

September 21, 2015

Joseph W. Krawczyk, Biologist
U.S. Army Corps of Engineers – Buffalo District
1776 Niagara Street. Buffalo, New York 14207

Regarding: Section 404 Individual Permit Application for the following projects:

- Phase I: 6/7 construction, located northeast of the existing landfill
- Phase II: Horizontal Expansion, located to the west of the existing landfill

Dear Mr. Krawczyk:

Under contract to Rumpke of Northern Ohio, Inc. (Rumpke), MAD Scientist Associates (MAD) has completed an updated 404 application form, Alternatives Analysis, and Conceptual Mitigation Plan for the Cell 6/7 (Phase I) and Horizontal Expansion (Phase II) construction projects, both located on the Rumpke landfill site, in Shiloh, Richland County, Ohio (see **Figure 1**). In order to expedite the review process for both projects, Rumpke has agreed to combine these projects into a single permit application for both the 401 and 404 permits. For recordkeeping purposes and to satisfy potential questions or concerns that may arise during the application review process, MAD has provided an outline below demonstrating the history of the two projects.

- July 31, 2014: Section 404 Individual Permit Application and Section 401 Water Quality Certification Application/Level 2 Isolated Wetland Permit Application for the Noble Road Landfill Horizontal Expansion was submitted to Ms. Lee Robinette of the U.S. Army Corps of Engineers (USACE)-Huntington District and Ms. Rachel Taulbee of Ohio EPA/Division of Surface Water.
- December 3, 2014: An approved Jurisdictional Determination was provided by USACE for wetlands associated with the Horizontal Expansion Project- Department of Army Application No. LRB-1991-05071
- February 6, 2015: A Preliminary Jurisdictional Determination was provided by USACE for wetlands associated with the Cell 6/7 expansion project- Department of Army Application No. 1993-05071.
- April 8, 2015, Ohio EPA accepted Rumpke's request to temporarily withdraw the Isolated Wetland Permit application for the Noble Road Landfill Expansion project (Horizontal Expansion)-Ohio EPA ID#144490
- May-June 2015: Section 404 Individual Permit Application and Section 401 Water Quality Certification Application for the Noble Road Landfill Cell 6/7 project was submitted to Mr. Joseph W. Krawczyk of USACE-Buffalo District and Ms. Heather Allamon of Ohio EPA/Division of Surface Water.
- July 9, 2015: Ms. Heather Allamon, of Ohio EPA/Division of Surface Water, confirmed with Ms. Rachel Taulbee that Rumpke would be required to submit a cover letter and revised permit application form to combine the Horizontal Expansion and Cell 6/7 permit applications.

- August 6, 2015: Conference call with Rumpke, USACE, and MAD concluded that a combined permit application for the Horizontal Expansion and Cell 6/7 projects would expedite the review process.

The combined wetland impact acreage is approximately 11.03 acres. The construction associated with Phase I, in the northeast portion of the site, will require the filling of three (3) wetlands located within the project boundaries totaling 0.4 acres. The affected wetlands are part of a mitigation site for Rumpke, which appears to have expanded in recent years due to higher than anticipated water levels and compaction along an infrequently driven, unimproved perimeter access drive. Phase II, to the west of the existing landfill, will impact 10.03 acres of non-isolated wetland and 0.60 acres of isolated wetland.

Rumpke intends to mitigate all wetland impacts that will occur in the Vermilion River watershed through the purchase of 11.20 acres (combined) of wetland credits at the Edison Woods Mitigation Bank, operated by the North Coast Regional Council of Park Districts. This credit purchase will accomplish Rumpke's required mitigation for impacts within the Buffalo District of the USACE. Rumpke also proposes to restore and create an 11.21-acre wetland complex including (in order of increasing acreage): emergent, scrub-shrub and forested wetland to compensate for all isolated and jurisdictional wetland impacts in the Mohican River watershed (Huntington District of USACE). Rumpke has reserved the necessary credits at Edison Woods and has presented a conceptual plan for on-site mitigation within the documentation provided.

Please contact me if you have any questions. Thank you in advance for your consideration of this application.

Sincerely,



Mary B. Skapof
Environmental Scientist II
MAD Scientist Associates, LLC

enclosures

Cc: Heather Allamon, Ohio EPA
Harry Kallipolitis, Section 401 Supervisor, Ohio EPA
David Murphy, P.E., Rumpke of Northern Ohio, Inc.
Richard Jay Roberts, Rumpke of Northern Ohio, Inc.

Attachment A:
Insert Updated PCN
Application

**U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT**
33 CFR 325. The proponent agency is GECW-CO-R.

*Form Approved -
OMB No. 0710-0003
Expires: 30-SEPTEMBER-2015*

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - William Middle - Last - Rumpke Company - Rumpke of Northern Ohio E-mail Address -			8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Mark Middle - A Last - Dilley Company - MAD Scientist & Associates, LLC E-mail Address - mark@madscientistassociates.net		
6. APPLICANT'S ADDRESS. Address- 10795 Hughes Road City - Cincinnati State - Ohio Zip - 45251 Country - USA			9. AGENT'S ADDRESS. Address- 253 N. State Street City - Westerville State - Ohio Zip - 43081 Country - USA		
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax (513) 851-0122 (513) 825-4983			10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax (614) 531-9156 (614) 818-9156 (614) 818-9157		

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Mark A. Dilley to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

William Rumpke 9-21-15
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Rumpke Noble Road Landfill- Phase I: Cell 6/7 Expansion and Phase II: Horizontal Expansion projects	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Mohican and Huron-Vermilion Watersheds	14. PROJECT STREET ADDRESS (if applicable) Address 170 Noble Road E. City - Shiloh State- Ohio Zip- 44878
15. LOCATION OF PROJECT Latitude: -N 40.9720528° Longitude: W -082.4798556	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID 0052123112000 Municipality Shiloh, Richland County, Ohio Section - S11 Township - T23N Range - R18W	

17. DIRECTIONS TO THE SITE

From Buffalo, New York: Take I-90 W. Take I-271 So. towards Akron/Columbus. Merge onto I-71 South. Take Exit 169 onto OH-13 toward Mansfield. Follow OH-13 through Mansfield and turn right onto Noble Road E. Please see attached Figures 1 and 2 for mapping depicting the location of the Site.

18. Nature of Activity (Description of project, include all features)

Phase I-Cell 6/7: Construction of the Cell 7 perimeter berm to provide additional airspace for waste disposal at the Site. The project will require the filling of three (3) wetlands located within the project boundaries, totaling 0.4 acres. The Phase I project area is approximately 6.5 acres.

Phase II-Horizontal Expansion: Provide an additional 87.5 acre footprint for waste disposal to the west of the existing landfill as well as additional contiguous areas to be used to support landfill development (perimeter berms, drainage structures, roadways, borrow areas, etc.) at the site. Phase II will require the filling of three (3) jurisdictional wetlands located within the project boundaries.

The proposed projects have been planned to limit the impacts to the larger wetlands located to the south of the current landfill and completely avoid the Fowler Woods State Nature Preserve to the east.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

See supplemental sheet

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Phase I will require the filling of three (3) wetlands located within the project boundaries, totaling 0.4 acres. The purpose of the proposed fill placement is to construct the Cell 7 perimeter berm in the northeastern portion of the landfill. The impacts would result from placement of compacted soil fill material (structural fill) for the perimeter embankments.

In order to construct Phase II to the west, grading will be required to establish a suitable base for landfill construction. Additionally, the side slopes, access routes, and ditches surrounding the limits of waste will require grading that will impact wetlands. As a result of these requirements, impacts to wetlands at the site are unavoidable.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

Structural Fill: Approx: 27,856.33 cu yd

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres See supplemental sheet

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Attachment B for a complete Alternatives Analysis

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

Construction of the berm for Cell 6 is nearly complete as of October 1, 2014; however, a temporary berm to allow construction equipment to construct the Cell 6 berm clipped some of the wetlands near Cell 7. A total of 0.10 acres of wetland were disturbed, however these were to be disturbed with the construction of Cell 7. Cell 7 is anticipated to be completed during the summer of 2016. A Tolling Agreement addressing the disturbance was issued upon February 12, 2015 to be signed by Rumpke and US Army Corps of Engineers. David Murphy (Rumpke) signed and returned this Tolling Agreement to the Corps on February 24, 2015. A copy was included with the Cell 6/7 application, submitted in May as Attachment D.

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See attached

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
Ohio EPA	401 Certification		4/30/15 and 7/31/12		
Ohio EPA	Landfill Authorization	03-16456	2004-09-10	2009-04-24	
Ohio EPA	NDPES	2IN00203*DD	2013-12-31	2014-06-01	

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

DATE



SIGNATURE OF AGENT

2015-09-21

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

Attachment B:
Supplemental Pages to PCN

Block 19: Project Purpose

Rumpke is proposing to expand their existing Noble Road Landfill site to accommodate its service area based on Average Maximum Daily Waste Receipt Limits (AMDWRL's). The privately owned, publicly available solid waste landfill began accepting waste in 1997 and was purchased by Rumpke in 2009. This is the only publicly available landfill in Richland County. In 2013, the landfill not only served the residents of Mansfield, but received waste from over 18 Ohio counties. Based on an agreement signed in June 1997, between the previous landfill owners and the Richland County Regional Solid Waste Management Authority (the Authority), the Noble Road Landfill guarantees to provide space for all solid wastes generated in Richland County for a continuous period of 25 years, beginning when the landfill was opened in 1997, and continuing to 2022, unless otherwise extended. To continue to accommodate this need, and in agreement with the original approved landfill Permit to Install (issued in 1994 by Ohio EPA), Rumpke proposes to build Cell 6/7 to the northeast of the landfill (Phase I) and add a horizontal expansion to the west of the existing landfill (Phase II). The proposed work will impact federally jurisdictional wetlands located to the northeast and southwest of the existing Noble Road Landfill site. The proposed construction associated with Phase I is crucial from a surface water drainage perspective as a final cap system and surface water letdown channel (fed by multiple drainage benches). In order to function properly, the cap system drainage structures need to be accurately constructed with minimal tolerance for error. If relocated, the channel would flow at a steeper grade and result in an indirect flow path to the basin. In addition, and based on the cells currently permitted for construction (not including the proposed horizontal expansion), the Rumpke Noble Road landfill has approximately 10 million tons of airspace remaining within its waste limits (assuming completion of Phase I, Cell 6/7). This amount equates to approximately 10 years of projected life until the current permitted, constructible space is full and Rumpke is unable to accept additional waste. Therefore, landfill expansion to the west of the existing landfill is a viable option to accommodate future waste projections.

