

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): February 28, 2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAP-OPR-2006-06162-85 Draper Stephen KE

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Delaware County/parish/borough: Sussex City: Milford
Center coordinates of site (lat/long in degree decimal format): Lat. 38.916977° **N**, Long. 75.460167° **W**.
Universal Transverse Mercator: 460106.743247/4307664.155878

Name of nearest waterbody: Lednum Branch

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mispillion River

Name of watershed or Hydrologic Unit Code (HUC): Upper Mispillion River 020402070501

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: February 28, 2022

☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- ☐ TNWs, including territorial seas
- ☐ Wetlands adjacent to TNWs
- ☒ Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- ☐ Non-RPWs that flow directly or indirectly into TNWs
- ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- ☐ Impoundments of jurisdictional waters
- ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 5,010 linear feet: 4.5 width (ft) and/or acres.

Wetlands: 7.82 acres.

c. Limits (boundaries) of jurisdiction based on: **Not Applicable.**

Elevation of established OHWM (if known): +/- 14.0.

2. Non-regulated waters/wetlands (check if applicable):³

- ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: **The 130.5 acre site contains two man made borrow pit depressions totaling 3.51 acres (ponds) excavated totally from uplands. The borrow pits are excluded waters based upon current regulations as they do not meet the definition of waters of the United States as clarified in the preamble of the November 13, 1986 Federal register (51 FR 41217).**

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**

Identify TNW: _____.

Summarize rationale supporting determination: _____.

2. **Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is “adjacent”: _____.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are “relatively permanent waters” (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

(i) **General Area Conditions:**

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: _____ inches

Average annual snowfall: _____ inches

(ii) **Physical Characteristics:**

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: _____.

Identify flow route to TNW⁵: Ledmun Branch to Haven Lake to Silver Lake to Mispillon River.

Tributary stream order, if known: 2.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

<input checked="" type="checkbox"/> Silts	<input checked="" type="checkbox"/> Sands	<input type="checkbox"/> Concrete
<input type="checkbox"/> Cobbles	<input checked="" type="checkbox"/> Gravel	<input checked="" type="checkbox"/> Muck
<input type="checkbox"/> Bedrock	<input type="checkbox"/> Vegetation. Type/% cover:	
<input type="checkbox"/> Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .

Presence of run/riffle/pool complexes. Explain: Occasional.

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): 0.6 %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime: .

Other information on duration and volume: Perennial.

Surface flow is: **Pick List**. Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

Tributary has (check all that apply):

<input type="checkbox"/> Bed and banks	
<input type="checkbox"/> OHWM ⁶ (check all indicators that apply):	
<input type="checkbox"/> clear, natural line impressed on the bank	<input type="checkbox"/> the presence of litter and debris
<input type="checkbox"/> changes in the character of soil	<input type="checkbox"/> destruction of terrestrial vegetation
<input type="checkbox"/> shelving	<input type="checkbox"/> the presence of wrack line
<input type="checkbox"/> vegetation matted down, bent, or absent	<input type="checkbox"/> sediment sorting
<input type="checkbox"/> leaf litter disturbed or washed away	<input type="checkbox"/> scour
<input type="checkbox"/> sediment deposition	<input type="checkbox"/> multiple observed or predicted flow events
<input type="checkbox"/> water staining	<input type="checkbox"/> abrupt change in plant community
<input type="checkbox"/> other (list):	
<input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: .	

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

<input checked="" type="checkbox"/> High Tide Line indicated by:	<input checked="" type="checkbox"/> Mean High Water Mark indicated by:
<input type="checkbox"/> oil or scum line along shore objects	<input type="checkbox"/> survey to available datum;
<input type="checkbox"/> fine shell or debris deposits (foreshore)	<input type="checkbox"/> physical markings;
<input type="checkbox"/> physical markings/characteristics	<input type="checkbox"/> vegetation lines/changes in vegetation types.
<input type="checkbox"/> tidal gauges	
<input type="checkbox"/> other (list):	

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water Quality is good and water is clear.

Identify specific pollutants, if known: .

