Savage and Savage ***Environmental***

practical solutions for environmental issues

4610 Haystack Drive
Windsor, Colorado 80550

970 674 8080 telephone
970 674 8088 facsimile
savageandsavage@earthlink.net

Transmittal

To: Matthew Verbit
Company: Noble Energy, Inc.
Address: 804 Grand Avenue
City, State, Zip: Platteville, CO 80651

From: Edith Savage
Company: Savage and Savage, Inc.
Project: Cole Girvin G10-19, -29, Latham G09-27D, 10-27D, -28D
Phone: 970-674-8080
Fax: 970-674-8088
Date: December 2, 2011

Attached for your files is the Nationwide Permit from the Army Corps of Engineers for the Cole Girvin G10-19, -29, Latham G09-27D, 10-27D, -28D site.

Savage and Savage ***Environmental***

practical solutions for environmental issues

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savageandsavage@earthlink.net

November 22, 2011

Terry McKee
US Army Corps of Engineers
9307 South Wadsworth Blvd
Littleton, Colorado 80128-6901

RE: Noble Energy, Cole Girvin G10-19, -29, Latham G09-27D, 10-27D, -28D Well Pad, Nationwide Permit Request

Mr. McKee:

Savage and Savage, on behalf of Noble Energy, Inc., requests a nationwide Corps permit for construction of a portion of a drill pad and access in waters of the United States (wetlands). The proposed drill site is located approximately 0.25 miles northeast of Weld County Roads 43 and 48, and is accessed by taking U.S. Highway 85 south from Greeley to La Salle (Main Street), South on Main Street to Todd Avenue (Weld County Road 50), east on Weld County Road 50 for approximately 2.25 miles to Weld County Road 43, south on Weld County Road 43 to the intersection of County Roads 43 and 48, east on Weld County Road 48 for approximately 0.25 miles, then north onto an oil and gas access road. The latitude of the project site is 40.33388 degrees north and longitude is 104.64824 degrees west. The average elevation of the project site is 4672 feet. The site is located within the SW¼ of Section 3, Township 4 North, Range 65 West of the 6th Prime Meridian, Weld County, Colorado (Wetland Delineation, Figure 1).

Proposed temporary disturbance will include construction of a drill pad for five oil and gas wells that is approximately 3.0 acres in total area. Permanent disturbance will include fenced well heads located on the drill pad remnant and a light use access road. The existing tank battery located to the southeast on an upland area will be expanded for this project.

A wetland delineation was conducted in order to determine the potential presence and extent of wetlands within and adjacent to the proposed drill pad and access. Wetlands were identified within and adjacent to the proposed drill pad location. Realignment of the proposed drill pad minimized disturbance to wetlands, with a remaining disturbance area of 0.08 acres of wetlands (Location Drawing, Figure 2).

If you have any questions or require further information about the Cole Girvan/Latham well pad nationwide permit request please contact me.

Sincerely,

Edith Savage

Edith Savage
Principal

c: Matthew Verbit, Noble Energy, Inc.

attachments: Cole Girvin/Latham Drill Pad Waters of the United States Identification and Wetland Delineation, Weld County, Colorado

Location Drawing Cole Girvan G10-19, -29, Latham G09-27D, 10-27D, -28D

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
DENVER REGULATORY OFFICE, 9307 SOUTH WADSWORTH BOULEVARD
LITTLETON, COLORADO 80128-6901

November 28, 2011

Ms. Edith Savage
Savage and Savage
4610 Haystack Drive
Windsor, CO 80550-2597

RE: Noble Energy, Cole Grivin G10-19, Latham G09-27D, 10-27D, -28D Well Pad
Nationwide Permit No. 18, Corps File No. NWO-2011-2562-DEN

Dear Ms. Savage:

Reference is made to the above-mentioned project on behalf of Noble Energy Inc., which will result in the filling of 0.08 acre of wetland located at 40.33528; -104.65274, Weld County, Colorado.

Based on the information provided, this office has determined that the work within Colorado is authorized by the **Department of the Army Nationwide Permit No. 18**, found in the March 12, 2007, Federal Register. Enclosed is a fact sheet, which fully describes this Nationwide Permit and lists the General Conditions, Section 404 Only Conditions, and Colorado Regional Conditions, which must be adhered to for this authorization to remain valid.

Although an Individual Department of the Army permit will not be required for this work, this does not eliminate the requirement that any other applicable Federal, state, tribal or local permits be obtained as required. Please be advised that deviations from the original plans and specifications of this project could require additional authorization from this office.

The applicant is responsible for all work accomplished in accordance with the terms and conditions of the nationwide permit. If a contractor or other authorized representative will be accomplishing the work authorized by the nationwide permit on behalf of the applicant, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable nationwide permit. Any activity which fails to comply with all the terms and conditions of the nationwide permit will be considered unauthorized and subject to appropriate enforcement action.

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to March 18, 2012. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP. In compliance with general Condition 14, the attached "Certification of Completed Work" form (blue) must be signed and returned to this office upon completion of the authorized work and any required mitigation.