Block 22: Surface Area in Acres of Wetland:

The planned impacts to wetlands occur in two separate hydrologic units (and corresponding USACE Districts): in the southern portion of the site, Shipp Creek-Black Fork Mohican River (HUC #050400020105; Huntington District=HD) and in the northern portion of the site, Southwest Branch Vermilion River (HUC #041000120103; Buffalo District=BD). A summary is provided below for the Preferred Alternative impacts to Jurisdictional (Non-isolated) Wetlands for both Phase I and Phase II

Phase I-Cell 6/7 to the northeast of the landfill:

- Wetland A: 0.36 acres (emergent/scrub-shrub, jurisdictional; BD),
- Wetland B1: 0.01 acres (emergent, jurisdictional; BD),
- Wetland B2: 0.03 acres (emergent, jurisdictional; BD).

Phase II-Horizontal Expansion to the west of the landfill:

- Wetland F: 3.14 acres (scrub-shrub/forested, jurisdictional; BD),
- Wetland H: 1.00 acres (scrub-shrub/forested, jurisdictional; BD),
- Wetland G/I: 5.89 acres (emergent/scrub-shrub/forested, jurisdictional; HD).

The cumulative surface area in acres of Jurisdictional Wetlands filled is 10.43 acres. Impacts will occur through removal of soil down to solid clay, using excavators, bulldozers, and other construction equipment as necessary. Following this removal, engineered fill will be utilized to establish a firm base for the landfill.

IMPORTANT NOTE: In addition to the Jurisdictional Wetlands listed above, 0.60 acres of isolated wetlands will be impacted in association with Phase II. These isolated wetland impacts associated with the Horizontal Expansion component of the proposed project were addressed in an Isolated Wetland Permit Application submitted to Ohio EPA on August 29, 2014. The impacts are summarized below for ease of cross-reference.

Phase II-Isolated Wetland Impacts:

- Wetland C: 0.40 acres (emergent, isolated; HD),
- Wetland D Complex: 0.20 acres (emergent, isolated; HD).

Block 25: Adjacent Property Owners

Adjacent property owners to Phase I- Cell 6/7:

State of Ohio Department of Natural Resources- Fowler Woods State Nature Preserve Parcel ID: 0052150008000 Parcel Address: Olivesburg- Fitchell Road Mailing Address: N/A
Leroy and Dorothy Tennis Parcel ID: 0052122109000 Parcel Address: 373 Noble Road Shiloh, Ohio 44878 Mailing Address: 373 Noble Road Shiloh, Ohio 44878
Grant Milliron Parcel ID: 0052125014000 Parcel Address: Noble Road Shiloh, Ohio 44878 Mailing Address: 2384 State Route 39 Mansfield, Ohio 44903
Homer and Carolyn Bloodhart Parcel ID: 0052121817000 Parcel Address: 235 Noble Road East Mailing Address: 235 Noble Road East Shiloh, Ohio 44878
Jerry and Ann Bloodhart Parcel ID: 0052121817002 Parcel Address: 235 Noble Road East Mailing Address: 235 Noble Road East Shiloh, Ohio 44878

Adjacent property owners to Phase II- Horizontal Expansion

Joseph H. Zimmerman Parcel ID: 0052123108000 Parcel Address: Crum Rd Mailing Address: 7254 State Route 13 Greenwich, OH 44837
Frances E. Cuppy Parcel ID: 0052122012000 Parcel Address: 7364 N State Route 13 Mailing Address: 7364 State Route 13 Shiloh, OH 44878
Paul M. Reiff Jr. Parcel ID: 0044618310000 & 0044619011000 Parcel Address: 7635 State Route 13 Mailing Address: 7316 Amstutz Rd Shiloh, OH 44878
Frontier Recycling and Disposal, LLC Parcel ID: 0052123315000 & 0052123104000 Parcel Address: 7700 State Route 13 Mailing Address: 2384 State Route 39 NW Mansfield, OH 44903

Attachment C:
Updated Alternatives Analysis

1.0 Alternatives Analysis

An alternatives analysis was prepared to present practicable alternatives to wetland impacts at the Site and to respond to Item 5 of the Ohio Environmental Protection Agency (Ohio EPA) Section 401 Water Quality Certification Application. An alternative is considered practicable if it is capable of being implemented after consideration of construction costs, technical feasibility, and sociological and economic impacts.

After extensive review, Rumpke considered the following components when developing the various alternatives to ensure the continued economic viability of the landfill:

- Based on an agreement signed in June 1997, between the previous landfill owners and the Authority, the Noble Road Landfill guarantees to provide space for all solid wastes generated in Richland County for a continuous period of 25 years, beginning when the landfill was opened in 1997, and continuing to 2022, unless otherwise extended. This agreement also specifies that the Noble Road Landfill will accept Richland County wastes in first priority before all other wastes. If the landfill has space left at the end of the 25 years, then the Noble Road Landfill agrees to accept Richland County waste as a first priority until the landfill reaches capacity. The landfill currently has 10 million tons of airspace remaining, assuming Phase I (Cell 6/7) is built. This amount equates to approximately 10 years of projected life until the current permitted, constructible space is full and unable to accept additional waste.
- The project area must be a sufficient size to include landfill operations support facilities such as access roads, sedimentation ponds, and soil borrow and stockpile areas.
- The proposed landfill expansion must comply with siting criteria established in the Ohio Administrative Code (OAC) regarding setback distances including, but not limited to, property lines (300 feet), domiciles (1,000 feet), and non-impacted wetlands (200 feet).
- The landfill expansion must be constructed in a location that will be accessible to the existing landfill infrastructure to economically and properly handle and manage the solid waste. Existing infrastructure includes the landfill leachate piping and storage, landfill gas management system, operational buildings and scale house, access roads, soil borrow and stockpile areas, and a groundwater monitoring well network.
- The proposed landfill expansion should be located in an area that is contiguous to an existing landfill
- The proposed landfill expansion should be located in an area that minimizes economical and socioeconomic impacts to the region.
- The development of the proposed landfill expansion must be on appropriately zoned land.
- The proposed landfill expansion should be in an area with adequate transportation routes to and from the landfill and available local utilities.

Based on the above criteria, expanding the landfill off-site would require extensive and costly infrastructure development that could generate environmental impacts in otherwise un-impacted areas. In general, on-site alternatives are the only viable options due to the complexity of off-site alternatives. The economic feasibility of the project is based on the efficient continuous use of Rumpke's substantial investment in infrastructure and human resources at the existing Noble Road Landfill Site, requiring the proposed

expansion areas to be located adjacent to the existing landfill. In addition, transportation of waste to remote facilities would create a financial hardship on the communities served by the existing landfill.

The following sections describe the project details; on-site alternatives; and the, economic, environmental, and sociological impacts associated with each alternative.

1.1 Project Description

The Preferred Design Alternative (PDA) is as follows for the two proposed Phases:

- For Phase I, complete the Rumpke Noble Road Landfill Cells 6 and 7 according to the original, approved landfill plan (Permit to Install issued by Ohio EPA in 1994). Cell 6 is under construction, and Cell 7 is planned to be built in 2016. This landfill construction plan uses more regular geometry to maximize available air space, extending the effective life of the landfill and reducing construction costs and engineering complexity.
- For Phase II, complete the Rumpke Noble Road Landfill Horizontal Expansion to the southwest using more regular geometry to maximize available air space and meet the projected waste disposal demands within the region for the next several decades. The proposed configuration will be the most cost-effective and the easiest to implement from an engineering perspective.

Please refer to **Figure 1** for a site overview of the two projects.

The Minimal Degradation Alternative (MDA) for both phases would adjust the landfill construction footprint, resulting in less direct wetland impact (*i.e.*, fill). However, these adjustments would result in a less regular cell geometry, with less available air space and greater engineering complexity and expense relative to the PDA.

To accomplish the Non-Degradation Alternative (NDA) for both phases, the landfill construction footprint would be vastly altered to eliminate all direct wetland impacts. This complete avoidance of wetlands would result in highly irregular geometry for many of the landfill cells, resulting in significant losses of air space, increased engineering complexity and lowered cost effectiveness.

The combined wetland impact acreage associated with the PDA is approximately 11.03 acres (including 0.40 acres of isolated wetland impact). The construction associated with Phase I, in the northeast portion of the site, will require the filling of three (3) wetlands located within the project boundaries totaling 0.40 acres. Phase II, to the west of the existing landfill, will impact 10.03 acres of non-isolated wetland and 0.60 acres of isolated wetland. The two phases combined will increase overall airspace to approximately 15 million tons or approximately 15 years of additional life. The overall lifespan of the landfill would extend to just over 25 years.

The goal for completing the northeast portion of the site is to maintain the waste limit, waste grades and the Cell 7 eastern berm configuration from the original approved landfill plan with no loss of waste disposal capacity (see **Figure 2**). Construction of the berm for Cell 6 is nearly complete as of October 1, 2014; however, a temporary berm to allow construction equipment to construct the Cell 6 berm clipped

some of the wetlands near Cell 7. A total of 0.10 acres of wetland were disturbed, however these were to be disturbed with the construction of Cell 7. A Tolling Agreement has been issued and signed by both Rumpke and the ACOE (included with the May application submittal for Cell 6/7), acknowledging Rumpke's obligations relative to these inadvertent impacts. Cell 7 is anticipated to be completed during the summer of 2017.

Impacts associated with Phase II would result from excavation within the existing landfill footprint to create the base contours and the placement of compacted soil fill material (structural fill) for the perimeter embankments, access roads, drainage swales and miscellaneous grading associated with the expansion of the landfill to the west (see **Figure 3**). Although it is possible that perimeter construction activities associated with the western expansion may only partially impact wetland areas, to be conservative our assumption is that the entire wetland area of each affected wetland will be impacted. Construction of the expansion area will occur over a fifteen (15) year time period and will proceed at a rate of approximately ten (10) acres constructed every other year. Rumpke anticipates that it will need to start construction of Phase II to the west of the existing landfill in 2020.

It is important to note that Rumpke will ensure that wetlands in the project areas that have not been permitted for impacts will be protected by the installation and maintenance of construction fencing and adequate erosion and sediment control structures. Additionally, Rumpke will also ensure that the proposed limit of waste is offset a minimum of 200 feet from remaining, non-impacted wetlands, as specified in OAC Rule 3745-27-07(H)(4)(d).

1.2 Avoidance

The NDA is designed to have no impact on any of the delineated wetlands within the project areas. Overall, the revised construction plans for both phases will increase overall airspace to approximately 5 million tons or approximately 5 years of additional life.