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width): feet.
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings: .
 - ☐ Fish/spawn areas. Explain findings: .
 - ☐ Other environmentally-sensitive species. Explain findings: .
 - ☐ Aquatic/wildlife diversity. Explain findings: Fish species and use by mammals observed.

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: 7.82 acres

Wetland type. Explain: PFO1E, PFO1C, PFO1A.

Wetland quality. Explain: High quality undisturbed forested habitat.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: .

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water is clear.

Identify specific pollutants, if known: .

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: Forested 100%.
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings: .
 - ☐ Fish/spawn areas. Explain findings: Observed fish in stream channels.
 - ☐ Other environmentally-sensitive species. Explain findings: .
 - ☐ Aquatic/wildlife diversity. Explain findings: Evidence of a wide variety of mammal utilization.

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

- ☐ TNWs: linear feet width (ft), Or, acres.
- ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

- ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Perennial tributaries that flow through the impoundments of Haven Lake and Silver Lake and into the traditional navigable waterway of the Mispillion River.
- ☐ Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ Tributary waters: **4,600** linear feet **4.5** width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **The forested wetlands within the review area are contiguous with tributaries that eventually flow to the Mispillion River, a tidal navigable waterway.**

☐ Wetlands directly abutting an RPW where tributaries typically flow “seasonally.” Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **7.8** acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from “waters of the U.S.,” or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ which are or could be used for industrial purposes by industries in interstate commerce.

☐ Interstate isolated waters. Explain: .

☐ Other factors. Explain: .

⁸See Footnote # 3.

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
- Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - ☐ Prior to the Jan 2001 Supreme Court decision in “*SWANCC*,” the review area would have been regulated based solely on the “Migratory Bird Rule” (MBR).
- ☐ Waters do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction. Explain: .

☒ Other: (explain, if not covered above): **The 130.5 acres site contains two interconnected man made borrow pit depressions totaling 3.51 acres (ponds) excavated totally from uplands. The borrow pits are excluded waters based upon current regulations as they do not meet the definition of WOTUS as clarified in the preamble of the November 13, 1986 Federal register (51 FR 41217).**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction (check all that apply):

