



123-29469

Savage and Savage Environmental
practical solutions for environmental issues

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November 4, 2008

Drew Hetherington
Noble Energy Production, Inc.
804 Grand Avenue
Platteville, Colorado 80651

RE: Noble Energy Ashton J 33-19 Well Site Wetland Delineation

Dear Mr. Hetherington:

Savage and Savage conducted a wetland delineation at the request of the Colorado Oil and Gas Commission within a swale adjacent to the proposed Noble Energy Ashton J 33-19 drill site on October 23, 2008. The site is located south of the intersection of U.S. Highway 34 and 65th Avenue. The site lies within the NW¼ NW¼ of Section 33, Township 5 North, Range 66 West of the 6th Prime Meridian, Weld County, Colorado.

No wetlands were observed within the swale during the wetland delineation. If you have any questions or require further information please contact me.

Sincerely,

Edith Savage
Principal

attachment: Ashton J 33-19 Well Site Wetland Delineation

**NOBLE ENERGY PRODUCTION, INC.
ASHTON J 33-19 WELL SITE
WATERS OF THE UNITED STATES IDENTIFICATION
AND WETLAND DELINEATION
WELD COUNTY, COLORADO**

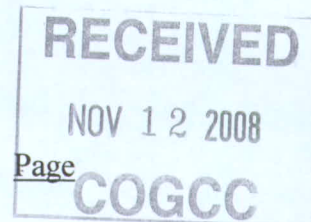
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**Prepared by: Savage and Savage, Inc.
4610 Haystack Drive
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November 2008

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FIGURES

1. Noble Energy Ashton J 33-19 General Location Map
2. Sample Point 1, Swale looking North (October 23, 2008)
3. Sample Point 2, Swale looking North (October 23, 2008)
4. Noble Energy Ashton J 33-19 Wetland Delineation

APPENDIX

U.S. Army Corps of Engineers Data Sheets

INTRODUCTION

Savage and Savage conducted a wetland delineation within a swale adjacent to the proposed Ashton J 33-19 drill site for Noble Energy Production, Inc. on October 23, 2008. The site is located south of the intersection of U.S. Highway 34 and 65th Avenue. (Figure 1. Noble Energy Ashton J 33-19 General Location Map). From Greeley, Colorado the site is accessed by traveling west on U.S. Highway 34 to 65th Avenue (Weld County Road 31), south on 65th Avenue for approximately 1.5 miles, then west for approximately 0.50 miles on an undeveloped oil and gas road to the site. The latitude of the project site is 40.36000 degrees North and longitude is 104.78947 degrees West. The average elevation of the project site is 4806 feet. The site lies within the NW¼ NW¼ of Section 33, Township 5 North, Range 66 West of the 6th Prime Meridian, Weld County, Colorado.

STUDY METHODS

A wetland delineation was conducted in accordance with the requirements of the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987). To determine the areas subject to Corps jurisdiction, three criteria were evaluated: (1) evidence of a hydrologic regime reflecting saturation or periodic inundation by surface or ground water of sufficient duration and frequency, (2) soils which are considered hydric by classification or field characteristics indicating anaerobic conditions, and (3) a prevalence of vegetation typically adapted to areas of wetland hydrology and soils.

At two sample points within the swale adjacent to the proposed drill site the three wetland criteria were evaluated. Dominant individual plant species were identified, and their wetland indicator status was assessed (USFWS, 1988). Evidence of the hydrologic regime was collected and evaluated. A soil test pit was dug using a core auger to 18 inches. Soil horizons were inspected and described using texture, soil color (Munsell, 1992), and moisture. Observations were recorded on the attached USACE approved data sheets.

PROJECT DESCRIPTION

Temporary disturbance will include construction of a drill pad totaling 3.2 acres. Permanent disturbance will include one fenced well head totaling 0.013 acres. All project disturbances are located in uplands.