We have prepared a Preliminary Jurisdictional Determination (JD) which is a written indication that wetlands and waterways within your project area may be Waters of the United States (attached). Such waters will be treated as jurisdictional Waters of the US for purposes of computation of impacts and compensatory mitigation requirements. If you concur with the findings of the Preliminary JD, please sign it and return it to the letterhead address within two weeks. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of Waters of the US. If an approved JD is requested, the Corps will complete one and you may not begin work on the proposed project until after the Approved JD is complete. If you do not want the Corps to complete an Approved JD, you may proceed with the proposed project.

In accordance with the Endangered Species Act, the Corps of Engineers has reviewed your project for potential impacts to threatened and endangered (T&E) species and their critical habitat. We have determined that no T&E species or critical habitats are present in the activity area. However, should anyone at any time become aware that either an endangered and/or threatened species or its critical habitat exists within the project area, this office must be notified immediately.

The Omaha District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://per2.nwp.usace.army.mil/survey.html. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax (Completing the survey is a voluntary action).

If there are any questions call **Mr. Terry McKee** of my office at **(303) 979-4120** and reference **Corps File No. NWO-2011-2562-DEN**.

Sincerely,

Timothy T. Carey
Chief, Denver Regulatory Office

tm

Enclosures

Copies Furnished:
U.S. Fish & Wildlife Service
Colorado Department of Public Health & Environment
Environmental Protection Agency
Colorado Division of Wildlife
State Historic Preservation Office

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

A. Report Completion Date for Preliminary Jurisdictional Determination (JD):
November 28, 2011

B. Name and Address of Person Requesting Preliminary JD:
Ms. Edith Savage
Savage and Savage
4610 Haystack Drive
Windsor, CO 80550-2597

C. District Office, File Name, and Number:
Denver Regulatory Office, Noble Energy, Cole Grivin G10-19, Latham G09-27D, 10-27D, -28D Well Pad, NWO-2011-2562-DEN

D. PROJECT LOCATION(S), BACKGROUND INFORMATION, AND WATERS:
State: Colorado
City:
County: Weld
Name of nearest waterbody: wetland

Identify amount of waters in the review area: .08 acre

Name of any water bodies on the site that have been identified as Section 10 waters:
Tidal:
Non-Tidal:

Table 1 - Waters of the U.S.

Site	Latitude	Longitude	Stream Flow	Cowardin Class	Estimated amount of aquatic resources in review area	Estimated amount of aquatic resource impact	Class of aquatic resource
wetland	40.33528	-104.6527		Palustrine	.08 acre	.08 acre	Non-tidal

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

☒ Office (Desk) Determination. Date: November 28, 2011

☐ Field Determination. Date(s):

F. SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply - checked items should 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: Savage and Savage
- ☐ 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). Site quad name: 1:24000, LA SALLE.

☐ USDA Natural Resources Conservation Service Soil Survey. Citation: GIS.

☐ National wetlands inventory map(s). Cite name: GIS.

☐ State/Local wetland inventory map(s): .

☐ FEMA/FIRM maps: .

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Project site
or ☒ Other (Name & Date): Project site

☐ Previous determination(s). File no. and date of response letter: .

☐ Other information (please specify): .

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

T. McKee November 28, 2011

Signature and date of
Regulatory Project Manager
(REQUIRED)

Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

G. EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

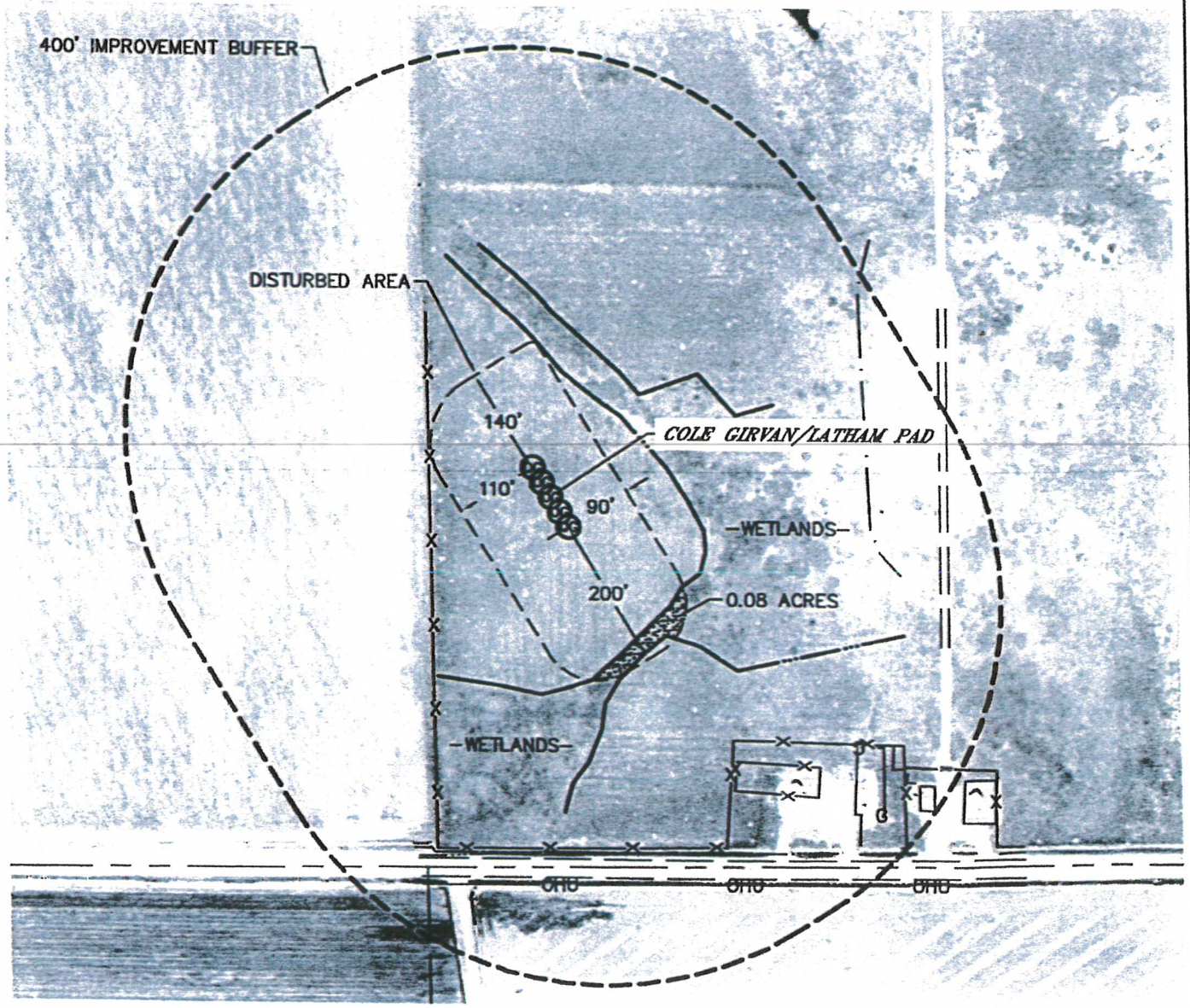
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