For construction activities associated with Phase I, this alternative would require relocation of the northeastern portion of the permitted Cell 7 perimeter berm (see **Figure 4**). In order to still match the existing Cell 6 embankment and waste limit, the Cell 7 berm and waste limit would have a "kink" or shift in the horizontal alignment. Furthermore, construction activities associated with Phase II would result in a truncated portion of the footprint (see **Figure 5**).

As with the other alternatives and in accordance with OAC Rule 3745-27-07(H)(4)(d), Rumpke will ensure that the proposed limit of waste placement is offset a minimum of 200 feet from identified wetlands in both phases and that the perimeter berm, roadways and swales do not encroach upon any identified wetlands. To ensure that identified wetlands are not impacted by the proposed development, Rumpke will install and maintain construction fencing and adequate erosion and sediment control structures.

1.3 Minimization

Development of the MDA is expected to impact a total of 4.89 acres of delineated wetlands. The proposed Phase I would impact 0.15 acres while Phase II would impact 4.74 acres of wetland. The two phases combined will increase overall airspace to approximately 13 million tons or approximately 13 years of additional life.

The MDA would require the lowering and relocation of the northeastern portion of the permitted Cell 7 perimeter berm associated with Phase I (see **Figure 6**). The berm would be lowered between 5 and 10 feet in height, and the alignment of the berm would be shifted up to 40 feet to the west.

Impacts associated with Phase II would result from excavation within the existing landfill footprint to create the base contours and the placement of compacted soil fill material (structural fill) for the perimeter embankments, access roads, drainage swales and miscellaneous grading to expand the landfill to the west (see **Figure 7**). Although it is possible that perimeter construction activities associated with the western expansion may only partially impact wetland areas, to be conservative, our assumption is that the entire wetland area will be impacted.

As with the PDA and NDA, Rumpke will ensure that wetlands in the project areas that have not been permitted for impacts will be protected by the installation and maintenance of construction fencing and adequate erosion and sediment control structures. Additionally, Rumpke will also ensure that the proposed limit of waste is offset a minimum of 200 feet from remaining, non-impacted wetlands, as specified in OAC Rule 3745-27-07(H)(4)(d).

1.4 Magnitude of the Proposed Lowering of Water Quality

The PDA, NDA, and MDA would all have temporary environmental impacts during construction activities. These temporary environmental impacts include increased sediment loading during the earthwork and construction of the landfill cells. BMPs and implementation of a storm water pollution prevention plan will prevent siltation of non-impacted portions of the wetlands. This will also minimize sediment deposition off-site to the maximum extent practicable and could reduce water quality impacts to nearly zero. The PDA will have the greatest permanent wetland impact (11.03 ac), followed by the MDA (4.89 ac). No permanent wetland impacts would occur under the NDA. However, due to on-site stormwater and sediment/erosion controls and the size and quality of wetlands on Site relative to the wetland impacts, the lowering of water quality associated with the temporary and permanent impacts from the three alternatives is considered to be nominal.

The categories of the wetlands range from 1 (low-functioning with limited potential for restoration) to 2 (moderate quality and support moderate wildlife habitat, hydrological or recreational function). In addition, the area is not suitable for sport or recreational fishing. The on-site stream has a drainage of 0.04 square miles and the channel has been straightened. Within the sample reach, the stream has shallow pool depths and a narrow bankfull width, which contributed to an HHEI score of 37 and categorization as a Modified Class II headwater stream. Due to its small watershed size, channelization, and poor substrate composition, it is unlikely to provide habitat to any sensitive or rare wildlife.

The close proximity of these wetlands and streams to the existing landfill and access roads make them unsuitable for many species of birds and wildlife. The species that are present are likely tolerant of disturbance and should readily relocate to suitable similar habitat outside of the project areas if they are displaced during construction activities. If the on-site mitigation proposed under the PDA is approved, the total wetland acreage at the Site will increase and adjacent wetland habitats will be available to mitigate wildlife and water quality impacts. Therefore, the impact of the proposed lowering of wildlife habitat and water quality would be considered negligible to minor. The effected habitats are common to Ohio and large areas of this type of habitat are present within Rumpke's mitigation wetland in the northeast portion of the site, between the landfill and Fowler Woods State Nature Preserve. The wetlands are not used for public recreation, but the wetland areas will continue to enhance the aesthetics of the area and it will offer continued opportunities for public education, particularly as school groups tour the site. In addition, the wetlands will continue to provide a substantial and effective buffer between the active landfill and the State Nature Preserve to the east. Specifically, for the Cell 6/7 project, the loss of habitat for wetland biota (amphibians and invertebrates) is also considered nominal, since this project will affect less than 5% of the available wetland area (<3% for MDA), consisting of a narrow fringe of emergent wetland vegetation and a large expanse of open water and aquatic bed habitat.

Based on correspondence with the USFWS during the permitting process for both phases, the list of T&E species known to occur in Richland County is unlikely to be found at the Site based on the historical uses and current conditions and human activity levels.

1.5 Technical Feasibility and Cost Effectiveness

1.5.1 Preferred Design Alternative

The PDA provides the most technically feasible option for landfill development with respect to constructability and operations. The configuration of the waste fill limit and perimeter berm is easily constructible by providing long, uniform alignments with large radii at the corners (see **Figures 2 and 3**). By avoiding tight corners and frequent alignment shifts, the installation of the base clay and geomembrane liner systems is greatly simplified. This design minimizes the complexity of the construction work, thereby reducing berm construction costs. In addition, the PDA will allow for the development of uniformly shaped disposal cells. The uniform and consistent shape of the footprint and phased disposal cells, facilitates access, waste placement operations, and grading. Lastly, the portion of the site associated with Phase I is crucial from a surface water drainage perspective as a final cap system and surface water letdown channel (fed by multiple drainage benches). In order to properly function, the cap system drainage structures need to be accurately constructed with minimal tolerance for error. If relocated, the channel would flow at a steeper grade and result in an indirect flow path to the basin, requiring larger energy dissipation structures at the channel base.

With respect to soils balance, there are adequate soils on-site between cell excavation and borrow area development to construct, operate and close the landfill. The goal of any development is to have a slight soils surplus to provide for a contingency, avoid unnecessary costs of importing soils from off-site sources

and avoid costs associated hauling and stockpiling excess soil away from the work area(s).

The PDA provides the most cost-effective option with respect to landfill construction and operation. As noted above, unit construction costs will be reduced by construction of a uniform shaped footprint and favorable soils balance. The larger waste disposal capacity and site life will allow for more favorable amortization of capital costs (cell and final cap system, weigh scales, roadways, gas control systems, leachate storage, etc.). Operating costs are lower with the PDA as a result of the uniform waste footprint which allows for easier waste placement, grading and covering operations. The lower construction and operating costs will allow Rumpke to establish a lower disposal rate that will be cost competitive and of benefit to regional customers.

1.5.2 Non Degradation Alternative (Avoidance)

The NDA provides the least technically feasible option for landfill development with respect to constructability and operations (see **Figures 4 and 5**). The most efficient and cost-effective landfill construction and operation is achieved via development of a uniform waste footprint. The NDA can only be developed by maintaining the waste fill limit 200 feet from the site wetlands. This offset results in a highly irregular footprint with a near truncation in the north central portion of the proposed waste fill area associated with the western expansion. Furthermore, portions of the berm associated with Phase I would be shifted to the west by as much as 180 feet, reducing the waste footprint by 1.9 acres and the available airspace by 600,000 cubic yards or 540,000 tons.

The inefficient layout with both phases and reduced footprint associated with the horizontal expansion causes the following concerns:

- Difficult and costly base clay and geomembrane liner construction.
- Irregular shape will result in irregular waste contours which will be difficult to construct and grade effectively.
- Difficult cell base liner construction due to irregular footprint associated with the expansion to the west.
- The irregular shape and waste grades will make it difficult to construct access roads across placed waste in the western expansion. Waste filling at higher elevations will be problematic.
- The truncated portion of the footprint would result in a very narrow floor width or pinch point in the western expansion. Truck access and equipment operation in such a limited space would be logistically difficult and pose a serious safety concern.
- The northeast portion of the site contains a rock-lined letdown channel; the irregular contour pattern would complicate installation of this channel and likely require relocation. The original design location of this channel was selected to minimize the overall slope and to flow directly into the north sedimentation basin. If relocated, the channel would flow at a steeper grade and result in an indirect flow path to the basin, requiring larger energy dissipation structures at the channel base.

As a result of the construction and operational challenges noted above, it would be very difficult to develop the NDA in a cost competitive manner.

1.5.3 Minimal Degradation Alternative (Minimization)

The MDA would require the lowering and relocation of the northeastern portion of the permitted Cell 7 perimeter berm associated with Phase I (see **Figures 6 and 7**). The berm would be lowered between 5 and 10 feet in height, and the alignment of the berm would be shifted up to 40 feet to the west. As with the NDA, the Cell 7 berm and waste limit would have a slight “kink” or shift in the alignment. Additionally, it will complicate waste placement as any angles or changes in permitted final waste contours are more difficult to accurately construct than long, straight runs. By reducing the berm height and by shifting the berm away from the wetland areas, the limit of construction is reduced and less wetland area is impacted. However, this reduces the airspace by 120,000 cubic yards or 100,000 tons

With respect to soils balance, there are adequate soils on-site between cell excavation and borrow area development to construct, operate and close the landfill. The goal of any development is to have a slight soils surplus to provide for a contingency, avoid unnecessary costs of importing soils from off-site sources and avoid costs associated hauling and stockpiling excess soil away from the work area(s).

The complex berm construction work would result in increased berm construction costs, as compared to the PDA. However, operating costs are lower with the MDA, when compared to the NDA, as a result of the more uniform waste footprint which allows for easier access, waste placement, grading and covering operations. The airspace loss with the MDA is also less than that associated with the NDA.

1.6 Economic Considerations

The local economy of Richland County is slightly below average in comparison to the overall economy of Ohio. Per capita income in Richland County for 2009-2013 was \$21,932 compared to the state mean of \$26,046, and the median household income for Richland County from 2009-2013 was \$41,835 compared to the state average of \$48,308 during the same time period. **Table 1** lists data for the local economy, obtained from the U.S. Census Bureau and the American Community Survey 5-Year Estimates, available from the U.S. Census Bureau American Fact Finder website. The most recent data on unemployment in the area (dated December 2014, obtained from the Ohio Department of Jobs and Family Services) lists Richland County as having an unemployment rate of 5.2%, slightly higher than the Ohio state average of 4.7%. Richland County was ranked 27 out of Ohio’s 88 counties for highest rates of unemployment.