SITE DESCRIPTION

The significant topographic features in the vicinity of the site are Ashcroft Draw to the northeast and the Big Thompson and South Platte Rivers to the south. The proposed drill site is located immediately east of man-made features.

One dominant soil map unit was identified in the area of the proposed project site. According to the Soil Survey of Weld County, Southern Part (1980), Aquolls and Aquepts, flooded are located within the area of the proposed project.

Aquolls and Aquepts are found within depressions in smooth plains and along the bottoms of natural drainageways throughout Weld County. They are deep, poorly drained soils that have formed in recent alluvium. Aquolls have a dark colored surface layer and make up about 55 percent of the unit. Aquepts, which make up about 25 percent of the soil unit, have a lighter colored surface layer. Surface layers are usually yellowish brown silty clay, underlain by silty clay. About 20 percent are soils that are well drained and soils that have sandstone or shale within 48 inches of the surface. Aquoll and Aquept soils are defined by the U.S. Army Corps of Engineers as hydric (USACE, 1987). On-site observation of soils did not confirmed the presence of this map unit within the swale.

Dominant plant species within uplands include lambsquarters (*Chenopodium album*) and other ruderal species not characteristic of wetlands. Vegetation species within the swale include Canada thistle (*Cirsium arvense*) and lambsquarters (Figures 2 and 3). No

significant hydrophytic plant species were identified within the swale in the vicinity of the project site.

RESULTS/CONCLUSION

Savage and Savage conducted a wetland delineation at the proposed Noble Energy Production Ashton J 33-19 well site on October 23, 2008. This delineation was conducted in order to determine the presence and extent of wetlands within a swale adjacent to the drill site. There were no wetlands identified within the swale. (Figure 4. Noble Energy Ashton J 33-19 Wetland Delineation).

LITERATURE CITED

Killmorgen Instruments Corp. 1992. Munsell® Soil Color Charts. Newburg, NW.

U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Department of Agriculture Soil Conservation Service. 1980. Soil Survey of Weld County, Colorado, Southern Part.

U.S. Fish and Wildlife Service. 1988. National List of Plant Species that Occur in Wetlands: Central Plains (Region 5). U.S. Department of Interior, Fish and Wildlife Service Research and Project, Biological Report 88(26.5), Washington, D.C.