Lat40°, Inc. 1635 Foxtrail Drive, Suite 325 Loveland, CO 970-776-3321

LOCATION DRAWING

SECTION: 3
TOWNSHIP: 4N
RANGE: 65W

COLE GIRVAN G10–19, 29
LATHAM G09–27D, 10–27D, 28D



0 200

1"=200'

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4610 Haystack Drive
Windsor, Colorado 80550

970 674 8080 telephone
970 674 8088 facsimile
savageandsavage@earthlink.net

Transmittal

To: Matthew Verbit
Company: Noble Energy, Inc.
Address: 804 Grand Avenue
City, State, Zip: Platteville, CO 80651
Phone: 970-785-5000
Via: Hand Delivered

From: Edith Savage
Company: Savage and Savage, Inc.
Project: Cole Girvin/Latham Drill Pad
Phone: 970-674-8080
Fax: 970-674-8088
Date: November 1, 2011

Attached for your files is a wildlife assessment and wetland delineation for the Cole Girvin/Latham Drill Pad.

Savage and Savage ***Environmental***

practical solutions for environmental issues

4610 Haystack Drive
Windsor, Colorado 80550

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970 674 8088 facsimile
savageandsavage@earthlink.net

October 27, 2011

Matthew Verbit
Noble Energy, Inc.
804 Grand Avenue
Platteville, Colorado 80651

RE: Noble Energy, Inc., Cole Girvin/Latham Drill Pad, Wildlife Assessment

Dear Mr. Verbit:

Our firm conducted a wildlife assessment for the proposed Cole Girvin/Latham drill pad site on October 20, 2011. The proposed drill site is located approximately 0.25 miles northeast of Weld County Roads 43 and 48, and is accessed by taking U.S. Highway 85 south from Greeley to La Salle (Main Street), South on Main Street to Todd Avenue (Weld County Road 50), east on Weld County Road 50 for approximately 2.25 miles to Weld County Road 43, south on Weld County Road 43 to the intersection of County Roads 43 and 48, east on Weld County Road 48 for approximately 0.25 miles, then north onto an oil and gas access road. The latitude of the project site is 40.33388 degrees north and longitude is 104.64824 degrees west. The average elevation of the project site is 4672 feet. The site is located within the SW¼ of Section 3, Township 4 North, Range 65 West of the 6th Prime Meridian, Weld County, Colorado.

The Cole Girvin/Latham site is located approximately 0.25 miles south of the shoreline of Lower Latham Reservoir. According to the Wildlife Map on the Colorado Oil and Gas Conservation Commission web site, sensitive wildlife habitat is located northwest of the reservoir, and a bald eagle nest is located southeast of the reservoir. However, there are no seasonal or distance restrictions for the bald eagle nest due to the distance from the sensitive wildlife habitat and bald eagle nest to the drill site.

During the breeding season the shoreline and riparian corridor of the reservoir may likely provide habitat for pelicans, wading birds, geese and ducks, raptors, shorebirds, as well as other migratory birds. Lower Latham Reservoir is a high profile site, and one of a small number of reservoirs in the area. Most migratory birds nesting activity in Colorado occurs from April 1 to July 15. In order to protect nesting birds along the shoreline of the Lower Latham Reservoir a drilling window from July 15 to April 1 is recommended for this site.

