04/02/2008

figure 5

AREAS OF ACTIVE FILLING - 1976-1996
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-15(DORA001)GN-WA006 AUG 18/2014



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CITY OF MORAINE.
ABRAMS AERIAL SURVEY INC. PROJECT 38443, AASI 29610, 04/02/2008

figure 6

SOUTHERN PARCELS WHERE WASTE WAS ACCEPTED
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-15(DORA001)GN-WA005 AUG 18/2014