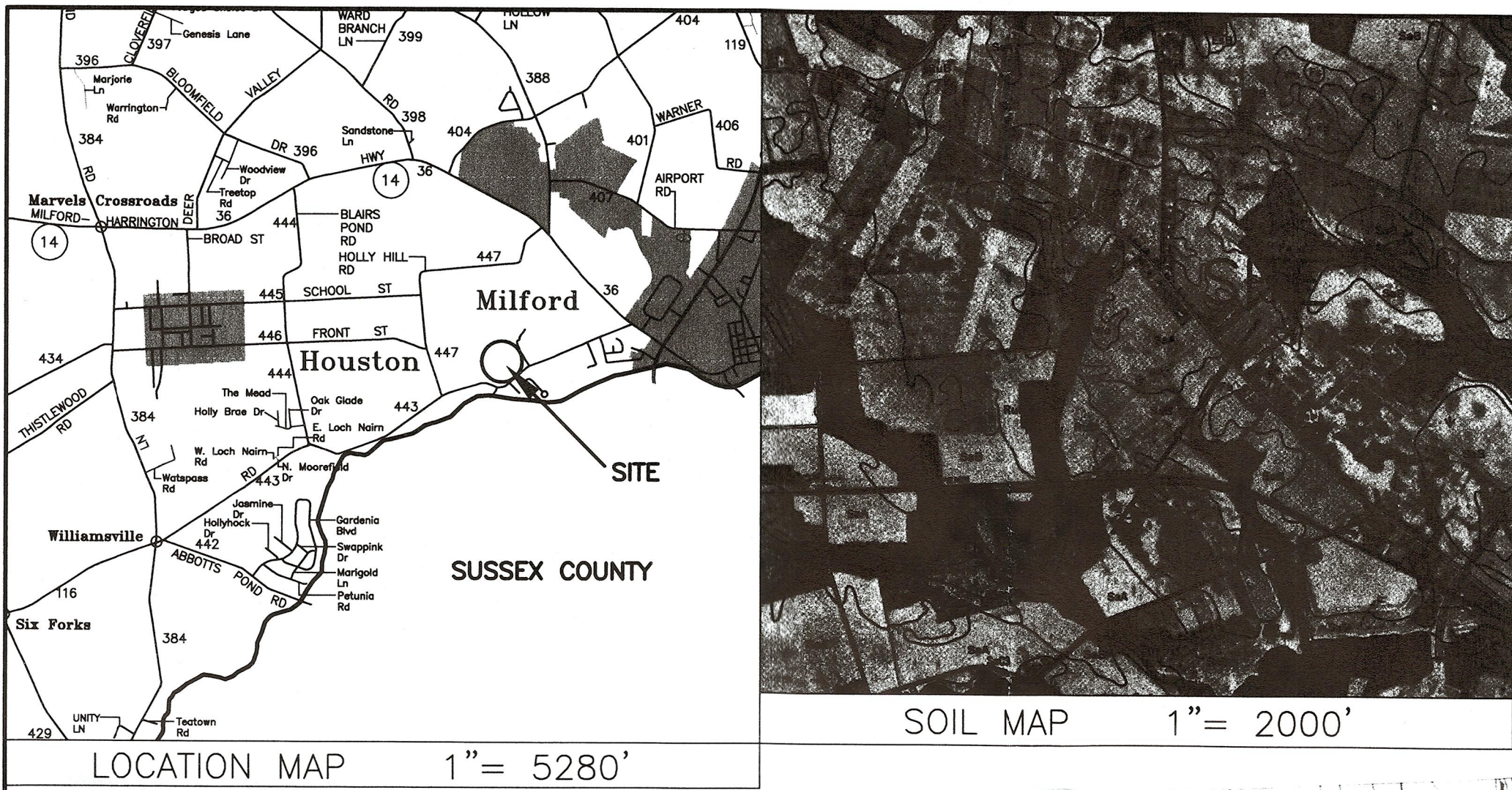
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