Sincerely,

Edith Savage

Edith Savage
Principal

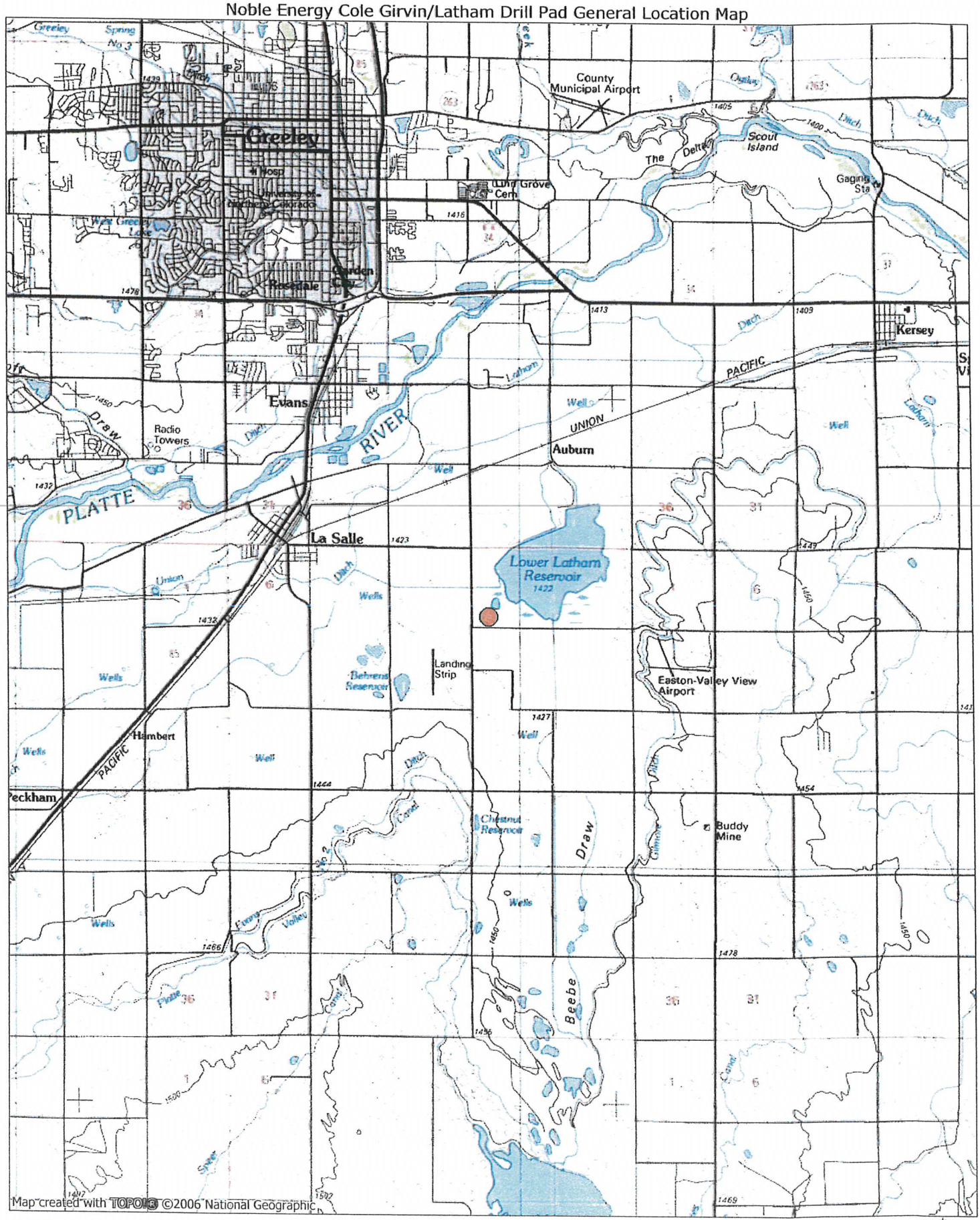
attachment: Noble Energy Cole Girvin/Latham Drill Pad General Location Map

NOBLE ENERGY, INC.
COLE GIRVIN/LATHAM DRILL PAD
WATERS OF THE UNITED STATES IDENTIFICATION
AND WETLAND DELINEATION
WELD COUNTY, COLORADO

Prepared by: Savage and Savage, Inc.
4610 Haystack Drive
Windsor, CO 80550
970 674 8080

October 2011

Noble Energy Cole Girvin/Latham Drill Pad General Location Map



NATIONAL GEOGRAPHIC

0.0 0.5 1.0 1.5 2.0 2.5 3.0 miles

0 1 2 3 4 5 km

TN MN

9½°

10/24/11

TABLE OF CONTENTS

FIGURES

APPENDIX

INTRODUCTION

Savage and Savage conducted a wetland delineation within the proposed Cole Girvin/Latham drill pad for Noble Energy, Inc. on October 20, 2011. The proposed drill site is located approximately 0.25 miles northeast of Weld County Roads 43 and 48, and is accessed by taking U.S. Highway 85 south from Greeley to La Salle (Main Street), South on Main Street to Todd Avenue (Weld County Road 50), east on Weld County Road 50 for approximately 2.25 miles to Weld County Road 43, south on Weld County Road 43 to the intersection of County Roads 43 and 48, east on Weld County Road 48 for approximately 0.25 miles, then north onto an oil and gas access road. The latitude of the project site is 40.33388 degrees north and longitude is 104.64824 degrees west. The average elevation of the project site is 4672 feet. The site is located within the SW¼ of Section 3, Township 4 North, Range 65 West of the 6th Prime Meridian, Weld County, Colorado (Figure 1).