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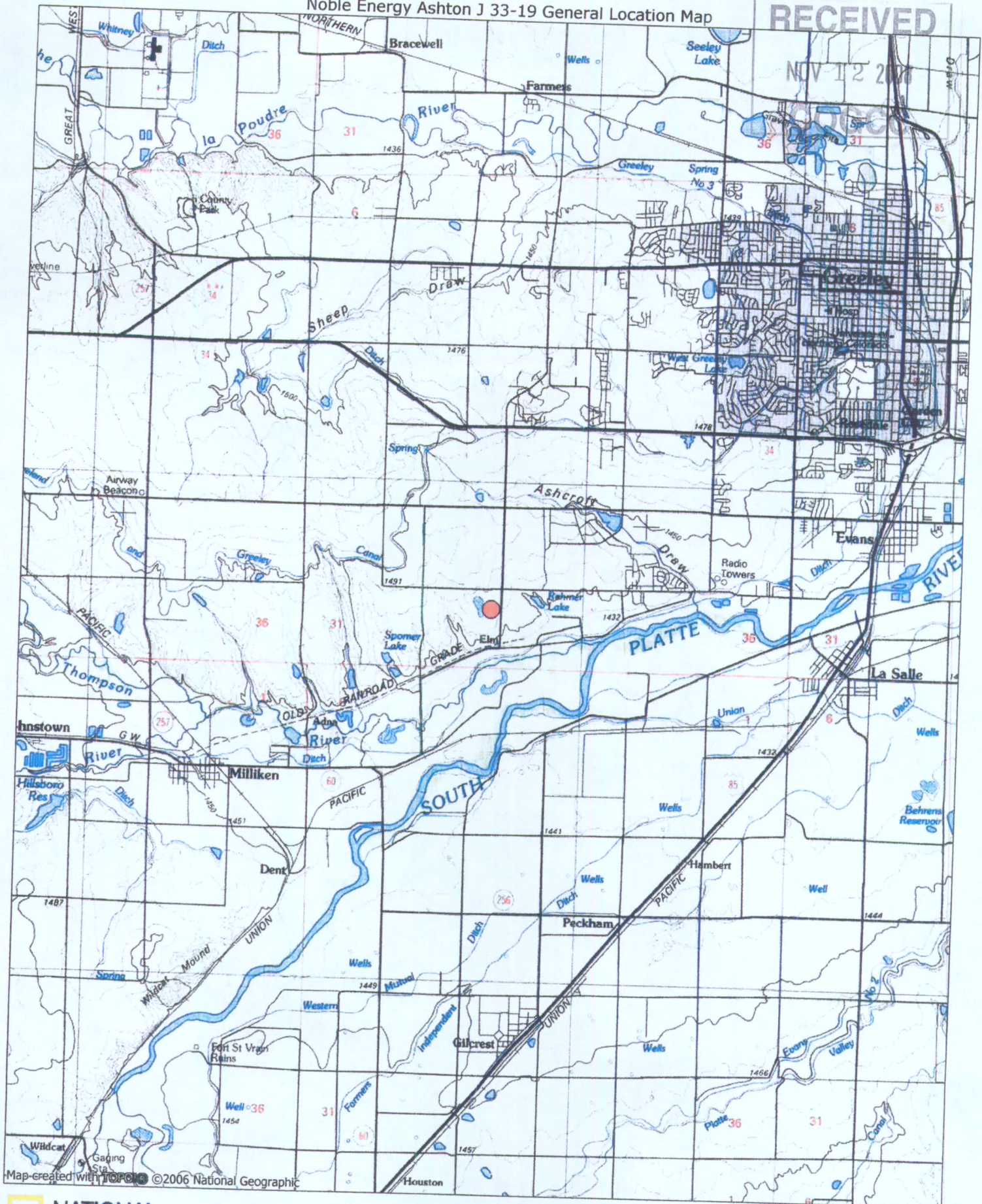
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FIGURES

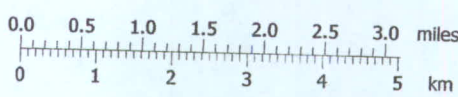
Noble Energy Ashton J 33-19 General Location Map

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Map created with TOPOLOG © 2006 National Geographic



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10/30/08

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Figure 2. Sample Point 1, Swale looking North (October 23, 2008)

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Figure 3. Sample Point 2, Swale Looking North (October 23, 2008)

NOBLE ENERGY ASHTON J33-19 WETLAND DELINEATION



•002

• 001

•DRILL HOLE LOCATION

873 ft

Image © 2008 DigitalGlobe

© 2007 Google™

DATA FORM
ROUTINE WETLAND DELINEATION
 (1987 COE Wetlands Delineation Manual)

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COCOCO

Project/Site: <u>ASHTON J33-19</u>	Date: <u>OCTOBER 23, 08</u>
Applicant/Owner: <u>NOBLE ENERGY</u>	County: <u>WELD</u>
Investigator: <u>M.S. SAVAGE / E.A. SAVAGE</u>	State: <u>COLORADO</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>FIELD/MEADOW</u> Transect ID: _____ Plot ID: <u>001</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cirsium arvense</u>	<u>HERB</u>	<u>FACU</u>	9. _____	_____	_____
2. <u>Chenopodium album</u>	<u>HERB</u>	<u>FAC</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 50%