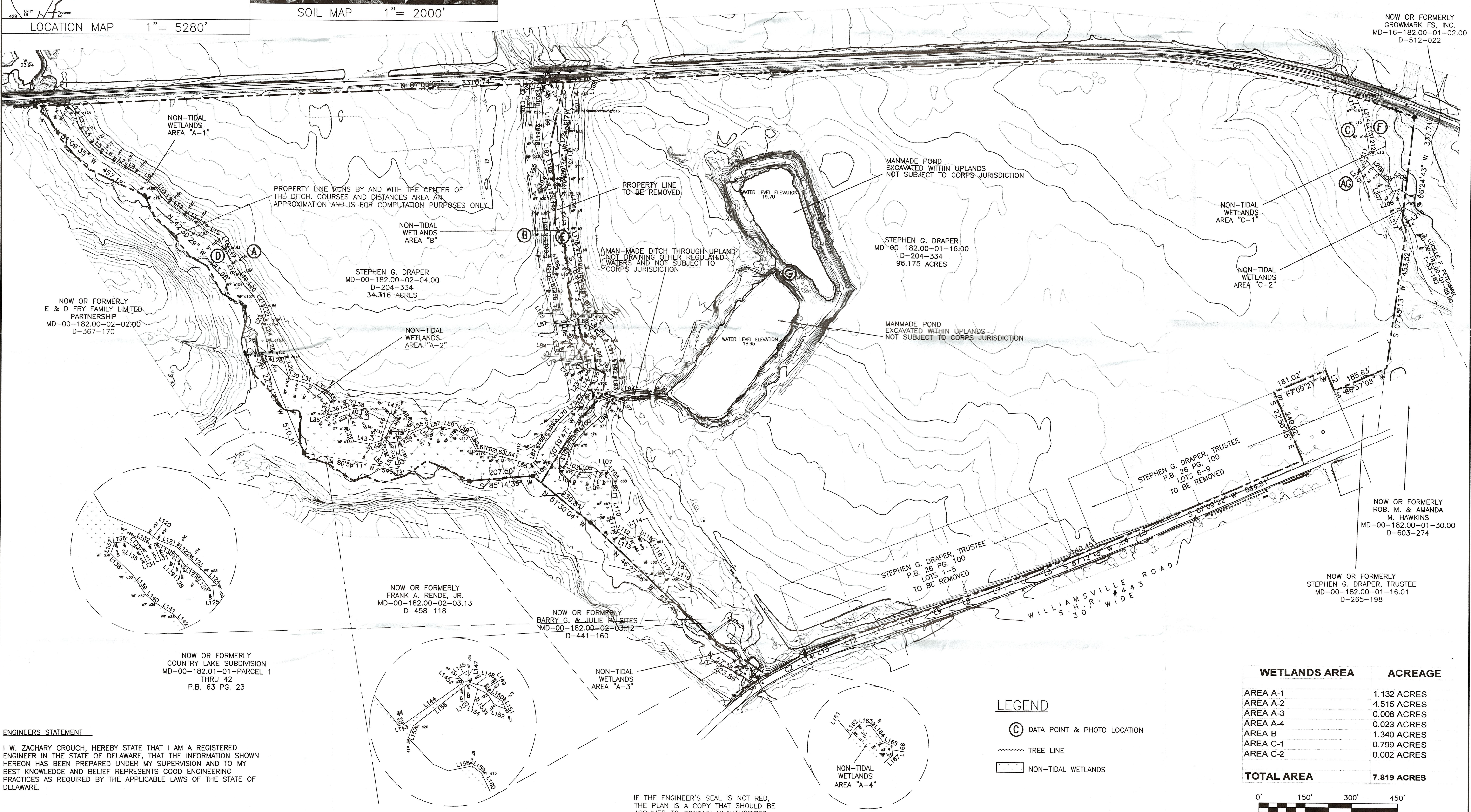
- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - ☒ Office concurs with data sheets/delineation report.
 - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters’ study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
 - ☐ USGS NHD data.
 - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: Fairmont Quadrangle 1:2400, 1954, 1984 & 2019.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☒ National wetlands inventory map(s). Cite name: Lewes DE.
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: 10001C0362J.
- ☐ 100-year Floodplain Elevation is: +/- 15 feet (National Geodetic Vertical Datum of 1929)
- ☐ Photographs: ☒ Aerial (Name & Date): Lewes 1954, 1961, 1968, 1992, 2002 & 2012.
 - or ☒ Other (Name & Date): wetland Report October 8, 2021.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: This AJD is a reverification of the previously verified AJD on October 2, 2007. This AJD and the previously verified AJD reviewed the project area within the context of the 1986 definition of waters of the United States. The borrow pits are well-defined excavated depressions that appear in historical aerial imagery between 1961 and 1968. The 1993 USGS Topography map identifies the borrow pits as sandpit. An excavated drainage ditch connects the south borrow pit to the unnamed tributary to Lednum Branch. The borrow pits and drainage ditch from the south borrow pit to the unnamed tributary to Lednum Branch do not meet the definition of waters of the United States as clarified in the preamble of the November 13, 1986 Federal Register (51 FR 41217). The forested wetlands within the review area are contiguous with tributaries that eventually flow to the Mispillion River, a tidal navigable waterway. As such, the remaining tributaries and wetlands within the review area meet the definition of waters of the United States.



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	2834.93'	1200.40'	1191.45'	S 81°34'24" E	24°15'39"
C2	1885.67'	142.03'	141.99'	S 60°21'15" W	04°18'56"

LINE	BEARING	DISTANCE
L1	S 24°22'17" E	30.49'
L2	N 22°50'50" W	70.70'
L3	S 67°09'57" W	55.77'
L4	S 67°34'29" W	97.66'
L5	S 68°27'54" W	91.46'
L6	S 69°16'48" W	99.67'
L7	S 69°53'02" W	99.79'
L8	S 70°10'31" W	99.88'
L9	S 70°22'33" W	99.85'
L10	S 70°27'20" W	99.97'
L11	S 70°46'58" W	99.99'
L12	S 69°59'41" W	100.54'
L13	S 68°10'26" W	101.34'
L14	S 63°34'02" W	5.16'