STUDY METHODS

A wetland delineation was conducted in accordance with the requirements of the U.S. Army Corps of Engineers Wetlands Delineation Manual and Interim Supplement (USACE, 1987, 2008). 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 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 approximately 20 inches from the soil surface. Soil horizons were inspected and described using texture, soil color

(Munsell, 1992), and moisture. Observations were recorded on the attached USACE Great Plains – Interim Version approved data sheet (Figures 2 – 3 depict the sample points).

PROJECT DESCRIPTION

Proposed temporary disturbance will include construction of a drill pad that is approximately 3.0 acres. Permanent disturbance will include fenced well heads located on the drill pad remnant. The existing tank battery will be expanded for this project.

SITE DESCRIPTION

The significant topographic and hydrologic feature in the vicinity of the site is the Lower Latham Reservoir that is located approximately 0.25 miles north of the drill site. Lower Latham Reservoir is situated within a broad topographic swale. The nature of the topography and natural and man-augmented hydrology produce seasonal hydric areas south (upgradient) of the reservoir. The proposed disturbance area slopes gently to the northeast.

The disturbance area is hydrologically connected to a large wetland complex located south of the Lower Latham Reservoir. The wetlands are a mosaic and include wet meadow and mesic/xeric meadow vegetation dependent on differences in micro-topography and surface water drainage patterns.

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), Vona sandy loam (0 to 1 percent slopes) are located within the area. This map unit is a nearly level map unit formed in alluvial deposits. Typically Vona soil is grayish brown sandy loam approximately 10 inches thick. The subsoil is brown fine sandy loam about 20 inches thick. The substratum to a depth of 60 inches is sandy loam. Vona soil is not defined by

the U.S. Army Corps of Engineers as hydric. On-site observation of soils within the site confirmed the presence of this soil map unit within Sample Point 002.

The dominant plant species adjacent to Sample Point 001 is Baltic rush (*Juncus balticus*). Other plants include inland saltgrass (*Distichlis spicata*), blowoutgrass, (*Redfieldia flexuosa*), and meadow foxtail (*Hordeum jubatum*), all hydrophytic species. The area surrounding Sample Point 002 is dominanted by dropseed (*Sporobolus cryptandrus*), a xeric species.

RESULTS/CONCLUSION

Savage and Savage conducted a wetland delineation at the proposed Noble Energy Cole Girvin/Latham well pad on October 20, 2011. This delineation was conducted in order to determine the presence and extent of wetlands within the proposed drill pad. Hydrophytic vegetation, hydric soil, and wetland hydrology were identified within the broad swale (Sample Point 001), however wetland indicators were not identified within the uplands (Sample Point 002) (Figure 4).

LITERATURE CITED

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

Munshower, Frank F. 1991. Perennial Grasses for Revegetation of Disturbed Lands in the Northern Great Plains and the Intermountain Region. Reclamation Research Unit, Montana State University, Bozeman, Montana.

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.

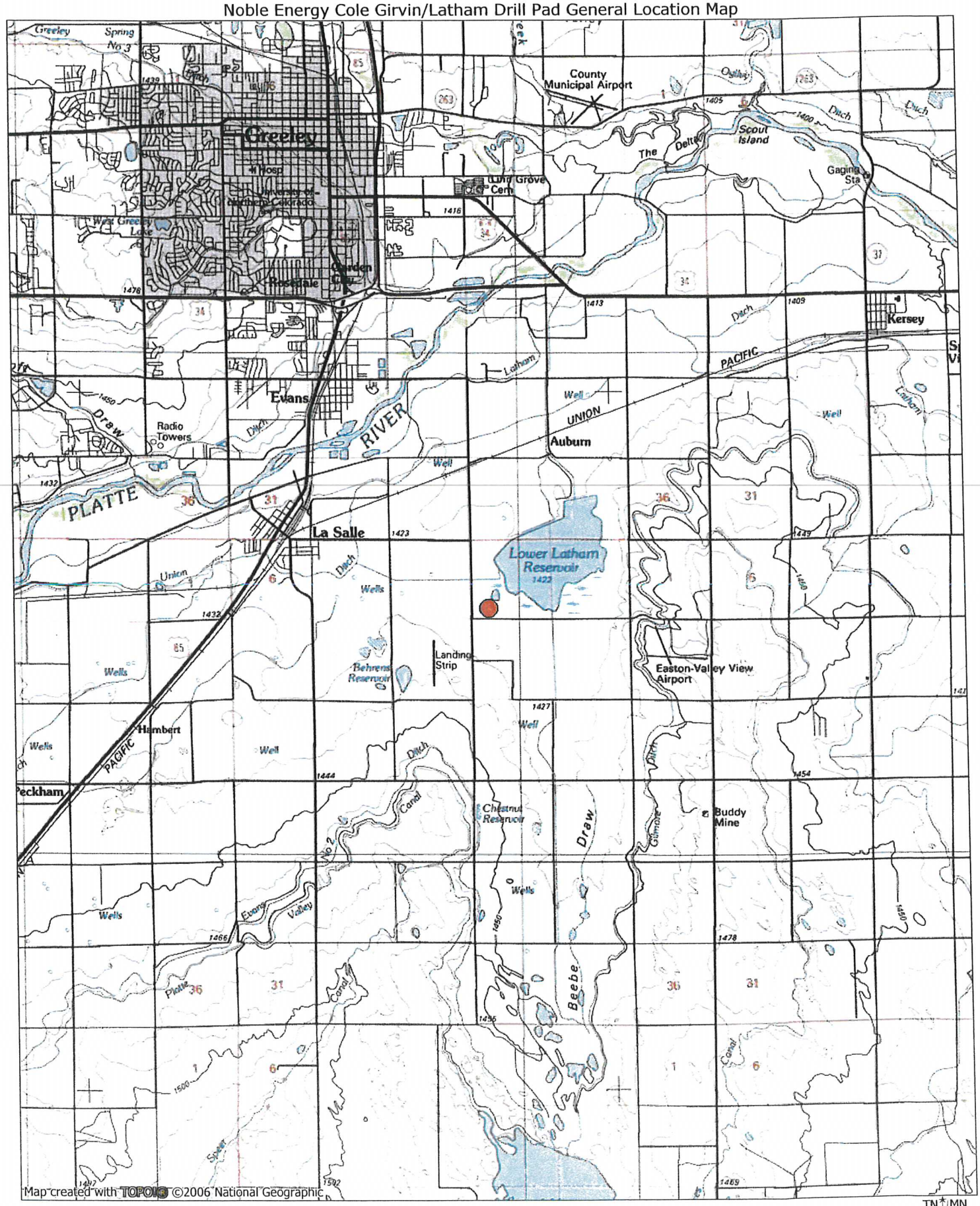
U.S. Army Corps of Engineers. 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble, ERDC/EL TR-08-12. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