Remarks: SAMPLE POINT IN TOPOGRAPHIC SWALE BOTTOM. NO DEVELOPMENT OF SIGNIFICANT HYDROPHYTIC PLANT ASSOCIATION

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other: _____ <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <u>NONE</u> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <u>NONE</u> <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>N/A</u> inches Depth to Free Water in Pit: <u>N/A</u> inches Depth to Saturated Soil: <u>N/A</u> inches	
Remarks: _____	

SOILS

Map Unit Name

(Series and Phase): AQUICUS & AQUPTS

Drainage Class:

DEEP
POORLY
DRAINED

Taxonomy (Subgroup): SAME

Field Observations

Confirm Mapped Type? Yes ☐ No ☒

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18"	A/B	10YR 4/3		NONE	CLAY, BLOCKY, DRY

Hydric Soil Indicators: NONE

- | | |
|------------------------------------------------------|-------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

☒ Yes ☐ No (CIRCLE)

Wetland Hydrology Present?

Yes ☒ No ☐

Hydric Soils Present?

Yes ☐ No ☒

(CIRCLE)

Is this Sampling Point Within a Wetland?

Yes

☒ No ☐

Remarks: WHILE OVERALL TOPOGRAPHY MIGHT INDICATE POTENTIAL FOR WETLANDS, THERE IS NO HYDROLOGIC OR SOILS EVIDENCE, w/ ONLY 50% FAC PLANTS.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Ashton 933-19</u> Applicant/Owner: <u>NOBLE ENERGY</u> Investigator: <u>M.S. SAVAGE / B.A. SAVAGE</u>	Date: <u>OCT 23, 2008</u> County: <u>WELD</u> State: <u>COLORADO</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the site a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>FIELD</u> Transect ID: _____ Plot ID: <u>002</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cirsium discolor</u>	<u>HERB</u>	<u>FACU</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 0%

Remarks: BOTTOM OF TOPOGRAPHIC SWALE

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks):</p> <p style="margin-left: 20px;">___ Stream, Lake or Tide Gauge</p> <p style="margin-left: 20px;">___ Aerial Photographs</p> <p style="margin-left: 20px;">___ Other: _____</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators: <u>NONE</u></p> <p style="margin-left: 20px;">___ Inundated</p> <p style="margin-left: 20px;">___ Saturated in Upper 12 Inches</p> <p style="margin-left: 20px;">___ Water Marks</p> <p style="margin-left: 20px;">___ Drift Lines</p> <p style="margin-left: 20px;">___ Sediment Deposits</p> <p style="margin-left: 20px;">___ Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required): <u>NONE</u></p> <p style="margin-left: 20px;">___ Oxidized Root Channels in Upper 12 Inches</p> <p style="margin-left: 20px;">___ Water Stained Leaves</p> <p style="margin-left: 20px;">___ Local Soil Survey Data</p> <p style="margin-left: 20px;">___ FAC-Neutral Test</p> <p style="margin-left: 20px;">___ Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>N/A</u> inches</p> <p>Depth to Free Water in Pit: <u>N/A</u> inches</p> <p>Depth to Saturated Soil: <u>N/A</u> inches</p>	
<p>Remarks: _____</p>	

SOILS

Map Unit Name

(Series and Phase): AQUOUS & AQUICPTS

Drainage Class:

DEEP
POORLY
DRAINED

Taxonomy (Subgroup): SAME

Field Observations

Confirm Mapped Type? Yes ☐ No ☒

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1"	A	10YR 3/2		NONE	LOAM, DRY
1-19"	B	10YR 4/3		NONE	CLAY LOAM, DRY

Hydric Soil Indicators: NONE

- | | |
|------------------------------------------------------|-------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/> (CIRCLE)	(CIRCLE)
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Hydric Soils Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Is this Sampling Point Within a Wetland?		Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: SAMPLE POINT IN SWALE BOTTOM, ~ 100' N OF SAMPLE POINT 201.
SWALE HAS INDICATIONS OF BEING MAN-MADE, PURPOSE ?

Approved by HQUSACE 2/92

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