Table 1. Local Economy Comparison to County and State Economies

Area	Zip Code	Richland County	State of Ohio
Year	2009-2013 (44878)*	2009-2013*	2009-2013
Total Housing Units	1,144	54,444	5,124,221
Occupied Housing Units	1,094 (95.6%)	48,458 (89.0%)	4,557,655 (89.9%)
Owner Occupied	900 (82.3%)	33,518 (69.2%)	3,074,792 (67.5%)
Renter Occupied	194 (17.7%)	14,940 (30.8%)	1,482,863 (32.5%)
Population	3,147	124,475	11,536,504
Income per Capita	\$20,406	\$21,932	\$26,046
Median Household Income	\$51,337	\$41,835	48,308
Families Below Poverty	8.9%	15.7%	15.8%

*U.S. Census Bureau, 2009 - 2013 American Community Survey

1.6.1 Preferred Design Alternative

For comparison purposes, **Table 2** provides the social and economic justification for all three alternatives. Implementation of the PDA provides for a number of primary and secondary social and economic benefits that are discussed below.

The development of the PDA will provide significantly more disposal volume than provided in the MDA or NDA. The facility would serve as a regional landfill, potentially receiving waste from the entire northern Ohio market. This larger waste disposal capacity allows for the following economic benefits:

- Long-term, environmentally sound waste disposal capacity.
- Lower disposal fees in conjunction with assured long term capacity will aid the region in attracting new business and help existing businesses to control costs.
- Rumpke anticipates that the PDA will allow for the creation of **15** full time permanent jobs:
 - 8 heavy equipment operators
 - 2 laborers
 - 2 heavy equipment mechanics

- 2 administrative personnel
- 1 site manager
- Corporate support staff
- It is estimated that between 3 and 5 temporary laborer positions would be created (numbers will vary with season).
- The PDA will also serve to support local vendors that provide the following services:
 - Heavy equipment maintenance/repair
 - Fuel providers
 - Uniforms
 - Earthwork and environmental contractors

The development of the PDA will also have the following economic impacts based on local fees:

- The landfill currently pays to the State of Ohio, an environmental protection fee of \$4.75/ton of non-exempt waste received. Based upon anticipated annual non-exempt waste receipts of 1,000,000 tons per year this would result in total annual payments of \$4,750,000, or approximately \$71,250,000 in fees paid over the 15-year life of the expansion area.
- The landfill currently pays a \$0.25/ton host community fee to Butler Township. Based upon anticipated annual non-exempt waste receipts of 1,000,000 tons per year, this would result in total annual payments of \$250,000, or approx. \$3,750,000 over the 15-year life of the expansion area.
- A generation fee of \$7.50/ton is paid to the Richland County Solid Waste Management District for waste accepted from the District to implement waste reduction education and recycling programs. Generation and contract fees will vary in the future, but based upon current volumes of 180,000 tons per year, this would amount to \$1,350,000 annually, or approximately \$20,250,000 over the 15-year life of the expansion area.

1.6.2 Non-Degradation Alternative

The development of the NDA, as previously noted, will be more technically difficult and costly than the MDA and the PDA. The NDA will severely limit the growth of the landfill and thus the local economy. This alternative will further limit the time period for construction, thus limiting the time frame that temporary workers will be employed on the Site. The NDA will also reduce the lifespan of the landfill to 9 years and provide for less disposal volume in Cell 7 than the other alternatives. The smaller size and reduced lifespan associated with the western expansion would result in higher unit costs for the construction, operation, and closure of this cell. These higher costs would be borne by the customers of the landfill via higher disposal fees. The higher fees could make it difficult for Rumpke to competitively bid on larger municipal waste disposal contracts. Therefore, it is doubtful that the facility could be developed under this scenario. The facility, if developed under the NDA, may offer the following economic benefits:

- Short-term, environmentally sound waste disposal capacity.
- Rumpke anticipates that the Non-Degradation Alternative will allow for the creation of **12** full time permanent jobs, as noted below:

- 6 heavy equipment operators
- 1 laborer
- 2 heavy equipment mechanics
- 2 administrative personnel
- 1 site manager
- Corporate support staff
- It is estimated that between 2 and 4 temporary laborer positions would be created (numbers will vary with season)

The development of the NDA will also have the following economic impacts based on local fees:

- The landfill currently pays to the State of Ohio, an environmental protection fee of \$4.75/ton of non-exempt waste received. Based upon anticipated annual non-exempt waste receipts of 1,000,000 tons per year this would result in total annual payments of \$4,750,000, or approximately \$23,750,000 in fees paid over the 5-year life of the expansion area.
- The landfill currently pays a \$0.25/ton host community fee to Butler Township. Based upon anticipated annual non-exempt waste receipts of 1,000,000 tons per year, this would result in total annual payments of \$250,000, or approx. \$1,250,000 over the 5-year life of the expansion area.
- A generation fee of \$7.50/ton is paid to the Richland County Solid Waste Management District for waste accepted from the District to implement waste reduction education and recycling programs. Generation and contract fees will vary in the future, but based upon current volumes of 180,000 tons per year, this would amount to \$1,350,000 annually, or approximately \$6,750,000 over the 5-year life of the expansion area.

1.6.3 Minimal Degradation Alternative

The benefits received from the MDA will likely cover the same breadth of service areas as the PDA, but without the same depth. The reduced size of the landfill will limit the construction time as well as its capacity. The smaller expansion area to the west will also limit the overall lifespan of the landfill to approximately 22 years. Benefits to vendors such as heavy equipment maintenance/repair vendors, fuel and uniform providers, and earthwork and environmental contractors would still exist but would be lessened by the shorter construction period. Further, Rumpke will not need to hire as many employees or contractors to excavate the land and prepare it to receive waste. The limit in both employees, as well as contractors, will limit the economic impact the landfill expansion can have on the local economy. This limit in waste disposal capacity provides the following economic benefits:

- Long-term, environmentally sound waste disposal capacity.
- Lower disposal fees in conjunction with assured long term capacity will aid the region in attracting new business and help existing businesses to control costs.
- Rumpke anticipates that the Minimal Degradation Alternative will still allow for the creation of **15** full time permanent jobs, as noted below:
 - 8 heavy equipment operators

- 2 laborers
- 2 heavy equipment mechanics
- 2 administrative personnel
- 1 site manager
- Corporate support staff
- It is estimated that between 3 and 5 temporary laborer positions would be created (numbers will vary with season).
- The MDA will also serve to support local vendors that provide the following services:
 - Heavy equipment maintenance/repair
 - Fuel providers
 - Uniforms
 - Earthwork and environmental contractors

The development of the MDA will also have the following economic impacts based on local fees:

- The landfill currently pays to the State of Ohio, an environmental protection fee of \$4.75/ton of non-exempt waste received. Based upon anticipated annual non-exempt waste receipts of 1,000,000 tons per year this would result in total annual payments of \$4,750,000, or approximately \$61,750,000 in fees paid over the 13-year life of the expansion area.
- The landfill currently pays a \$0.25/ton host community fee to Butler Township. Based upon anticipated annual non-exempt waste receipts of 1,000,000 tons per year, this would result in total annual payments of \$250,000, or approx. \$3,250,000 over the 13-year life of the expansion area.
- A generation fee of \$7.50/ton is paid to the Richland County Solid Waste Management District for waste accepted from the District to implement waste reduction education and recycling programs. Generation and contract fees will vary in the future, but based upon current volumes of 180,000 tons per year, this would amount to \$1,350,000 annually, or approx. \$17,550,000 over the 13-year life of the expansion area.

1.7 Cumulative Impact

Cumulative negative impacts to the watershed are anticipated to be nominal in conjunction with the previously authorized impacts associated with the Rumpke landfill Site. Previously authorized impacts associated with the landfill site included an authorized fill acreage of 3.35 acres with an approved mitigation program of 11.38 acres total; however, the combined acreage of on-site created and enhanced wetlands yielded approximately 14.55 acres, exceeding the overall 11.38 on-site mitigation requirement by 3.27 acres. In addition, the proposed Horizontal Expansion to the west of the existing landfill anticipates impacting an additional 10.63 acres of delineated wetlands (including 5.89 acres of previously mitigated Wetland G/I) with a proposed on-site mitigation of 11.21 acres.

Table 2. Social and Economic Justification

	Preferred (PDA)	Minimal Degradation (MDA)	Non-Degradation (NDA)
New Permanent Jobs*	15	15	12
Estimated Payroll*	\$685,000/2015 fiscal yr. (\$10,275,000/15 yr lifespan)	\$685,000/2015 fiscal yr. (\$8,905,000/13 yr lifespan)	\$550,000/2015 fiscal yr. (\$2,750,000/5 yr lifespan)
State of Ohio, Environmental Protection Fee (\$4.75/ton)	\$71,250,000	\$61,750,000	\$2,375,000
Butler Township, Host Community Fee (\$0.25)	\$3,750,000	\$3,250,000	\$1,250,000
Richland County Solid Waste Management Generation & Contract Fees	\$20,250,000	\$17,550,000	\$6,750,000

*Phase II only. Although it is anticipated that Phase I will have no impact on the creation of new jobs, Phase I will serve to support local vendors.

Although cumulatively, the proposed and approved impacts to wetlands amounts to approximately 14.38 acres (3.35 acres of impact formerly approved and a proposed impact of 11.03 acres), the proposed mitigation, if approved, would increase the amount of on-site created and enhanced wetlands to approximately 25.76 acres. This results in a net increase of approximately 11.38 acres of wetland. Although the proposed mitigation of 0.80 acres associated with the Cell 6/7 expansion will occur outside of the watershed, the cumulative impact of the authorized and proposed projects is considered to be minor and non-detrimental to nearby waterways due to the previous net increase in on-site wetland mitigation acreage associated with the landfill's expansion.

Lastly, by creating more designated area for proper waste disposal, it is anticipated that the amount of litter within the watershed region will remain low, thus preventing the amount of artificial debris and potentially toxic contamination that may pollute nearby waterways.

1.8 Indirect Impacts

The wetlands on the Site are mostly small, Category 1 and 2 wetlands; therefore, indirect impacts such as loss of buffers and elimination of wetland functions associated with the overall hydrology of the Site and watershed are expected to be nominal. Furthermore, the overall values and the regulated on-site features do not provide established permanent populations of aquatic life; therefore, indirect impacts to wildlife migration are not anticipated.