ENGINEERS STATEMENT

I, W. ZACHARY CROUCH, HEREBY STATE THAT I AM A REGISTERED ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

SIGNATURE: _____

DATE: _____ SEAL

IF THE ENGINEER'S SEAL IS NOT RED, THE PLAN IS A COPY THAT SHOULD BE ASSUMED TO CONTAIN UNAUTHORIZED ALTERATIONS. THE STATEMENTS CONTAINED ON THIS DOCUMENT SHALL NOT APPLY TO ANY COPIES.

WETLANDS AREA	ACREAGE
AREA A-1	1.132 ACRES
AREA A-2	4.515 ACRES
AREA A-3	0.008 ACRES
AREA A-4	0.023 ACRES
AREA B	1.340 ACRES
AREA C-1	0.799 ACRES
AREA C-2	0.002 ACRES
TOTAL AREA	7.819 ACRES

BOUNDARIES OF WETLANDS DETERMINED BY THE 1987 CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL

OF THE LANDS OF
STEPHEN G. DRAPER
MILFORD HUNDRED
KENT COUNTY, DELAWARE

DAVIS, BOWEN & FRIEDEL, INC.
ARCHITECTS ENGINEERS SURVEYORS
SALESBURY, MARYLAND (410) 543-9001
MILFORD, DELAWARE (302) 424-4441

Revisions:

Date: APR. 2005

Scale: 1" = 100'

Dwn.By: LRW

Proj.No.: 465D019

Dwg.No.:

WETLANDS POINT TABLE

POINT	NORTHING	EASTING	DESCRIPTION
2203	332688.03	643543.61	wf1/a1
2204	332710.91	643578.71	wf1/a2
2205	332713.53	643589.87	wf1/a3
2206	332728.81	643615.73	wf1/a4
2207	332746.50	643603.98	wf1/a5
2208	332768.88	643627.58	wf1/a6
2209	332778.96	643628.35	wf1/a7
2210	332783.99	643617.05	wf1/a8
2211	332800.59	643603.95	wf1/a9
2212	332801.80	643591.52	wf1/a10
2213	332794.02	643584.92	wf1/a11
2214	332772.87	643571.89	wf1/a12
2215	332778.39	643559.68	wf1/a13
2216	332800.65	643551.98	wf1/a14
2217	332824.89	643540.06	wf1/a15
2218	332832.08	643529.95	wf1/a16
2219	332826.77	643503.49	wf1/a17
2220	332833.82	643487.02	wf1/a18
2221	332863.16	643459.18	wf1/a19
2222	332875.89	643464.56	wf1/a20
2223	332915.28	643515.27	wf1/a21
2293	332921.34	643523.83	wf1/a22
2294	332910.51	643544.82	wf1/a23
2295	332898.87	643552.32	wf1/a24
2296	332894.40	643564.64	wf1/a25
2297	332902.90	643560.48	wf1/a26
2298	332913.28	643544.77	wf1/a27
2299	332918.37	643541.94	wf1/a28
2300	332923.42	643523.49	wf1/a29
2301	332935.33	643523.98	wf1/a30
2302	332928.94	643513.21	wf1/a31
2303	332923.22	643519.24	wf1/a32
2306	332877.30	643453.68	wf1/a33
2307	332876.06	643449.17	wf1/a34
2308	332913.61	643591.98	wf1/a35
2309	332932.65	643387.35	wf1/a36
2310	332946.23	643371.39	wf1/a37
2311	332976.23	643351.31	wf1/a38
2312	333012.30	643331.03	wf1/a39
2313	333029.70	643320.34	wf1/a40
2314	333031.39	643338.30	wf1/a41
2315	333018.01	643359.26	wf1/a42
2316	333020.48	643365.39	wf1/a43
2317	333041.62	643349.95	wf1/a44
2318	333027.00	643378.28	wf1/a45
2319	333029.94	643390.01	wf1/a46
2320	333014.95	643417.10	wf1/a47
2321	333005.76	643426.75	wf1/a48
2322	332993.91	643434.23	wf1/a49
2323	332978.47	643458.38	wf1/a50
2324	332960.53	643471.99	wf1/a51
2325	332962.24	643487.50	wf1/a52
2326	332983.94	643465.18	wf1/a53
2327	333005.52	643440.27	wf1/a54
2328	333026.31	643421.58	wf1/a55
2329	333034.55	643390.59	wf1/a56
2330	333045.92	643374.85	wf1/a57
2331	333056.29	643351.18	wf1/a58
2332	333073.76	643307.86	wf1/a59
2333	333108.77	643285.48	wf1/a60
2334	333171.42	643255.86	wf1/a61
2335	333192.75	643223.91	wf1/a62
2336	333185.07	643197.20	wf1/a63
2337	333180.15	643180.41	wf1/a64
2338	333205.92	643153.79	wf1/a65
2339	333250.75	643143.17	wf1/a66
2342	333297.34	643131.36	wf1/a67
2343	333375.32	643137.77	wf1/a68
2344	333401.22	643119.56	wf1/a69
2345	333402.35	643104.65	wf1/a70
2346	333396.08	643066.21	wf1/a71
2347	333397.47	643032.14	wf1/a72
2348	333403.55	643008.92	wf1/a73
2349	333417.23	642981.83	wf1/a74
2350	333489.92	643010.38	wf1/a75
2351	333527.44	643042.34	wf1/a76
2352	333553.42	643071.89	wf1/a77
2353	333603.77	643126.54	wf1/a78
2354	333627.64	643135.66	wf1/a79
2357	333639.19	643127.26	wf1/a80
2360	333655.87	643130.94	wf1/a83
2361	333701.54	643130.47	wf1/a84
2362	333757.43	643125.58	wf1/a85
2363	333822.67	643105.66	wf1/a86
2364	333864.68	643068.50	wf1/a87
2365	333876.33	643047.71	wf1/a88
2366	333875.20	643026.34	wf1/a89
2367	333869.87	643009.25	wf1/a90
2368	333841.03	643012.90	wf1/a91
2369	333814.31	642996.96	wf1/a92
2370	333811.76	643010.29	wf1/a93
2371	333767.75	643012.17	wf1/a94
2372	333780.26	643024.82	wf1/a95
2373	333778.06	643045.11	wf1/a96
2374	333756.27	643050.21	wf1/a97
2375	333743.63	643026.18	wf1/a98
2376	333725.41	643042.74	wf1/a99
2377	333733.90	643066.36	wf1/a100
2378	333728.63	643076.08	wf1/a101
2379	333691.78	643066.87	wf1/a102
2380	333667.05	643054.06	wf1/a103
2381	333645.55	643041.79	wf1/a104
2382	333609.78	643022.16	wf1/a105
2383	333593.92	643003.72	wf1/a106
2386	333558.49	642985.43	wf1/a107
2387	333513.38	642933.58	wf1/a108
2388	333470.15	642899.57	wf1/a109
2389	333431.66	642886.25	wf1/a110
2390	333421.50	642871.01	wf1/a111
2391	333433.64	642823.17	wf1/a112
2392	333444.50	642779.20	wf1/a113
2393	333448.40	642758.93	wf1/a114
2394	333460.63	642721.76	wf1/a115
2395	333462.34	642696.55	wf1/a116
2396	333511.70	642669.32	wf1/a117

2397	333532.84	642626.92	wf1/a118
2400	333540.93	642581.00	wf1/a119
2401	333531.90	642551.41	wf1/a120
2402	333542.26	642535.38	wf1/a121
2403	333522.43	642488.89	wf1/a122
2404	333491.97	642444.19	wf1/a123
2405	333488.15	642412.87	wf1/a124
2406	333504.49	642397.55	wf1/a125
2407	333516.66	642405.08	wf1/a126
2408	333537.61	642412.95	wf1/a127
2409	333567.71	642431.81	wf1/a128
2410	333579.53	642424.30	wf1/a129
2411	333583.36	642413.25	wf1/a130
2412	333515.32	642390.10	wf1/a131
2413	333495.16	642385.11	wf1/a132
2414	333483.24	642347.56	wf1/a133
2415	333493.44	642295.22	wf1/a134
2416	333535.89	642280.46	wf1/a135
2417	333570.75	642275.94	wf1/a136
2418	333580.68	642319.70	wf1/a137
2419	333595.42	642321.50	wf1/a138
2420	333600.43	642298.95	wf1/a139
2421	333584.04	642245.21	wf1/a140
2422	333579.96	642220.79	wf1/a141
2423	333580.84	642207.86	wf1/a142
2426	333619.95	642218.06	wf1/a143
2427	333644.93	642198.75	wf1/a144
2428	333673.37	642157.56	wf1/a145
2429	333686.56	642111.25	wf1/a146
2430	333694.20	642081.64	wf1/a147
2431	333759.26	642064.28	wf1/a148
2432	333762.52	642017.68	wf1/a149
2433	333769.71	641996.50	wf1/a150
2434	333774.66	641988.08	wf1/a151
2435	333777.34	642014.45	wf1/a152
2436	333811.03	642010.32	wf1/a153
2437	333869.92	642193.18	wf1/a154
2440	333883.17	642000.45	wf1/a155
2441	333927.03	641986.66	wf1/a156
2442	333959.59	641966.94	wf1/a157
2443	333997.80	641933.98	wf1/a158
2444	334025.56	641912.81	wf1/a159
2445	334065.18	641897.54	wf1/a160
2446	334114.17	641869.04	wf1/a161
2447	334144.87	641855.14	wf1/a162
2448	334168.28	641813.92	wf1/a163
2451	334196.23	641778.38	wf1/a164
2452	334219.87	641741.05	wf1/a165
2453	334259.16	641686.81	wf1/a166
2454	334283.09	641663.65	wf1/a167
2455	334310.20	641648.22	wf1/a168
2456	334355.06	641580.35	wf1/a169
2457	334369.51	641549.45	wf1/a170
2458	334392.71	641510.79	wf1/a171
2459	334418.45	641468.48	wf1/a172
2460	334448.95	641436.15	wf1/a173
2463	334497.36	641400.32	wf1/a174
2464	334544.68	641386.59	wf1/a175
2465	334568.38	641364.66	wf1/a176
2466	334580.22	641332.09	wf1/a177
2467	334569.76	641282.15	wf1/a178
2468	334576.95	641250.77	wf1/a179
2469	334572.15	641207.99	wf1/a180
2470	334586.71	641202.93	wf1/a181
2471	333920.74	643048.21	wf2/b2
2472	333956.77	643029.13	wf2/b3
2473	334012.24	643024.05	wf2/b4
2474	334055.60	643016.37	wf2/b5
2475	334115.31	643009.47	wf2/b6
2476	334185.57	642990.05	wf2/b7
2477	334250.94	642993.21	wf2/b8
2478	334291.33	642991.18	wf2/b9
2479	334347.31	642992.52	wf2/b10
2480	334387.40	642982.10	wf2/b11
2481	334435.14	642978.13	wf2/b12
2482	334500.21	642990.52	wf2/b13
2483	333883.84	642990.87	wf3/b38
2484	333930.42	642963.09	wf3/b37
2485	333977.09	642964.26	wf3/b36
2486	334039.52	642941.82	wf3/b35
2487	334060.98	642942.81	wf3/b34
2488	334097.38	642931.74	wf3/b33
2489	334161.56	642931.48	wf3/b32
2490	334239.00	642924.50	wf3/b31
2491	334283.66	642923.40	wf3/b30
2492	334314.82	642913.25	wf3/b29
2493	334332.81	642921.77	wf3/b28
2494	334343.56	642925.10	wf3/b27
2495	334415.26	642904.59	wf3/b26
2496	334456.59	642902.53	wf3/b25
2497	334514.49	642907.37	wf3/b24
2498	334558.65	642904.69	wf3/b23
2499	334585.45	642902.46	wf3/b22
2500	334636.87	642897.58	wf3/b21
2501	334644.64	642904.30	wf3/b20
2502	334650.33	642928.92	wf3/b19
2503	334663.35	642943.46	wf3/b18
2504	334664.91	642980.34	wf3/b17
2505	334665.78	643012.48	wf3/b16
2506	334614.75	642999.22	wf3/b15
2507	334568.11	643004.03	wf3/b14connecttowf2/b13
2508	334629.42	645550.23	wf4/c17end
2509	334583.34	645569.11	wf4/c16
2510	334545.96	645576.15	wf4/c15
2511	334499.66	645586.83	wf4/c14
2512	334449.36	645594.26	wf4/c13
2513	334421.75	645586.21	wf4/c12
2514	334400.32	645606.31	wf4/c11
2515	334379.52	645625.23	wf4/c10
2516	334346.53	645661.13	wf4/c9
2517	334323.75	645671.21	wf4/c8
2518	334329.90	645693.26	wf4/c7
2519	334311.07	645724.98	wf4/c6
2520	334287.27	645723.73	wf4/c5
2521	334269.92	645698.18	wf4/c4
2522	334226.45	645721.38	wf4/c3
2523	334180.91	645745.93	wf4/c2
2524	334141.09	645754.90	wf4/c1

WETLANDS LINE CHART

LINE	BEARING	DISTANCE
L1	S 70°01'37" E	14.87'
L2	S 42°46'34" E	32.29'
L3	S 16°10'35" E	49.27'
L4	S 36°30'39" E	60.23'
L5	S 46°39'57" E	44.44'
L6	S 58°41'16" E	49.53'
L7	S 59°01'27" E	45.08'
L8	S 64°56'23" E	34.11'
L9	S 56°32'29" E	81.35'
L10	S 29°38'44" E	31.20'
L11	S 44°04'15" E	33.29'
L12	S 54°04'55" E	66.98'
L13	S 57°39'19" E	44.19'
L14	S 51°50'57" E	45.19'
L15	S 60°21'50" E	47.42'
L16	S 24°21'23" E	33.70'
L17	S 30°11'15" E	56.67'
L18	S 21°04'59" E	42.47'
L19	S 37°19'45" E	34.91'
L20	S 40°47'08" E	50.45'
L21	S 31°11'53" E	38.07'
L22	S 17°26'37" E	45.98'
L23	S 28°43'59" W	15.10'
L24	S 16°13'26" E	61.33'
L25	S 06°59'25" E	33.94'
L26	S 84°11'22" W	14.31'
L27	S 71°15'03" E	14.68'
L28	S 85°59'57" E	46.72'
L29	S 14°56'06" E	67.34'
L30	S 75°32'45" E	30.58'
L31	S 74°06'02" E	48.16'
L32	S 55°22'27" E	50.06'
L33	S 37°42'20" E	31.56'
L34	S 14°36'55" W	40.42'
L35	S 86°05'59" E	12.97'
L36	N 80°29'56" E	24.75'
L37	N 73°02'33" E	56.18'
L38	S 77°28'11" E	23.10'
L39	S 06°56'43" W	14.85'
L40	S 77°12'50" W	44.88'
L41	S 07°23'29" E	35.15'
L42	S 19°10'21" E	44.94'
L43	S 78°57'53" E	53.32'
L44	N 72°23'03" E	59.40'
L45	N 13°54'23" E	20.77'
L46	N 18°47'13" E	71.86'
L47	S 70°53'36" E	11.69'
L48	S 32°26'48" E	14.00'
L49	S 32°52'14" W	35.84'
L50	S 19°09'45" W	22.18'
L51	S 31°43'19" W	14.31'
L52	S 43°10'02" E	22.39'
L53	N 83°03'19" E	31.55'
L54	N 55°43'45" E	54.10'