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.

FIGURES

Noble Energy Cole Girvin/Latham Drill Pad General Location Map



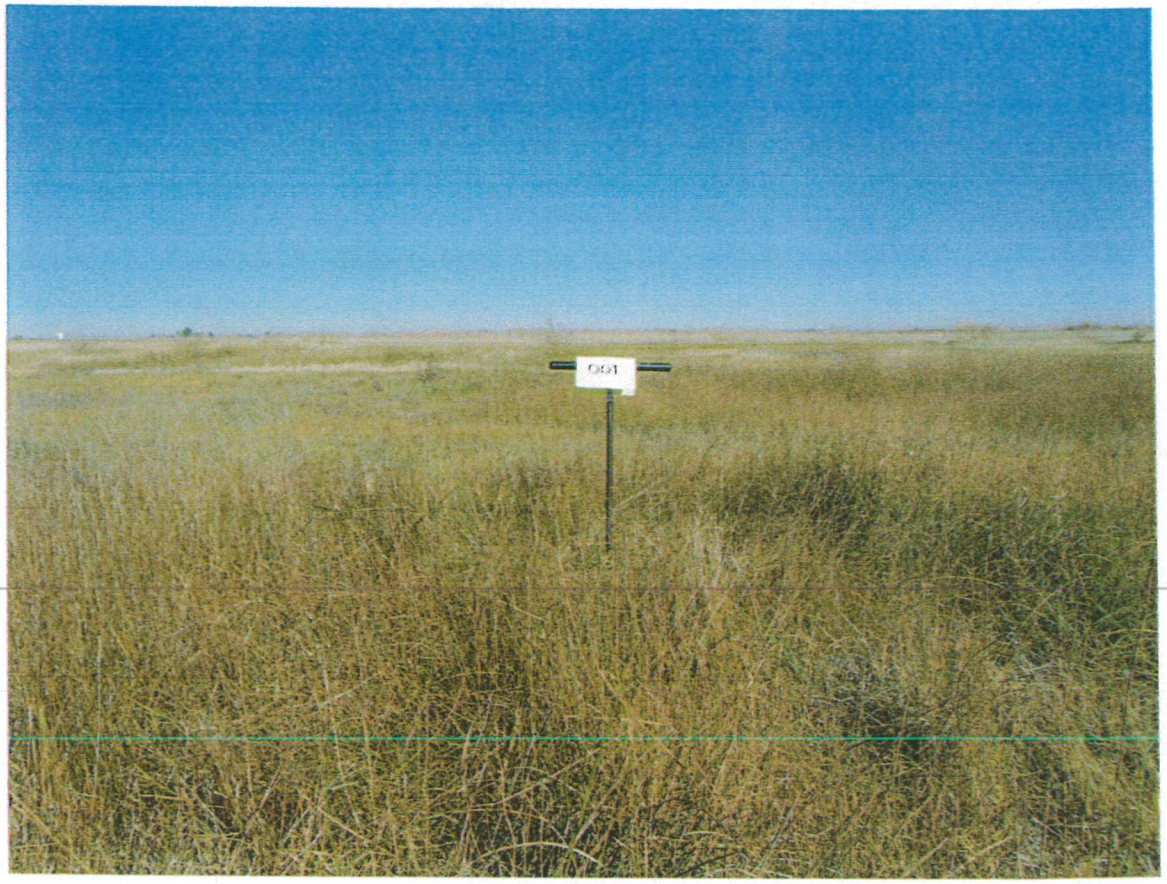
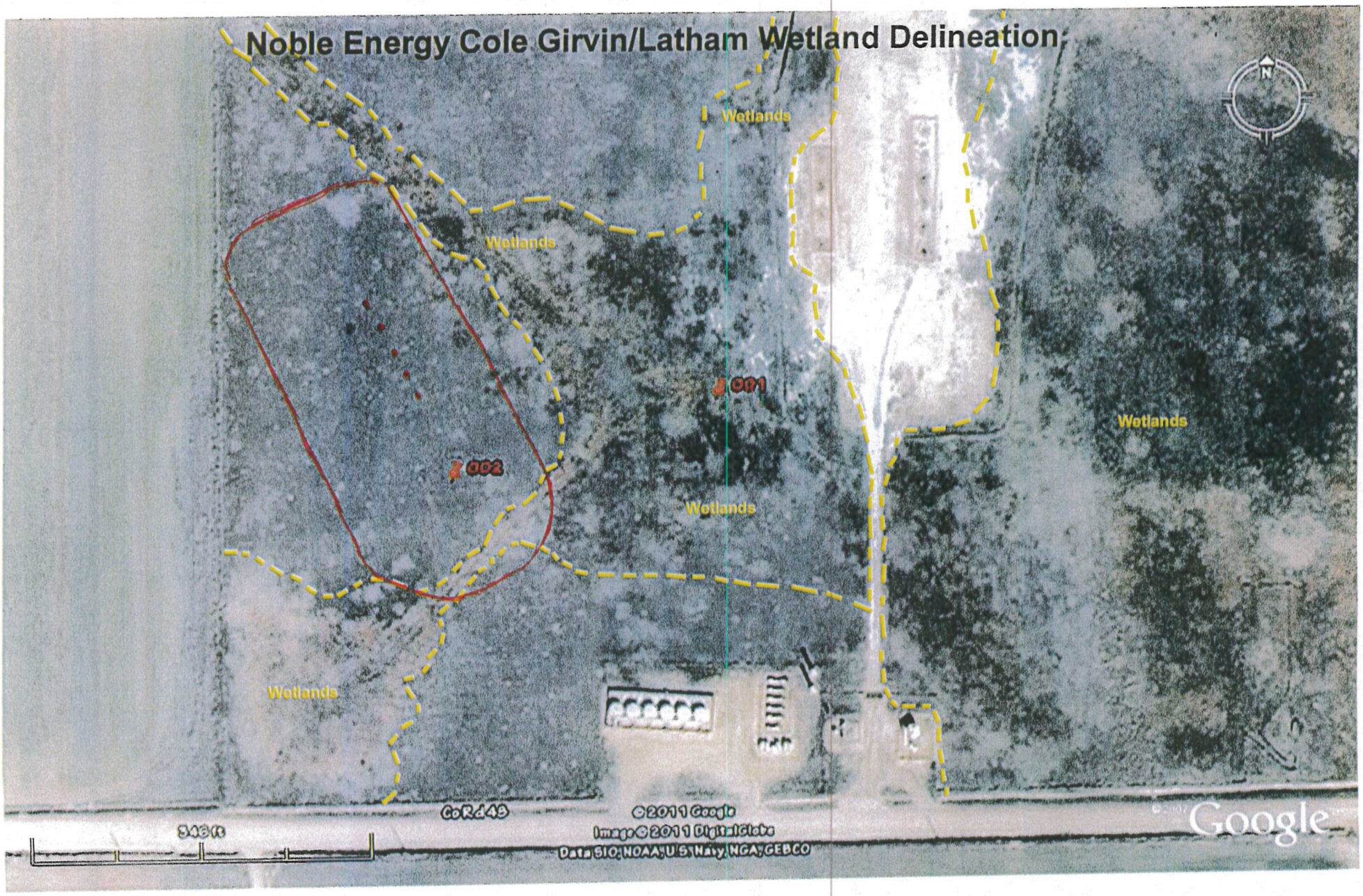
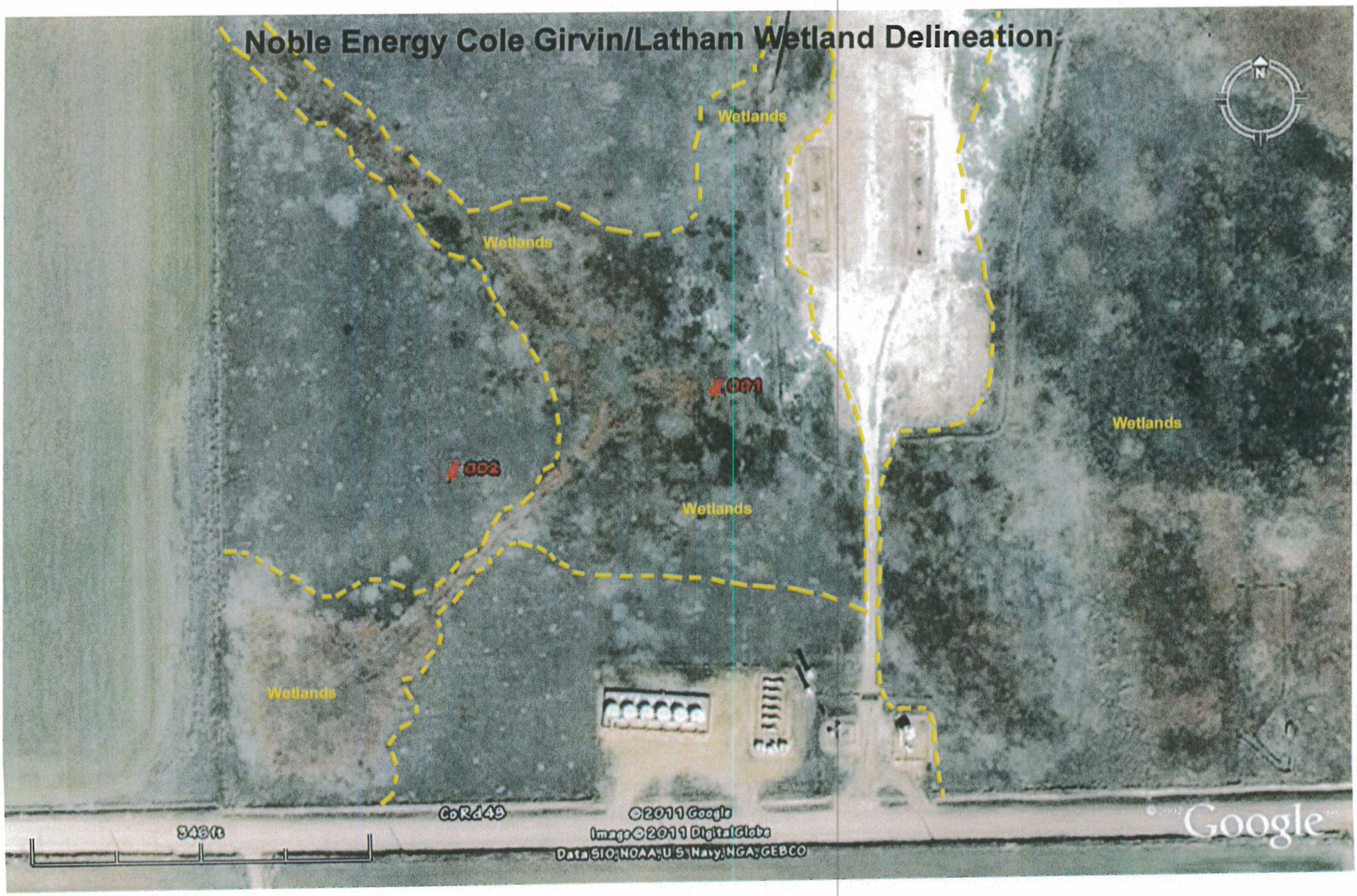