As mentioned previously, the northeast portion of the site contains a rock-lined letdown channel and the irregular contour pattern would complicate installation of this channel and likely require relocation. The original design location of this channel was selected to minimize the overall slope and to flow directly into the north sedimentation basin. If relocated, the channel would flow at a steeper grade and result in an indirect flow path to the basin, requiring larger energy dissipation structures at the channel base. Therefore, the PDA offers the most feasible option to assist with storm water management on the Site.

1.9 Construction Storm Water Management Plans

During construction, surface waters in the projects' vicinity, aside from the proposed impacted wetland areas noted above, will be protected from sediment laden runoff by implementing the following erosion and sediment control practices:

- Temporary silt fencing
- Temporary grading and diversion swales
- Permanent perimeter diversion swales conveying runoff to designated sedimentation basins
- Permanent seeding of all disturbed areas

Once the landfill phase is certified to accept waste, sediment runoff and leachate (water in contact with waste) will be controlled using the following measures and practices:

- Installation of daily and intermediate cover over the placed waste
- Installation of temporary and permanent drainage swales which will convey flow to designated sedimentation basins.
- Temporary and permanent seeding
- Proper waste grading

Estimated construction and operation/maintenance costs for storm water management/water pollution control for each alternative are outlined in **Tables 3 through 5** below. The quantities are associated with structures located within or adjacent to the proposed phases.

1.10 Post-Construction Storm Water Management Plans

Once the landfill cell is certified to accept waste, sediment runoff and leachate (water in contact with waste) will be controlled using the following measures and practices for each alternative:

- Proper waste grading
- Installation of daily and intermediate cover over the placed waste
- Installation of temporary and permanent drainage swales which will convey flow to a designated sedimentation basin.
- Temporary and permanent seeding

Estimated construction and operation/maintenance costs for storm water management/water pollution control for the various alternatives are outlined above in **Tables 3 through 5**.

Table 3. Estimated Construction Costs for Preferred Design Alternative

Item	Quantity*	Units	Unit Cost**	Total Cost
Temporary/Construction Erosion Control Measures (per phase)	7	Lump Sum	\$5,000	\$35,000
Permanent Sedimentation Basins	2	Each	\$100,000	\$200,000
Perimeter Drainage Channels	9,600	LF	\$10.00	\$96,000
Temporary Seed/Mulch	80	AC	\$2,000	\$160,000
Final Cap Bench Channels	20,690	LF	\$10.00	\$206,900
Permanent Seeding (landfill, borrow, support)	160	AC	\$2,500	\$400,000
Rock-lined Let Down	3,075	LF	\$55.00	\$169,180
Maintenance (basin cleanout, channel dredging)***	55	YR	\$15,000	\$825,000
NPDES Sampling/lab Analysis/Reporting****	55	YR	\$12,000	\$660,000
Total				\$2,752,080

* Quantities are estimated based conceptual landfill layouts

**includes operating life and 30 years post closure as specified by OAC Rules

***Construction costs based upon construction bids for Ohio landfill projects between 2012 and 2014

**** Operation and Maintenance (O & M) Costs based upon applicant experience at other sites.

Table 4. Estimated Construction Costs for Non Degradation Alternative

Item	Quantity*	Units	Unit Cost**	Total Cost
Temporary/Construction Erosion Control Measures (per phase)	5	Lump Sum	\$5,000	\$25,000
Permanent Sedimentation Basins	2	Each	\$200,000	\$200,000
Perimeter Drainage Channels	9,540	LF	\$10.00	\$95,400
Temporary Seed/Mulch	60	AC	\$2,000	\$120,000
Final Cap Bench Channels	10,350	LF	\$10.00	\$103,500
Permanent Seeding (landfill, borrow, support)	100	AC	\$2,500	\$2,500
Rock-lined Let Down	1,875	LF	\$55.00	\$103,125
Maintenance (basin cleanout, channel dredging)***	39	YR	\$15,000	\$585,000
NPDES Sampling/lab Analysis/Reporting****	39	YR	\$12,000	\$468,000
Total				\$1,702,525

* Quantities are estimated based conceptual landfill layouts

**includes operating life and 30 years post closure as specified by OAC Rules

***Construction costs based upon construction bids for Ohio landfill projects between 2012 and 2014

****O&M Costs based upon applicant experience at other sites.

Table 5. Estimated Construction Costs for Minimum Degradation Alternative

Item	Quantity*	Units	Unit Cost**	Total Cost
Temporary/Construction Erosion Control Measures (per phase)	6	Lump Sum	\$5,000	\$30,000
Permanent Sedimentation Basins	2	Each	\$100,000	\$200,000
Perimeter Drainage Channels	9,580	LF	\$10.00	\$95,800
Temporary Seed/Mulch	80	AC	\$2,000	\$160,000
Final Cap Bench Channels	18,990	LF	\$10.00	\$189,900
Permanent Seeding (landfill, borrow, support)	160	AC	\$2,500	\$400,000
Rock-lined Let Down	2,975	LF	\$55.00	\$163,625
Maintenance (basin cleanout, channel dredging)***	52	YR	\$15,000	\$780,000
NPDES Sampling/lab Analysis/Reporting****	52	YR	\$12,000	\$624,000
Total				\$2,643,325

* Quantities are estimated based conceptual landfill layouts

**Includes operating life and 30 years post closure as specified by OAC Rules

***Construction costs based upon construction bids for Ohio landfill projects between 2012 and 2014

****O&M Costs based upon applicant experience at other sites.

Attachment D:
Conceptual Mitigation Plan

Mitigation for wetland impacts at this Site is complicated by the presence of both isolated and jurisdictional wetlands that occur within two 8-digit HUC watersheds, one in the U.S. Army Corps of Engineers Buffalo District (Vermilion River watershed), and the other in the Huntington District (Mohican River watershed). The goals of this project include purchasing 11.20 acres of wetland credits at the Edison Woods Mitigation Bank operated by the North Coast Regional Council of Park Districts to compensate for 4.54 acres of impact to jurisdictional scrub-shrub/forested wetlands. This credit will accomplish Rumpke's required mitigation for impacts in the Vermilion River watershed within the Buffalo District of the USACE.

Rumpke also proposes to restore and create an 11.21-acre wetland complex to include (in order of increasing acreage): emergent, scrub-shrub and forested wetland to compensate for all isolated and jurisdictional wetland impacts in the Mohican River watershed. The site location showing an initial conceptual mitigation area is included as **Figure 1**. This on-site mitigation will satisfy Rumpke's required mitigation for impacts within the Huntington District of the USACE. To accomplish this, Rumpke will allocate an approximately 20-acre area of predominantly hydric soils on the west side of the horizontal expansion site (along S.R. 13) to establish an on-site mitigation area to be protected in perpetuity. As the mitigation area develops, to the extent practicable, plants, soils, and animals from the impacted wetlands with the horizontal expansion footprint will be gradually relocated into this area. With the anticipated phasing of this expansion, Rumpke and MAD expect to be able to salvage much of the biological material before the wetlands are impacted, providing a beneficial source of local genotype plants and animals to colonize the maturing wetlands.

Rumpke has reserved the necessary credits at Edison Woods. Final bank payment will proceed after the Section 401 and 404 permits are issued. Mitigation for wetland impacts associated with the Minimal Degradation Alternative is similar to the Preferred Design Alternative, with the exception of the proposal to purchase 10.70 acres of wetland credits at the Edison Woods Mitigation Bank and the proposal to restore and create a 0.90-acre emergent wetland to compensate for 0.6 acres of isolated wetland impacts in the Mohican River watershed. This on-site mitigation will satisfy Rumpke's required mitigation for impacts within the Huntington District of the USACE. To accomplish this, Rumpke will allocate an approximately 2-acre area of predominantly hydric soils on the west side of the horizontal expansion site (along S.R. 13) to establish an on-site mitigation area to be protected in perpetuity.

The proposed mitigation ratios were calculated using the OAC 3745-1-54 Wetland Antidegradation regulations and are presented in **Tables 1 and 2**. Mitigation options were discussed with Ohio EPA representative Heather Allamon and USACE representative Paul Wetzal during a pre-application meeting on March 25, 2014.

Table 1. PREFERRED ALTERNATIVE Wetland Mitigation Summary: Rumpke Noble Road Landfill - PHASE I

Wetland ID	Size (acres on Site)	Jurisdictional Status	Vegetation Type(s)	Category	Watershed	Mitigation Calculations				Mitigation Proposed		
						Impact Acreage	Mitigation Location*	Mitigation Ratio**	Mitigation Requirement	On-Site	Off-Site (Edison Woods)	
A	1.74	Non-isolated	Emergent/Scrub-shrub	2	Vermilion	0.36	Off-site	2.0:1	0.72	-	0.72	
B1	0.01	Non-isolated	Emergent	1	Vermilion	0.01	Off-site	1.5:1	0.02	-	0.02	
B2	0.03	Non-isolated	Emergent	1	Vermilion	0.03	Off-site	1.5:1	0.05	-	0.05	
Total Isolated Emergent Wetland Impacts						0.00	Total Isolated Emergent Wetland Mitigation				-	0.00
Total Jurisdictional Emergent Wetland Impacts						0.40	Total Jurisdictional Emergent Wetland Mitigation				-	0.78
Total Jurisdictional Forested Wetland Impacts						0.00	Total Jurisdictional Forested Wetland Mitigation				-	0.00
Total Wetland Impacts (All Types)						0.40	Total Wetland Acreage to be Restored or Purchased				0.00	0.78

BANK CREDIT REQUIRED (Nearest 0.10 ac)	0.8
GRAND TOTAL MITIGATION ACREAGE	0.80

*Off-Site location = Edison Woods Wetland Mitigation Bank

** Off-site jurisdictional emergent (Category 1) acreage requirement based on 1.5:1 mitigation ratio (credits at Edison Woods Wetland Mitigation Bank)

Off-site jurisdictional emergent wetland (Category 2) acreage requirement based on 2.0:1 mitigation ratio (credits at Edison Woods Wetland Mitigation Bank)

Table 2. PREFERRED ALTERNATIVE Wetland Mitigation Summary: Rumpke Noble Road Landfill - PHASE II

Wetland ID	Size (acres on Site)	Jurisdictional Status	Vegetation Type(s)	Category	Watershed	Mitigation Calculations				Mitigation Proposed	
						Impact Acreage	Mitigation Location*	Mitigation Ratio**	Mitigation Requirement	On-Site	Off-Site (Edison Woods)
A	0.03	Isolated	Emergent	1	Mohican	0.00	N/A	N/A	None	None	None
B	0.14	Isolated	Scrub-Shrub	1	Mohican	0.00	N/A	N/A	None	None	None
C	0.40	Isolated	Emergent	1	Mohican	0.40	On-site	1.5:1	0.60	0.60	None
D	0.20	Isolated	Emergent	1	Mohican	0.20	On-site	1.5:1	0.30	0.30	None
E	0.03	Isolated	Emergent/Scrub Shrub	1	Vermilion	0.00	N/A	N/A	None	None	None
F	3.14	Non-Isolated	Scrub-shrub/Forested	2	Vermilion	3.14	Off-site	2.5:1	7.85	None	7.85
H	1.00	Non-Isolated	Scrub-shrub/Forested	2	Vermilion	1.00	Off-site	2.5:1	2.50	None	2.50
G/I***	2.95	Non-Isolated	Emergent	Modified 2	Mohican	2.95	On-site	1.5:1	4.43	4.43	None
G/I***	2.94	Non-Isolated	Scrub-shrub/Forested	Modified 2	Mohican	2.94	On-site	2.0:1	5.88	5.88	None
J	5.60	Non-Isolated	Emergent/Scrub shrub/Forested	Modified 2	Mohican	0.00	N/A	N/A	None	None	None
K	0.12	Non-Isolated	Scrub-shrub/Forested	Modified 2	Mohican	0.00	NA	NA	None	None	None
Total Isolated Emergent Wetland Impacts						0.60	Total Isolated Emergent Wetland Mitigation			0.90	
Total Jurisdictional Emergent Wetland Impacts						2.95	Total Jurisdictional Emergent Wetland Mitigation			4.43	
Total Jurisdictional Forested Wetland Impacts						7.08	Total Jurisdictional Forested Wetland Mitigation			5.88	10.35
Total Wetland Impacts (All Types)						10.63	Total Wetland Acreage to be Restored or Purchased			11.21	10.35

BANK CREDIT REQUIRED (Nearest 0.10 ac)	10.4
GRAND TOTAL MITIGATION ACREAGE	21.61

*On-Site location=~20-acre western portion of Rumpke Horizontal Expansion Site; Off-site=Edison Woods Wetland Mitigation Bank

** On-site isolated wetland (Category 1 and 2 emergent) acreage requirement based on 1.5:1 mitigation ratio

On-site jurisdictional emergent wetland (Category 2) acreage requirement based on 1.5:1 mitigation ratio

On-site jurisdictional forested wetland (Category 2) acreage requirement based on 2:1 mitigation ratio

Off-site jurisdictional forested wetland (Category 2) acreage requirement based on 2:1 mitigation ratio (credits at Edison Woods Wetland Mitigation Bank)

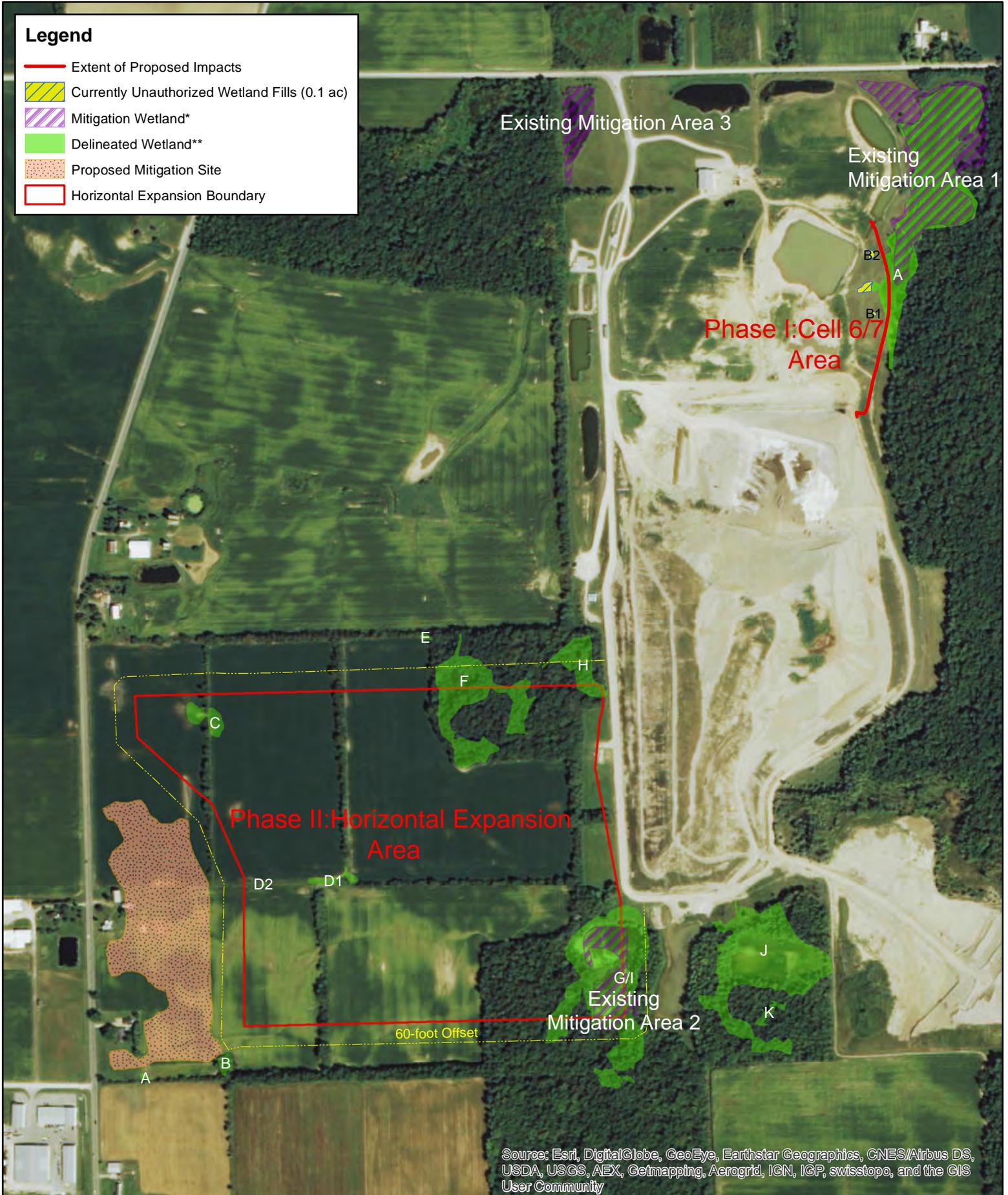
***Original Wetland G and Wetland I were merged per USACE recommendation; feature extends beyond property boundary; acreage indicated represents on-site acreage.

Figures

Phase I and Phase II Design Alternatives

Legend

- Extent of Proposed Impacts
- Currently Unauthorized Wetland Fills (0.1 ac)
- Mitigation Wetland*
- Delineated Wetland**
- Proposed Mitigation Site
- Horizontal Expansion Boundary



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Figure 1. Proposed Wetland Fills - Phase I and Phase II
 Rumpke Noble Road Site
 Richland Co, OH

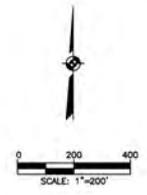
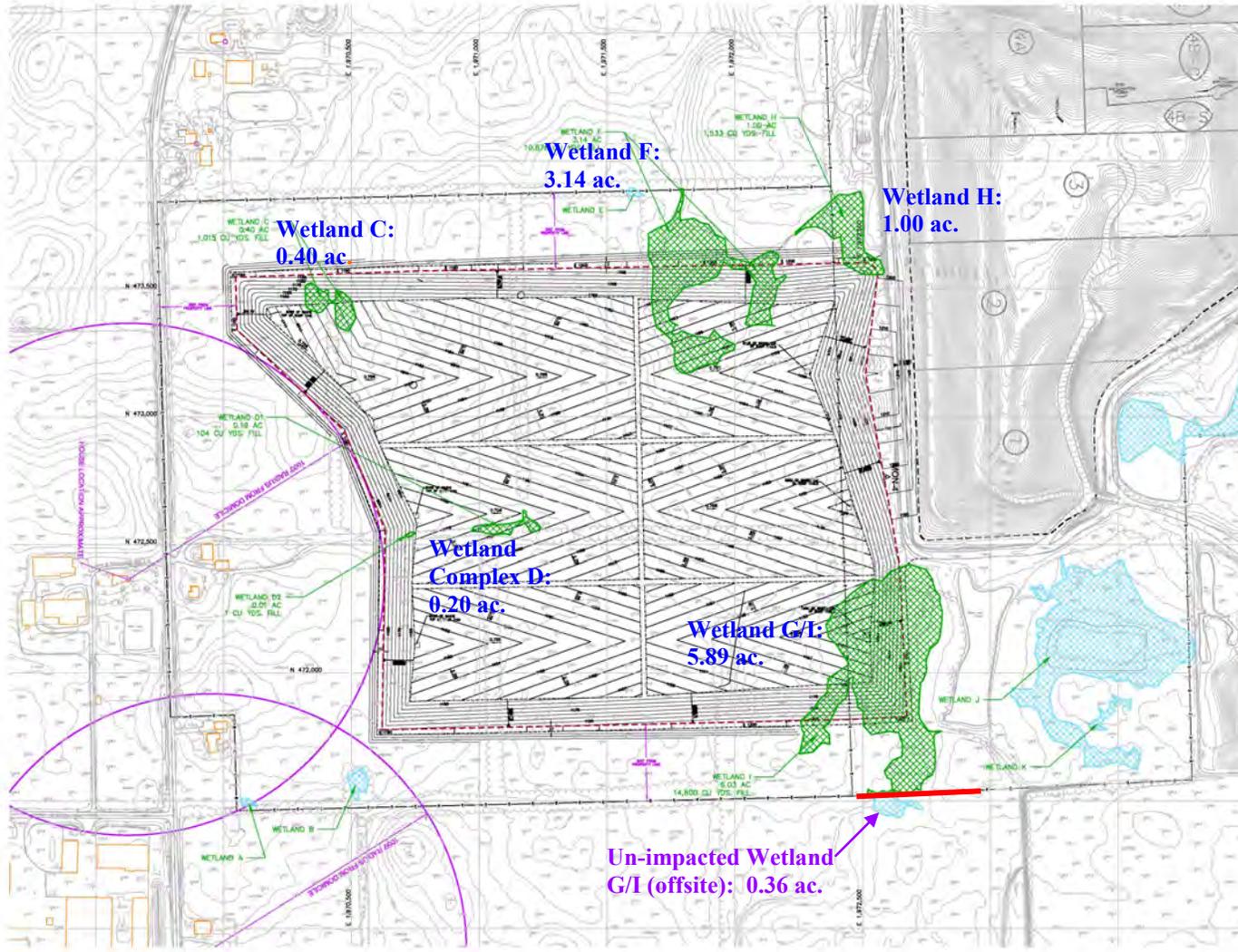
Sources: Esri World Imagery Basemap, MAD Scientist Associates Field Data (2012), *Hull & Associates Modified Mitigation Plan (1995)

**Partial impacts to Wetlands F, H, and G/I are treated as complete losses

Date: 08/20/2015 By: AML



C:\PUM019-NOBLE ROAD EXPANSION\PTV\EXPANSION_PTV\WETLAND_OPTIONS\6-25-14_REV_WETLANDS\RM019-PREFERRED_ALT.dwg - Jun 25, 2014 - 11:48am - Rhyngard



- LEGEND**
- PROPERTY LINE
 - PERMITTED LIMIT OF SOLID WASTE PLACEMENT
 - PROPOSED LIMIT OF SOLID WASTE PLACEMENT
 - 1040 PROPOSED TOP OF REL CONTOURS
 - EXISTING AERIAL TOPOGRAPHY
 - EXISTING WETLANDS (NOT TO BE IMPACTED)
 - EXISTING WETLANDS (TO BE IMPACTED)

Volume of Fill
Jurisdictional: 27,211 yd³
Isolated: 1,120 yd³

REVISIONS			
NUMBER	DATE	MADE BY	CHECKED BY

DATE: 6-25-14
 PREPARED BY: RSZ
 DRAWN BY: LMK
 CHECKED BY: RSZ
 FILE: RM019-PREFERRED ALT

NORTH POINT ENGINEERING

8607 Frank Ave., N.W.
 Suite 200
 North Canton, Ohio 44720
 330-434-8888
 Fax 330-434-8889

REG. PROF. ENG. RONALD S. ZITEK, P.E. LICENSE NO. C-62787 DATE

RUMPKE OF NORTHERN OHIO
 NOBLE ROAD LANDFILL PROPOSED
 WESTERN LATERAL/VERTICAL EXPANSION
 PREFERRED WETLAND ALTERNATIVE
 BUTLER TOWNSHIP, RICHLAND COUNTY, OHIO

3



Figure 3: Phase II Preferred Design Alternative

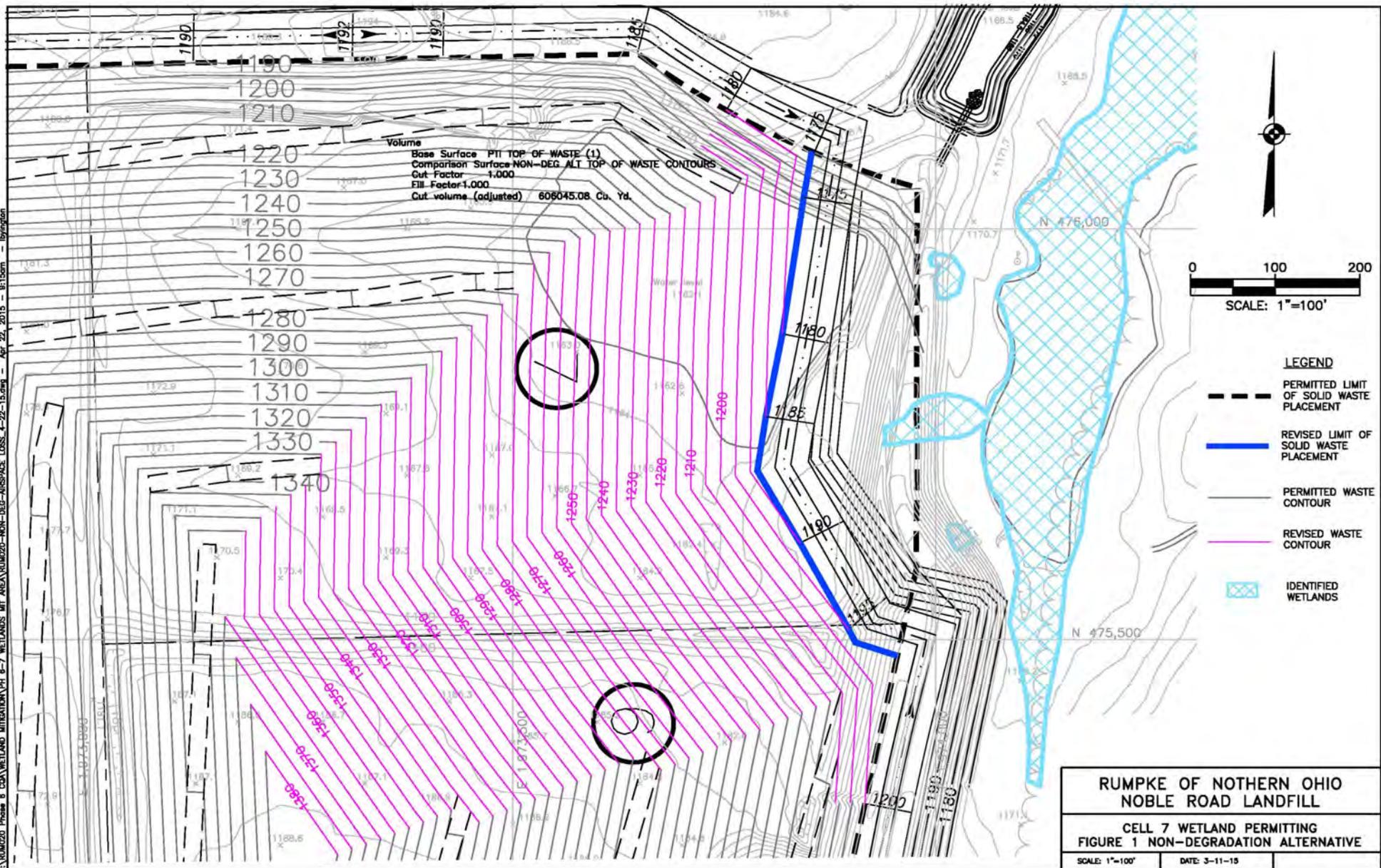
Source: North Point Engineering

Shiloh, OH

Created By: North Point Engineering
 Edited By: LMK

Created: 07-28-2014

RUMUCO Phase 6 COA WETLAND MITIGATION PH 6-7 WETLANDS MT. AREA RUMUCO-NON-DEGRADATION LOSS. 4-22-15.dwg - Apr. 22, 2015 - 8:15am - bbrington



**Figure 4: Phase I
Non-Degradation Alternative**

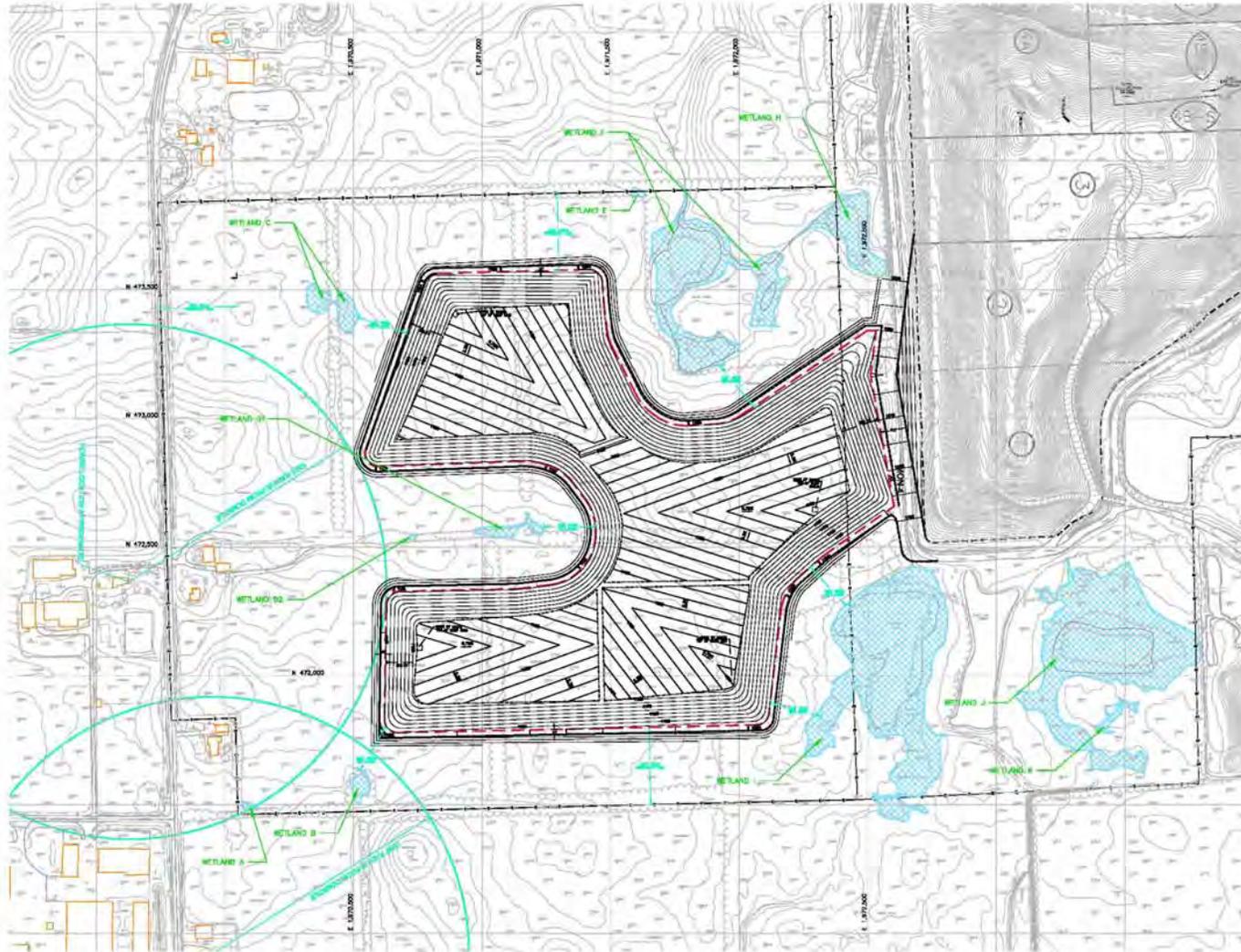
Shiloh, OH

Source: Google Earth,
North Point Engineering Construction Plan

Created By: MS

Created: 4-1-2015

J:\BLM19-NON DEGRADATION WETLAND EXPANSION\PTV\DWANSON\PTV\WETLAND\BLM19-NON DEGR ADU.dwg - Jun 25, 2014 - 11:33am - 2d/3dplot



Volume of Fill
Jurisdictional: 0 yd³
Isolated: 0 yd³

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5">REVISIONS</th> </tr> <tr> <th>NUMBER</th> <th>DATE</th> <th>MADE BY</th> <th>CHECKED BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISIONS					NUMBER	DATE	MADE BY	CHECKED BY	DESCRIPTION																DATE: 8-25-14 PREPARED BY: HSZ DRAWN BY: LMK CHECKED BY: HSZ FILE: BLM19-NON DEGR ADT	<p>NORTH POINT ENGINEERING</p>	6887 Frank Ave. N.W. Suite 300 North Canton, Ohio 44720 330 - 491 - 8888 Fax 330 - 494 - 8888	RUMPKE OF NORTHERN OHIO NOBLE ROAD LANDFILL PROPOSED WESTERN LATERAL/VERTICAL EXPANSION NON-DEGRADATION WETLAND ALTERNATIVE BUTLER TOWNSHIP, RICHLAND COUNTY, OHIO
REVISIONS																													
NUMBER	DATE	MADE BY	CHECKED BY	DESCRIPTION																									



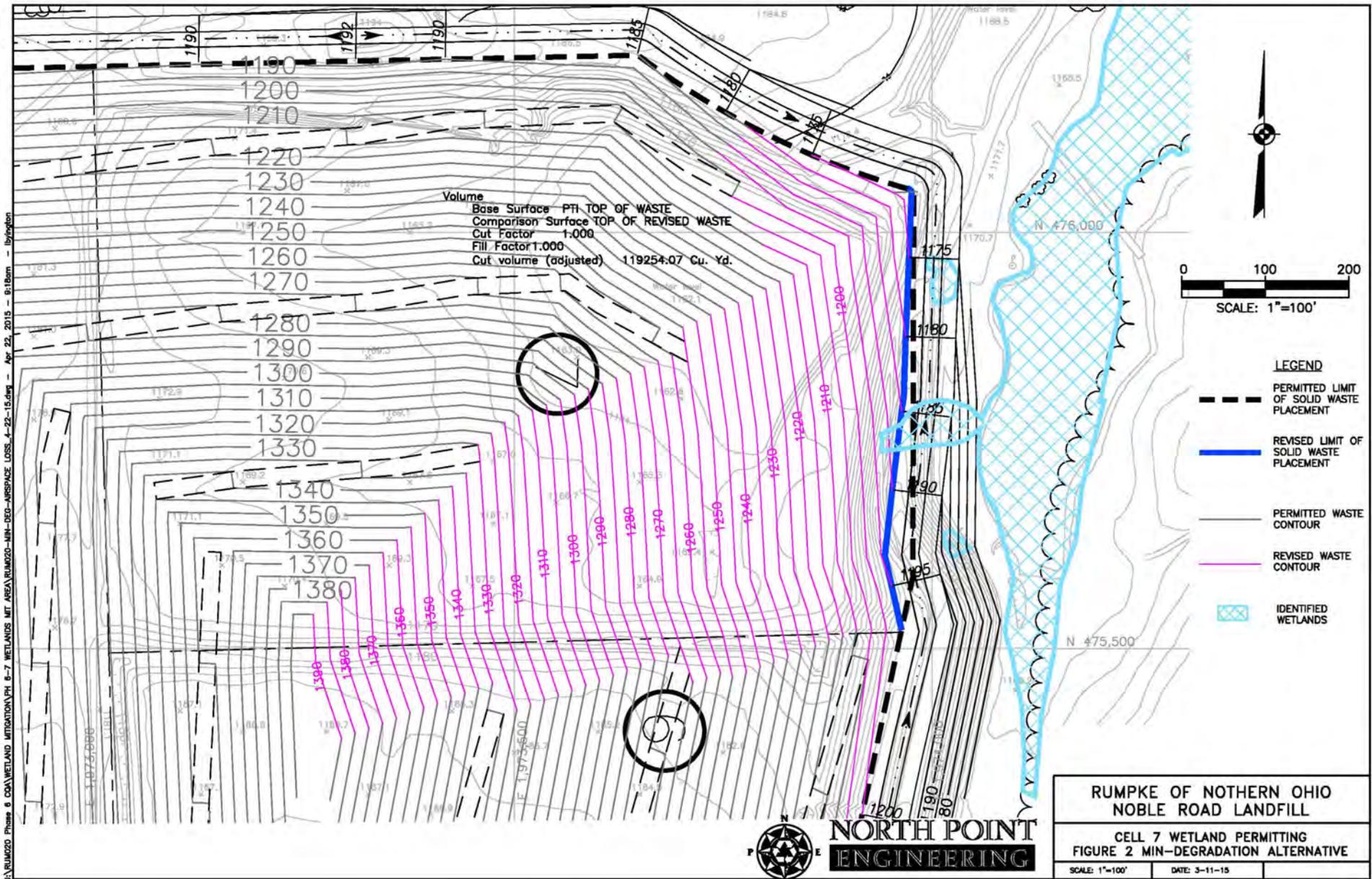
**Figure 5: Phase II
Non-Degradation Alternative**

Source: North Point Engineering

Shiloh, OH

Created By: North Point Engineering
 Edited By: LMK

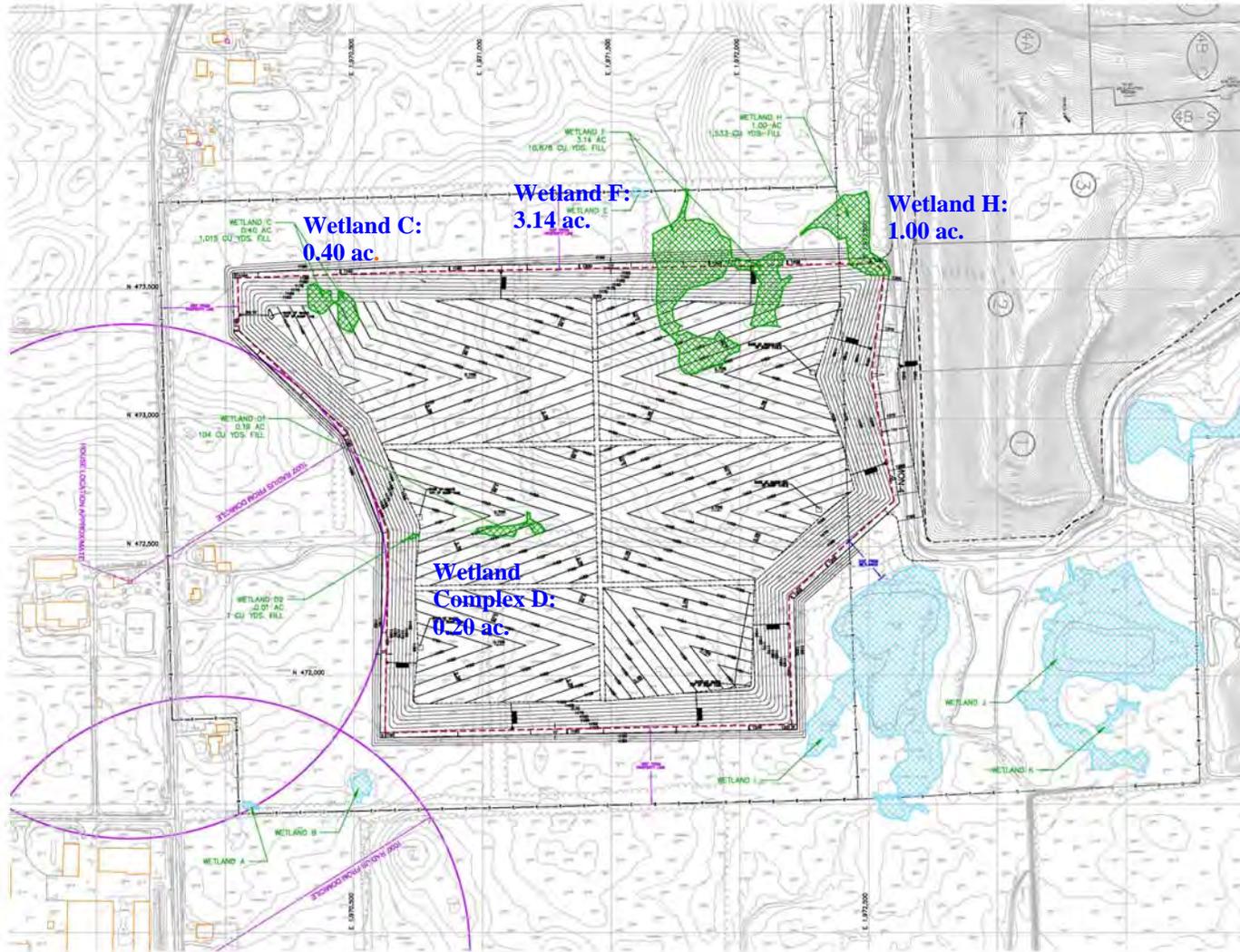
Created: 07-30-2014



RUM020 Phase 6 COA WETLAND MITIGATION VPH 6-7 WETLANDS MIT AREA RUM020-MH-DEC-AIRSPACE LOSS. 4-22-15.dwg -- Apr 22, 2015 -- 9:18am -- lbyngdon

		Figure 6: Phase I Minimal Degradation Alternative		Source: Google Earth, North Point Engineering Construction Plan	
		Shiloh, OH	Created By: LJM	Created: 4-22-2015	

A:\RUMD19-NOBLE ROAD EXPANSION\PTI\WETLAND_OPTIONS\6-25-14_REV_WETLANDS\RUMD19-MIN_DEG.dwg - Jun 25, 2014 - 11:55am - Byington



Volume of Fill
Jurisdictional: 12,411 yd³
Isolated: 1,120 yd³

REVISIONS			
NUMBER	DATE	MADE BY	CHECKED BY

DATE: 6-25-14
 PREPARED BY: RSZ
 EXAMINER BY: LMB
 CHECKED BY: RSZ
 FILE: RUMD19-MIN DEG


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 MINIMUM WETLANDS DEGRADATION ALTERNATIVE
 BUTLER TOWNSHIP, RICHLAND COUNTY, OHIO



Figure 7: Phase II
Minimal Degradation Alternative

Source: North Point Engineering

Shiloh, OH

Created By: North Point Engineering
 Edited By: LMK

Created: 07-30-2014