Figure 2. Cole Girvin/Latham Sample Point 001.

Figure 3. Cole Girvin/Latham Sample Point 002.


Noble Energy Cole Girvin/Latham Wetland Delineation
Wetlands
Wetlands
001
002
Wetlands
Wetlands
Wetlands
CoRd 49
348 ft
©2011 Google
Image ©2011 DigitalGlobe
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Google


Noble Energy Cole Girvin/Latham Wetland Delineation
Wetlands
Wetlands
001
002
Wetlands
Wetlands
Wetlands
CoRd49
348 ft
©2011 Google
Image ©2011 DigitalGlobe
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Google

APPENDIX

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: COLE GIRVIN/LATHAM City/County: WELD Sampling Date: OCT 20, 2011

Applicant/Owner: NOBLE ENERGY State: CO Sampling Point: 001

Investigator(s): MS SAVAGE/E A SAVAGE Section, Township, Range:

Landform (hillslope, terrace, etc.): BROAD SWALE Local relief (concave, convex, none): FLAT Slope (%): <1

Subregion (LRR): Lat: 40.33388° N Long: 104.648224° W Datum:

Soil Map Unit Name: VONA SANDY LOAM (0-1% SLOPES) NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area within a Wetland? Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: APEX OF TWO CONVERGING TOPOGRAPHIC SWALES

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Juncus balticus	50	Y	OBL
2. Distichlis spicata	16	Y	NI(FAC)
3. Hordeum jubatum	1	N	FACW
4. Bedfieldia flexuosa	3	N	NI(FAC)
5.			
6.			
7.			
8.			
9.			
10.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
	70 = Total Cover		

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	7.5YR4/2	95	N/A				LOAM	SIGNIF O HORIZON
4-21"	7.5YR4/2	80	GLEY1 2.5/N	10	CS	M	SAND	SATURATED @ BOTTOM
			7.5YR4/6	2	RM	M		MOTTLES

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: ORGANIC STREAKING SIGNIFICANT IN SANDY B HORIZON

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 17"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 16"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: COLE GIRVIN / LATHAM City/County: WELD Sampling Date: OCT 30, 2011

Applicant/Owner: NOBLE ENERGY State: CO Sampling Point: 002

Investigator(s): MS SAVAGE / BA SAVAGE Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): FLAT Slope (%): < 1

Subregion (LRR): Lat: 40-33388°N Long: 104-64824°W Datum:

Soil Map Unit Name: VONA SANDY LOAM (0-1% SLOPES) NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 10' X 10')			
1. Sporobolus cryptandrus	40	Y	FACU(-)
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-23"	7.5YR 4/2	95	N/A				SANDY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) NONE

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply) NONE

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: