



# **Rockin' K on Chambers Creek Mitigation Banking Instrument**

**Project Number SWF-2012-00323**

**Prepared for**

**Rockin' K on Chambers Creek LP  
Raymond J. Kane  
1601 Elm Street  
Suite 3700  
Dallas, Texas 75201**

**Prepared by**

**KBA EnviroScience, Ltd.  
101 E. Southwest Parkway, Ste 114  
Lewisville, Texas 75067  
972-436-9669**

**December 19, 2014**

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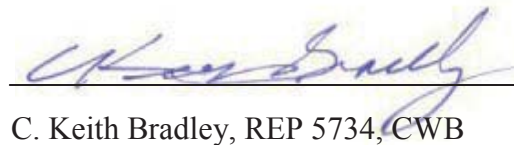
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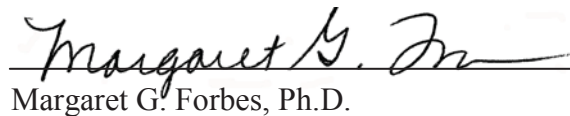


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December 19, 2014

C. Keith Bradley, REP 5734, CWB

Date



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December 19, 2014

Margaret G. Forbes, Ph.D.

Date

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## I. BANK INFORMATION

### 1. Contact Information

Rockin' K on Chambers Creek Mitigation Bank (the Bank, or RKMB) is sponsored and managed by Rockin' K on Chambers Creek LP (the Sponsor), located in Dallas, Texas. The Mitigation Plan and other required documents have been prepared by KBA EnviroScience, Ltd. of Lewisville, Texas.

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### 2. Project Description

The Bank is located in Navarro County, Texas, approximately 1 mile west of Interstate Highway 45 and 4.7 miles north-northwest of the City of Corsicana. The Bank's geographic coordinates are latitude 32.1614° N and longitude -96.4867° W. All of the land comprising the Bank is held in fee simple by Raymond J. and Martha E. Kane, husband and wife, with beneficial interests owned by their children, Kaitlin M. Kane, and John Paul R. Kane. These four individuals are the sole equity owners through their ownership of Rockin' K Ranch, LP. The Bank extends northward beyond Chambers Creek to include the proposed Chambers Creek buffer.

The Sponsor has completed a Mitigation Plan (Attachment B) to restore and enhance wetland and ephemeral, intermittent, and perennial stream habitat. The Mitigation Plan includes the goals and objectives of the Bank, as well as the detailed description of restorative actions, baseline conditions, and standards for operation, performance standards, reporting protocols, and management guidelines.

The Bank's existing conditions include 477 feet of ephemeral stream, 15,715 feet of intermittent stream, 3,230 feet of perennial stream, and 1.30 acres (ac) of palustrine emergent wetland. Following implementation of all phases of the Mitigation Plan, the Bank will consist of 29,857 feet of restored or enhanced ephemeral stream, 21,326 feet of restored or enhanced intermittent stream, 2,990 feet of enhanced perennial stream, 26.4 acres of restored emergent wetlands, 63 acres of restored forested palustrine wetlands, primary stream buffer along the length of all the restored and enhanced streams (54,173 feet) and expanded stream buffer along 48,566 feet of stream. Most of the stream credits created by the proposed work meet the criteria for "in-channel" stream credits, as defined by the "Fort Worth District Stream Mitigation Method", issued October 2, 2013.

### 3. Service Areas

The Bank's service area map is included as Figure 5-1 in the Mitigation Plan (Attachment B). The Bank's service area is based on its native and adjacent Hydrologic Unit Codes (HUCs), within the Trinity River basin, as well as its native and adjacent EPA Level III Ecoregions. All service areas are within the boundaries of the US Army Corps of Engineers (USACE) Fort Worth District.

The Bank's primary service area consists of the USGS 8-digit HUC (12030109) where the Bank is located. The secondary service area is determined by the overlap of the Bank's native Level III Ecoregion (Texas Blackland Prairie) and adjacent 8-digit HUCs within the Upper Trinity River basin. The Bank's secondary service area is comprised of those portions of adjacent HUCs 12030102, 12030105, and 12030108 that are within the Texas Blackland Prairie Ecoregion. Finally, the tertiary service area is comprised of the overlap of the Bank's adjacent HUCs and the Bank's adjacent Level III Ecoregions (Cross Timbers and East Central Texas Plains) within the Trinity River basin. The Bank's tertiary service area is comprised of those portions of HUCs 12030102, 12030105, and 12030108 that are within the Cross Timbers and East Texas Plains Ecoregions. The entire service area comprises all of Ellis County and portions of Parker, Tarrant, Collin, Dallas, Kaufman, Hood, Johnson, Hill, Navarro, Henderson, Limestone, Freestone, and Anderson Counties. Use of Bank credits outside the primary, secondary and tertiary service areas is permissible with USACE approval, to be provided with consultation with the Interagency Review Team (IRT) Authorities.

## II. AUTHORITIES

### 1. Purpose

The purpose of this Mitigation Banking Instrument (MBI) is to establish guidelines and responsibilities for the establishment, use, operation, and maintenance of the Bank. The Bank will be used with the intent to sell credits commercially for compensatory mitigation for unavoidable impacts to waters of the US that result from activities authorized under Sections 401 and 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899, provided such use has met all applicable requirement and is authorized by the USACE.

## 2. Regulatory Authorities

The establishment, use, and operation of the Bank are carried out in accordance with the following authorities:

- Clean Water Act (33 USC 1251 et. seq.)
- Rivers and Harbors Act (33 USC 403)
- Fish and Wildlife Coordination Act (16 USC 661 et. seq.)
- Regulatory Programs of the US Army Corps of Engineers (USACE), Final Rule (33 CFR 320-330)
- Guidelines for Specification of Disposal Sites for Dredged and Fill Materials (40 CFR 230)
- Memorandum of Agreement between the US Environmental Protection Agency (EPA) and the Department of the Army concerning Determination of Mitigation Under the Clean Water Act, Section 404(b) 1 Guidelines (February 6, 1990)
- Final Rule for the Compensatory Mitigation for Losses of Aquatic Resources issued by the USACE and EPA (April 10, 2008)
- Section 7 of the Endangered Species Act
- Section 106 of the National Historic Preservation Act
- Texas State Water Quality Certification [(30 Tex. Admin. Code§279.12 (2001))]
- Texas State Water Quality Standards [30 Tex. Admin. Code§301 (2000)]
- Texas Parks and Wildlife Code Chapter 14 Powers and Duties Concerning Wetlands

## 3. Interagency Review Team (IRT)

The following agencies and representatives comprise the IRT:

<b>Agency</b>	<b>Representative</b>	<b>Phone Number</b>	<b>Email Address</b>
USACE (Chair)	Eric Dephouse	817-886-1670	eric.j.dephouse@usace.army.mil
EPA	Donna Mullins	214-665-2760 x7576	mullins.donna@epa.gov
USFWS	Sid Puder	817 277-1100	sidney_puder@fws.gov
TCEQ	Brittany Lee	512-239-5210	brittany.lee@tceq.texas.gov
TPWD	Tom Heger	512-389-4583	tom.heger@tpwd.texas.gov

## 4. Force Majeure

The Bank sponsor shall be responsible for repair and remediation of any portion of the Bank requiring such repair and remediation as determined by the IRT, except upon events of Force Majeure as defined below:

*Force Majeure shall mean an irreparable material and detrimental impact on the Bank site over which the Bank Sponsor or any entity controlled by the Bank Sponsor could not have anticipated or controlled.*

The IRT has discretion to determine whether an event is a “Force Majeure” event as defined herein, and the Bank Sponsor shall bear the burden of demonstrating to the IRT’s satisfaction that:

- The Force Majeure event was caused by circumstances beyond the control or anticipation of the Bank Sponsor and/or any entity controlled by the Bank Sponsor, including its contractors and consultants;
- Neither the Bank Sponsor nor any entity controlled by the Bank Sponsor, including its contractors and consultants, could have reasonably foreseen and prevented such an event;
- Damage was caused by such circumstances; and
- Damage is irreparable by any practicable and reasonable means as determined in the discretion of the IRT.

## 5. Dispute Resolution

Should disputes arise regarding the application of the MBI, resolution will be in accordance with 33 CFR 332.8(e). USACE approval of this Instrument constitutes the regulatory approval required for the Rockin’ K on Chambers Creek Mitigation Bank to be used to provide compensatory mitigation for Department of the Army permits pursuant to 33 C.F.R. 332.8(a)(1). This Instrument is not a contract between the Sponsor or Property Owner and USACE or any other agency of the federal government. Any dispute arising under this Instrument will not give rise to any claim by the Sponsor or Property Owner for monetary damages. This provision is controlling notwithstanding any other provision or statement in the Instrument to the contrary.

## 6. Validity, Modification, and Termination of the Mitigation Bank

This MBI will become valid upon signature by the U.S. Army Corps of Engineers and Bank Sponsor. The initial credit release is typically authorized following the recordation of the conservation easement, execution of the financial assurances requirements, and any other requirements specified in the MBI. This MBI may be amended, altered, released, or revoked only by written agreement among the parties hereto or their heirs, assigns, or successors-in-interest. The amendment must follow the appropriate procedures listed in 33 CFR 332.8 (d), unless the District Engineer determines that the streamlined review process described in 33 CFR 332.8 (g) (2) is warranted. Any of the IRT members may terminate their participation upon written notification to all signatory parties. Participation of IRT members will terminate 30 days after written notification.



## 7. Controlling Language

To the extent that specific language in this document changes, modifies, or deletes terms and conditions contained in those documents that are incorporated into the MBI by reference, and are not legally binding, the specific language within the MBI shall be controlling.

## III. MITIGATION PLAN

The Mitigation Plan (Plan) is provided as Attachment B.

## IV. BANK OPERATIONS

### 1. Accounting Procedures and Reporting

The Sponsor will maintain the Bank's credit ledger in the Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS). All credit transactions shall be entered into the database no later than seven calendar days after the transaction has occurred or the USACE reserves the right to suspend credit sales until sales transactions are deemed current and compliant. RIBITS entries will include the following:

- Jurisdiction
- Transaction date
- Credits debited
- USACE permit number
- Name of permittee
- Credit classification
- Specific area(s) within the Bank that credits are to be debited

Compliance with RIBITS reporting does not supersede the requirement of the Sponsor to submit individual transaction reports.

### 2. Credit Release Schedule

Release of credits will be tied to performance-based milestones as shown on the following tables for perennial stream credits, ephemeral and intermittent stream credits, and wetland credits. Credit withdrawals shall be in-kind between the impact and bank. The Performance Standards that define satisfaction of the Release Terms are included in Tables 8-1 through 8-5 of the Mitigation Plan.

## Perennial Stream Credit Release Schedule, Rockin' K on Chambers Creek Mitigation Bank

Release Stage	Release Terms	Release Percentage
Initial	<ul style="list-style-type: none"> <li>• Execution of MBI</li> <li>• Financial assurance established</li> <li>• Execution of USACE-approved Conservation Easement</li> <li>• Purchase or execution of easement or other binding agreement on north streambed and bank of Chambers Creek</li> <li>• Phase 1 will be the first phase constructed.</li> </ul>	20%
Post Planting/Construction	<ul style="list-style-type: none"> <li>• Completion of bank stabilization earthwork and riparian planting</li> <li>• Achievement of Performance Standards</li> </ul>	15%
1 <sup>st</sup> Bank-Full Event	<ul style="list-style-type: none"> <li>• One bank-full event after construction completed and planting initiated</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	5%
2 <sup>nd</sup> Bank-Full Event	<ul style="list-style-type: none"> <li>• Event at least one year after 1<sup>st</sup> bank-full event</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	5%
Two-Season Survival: Final	<ul style="list-style-type: none"> <li>• No earlier than 2<sup>nd</sup> Bank Full Event</li> <li>• After two full growing seasons</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	5%
Interim Release 1	<ul style="list-style-type: none"> <li>• Minimum of 2 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 2	<ul style="list-style-type: none"> <li>• Minimum of 3 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 3	<ul style="list-style-type: none"> <li>• Minimum of 5 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Final Release	<ul style="list-style-type: none"> <li>• 2<sup>nd</sup> bank-full event must have occurred</li> <li>• Long-term management non-wasting endowment funded</li> <li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li> </ul>	20%

**Ephemeral and Intermittent Stream Credit Release Schedule,  
Rockin' K on Chambers Creek Mitigation Bank**

<b>Release Stage</b>	<b>Release Terms</b>	<b>Release Percentage by Restoration Type</b>
Initial	<ul style="list-style-type: none"> <li>• Execution of MBI</li> <li>• Financial assurance established</li> <li>• Execution of USACE-approved Conservation Easement</li> <li>• Phase 1 will be the first phase constructed.</li> </ul>	Complete: 30% Partial: 20%
Post Planting/ Construction	<ul style="list-style-type: none"> <li>• Completion of earthwork and planting</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 15%
1 <sup>st</sup> Bank-Full Event (Complete Restoration Streams)	<ul style="list-style-type: none"> <li>• One bank-full event after construction completed and planting initiated</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 5%
2 <sup>nd</sup> Bank Full Event (Complete Restoration Streams)	<ul style="list-style-type: none"> <li>• Event at least one year after 1<sup>st</sup> bank-full event</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 5%
1 <sup>st</sup> Bank-Full Event (Partial Restoration Streams)	<ul style="list-style-type: none"> <li>• One bank-full event after construction completed and planting initiated</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Partial: 5%
2 <sup>nd</sup> Bank-Full Event (Partial Restoration Streams)	<ul style="list-style-type: none"> <li>• Event at least one year after 1<sup>st</sup> bank-full event</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Partial: 5%
Two-Season Survival: Final (Partial Restoration Streams )	<ul style="list-style-type: none"> <li>• No earlier than 2<sup>nd</sup> Bank Full Event</li> <li>• After two full growing seasons</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Partial: 5%
Interim Release 1	<ul style="list-style-type: none"> <li>• Minimum of 2 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 10%
Interim Release 2	<ul style="list-style-type: none"> <li>• Minimum of 3 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 10%
Interim Release 3	<ul style="list-style-type: none"> <li>• Minimum of 5 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 10%
Final Release	<ul style="list-style-type: none"> <li>• 2<sup>nd</sup> bank-full event must have occurred</li> <li>• Long-term management non-wasting endowment funded</li> <li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li> </ul>	Complete: 20% Partial: 20%

Secondary and Tertiary Riparian Buffers Credit Release Schedule,  
Rockin' K on Chambers Creek Mitigation Bank

<b>Release Stage</b>	<b>Release Terms</b>	<b>Release Percentage</b>
Initial	<ul style="list-style-type: none"> <li>• Execution of MBI</li> <li>• Financial assurance established</li> <li>• Execution of USACE-approved Conservation Agreement</li> <li>• Phase 1 will be the first phase constructed.</li> </ul>	15%
Post Planting	<ul style="list-style-type: none"> <li>• Completion of planting</li> <li>• Achievement of Performance Standards</li> </ul>	20%
2 <sup>nd</sup> Growing Season	<ul style="list-style-type: none"> <li>• After 2 full growing seasons</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	15%
Interim Release 1	<ul style="list-style-type: none"> <li>• Minimum of 3 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 2	<ul style="list-style-type: none"> <li>• Minimum of 4 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 3	<ul style="list-style-type: none"> <li>• Minimum of 5 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Final Release	<ul style="list-style-type: none"> <li>• Long-term management non-wasting endowment funded</li> <li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li> </ul>	20%

Wetland Credit Release Schedule,  
Rockin' K on Chambers Creek Mitigation Bank

Release Stage	Release Terms	Release Percentage
Initial	<ul style="list-style-type: none"> <li>• Execution of MBI</li> <li>• Financial assurance established</li> <li>• Execution of USACE-approved Conservation Agreement</li> <li>• Phase 1 will be the first phase constructed.</li> </ul>	15%
Post Planting /Construction /Hydrology	<ul style="list-style-type: none"> <li>• Completion of earthwork and planting</li> <li>• Successful hydrology demonstration</li> <li>• Achievement of Performance Standards</li> </ul>	20%
2 <sup>nd</sup> Growing Season	<ul style="list-style-type: none"> <li>• After 2 full growing seasons</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	15%
Interim Release 1	<ul style="list-style-type: none"> <li>• Minimum of 3 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 2	<ul style="list-style-type: none"> <li>• Minimum of 5 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 3	<ul style="list-style-type: none"> <li>• Minimum of 7 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Final Release	<ul style="list-style-type: none"> <li>• Long-term management non-wasting endowment funded</li> <li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li> </ul>	20%

### 3. Contingency Plans/Remedial Actions

In the event the mitigation bank or a specific phase of the bank fails to achieve performance standards as specified in this MBI, the Sponsor shall develop necessary contingency plans to implement appropriate remedial actions for the Bank or that phase in coordination with the IRT. In the event the Sponsor fails to implement necessary remedial actions within one growing season after notification by the USACE of the necessary remedial action to address any failure in meeting the performance standards, the IRT (acting through Chair), will notify the appropriate authorizing agencies and recommend appropriate remedial actions.

If the authorizing agencies determine that the Bank is operating at a deficit, debiting by the sponsor of deposited credits shall immediately cease, and the authorizing agencies, in consultation with the IRT and the Sponsor, will determine what remedial actions are necessary to correct the situation. As determined by the Chair in coordination with the IRT and the Sponsor, if conditions at the Bank site do not improve or continue to deteriorate within one growing season from the date that the need for remediation was first identified in writing to the Sponsor by the USACE through the Chair of the IRT, the agent responsible for the financial assurances shall be directed by the USACE to transfer the amount necessary to correct the deficiency to Connemara Conservancy to undertake corrective measures.

### 4. Provisions Covering the Use of the Land

The use of the Bank land will be constrained by a conservation easement executed by the Sponsor and Connemara Conservancy as described in Section 3 of the Mitigation Plan and provided as Attachment G to this MBI. Recreational and educational activities on the part of the Sponsor or owner or their invitees are appropriate if conducted so as to have minimal adverse effects on the aquatic resources. Recreational use of vehicles and horses within the Bank will be limited to established roads and pathways. The locations and the typical design of the stream crossings are shown on the Construction Plans. Mineral resources, including natural gas and oil, may exist under Bank or adjacent lands. The existing landowner does not own any substantial amount of subsurface mineral rights. Landowners in the State of Texas cannot generally prevent a mineral owner's access to those minerals.

The exploration for, and production and transportation of, subsurface mineral resources beneath the Bank site is acceptable provided the amount of ground disturbing activities and surface alterations are minimized to the maximum extent practicable; activities are conducted in a manner that minimizes adverse environmental impacts; impacted areas are restored to pre-existing conditions as soon as practicable; reasonable and appropriate compensatory mitigation is achieved; and the entity conducting the activities complies with all applicable regulatory requirements, including Section 404 of the Clean Water Act. If necessary, the permit applicant will provide appropriate compensation to the Sponsor for any impacts. The Sponsor has designated a drilling site outside of Bank boundaries (Attachment B).



## 5. Approved Credit Quantities

Upon signature of this document, the USACE, in consultation with the IRT, grants the Sponsor the proposed quantities of wetland, riparian buffer, and stream credits, as described in the attached Mitigation Plan. The release of these credits shall follow the schedule described in Part IV. In accordance with the Final Rule for the Compensatory Mitigation for Losses of Aquatic Resources issued by the USACE and the EPA, dated April 10, 2008, these quantities can be adjusted downward if performance standards are not met, or adjusted upward if the performance standards are exceeded.

## V. ADDITIONAL INFORMATION

### 1. Financial Assurances

All mitigation banks must have a USACE approved financial assurance mechanism (performance bond, letter of credit, cash escrow, casualty insurance) for the duration of the Bank establishment and monitoring period. The financial assurance mechanism for the RKMB will initially be an insurance policy, the specific form of which is provided in Attachment J. In the event the financial assurance mechanism is due to expire, or the Sponsor elects to replace the financial assurance mechanism with another form, the Sponsor shall notify the USACE at least 120 days prior to the expiration or replacement to allow for USACE review and approval. If an alternate financial assurance mechanism is proposed, but has not been approved by the USACE, the current financial assurance mechanism will be maintained. Under no circumstance will the currently approved financial assurance mechanism be allowed to expire without USACE approval. If an approved financial assurance mechanism has not been established, mitigation bank credits may be suspended until such time financial assurances are approved. -A schedule of proposed financial assurance mechanisms for the duration of the monitoring period is provided on the following page. The schedule shows financial assurance in the amount of 110% of construction costs until after the second bank-full event for Phases 1-3 and after the second growing season for Phase 4, at which time the financial assurance will be reduced to 10% of construction cost. The reduced financial assurance amount (10% of construction cost) represents adequate funding to revegetate the mitigation areas if needed.

**Schedule of Proposed Financial Assurance  
Rockin' K on Chambers Creek Mitigation Bank**

<b>Coverage</b>	<b>Amount</b>	<b>Estimated Date</b>	<b>Comments</b>
Phases 1-3	\$ [REDACTED] (110% of construction cost)	01/15	Financial assurances will be submitted in the form of a mitigation casualty policy with an initial term of three (3) years. Financial assurances must be submitted and approved prior to Initial Release of credits for Phases 1-3. Amount of financial assurance may be decreased to 10% of construction cost after second bank-full event.
Phase 4	\$ [REDACTED] (110% of construction cost)	01/15	Financial assurances will be submitted in the form of a mitigation casualty policy with an initial term of three (3) years. Financial assurances must be submitted and approved prior to Initial Release for Phase 4. Amount decreased to 10% of initial construction cost after second growing season.
Phases 1-3	\$ [REDACTED] (10% of construction cost)	5/17	Financial assurances may be in the form of a mitigation casualty policy, cash escrow or letter of credit, upon the occurrence of the second bank-full event. Replaced by non-wasting endowment prior to Final Release of credits.
Phase 4	\$ [REDACTED] (10% of construction cost)	5/18	Financial assurances may be in the form of a mitigation casualty policy, cash escrow or letter of credit, upon the occurrence of the end of second growing season. Replaced by non-wasting endowment prior to Final Release of credits.
All Phases	\$ [REDACTED]	1/24	Non-wasting endowment for supporting long-term maintenance. Replaces previous financial assurance mechanism. Condition for Final Release of credits. With IRT approval, Sponsor may elect to establish non-wasting endowment earlier to obtain Final Release of credits for mitigation areas that are otherwise eligible for Final Release (e.g., in-channel or riparian buffer credits).

Note: Dates are estimates only. Criteria described in Comments column must be satisfied.

## VI. SIGNATURE PAGE

By signing this Final MBI, the Bank Sponsor hereby reaffirms the fact that the status of the project site relative to liens, encumbrances, or other conditions described in the submittals for this project remain unaltered.

<b>Organization</b>	<b>Name and Title</b>	<b>Signature</b>	<b>Date</b>
U.S. Army Corps of Engineers Fort Worth District			
U.S. Environmental Protection Agency			
U.S. Fish and Wildlife Service			
Texas Commission on Environmental Quality			
Texas Parks and Wildlife Department			
Rockin' K on Chambers Creek LP, a Texas limited partnership	Raymond J Kane, Manager, RKMB GP LLC, a Texas Limited Liability Company, its General Partner		

## Attachments

	Included
<b>A. Figures (see Mitigation Plan and Appendices)</b>	■
<b>B. Mitigation Plan</b>	■
<b>C. Delineation of Waters of the U.S., Including Wetlands</b>	■
<b>D. Site Photos (see Delineation)</b>	■
<b>E. Functional/Conditional Assessment</b>	■
<b>F. Credit Evaluation</b>	■
<b>G. Draft Site Protection Instrument</b>	■
<b>H. Long-term Management Plan (Section 10, Mitigation Plan)</b>	■
<b>I. Letter of Agreement Identifying the Long-term Steward</b>	■
<b>J. Financial Assurances Documents</b>	■
<b>K. Assurance of Water Rights</b>	■
<b>L. Other: Archaeological Evaluation</b>	■

**Attachment A. Figures (see Mitigation Plan and Appendices)**

## **Attachment B. Mitigation Plan**



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## APPENDICES

- A. Design Basis
  - B. Natural Channel Design Review Checklist
  - C. Consultant Qualifications
- Construction Plans submitted under separate cover

## DEFINITIONS

**Buffer** means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

**Condition** means the relative ability of an aquatic resource to support and maintain a community of organisms having a species composition, diversity, and functional organization comparable to reference aquatic resources in the region.

**Enhancement** means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

**Establishment** (creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.

**Functional capacity** means the degree to which an area of aquatic resource performs a specific function.

**Functions** mean the physical, chemical, and biological processes that occur in ecosystems. Impact means adverse effect.

**Preservation** means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions, but rather maintains a targeted condition.

**Re-establishment** means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

**Reference** aquatic resources are a set of aquatic resources that represent the full range of variability exhibited by a regional class of aquatic resources as a result of natural processes and anthropogenic disturbances.

**Rehabilitation** means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

**Restoration** means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

**Riparian areas** are lands adjacent to streams, rivers, lakes, and estuarine-marine shorelines. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality.



## PROJECT INFORMATION

<u>Project Name:</u>	Rockin' K on Chambers Creek Mitigation Bank
<u>SWF Permit No.:</u>	SWF-2012-00323
<u>Project Location:</u>	Rockin' K Ranch, latitude 32.1614° N, longitude -96.4867° W
<u>Mitigation Site Location:</u>	See <b>Figure 1-1</b> Site Location Map.
<u>Watershed:</u>	Richland Chambers Lake, HUC 12030109
<u>County:</u>	Navarro County, Texas

## 1. Goals and Objectives

The primary goal for the Rockin' K on Chambers Creek Mitigation Bank (RKMB or Bank) is to restore the natural on-site aquatic ecosystems and replace the functions and values of the waters of the U.S. that have or will be lost or degraded due to impacts in the watershed. Specific objectives include:

- (1) Restore on-site natural drainage patterns including restoring flood flows above the bankfull stage to the floodplain;
- (2) Restore channel-forming flows to appropriately sized channels;
- (3) Reduce channel erosion and dissipate flood energy by creating step-pool channels and floodplain benches at the appropriate bankfull elevations;
- (4) Restore stable channels (i.e., dimension, pattern and profile) that do not aggrade, degrade, or erode at rates greater than what is natural for reference streams of the same stream type;
- (5) Increase in-stream habitat heterogeneity by constructing stable riffle-pool channels, using native materials to build in-channel structures;
- (6) Restore a riparian buffer using native plants to reduce flood velocities on the floodplain, enhance infiltration, promote sediment deposition, improve channel shade and water quality, and enhance terrestrial habitat.

To accomplish these objectives, the Sponsor will:

- Restore 22,471 feet of ephemeral streams
- Enhance 7,386 feet of ephemeral streams
- Restore 14,345 feet of intermittent stream
- Enhance 6,981 feet of intermittent stream
- Enhance 2,990 feet of perennial stream
- Restore/enhance riparian buffer area along 48,566 feet of stream
- Restore 26.4 acres of emergent wetlands
- Enhance 63 acres of riverine wetlands

## 2. Site Selection

Mitigation site selection should take into account three primary components: watershed considerations, practicability, and air traffic considerations (USACE 2002). The three components are addressed below.

### 2.1 Watershed Considerations

The Rockin' K site is located within the Chambers watershed (HUC 12030109), which is part of the Upper Trinity basin (**Figure 2-1**). Chambers Creek, a primary tributary of Richland Chambers Lake, is located within the Region C Regional Water Planning Area. According to the 2011 Region C Water Plan, no other reservoirs are planned in the Chambers watershed (TWDB 2010).

Chambers Creek and its tributaries comprise one of the primary water sources for Richland Chambers Reservoir, a 44,000 acre water supply impoundment operated by the Tarrant Regional Water District (TRWD 2009). The RKMB site is located approximately 10 miles upstream of the reservoir. Water quality in Chambers Creek is therefore an important concern for water supply and other beneficial uses in the watershed. Proposed activities at RKMB, such as wetland and stream restoration and implementation of best management practices, will help improve water quality and sustainable flows into Chambers Creek and Richland Chambers Reservoir.

Chambers Creek water quality is considered impaired by the Natural Resource Conservation Service (NRCS) due to high turbidity, low dissolved oxygen, and high concentrations of nutrients (NRCS 2012). To improve water quality, the NRCS has recently implemented a financial assistance program to promote conservation practices along Chambers Creek. The NRCS considers the Chambers watershed to have a good restoration potential. Although the Project Sponsor has not received financial assistance from this program, proposed bank stabilization and upstream restoration/enhancement activities would be expected to improve water quality in Chambers Creek.

The site is low-lying, was historically rich in aquatic resources, and encompasses a 2,990-ft reach of Chambers Creek, which is a perennial stream. Recent aerial imagery is provided as **Figure 2-2** and a USGS topographic map is provided as **Figure 2-3**. The RKMB site also collects and has the potential to improve the quality of runoff from adjacent agricultural fields, including some fields that are presently in row crops. The site contains numerous impoundments which, when removed, will improve stream base flows. Restoration at the site will reestablish hard-mast producing flora, which, combined with overbank flooding, will provide a seed source for additional recruitment at downstream sites.

The site will be the first large-scale restoration effort in a community dominated by agriculture. Therefore, site restoration will provide an example that could lead to additional restoration efforts in the watershed. For these reasons, the restoration of ecological, water storage, flood attenuation, and water quality functions at the RKMB site will have a beneficial impact on the watershed.

Land use in the site's watershed is primarily agricultural. Available aerial imagery indicates that the watershed has been a mixture of pasture, and to a lesser extent, row crops, for decades. Isolated tracts of forest occur throughout the watershed, and these most likely represent the historic condition. Channel scars and USGS maps indicate that a sizeable drainage way, probably Chambers Creek, once meandered across the valley. The straightening of Chambers Creek and the field ditches installed throughout the watershed fundamentally altered Chambers Creek's hydrograph, creating the degraded system that is present at the site today. Land use is likely to remain in agriculture for future decades, so large-scale watershed changes that would impact the site's hydrology are unlikely. There is negligible impervious area in the watershed, but numerous impoundments and ditches alter drainage patterns.

Streams in the southern portion of the site have small drainage areas that are nearly completely within the Rockin' K site. The streams, drainage ditch, and proposed intermittent streams receive runoff from the valley to the west. Chambers Creek receives runoff from a much larger area extending west to the vicinity of the town of Maypearl and northwest beyond the town of Ennis.

## **2.2 Practicability**

The RKMB site is ecologically suitable for restoration because it has the topography, soils, and hydrology to provide the functions discussed above. Historically, these functions were fully supported by the site. The site presently includes several degraded aquatic resources including a limited amount of emergent wetlands, farm ponds, and stream segments. The following factors were considered during the site selection process:

- The RKMB site encompasses most of the drainage areas of several unnamed headwater streams, allowing watershed level restoration of these systems.
- The RKMB site has a high probability of being restored to a self-sustaining system providing aquatic functions to the watershed. Therefore, the proposed restoration is practical.
- Historically, the RKMB site contained wetlands, as evidenced by the presence of the hydric soil, Trinity Clay, remnant wetlands, and historic maps. USGS topographic maps and historic aerial photos indicate that many of the presently interrupted stream systems were once connected to the floodplain and Chambers Creek.
- The RKMB site is adjacent to Chambers Creek, thereby providing a water source for overbank flooding, an opportunity to address severe erosion in that system, and protection/enhancement of existing riparian corridors.

The likelihood of success is high because the aquatic features at the site are degraded primarily due to altered hydrology (i.e., drainage ditches, berms, and in-stream stock ponds) and impoverished vegetation communities. Existing elevations and topography at the RKMB site are conducive to restoring some of the stream and wetland features that were historically present.

Overland runoff from the site and adjacent property, combined with overbank flow from Chambers Creek, should provide adequate hydrology to sustain the restored features, including desirable vegetation. There are no obvious obstructions that would prevent water from entering the site from the adjacent property to the west. Neither a large amount of earth-moving nor water rights will be necessary to complete the proposed restoration. The risk of failure is considered small, and would most likely be due to natural variation in predicted hydrology. Furthermore, a significant stressor, cattle grazing, will be removed, which will promote the re-establishment of desirable vegetation.

### **2.3 Air Traffic Considerations**

Draft mitigation guidelines published by the USACE Fort Worth District require that the mitigation plan comply with the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5200-33B. The AC recommends a minimum separation distance of 5,000 feet and 10,000 feet between an airport servicing piston-powered and turbine-powered aircraft, respectively, and wildlife habitat attractants. The AC also recommends a distance of 5 statute miles between the farthest edge of an airport's air operations area (AOA) and a hazardous wildlife attractant.

Coyote Field is a privately owned airport located approximately 10,300 feet to the southwest. The next closest airport is David Campbell-Corsicana Municipal Airfield, located 10 statute miles to the south-southwest of the RKMB site. The site is, therefore, not located within siting area of an airport.

### **3. Site Protection Instrument**

The Bank will be permanently protected by a conservation easement to be filed with the Navarro County Clerk. The approved conservation easement will be filed prior to the Bank's first credit release and will protect the site in perpetuity. Official copies of the recorded easement associated with the Bank will be submitted (along with other necessary materials) to the USACE in support of the Bank's first credit release request.

The easement's holder will be Connemara Conservancy of Dallas, Texas (see Attachment G). Connemara Conservancy will be designated as the grantee within the recorded easement, and will serve as the Bank's long-term steward, responsible for monitoring and reporting easement conditions as well as enforcing the easement's terms.

The conservation easement shall be granted in perpetuity without encumbrances or other reservations, unless such encumbrances or reservations (e.g., retention of hunting, educational, fishing, and hiking privileges) do not adversely affect the ecological viability of the Bank. The conservation easement will not be removed or modified without written approval of the USACE, in coordination with the IRT. Conveyance of any interest in the property will be subject to the conservation easement.

## 4. Baseline Information

A "Delineation of Waters of the U.S." is provided as Attachment C. The delineation provides detailed information on the vegetation, soil, and hydrology of some of the aquatic features and uplands within the RKMB site. In general, the ecological functions within the site are substantially degraded, primarily due to (1) hydrologic alterations that have orphaned streams and wetlands from their historic water sources, and (2) vegetation changes reflecting land uses that reduce the abundance and diversity of tallgrass prairie and bottomland hardwood species. Prior to the delineation, the area had been experiencing a severe drought which had further impacted aquatic resources. Recent photographs of many of the features described below are included in the delineation. A draft Jurisdictional Determination has been prepared based on the delineation and will be approved by USACE prior to approval of the MBI.

### 4.1 Hydrology

Topography on the RKMB site ranges from strongly sloping terraces to nearly level floodplains. Site investigations occurred in July and August of 2013 during a period of extreme drought; nonetheless, most of the excavated ponds contained water. The general source and direction of water flow on the site varies according to three areas. **Figure 4-1** depicts 2-ft elevation contours and the general direction and type of water flow within each area. As depicted in the figure, Area 1 (the southern slope) consists of a relatively steep terrace above the floodplain. Area 2 (the flat) is a broad flat valley presently in pasture, and Area 3 (forested area) is a forested area adjacent to Chambers Creek. The FEMA 100-year floodplain (Zone A) occupies Areas 2 and 3 on the site to an approximate elevation of 350 ft above mean sea level (msl). The FEMA map is provided as **Figure 4-2**.

Hydrology on and around the site has been altered in the past century to promote agricultural production. The relocation and straightening of Chambers Creek, the ditching and berming of the lowlands, and capturing of runoff into man-made stock ponds have degraded ecological and aquatic functions at the site.

Along the southern slope (Area 1), numerous ephemeral drainages collect runoff from the southern terraced portion of the site. Most of these drainages convey water into stock ponds, reducing downstream discharges and effectively disconnecting them from receiving waters. Some of the drainages contain large woody debris, slash and other refuse that interfere with stream function.

Within the flat (Area 2), a bermed ditch conveys drainage from offsite where it discharges into Chambers Creek east of the RKMB site. This man-made ditch likely replaced a natural stream channel similar to present channels that convey drainage in other parts of this floodplain. Most of the flooding in this area results from sheet flow from the adjacent properties to the northwest. Some historic drainage channels are evident in the aerial image dated March 1960 (**Figure 4-3**). Historically, the flat contained depressions (i.e. scour scars) that would stay wet for varying amounts of time. Such ephemeral wetlands were especially important to amphibian species. Unfortunately, most of these "wet prairie/ephemeral pool" components of the Blackland Prairie



have been drained for a variety of reasons such as agricultural fields, development, and mosquito control.

The forested area (Area 3) is mapped by the National Wetland Inventory (**Figure 4-4**) as a temporarily flooded forested wetland. The forested area also includes Chambers Creek, a perennial stream relocated to its present position in the early 1900s. There are two small, man-made ponds in the forested area and sloughs that run alongside a man-made berm. Historic Chambers Creek channel ("Charm Creek") is located near the southern edge of the forested area. Presently, Charm Creek conveys water that collects along the toe of the man-made berm that extends west northwest up valley. The main sources of water to the forested area, ponds, and sloughs are runoff from the adjacent property to the northwest, and Chambers Creek overbank flooding.

Chambers Creek exhibits severe bank erosion on the south bank, vertical incision, and overwidening. Berms just southwest of Chambers Creek impede the distribution of overbank flooding to the adjacent areas. The March 20, 1995 areal image of RKMB site (**Figure 4-5**) provides an example of site inundation approximately one week after a moderate rainfall event. In the week prior to March 20, 1995, Chamber's Creek maximum discharge was 1,873 cfs (not sufficient for overbank flooding). On March 13<sup>th</sup>, 1995, 2.22 inches of rain fell, followed by 0.38 inches on March 14<sup>th</sup>. Based on 20 years of precipitation data at the Corsicana Weather Station, the recurrence interval of the March 13<sup>th</sup> event is 146 days. Therefore such flooding events would be expected to occur 2.5 times per year. A probability analysis of precipitation at the site, with the March 13<sup>th</sup> condition highlighted, is provided as **Figure 4-6**.

The discharge required for Chambers Creek to exceed bankfull discharge was estimated from the Chambers Creek gaging stream (Chambers Creek at Rice, Texas, Gage No. 08064100) located approximately 2 miles upstream. The gage flow was adjusted to the RKMB site using the drainage-area ratio method (Asquith et al. 2006). The bankfull discharge was determined using the slope-conveyance method. Based on the peak annual flow over the 29 years of the gage's operation, overbank flooding has a 90% probability of occurring in a given year. In the past 7 years, overbank flooding at the site has occurred an average of 3.2 times per year. **Table 4-1** provides the number of events, number of days, months, and range of daily maximum flow at the site for the past 10 years. Table 4-1 also illustrates the considerable annual variability of overbank flooding events. This variability and the uncertainty associated with potential climate change have been taken into account in the design and performance standards.

## **4.2 Water Features Delineated**

Presently, water features at the site consist of ponds, drainage ditches, streams, and fringe/depressional wetlands. As previously stated, a wetland delineation was performed July through August, 2013. Both jurisdictional and non-jurisdictional water features are summarized in **Table 4-2** and depicted on figures in the delineation report (Attachment C to the MBI).



### 4.3 Vegetation

The RKMB site is located within the Major Land Resource Area (MLRA) 86A, "Texas Blackland Prairie, Northern Part" as described by the NRCS. Blackland Prairie is an endangered ecosystem characterized by clay soils and mid- to tall-grass prairie grasses. The Blackland Prairie was historically dominated by little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), Indiangrass (*Sorghastrum nutans*), Eastern gama grass (*Tripsacum dactyloides*), silver bluestem (*Bothriochloa saccharoides*), tall dropseed (*Sporobolus asper*), sideoats grama (*Bouteloua curtipendula*), and panic grass (*Panicum obtusum*). Common forbs would have included prairie clover (*Dalea purpurea*), western ragweed (*Ambrosia psilostachya*), Maximilian sunflower (*Helianthus maximiliani*), gayfeather (*Liatris mucronata*), rattlesnake master (*Eryngium yuccifolium*), and Indian plantain (*Cacalia plantaginea*). The ecosystem relied on disturbance (fire and intense, but short-lived grazing) to prevent the encroachment of woody shrubs and trees.

Bottomland forests and riparian areas within the Blackland Prairie would have supported mixed hardwoods such as post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), American elm (*Ulmus americana*), winged elm (*Ulmus alata*), cedar elm (*Ulmus crassifolia*), sugarberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), osage-orange (*Maclura pomifera*), honey mesquite (*Prosopis glandulosa*), and eastern redcedar (*Juniperus virginia*).

Currently, pasture and grasslands at the site include large areas of invasive/non-native grasses and forbs associated with prolonged cattle grazing. Dominant species include cheatgrass (*Bromus tectorum*), Virginia wild-rye (*Elymus virginicus*), Johnsongrass (*Sorghum halapense*), giant ragweed (*Ambrosia trifida*), and Bermudagrass (*Cyanodon dactylon*). Non-native or invasive species are estimated to occupy approximately 60 percent of the pasture/grassland areas.

Hydrophytic vegetation at the site is limited to the central drainage ditch and around the edges of some of the man-made ponds. Dominant species include black willow (*Salix nigra*), common button-bush (*Cephalanthus occidentalis*), water willow (*Justicia americana*), crowfoot sedge (*Carex crus-corvi*), muskgrass (*Chara* sp.), and water primrose (*Ludwigia peploides*). Non-native or invasive hydrophytic species were not observed at the site.

In general, forested floodplain and riparian areas at the RKMB site contain native species such as cedar elm, American elm, sugarberry, pecan (*Carya illinoensis*), green ash, *Smilax* species (greenbriars), gum bumelia (*Bumelia lanuginosa*), and honey locust (*Gleditsia triacanthos*). With the exception of pecan trees, the area lacks hard mast-producing species. No trees with a diameter at breast height (dbh) greater than 24 inches were observed. The forested areas were generally low in species diversity.

### 4.4 Soils

Mapped soils, as shown by the NRCS soils map (**Figure 4-7**), reflect the RKMB site's historic hydrology and geomorphology. **Table 4-3** summarizes soil types at the site. Floodplain soils (Trinity clays) occupy the floodplain, while the southern uplands consist primarily of Ferris (3 to 8% slopes, eroded) and Ferris and Heiden (5 to 15% slopes, eroded) clays that occur on ridges

above floodplains. These soils are easily damaged by sheet and gulley erosion. Burleson clay and Lamar calcareous loamy soil are also present. Soils on the site are all described as deep and generally fine-grained. Soils examined during the site delineation were consistent with the above descriptions, except that the Trinity clay soils, included on the Texas Hydric Soils list, did not exhibit hydric characteristics in most of the plots examined.

Some areas of soil erosion and down-cutting were observed along portions of existing ephemeral streams, but these areas were limited in length. Gulley erosion is also present in some of the existing drainage ways within the southern, sloped portion of the site.

## 5. Determination of Credits

In accordance with 33 CFR 332.4(c)(6) the determination of credits is based on conditional assessments of the existing aquatic resources and the proposed (i.e. reference) condition that corresponds to that resource. The difference between the existing condition and the proposed condition is termed the "conditional lift". The calculated conditional lift provides the basis for determining the credits for each proposed mitigation feature.

### 5.1 Conditional Assessment

Conditional lift for existing and proposed aquatic resources at RKMB was determined using the Texas Rapid Assessment Method (TXRAM). The methodology described in the Draft TXRAM manual was followed (USACE 2010). For each major class of stream or wetland (e.g. ephemeral stream, intermittent stream, riparian buffer, forested wetland), a reference site was located and a TXRAM assessment performed on that resource. In some instances, it was determined that resources present at the reference site did not represent the condition that could be re-established at the RKMB. For example, the intermittent stream reference site had a substrate that included sand and gravel, a feature that is unlikely to occur naturally at the RKMB. In another example, the riparian buffer condition of the ephemeral stream reference site was degraded and not representative of what is achievable in the riparian buffers at the RKMB. All TXRAM results for existing and reference conditions are included in Attachment E. The scores are summarized in Table F-1 through F-3 (Appendix F). Where a proposed condition did not match the reference condition, the proposed score is listed below the TXRAM score in Tables F-1 and F-3 (streams and wetlands respectively). Footnotes in those tables provide the reasoning for using the proposed scores. Proposed scores were used in the ecological lift calculations in Appendix F. Credit Calculation.

### 5.2 Credit Calculation

Credit calculations follow recently issued USACE guidance on in-channel credit calculation and expanded buffer calculation. Credit calculation worksheets are provided in Attachment F. Credits for enhancement and restoration of resources were calculated as the difference between the reference (or proposed) TXRAM score and the existing TXRAM score, multiplied by the stream length or wetland acreage, and then divided by 100. Credits for restoration were calculated with the existing TXRAM score equal to zero for the stream channel and equal to the existing condition for the riparian buffers. In instances where jurisdictional resources will be sacrificed (i.e. the ditch), a credit value was calculated for that resource and the credits were subtracted from the total credits projected for that resource type. Table F-1 contains the stream credit calculations. Most of the generated stream credits qualify as "In-Channel" stream credits but, as shown on the table, some of the enhanced ephemeral and intermittent stream reaches do not qualify for in-channel credits. The equation for ephemeral, intermittent and perennial credits is shown below.

In-Channel Credits = (TXRAM reference – TXRAM existing) x (stream length in feet /100)  
Primary stream buffers are included in the initial stream credit calculations. Expanded (secondary and tertiary) buffers were calculated for each resource only if the proposed in-

channel TXRAM lift comprised at least 50 percent of the total conditional lift. The "50-50" calculations are provided in Table F-1. Expanded buffer lift was determined from the difference between reference and existing condition, i.e. TXRAM scores from the Riparian Buffer Condition (RBC) section of the TXRAM data sheet. The secondary buffer credits were calculated by multiplying the secondary riparian buffer lift times 0.5 and the stream length, and then dividing by 100. A factor of 0.25, instead of 0.5, was used to calculate tertiary riparian buffer credits. The equations used for calculating secondary and tertiary stream buffer credits are provided below.

Secondary Buffer Credits =  $0.5 \times (\text{Reference RBC} - \text{Existing RBC}) \times (\text{stream length} / 100)$

Tertiary Buffer Credits =  $0.25 \times (\text{Reference RBC} - \text{Existing RBC}) \times (\text{stream length} / 100)$

As shown on Table F-1, the planned mitigation will result in the loss of 7,271 feet (2,740.77 credits) of intermittent stream (i.e. the jurisdictional ditch), due to rerouting. These credits were subtracted from the total intermittent credits. The resulting total net stream credits are:

- In-channel Ephemeral Streams 12,783.77 credits
- In-channel Intermittent Streams 10,214.33 credits
- In-channel Perennial Streams 919.92 credits
- Riparian Buffer 4,374.66 credits

The total stream credits projected for the bank are 23,918.02 in-channel credits and 4,374.66 riparian buffer credits. Expanded riparian buffer credit calculations are presented in Table F-2 and included with the primary buffer credit calculations (where the stream credits are not in-channel) in Table F-1.

Wetland credits were calculated using the same procedure except score differences were multiplied by acres instead of linear feet. Credits associated with sacrificed depressional wetlands in the ditch of approximately 0.9 acres (0.51 credits) were subtracted from the projected credit gains. The wetland credit calculations are provided in Table F-3. The resulting wetland credits projected are:

- Depressional wetlands 20.61 credits
- Riverine wetlands 5.74 credits

The total wetland credits projected for RKMB are 26.36 credits. As discussed in Section 13, mitigation at RKMB is divided into four phases. Tables F-3 through F-5 provide the breakout of credits by phase and credit release for riparian buffer, in-channel, and wetland credits, respectively.

The RKMB service area is shown on **Figure 5-1**. The Bank's service area is based on its native and adjacent Hydrologic Unit Codes (HUCs), within the Upper Trinity River basin, as well as its native and adjacent EPA Level III Ecoregions. All service areas are within the boundaries of the US Army Corps of Engineers (USACE) Fort Worth District.

The Bank's primary service area consists of the USGS 8-digit HUC (12030109) where the Bank is located. The secondary service area is determined by the overlap of the Bank's native Level III Ecoregion (Texas Blackland Prairie) and adjacent 8-digit HUCs within the Upper Trinity River basin. The Bank's secondary service area is comprised of those portions of adjacent HUCs 12030102, 12030105, and 12030108 that are within the Texas Blackland Prairie Ecoregion. Finally, the tertiary service area is comprised of the overlap of the Bank's adjacent HUCs and the Bank's adjacent Level III Ecoregions (Cross Timbers and East Central Texas Plains) within the Trinity River basin. The Bank's tertiary service area is comprised of those portions of HUCs 12030102, 12030105, and 12030108 that are within the Cross Timbers and East Texas Plains Ecoregions. The entire service area comprises all of Ellis County and portions of Parker, Tarrant, Collin, Dallas, Kaufman, Hood, Johnson, Hill, Navarro, Henderson, Limestone, Freestone, and Anderson Counties. Use of Bank credits outside the primary, secondary and tertiary service areas is permissible with USACE approval, to be provided with consultation with the IRT Authorities.

Credits sold for projects within the primary service area will be at a 1.0 multiplier. Multipliers for the secondary and tertiary service areas will be 1.5 and 3.0, respectively. On a case-by-case basis, USACE may reduce the multipliers for the secondary and tertiary service areas.

## 6. Mitigation Work Plan

The Mitigation Work Plan describes the design, construction, and timing of proposed restoration and enhancement activities. Functions and values to be restored include water quality, wildlife habitat, biotic diversity, food chain support, and aesthetics. Although TXRAM is a conditional assessment method, "...it provides an integrated score of overall ecosystem health (based on physical and biological structural attributes) from which the relative functional capacity of a wetland is inferred." (USACE 2010).

The proposed activities are listed below, followed by an explanation of the methods, design, and construction involved with each activity:

- Exclude cattle from the mitigation area.
- Enhance and restore (re-establish) the ephemeral stream system along the southern slope.
- Enhance and restore (re-establish) three intermittent streams.
- Reconnect the ephemeral stream system to Charm Creek.
- Enhance Chambers Creek by stabilizing its south bank.
- Enhance and restore (re-establish) seasonal emergent wetlands.
- Enhance the forested bottomland by breaching the berm and planting hard-mast trees.
- Enhance and restore riparian buffer areas along all stream systems.
- Control exotic species.

The design basis for the stream mitigation is provided in **Appendix A**. That appendix includes figures that show:

- Locations and plan views of reference streams.
- Field survey locations for the existing streams.
- Regional curves for bankfull discharge, width, and depth.
- A map of the ephemeral stream design groups.

Tables in Appendix A include:

- Lengths and drainage areas of the mitigated streams.
- Geometry of the existing streams.
- A stream assessment summary.
- Hydrology calculations.
- Morphological data for existing and reference streams.

The Natural Channel Design Review Checklist is included in **Appendix B**. The form is included as well as an attachment that provides detailed comments and supplemental information.



Construction Plans are provided under separate cover. The plans include:

- Layout of each phase.
- Overview of RKMB, showing mitigation area, property, and Conservation Easement boundaries and the designated location for future potential oil and gas extraction.
- Detailed plan, profile, and cross-sections for streams and wetlands, by phase.
- Locations and typical detail for in-stream structures and stream crossings.
- Vegetation Plan.

An Erosion Control Plan will be prepared separately as a component of a Storm Water Pollution Protection Plan (SWPPP) for the site. Consultant qualifications are presented in **Appendix C**.

## **6.1 Cattle Exclusion and Feral Hog Control**

Cattle will be excluded from access to each Phase of RKMB upon initiation of construction for that phase through the use of both permanent and portable electric fencing. Although there was no evidence of feral hogs during the site visits, should feral hogs or evidence of them be observed, efforts will be made to eradicate them. Feral hogs can cause damage to existing and newly planted vegetation such as hardwood seedlings, herbaceous wetland plants, and native grasses. Negative impacts from feral hogs are best managed by removal and harassment. The cost of feral hog control is not substantial, but is included under the General category of the current Financial Assurance budget.

## **6.2 Ephemeral Stream System – Southern Slope**

The ephemeral stream system that occupies the southern slopes of the Site (Construction Plans, streams S1 through S6) is presently degraded by altered hydrology, deforestation, channel erosion, overgrazing, and debris fill. Most of the streams have been disconnected from waters of the U.S. by in-stream impoundments and other manmade obstacles (e.g. road crossings). The proposed mitigation will restore the hydrologic connection to downstream receiving waters, thereby restoring the flux of energy and materials (e.g. water, nutrients, sediment, and biota). To improve ecological function of the streams, enhancement activities will include bank and channel stabilization, improvement of in-stream condition, planting of native vegetation alongside the streams, and enhancement/restoration of riparian buffer areas. All species to be planted at the site will be native to the region and non-invasive. The proposed plant list is provided as **Table 6-1**. Where stream connections have been lost, ephemeral streams reaches will be restored (re-established) to connect to downstream systems. The total proposed ephemeral stream system along the southern slope is approximately 29,857 feet. **Table 6-2** provides the stream lengths proposed for enhancement and restoration of ephemeral streams by project area. The ephemeral stream alignments are depicted on the Construction Plans. Streams S1 through S6 are included in Phase 1 and Streams S-7 through S-9 are included in Phase 2. The proposed ephemeral stream activities are described in the following paragraphs.

### **6.2.1 Impoundment Work**

To increase available water to the streams, several of the 15 existing impoundments along the southern slope will be deconstructed and/or reduced, restoring ground elevations to original stream grade lines and adjacent contours. **Table 6-3** summarizes the proposed mitigation activities for site impoundments. Approximately 2.8 acres will be converted to riparian wetlands, 1.4 acres of pond will be returned to upland and 0.26 acres will be left as is. To enhance wildlife habitat and biotic diversity, small stream-adjacent emergent wetlands will be restored in selected areas. The vegetated portions of the wetlands will be designed to have water depths ranging from 0 to 36 inches and be interspersed with small areas of open water. Scattered areas of open water on the landscape will provide wildlife with a source of water. Portions of the proposed 1.4 acres of wetlands will likely be dry during the hottest parts of the year and during droughts. Such seasonally inundated wetlands are particularly attractive to amphibians. Existing impoundments are shown on the Construction Plans and on **Figure A-2** (Appendix A). Design details for the impoundment wetlands are provided on the Phase 1 plans. Construction and planting will follow the criteria described for restoration of depressional wetlands.

### **6.2.2 Enhancement and Restoration of Ephemeral Streams**

Many of the existing stream channels along the southern slope are eroded, over-widened, and filled with natural and man-made debris. These areas will be stabilized and cleared of debris. Stream stability will be improved by installing features such as step pools (using-cross vanes), removing excess woody debris and trash, and restoring streamside vegetation. For design consideration, the streams were divided into stream type A6 (slope > 4%, sinuosity < 1.2, clay/silt bed and bank), type G6 (2% < slope < 4%, sinuosity > 1.2, silt/clay bed and bank), type G6c (slope < 2%), or type E6 (very low slope, meanders). Most of the upper reaches are type A6 or G6 streams while the lower reaches are types G6c or E6. Streams S8 and S9 are located in the northern portion of the site within the forested area. Breaching the berm is expected to increase the frequency and duration of stream flow in S8 and S9.

The watershed (i.e. drainage) areas of the ephemeral streams range from 0.01 to 0.1 square mile. Such small drainages do not allow for the use of regional curves to calculate bankfull discharges because regional curves typically do not include drainage areas less than 1 square mile. A more appropriate method for calculating bankfull discharge is to use the rational runoff method (Harman et al. 2012), which estimates the time to concentration for small drainage area during a 1.5-year storm event. Bankfull channel areas were then calculated from bankfull discharge and an appropriate width: depth ratio for the appropriate Rosgen stream type was determined. Based on the channel geometry, slope, and a range of Manning's coefficients of roughness, velocities for each stream were calculated and compared to permissible velocities for very firm clay soils, adjusted for stream depth (5 to 6 ft/s, Knighton 1984). Grade control (step pools) was designed for proposed reaches with velocities greater than 6 ft/s. Hydrology calculations are provided in **Table A-4** and details of channel geometry for each stream are provided in **Tables A-5** and **A-6** in Appendix A.

Ephemeral stream construction will begin by breaching the existing in-channel impoundments. Once the soil and sediments within the impoundments are sufficiently dry, grading will occur to restore the stream valley slopes in and adjacent to the impoundments. Fill material comprising



the embankments will be used to fill and recontour the area around the impoundments. The stream channels will then be staked and graded as a continuous linear slope. Step pools will be graded. Grasses, forbs, and other vegetation will be seeded along the channel banks and floodplain areas immediately after grading. Channel banks will be protected with a stabilizing mat, where necessary, to prevent erosion.

Cross vanes will be installed to create the step pools in selected reaches of S1-S6 and in selected locations along SF Charm and Rockin' Creeks. These structures provide grade control, protect the banks by keeping the thalweg in the center of the channel, and enhance habitat. The cross vanes will use three logs, two supporting logs and one perpendicular to the flow that controls the pool elevation. The supporting logs (vanes) will be oriented upstream at 20 to 30 degree angles from the bank. The vanes will be highest next to the bank, slightly below bankfull, then slope downward, pointing upstream. The length of a single-vane structure will be up to one half of the base-flow channel width and the slope will range from 2 to 20 percent. Geotextile material will be used on the upstream side of the logs and buried to the depth of the footers. The fabric helps prevent water from piping between or underneath the logs. Footers will be used to prevent movement of the structure during high flow. Illustrations of log cross-vane installation are provided on the Construction Plans. The location and spacing of proposed cross-vane structures are provided on the plans.

### **6.3 Intermittent Streams**

Three intermittent streams are included in proposed activities: Rockin' Creek, South Fork Charm Creek, and Charm Creek. The primary goal of the intermittent stream activities is to re-establish the local drainage system, including Charm Creek, which is the historic channel of Chambers Creek. The stream lengths for the intermittent streams are shown in **Table 6-4**. Charm Creek will be enhanced, whereas Rockin' Creek and South Fork Charm Creek will be restored. No earthwork or other construction is proposed for Charm Creek, as it is expected that improving the hydrology of the system will restore aquatic and riparian functions to that feature. Hydrology calculations are provided in Table A-4 and details of channel geometry for each stream are provided in Tables A-5 and A-6 in Appendix A; construction details are provided on the Construction Plans for Phase 1.

Restoration of South Fork Charm Creek and Rockin' Creek is proposed. The streams are type E6 streams (low gradient, high sinuosity, clay soils) although we applied a sinuosity that reflected the reference stream rather than the Rosgen classification. Root wads and cross-vanes will be constructed in those streams as described in the following paragraphs. Appropriate erosion control measures will be implemented to ensure that newly constructed channels and floodplain benches are stabilized until the targeted plant community can be established.

Root wads armor a stream bank by deflecting flow away from the bank. They provide habitat for aquatic organisms and a surface for periphyton to grow and provide food to organisms. Root wads will be installed with at least a 10-15 feet length of the trunk, using logs which will be 10 to 24 inches in diameter. They will be installed where flow vectors intercept the banks at acute angles such as the outside of a meander bend. Root wads will be placed in selected areas upstream of newly planted streambank vegetation to help prevent erosion as well. About one-

third to one-half of the root wad will be placed below the base-flow elevation. One-ton boulders will be placed behind the root wad to prevent back-eddy scour. The root wad will be oriented to intersect the flow at approximately a 90 degree angle. Wads will be installed using the drive-point method unless the soil does not allow it, in which case the log will be trenched in with a footer log under the root wad log. Illustrations of root wad installation are provided in the Construction Plans. The locations of proposed root wads are shown on the plans.

Cross vanes will be installed to create the step pools in selected reaches of S1-S6 and in selected locations along SF Charm and Rockin Creeks. These structures provide grade control, protect the banks by keeping the thalweg in the center of the channel, and enhance habitat. Cross-vanes will be installed as described in Section 6.2 above.

### **6.3.1 South Fork Charm Creek Restoration**

The restoration of South Fork Charm Creek will allow drainage from the western area (offsite) to be conveyed across the flat (Area 2) into the existing Charm Creek channel. The 7,759 feet of South Fork Charm Creek will begin at the western edge of the site, replacing the portion of the existing ditch that presently receives channelized drainage from the adjacent property. South Fork Charm Creek will also receive flow from ephemeral streams S1 and S2. The stream will flow east north-east through the flat to its confluence with the existing Charm Creek channel. Construction will involve earthwork to re-establish the appropriate channel flow-line and floodplain benches and construct root wads and cross-vanes.

### **6.3.2 Rockin' Creek Restoration**

The restoration (re-establishment) of Rockin' Creek will allow drainage from the ephemeral streams S4, S5, and S6 to be conveyed to Charm Creek and subsequently Chambers Creek. Rockin' Creek will begin east of South Fork Charm Creek in the ditch area and discharge into Charm Creek approximately 6,586 feet downstream. Rockin' Creek will be fed primarily by ephemeral streams, but it will also receive overland runoff from portions of the southern slope and the flat. Construction will involve earthwork to re-establish the appropriate channel flow-line and floodplain benches and construct root wads and cross-vanes using the construction techniques described previously.

### **6.3.3 Charm Creek Enhancement**

Charm Creek once conveyed drainage from the Chambers Creek valley to the west. Charm Creek presently conveys runoff from the west that collects along a man-made berm that runs parallel to Chambers Creek. Charm Creek enters the site along the northwestern boundary and flows east-southeast along the southern edge of the forested bottomland. Charm Creek eventually flows offsite where it discharges into Chambers Creek approximately 2 miles downstream. Since the channel was abandoned, hydrology in the watershed has been substantially altered, so it is not possible to determine what bankfull discharge may have formed the entire length of the present-day Charm Creek channel. However, the drainage area and bankfull dimensions of the portion of Charm Creek below the confluence with the ditch (SAR 5) reflects a width and depth that resembles the regional runoff curve used to predict discharge for the intermittent streams. These relationships are presented in **Tables A-3 and A-4**.

#### **6.4 Enhance/Restore the Ephemeral Stream System – Forested Bottomland and Flat Areas.**

Presently, two abandoned ephemeral stream channels (S8 and S9) run west to east along the berm in the forested bottomland, both ending in a small pond. These ephemeral streams will be enhanced by breaching the berm to promote overbank flooding from Chambers Creek. A third ephemeral stream (S7), 4,086 feet long, will reconnect these features to Charm Creek by conveying flow from S8 and S9 through the eastern portion of the flat, then discharging into Charm Creek near the eastern property boundary. Hydrology calculations and details of channel geometry are provided in Tables A-4, A-5 and A-6 for S7 and construction details are provided on the Construction Plans for Phase 2. No construction is planned in S8 or S9. Appropriate erosion control measures will be implemented to ensure that newly constructed channels and floodplain benches are stabilized until the targeted plant community can be established.

#### **6.5 Chambers Creek South Bank Stabilization**

Chambers Creek's southern bank is presently severely eroding, contributing to the excess sediment load and associated aggradation of the stream channel. The goal for enhancement of Chambers Creek is improved riparian and in-channel condition. This will be accomplished by stabilizing the south bank. The proposed restoration will restore the stream bank to a 4:1 slope, protected with an appropriate turf reinforcement mat, if necessary, and revegetated with native species to stabilize the soil. Hydrology calculations and details of channel geometry are provided in Tables A-4, A-5 and A-6 and construction details are provided on the Construction Plans for Phase 3.

#### **6.6 Depressional Wetland Restoration – The Flat**

Drainage alterations in the Chambers Creek valley and severe drought have caused a drying of emergent wetlands in the flat. To re-establish these historical wetlands within the present hydrologic conditions, their elevation relative to the surrounding landscape will be lowered. Excavation of between 0.5 to 3 feet will increase the duration of inundation and facilitate the re-establishment of hydric soil features and hydrophytic vegetation. A total of 24 acres of emergent wetlands will be restored in the flat. The proposed wetland areas are provided in **Table 6-5** and depicted on the Construction Plans for Phase 4. Cross-section and plan view drawings of the proposed emergent wetlands and a Planting Plan are also provided in the Construction Plans.

The hydrology of the eight depressional emergent wetlands will be seasonally or temporarily flooded systems that are likely to dry up during the hot summer months or during droughts; this is a feature that enhances their habitat value for amphibian species. Some of these emergent wetlands will be adjacent to proposed or existing stream systems and therefore be seasonally connected to the larger hydrologic system. They will be restored to exhibit a high edge complexity, interspersed, micro topography, and plant species diversity.

Plantings will include species from Table 6-1. Wetlands will be planted during the late fall or early spring, depending on plant availability. Emergent plants will be planted in pods with 250-300 plants per pod, with 5-7 pods per acre. Low marsh plants such as pondweeds and water

lilies will be planted in pods of 5-7 plants, with 10-12 pods per acre. Temporary cover species, including cereal grains, may be used within the project site to stabilize soil, provide cover and contribute detritus to the upper soil profile as well as encourage the use of the area by wildlife. These benefits are needed in the transition area from the uplands to wetlands, though the type of cereal grain used will vary depending on landscape. Winter wheat, oats and ryegrass may be used in upland to mesic areas where native grasses will be the permanent cover, whereas. Cereal grains will not be used after the third credit release (two full growing seasons).

## **6.7 Riverine Wetland Enhancement -Forested Bottomland**

The forested bottomland adjacent to Chambers Creek has been deprived of water compared to its historical condition and no longer contains hydrophytic vegetation, although facultative species are present. The hydrology of this area will be enhanced by breaching the berm that impedes overbank flow from Chambers Creek. Hard-mast producing tree species will be planted to increase species diversity and habitat value of the area, and to serve as a source of hard mast seeds for adjacent and downstream areas. Tree planting will occur at a density of 100 bare-root stems or 40 containerized plants per acre in areas that already contain mature trees. Where necessary, canopy openings will be created by selectively removing (i.e. felling) or girdling less desirable trees. The riverine wetland area to be enhanced occupies approximately 118 acres. The area remaining after the riparian buffers (described below) are subtracted is approximately 63 acres. The area is depicted on the Phase 2 Construction Plans. A Planting Plan is also provided in the Construction Plan.

## **6.8 Riparian Buffer Enhancement and Restoration**

Existing riparian buffers, where present, are discontinuous and low in species richness and hard-mast producing species. Therefore, the proposed stream restoration includes establishing vegetated buffer areas on both sides of all streams. Buffers will be planted with native vegetation (grasses, forbs, vines, and trees) from Table 6-1. Oaks, hickories, and other hard-mast producing tree species will be planted in buffer areas to establish the mast-producing trees as an important tree component. In areas with few or no existing trees, trees will be planted at a density of at least 300 bare root stems/ac or 160 containerized plants/ac. In areas with more than a few existing trees, hard-mast producing species will be planted at a density of at least 100 bare root stems/ac or at least 40 containerized trees/ac. The objective will be at least 120 stems /ac at maturity, which is reflective of a typical mature Texas blackland prairie forest (Blevins, personal communication, 2014). Prior to planting desirable vegetation, undesirable herbaceous vegetation (e.g. ragweed, greenbrier), will be selectively removed. Stream banks will also be planted with appropriate grasses and forbs from Table 6-1. Where necessary, canopy openings for hard-mast tree species will be created by selectively removing (i.e. felling) or girdling less desirable trees.

Buffer widths will include primary, secondary, and tertiary buffers as defined by the Ft. Worth District's "Proposed Expanded Buffer Crediting" (Happold, email Aug 26, 2013). The primary buffer widths are based on the TXRAM assessment, as previously described. The resulting primary, secondary and tertiary buffer widths along each stream (both banks) are approximately 150 feet for ephemeral streams, 300 feet for intermittent streams and 600 feet for perennial streams. Streams without in-channel credits will have only primary buffers. The estimated areas

of the proposed riparian buffers and the estimated total number of trees to be planted are presented in **Table 6-6**; the buffers and a Planting Plan are depicted in the Construction Plans for Phases 1, 2, and 3.

## **6.9 Exotic Species Control**

Exotic species at the site are primarily restricted to the pasture area. Should exotic or invasive species be observed in restoration/enhancement areas, including their buffers, appropriate measures will be taken to control the species. These methods may include manual removal, herbicide treatment, mowing and removing forage material, or fire. Mowing will not be performed after the third credit release.

## **7. Maintenance Plan**

### **7.1 Schedule of Inspection and Maintenance**

The restored/enhanced areas will be inspected quarterly during the first year following construction and planting. If irrigation is employed in any mitigation area, the first year of monitoring will begin after irrigation ceases (although earlier inspections may be performed). After the first year of monitoring, the restored/enhanced areas will be inspected semi-annually or after major hydrologic events (including drought) to verify compliance with performance standards and to identify specific maintenance needs. Maintenance activities will occur during or following the inspection, depending upon the nature of the activity. A record will be kept of each inspection and it will include:

- The name of the area inspected;
- A photo of the inspected area;
- The condition of the planted vegetation;
- The condition of the planted, existing, and volunteer vegetation including cause of damage if discernible;
- The presence of invasive or exotic flora; and,
- Assessment of hydrology and erosion.

### **7.2 Maintenance Activities**

#### ***7.2.1 Measures to control predation/grazing of mitigation plantings***

Saplings are particularly susceptible to browsing by deer and damage by beaver, deer, and other animals. If tree damage is observed during inspection activities, the trees will be protected by wire cages or similar means. Livestock will be excluded from the mitigation bank, so the source of damage to the planted trees is expected to be from wild animals. Livestock exclusion fencing, where it exists, will be inspected and repaired as necessary.

Herbaceous wetland vegetation can be grazed by turtles, deer, and other herbivores, but since no evidence of overgrazing has been observed in existing herbaceous wetlands on the property, little is expected in the newly established emergent wetlands. If damaging grazing is observed, vegetation exclusion cages may be utilized until adequate vegetation colonies have been established.

#### ***7.2.2 Temporary irrigation for plant establishment***

Irrigation will be provided only as necessary (i.e. in the event of drought) to ensure the initial survival and vitality of vegetation. If survivability is a problem after the first season, more tolerant species will be considered. Although inspections may occur at any time, monitoring of irrigated areas officially begins only after irrigation ceases.



### ***7.2.3 Invasive Species Control***

Non-native, noxious, and invasive plant species can compromise the appearance and ecological function of mitigation areas. State and federally-listed invasive, noxious, prohibited, and exotic plants that could potentially occur at RKMB are included as **Table 7-1**. Plants included on the Invasive Plant Atlas of the United States (IP AUS) list that are not listed in Table 7-1 are provided in **Table 7-2**.

The observation of any species listed on Table 7-1 within the bank will result in immediate efforts to remove the species. To control undesirable species, minimal-impact techniques, such as manual removal or hand clearing, or topically applied herbicides will be performed as needed to assure that non-native species are removed and native, invasive species do not establish monocultures. Should percent cover of species listed in Table 7-1 exceed 0% in the midstory or overstory, or exceed 1% in the herbaceous layer, immediate action will be taken to remove such species. Should any plants included on the IP AUS list (Table 7-2) that are not on Table 7-1 be present at greater than 3% average coverage, appropriate actions will be initiated to reduce the presence of the species.

Selective mowing and removal of forage material, and/or burning will be performed if it would be beneficial for early control of invasive species, noxious weeds, or woody vegetation. Mowing would take place only after the native species had set seed for that year and would be discontinued before the third credit release.

### ***7.2.4. Vegetation Replacement Plan***

Even the most carefully planted areas are likely to have some vegetation that does not survive. Factors such as herbivory, poor plant stock, high water levels, poor substrate, and many other factors may require an additional round of plantings. Information obtained during inspections and monitoring will guide re-plantings and any necessary modifications to the overall vegetation plan. For depressional herbaceous wetlands, replantings will occur in areas where greater than 75 percent of the planted vegetation does not survive. For seeded herbaceous vegetation planted in areas without established vegetation, replantings will occur if survival is less than 50 percent. In established vegetated areas, small areas (greater than 5 feet in diameter) of non-surviving herbaceous vegetation will be replanted. For woody vegetation in riparian areas and wetlands, replantings will occur when greater than 25 percent of the planted vegetation does not survive.

### ***7.2.5. Structural Maintenance and Repair***

Once vegetation plantings are successfully established and new stream courses have been established, the mitigation area is not expected to require operation and maintenance. However some adjustments are anticipated during the monitoring period. Maintenance of step pools and other in-stream structures, erosion control fabric, and construction areas in general will consist of additional earthwork, erosion control, and plantings.

## **8. Performance Standards**

Performance standards have been selected for perennial streams (Chambers Creek), ephemeral and intermittent streams, riparian buffers, and wetlands. The standards provide measurable criteria for each item in the Credit Release Schedule.

The initial release of credits is scheduled after completion of certain administrative criteria, including the execution of the MBI, establishment of financial assurances, and execution of a USACE-approved Conservation Easement. For Chambers Creek, the initial release is also conditional on execution of an easement or acquisition of fee title that provides RKMB control of the entire width of Chambers Creek and the buffer on the north side of the creek, which has been accomplished by purchase of the buffer north of Chambers Creek.

Interim credit releases will be conditioned on meeting target TXRAM scores and meeting criteria for “waters of the United States” (jurisdictional waters). For each of the five types of credits, the final release performance standard requires that the target lift TXRAM score be achieved in addition to being jurisdictional. The standards are presented on **Tables 8-1, 8-2, 8-3, 8-4, and 8-5.**

Performance standards for streams and primary riparian areas and their recommended ratings (functioning, functioning-at-risk, and not functioning) were taken from EPA (2012). The performance standards would be satisfied if the standard meets the functioning or functioning-at-risk rating, although if functioning-at-risk scores are obtained, consideration of adaptive management and/or maintenance/repair actions would be triggered (depending on the cause of the rating). The final performance standard requires a “functioning” rating. Each metric and the ratings are provided in Table 8-5.

### **8.1 Floodplain Connectivity**

Floodplain connectivity will be measured with the Bank Height Ratio (BHR), a field measurement that determines the degree of channel incision. It is calculated by dividing the maximum bank full depth into the height of the lowest bank. The EPA (2012) provides recommended ranges for BHR of 1.0 to 1.2 for functioning, and 1.3 to 1.5 for functioning-at-risk.

### **8.2 Lateral Stability/Bank Erosion**

Stream channel stability will be assessed using periodic measurements of stream bank location relative to bank pins. Bank pins are steel rods or wooden dowels installed horizontally into the bank at intervals from the toe to the top of bank. The length of exposed rod will be measured periodically to provide an estimate of erosion rate. Bank pins will be installed in the reference stream to obtain naturally occurring rates of erosion.



### **8.3 Riparian Buffers and Riverine Wetland Vegetation**

Riparian vegetation will be assessed by two metrics: vegetation density (stems per acre) and buffer width. Vegetation density is determined by counting woody species in multiple plots and calculating the stems per acre. Trees/shrubs to be counted include existing and volunteer, as well as planted species. The target density, as previously stated, is 120 stems per acre.

If the presence of any species listed on Table 7-1 or 7-2 is observed, appropriate action will be taken to remove it. Should percent cover of species listed in Table 7-1 exceed 0% in the midstory or overstory, or exceed 1% in the herbaceous layer, immediate action will be taken to remove such species. Should any plants included on the Invasive Plant Atlas of the United States (IPAUS) list (Table 7-2) that are not on Table 7-1, be present at greater than 3% average coverage, appropriate actions as described in the Adaptive Management Plan will be initiated to reduce the presence of the species.

Buffer width will be monitored to assure that the spatial extent of the restored primary buffer areas comply with the restoration plans. Widths will be measured in the field or with aerial photography.

## 9. Monitoring Requirements

Monitoring of the mitigation areas will be performed to determine whether the mitigation project is on track to meet performance standards and if adaptive management is needed. Monitoring will be performed annually and a report will be submitted to USACE by the following January 31. Each mitigation stream and wetland will be monitored in each event, beginning with completion of earthwork and planting (except for required maintenance and replacement). In areas subject to irrigation, the first year of monitoring will begin only after irrigation ceases.

Streams and riparian buffer areas will be monitored for five years or until final credit release, whichever is later. Wetlands will be monitored for seven years or until final credit release, whichever is later. Monitoring and reporting will be the responsibility of the Bank Sponsor, Rockin' K on Chambers Creek LP. KBA EnviroScience, Ltd, or a suitable replacement approved by the IRT, will perform the monitoring. KBA's qualifications are presented in Appendix C.

Permanent survey points will be established and pre-construction measurements and photographs taken for each mitigation stream. During routine monitoring, the following field data will be collected:

- Name and contact information for monitoring personnel
- Date surveyed
- Coordinates and photos of survey point
- Drawing of monitored feature
- Current and recent weather
- Observed hydrology/moisture
- Description of previous irrigation, if any
- Description of mitigation activity at survey point
- Earthwork, other construction stability, erosion observations
- Dominant vegetation by stratum
- Percent vegetation cover by stratum
- Presence and percent cover of invasive species from Table 7-1
- Survival percentage of planted vegetation
- Diameter of planted trees
- Soil color, characteristics
- Wildlife or sign observed
- Other observations
- Recommendations
- TXRAM field data (all years for streams and riparian buffers, final event for wetlands)
- Wetland Determination Data Form (Great Plains Regional Supplement) for wetlands, beginning after the second full growing season.

Each annual monitoring report will contain the following:

- Part I. Mitigation Bank Overview
- Part II. Mitigation Activities since Previous Monitoring Event
- Part III. Other Relevant Events or Issues since Previous Monitoring Event
- Part IV. Monitoring Methodology
- Part V. Results
- Part VI. Recommendations
- Part VIII. Conclusions

Tables

Figures

Attachments:

- As-built drawings (as appropriate)
- Comparison of Performance Standards to Monitoring Results
- Monitoring Data Sheets
- Site Photographs
- Annual Ledger of Credit Transactions
- Financial Assurance Status Report
- Other Relevant Documents

The report will address each mitigation stream (including primary riparian buffer), expanded riparian buffer, and wetland separately. In cases where only a portion of a particular mitigation feature is accomplishing the required performance standard, that condition will be noted and the amount of the feature that has met the standard will be provided as a basis for credit release.

## **10. Long-term Management Plan**

Long-term management assures the long term sustainability of the bank resources after performance standards have been achieved. Rockin' K on Chambers Creek, LP is the Bank Sponsor and will be responsible for long-term management of the Bank. The Sponsor will be financially responsible for long-term management and will perform or contract all or part of the necessary management activities.

The Sponsor will be responsible for management through the construction and monitoring phases of the Bank. The owner and the conservation easement holder, Connemara Conservancy, will be responsible for long-term management and maintenance of the Bank property. The owner will perform or subcontract specific tasks as part of long-term maintenance, which will be funded by an endowment controlled by Connemara Conservancy (see Section 12). Connemara Conservancy will also monitor the site, at least annually, to ensure the terms of the Bank's conservation easement are not violated. In addition, long-term monitoring will assess the presence and extent of invasive species, as well as the condition of the Bank's fences.

The Bank site is vulnerable to acts of nature such as wildfires, floods, climatic instability and disease. Occurrence of such an act following the attainment of performance standards may require changes to the Bank, including revision of the Mitigation Plan or MBI, to allow for maintenance activities to offset and counteract negative impacts. Depending on the circumstances, allowing nature to take its course may be appropriate.

Long-term vegetation management practices such as selective herbicide treatments, prescribed burning, temporary plantings intended to suppress invasive or weed species or stabilize soil, and selective tree and forage material removal can be valuable management tools and will remain available. However, the Sponsor will consider the effect of these practices on the long-term ecological objectives of the Bank prior to implementing them. The use of herbicides may be necessary to eradicate or control undesirable and invasive grass, herb and woody species within the Bank during and after the construction and monitoring periods.

Herbicides will be applied according to the manufacturer's labeling. The appropriate type of herbicide will be selected depending on the type of vegetation (e.g., grasses, broad-leafed weeds or woody plants) requiring control. Care will be taken when applying herbicides in and around waterways to avoid contamination of water or toxicity to aquatic organisms.

All structures and facilities within the Bank shown on the Construction Plan shall be properly maintained for as long as each is needed to accomplish the goals of the Bank and achieve MBI requirements.

Educational and recreational activities on the part of the Sponsor or owner or their invitees are appropriate if conducted so as to have minimal adverse effects on the aquatic resources. Recreational use of vehicles and horses within the Bank will be limited to established roads. The locations of the roads and stream crossings and the typical design of the stream crossings are shown on the Construction Plans.

## **11. Adaptive Management Plan**

According to the USACE, the adaptive management plan is a strategy used to address foreseeable or unforeseen changes in site conditions or other components that adversely affect compensatory mitigation success. The RKMB Mitigation Plan has been developed after careful evaluation of the site and the surrounding area and has designed a mitigation strategy that is compatible with that environment. As a result, it is believed that all Performance Standards will be successfully achieved. However, the Sponsor is aware that unexpected circumstances can occur and has developed a strategy to detect such circumstances and make adjustments as appropriate. The comprehensive monitoring plan for the streams, wetlands, and riparian areas, as described in Section 9, will identify potential problems that would deter the attainment of the Performance Standards. Subsequent monitoring reports will document any corrective actions taken and the results of those actions.

### **11.1 Responsible Party**

The Sponsor will engage KBA EnviroScience, Ltd or a suitable replacement acceptable to the IRT to perform routine inspections of the RKMB and annual monitoring (as described in Section 9). Subject to force majeure, if circumstances or conditions identified in those inspections and monitoring events, or otherwise known to the Sponsor, threaten the success of the RKMB, relative to the Performance Standards, a corrective action strategy will be developed to address that threat. The strategy will be provided to USACE for concurrence. In more time-sensitive circumstances, the Sponsor may take immediate corrective action and communicate with USACE by phone or email. The process for resolving adverse impacts to the mitigation areas is described more fully in Section 3, "Contingency Plans/Remedial Actions" in the MBI.

### **11.2 Vegetation Management**

Long-term vegetation management practices may include mechanical clearing, prescribed burning, temporary plantings intended to suppress invasive species or to stabilize exposed soil, selective tree removal, selective herbicide treatments, and flash grazing. In the event of unpredictable climate such as extreme, prolonged drought, more appropriate plant species may be substituted for initial plantings. Such practices will only be conducted provided they will enhance aquatic ecosystem functions and not interfere with the long-term ecological goals of the RKMB.

For depressional herbaceous wetlands, replantings will occur in areas where greater than 75 percent of the planted vegetation does not survive. For seeded herbaceous vegetation planted in areas without established vegetation, replantings will occur if survival is less than 50 percent. In established vegetated areas, small areas (greater than 5 feet in diameter) of non-surviving herbaceous vegetation will be replanted. For woody vegetation in riparian areas and wetlands, replantings will occur when greater than 25 percent of the planted vegetation does not survive.

As stated in Section 7.1, irrigation may be needed to ensure initial survival of planted vegetation. Such irrigation would be obtained from groundwater wells or off-channel ponds not within the RKMB. No regulated water rights will be required by RKMB and the Sponsor is unaware of water rights of any upstream owner which would impact RKMB.

If the presence of any species listed on Table 7-1 or Table 7-2 is confirmed during routine monitoring, it will be noted on the monitoring report and the appropriate action taken. Should percent cover of species listed in Table 7-1 exceed 0% in the midstory or overstory or 1% in the herbaceous layers, immediate action will be taken to remove such species. Should percent cover of species listed in Table 7-2 exceed 3% in the midstory, overstory, or herbaceous layers, immediate action will be taken to remove such species. If flash grazing or any other tool not specifically identified in this section is intended to be employed, the Sponsor will not implement that action until an action-specific Adaptive Management Plan (such as a grazing plan) has been submitted to USACE for review and approval is received. The IRT review of an Adaptive Management Plan for such a tool will not exceed 15 business days. Requests for approval of subsequent events will be submitted to the IRT by email for a 5-day review prior to implementation.

In the case of flash grazing, IRT approval will be required for each flash grazing event and all stream channels will be protected/off limits; however, flash grazing in all stream buffers could be allowed. Flash grazing will only be allowed during monitoring and not after a phase has been released from monitoring. The general parameters of a "flash" grazing program would be based on (i) controlled exposure of livestock to forage materials, to preclude over-grazing; and (ii) on-site management of grazing activity to preclude damage to woody vegetation. Requests for each flash grazing event will include:

- Location of grazing area/location of fencing.
- Number of cattle.
- Duration.
- Pre-grazing photos of area to be grazed, including observations/photos of planted species, with a key showing where each photo was taken and in which direction.
- Within seven days of the end of the flash grazing event, a post-grazing report will be submitted, which includes photos taken in the same location/direction of pre-grazing photos.

The conservation easement agreement states that grazing is prohibited with the exception of flash grazing as an adaptive management tool during the monitoring phase.

### **11.3 Structures and Facilities**

Protective fencing may be used to control trespassing and prevent unwanted grazing. Fencing may be removed and reinstalled according to issued identified in maintenance inspections and monitoring reports. Structures and facilities within the Bank, such as fences, roads, trails, etc. will be properly maintained for as long as each is needed to accomplish the goals of the RKMB.

#### **11.4 Mineral Resources**

Should minerals rights owners seek to extract subsurface mineral resources, the Sponsor shall take all reasonable steps to develop a Mineral Management Plan (MMP) with the mineral owner prior to any mineral exploration, production, or transportation activities. The MMP will include a list of all anticipated activities, resultant short and long-term impacts on aquatic ecosystems, and guidelines (including best management practices) to minimize negative impacts. The Sponsor has designated areas of uplands for mineral exploration, shown on the Construction Plans, which will minimize impacts to aquatic areas.

## **12. Financial Assurances**

As discussed in Section 13, “Timing of Implementation”, the Sponsor will perform the mitigation work in “Phases”. The credits to be accomplished in each Phase are shown in Tables F-4 through F-6 in Attachment F. Prior to the first credit release in each Phase, the Sponsor will furnish to the USACE a financial assurance instrument sufficient to construct and re-vegetate that Phase. In the event that a financial instrument is not obtained for a particular Phase, no credits shall be released for that Phase. The instrument shall consist of a cash escrow, letter of credit, insurance policy, or bond issued by a reputable financial institution in an amount sufficient to ensure completion of that Phase. Connemara Conservancy has been selected as the bank conservator and easement holder and will be designated as the beneficiary. Within 120 days from the execution date of the MBI, the Sponsor shall provide documentation demonstrating the establishment of the necessary financial assurance for the first Phase(s). Estimated construction costs will be submitted to USACE as Confidential Business Information under separate cover. Following the Bank's completion of monitoring for each phase, the construction financial assurance instrument will be replaced with an instrument for Operation and Maintenance, Monitoring and Remedial Measures related to the Bank. This instrument shall consist of a cash escrow, letter of credit, insurance policy, or other instrument issued by a reputable financial institution in the amount of \$100,000 (one hundred thousand dollars). The Connemara Conservancy will be designated as the beneficiary. Such amount shall be released at the final credit release.

Prior to the final credit release, the Sponsor will establish a non-wasting endowment in the amount of \$100,000 (one hundred thousand dollars) for supporting the Bank's long-term maintenance plan. The Connemara Conservancy will be designated as the beneficiary. All expenditures must be related to the maintenance of the Bank and must be approved by the USACE. In addition, Connemara Conservancy will provide annual financial reports describing the account's balance and expenditures to the USACE.



### 13. Timing of Implementation

Four Phases are identified for implementation of this Plan. The Phases have been developed to allow for reasonable management of financial assurance and capital costs in a manner that is desirable from both ecological and constructability perspectives. The Phases are:

Phase

1. Charm Creek system (S1, S2, South Fork Charm Creek, and Charm Creek), Rockin' Creek system (S3, S4, S5, S6, and Rockin' Creek) and impoundment wetlands.
2. S7 system (including S8 and S9) and Riverine Wetlands.
3. Chambers Creek.
4. Emergent (Depressional) Wetlands W1-W8.

It is anticipated that the phases will be constructed in the order numbered, but it is only considered critical that Phase 1 be constructed first. Accordingly, initiation of construction of Phase 1 is a condition for initial release of credits for Phases 2, 3, and 4, as shown on Tables 8-1 through 8-4. Generally, grasses and forbs will be planted in the spring or fall and woody vegetation will be planted in the winter. The credit release schedule is presented by phase in Tables F-4 through F-6.

A Conservation Easement (CE) and financial assurances will be obtained for RKMB as a condition for initial credit release. Legal control of both sides of the bank is an additional condition for initial credit release for Phase 3 (Chambers Creek). These phases are depicted on **Figures 13-1 through 13-5**.

## **14. Mineral Exploration**

Mineral resources, including natural gas and oil, may exist under the Bank or adjacent lands. The existing landowner does not own any substantial amount of subsurface mineral rights. Landowners in the State of Texas cannot generally prevent a mineral owner's access to those minerals.

Should minerals rights owners seek to extract subsurface mineral resources, the Sponsor shall take all reasonable steps to develop a Mineral Management Plan (MMP) with the mineral owner prior to any mineral exploration, production, or transportation activities. The MMP will include a list of all anticipated activities, resultant short and long-term impacts on aquatic ecosystems, and guidelines (including best management practices) to minimize negative impacts. The Sponsor has designated areas of uplands for mineral exploration, shown on the Construction Plans that will minimize impacts to aquatic areas.

## **15. Consultant Qualifications**

The RKMB consulting team consists of KBA EnviroScience, Ltd. (KBA), Duck Hawk Environmental Contractors, LP, and Winkelmann & Associates, Inc. KBA will perform construction oversight, monitoring, and reporting and will design and direct any corrective actions that are necessary. Duck Hawk will construct the mitigation areas. Winkelmann will provide civil engineering and hydrology consulting. Descriptions of each firm's qualifications and example projects are provided in Appendix C.

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## **Appendix A. Design Tables and Figures**

**Table 4-1. Timing, Flow and Duration of Chambers Creek Overbank Flooding since 2003, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Year of Record</b>	<b>Number of Overbank Flooding Events</b>	<b>Number of Days with Overbank Flooding</b>	<b>Months in which Overbank Flooding Occurred</b>	<b>Range of Daily Maximum Flow (cfs)</b>
2003	1	2	Feb	4,159-4,219
2004	9	27	Jan, Mar, Apr, Jun, July, Aug, Nov	4,058-14,119
2005	1	2	Jan	6,756-7,320
2006	1	3	Mar	7,058-10,270
2007	7	27	Mar, Apr, May, Jun, Jul, Sep	4,018-10,170
2008	2	6	Mar, Apr	9,072-13,090
2009	4	17	Sep, Oct	*4,451-25,576
2010	5	16	Jan, Feb, Mar, Sept	4,088-16,111
2011	0	0	-	-
2012	2	4	Jan, Mar	7,965-13,694
2013	0	0	-	-
<b>Average</b>	<b>3.2</b>	<b>9.5</b>		

\* Maximum flow of record

**Table 4.2. Summary of Delineated Water Features, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Water Feature</b>	<b>Water of the U.S?</b>	<b>Water Type</b>	<b>Length (ft)</b>	<b>Area (ac)</b>
<b><i>Streams</i></b>				
Chambers Creek	Yes	Perennial	3,230	
Charm Creek <sup>a</sup>	Yes	Intermittent	6,584	
Ditch	Yes	Intermittent	9,131	
Tributary in NW corner	Yes	Ephemeral	410	
S3	No	Ephemeral	972	
S3D	No	Ephemeral	500	
S3B	No	Ephemeral	996	
S3C	No	Ephemeral	734	
S4A	No	Ephemeral	194	
S4B	No	Ephemeral	316	
S4C	No	Ephemeral	226	
<b><i>Wetlands</i></b>				
Ditch fringe	Yes	Emergent/shrub		0.90
Pond d – deed restricted	Yes	Emergent		0.13
<b><i>Other</i></b>				
Impoundments S1-S6	No	Open water		3.97
Ponds a-c, e-g	No	Open water		0.83

a. Delineated Charm Creek is 100 ft. less than Enhanced Charm Creek due to elimination of dirt road crossings.



**Table 4-3. Soil Series, Rockin' K on Chambers Creek Mitigation Bank.**

Map Unit	Soil	Erosion Hazard	Hydrologic Group	Listed Hydric Soil	Project Area
FeD2	<b>Ferris clay, 3 to 8 percent slopes, eroded</b> - gently sloping to moderately steep, somewhat excessively drained calcareous, clayey soils on upland areas.	severe	D	No	1
FhE2	<b>Ferris and Heiden clays, 5 to 15 percent slopes</b> , eroded - sloping to moderately steep soils on ridgetops and upper parts of slopes.	moderate to severe	B	No	1
BuA	<b>Burleson clay, 0 to 1 percent slopes</b> - deep, moderately well drained, clayey soils.	moderate	D	No	1
BuB	<b>Burleson clay, 1 to 3 percent slopes</b> deep, moderately well drained, clayey soils	moderate	D	No	1
HaD	<b>Heiden clay, 1 to 3 percent slopes</b> – deep, well-drained, calcareous clay soils on gently sloping to moderately steep soils on uplands.	moderate	D	No	1
HaD2	<b>Heiden clay, 3 to 5 percent slopes</b> – gently sloping upland soil on breaks and narrow ridgetops.	moderate	D	No	1
LaD	<b>Lamar clay loam, 3 to 8 percent slopes</b> – moderately drained, calcareous, loamy soils on gently sloping areas adjacent to major streams.	moderate to severe	B	No	1
LaE2	<b>Lamar clay loam, 5 to 12 percent slopes</b> – on gently to strongly sloping breaks to creeks, a friable clay loam underlain with calcareous clay loam.	moderate to severe	B	No	1
Tn	<b>Trinity clay</b> , - deep, moderately well drained to somewhat poorly drained, calcareous clay soils that formed in alluvium. Nearly level on flood plains with slow permeability.		D	Yes	2
Tr	<b>Trinity clay, frequently flooded</b> – on flood plains or along streams, some areas have numerous scour channels.		D	Yes	3

**Table 6.1. Proposed Vegetation for Enhancement and Restoration, Rockin' K on Chambers Creek Mitigation Bank.**

Habitat Type/Species	Common Name
<b>Riparian Trees</b>	
<i>Carya aquatica</i>	Water hickory
<i>Maclura pomifera</i>	Osage-orange
<i>Prunus mexicana</i>	Mexican plum
<i>Quercus stellata</i>	Post oak
<i>Quercus simillis</i>	Bottomland Post Oak
<i>Rhus aromatic</i>	Fragrant sumac
<i>Rhus capallinum</i>	Winter sumac
<i>Rhus glabra</i>	Smooth sumac
<i>Prunus angustifolia</i>	Chickasaw plum
<i>Quercus shumardii</i>	Shumard red oak
<i>Cercis canadensis</i>	Redbud
<i>Carya illinoensis</i>	Pecan
<i>Quercus macrocarpa</i>	Bur oak
<i>Fraxinum pennsylvanica</i>	Green ash
<i>Quercus muehlenbergii</i>	Chinkapin oak
<i>Sophora affinis</i>	Eve's necklace
<i>Amorpha fruticosa</i>	Indigobush
<i>Ilex decidua</i>	Deciduous holly
<i>Sideroxylon lanuginosum</i>	Gum bumelia
<i>Celtis laevegatis</i>	Sugarberry
<i>Ulmus crassifolia</i>	Cedar elm
<i>Myrica cerifera</i>	Wax myrtle
<i>Diospyros virginianum</i>	Common persimmon
<i>Salix nigra</i>	Black willow
<i>Populous deltoids</i>	Cottonwood
<i>Plantanus occidentalis</i>	Sycamore
<b>Riparian Shrubs</b>	
<i>Cephalanthus occidentalis</i>	Buttonbush
<i>Ilex decidua</i>	Possum haw
<i>Cornus drummondii</i>	Roughleaf dogwood
<i>Amorpha fruticosa</i>	Indigobush
<i>Callicarpa americana</i>	American beautyberry
<i>Rhus aromatica</i>	Fragrant sumac
<i>Symphoricarpos orbiculatus</i>	Texas coralberry
<b>Native Grasses</b>	
<i>Schizachyrium scoparium</i>	Little bluestem
<i>Andropogon gerardii</i>	Big bluestem
<i>Bouteloua curtipendula</i>	Sideoats grama
<i>Paspalum floridanum</i>	Florida paspalum

Habitat Type/Species	Common Name
<i>Panicum virgatum</i>	Switchgrass
<i>Tripsacum dactyloides</i>	Eastern gamagrass
<i>Buchloe dactyloides</i>	Buffalograss
<i>Sorghastrum nutans</i>	Indiangrass
<b>Erosion Control</b>	
<i>Panicum virgatum</i>	Switchgrass
<i>Tripsacum dactyloides</i>	Eastern gamagrass
<i>Helianthus annuus</i>	Annual sunflower
<i>Juncus spp.</i>	Juncus
<i>Echinochloa sp.</i>	Barnyard grass
<i>Desmanthus illinoensis</i>	Illinois bundleflower
<i>Chamaecrista fasciculata</i>	Partridge pea
Texas wildflower mix	
<b>Emergent Wetlands</b>	
<b>High Marsh (water depths -0.5 – 0.5 ft.)</b>	
<i>Eleocharis sp.</i>	Spike Rush
<i>Eleocharis parvula</i>	Dwarf spikerush
<i>Eleocharis quadrangulata</i>	Squarestem spikerush
<i>Juncus effusus</i>	Soft rush
<i>Juncus sp.</i>	Rushes
<i>Panicum hemitomon</i>	Maiden cane
<i>Hymenocallis caroliniana</i>	Spider lily
<i>Rhynchospora colorata</i>	White-topped sedge
<i>Cyperus retrorsus</i>	Flatsedge
<i>Proserpinaca palustris</i>	Mermaid weed
<i>Saururus cernus</i>	Lizard tail
<i>Heteranthera limosa</i>	Blue mud plantain
<i>Polygonum sp.</i>	Smartweeds
<b>Middle Marsh (water depths 0.5 – 1.5 ft.)</b>	
<i>Scirpus validus</i>	Softstem bulrush
<i>Scirpus californicus</i>	California bulrush
<i>Schoenoplectus acutus</i>	Hardstem bulrush
<i>Pontederia cordata</i>	Pickrel weed
<i>Sagittaria sp.</i>	Duck potato
<b>Low Marsh (water depths 1.5 – 4 ft.)</b>	
<i>Nymphaea odorata</i>	White water lily
<i>Nymphae amexicana or elegans</i>	Mexican water lily
<i>Brasenia schreberi</i>	Water shield
<i>Potamogeton sp.</i>	Pond weeds
<i>Chara sp.</i>	Muskgrass
<i>Lemna sp.</i>	Duck weeds

**Table 6-2. Proposed Restoration / Enhancement in Ephemeral Streams, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Stream</b>	<b>Enhancement (ft.)</b>	<b>Restoration (ft.)</b>	<b>Total Length (ft.)</b>
S1	0	2550	2550
S2	0	1980	1980
S2a	0	817	817
S3	1033	3034	4067
S3a	0	1440	1440
S3b	1130	1117	2247
S3c	722	635	1357
S3d	428	699	1127
S3e	0	1071	1071
S4	0	1047	1047
S4a	195	507	702
S4b	255	894	1149
S4c	334	225	559
S5	157	1228	1385
S6	174	1141	1315
S7	0	4086	4086
S8	1294	0	1294
S9	1664	0	1664
<b>Total Ephemeral</b>	<b>7386</b>	<b>22471</b>	<b>29857</b>

**Table 6-3. Summary of Proposed Activities in Impoundments, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Name</b>	<b>Location</b>	<b>Present Area (ac)</b>	<b>Fill (ac)</b>	<b>Restore to Wetland (ac)</b>	<b>Leave As Is (ac)</b>
P1	top S1	0.557	0	0.557	0
P2	bottom S1	0.233	0	0.233	0
P3	top S2	0.089	0.089	0	0
P4	bottom S2	0.258	0	0.258	0
P5	top S3	0.439	0.439	0	0
P6	middle S3a	0.250	0.183	0.066	0
P7	middle S3b	0.635	0.311	0.324	0
P8	top S3c	0.524	0.252	0.271	0
P9	bottom S4a	0.439	0	0.177	0.262
P10	mid S4b	0.209	0	0.209	0
P11	mid S5	0.095	0.070	0.025	0
P12	Bottom S6	0.245	0.000	0.245	0
P13	top S7	0.083	0.083	0	0
<b>Total<sup>a</sup></b>		<b>4.9</b>	<b>1.4</b>	<b>2.8</b>	<b>0.26</b>

**Table 6-4. Proposed Restoration / Enhancement in Intermittent and Perennial Streams, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Stream</b>	<b>Enhancement (ft.)</b>	<b>Restoration (ft.)</b>	<b>Total Length (ft.)</b>
<b>Intermittent</b>			
South Fork Charm Creek	0	7,759	7,759
Rockin Creek	0	6,586	6,586
Charm Creek	6,981	0	6,981
<b>Total Intermittent</b>	<b>6,981</b>	<b>14,345</b>	<b>21,326</b>
<b>Perennial</b>			
Chambers Creek	2,990	0	2,990
<b>Total Perennial</b>	<b>2,990</b>	<b>0</b>	<b>2,990</b>

**Table 6-5. Proposed Restoration of Emergent and Riverine Wetlands, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Wetland Name</b>	<b>Size (ac)</b>
W1	0.72
W2	1.80
W3	1.73
W4	4.88
W5	4.25
W6	5.00
W7	3.63
W8	1.99
<b>Sub total</b>	24.00
Impoundments	2.37
Riverine	63.02
<b>Total</b>	89.38



**Table 6-6. Proposed Tree Planting in Buffers and Forested Area, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Tree Planting</b>	<b>Riparian Buffer (ac)</b>	<b>Density (Stems/Acre)<sup>a,b</sup></b>	<b>Trees Required<sup>a</sup></b>
Ephemeral Buffers	69.4	300/160	20,820/11,104
Intermittent Buffers	144.8	300/160	43,440/23,168
Perennial Buffer	41.9	300/160	12,570/6,704
<b>Sub-total Buffers</b>	<b>256.1</b>	<b>----</b>	<b>76,830/40,976</b>
Riverine Wetlands <sup>c</sup>	63	100/40	6,300/2,520
<b>Total</b>	<b>189</b>	<b>----</b>	<b>83,130/43,496</b>

- a. The first number is the estimated number of bare root stems and the second number is the estimated number of containerized (larger) stems. Either or both will be planted, depending on the planting season, species planted, availability of plant stock, and other factors. These two numbers should be considered a range.
- b. In areas with few or no existing trees, trees will be planted at a density of 300/160 (bare root/containerized). In wooded areas, trees will be planted at a density of 100/40. Most of the buffer areas will be planted at the 300/160 density and most of the riverine wetlands will be at the 100/40 density.
- c. The planting area does not include the stream buffers that are located in the riverine wetlands.

**Table 7.1. State and Federally-Listed Invasive, Noxious, Prohibited, and Exotic Plants, Rockin' K on Chambers Creek Mitigation Bank.**

Scientific Name	Common Name
<i>Alhagi maurorum</i>	Camelthorn
<i>Alternanthera philoxeroides</i>	Alligatorweed
<i>Arundo donax</i>	Giant reed
<i>Asphodelus fistulosus</i>	Onionweed
<i>Calystegia sepium</i>	Hedge false bindweed
<i>Commelina benghalensis</i>	Tropical Spiderwort/Benghal dayflower
<i>Cuscuta japonica</i>	Japanese dodder
<i>Eichhornia azurea</i>	Anchored water hyacinth/ Rooted water hyacinth
<i>Eichhornia crassipes</i>	Common water hyacinth
<i>Heracleum mantegazzianum</i>	Giant hogweed
<i>Hydrilla verticillata</i>	Hydrilla
<i>Imperata cylindrica</i>	Cogongrass
<i>Ipomoea aquatica</i>	Swamp morning-glory, Water Spinach
<i>Lagarosiphon major</i>	Oxygen-weed, African elodea
<i>Landoltia punctata</i>	Dotted duckmeat
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Melaleuca quinquenervia</i>	Melaleuca
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil
<i>Nassella trichotoma</i>	Serrated tussock grass
<i>Orobancha ramosa</i>	Hemp broomrape
<i>Panicum repens</i>	Couch panicum
<i>Pistia stratiotes</i>	Water lettuce
<i>Pueraria montana var. lobata</i>	Kudzu
<i>Rottboellia cochinchinensis</i>	Itchgrass
<i>Salvinia minima</i>	Common salvinia
<i>Salvinia molesta</i>	Giant salvinia
<i>Schinus terebinthifolius</i>	Brazilian peppertree
<i>Solanum viarum</i>	Tropical soda apple
<i>Tamarix africana</i>	African tamarisk
<i>Tamarix aphylla</i>	Athel tamarisk
<i>Tamarix chinensis</i>	Fivestamen tamarisk
<i>Tamarix gallica</i>	French tamarisk
<i>Tamarix parviflora</i>	Smallflower tamarisk
<i>Tamarix ramosissima</i>	Salt cedar
<i>Triadica sebifera</i>	Chinese tallow tree

Source: [http://texasinvasives.org/plant\\_database/sn\\_results.php](http://texasinvasives.org/plant_database/sn_results.php) accessed May 21, 2014.

**Table 7.2. Invasive Species of Concern, Rockin' K on Chambers Creek Mitigation Bank.**

Scientific Name	Common Name
<i>Acroptilon repens</i>	Russian knapweed
<i>Ailanthus altissima</i>	Tree of heaven
<i>Albizia julibrissin</i>	Mimosa
<i>Alliaria petiolata</i>	Garlic mustard
<i>Allium vineale</i>	Wild garlic
<i>Antigonon leptopus</i>	Coral vine
<i>Bothriochloa ischaemum</i> var. <i>songarica</i>	King Ranch bluestem
<i>Bromus arvensis</i>	Field brome
<i>Bromus catharticus</i>	Rescuegrass
<i>Bromus tectorum</i>	Cheat grass
<i>Broussonetia papyrifera</i>	Paper mulberry
<i>Carduus nutans</i>	Nodding plumeless thistle
<i>Carduus tenuiflorus</i>	Slender-flowered thistle
<i>Carthamus lanatus</i>	Woolly distaff thistle
<i>Casuarina equisetifolia</i>	Beach sheoak
<i>Cayratia japonica</i>	Bushkiller
<i>Centaurea melitensis</i>	Malta star-thistle
<i>Centaurea solstitialis</i>	Yellow star-thistle
<i>Cinnamomum camphora</i>	Camphor tree
<i>Cirsium vulgare</i>	Bull thistle
<i>Colocasia esculenta</i>	Elephant ears
<i>Conium maculatum</i>	Poison hemlock
<i>Convolvulus arvensis</i>	Field bindweed
<i>Coronilla varia</i>	Purple crown-vetch
<i>Cortaderia selloana</i>	Pampas grass
<i>Cryptostegia grandiflora</i>	Palay rubbervine
<i>Cupaniopsis anacardioides</i>	Carrotwood Tree
<i>Cyanthillium cinereum</i>	Little ironweed
<i>Cynodon dactylon</i>	Bermuda grass
<i>Cyperus entrerianus</i>	Deep-rooted sedge
<i>Cyperus rotundus</i>	Nutgrass
<i>Cyrtomium falcatum</i>	Japanese netvein hollyfern
<i>Dichanthium annulatum</i>	Kleberg bluestem
<i>Dichanthium aristatum</i>	Angleton bluestem
<i>Dichanthium sericeum</i>	Silky bluestem
<i>Dioscorea bulbifera</i>	Air potato
<i>Dioscorea oppositifolia</i>	Chinese yam

Scientific Name	Common Name
<i>Echium vulgare</i>	Blueweed
<i>Elaeagnus angustifolia</i>	Russian olive
<i>Elaeagnus pungens</i>	Thorny olive
<i>Elaeagnus umbellata</i>	Autumn olive
<i>Eragrostis lehmanniana</i>	Lehman's love grass
<i>Euphorbia esula</i>	Leafy spurge
<i>Ficus religiosa</i>	Peepul Tree
<i>Firmiana simplex</i>	Chinese parasoltree
<i>Gibasis pellucida</i>	Dotted bridalveil
<i>Glandularia pulchella</i>	South American mock vervain
<i>Hedera helix</i>	English ivy
<i>Hovenia dulcis</i>	Japanese raisintree
<i>Ilex aquifolium</i>	English holly
<i>Iris pseudacorus</i>	Yellow flag iris
<i>Kalanchoe daigremontiana</i>	Mother of thousands
<i>Kickxia elatine</i>	Sharpleaf cancerwort
<i>Koelreuteria paniculata</i>	Golden rain tree
<i>Lantana camara</i>	Largeleaf lantana
<i>Lepidium latifolium</i>	Perennial pepperweed
<i>Lespedeza bicolor</i>	Shrubby lespedeza
<i>Lespedeza cuneata</i>	Chinese lespedeza
<i>Leucaena leucocephala</i>	Popinac
<i>Leucanthemum vulgare</i>	Oxeye daisy
<i>Ligustrum japonicum</i>	Japanese privet
<i>Ligustrum lucidum</i>	Glossy privet
<i>Ligustrum quihoui</i>	Waxyleaf privet
<i>Ligustrum sinense</i>	Chinese privet
<i>Ligustrum vulgare</i>	European privet
<i>Lolium arundinaceum</i>	Tall fescue
<i>Lolium perenne</i>	Perennial ryegrass
<i>Lonicera fragrantissima</i>	Winter Bush Honeysuckle
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Lonicera maackii</i>	Amur honeysuckle
<i>Lonicera morrowii</i>	Morrow's honeysuckle
<i>Lonicera tatarica</i>	Bush honeysuckle
<i>Lygodium japonicum</i>	Japanese climbing fern
<i>Macfadyena unguis-cati</i>	Catclawvine
<i>Marrubium vulgare</i>	Horehound

Scientific Name	Common Name
<i>Medicago minima</i>	Little bur-clover
<i>Melia azedarach</i>	Chinaberry tree
<i>Melilotus officinalis</i>	Yellow sweet clover
<i>Microstegium vimineum</i>	Japanese stiltgrass
<i>Miscanthus sinensis</i>	Chinese silvergrass
<i>Morus alba</i>	White mulberry
<i>Myagrurum perfoliatum</i>	Bird's eye-cress
<i>Myriophyllum aquaticum</i>	Parrotfeather milfoil
<i>Nandina domestica</i>	Heavenly bamboo
<i>Nicotiana glauca</i>	Tree tobacco
<i>Onopordum acanthium</i>	Scotch thistle
<i>Paederia foetida</i>	Skunkvine
<i>Paliurus spina-christi</i>	Jerusalem thorn
<i>Paspalum dilatatum</i>	Dallisgrass
<i>Paspalum notatum</i>	Bahiagrass
<i>Paspalum urvillei</i>	Vasey grass
<i>Paulownia tomentosa</i>	Princess tree
<i>Peganum harmala</i>	African rue
<i>Pennisetum ciliare</i>	Buffelgrass
<i>Perilla frutescens</i>	Beefsteakplant
<i>Photinia serratifolia</i>	Taiwanese photinia
<i>Photinia x fraseri</i>	Redtip photinia
<i>Phyllostachys aurea</i>	Golden bamboo
<i>Pistacia chinensis</i>	Chinese pistache
<i>Poncirus trifoliata</i>	Trifoliolate orange
<i>Populus alba</i>	Alamo blanco
<i>Pyracantha coccinea</i>	Scarlet firethorn
<i>Pyrus calleryana</i>	Callery pear
<i>Rapistrum rugosum</i>	Bastard cabbage
<i>Ricinus communis</i>	Castor Bean
<i>Rosa bracteata</i>	Macartney rose
<i>Rosa laevigata</i>	Cherokee rose
<i>Rosa multiflora</i>	Multiflora rose
<i>Ruellia caerulea</i>	Britton's wild petunia
<i>Salsola tragus</i>	Prickly Russian thistle
<i>Salvinia minima</i>	Common salvinia
<i>Scabiosa atropurpurea</i>	Pincushions
<i>Senna pendula</i>	Climbing cassia, Valamuerto

Scientific Name	Common Name
<i>Sesbania punicea</i>	Rattlebox
<i>Silybum marianum</i>	Blessed Milk Thistle
<i>Solanum pseudocapsicum</i>	Jerusalem-cherry
<i>Sorghum halepense</i>	Johnson grass
<i>Stellaria media</i>	Common chickweed
<i>Taraxacum officinale</i>	Common dandelion
<i>Tribulus terrestris</i>	Puncturevine
<i>Trifolium campestre</i>	Field clover
<i>Ulmus pumila</i>	Siberian elm
<i>Urochloa maxima</i>	Guineagrass
<i>Verbascum thapsus</i>	Common mullein
<i>Verbena brasiliensis</i>	Brazilian vervain
<i>Vinca major</i>	Bigleaf periwinkle
<i>Vinca minor</i>	Common periwinkle
<i>Vitex agnus-castus</i>	Lilac chastetree
<i>Wisteria floribunda</i>	Japanese wisteria
<i>Wisteria sinensis</i>	Chinese wisteria
<i>Xanthium spinosum</i>	Spiny cocklebur

Source: [http://texasinvasives.org/plant\\_database/sn\\_results.php](http://texasinvasives.org/plant_database/sn_results.php) accessed May 21, 2014.

**Table 8-1. Performance Standards for Perennial Streams, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Release Stage</b>	<b>Release Terms</b>	<b>Performance Standards</b>
Initial	Execution of MBI	<ul style="list-style-type: none"> <li>• Execution of signature page in MBI</li> </ul>
	Financial assurance established	<ul style="list-style-type: none"> <li>• Completion of financial assurances as prescribed in Section 12 of this Plan.</li> </ul>
	Execution of USACE-approved Conservation Easement	<ul style="list-style-type: none"> <li>• Completion of Conservation Easement as prescribed in Section 12 of this Plan.</li> </ul>
	Execution of easement or other binding agreement on north streambed and bank of Chambers Creek	<ul style="list-style-type: none"> <li>• Sponsor has accomplished control of both sides of Chambers Creek and has subjected both banks of Chambers Creek to Conservation Easement.</li> </ul>
	Phase I will be the first phase constructed.	<ul style="list-style-type: none"> <li>• Construction will have commenced on Phase 1.</li> </ul>
Post Planting/Construction	Completion of bank stabilization earthwork and riparian planting	<ul style="list-style-type: none"> <li>• The earthwork along Chambers Creek has been performed and the vegetation has been planted in the riparian zone of Chambers Creek, as described in Section 6 and the design figures in Appendix A of the Mitigation Plan.</li> <li>• Earthwork and planting documented in as-built drawings and monitoring forms.</li> </ul>
	One bankfull event after construction completed and planting initiated	<ul style="list-style-type: none"> <li>• Chambers Creek is observed to be bankfull.</li> </ul>
Two Growing Season Survival: 1 <sup>st</sup> Bankfull Event	Project survival	<ul style="list-style-type: none"> <li>• Only moderate damage to earthwork (rills, gullies, erosion) has occurred and can be repaired without redesign.</li> <li>• Riparian/Riverine vegetation function-based criterion “Functioning” or “Functioning at Risk” (See Table 8-4).</li> <li>• Density of viable woody stems (planted plus pre-existing plus volunteer) is at least 120/acre.</li> </ul>



Two-Season Survival: 2 <sup>nd</sup> Bankfull Event	Event at least one year after 1 <sup>st</sup> bankfull event	NA
	Project survival	<ul style="list-style-type: none"> <li>Only moderate damage to earthwork (rills, gullies, erosion) has occurred and can be repaired and stabilized without redesign.</li> <li>Riparian/Riverine vegetation function-based criterion “Functioning” or “Functioning at Risk” (See Table 8-4).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> </ul>
	No earlier than 2 <sup>nd</sup> Bank Full Event After two full growing seasons (March-September).	NA
Two-Season Survival: Final	Project survival.	<ul style="list-style-type: none"> <li>Only minor erosion has occurred and can be repaired and stabilized without redesign.</li> <li>Riparian/Riverine vegetation function-based criterion “Functioning” or “Functioning at Risk” (See Table 8-4).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> </ul>
	Minimum of 2 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>Riparian/Riverine vegetation function-based criterion “Functioning” or “Functioning at Risk” (See Table 8-4).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>Stream must meet definition of “water of the United States”.</li> <li>TXRAM score must be at least the sum of the base score and 40% of the target TXRAM lift.</li> </ul>
Interim Release 2	Minimum of 3 years after planting/construction	NA

	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>Riparian/Riverine vegetation function-based criterion “Functioning” or “Functioning at Risk” (See Table 8-4).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>Stream must meet definition of “water of the United States”.</li> <li>TXRAM score must be at least the sum of the base score and 60% of the target TXRAM lift.</li> </ul>
Interim Release 3	Minimum of 5 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>Riparian/Riverine vegetation function-based criterion “Functioning” or “Functioning at Risk” (See Table 8-4).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>Stream must meet definition of “water of the United States”.</li> <li>TXRAM score must be at least the sum of the base score and 80% of the target TXRAM lift.</li> </ul>
Final Release	2 <sup>nd</sup> bankfull event must have occurred	NA
	Long-term management non-wasting endowment funded	<ul style="list-style-type: none"> <li>Completion of financial assurances prescribed in Section 12 of this Plan.</li> </ul>
	USACE release from further monitoring, based on final monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>Riparian/Riverine vegetation function-based criterion “Functioning” (See Table 8-4).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>Plant species on Table 7-1 of the Mitigation Plan not greater than 0% cover of overstory or midstory, and not greater than 1% of herbaceous cover.</li> <li>TXRAM score must show target lift.</li> </ul>

**Table 8-2. Performance Standards for Ephemeral and Intermittent Streams, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Release Stage</b>	<b>Release Terms</b>	<b>Performance Standards</b>
Initial	Execution of MBI	<ul style="list-style-type: none"> <li>• Execution of signature page in MBI</li> </ul>
	Financial assurance established	<ul style="list-style-type: none"> <li>• Completion of financial assurances as prescribed in Section 12 of this Plan.</li> </ul>
	Execution of USACE-approved Conservation Agreement	<ul style="list-style-type: none"> <li>• Completion of Conservation Easement as prescribed in Section 12 of this Plan.</li> </ul>
	Phase I will be the first phase constructed.	<ul style="list-style-type: none"> <li>• Construction will have commenced on the Phase 1 streams before the initial credit release on the Phase 2 streams (S7-9).</li> </ul>
Post Planting/Construction	Completion of stream restoration/enhancement earthwork and riparian planting	<ul style="list-style-type: none"> <li>• The earthwork along streams has been performed and the vegetation has been planted in the riparian zones, as described in Section 6 and the design figures in Appendix A of the Mitigation Plan. Earthwork and planting documented in as-built drawings and monitoring forms.</li> </ul>
		<ul style="list-style-type: none"> <li>• All function-based performance criteria 'Functioning,' or "Functioning at Risk" (see Table 8-5).</li> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> </ul>
		<ul style="list-style-type: none"> <li>• Streams are observed to be bankfull.</li> </ul>
1 <sup>st</sup> Bankfull Event	One bankfull event after construction completed and planting initiated	
	Project survival	<ul style="list-style-type: none"> <li>• Only moderate damage to earthwork (rills, gullies, erosion) has occurred and can be repaired without redesign.</li> <li>• All function-based performance criteria 'Functioning,' or "Functioning at Risk" (see Table 8-5).</li> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> </ul>
2 <sup>nd</sup> Bankfull Event	Event at least one year after 1 <sup>st</sup> bankfull event	NA

Release Stage	Release Terms	Performance Standards
	Project survival	<ul style="list-style-type: none"> <li>Only minor erosion has occurred and can be repaired and stabilized without redesign.</li> <li>All function-based performance criteria ‘Functioning;’ or ‘Functioning at Risk’ (see Table 8-5).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> </ul>
Interim Release 1	Minimum of 2 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>All function-based performance criteria ‘Functioning;’ or ‘Functioning at Risk’ (see Table 8-5).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>Stream must meet definition of “water of the United States”.</li> <li>TXRAM score must be at least the sum of the base score and 40% of the target TXRAM lift.</li> </ul>
Interim Release 2	Minimum of 3 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>All function-based performance criteria ‘Functioning;’ or ‘Functioning at Risk’ (see Table 8-5).</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>Stream must meet definition of “water of the United States”.</li> <li>TXRAM score must be at least the sum of the base score and 60% of the target TXRAM lift.</li> </ul>

Interim Release 3	Minimum of 5 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>• All function-based performance criteria ‘Functioning,’ or ‘Functioning at Risk’ (see Table 8-5).</li> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>• Stream must meet definition of “water of the United States”.</li> <li>• TXRAM score must be at least the sum of the base score and 80% of the target TXRAM lift.</li> </ul>
Final Release	2 <sup>nd</sup> bankfull event must have occurred	NA
	Long-term management non-wasting endowment funded	<ul style="list-style-type: none"> <li>• Completion of financial assurances prescribed in Section 12 of this Plan.</li> </ul>
	USACE release from further monitoring, based on final monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>• After five years of monitoring.</li> <li>• All function-based performance criteria ‘Functioning,’ (see Table 8-5).</li> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>• Plant species on Table 7-1 of the Mitigation Plan not greater than 0% cover of overstory or midstory, and not greater than 1% of herbaceous cover.</li> <li>• TXRAM score must show target lift.</li> </ul>

**Table 8-3. Performance Standards for Secondary and Tertiary Riparian Buffers, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Release Stage</b>	<b>Release Terms</b>	<b>Performance Standards</b>
<b>Initial</b>	Execution of MBI	<ul style="list-style-type: none"> <li>• Execution of signature page in MBI</li> </ul>
	Financial assurance established	<ul style="list-style-type: none"> <li>• Completion of financial assurances as prescribed in Section 12 of this Plan.</li> </ul>
	Execution of USACE-approved Conservation Agreement	<ul style="list-style-type: none"> <li>• Completion of Conservation Easement as prescribed in Section 12 of this Plan.</li> </ul>
	Phase I will be the first phase constructed.	<ul style="list-style-type: none"> <li>• Construction will have commenced on Phase 1 prior to the initial release of credits for Phase 2 or 3 riparian buffers.</li> </ul>
<b>Post Planting</b>	Completion of planting	<ul style="list-style-type: none"> <li>• All vegetation has been planted, as described in Section 6 of this Plan.</li> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> </ul>
<b>2<sup>nd</sup> Growing Season</b>	After 2 full growing seasons (growing season is from March-September)	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> </ul>
<b>Interim Release 1</b>	Minimum of 3 years after planting	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>• TXRAM score must be at least the sum of the base score and 40% of the target TXRAM lift.</li> </ul>
<b>Interim Release 2</b>	Minimum of 4 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>• Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>• TXRAM score must be at least the sum of the base score and 60% of the target TXRAM lift.</li> </ul>

Release Stage	Release Terms	Performance Standards
Interim Release 3	Minimum of 5 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>TXRAM score must be at least the sum of the base score and 80% of the target TXRAM lift.</li> </ul>
Final Release	Long-term management non-wasting endowment funded	<ul style="list-style-type: none"> <li>Completion of requirements prescribed in Section 12 of this Plan.</li> </ul>
	USACE release from further monitoring, based on final monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>After 7 years of monitoring.</li> <li>Density of viable woody stems (planted plus preexisting plus volunteer) is at least 120/acre.</li> <li>Plant species on Table 7-1 of the Mitigation Plan not greater than 0% cover of overstory or midstory, and not greater than 1% of herbaceous cover.</li> <li>TxRAM score must show target lift.</li> </ul>



**Table 8-4. Performance Standards for Wetlands, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Release Stage</b>	<b>Release Terms</b>	<b>Performance Standards</b>
Initial	Execution of MBI	<ul style="list-style-type: none"> <li>• Execution of signature page in MBI</li> </ul>
	Financial assurance established	<ul style="list-style-type: none"> <li>• Completion of financial assurances as prescribed in Section 12 of this Plan.</li> </ul>
	Execution of USACE-approved Conservation Agreement	<ul style="list-style-type: none"> <li>• Completion of Conservation Easement as prescribed in Section 12 of this Plan.</li> </ul>
	Phase I will be the first phase constructed.	<ul style="list-style-type: none"> <li>• Construction will have commenced on Phase 1 before the initial release of credits for Phase 4 wetlands.</li> </ul>
Post Planting/ Construction/ Hydrology	Completion of earthwork and planting	<ul style="list-style-type: none"> <li>• All earth work to restore and enhance wetlands has been completed and the wetland vegetation has been planted, as described in Section 6 of this Plan. Earthwork and planting documented in as-built drawings and monitoring forms.</li> </ul>
	Successful hydrology demonstration	<ul style="list-style-type: none"> <li>• Wetlands are observed to be inundated or saturated during the growing season.</li> </ul>
2 <sup>nd</sup> Growing Season	After 2 full growing seasons (growing season is from March-September)	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>• Wetlands must meet vegetation and hydrology criteria in Great Plains Regional Supplement to Wetland Delineation Manual.</li> </ul>
Interim Release 1	Minimum of 3 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>• Wetland must meet definition of “water of the United States”.</li> <li>• TXRAM score must be at least the sum of the base score and 40% of the target TXRAM lift.</li> </ul>

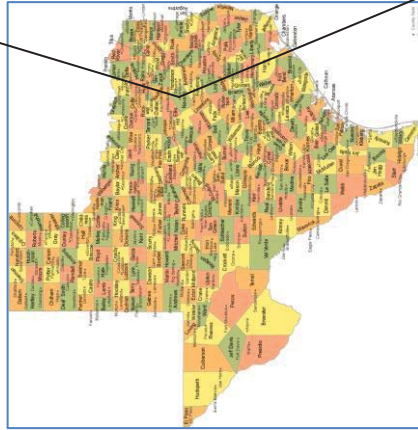
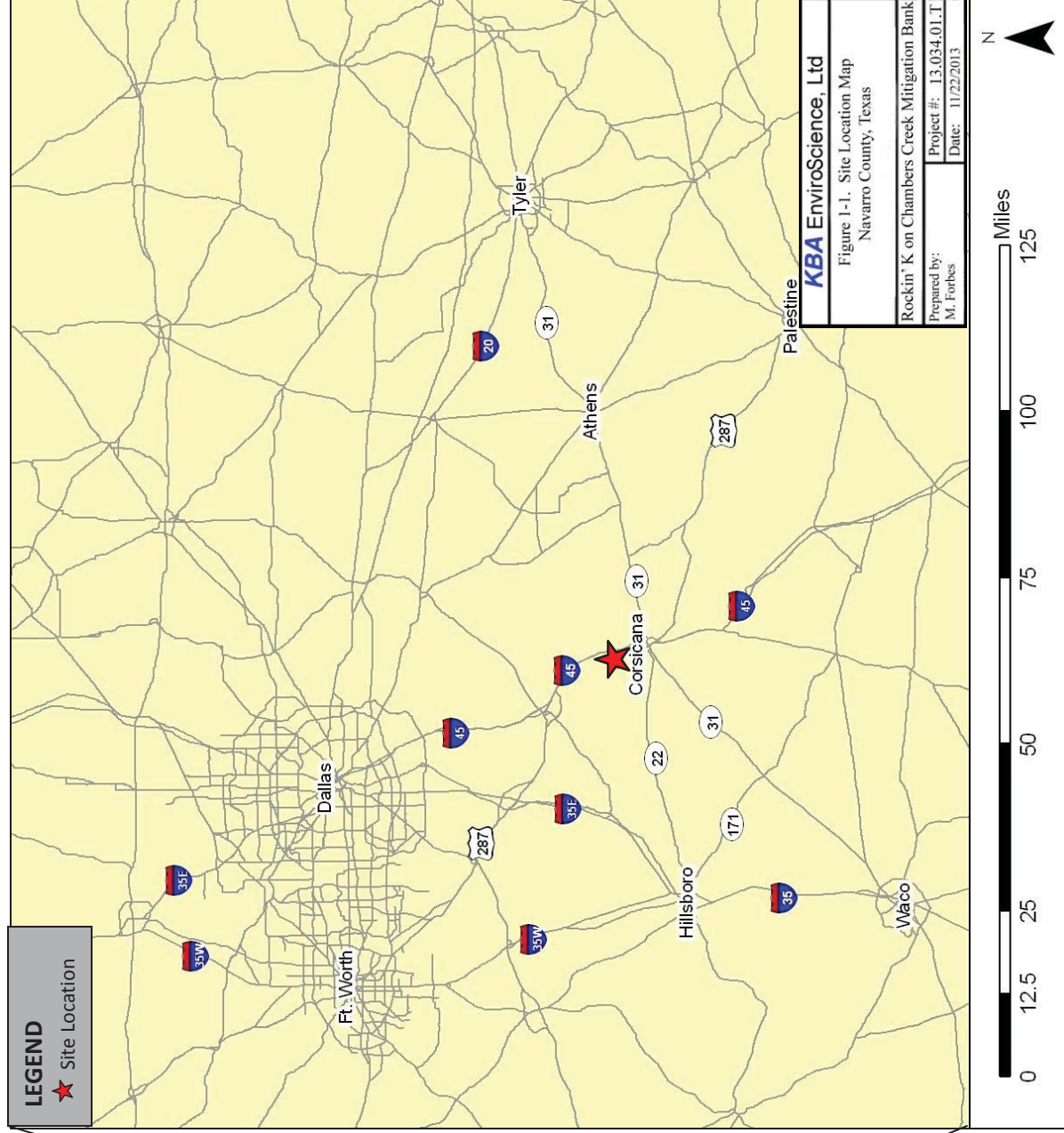
Interim Release 2	Minimum of 5 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>Wetland must meet definition of “water of the United States”.</li> <li>TXRAM score must be at least the sum of the base score and 60% of the target TXRAM lift.</li> </ul>
Interim Release 3	Minimum of 7 years after planting/construction	NA
	USACE acceptance of monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>Wetland must meet definition of “water of the United States”.</li> <li>TXRAM score must be at least the sum of the base score and 80% of the target TXRAM lift.</li> </ul>
Final Release	Long-term management non-wasting endowment funded	<ul style="list-style-type: none"> <li>Completion of requirements prescribed in Section 12 of this Plan.</li> </ul>
	USACE release from further monitoring, based on final monitoring report and conditional assessment	<ul style="list-style-type: none"> <li>After 7 years of monitoring.</li> <li>Wetland must meet definition of “water of the United States”.</li> <li>Plant species on Table 7-1 of the Mitigation Plan not greater than 0% cover of overstory or midstory, and not greater than 1% of herbaceous cover.</li> <li>TxRAM score must show target lift.</li> </ul>

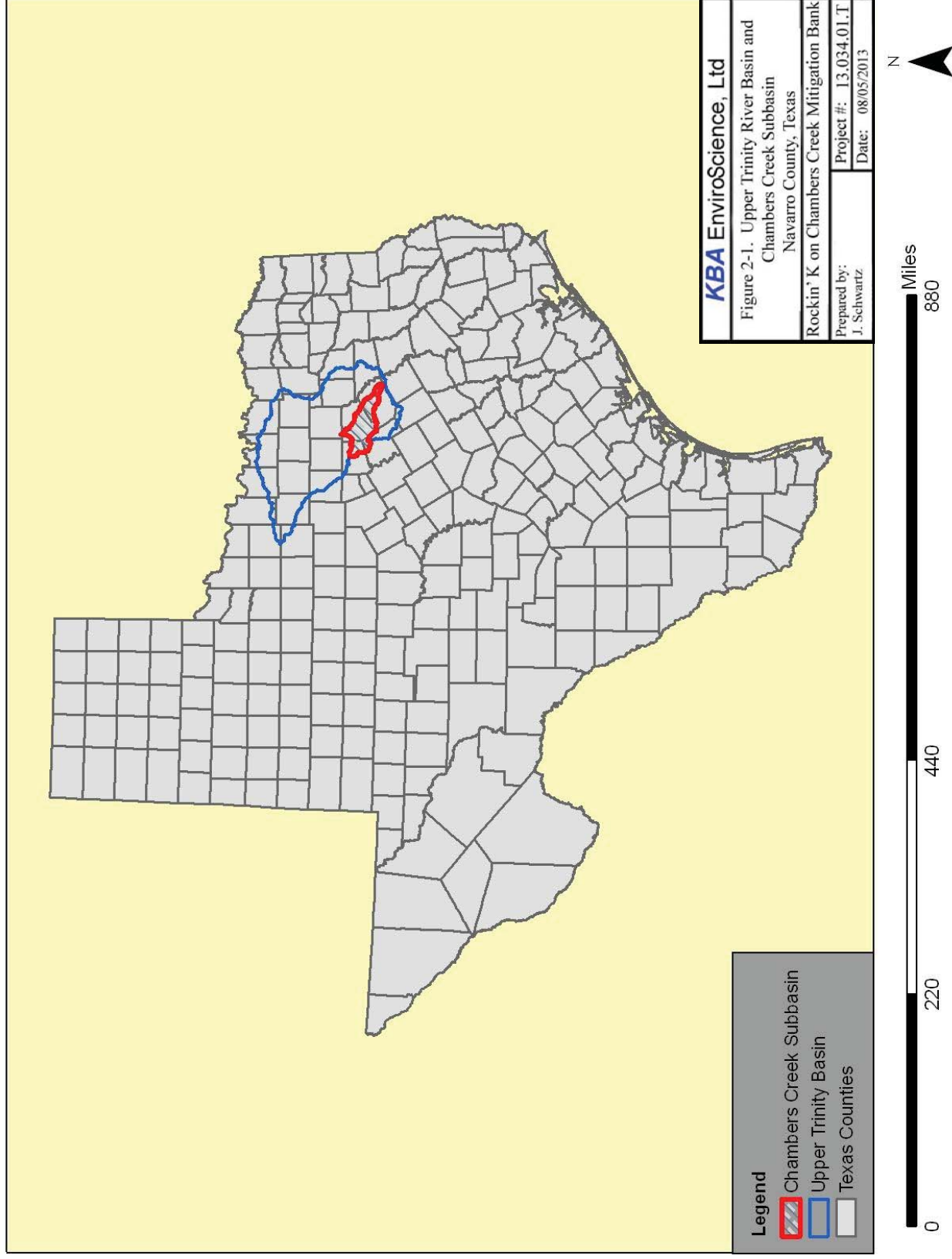
**Table 8-5. Criteria for Function-Based Performance Standards. Source: EPA 2012.**

Function/ Parameter	Metric/ Method	Performance Criteria		
		Functioning	Functioning-at-Risk	Not Functioning
Floodplain Connectivity	Bank Height Ratio	1.0 to 1.2	1.3 to 1.5	> 1.5
Bank Migration/Lateral Stability	Bank Pins	Erosion rate is similar to reference reach values, generally < 0.1 ft/yr.	0.1 to 0.5 ft/yr	>0.5 ft/yr
Riparian/Riverine Vegetation	Vegetation Density (stems per acre)	Similar to reference (120 stems/ac)	Deviates from reference but has potential for full functionality with moderate additional maintenance	Significantly less than reference condition; little or no potential to improve without significant restoration effort.
	Buffer Width <sup>a</sup>	Proposed vegetation established within 90% of TXRAM widths	Proposed vegetation established within 75% to 90% of TXRAM widths	Proposed vegetation established within < 75% of TXRAM widths

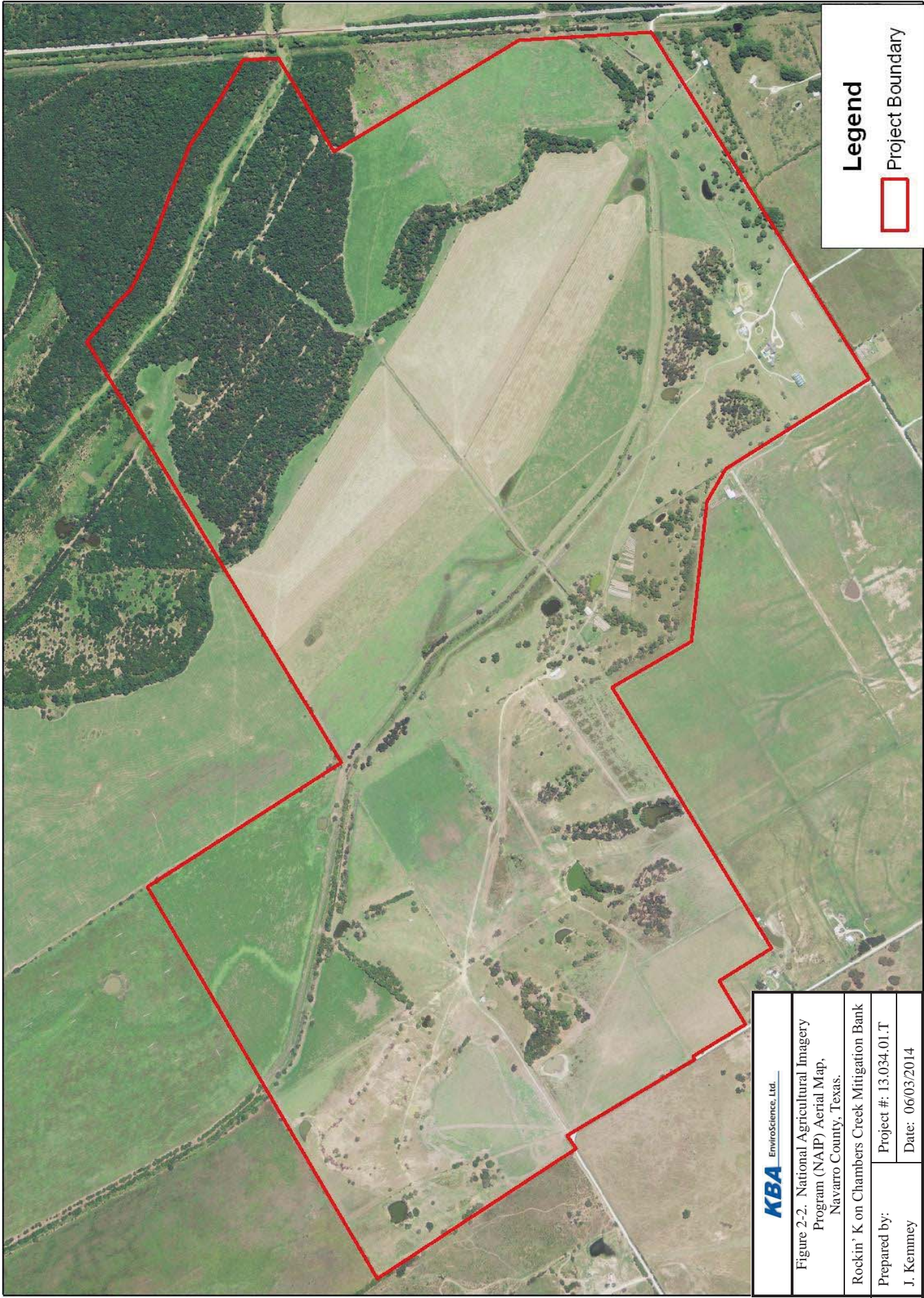
- a. Widths based on TXRAM riparian buffer assessment: 25 ft per buffer for ephemeral streams, 50 ft per buffer for intermittent streams, 100 ft per buffer for perennial streams.

## FIGURES

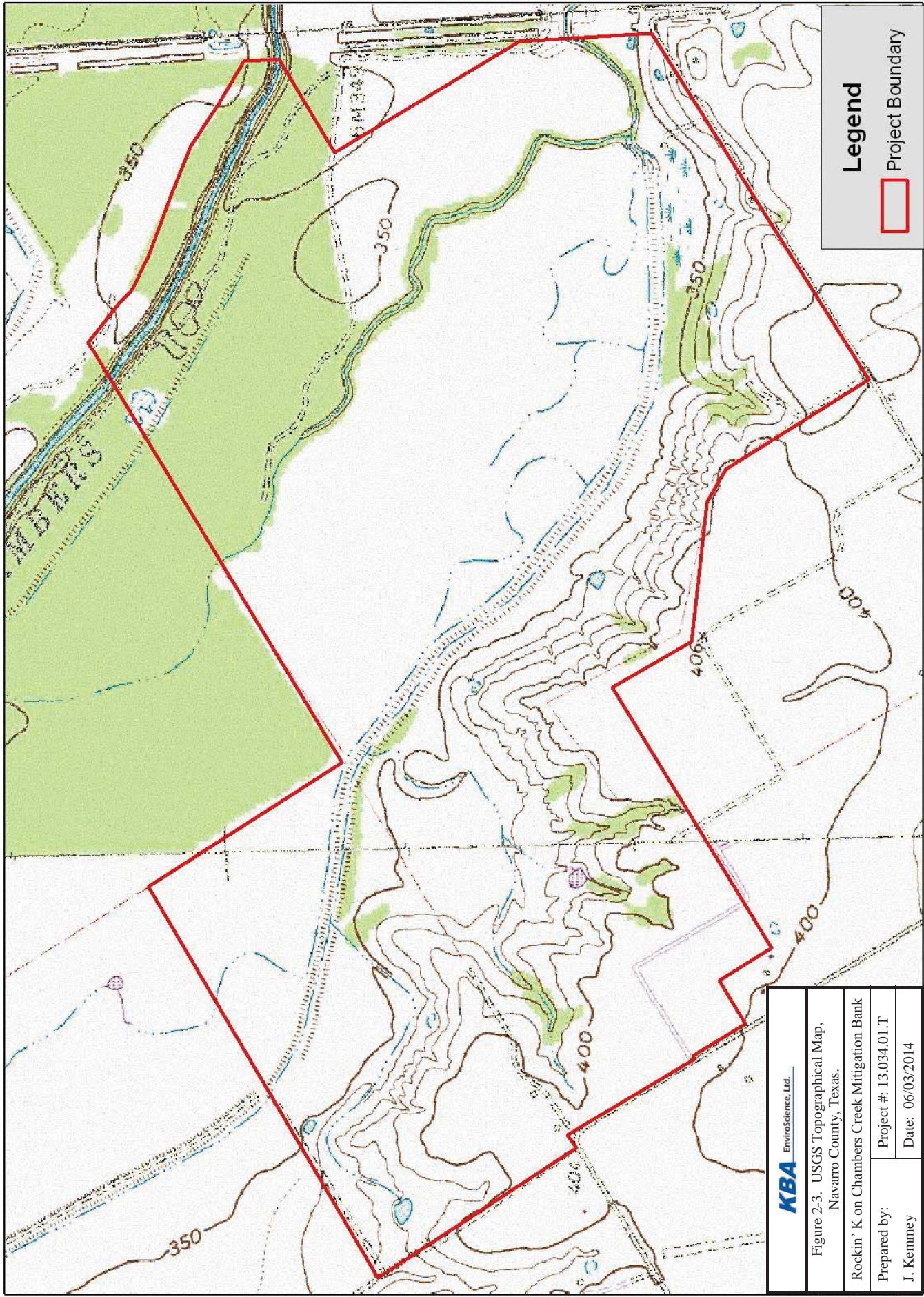












**KBA** EnviroScience, Ltd.

Figure 2-3. USGS Topographical Map,  
Navarro County, Texas.

Rockin' K on Chambers Creek Mitigation Bank

Prepared by: J. Kemmery

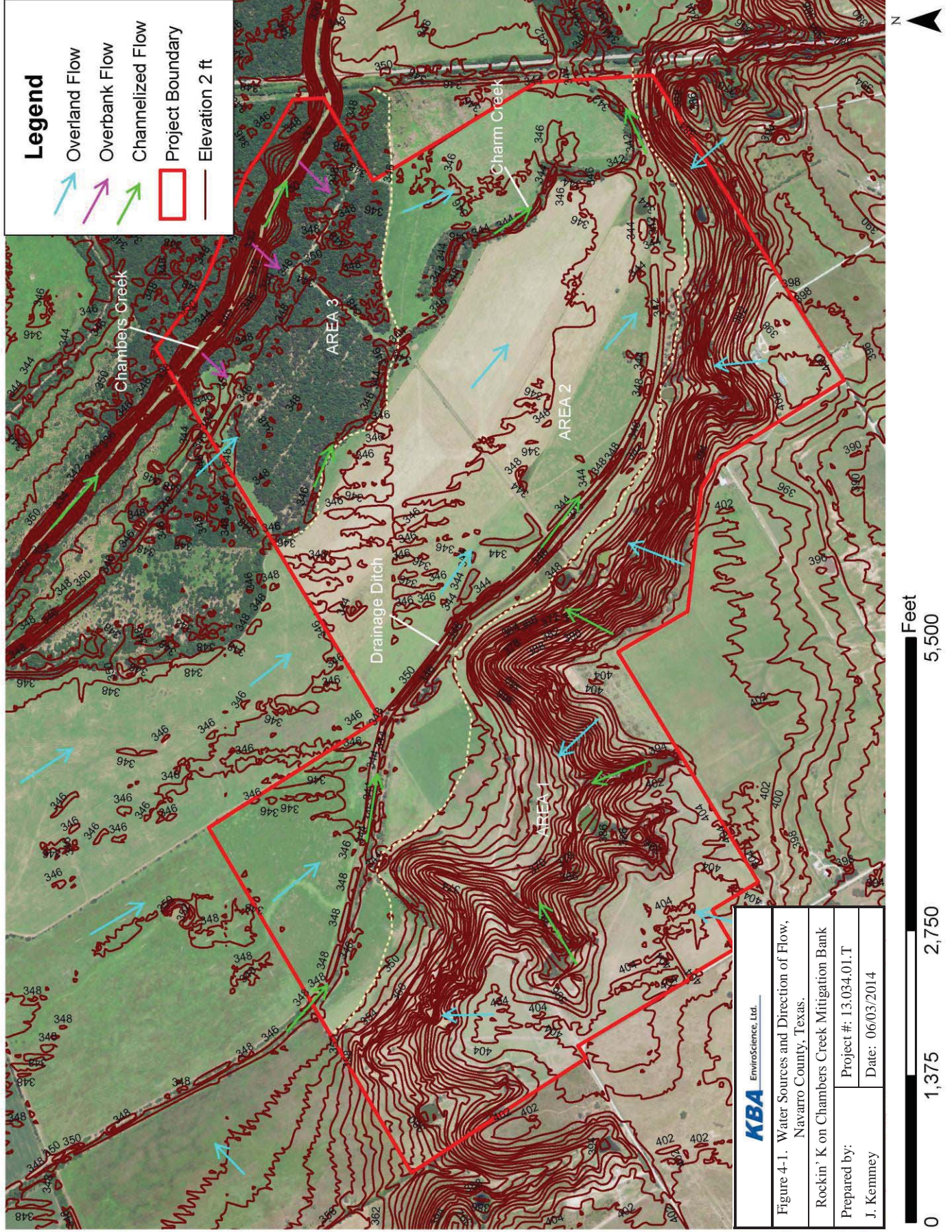
Project #: 13.034.01.T

Date: 06/03/2014

0 1,250 2,500 5,000 Feet



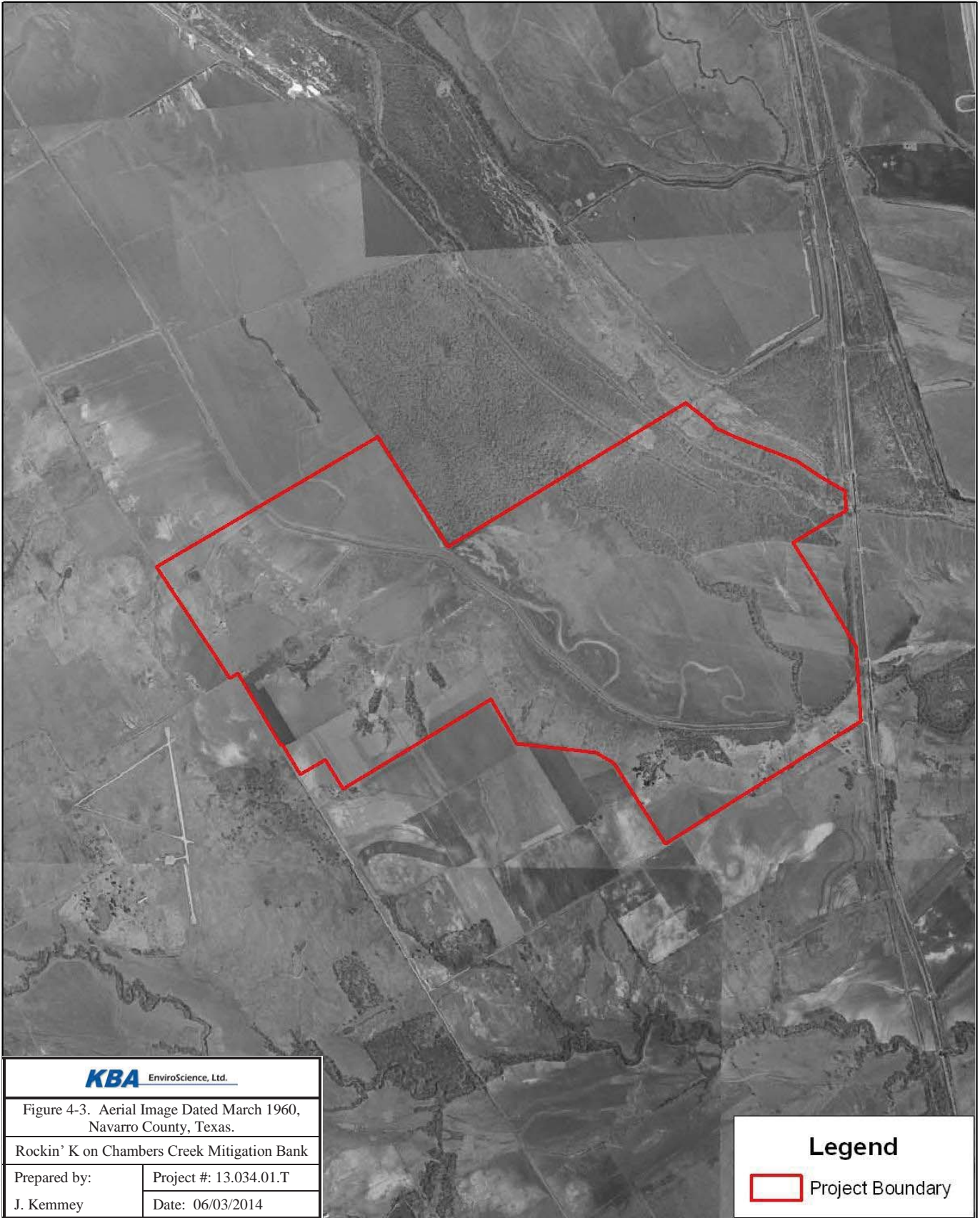




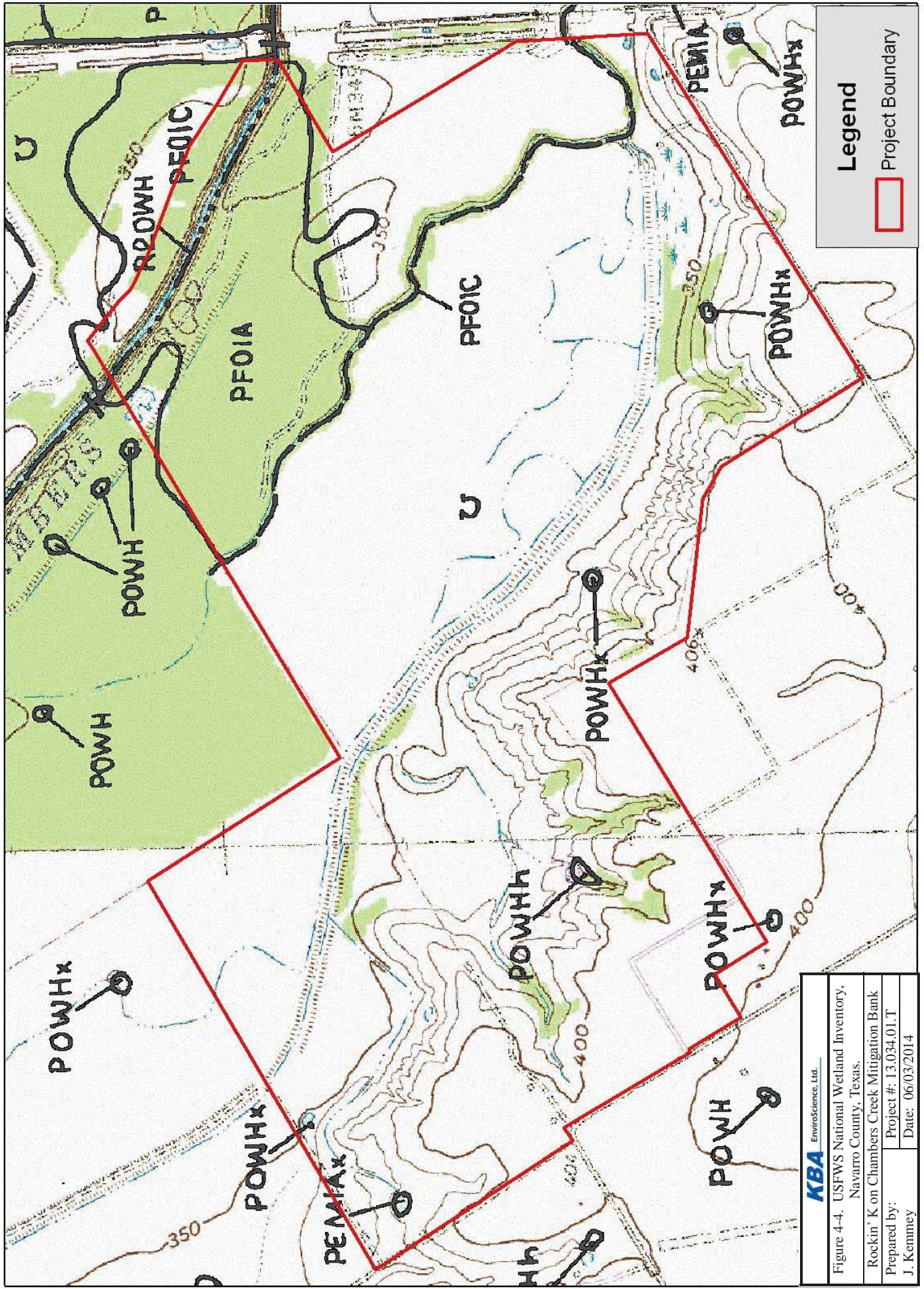




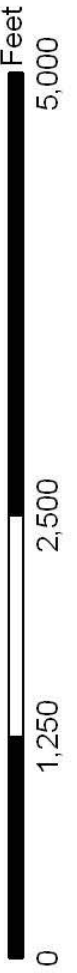








<b>KBA</b> EnviroScience, Ltd.	
Figure 4-4. USFWS National Wetland Inventory, Navarro County, Texas.	
Rockin' K on Chambers Creek Mitigation Bank	
Prepared by: J. Kemmey	Project #: 13.034.01.T
Date: 06/03/2014	

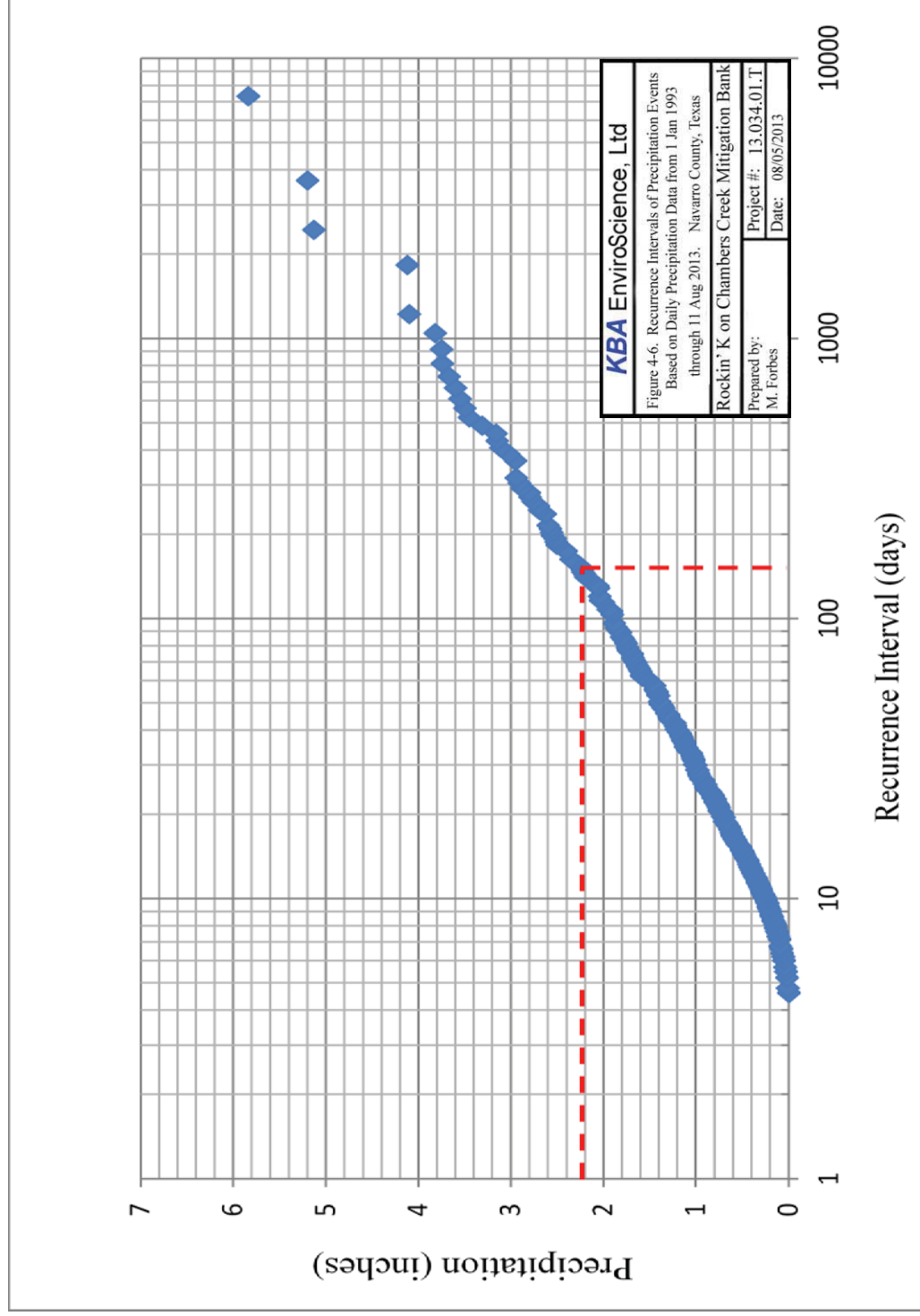




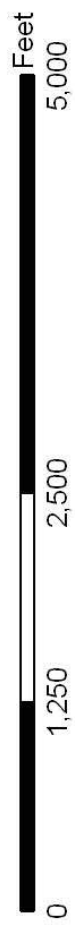
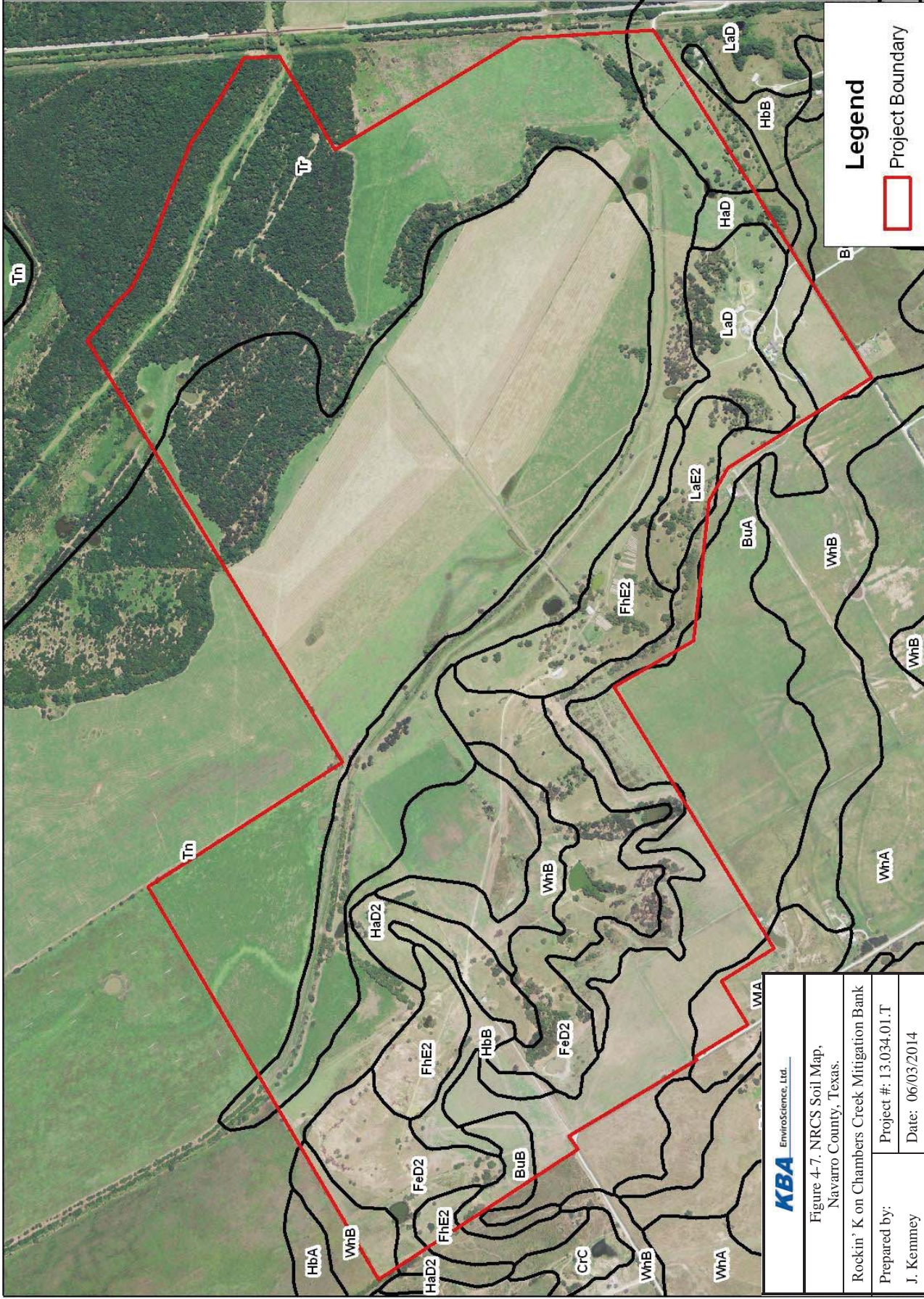


0 2,000 4,000 8,000 Feet

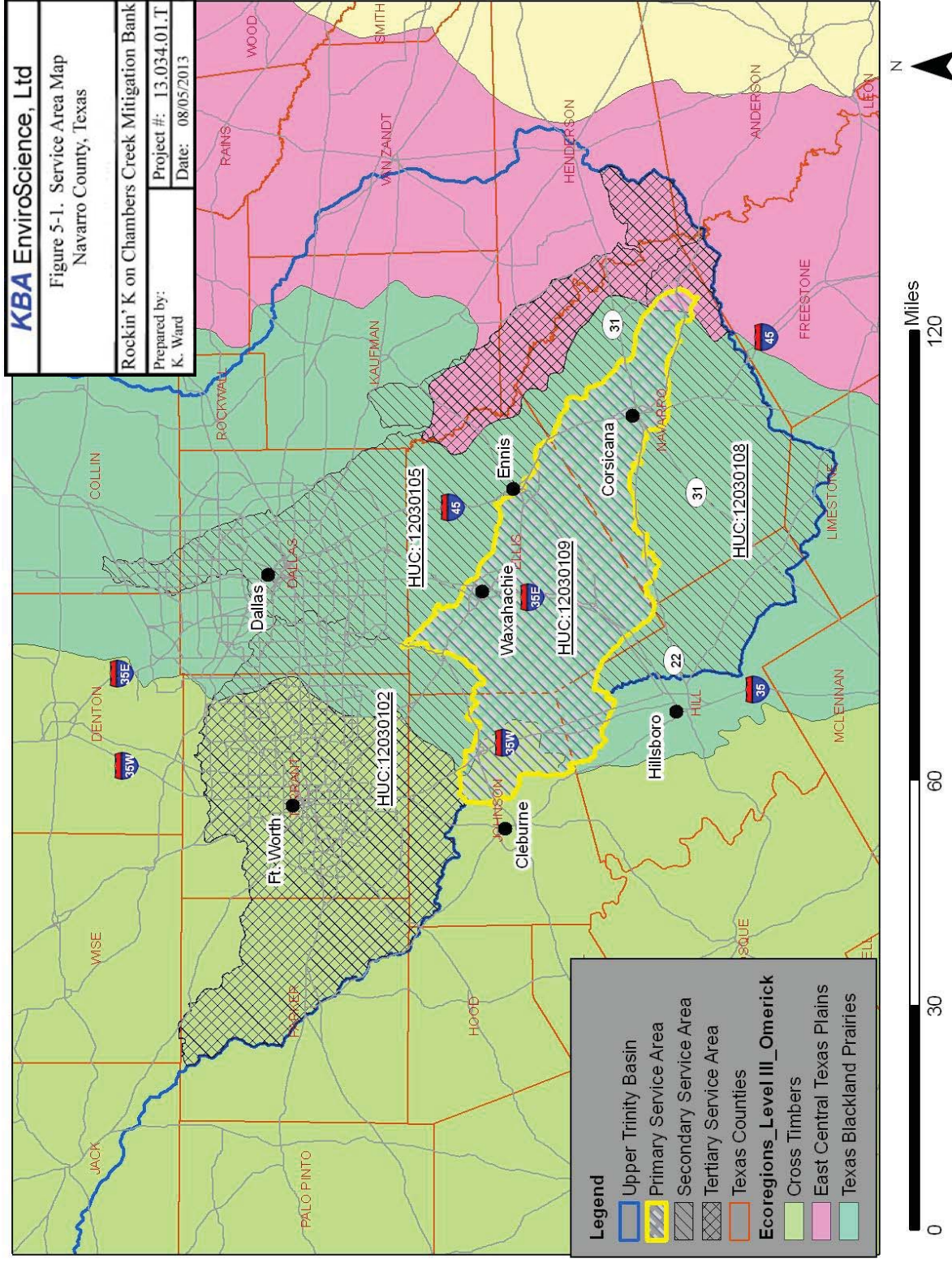




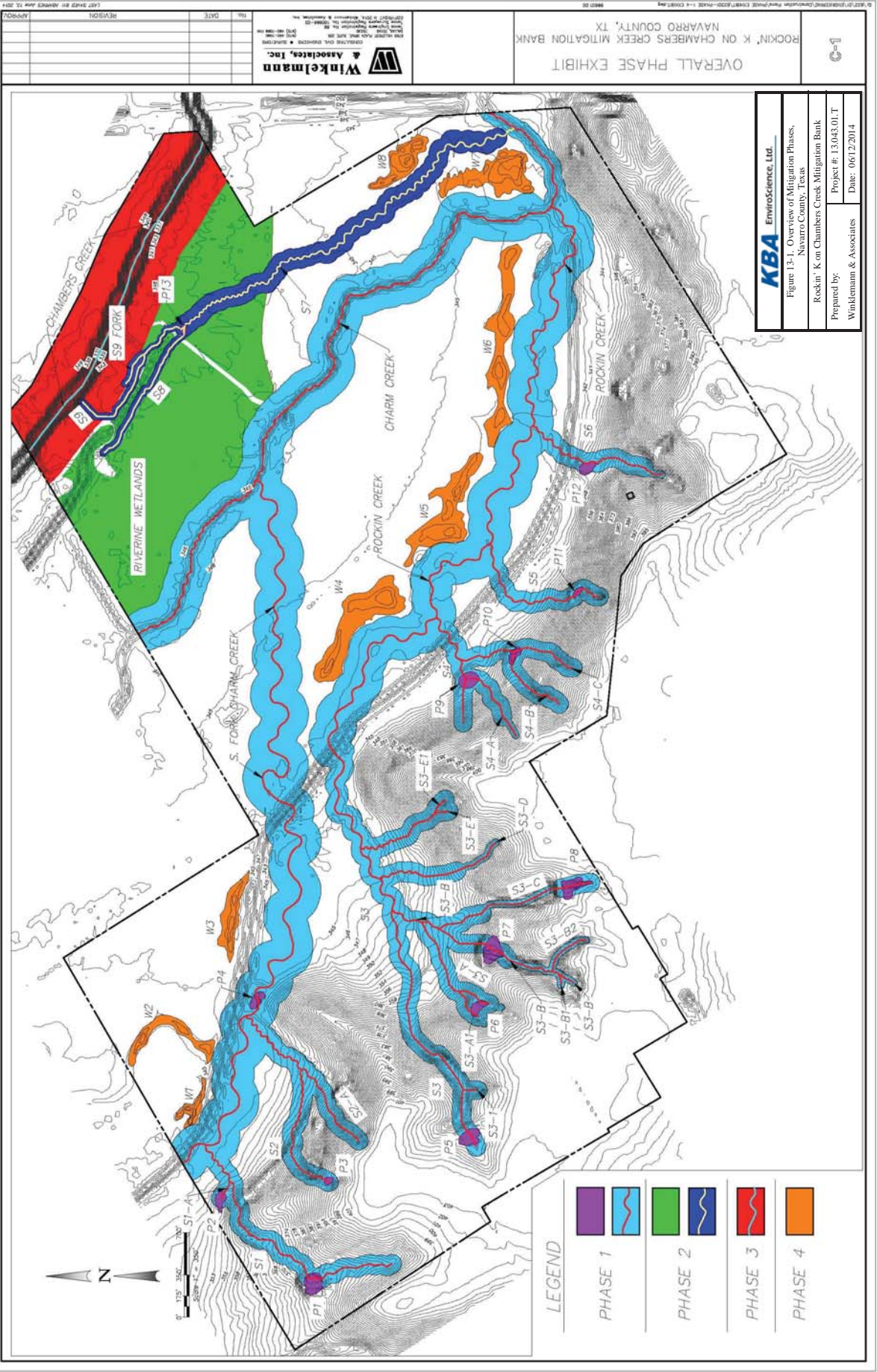










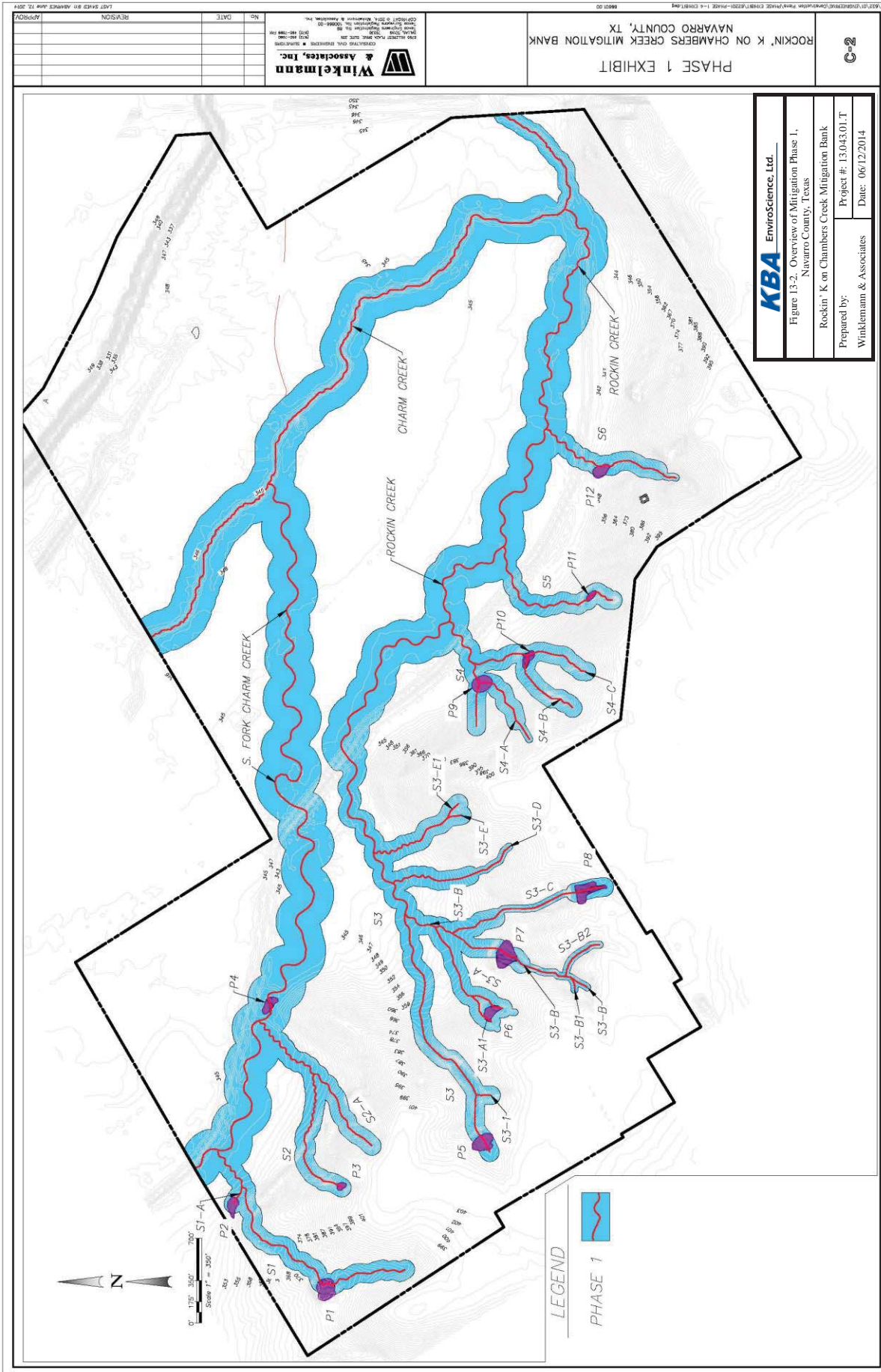


**KBA** EnviroScience, Ltd.  
 Figure 13-1 Overview of Mitigation Phases,  
 Navarro County, Texas  
 Rockin' K on Chambers Creek Mitigation Bank  
 Prepared by:  
 Winkelman & Associates  
 Date: 06/12/2014  
 Project #: 13.043.01.T

OVERALL PHASE EXHIBIT  
 ROCKIN' K ON CHAMBERS CREEK MITIGATION BANK  
 NAVARRO COUNTY, TX



REVISION	DATE	BY	APP'D



NO.	DATE	REVISION	APPROVAL

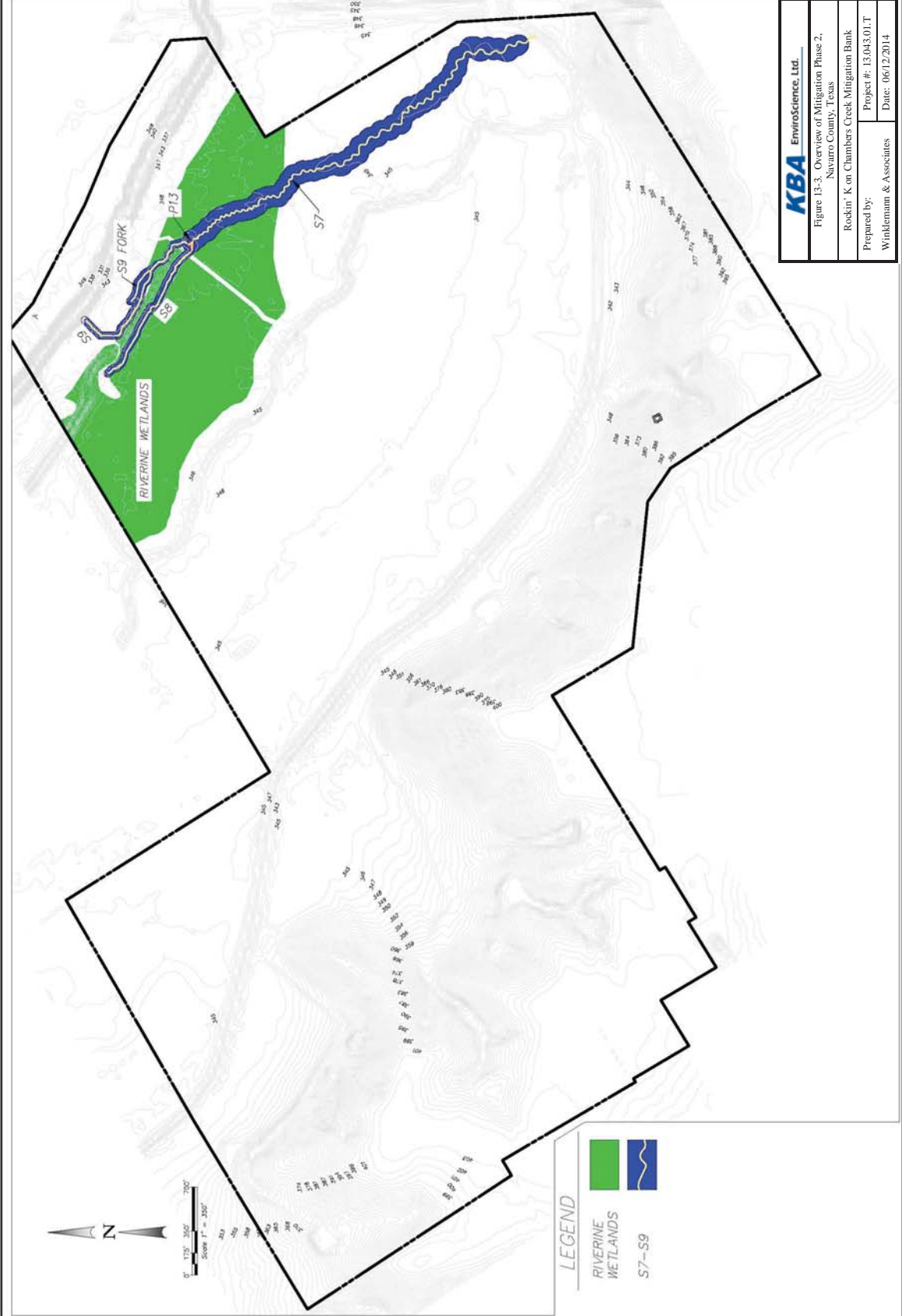


PHASE 1 EXHIBIT  
 ROCKIN' K ON CHAMBERS CREEK MITIGATION BANK  
 NAVARRO COUNTY, TX

C-2

<b>KBA</b> EnviroScience, Ltd.	
Figure 13-2. Overview of Mitigation Phase 1, Navarro County, Texas	
Rockin' K on Chambers Creek Mitigation Bank	
Prepared by:	Project #: 13043.01.T
Winkelmann & Associates	Date: 06/12/2014





LEGEND

- RIVERINE WETLANDS
- S7-S9

**KBA** EnviroScience, Ltd.

Figure 13-3. Overview of Mitigation Phase 2.  
Navarro County, Texas

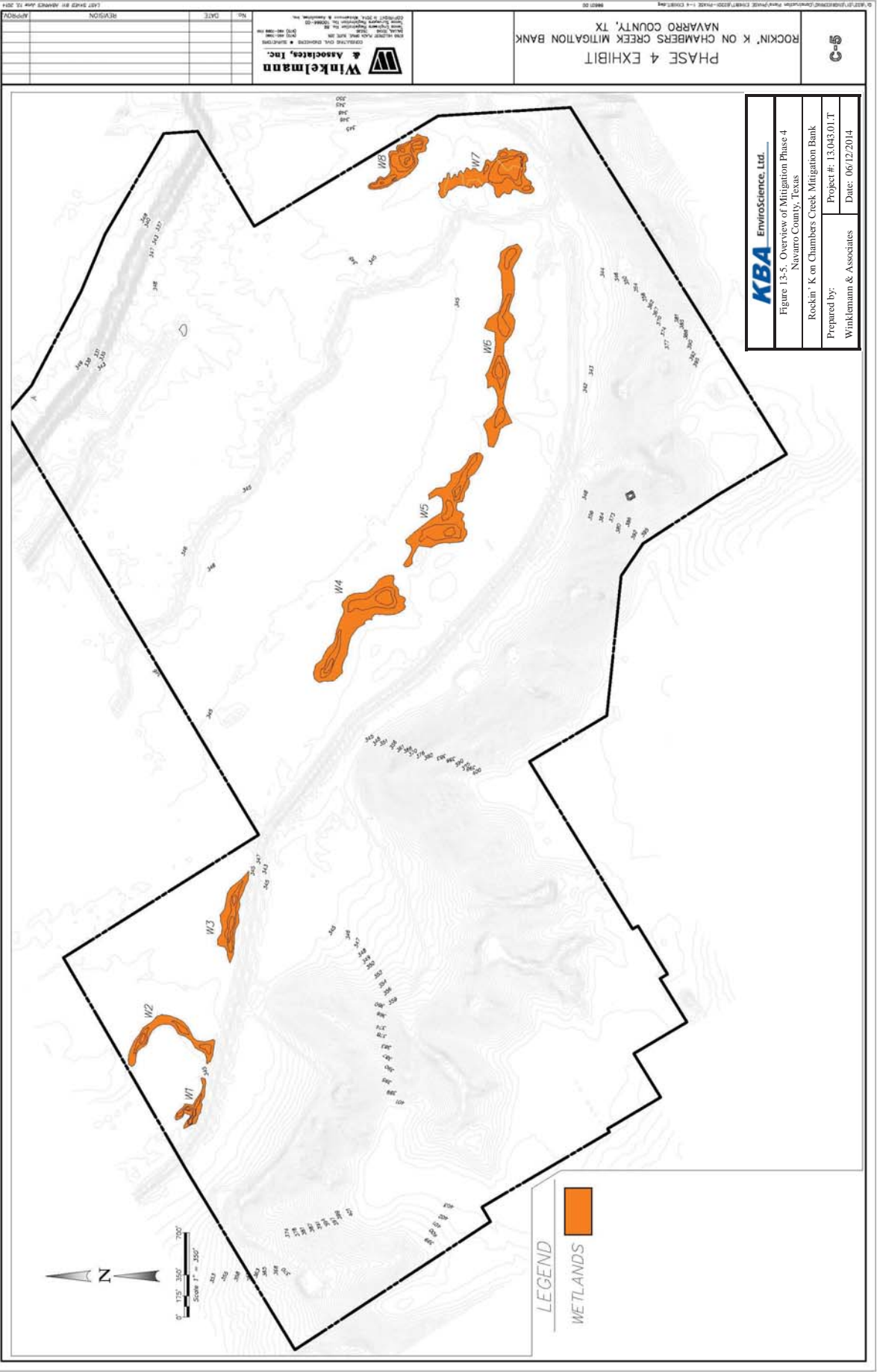
Rockin' K on Chambers Creek Mitigation Bank

Prepared by:  
Winkelman & Associates

Project #: 13.043.01.T

Date: 06/12/2014





## **Appendix A. Design Tables and Figures**

**Table A-1. Lengths and Drainage Areas of Streams, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Stream</b>	<b>Total Length (ft)</b>	<b>Drainage Area (ac)</b>
S1	2550	44
S2	1980	20
S2a	817	5.4
S3	4067	167
S3a	1440	20
S3b	2247	77
S3c	1357	20
S3d	1127	16
S3e	1071	10
S4	1047	53
S4a	702	5.0
S4b	1149	19
S4c	559	5.4
S5	1385	182
S6	1315	33
S7	4086	72
S8	1294	8.6
S9	1664	10.7
Rockin Creek	6586	547
South Fork Charm	7759	2760
Charm Creek	6981	7610
Chambers Creek	2990	520320

Table A-2. Geometry for Existing Conditions Streams, Rockin' K on Chambers Creek Mitigation Bank.

Feature	Waypt	Lat (UTM 14N)	Long	Left Top of Bank	Right Top of Bank	Right Bankfull HeightLbf	Left Bankfull HeightLbf	Centerline	Maximum Depth	Right Inner Berm	Left Inner Berm	Other	Width Bankfull	Width Prone Area	Slope	Area Bankfull (ft2)	Depth mean (ft)	W:D	Entrenchment Ratio	Whole Stream Sinuosity	Class	NOTES
Chambers (west)		737035	3561842	20.0	20.0	3.00	3.00	0.00	3.00				35.0	75.0	0.0006	96	2.74	13	2.1	1.03	F6	cross-sections for
Chambers (mid)		737351	3561680	16.5	16.5	3.50	3.50	0.00	3.50				45.0	75.0	0.0005	145	3.23	14	1.7	1.03	F6	Chambers from
Chambers (east)		373567	3561561	18.0	18.5	1.50	1.50	0.00	1.50				55.0	65.0	0.0006	80	1.46	38	1.2	1.03	F6	0.5-ft lidar contours
Charm (west)	25	736489	3561586	4.87	4.35	1.50	1.52	0.00	1.50	2.02	2.22		16.8	28.0	0.0023	23	1.37	12	1.7	1.27	C6c	
Charm (center)	26	736929	3561359	4.50	4.84	2.21	2.30	0.00	2.21				30.0	57.5	0.0006	61	2.05	15	1.9	1.27	C6c	
Charm (abv conf)	27	737523	3560652	4.17	3.57	4.17	3.57	0.00	3.57				41.5	100.0	0.0004	135	3.26	13	2.4	1.27	N/A	grassy swale
Charm (lower)	28	737683	3560659	4.71	4.96	3.46	3.46	0.00	3.46			0.92,0.59	45.0	100.0	0.0042	144	3.19	14	2.2	1.27	C6c	Left/right toe of bank
Charm (east end)	29	737799	3560787	3.92	4.83	2.90	2.96	0.00	2.90			0.96,0.08	42.2	100.0	0.0021	114	2.70	16	2.4	1.27	C6c	Left/right toe of bank
Ditch	17	736438	3560878	5.08	4.46	1.29	1.30	0.00	1.29				25.0	45.0	0.0040	31	1.22	20	1.8	N/A	N/A	man-made channel
Ditch	3	735172	3561513	7.15	2.63	7.15	2.63	0.00	2.63				83.1	200.0	0.0041	212	2.55	33	2.4	N/A	N/A	man-made channel
S1up	2	734922	3561345	3.54	4.52	3.54	4.52	0.00	3.54				42.0	100.0	0.0271	136	3.24	13	2.4	N/A	N/A	grassy swale
S2up	4	735087	3561228	9.52	7.77	2.30	2.30	0.00	2.30				19.6	32.5	0.11	40	2.03	10	1.7	1.08	A6a+	grassy swale-some erosion
S2dn	6	735369	3561231	4.46	3.60	4.46	3.60	0.00	3.60				19.2	100.0	0.02	56	2.92	6.6	5.2	N/A	N/A	grassy swale
S2a	9	735204	3561146	5.70	7.08	1.25	1.37	0.00	1.25	2.04	2.45		13.2	68.5	0.16	15	1.13	12	5.2	1.06	A6a+	above pond
S3up	8	735392	3560908	4.00	3.50	1.91	2.25	0.00	1.91	3.25	6.33		4.5	62.0	0.01	5	1.10	4.1	13.8	1.12	E6	
S3b	10	735675	3560835	2.58	2.58	0.90	1.23	0.00	0.90				23.0	34.5	0.03	20	0.86	27	1.5	N/A	N/A	grassy swale
S3c	11	735763	3560749	9.80	4.00	3.89	1.91	0.00	1.91			0.62	15.0	39.0	0.03	25	1.67	9.0	2.6	1.04	E6b	right toe of bank
S3d	12	735849	3560897	2.25	4.71	1.89	1.87	0.00	1.87				8.0	34.5	0.03	11	1.43	5.6	4.3	1.07	G6	
S3e	13	736005	3560910	5.21	4.79	5.21	4.79	0.00	4.79	3.40	3.20		12.0	46.0	0.06	35	2.88	4.2	3.8	1.06	N/A	grassy swale
S4a	16	736271	3560759	0.61	0.79	0.61	0.79	0.00	0.61				9.0	100.0	0.06	5	0.57	16	1.1	1.01	N/A	grassy swale
S4b	18	736310	3560675	5.33	3.77	2.21	2.23	0.00	2.21	3.88	2.52		46.0	100.0	0.02	97	2.10	22	2.2	1.03	G6	
S5up	19	736522	3560514	12.53	15.70	3.20	3.70	0.00	3.20			8.00	12.0	34.0	0.06	28	2.35	5.1	2.8	1.12	A6	width bottom of channel
S6up	21	736850	3560385	5.75	5.94	0.96	0.96	0.00	0.96				9.8	20.0	0.03	8	0.87	11	2.0	1.06	G6	
S8	33	737177	3561594	2.92	3	2.92	3	0.00	2.92			1.06,0.6	15.0	100.0	0.002	35	2.35	6.4	6.7	1.07	E6	Left/right toe of bank
S9	34	737194	3561620	3.5	6.75	1.5	1.91	0.00	1.50	1.09	1.36	4.46	13.0	33.0	0.01	17	1.33	9.8	2.5	1.14	E6	2nd RIB-4.46
REF2 (Cummins)	REF2	735214	3566335	11.00	9.54	2.67	2.08	0.00	2.08	4.31	2.12		17.0	25.0	0.003	31	1.83	9.3	1.5	1.81	E6	
REF3 (Emhouse)	REF3	726873	3563984	3.50	4.79	2.91	2.41	0.00	2.41			0.08	11.6	100.0	0.001	22	1.91	6.1	8.6	1.35	E6	rt toe of bank
REF4 (S3b)		735585	3560592	4.50	7.50	1.00	1.00	0.00	1.00	1.75	1.40		3.8	41.4	0.03	2.8	0.74	5.2	11	1.12	G6	

Note:  
values of 100 or 200 for Wfp represent reaches where 2Dmax>>Top of Bank



**Table A-3. Stream Assessment Summary, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Stream</b>	<b>Rosgen Type</b>	<b>Impairment</b>	<b>Magnitude</b>	<b>Causes</b>	<b>Method Used to Determine Bankfull Discharge</b>
Chambers Creek	F6	Incised, overwidened, excessive sedimentation, bank erosion	Severe	Channelization, artificial drainage patterns in watershed	USGS Gage at Rice No in-channel work is proposed for this stream.
Charm Creek	C6	Altered hydrology – insufficient flow	Moderate	Changes in drainage patterns in watershed, diversion of flows to Chambers	Regional curve from Dutnell
S3, S3b, S3c, S3d, S4b, S4c, S5	Upper: G6	Eroded banks	Moderate	Debris contributed to scouring	Rational Runoff Method 1.5-year event
	Lower G6c	Debris pushed in channel	Moderate	Use of streams as brush receptacles	
		Altered hydrology	Moderate	In-stream stock tanks withhold runoff	
		Degraded watershed	Moderate	Ag land use	
S8, S9	E6	Altered hydrology,	Low	Orphaned from periodic overbank flow of Chambers.	Rational Runoff Method 1.5-year event. However, no-in channel work is proposed for these streams.
		Lowering of water table Degraded watershed	Moderate Low	Lowering of Chamber Ag land use	



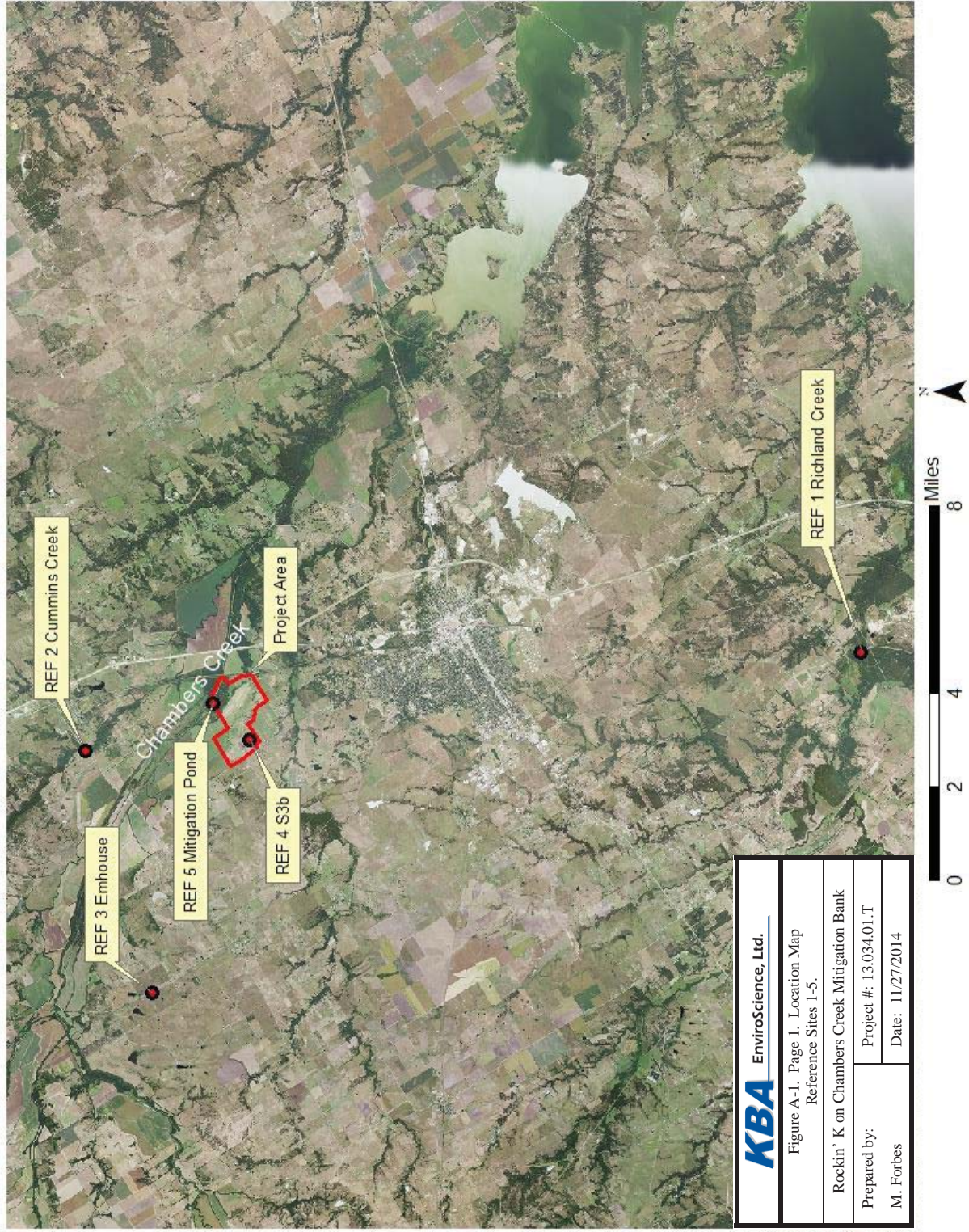
Table A-5. Existing Design and Reference Stream Morphological Data - Reference 4, Rockin' K on Chambers Creek Mitigation Bank.

Parameter Group No.	EPHEMERAL ENHANCEMENT - UPPER REACHES										EPH RESTORATION - UPPER REACHES										Reference Stream		
	Existing Stream			Design Stream			Existing Stream				Design Stream				Design Stream				Max 4				
	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max								
S3-U, S3b-U, S3c-U, S3d-U, S6-U G6												S4b-U, S4c-U, S5-U G6				S1-U A6/G6/G6c				S2-U, S2a-U, S3a-U, S3e-U, S4-U, S4a-U A6/G6			
9.8	12.8	33.5	9.6	14.9	31	3.8	5.4	8.9	5.4	8.1	13.9	17.0	33.0	36.0	2.8	5.0	9.3	5.0	9.3	REF 4 G6			
0.7	1.3	1.7	0.8	1.1	1.3	2.1	2.2	2.3	0.6	0.8	0.9	0.9	1.4	1.5	0.4	0.6	0.8	0.6	0.8				
3.8	6.3	15	4.0	5.6	6.9	12	29	46	3.4	3.9	4.8	4.9	7.1	7.9	2.2	3.1	3.9	3.1	3.9				
4.1	5.4	9.0	5.0	5.1	5.3	5.1	13.5	21.9	5.7	4.9	5.3	5.4	5.1	5.3	5.5	5.2	4.9	5.2	4.9				
2.8	8.2	25	3.1	5.1	9.4	28.2	62.5	96.8	2.2	3.2	4.6	4.5	9.8	11.9	1.1	1.9	3.1	1.1	1.9	3.1			
1.0	1.9	1.9	1.0	1.3	1.6	2.2	2.7	3.2	0.7	1.0	1.1	1.1	1.1	1.7	1.8	0.5	0.7	1.0	0.9	1.0			
1.4	1.5	1.1	1.2	1.2	1.2	1.0	1.2	1.4	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3			
			1.2	1.7	2.0	---	---	---	---	---	---	---	0.9	1.2	1.4	2.1	2.3	0.6	0.9	1.2			
			1.5	1.5	1.5	---	---	---	---	---	---	---	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5			
			1.3	2.2	6.2	---	---	---	---	---	---	---	1.3	2.2	6.2	---	---	---	1.3	2.2			
			0.3	0.4	0.90	---	---	---	---	---	---	---	0.4	0.6	1.29	---	---	---	0.6	0.7			
			1.2	3.8	23	---	---	---	---	---	---	---	1.2	3.8	23	---	---	---	1.2	3.8			
			0.4	0.7	2.4	---	---	---	---	---	---	---	0.5	1.2	5.0	---	---	---	1.1	2.0			
			1.4	2.0	2.4	---	---	---	---	---	---	---	1.1	1.4	1.6	---	---	---	0.7	1.1			
			1.2	1.2	1.2	---	---	---	---	---	---	---	1.2	1.2	1.2	---	---	---	1.2	1.2			
	1.0	1.9	2.3	0.9	1.2	1.4	2.2	2.7	3.2	0.7	0.9	1.0	1.0	1.6	1.7	0.4	0.7	0.9	0.8	0.9			
	1.4	1.5	1.4	1.1	1.1	1.1	1.0	1.2	1.4	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1			
	34	40	62	44	61.6	75.9	34	67	100	8	9	11	54	78	87	24	34	43	34	43			
	8.9	6.3	4.1	11.0	11.0	11.0	2.8	2.3	2.2	2	2	2	11	11	11	11	11	11	11	11			
	13.3	19.2	51	13	21	38	4.9	8.8	14.6	8.8	12.8	18.2	17	39	48	4.4	7.5	12	7.5	12			
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	5	12	36	3	8	42	5	8	14	3	8	42	11	13	15	3	8	42	3	8			
	1	1.9	2.4	1	1.4	6.1	0	0.3	0.3	0.9	2.1	8.8	2.2	1.8	1.9	1.4	2.6	10.8	2.6	10.8			
	251	328	563	251	328	563	209	334	406	209	334	406	150	290	500	169	211	318	169	211			
	247	310	520	247	310	520	180	240	297	180	240	297	148	265	408	161	207	285	161	207			
	0.03	0.03	0.05	0.03	0.03	0.05	0.06	0.07	0.08	0.06	0.07	0.08	0.01	0.02	0.06	0.05	0.07	0.08	0.05	0.07			
	1.02	1.04	1.07	1.02	1.04	1.07	1.1	1.1	1.7	1.1	1.1	1.7	1.01	1.1	1.23	1.01	1.04	1.1	1.01	1.04			
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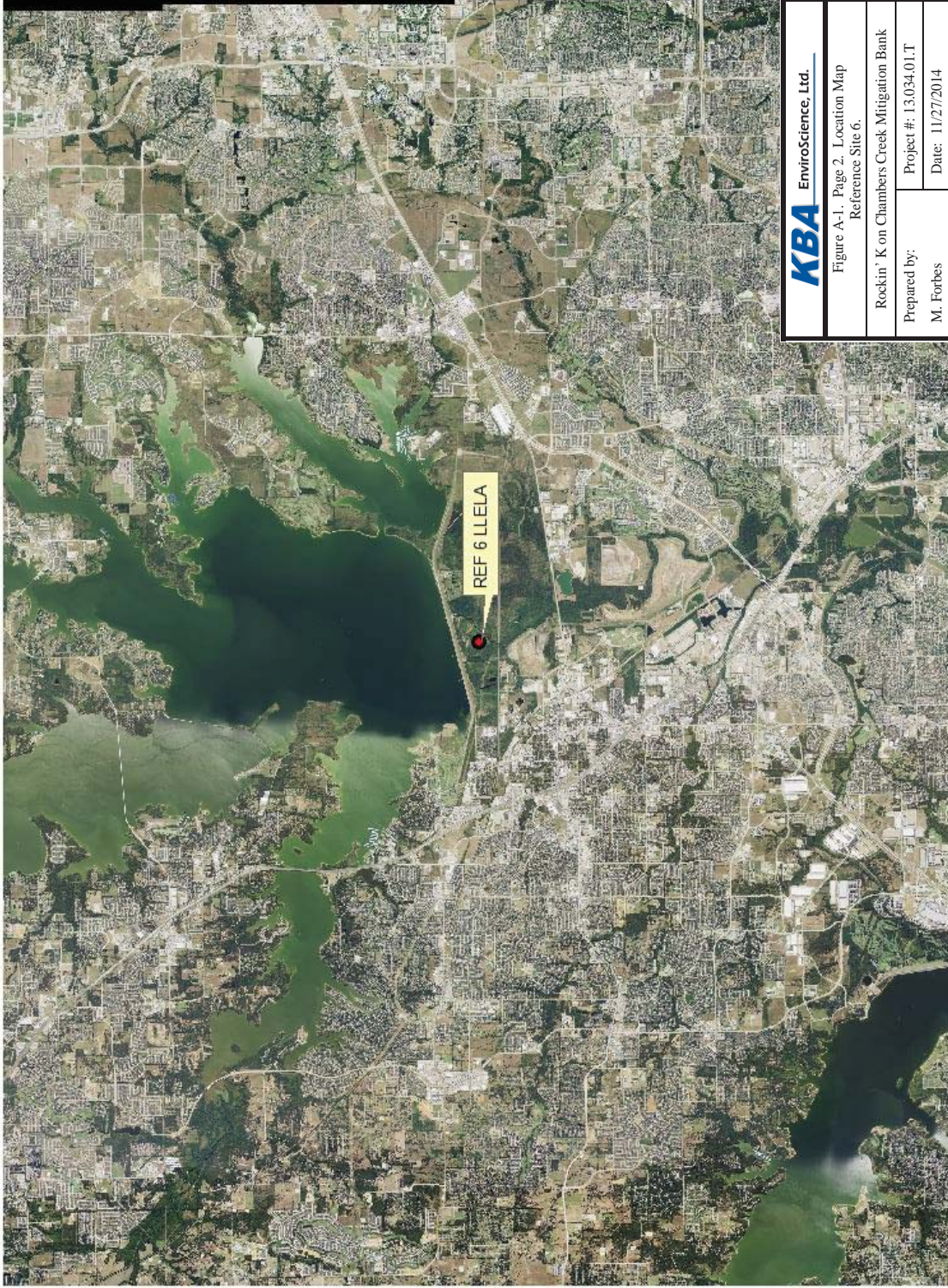
Table A-6. Existing Design and Reference Stream Morphological Data Table - Reference 3, Rockin' K on Chambers Creek Mitigation Bank.

Parameter	Design Stream			Design Stream			Design Stream			Design Stream			Reference Stream
	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	
Group No.	5			6			S7			Rockin Creek			REF 3
Stream name	S3-D			S3a-D, S3b-D, S3c-D, S3d-D, S3e-D, S4-D, S5-D, S6-D			E6 w/o K			E6 w/o K			E6 w/o K
Stream type	G6c/E6			G6/G6c/E6			E6 w/o K			E6 w/o K			E6 w/o K
Drainage area (ac)	43	141	162	9.2	18	56	15	35	68	190	319	530	2710
Mean riffle DEPTH (ft)	1.3	2.2	2.6	0.7	0.9	1.6	0.7	0.8	0.8	2.0	2.2	2.4	3.7
Riffle WIDTH (ft)	8	14	16.0	4.0	5.4	9.6	4.4	4.8	5.0	12	13	15	23.0
Width-to-depth ratio	6.2	6.4	6.2	5.7	6.0	6.0	6.3	6.0	6.3	6.0	5.9	6.3	6.2
Riffle cross-section area (sq ft)	10	30	41.0	2.6	4.6	15	3.2	3.8	4.2	25	29	36	81.0
Max riffle depth (ft) Dmax Eph	1.6	2.8	3.3	0.9	1.1	2.0	0.9	1.0	1.0	2.5	2.8	3.0	4.7
Max riffle depth ratio	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
Mean pool depth (ft)	2.6	4.4	5.2	0.9	1.1	2.0	0.9	1.0	1.0	2.5	2.8	3.0	4.7
Mean pool depth ratio	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Pool width (ft)	5.0	9.0	11.0	2.8	3.7	6.7	3.1	3.4	3.5	8.7	9.4	10.3	15.4
Pool width ratio	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Pool cross-section area (sq ft)	17.0	51.0	69.0	4.5	7.7	26	5.5	6.5	7.1	43	50	61	90.0
Pool area ratio	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Max pool depth (ft)	2.3	4.0	4.7	1.3	1.6	2.9	1.3	1.4	1.4	3.6	4.0	4.3	6.7
Max pool depth ratio	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Low bank height (ft)	1.6	2.8	3.3	0.9	1.1	2.0	0.9	1.0	1.0	2.5	2.8	3.0	4.7
Low bank ht ratio	1.3	1.3	1.3	1.3	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Width flood-prone area (ft)	34	60	69	17	23	41	19	21	22	52	56	65	99
Enrichment ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Bankfull discharge (cfs)	40	120	163	11	19	61	13	15	17	100	117	142	324
Meander length (ft)	78	162	221	40	62	135	44	58	70	124	160	206	319
Meander length ratio	10	12	14	10	11	14	10	12	14	10.3	12.3	13.7	10.1
Radius of curvature (ft)	18	31	36	9	12	22	10.0	11.0	12.0	28	31	34	51
Radius of curvature ratio	2.3	2.2	2.3	2.3	2.2	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3
Belt width (ft)	29	50	87	15	24	40	24	27	28	68	73	81	122
Meander width ratio	3.6	3.6	5.4	3.8	4.4	4.2	5.5	5.6	5.6	5.7	5.6	5.4	5.4
Pool length (ft)	10.3	18.1	20.7	5.2	7.0	12.4	5.7	6.2	6.5	15.5	16.8	19.4	28.4
Pool length ratio	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Pool-to-pool spacing (ft)	27	50	63	14	19	39	16	18	20	43	50	59	78
Pool-to-pool spacing ratio	3.4	3.6	3.9	3.5	3.5	4.1	3.6	3.8	4.0	3.6	3.8	3.9	3.5
Stream (reach) length (ft)	56	374	853	241	475	730	76	943	1775	105	1278	2284	105
Valley length (ft)	54	307	657	230	427	580	59	746	1390	102	976	1557	102
Valley slope	0.001	0.008	0.009	0.003	0.017	0.029	0.0003	0.0010	0.0040	0.0002	0.0003	0.0025	0.0001
Sinuosity (K)	1.04	1.07	1.30	1.03	1.19	1.26	1.26	1.27	1.29	1.03	1.03	1.24	1.03
Riffle length (ft)	22	39	44	11	15	26	12	13	14	33	36	41	61
Riffle length ratio	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8









**KBA** EnviroScience, Ltd.

Figure A-1, Page 2, Location Map  
Reference Site 6.

Rockin' K on Chambers Creek Mitigation Bank

Prepared by:  
M. Forbes

Project #: 13,034.01.T  
Date: 11/27/2014





**KBA** EnviroScience, Ltd.

Figure A-1. Page 3.  
Plan View Reference Site 1.

Rockin' K on Chambers Creek Mitigation Bank

Prepared by:

M. Forbes

Project #: 13.034.01.T

Date: 11/27/2014









<b>KBA</b> EnviroScience, Ltd.	
Figure A-1. Page 6. Plan View Reference Site 4.	
Rockin' K on Chambers Creek Mitigation Bank	
Prepared by:	Project #: 13.034.01.T
M. Forbes	Date: 11/27/2014



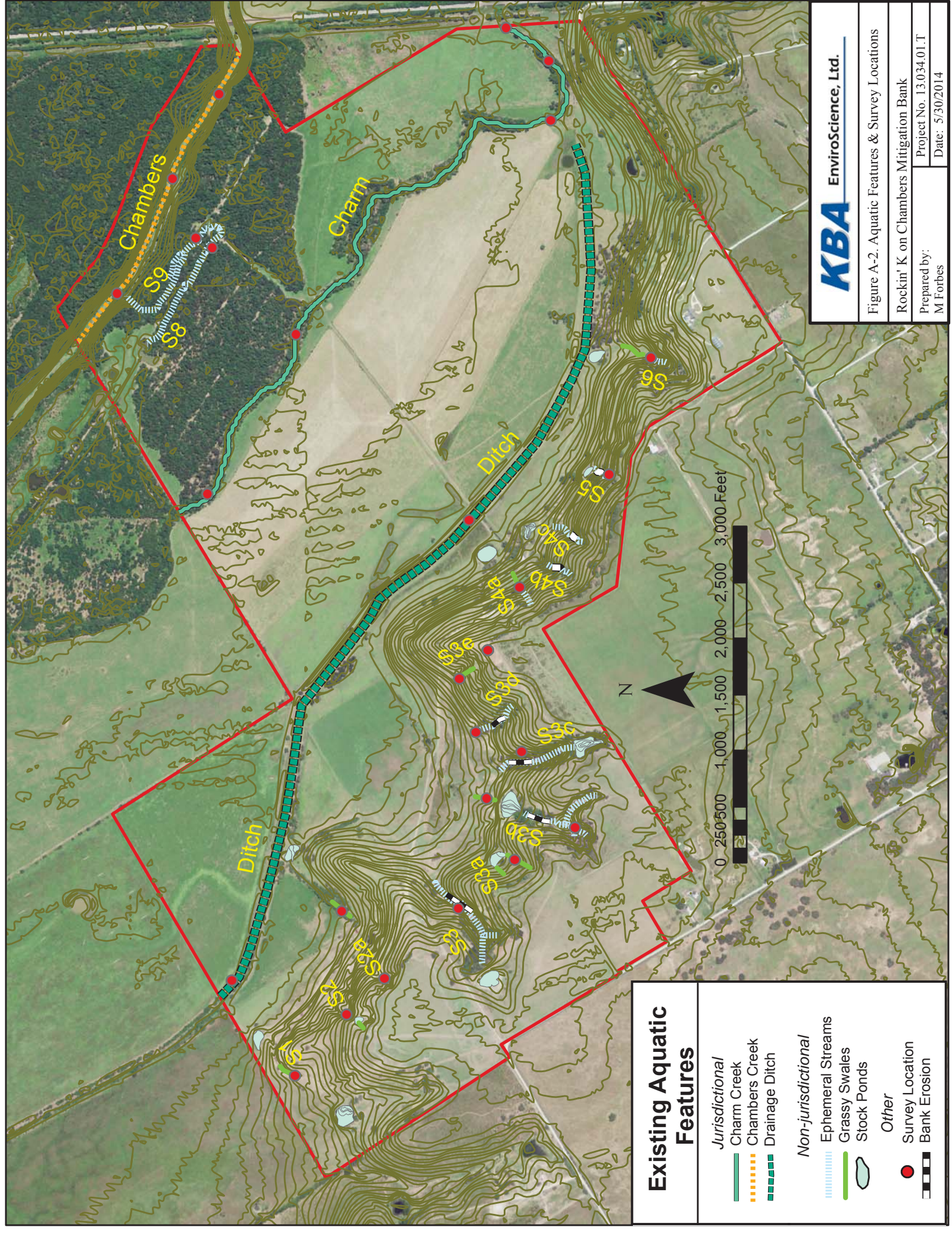












### Existing Aquatic Features

- |                       |                           |                 |
|-----------------------|---------------------------|-----------------|
| <b>Jurisdictional</b> | <b>Non-jurisdictional</b> | <b>Other</b>    |
| Charm Creek           | Ephemeral Streams         | Survey Location |
| Chambers Creek        | Grassy Swales             | Bank Erosion    |
| Drainage Ditch        | Stock Ponds               |                 |



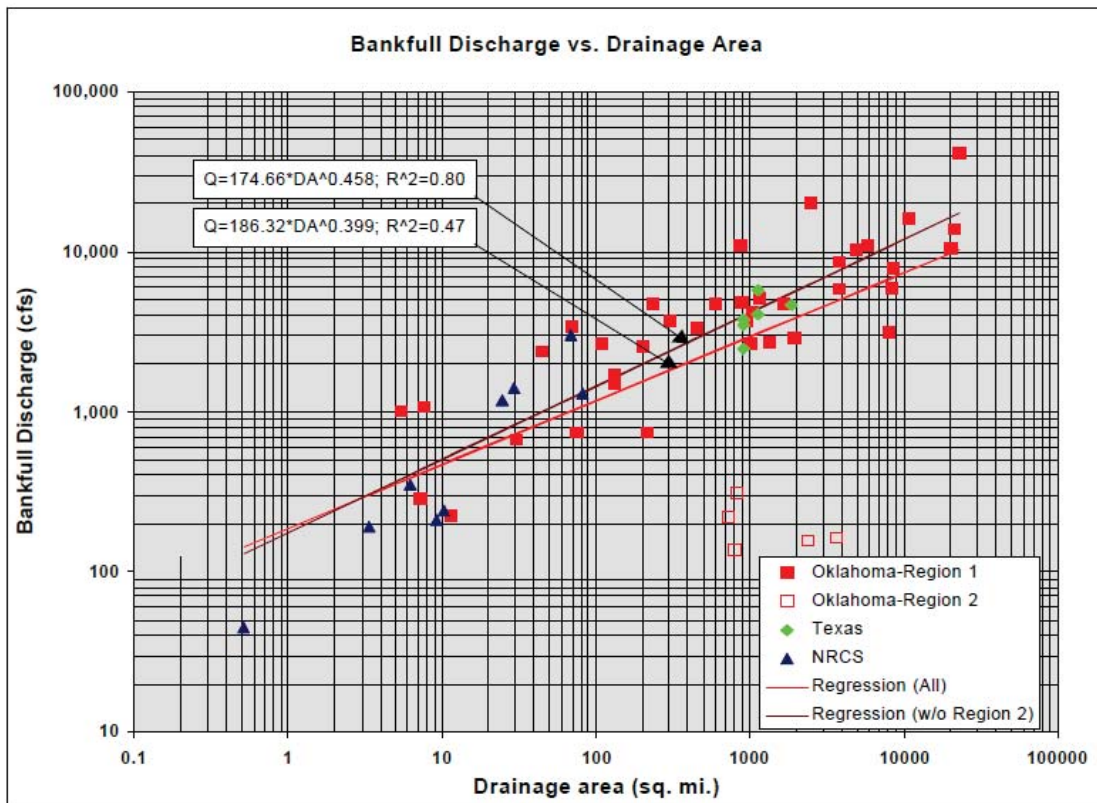


Figure 8: Plot of Bankfull Discharge (cfs) versus Drainage Area (mi<sup>2</sup>) – Entire Data Set.

Figure A-3. Regional runoff curve from multiple sites in Oklahoma and Texas. The curve w/o Region 2 was used for this project. source: Dutnell 2000.

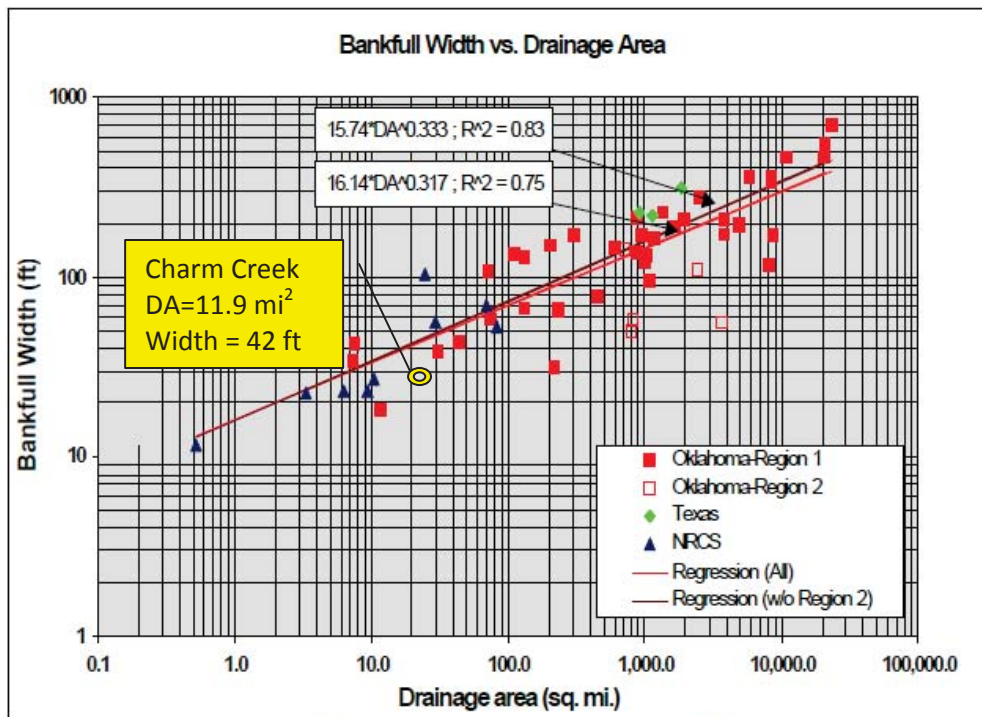


Figure 10: Plot of Bankfull Width (ft) versus Drainage Area (mi<sup>2</sup>) – Entire Data Set.

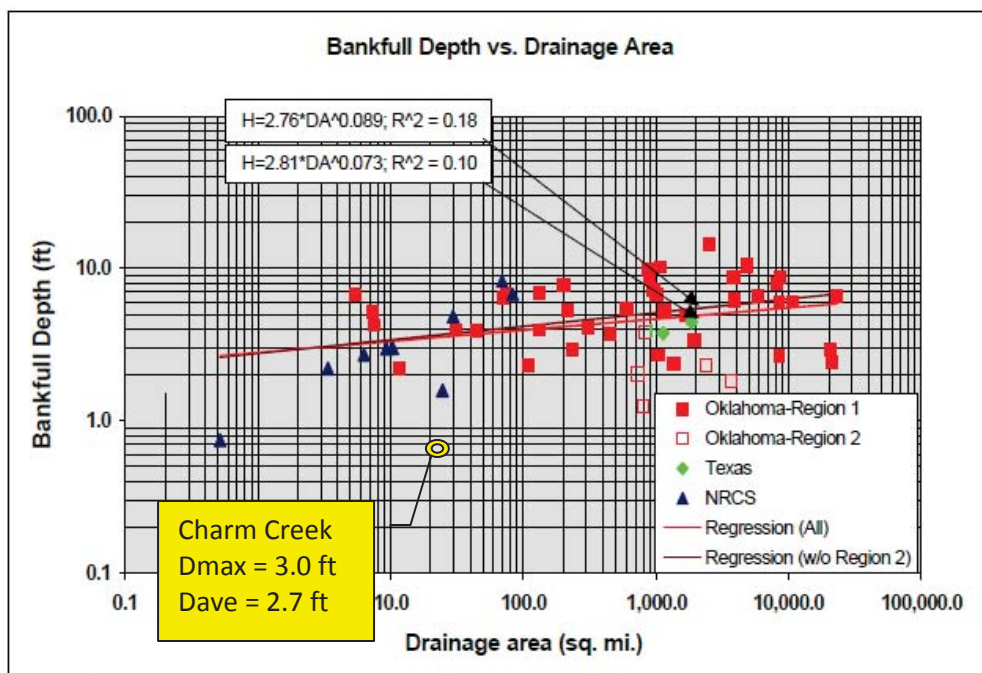
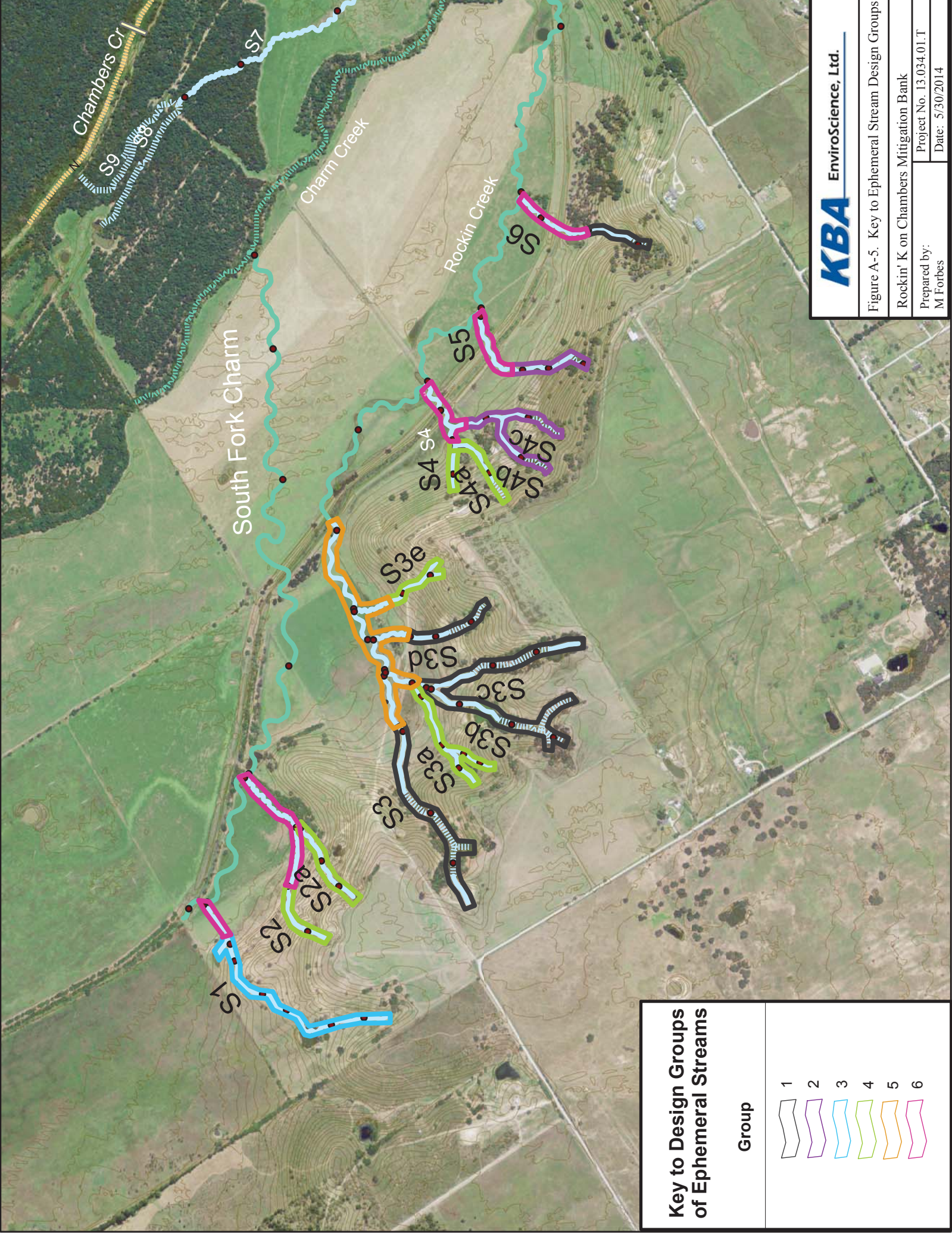


Figure 11: Plot of Bankfull Depth (ft) versus Drainage Area (mi<sup>2</sup>) – Entire Data Set.

Figure A-4. Predicted Width and Depth of Charm Creek Compared to Dutnell Curves, Rockin' K on Chambers Creek Mitigation Bank.







**Table A-1. Lengths and Drainage Areas of Streams, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Stream</b>	<b>Total Length (ft)</b>	<b>Drainage Area (ac)</b>
S1	2550	44
S2	1980	20
S2a	817	5.4
S3	4067	167
S3a	1440	20
S3b	2247	77
S3c	1357	20
S3d	1127	16
S3e	1071	10
S4	1047	53
S4a	702	5.0
S4b	1149	19
S4c	559	5.4
S5	1385	182
S6	1315	33
S7	4086	72
S8	1294	8.6
S9	1664	10.7
Rockin Creek	6586	547
South Fork Charm	7759	2760
Charm Creek	6981	7610
Chambers Creek	2990	520320

Table A-2. Geometry for Existing Conditions Streams, Rockin' K on Chambers Creek Mitigation Bank.

Feature	Waypt	Lat (UTM 14N)	Long	Left Top of Bank	Right Top of Bank	Right Bankfull HeightLbf	Left Bankfull HeightLbf	Centerline	Maximum Depth	Right Inner Berm	Left Inner Berm	Other	Width Bankfull	Width Prone Area	Slope	Area Bankfull (ft2)	Depth mean (ft)	W:D	Entrenchment Ratio	Whole Stream Sinuosity	Class	NOTES
Chambers (west)		737035	3561842	20.0	20.0	3.00	3.00	0.00	3.00				35.0	75.0	0.0006	96	2.74	13	2.1	1.03	F6	cross-sections for
Chambers (mid)		737351	3561680	16.5	16.5	3.50	3.50	0.00	3.50				45.0	75.0	0.0005	145	3.23	14	1.7	1.03	F6	Chambers from
Chambers (east)		373567	3561561	18.0	18.5	1.50	1.50	0.00	1.50				55.0	65.0	0.0006	80	1.46	38	1.2	1.03	F6	0.5-ft lidar contours
Charm (west)	25	736489	3561586	4.87	4.35	1.50	1.52	0.00	1.50	2.02	2.22		16.8	28.0	0.0023	23	1.37	12	1.7	1.27	C6c	
Charm (center)	26	736929	3561359	4.50	4.84	2.21	2.30	0.00	2.21				30.0	57.5	0.0006	61	2.05	15	1.9	1.27	C6c	
Charm (abv conf)	27	737523	3560652	4.17	3.57	4.17	3.57	0.00	3.57				41.5	100.0	0.0004	135	3.26	13	2.4	1.27	N/A	grassy swale
Charm (lower)	28	737683	3560659	4.71	4.96	3.46	3.46	0.00	3.46			0.92,0.59	45.0	100.0	0.0042	144	3.19	14	2.2	1.27	C6c	Left/right toe of bank
Charm (east end)	29	737799	3560787	3.92	4.83	2.90	2.96	0.00	2.90			0.96,0.08	42.2	100.0	0.0021	114	2.70	16	2.4	1.27	C6c	Left/right toe of bank
Ditch	17	736438	3560878	5.08	4.46	1.29	1.30	0.00	1.29				25.0	45.0	0.0040	31	1.22	20	1.8	N/A	N/A	man-made channel
Ditch	3	735172	3561513	7.15	2.63	7.15	2.63	0.00	2.63				83.1	200.0	0.0041	212	2.55	33	2.4	N/A	N/A	man-made channel
S1up	2	734922	3561345	3.54	4.52	3.54	4.52	0.00	3.54				42.0	100.0	0.0271	136	3.24	13	2.4	N/A	N/A	grassy swale
S2up	4	735087	3561228	9.52	7.77	2.30	2.30	0.00	2.30				19.6	32.5	0.11	40	2.03	10	1.7	1.08	A6a+	grassy swale-some erosion
S2dn	6	735369	3561231	4.46	3.60	4.46	3.60	0.00	3.60				19.2	100.0	0.02	56	2.92	6.6	5.2	N/A	N/A	grassy swale
S2a	9	735204	3561146	5.70	7.08	1.25	1.37	0.00	1.25	2.04	2.45		13.2	68.5	0.16	15	1.13	12	5.2	1.06	A6a+	above pond
S3up	8	735392	3560908	4.00	3.50	1.91	2.25	0.00	1.91	3.25	6.33		4.5	62.0	0.01	5	1.10	4.1	13.8	1.12	E6	
S3b	10	735675	3560835	2.58	2.58	0.90	1.23	0.00	0.90				23.0	34.5	0.03	20	0.86	27	1.5	N/A	N/A	grassy swale
S3c	11	735763	3560749	9.80	4.00	3.89	1.91	0.00	1.91			0.62	15.0	39.0	0.03	25	1.67	9.0	2.6	1.04	E6b	right toe of bank
S3d	12	735849	3560897	2.25	4.71	1.89	1.87	0.00	1.87				8.0	34.5	0.03	11	1.43	5.6	4.3	1.07	G6	
S3e	13	736005	3560910	5.21	4.79	5.21	4.79	0.00	4.79	3.40	3.20		12.0	46.0	0.06	35	2.88	4.2	3.8	1.06	N/A	grassy swale
S4a	16	736271	3560759	0.61	0.79	0.61	0.79	0.00	0.61				9.0	100.0	0.06	5	0.57	16	11.1	1.01	N/A	grassy swale
S4b	18	736310	3560675	5.33	3.77	2.21	2.23	0.00	2.21	3.88	2.52		46.0	100.0	0.02	97	2.10	22	2.2	1.03	G6	
S5up	19	736522	3560514	12.53	15.70	3.20	3.70	0.00	3.20			8.00	12.0	34.0	0.06	28	2.35	5.1	2.8	1.12	A6	width bottom of channel
S6up	21	736850	3560385	5.75	5.94	0.96	0.96	0.00	0.96				9.8	20.0	0.03	8	0.87	11	2.0	1.06	G6	
S8	33	737177	3561594	2.92	3	2.92	3	0.00	2.92			1.06,0.6	15.0	100.0	0.002	35	2.35	6.4	6.7	1.07	E6	Left/right toe of bank
S9	34	737194	3561620	3.5	6.75	1.5	1.91	0.00	1.50	1.09	1.36	4.46	13.0	33.0	0.01	17	1.33	9.8	2.5	1.14	E6	2nd RIB-4.46
REF2 (Cummins)	REF2	735214	3566335	11.00	9.54	2.67	2.08	0.00	2.08	4.31	2.12		17.0	25.0	0.003	31	1.83	9.3	1.5	1.81	E6	
REF3 (Emhouse)	REF3	726873	3563984	3.50	4.79	2.91	2.41	0.00	2.41			0.08	11.6	100.0	0.001	22	1.91	6.1	8.6	1.35	E6	rt toe of bank
REF4 (S3b)		735585	3560592	4.50	7.50	1.00	1.00	0.00	1.00	1.75	1.40		3.8	41.4	0.03	2.8	0.74	5.2	11	1.12	G6	

Note:  
values of 100 or 200 for Wfp represent reaches where 2Dmax>>Top of Bank

**Table A-3. Stream Assessment Summary, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Stream</b>	<b>Rosgen Type</b>	<b>Impairment</b>	<b>Magnitude</b>	<b>Causes</b>	<b>Method Used to Determine Bankfull Discharge</b>
Chambers Creek	F6	Incised, overwidened, excessive sedimentation, bank erosion	Severe	Channelization, artificial drainage patterns in watershed	USGS Gage at Rice No in-channel work is proposed for this stream.
Charm Creek	C6	Altered hydrology – insufficient flow	Moderate	Changes in drainage patterns in watershed, diversion of flows to Chambers	Regional curve from Dutnell
S3, S3b, S3c, S3d, S4b, S4c, S5	Upper: G6	Eroded banks	Moderate	Debris contributed to scouring	Rational Runoff Method 1.5-year event
	Lower G6c	Debris pushed in channel	Moderate	Use of streams as brush receptacles	
		Altered hydrology	Moderate	In-stream stock tanks withhold runoff	
		Degraded watershed	Moderate	Ag land use	
S8, S9	E6	Altered hydrology,	Low	Orphaned from periodic overbank flow of Chambers.	Rational Runoff Method 1.5-year event. However, no-in channel work is proposed for these streams.
		Lowering of water table Degraded watershed	Moderate Low	Lowering of Chamber Ag land use	







Table A-6. Existing Design and Reference Stream Morphological Data Table - Reference 3, Rockin' K on Chambers Creek Mitigation Bank.

Parameter	Design Stream			Design Stream			Design Stream			Design Stream			Reference Stream
	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	
Group No.	5			6			S7			Rockin Creek			REF 3
Stream name	S3-D			S1-D, S2-D, S3a-D, S3b-D, S3d-D, S3e-D, S4-D, S5-D, S6-D			E6 w/o K			Rockin Creek			E6 w/o K
Stream type	G6c/E6			G6/G6c/E6			E6 w/o K			E6 w/o K			E6 w/o K
Drainage area (ac)	43	141	162	9.2	18	56	15	35	68	190	319	530	324
Mean riffle DEPTH (ft)	1.3	2.2	2.6	0.7	0.9	1.6	0.7	0.8	0.8	2.0	2.2	2.4	3.6
Riffle WIDTH (ft)	8	14	16.0	4.0	5.4	9.6	4.4	4.8	5.0	12	13	15	22.0
Width-to-depth ratio	6.2	6.4	6.2	5.7	6.0	6.0	6.3	6.0	6.3	6.0	5.9	6.3	6.1
Riffle cross-section area (sq ft)	10	30	41.0	2.6	4.6	15	3.2	3.8	4.2	25	29	36	81.0
Max riffle depth (ft) Dmax Eph	1.6	2.8	3.3	0.9	1.1	2.0	0.9	1.0	1.0	2.5	2.8	3.0	4.5
Max riffle depth ratio	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
Mean pool depth (ft)	2.6	4.4	5.2	0.9	1.1	2.0	0.9	1.0	1.0	2.5	2.8	3.0	4.5
Mean pool depth ratio	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Pool width (ft)	5.0	9.0	11.0	2.8	3.7	6.7	3.1	3.4	3.5	8.7	9.4	10.3	15.4
Pool width ratio	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Pool cross-section area (sq ft)	17.0	51.0	69.0	4.5	7.7	26	5.5	6.5	7.1	43	50	61	90.0
Pool area ratio	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.1
Max pool depth (ft)	2.3	4.0	4.7	1.3	1.6	2.9	1.3	1.4	1.4	3.6	4.0	4.3	6.5
Max pool depth ratio	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Low bank height (ft)	1.6	2.8	3.3	0.9	1.1	2.0	0.9	1.0	1.0	2.5	2.8	3.0	4.5
Low bank ht ratio	1.3	1.3	1.3	1.3	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Width flood-prone area (ft)	34	60	69	17	23	41	19	21	22	52	56	65	95
Enrichment ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Bankfull discharge (cfs)	40	120	163	11	19	61	13	15	17	100	117	142	324
Meander length (ft)	78	162	221	40	62	135	44	58	70	124	160	206	222
Meander length ratio	10	12	14	10	11	14	10	12	14	10.3	12.3	13.7	10.1
Radius of curvature (ft)	18	31	36	9	12	22	10.0	11.0	12.0	28	31	34	51
Radius of curvature ratio	2.3	2.2	2.3	2.3	2.2	2.3	2.3	2.3	2.4	2.3	2.4	2.3	2.3
Belt width (ft)	29	50	87	15	24	40	24	27	28	68	73	81	122
Meander width ratio	3.6	3.6	5.4	3.8	4.4	4.2	5.5	5.6	5.6	5.7	5.6	5.4	5.5
Pool length (ft)	10.3	18.1	20.7	5.2	7.0	12.4	5.7	6.2	6.5	15.5	16.8	19.4	28.4
Pool length ratio	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Pool-to-pool spacing (ft)	27	50	63	14	19	39	16	18	20	43	50	59	78
Pool-to-pool spacing ratio	3.4	3.6	3.9	3.5	3.5	4.1	3.6	3.8	4.0	3.6	3.8	3.9	3.5
Stream (reach) length (ft)	56	374	853	241	475	730	76	943	1775	105	1278	2284	105
Valley length (ft)	54	307	657	230	427	580	59	746	1390	102	976	1557	102
Valley slope	0.001	0.008	0.009	0.003	0.017	0.029	0.0003	0.0010	0.0040	0.0002	0.0003	0.0025	0.0001
Sinuosity (K)	1.04	1.07	1.30	1.03	1.19	1.26	1.26	1.27	1.29	1.03	1.24	1.47	1.03
Riffle length (ft)	22	39	44	11	15	26	12	13	14	33	36	41	61
Riffle length ratio	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

## **Appendix B. Stream Design Checklist**



# Natural Channel Design Review Checklist

## Project Design Checklist

Reviewer: \_\_\_\_\_  
Date: \_\_\_\_\_

Project: Rockin' K on Chambers Creek Mitigation Bank

Engineer: KBA EnviroScience, Ltd.

Item	Submitted (Y/N)	Acceptable (Y/N)	Comments
<b>1.0 Watershed and Geomorphic Assessment</b>			
<b>1.1 Watershed Assessment</b>			
Was the watershed assessment methodology described?	Y		See Comments and Details Attachment
Was the project drainage area provided?	Y		
Was the percent impervious cover for the watershed provided?	Y		
Was the current land use described along with future conditions?	Y		
Were watershed hydrology calculations performed?	Y		
<b>1.2 Basemapping</b>			
Does the project include basemapping?	Y		
<b>1.3 Project Reach Geomorphic Assessment</b>			
Was the geomorphic assessment methodology described?	Y		
Were vertical and lateral stability analyses completed?	N		
Was it shown whether the instability was localized or system-wide?	N/A		
Was the cause and effect relationship of the instability identified?	N/A		
Was the channel evolution predicted?	Y		
Were constraints that would inhibit restoration identified?	Y		
<b>1.4 Hydraulic Assessment</b>			
Was a hydraulic assessment completed?	Y		
Was stream velocity, shear stress, and stream power shown in relation to stage and discharge?	Y		
<b>1.5 Bankfull Verification</b>			
Was bankfull verification analysis completed?	Y		
Were USGS gages or regional curves used to validate bankfull discharge?	Y		
If a regional curve was used, were the curve data representative of the project data?	Y		
If gages or regional curves were not available, were other methods, such as hydrology and hydraulic models used?	N/A		
Overall Watershed and Geomorphic Assessment Comment(s)			

# Natural Channel Design Review Checklist

## Project Design Checklist

Reviewer: \_\_\_\_\_  
Date: \_\_\_\_\_

Project: Rockin' K on Chambers Creek Mitigation Bank

Engineer: KBA EnviroScience, Ltd.

Item	Submitted (Y/N)	Acceptable (Y/N)	Comments
<b>2.0 Preliminary Design</b>			
<b>2.1 Goals and Restoration Potential</b>			
Does the project have clear goals?	Y		
Was the restoration potential based on the assessment data provided?	Y		
Was a restoration strategy developed and explained based on the restoration potential?	Y		
<b>2.2 Design Criteria</b>			
Were design criteria provided and explained?	Y		
Is the design criteria representative of reference reaches within the project area or of the same valley type, geology, and land use?	Y		
<b>2.3 Conceptual Design</b>			
Was the conceptual channel alignment provided and developed within the design criteria?	Y		
Were typical bankfull cross sections provided and developed within the design criteria?	Y		
Were typical drawings of in-stream structures provided and their use and location explained?	Y		
Was a draft planting plan provided?	Y		
Overall Conceptual Design Comment(s)			
<b>3.0 Final Design</b>			
<b>3.1 Natural Channel Design</b>			
Was a proposed channel alignment provided and developed within the design criteria?	Y		
Were proposed channel dimensions provided and developed within the design criteria?	Y		
Do the proposed channel dimensions show the adjacent floodplain or flood prone area?	Y		
Was a proposed channel profile provided and developed within the design criteria?	Y		
Were specifications for materials and construction procedures provided and explained for the project (i.e., in-stream structures, erosion control measures, etc.)?	Y		

## Natural Channel Design Review Checklist

### Project Design Checklist

Reviewer: \_\_\_\_\_  
Date: \_\_\_\_\_

Project: Rockin' K on Chambers Creek Mitigation Bank

Engineer: KBA EnviroScience, Ltd.

Item	Submitted (Y/N)	Acceptable (Y/N)	Comments
<b>3.2 Sediment Transport</b>			
Was sediment transport analysis required?	Y		
If required, was the type of sediment transport analysis explained?	Y		
Were existing versus design relationships of shear stress, velocity, and stream power versus stage or discharge provided?	Y		
Did sediment transport capacity analyses show that the stream bed would not aggrade or degrade over time?	Y		
Did sediment transport competency analysis show what particle sizes would be transported with a bankfull discharge?	Y		
For gravel/cobble bed streams, does the proposed design move particles that are larger than the D100 of the stream bed?	N/A		
<b>3.3 In-Stream Structures</b>			
Based on the assessment and design, were in-stream structures required for lateral stability?	Y		
Based on the assessment and design, were in-stream structures required for vertical stability?	Y		
If required, was the reason for their location and use explained?	Y		
Will the in-stream structures provide the intended stability?	Y		
Were detail drawings provided for each in-stream structure?	Y		
<b>3.4 Vegetation Design</b>			
Was a vegetation design provided?	Y		
Does the design address the use of permanent vegetation for long term stability?	Y		
Overall Final Design Comment(s)			

## Natural Channel Design Review Checklist

**Project Design Checklist**

**Reviewer:** \_\_\_\_\_  
**Date:** \_\_\_\_\_

**Project:** Rockin' K on Chambers Creek Mitigation Bank

**Engineer:** KBA EnviroScience, Ltd.

Item	Submitted (Y/N)	Acceptable (Y/N)	Comments
<b>4.0 Maintenance and Monitoring Plans</b>			
<b>4.1 Maintenance Plan</b>			
Was a maintenance plan provided?	Y		
Does it clearly state when maintenance will be required and if so, is it quantifiable?	Y		
Does it clearly state how erosion will be addressed and by who?	Y		
<b>4.2 Monitoring Plan</b>			
Was a monitoring plan provided?	Y		
Does it have measurable, quantifiable performance standards?	Y		
Does it have clearly defined thresholds of success and failure?	Y		
Is monitoring required for at least 3 years?	Y		
Does it state who is required to conduct the monitoring?	Y		
<b>5.0 Overall Design Review</b>			
Does the design address the project objectives?	Y		
Is there any component of the design that adversely affects the success of the project?	N		



# Natural Channel Design Review Checklist – Attached Comments and Details

## 1.0 Watershed and Geomorphic Analysis

### 1.1 Watershed Assessment

#### Watershed Assessment Methodology

Watershed characteristics were evaluated with a combination of field work and map analysis. KBA drove throughout the area upstream of the site to identify potential reference sites and characterize the watershed. Most of the watershed is privately owned and some potentially suitable reference streams were inaccessible.

#### Drainage Areas

Drainage areas for existing and proposed streams were determined using aerial photography and topographic maps. Drainage areas are provided in **Table A-1**. The drainage area for Chambers Creek was taken from the USGS gage at Rice, Texas which is located approximately one mile upstream of the site. The area below the gage that drains to Chambers was delineated and added to that value.

The existing intermittent streams (i.e. the drainage ditch and Charm Creek), and proposed intermittent streams (South Fork Charm and Rockin Creek) receive runoff from onsite and from the valley to the west. The drainage areas of intermittent streams were delineated using a USGS topographic map and 1-ft and 0.5-ft lidar-generated contours.

Ephemeral streams in the southern portion of the site (S1 - S6) have small drainage areas that are almost wholly within the site. All of the ephemeral stream drainage areas were delineated using lidar-contours.

#### Land Use

Land use in the site's watershed is primarily agricultural and is expected to remain so for the foreseeable future. Mining and oil and gas production activity in the area is negligible and is not expected to increase. Historic aerial imagery indicates that for the past several decades, the watershed consisted of pasture, and to a lesser extent, row crops. Isolated tracts of forest occur throughout the watershed, and these most likely represent the historic condition of the floodplain. Land use is likely to remain in agriculture for future decades, so large-scale watershed changes that would impact the site's hydrology are unlikely. There are no known large-scale water diversion or reservoir construction projects proposed within the watershed that would affect the site.

Channel scars and remnant "old channel" reaches on USGS maps suggest that a sizeable drainage way, probably an ancestor of the present Chambers Creek, once meandered across the valley. Presumably due to channel relocation and other changes in its watershed, Chambers

Creek has become over-widened and incised, disconnecting the stream from its floodplain and lowering the water table of adjacent land. The amount of impervious area in the Chambers Creek watershed is negligible; however numerous impoundments and ditches alter drainage patterns and runoff timing.

### Watershed Hydrology Calculations

As previously discussed in this mitigation work plan, hydrology calculations were performed on Chambers Creek to estimate the frequency of overbank flooding at the site. Although incised, Chambers has relatively unaltered access to its floodplain. For other existing and proposed streams at the site, access to their floodplain will be promoted. Overbank events at the site do not now nor will they in the future threaten any manmade structures. Hydrology calculations for the remaining intermittent and ephemeral streams at the site are discussed in the Hydraulic Assessment Section 1.4 below.

## **1.2 Base Mapping**

Each existing stream and reference streams for in-channel work were surveyed for stream geometry parameters. The resulting cross-sections are depicted on the design drawings. The reference stream cross-sections are shown separately and the existing stream cross-sections are overlaid on the proposed cross-sections. **Table A-2** contains the results of the survey for existing bed and bank streams and for grassy swales. **Figure A-1** show the location of the two reference sites used for stream restoration purposes and **Figure A-2** shows the survey locations and existing aquatic features at the site.

## **1.3 Project Reach Geomorphic Assessment**

### Geomorphic Assessment Methodology

Each stream with a bed and bank was assessed with the TXRAM conditional assessment method. In addition, streams were analyzed with a combination of map (e.g. measurement of slope and sinuosity) and field methods (e.g. geomorphic surveys). Streams were classified according to Rosgen stream types and the nature, magnitude, and causes of impairments noted (**Table A-3**).

### Vertical and Lateral Stability Analyses

Formal (numerical) vertical and lateral stability analyses were not performed on the existing streams. Bank erosion was noted on field survey forms. Baseline data were collected during stream surveys. Vertical and lateral stability will be measured on restored streams using bank pins and cross-sectional surveys.

### Stream Instabilities and Channel Evolution

Stream evolution models analyze the balance between the available energy of the stream to transport sediment (the hydrologic load) and the available sediment supply (the sediment load). Alterations in the watershed cause a response in the stream system that can lead to either degradation (erosion) or aggradation (deposition). Schumm (1984) describes five stages of channel evolution.

Chambers Creek is in a later stage of evolution. It has already undergone vertical and lateral incision and aggradation and is re-establishing a new channel within aggraded sediments. Unfortunately, the water table dropped with the stream channel and is now approximately 20-30 feet lower than during pre-disturbance conditions.

Charm Creek is a stable, low gradient stream that is aggrading not from sediment deposition but from autochthonous organic material and a lack of flow. It has been deprived of its natural hydrologic inputs by field ditching and water diversions upstream. In addition, it is probably the channel that carried the majority of runoff from up valley prior to the channelization of Chambers Creek. As a result, an excess of organic material and woody debris has collected in the channel. This was evident in the surveys and in comparing the area below the confluence with the ditch, which carries much of the flow from up valley, to the area above it.

The ephemeral streams reflect both an altered flow regime and channel erosion in steep reaches. Thus some of the reaches are stable while other portions are incised or incised and widened. The stock tanks located in the upper reaches capture much of the runoff from moderate rain events, depriving the channels of adequate flow and energy to maintain bed and bank. On the other hand, the steep areas have eroded and widened, presumably during high flow events. Several of the eroded reaches, which are limited in length, have had brush and trash pushed into them to “fill” the channels. This debris would exacerbate erosion, as it does not form a pool but rather promotes scouring flows around it.

#### Constraints to Restoration

The major constraints to restoration apply to Chambers Creek. The large-scale impacts that have contributed to the Creek’s degradation are beyond the control of the sponsor. For that reason, Chambers Creek restoration is not a goal of this project.

There are no major constraints to restoration of the remaining streams. The sponsor owns most of the watershed of the ephemeral streams and there are no structural or flood plain constraints that threaten success of the proposed restoration.

### **1.4 Hydraulic Assessment**

Hydrology was calculated for each stream reach at bankfull discharge using one of two methods. The Rational Runoff Method was used to estimate bankfull discharge for watersheds less than 200 acres. These calculations are shown on **Table A-4**. The rational formula estimates the peak rate of runoff at a specific location in a watershed as a function of the drainage area, runoff coefficient, and mean rainfall intensity for a duration equal to the time of concentration. Mean rainfall intensity for a 1.5-year event was interpolated from 1- and 2-year storm data for Navarro County (NTCOG 2010).

For drainage areas greater than 200 acres, a regional curve relating drainage area to bankfull discharge from Dutnell was used (Dutnell 2000). The Dutnell curves were based on 48 streams in the southern central plains, including Oklahoma and Texas. The drainage area versus bankfull discharge curve is provided as **Figure A-3**. No hydraulic models (e.g. HEC-RAS) were run to assess backwater effects or other hydraulic parameters for the proposed restoration reaches.

### Stream Velocity, Shear Stress, and Stream Power

Stream velocity, shear stress and stream power were estimated at bankfull discharge for each reach described above (see Table A-4). Reaches with velocities above 6 feet per second and slopes greater than 3% (some reaches of streams S1 – S6) were designated for grade control.

Stream velocities were calculated with Mannings equation using the slope and channel geometry proposed for each reach, and a roughness coefficient of 0.035.

Sediment competency refers to a stream's ability to transport its bedload material so that the amount of material moving through the reach is in balance and the stream neither aggrades or degrades. Proposed and existing RKMB streams are located in cohesive clay or clay loam soils dominated by particles less than 0.074 mm (Navarro County Soil Survey). Streambeds consist of clays and silts with organic material; with no visible sand, gravel, or pebbles.

RKMB streams are supply-limited, that is, the material supplied to them is so fine (< 0.064 mm) that, provided it can be carried in suspension, almost any flow will transport it (Knighton 1984).

Nevertheless, we calculated an estimate of the shear stress ( $\tau$ ) for each stream reach using the equation below.

$$\tau = \gamma R S$$

where  $\tau$  is the average shear stress in lbs/ft<sup>2</sup>

$\gamma$  is the specific weight of water at 62.4 lbs/ft<sup>3</sup>

R is the hydraulic radius at bankfull (ft<sup>2</sup>/ft)

S is the slope of the reach (ft/ft)

The resulting dimensionless shear stress was used to estimate the particle size that could be entrained using the regression below from laboratory and field data of Leopold, Wolman and Miller (1964) as presented in NRCS 2007.

$$D \text{ (mm)} = 77.966 \tau^{1.042} \quad R^2=0.9336$$

where D is the largest particle size diameter (mm) that can be entrained

$\tau$  is the average shear stress

The critical or dimensionless shear stress was also calculated (NRCS 2007) and the riffle D<sub>50</sub> and the bar D<sub>50</sub> where they were assumed to be the median coarse silt and median fine silt values of 0.04675 and 0.0117 mm respectively.

In all cases, the predicted entrained particle size exceeded the range of particle sizes for clay (<0.004) and silt (0.0156 - 0.0625).



## 1.5 Bankfull Verification

No direct measurement of bankfull discharge was available or conducted for Charm Creek or the ephemeral stream reaches on the site. Bankfull discharge as predicted by Dutnell was compared to predicted morphological variables for Charm Creek lowest reach (Charm Creek east). The predicted width and depth provided stream survey bankfull width was compared to the Dutnell curves for width and depth versus drainage area (**Figure A-4**). Charm Creek width and depth fall close to the regression lines on the Dutnell curves and it was concluded that this regional curve is an appropriate predictor of bankfull discharge for restored streams greater than 200 acres at the site.

## 2.0 Preliminary Design

### 2.1 Goals and Restoration Potential

The goals for this project are stated in Section 1 of the mitigation plan. The restoration potential for the site's aquatic resources was evaluated in light of the identified condition of each resource and the identified causes of degradation. The restoration potential is discussed in Section 2.2 of the mitigation plan.

### 2.2 Design Criteria

The overall approach to the design is consistent with Natural Stream Channel Design as discussed by Rosgen (1996), the EPA's *A Function-Based Framework for Stream Assessments and Restoration Projects* (Harmon et al. 2012) and the *North Carolina Stream Restoration: A Natural Channel Design Handbook* (Droll et al. 2003). The steps provided in Chapter 7 of the latter reference were similar to the steps followed for this project.

Once the bankfull discharge was determined, the channel cross-sectional area was obtained by dividing by a proposed velocity of 4 fps. The channel width and depth were determined from the cross-sectional area using the width:ratio of the reference stream. The Manning's velocity was then calculated based on design parameters.

Results of the stream survey of REF 3 and REF 4 reaches were used to identify dimensionless ratios that were then applied to restored streams. These parameters are obtained during the field survey or from GIS measurements and are included on the Geomorphic Summary tables (**Tables A-5 and A-6**). This table combines similar reaches into groups and provides the minimum, median, and maximum values of stream parameters for each group. The map key to the groups is provided as **Figure A-5**.

The reference reaches did not contain water during the survey, and pool/riffle/glide slopes were not measured. However the slope of the channel bottom was determined. The reference reaches relevant to the proposed restored streams are REF3 for SFCharm/Rockin Creek and REF4 for the type A6/G6 ephemeral streams. The ephemeral streams transition from relatively high gradient, straight reaches to low gradient meandering reaches when they arrive at the valley. The REF3, a meandering low gradient stream, was used as the reference stream for those lower reaches.

In addition to reference reach information, some published dimensionless ratios were applied to the stream design calculations. For example, pool-to-pool spacing and meander length were taken from literature sources (Knighton 1984, Rosgen 1996), as long as they were within the range of pool-to-pool spacing and meander length measured for the reference stream. Width and depth variability, width:depth, entrenchment ratios, and other features were based on reference streams.

Step pools proposed for grade control in the high slope areas of the ephemeral streams S1-S6 were designed according to regressions based on existing step pools in a variety of environments. Rosgen (1996) proposed a regression based on channel slope and width, while Maxwell and Papanicolaou (2001) and others calculate step height based on water depth, particle distribution, and discharge, then calculate longitudinal step spacing as a function of step height. The resulting step heights were generally less than 1 foot. An example of “steps” on ephemeral stream S3d is shown below.



## **2.3 Conceptual design**

### Alignments and Typical Cross Sections

The stream alignments and typical bankfull cross sections are provided in the design drawings submitted with this MBI. The stream alignments of the upper sections of ephemeral streams S1-S6 follow the existing topography. The remaining stream alignments are based on meander ratios, belt widths, and other parameters discussed above.

### In-stream structures

Drawings and location of in-stream structures are provided in the design drawings. Two types of in-stream structures will be utilized. All three will provide in-stream habitat for invertebrates, control grade, and protect the bank. These structures force the flow of water away from vulnerable streambanks, while adding woody debris to the stream. The structures will be constructed primarily of materials native to the site (i.e. logs).

**Root wads** - Root wads armor a stream bank by deflecting flow away from the bank. They provide habitat for aquatic organisms and a surface for periphyton to grow and provide food to organisms. Root wads will be installed with at least a 10-15 feet length of the trunk, using logs which will be 10 to 24 inches in diameter. They will be installed where flow vectors intercept the banks at acute angles such as the outside of a meander bend. Root wads will be placed in selected areas upstream of newly planted streambank vegetation to help prevent erosion as well. About one-third to one-half of the root wad will be placed below the base-flow elevation. One-ton boulders will be placed behind the root wad to prevent back-eddy scour. The root wad will be oriented to intersect the flow at approximately a 90 degree angle. Wads will be installed using the drive-point method unless the soil does not allow it, in which case the log will be trenched in with a footer log under the root wad log. Illustrations of root wad installation are provided in the design drawings. The locations of proposed root wads are shown on the plan drawings.

**Cross-vanes** – Cross vanes will be installed to create the step pools in selected reaches of S1-S6 and in selected locations along SF Charm and Rockin Creeks. These structures provide grade control, protect the banks by keeping the thalweg in the center of the channel, and enhance habitat. A cross vane raises or maintains the stream bed elevation, so it is often placed within the glide or at the head of the riffle. The cross vanes will use three logs, two supporting logs and one perpendicular to the flow that controls the stream elevation. The supporting logs (vanes) will be oriented upstream at 20 to 30 degree angles from the bank. The vanes are highest next to the bank, slightly below bankfull, then slope downward, pointing upstream. The length of a single-vane structure will be up to one half of the base-flow channel width and the slope will range from 2 to 20 percent (longer and flatter is better for streambank protection and habitat). Geotextile material will be used on the upstream side of the logs and buried to the depth of the footers. The fabric helps prevent water from piping between or underneath the logs. Footers will be used to prevent movement of the structure during high flow. Illustrations of log cross-vane installation are provided in the design drawings. The location and spacing of proposed cross-vane structures are shown on the plan drawings.

### Planting Plan

The planting plan is provided in the design drawings.

## **3.0 Final Design**

### **3.1 Natural Channel Design**

Stream alignments, design criteria, channel dimensions, channel profiles, and construction specifications are all included on the design drawings. The proposed channel dimensions show the adjacent floodplain or flood prone area.

### **3.2 Sediment Transport**

Sediment transport analysis was conducted by calculating shear stress, velocity and stream power for each reach. Although no sediment samples were analyzed, the site clearly lacks

sediments larger than clay/silt sized particles. Literature values for clay and silt were used in the sediment transport analyses. The size of particle able to be transported at bankfull discharge is several times larger than the size of clay/silt particles (Table A-4). The proposed streams have sufficient energy to transport the anticipated sediment supply.

### **3.3 In-stream Structures**

See section 2.3

### **3.4 Vegetation Design**

The vegetation design is provided on the construction drawings. Once established, most of the plant species selected will provide permanent cover and long term stability.

## **4.0 Maintenance and Monitoring Plans**

### **4.1 Maintenance Plan**

The Sponsor will be responsible for necessary maintenance of the project. Most stream restoration projects require some maintenance after construction. The Sponsor will be responsible for identifying and conducting maintenance at the site. The site will be inspected quarterly for the first year following construction and after bankfull events.

Areas of stream bank erosion will be identified during the inspection and the appropriate actions (reposition of structures, re-application of erosion control fabric, re-planting) will be conducted shortly following the inspections.

### **4.2 Monitoring Plan**

The monitoring plan includes an assessment of channel morphology annually for five years after construction. At least one permanent station will be established along each stream with rebar and flagged stakes on each bank marking the stream cross-section. A cross-sectional rod-and-transit survey will be performed at each station and compared to previous surveys to assess lateral and vertical stream stability. Bank-pins driven laterally into the banks will be used to determine the rate of bank erosion. Photo documentation and vegetation assessment will also be included.

Vegetation survival will be evaluated using survival plots located adjacent to the stream. For trees and shrubs (stakes, bare root, or potted), survival plots of 1000 square feet will be established (100 ft by 20 ft) oriented parallel to the stream within each stream buffer. Stem counts will be conducted and if less than 120 stems per acre, the Sponsor will plant additional trees. For herbaceous plants, plot sizes of 9 square feet will be established at the cross section locations to determine percent cover of living vegetation. If the survival is less than 75%, the Sponsor will replant. Vegetation monitoring will be conducted during the growing season (April through August).



## **Appendix C. Consultant Qualifications**

## CONSULTANT QUALIFICATIONS AND EXPERIENCE

### **KBA EnviroScience, Ltd. (KBA)**

KBA will perform construction oversight, monitoring, and reporting and will design and direct any corrective actions that are necessary. KBA is an environmental management, consulting, and restoration firm based in Lewisville, Texas. The firm was founded in May 1999 and offers highly experienced KBA staff in Lewisville and Nacogdoches, Texas.

KBA focuses on natural resources consulting, particularly wetlands and protected species. KBA has performed hundreds of wetland delineations in Texas and has performed the following relevant functions at numerous sites:

- Functional Assessment (TxRAM, ORAM, HGM, NRCS, WET II, etc.)
- Mitigation Plan development
- Section 404 permit application development (NWP, IP, LOP, RGP)
- Wetland/stream/pond design, construction, and construction oversight
- Mitigation monitoring and reporting

KBA has several senior staff with particular experience and expertise in evaluation and design of wetlands, streams, and other aquatic systems. They include:

**Keith Bradley, REP, CWB** is the Principal at KBA and has 37 years of relevant professional experience, including 3 years as a Wetland Scientist in the EPA Region 6 Section 404 program. Mr. Bradley has performed and directed wetland projects, including design, construction, and monitoring, throughout Texas. Mr. Bradley has a B.S. in Biology from the University of West Florida and a M.S. in Environmental Science (Wetland Ecology emphasis) from the University of Texas at Dallas. Mr. Bradley's M.S. thesis addressed removal of heavy metals using constructed wetlands. Mr. Bradley is very experienced in directing subcontractors, including construction contractors, and has provided expert witness support on several cases involving wetland issues.

**Margaret Forbes, EIT, Ph.D.** has 20 years of experience designing, constructing, and monitoring wetlands, streams, reservoirs and estuaries. Dr. Forbes was involved in many of the KBA stream projects described herein and was the lead designer/project manager on two KBA stream projects that employed natural stream channel design methods. She also has experience with Section 404 delineation and permitting issues, with a focus on designing mitigation wetlands that provide multiple functions. Dr. Forbes has experience evaluating site hydrology, vegetation, soils, geomorphology, and ecological functions in a variety of settings. Dr. Forbes has a B.S. and a M.S. in Environmental Resources Engineering from Humboldt State University and a Ph.D. in Environmental Science from the University of North Texas.

Dr. Forbes is the Technical Director and Stream Designer for this project. Her curriculum vitae and a separate resume of experience relevant to natural stream channel design are included in this Appendix.

**Joseph Schwartz** has 16 years of relevant professional experience. Mr. Schwartz has performed jurisdictional waters delineations throughout Texas and has performed functional assessments by TxRAM and other models, designed mitigation wetlands and streams, prepared Section 404 permit applications, and performed mitigation monitoring on numerous sites. Mr. Schwartz also is highly experienced in performing assessments of aquatic systems (chemical, physical, and biological characterization). He has a B.S. in Zoology from Colorado State University and a M. S. in Environmental Science from the University of North Texas.

**Kirsten Ward** has 9 years of relevant experience. Like Mr. Schwartz, Ms. Ward has performed jurisdictional waters delineations throughout Texas and has performed functional assessments by TxRAM and other models, designed mitigation wetlands and streams, prepared Section 404 permit applications, and performed mitigation monitoring on numerous sites. Ms. Ward is also highly skilled with GIS applications. Ms. Ward has a B. A. in Environmental Studies and Geography from Baylor University.

Several examples of KBA's relevant experience (project summaries) are provided in this appendix.

#### **Duck Hawk Environmental Contractors, LP (DHEC)**

DHEC will construct and manage the mitigation areas. DHEC provides a specialized environmental construction service targeting the installation and management of permittee responsible mitigation conditions. DHEC is set apart in the construction side of mitigation by having both extensive experience with the physical implementation of mitigation work plans and the knowledge and experience to manage planted materials to achieve performance goals. Types of mitigation services performed include:

- Forested wetland
- Emergent freshwater wetland
- Riparian buffer
- Upland buffer
- Native grass reestablishment
- Intermittent and perennial stream restoration and enhancement

**Glenn J. Stewart, PWS, CWB** is the Principal at DHEC and has 27 years of professional experience working with the restoration of drastically disturbed habitats, including 18 years in the Texas Surface Mining Industry as a Reclamation and Permitting Specialist. Mr. Stewart has a Bachelor of Science degree in Wildlife Ecology from Texas A&M University. Mr. Stewart is involved with mitigation banking in both field investigations and permitting for proposed banks in Walker County and Aransas County, Texas. For the last five years has sat on the five-member elected Board of Managers for the Coastal Bend Wetland Mitigation Bank (CBWMB) in Aransas County. DHEC was formed in 2007, to bring specific expertise to the contract side of projects related to Waters of the United States (WOUS). This specific expertise has been garnered through 28 years of professional responsibilities concentrated on wetland determinations, Jurisdictional Determinations, and reclamation of disturbed habitats. The most challenging habitats to reclaim being wetlands and streams.

Mr. Stewart had the unique circumstance of having dual professional careers from 1992-2004. From 1986 to 2004, Mr. Stewart was employed within the Surface Mine Industry in east Central and Northeast Texas. From 1992 to 2004, Mr. Stewart operated, Stewart Planning and Mitigation, a small environmental consulting firm specializing in wetland delineations, Threatened/Endangered species surveys and wetland/stream mitigation. As a result of experiences with Corps of Engineer (COE) permitting and permit implementation, from the older State Program General Permits to the Nationwide system employed today, Mr. Stewart recognized the “pinch-point” in the mitigation process was in the actual implementation of permit conditions, most glaring, with stream restoration.

Today the DHEC mission is premised on doing things right the first time. The skills Mr. Stewart developed, over the years of actually performing habitat construction work, are the result of trial and error as well as implementing Best Management Practices available through scientific literature. The Surface Mining experience provided a unique laboratory to implement designs and then observe the design over years.

**Employment History:**

2007-Present Duck Hawk Environmental Contractors, LP  
1992-2007 Stewart Planning and Mitigation (dual)  
1986 – 1997 Northwestern Resources, Jewett Mine  
1998-2004 Sabine Mining Company, Hallsville, Texas

**Education/Certifications:**

1980-1986 Texas A&M University, Bachelor of Science, Wildlife Ecology  
Certified Wildlife Biologist  
Professional Wetland Scientist  
Licensed Irrigator

Several examples of DHEC’s relevant experience (project summaries) are provided in this appendix.

**Winkelmann and Associates, Inc. (Winkelmann)**

Winkelmann & Associates is a professional civil engineering, consulting, and surveying firm. Winkelmann has performed many stream designs over the years, often in coordination with environmental consultants, including KBA. Many of these have been predominantly hydrologic/hydraulic in nature. These projects have been for floodplain reclamation, stream bank stabilization, and stream realignment or reconfiguration. Winkelmann’s stream projects are based on in-house hydrology and hydraulic analysis, in combination with ecological analysis performed by subconsultants, to result in stable stream systems that are compatible with natural conditions.

Winkelmann has performed stream designs that incorporated wetland/waters of the U.S. mitigation on numerous projects. A few examples are:



1. Southeast corner of US 380 at Dallas Tollway in Frisco, Texas

This project involved extensive coordination between KBA and Winkelmann to address corps of Engineer issues as well as City of Frisco criteria and FEMA guidelines. The project involved the relocation of Parvin Branch, a major channel through Collin County. The design included configuration of a natural design of bed and banks with an adjacent floodplain and riparian area. The work was permitted under an Individual 404 Permit but not constructed.

2. Southwest corner of US 75 & McDermott in the City of Allen

This project, associated with Home Depot, involved the relocation of an unnamed stream branch. Deed restricted mitigation areas were designed and established per COE permit requirements.

3. Channel Flood Study - Cottonwood Creek (Tributary of Rowlett Creek) in the City of McKinney, Texas.

Flood study for residential development Village Park. Channel improvements along the creek included installation of control structures of areas with high velocities and gabion baskets by Maccaferri along the creek along with RecycleX TRM by American Excelsior for slope stabilization. The project included a survey of the creek to identify areas needed to have creek restoration, as several areas of the creek had been eroded due to high density development.

**RELEVANT PROJECT SUMMARIES**

**Project:** Stream / Constructed Wetland Complex for Stormwater Treatment, Research and Education (KBA)  
**Location:** Clear Lake, Texas  
**Client:** University of Houston Clear Lake  
**Date:** 2011

KBA designed and constructed a multiple use stream/wetland system discharging to Horsepen Bayou on the campus of University of Houston in Clear Lake, Texas. The primary purpose of the system was to treat stormwater runoff from approximately 20 acres of campus grounds and parking lots. The University also uses the system as a research and education facility to demonstrate the stormwater quality improvements. As the prime contractor, KBA designed the system obtained all necessary permits, and selected and managed subcontractors, within substantial temporal and spatial constraints. The proposed stream reach replaced an existing ditch and the proposed wetland occupied a borrow pond. Earthwork cut and fill were balanced to minimize cost and regulatory issues. Additional highlights of the project included re-purposed cypress log step pools, interpretive signage, a community volunteer planting event, a boardwalk with solar lighting and a shaded canopy, and a solar powered pump to treat water from Horsepen Bayou.

**Project:** Stream Restoration and Wetland Creation, Lakes of Prosper Subdivision (KBA/DHEC)  
**Location:** Collin County, Texas  
**Client:** Goodman Land Advisors, Hunt Consolidated  
**Date:** Ongoing

KBA delineated two degraded streams (one intermittent and one ephemeral) on a property planned for a large residential development. KBA obtained an Individual Permit to restore 5,200 feet of stream channel using natural stream channel design methods. Storm water detention was provided by two in-stream pond/wetland systems on the intermittent stream. The mitigation included which included several acres of riparian buffer. KBA designed the created and restored systems and provided construction oversight. DHEC assisted with the vegetation specifications and performed all of the vegetation planting (emergent and floating aquatic vegetation and trees and grasses in the riparian areas). KBA is presently performing semi-annual monitoring of the project.

**Project:** Stream Restoration at FM 1382 Bridge (KBA)  
**Location:** Dallas, Texas  
**Client:** Clotey Engineering/TxDOT  
**Completed:** 2003

KBA EnviroScience, Ltd. provided design and environmental support for stream restoration associated with construction of two 2-lane bridges over an intermittent stream on FM 1382. Velocity dissipators, instream habitat features, and establishment of native vegetation were included in the design. KBA performed the jurisdictional waters delineation and developed NEPA documentation for the project. The project qualified as a Categorical Exclusion. KBA prepared and submitted the Preconstruction Notification to the Corps of Engineers.

**Project:** Constructed Streams and Wetlands, NRG Coal Combustion Landfill Development (KBA)  
**Location:** Jewett, Texas  
**Client:** NRG Texas Power LLC  
**Date:** Completed 2009

KBA EnviroScience, Ltd. provided environmental support for the development of additional coal combustion by-product disposal areas. KBA performed two delineations of waters of the U.S., one for the disposal area and one for the mitigation area and designed a constructed wetland/ stream system for the project that consisted of over 3,000 lf of ephemeral stream channel within a large wetland area, 6.62 acres of wetlands, and three areas of open water totaling 1 acre. KBA developed and submitted an Individual Permit Application for the project to the Corps of Engineers, which included a Mitigation Plan. The Plan included a detailed design for onsite mitigation streams and wetlands, a water budget for the mitigation area, monitoring plan, and functional assessment. KBA also directed a presence/absence survey for the Navasota ladies-tresses and lead a multi-agency site visit. An Individual Permit was awarded in 2009.

**Project:** Constructed Streams and Wetlands, Realty Capital – Beach Street Addition (KBA)  
**Location:** Fort Worth, Texas  
**Client:** Realty Capital Corporation  
**Date:** Completed 2010

KBA EnviroScience, Ltd. performed jurisdictional waters delineation for the proposed extension of a roadway and to develop the commercial and residential properties adjacent to the proposed right-of-way (ROW) along a portion of the extension. KBA identified an intermittent stream, four associated ephemeral tributaries, and one adjacent wetland within the project area as waters of the U.S. totaling approximately 5,000 linear feet of stream and 1.51 acres of total waters of the U.S. KBA developed an application that included a detailed mitigation plan and functional assessment for the project and applied for Section 404 authorization under an Individual Permit. KBA designed onsite mitigation for the project, including ephemeral streams, constructed wetlands, and a restored intermittent stream. An Individual Permit was awarded in 2010.

**Project:** Stream and Wetland Restoration, Circle K Ranch (KBA)  
**Location:** Kaufman County, Texas  
**Client:** Hunt Consolidated  
**Date:** Ongoing

KBA performed jurisdictional waters delineation for a several-hundred acre private ranch and consulted with the client regarding the construction of a 40-acre lake. Since some work had already begun on the dam, KBA recommended interim measures. KBA and the client met with the U.S. Army Corps of Engineers (the Corps) to plan a strategy for complying with Section 404 permitting requirements. KBA guided the client to restore the stream, implement interim measures, and submit an Individual Permit (IP) application. KBA wrote the IP application and mitigation plan for the project which included the design of streams, wetlands, marshes, wooded areas, and grass buffers. KBA followed an aggressive schedule on budget and maintained constant contact with the client and the Corps through completion of the project. An Individual Permit was awarded in 2009. KBA continues to perform mitigation area monitoring twice yearly.

**Project:** Stream Enhancement Project, Big Fossil Creek (KBA)  
**Location:** North Richland Hills, Texas  
**Client:** Elliott & Hughes, Inc./City of North Richland Hills  
**Completed:** September 2001

KBA EnviroScience, Ltd. performed a wetland delineation, provided permitting assistance, and directed project mitigation for a bank stabilization project in North Richland Hills, Texas. The bank was severely eroded and posed a threat to residential property. KBA performed the delineation and obtained the necessary Nationwide Permits. KBA assisted with the design of the bank stabilization, and designed the streamside stabilization with coir rolls and re-establishment of riparian vegetation. KBA developed the stream mitigation plan for the project and provided construction oversight.

**Project Title:** Stream Restoration, Vitruvian Park Development (KBA)  
**Location:** Addison, Texas  
**Client:** UDR, Inc.  
**Completed:** August 2009

KBA performed a Waters of the U.S. jurisdictional delineation on Farmers Branch in Addison, Texas. The applicant's project consisted of constructing a mixed-use development on approximately 136 acres of developed land. KBA worked with the USACE to allow the applicant to reroute an impounded portion of the stream, remove the concrete liner, install weirs, and widen portions of the stream. KBA worked with the engineer to design the mitigation project within permit constraints.



**Project:** Stream Mitigation, Streets at Frisco (KBA)  
**Location:** Frisco, TX  
**Client:** Winkelmann Engineers/Alberta Development  
**Completed:** 2008

KBA EnviroScience, Ltd. performed a delineation of jurisdictional waters on a 125-acre property for a planned mixed-use development. The site contained a perennial stream (Parvin Branch), three ephemeral tributaries to Parvin Branch, a jurisdictional pond, and two forested wetland areas. To effectively develop the property, the perennial stream had to be rerouted and the remainder of the jurisdictional areas filled. KBA worked with the civil engineers, hydrologists, and the developer to minimize the impacts to jurisdictional waters and to design onsite mitigation for unavoidable impacts. KBA designed a floodplain along the reconstructed stream that contained wet meadows, storm water detention/treatment wetlands, and riparian areas. KBA submitted an Individual Permit application to USACE which included a Mitigation Plan.

At the request of TCEQ, KBA performed surveys of the fish community, benthic invertebrate community, and stream habitat of Parvin Branch using TCEQ Surface Water Quality Monitoring protocol. These data were used to calculate indices of community health and water quality indicators, supporting the Functional Assessment submitted to USACE as part of the permit application. TCEQ accepted the stream survey and agreed that it supported KBA's Functional Assessment. The Corps issued the Individual Permit to the applicant.

**Project:** Stream Restoration, Wetlands Delineation, Permitting Support, and Project Mitigation for Hickory Creek Estates (KBA)  
**Location:** Red Oak, Texas  
**Client:** Red Oak Coyote Ridge, Ltd.  
**Date:** 2005

KBA EnviroScience, Ltd. performed two delineation of waters of the United States reports for this project. The project was estimated to impact approximately 2,300 linear feet, or 0.37 acres, of ephemeral stream in two areas of residential development. KBA realigned an ephemeral stream to contain the 100-year storm event within a constructed riparian area and storm water wetland. KBA submitted the Preconstruction Notification to the Corps of Engineers.

**Project:** Stream Design, Wetlands Delineation, Permitting, and Mitigation Design for Big Lots Distribution Center (KBA)  
**Location:** Durant, Oklahoma  
**Client:** The Haskell Company  
**Completed:** 2004

KBA EnviroScience, Inc. (KBA) performed a wetland delineation and a protected species habitat evaluation under contract to The Haskell Company on a 265-acre site in Durant, Oklahoma. The tract was the planned location of a Big Lots Distribution Center and related improvements. The delineation identified an ephemeral stream within the project limits. The protected species habitat evaluation determined that the site is within the range and provided potentially suitable habitat for the endangered American Burying Beetle. To resolve the potential presence of the endangered beetle, KBA performed a survey under a Section 10 Incidental Take Permit from US Fish and Wildlife Service (USFWS) and a permit from the Oklahoma Department of Wildlife Conservation (ODWC). The survey indicated that related burying beetles (same genus) are present on the site, but that the endangered species was not present. The survey findings were accepted by USFWS and ODWC.

The survey results cleared the way for the US Army Corps of Engineers (USACE) to consider a Section 404 permit for impacts on the ephemeral stream. KBA developed a permit application for filling and grading the stream. KBA developed a Mitigation Plan that included construction of a new stream channel around the perimeter of the site. KBA designed the stream contours and developed the vegetation plans for the new stream and riparian area. USACE issued the Section 404 permit in response to the Mitigation Plan and permit application.

**Project:** Jurisdictional Waters, Threatened and Endangered Species, and Cultural Resources Consulting and Permitting for Whiskey Springs Resort (KBA)  
**Location:** Kerrville, Texas  
**Client:** Berlin Interests, Inc.  
**Completed:** 2009

KBA EnviroScience, Ltd. (KBA) performed a jurisdictional waters delineation, habitat evaluation for threatened and endangered species, and a cultural resource survey on a proposed multi-use development on an approximately 1,100-acre subject site in Kerrville, Texas. A total of 41 jurisdictional water resources were present and consisted of 38 streams, two ponds, and one wetland, were identified on the site. KBA also determined that the endangered golden-cheeked warbler nests on the site. At the request of the State, KBA also performed a survey for the endangered Tobush fishhook cactus, but determined that the species is not present on the site. KBA developed an application for an Individual 404 Permit, including a detailed Mitigation Plan and design that provides for preservation, revegetation, and restoration of one of the ponds and rerouting of several streams. KBA designed the stream realignment and pond restoration in coordination with the client's civil engineers. KBA also developed an acceptable mitigation for the golden-cheeked warbler and wrote a Biological Assessment, which was accepted by USFWS. KBA also negotiated a mitigation strategy for two potential archaeological sites on the project. An Individual Permit was awarded in 2009.

**Project:** Reforestation, Gaylord-Opryland Mitigation (DHEC)  
**Location:** Denton County, Texas  
**Client:** Gaylord Entertainment  
**Date:** 2004

This project consisted of two separate mitigation areas of 14 and 50 acres, respectively. The project was a reforestation project supported by a dedicated irrigation system. DHEC installed the irrigation on both project sites, which entailed the installation of more than a mile of 8" waterline and over 40,000 feet of mainline and lateral line. DHEC planted over 50,000 bare root trees and shrubs over each project site. The COE permit required a 5-year monitoring period. The project was successfully completed and released by the COE at the end of the 5-year period.

**Project:** Revegetation, Cabelas Retail Location Mitigation (DHEC)  
**Location:** Tarrant County, Texas  
**Client:** Kraus-Anderson Construction  
**Date:** 2005

This project included onsite and offsite mitigation. The onsite mitigation involved the establishment of wetland vegetation in the littoral margins of the onsite 4-acre lake and stabilization of onsite slopes with native grass surrounding a created perennial stream segment. Bare root and larger containerized stock were planted throughout the onsite project. Offsite work consisted of planting 5-gallon containerized stock to establish a riparian buffer along several thousand feet of perennial creek, north of the retail location. This project had a 5-year monitoring period and was successfully released at the end of it.

**Project:** Stream Relocation, Custer Bridges Retail Development (DHEC)  
**Location:** Collin County, Texas  
**Client:** Rogers-O'Brian Construction  
**Date:** 2009

Approximately 1000 feet of a perennial stream was relocated 300' east of its natural location. This work involved 15 feet of excavation down to limestone and carving the limestone down to the flowline. Appropriate side slopes were created and 5-gallon containerized stock used to create a riparian buffer zone along each side. In addition to pools and riffle areas, instream features were carved into the limestone streambed to create planting areas for wetland plants as well as large canopy cypress trees.

**Project:** Vegetation, Detention Pond and Side Slope Rayzor Ranch (DHEC)  
**Location:** Denton County, Texas  
**Client:** REDD Development  
**Date:** 2010-2012

This project involved the reestablishment of native grass on the approximately 14-acres of side slopes of a new storm water detention pond and the establishment of emergent and submergent

wetland vegetation around the perimeter of the pond. This detention pond was unique in it incorporated storm water design features to enhance water quality commonly seen on the east and west coasts but had not been used in Denton County.

**Project:** Stream Bank Stabilization, Rall Ranch (DHEC)  
**Location:** Tarrant County, Texas  
**Client:** Rall Properties  
**Date:** Present

This project involved stream bank stabilization of 1000 feet of intermittent stream and the creation of three wetland areas along the stream channel. Inlet and outlet features were designed to connect the wetlands to the stream. Storm water drainage from the Chisholm Trail Toll Road construction flowed overland to the wetlands and then to the stream channel. Wetlands and the stream channel were planted with 5-gallon containerized stock to develop the riparian buffer and the wetlands were planted with woody and herbaceous species. Side slopes and surrounding disturbed areas were stabilized with native grasses. A dedicated irrigation system was installed to ensure plant establishment. Stream bank stabilization required excavating the stream bank to nearly the flowline and building the slope back wrapped with Turf Reinforcement Mat (TRM). The bank was reconstructed in TRM encapsulated layers.

## **PERENNIAL/INTERMITTENT STREAMS – MINING OPERATIONS (GLENN STEWART):**

### **Lambs Creek Diversion and Restoration, Jewett Mine**

Approximately 3000' of perennial stream was relocated in front of dragline operations in Area C to allow mining through the streambed. Once the dragline was sufficiently past the original streambed the stream was rerouted through the reclaimed spoil area to its permanent alignment. This was the first perennial stream relocation performed at the Jewett Mine and many of the measures employed to construct, stabilize and revegetate the stream corridor were the result of trial and error.

### **Mine Creek Diversion and Relocation, Jewett Mine**

Approximately 2000' of Mine Creek were diverted away from dragline operations and reestablished through reclaimed spoil once dragline operations were sufficiently past the area where the stream was to be rerouted.

Responsibilities for the above projects included design assessment, stabilization and revegetation of channel slopes, in-stream features and riparian buffer areas. As well as development and implementation of adaptive management plans. There were many unnamed ephemeral reaches throughout the reclaimed watershed, dealt with the construction and stabilization of these reaches on a daily basis.



**MARGARET G FORBES, Ph.D.**

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**EDUCATION**

Ph.D. in Environmental Science, University of North Texas, Denton, Texas, 2002  
M.S. in Environmental Systems, Humboldt State University, Arcata, California, 1997  
B.S. in Environmental Engineering, Humboldt State University, Arcata, California, 1994

**WORK EXPERIENCE**

**KBA EnviroScience, Inc.,** Lewisville and Nacogdoches, Texas

*Senior Scientist* – Designed stream and wetland restoration/mitigation projects, conducted wetland delineations, prepared permit applications under Section 404 Clean Water Act activities, monitored mitigation wetlands in Louisiana, performed habitat assessments for threatened and endangered species, and ecological risk assessments according to Texas Risk Reduction Program rules, and prepared environmental assessments according to National Environmental Policy Act. (2000-2004 and 2010-present).

**Baylor University, Waco Texas**

*Research Associate, Postdoctoral Fellow* – Researched aspects of freshwater science within Texas streams, reservoirs, and wetlands. Research focused on functional assessment, plant ecology, hydrology, productivity and water quality. Co-principal investigator on research projects including study on coastal prairie wetlands (\$360,000 funded by Galveston Bay Estuary Program) and nitrogen removal by constructed wetlands (\$180,000 funded by Onsite Wastewater Council). Write proposals, give oral presentations, and prepare publications for the Center for Reservoir and Aquatic Systems Research (2006-2010).

**The University of Texas at Austin, Marine Science Institute,** Port Aransas, Texas

*Postdoctoral Fellow* – Monitor water quality, vegetation, soils, and ecology to determine effects of freshwater flows on salt marsh ecosystem health. Obtain, analyze, and interpret hydrology, water quality, salt marsh soils, and vegetative data within the Nueces Delta. Evaluate effects of climate and hydrology on adjacent salt marsh ecology and community structure including the effects of using treated wastewater to restore degraded salt marshes. Disseminate results via published articles and technical presentations to general public and educators (2004-2006).

**The University of North Texas, Denton, Texas**

**Adjunct Professor & Teaching Fellow** – Developed course curriculum and laboratory/field activities, and taught 4-unit undergraduate/graduate level course titled “Wetland Ecology and Management”. Curriculum covered plant ecology, hydrology, biogeochemistry, soils, energy cycling, regulation and management of wetlands. Taught course two semesters (2001-2002).

**Research Assistant** - Wrote grant proposals, designed and managed wetland and riparian forest restoration projects within the Lewisville Lake Environmental Learning Area. Performed public outreach and coordinated community and student participation in restoration and research activities. Designed and built multiple-use wetland utilizing reclaimed wastewater and community volunteers. Analyzed effects of different planting techniques on survival of aquatic plants in regional reservoirs (1997-2000).

**Lower Rogue Watershed Council, Gold Beach, Oregon**

**Coordinator** –Worked with individual landowners and appropriate agency personnel to design stream restoration projects. Obtained grant funding, implemented, monitored, and reported on projects. Organized public education activities and landowner outreach, coordinated environmentally related activities with local schools. Provided training for volunteers for a water quality monitoring program, coordinated volunteers and contractors for stream and watershed restoration projects (1996-1997).

**SPECIFIC EXPERIENCE RELEVANT TO NATURAL STREAM CHANNEL DESIGN**

**Education**

Fluvial Processes: study of natural streams and rivers including field work on perennial streams. Streams were surveyed (rod and transit) and data obtained to create cross-section velocity profiles, longitudinal profiles, a flow-rating curve, and sediment analysis (specifically, pebble counts). Course taught by Dr. Andre Lehre. Text: *Fluvial Processes in Geomorphology* (Leopold et al. 1964) and *Fluvial Forms and Processes* (Knighton 1984).

Fluid Mechanics: study of fluids (liquids, gases, and plasmas) and the forces acting on them. Included fluid kinematics, the study of fluids in motion; and fluid dynamics, the study of the effect of forces on fluid motion such as laminar and turbulent flow numerical modeling.

Transport Phenomena: study of the exchange of mass, energy, and momentum between observed and studied systems.

Groundwater Systems: study of flow, rate and transport and natural attenuation of constituents in groundwater. Included modeling of flow in saturated and unsaturated flow using linear algebraic.

Hydrology: (audited) study of watershed hydrology, groundwater modeling, urban stormwater management, flood mitigation and river mechanics. Focused on the water cycle, precipitation, flood prediction, and runoff processes.

Hillslope Processes: study of dynamic landscapes and the principles and applications of geomorphology. Topics include erosion and weathering processes such as those for hillslopes, rivers and mountains, including mass movement or mass wasting.

### **Work Experience**

As Senior Scientist, KBA EnviroScience, Inc., Lewisville and Nacogdoches, Texas:

**Project:** Stream / Constructed Wetland Complex for Stormwater Treatment, Research and Education (KBA)  
**Location:** Clear Lake, Texas  
**Client:** University of Houston Clear Lake  
**Date:** 2011

Dr. Forbes designed and constructed a multiple use stream/wetland system discharging to Horsepen Bayou on the campus of University of Houston in Clear Lake, Texas. The proposed stream reach replaced an existing ditch, and was designed to convey peak stormwater flow while providing water quality and wildlife habitat enhancement. The stream reach portion of the project was short and existing topographical and culvert constraints did not allow for the establishment of meanders. However cypress logs salvaged from onsite were used to construct step pools. Earthwork cut and fill were balanced to minimize cost and regulatory issues.

**Project:** Stream Restoration and Wetland Creation, Lakes of Prosper Subdivision (KBA/DHEC)  
**Location:** Collin County, Texas  
**Client:** Goodman Land Advisors, Hunt Consolidated  
**Date:** 2004 with ongoing monitoring

Dr. Forbes designed the restoration of over 5,200 feet of intermittent and ephemeral stream channel using natural stream channel design methods. The design was based on the 1.5-year discharge and stream morphology parameters of a local reference stream. Meander length, bank full channel width and depth, and other design parameters were specified. Storm water detention was provided by two in-stream pond/wetland systems on the intermittent stream. The mitigation included which included several acres of riparian buffer. KBA is presently performing semi-annual monitoring of the project.

**Project:** Stream Enhancement Project, Big Fossil Creek (KBA)  
**Location:** North Richland Hills, Texas  
**Client:** Elliott & Hughes, Inc./City of North Richland Hills  
**Completed:** 2001

Dr. Forbes assisted with the design of the bank stabilization, and designed the streamside stabilization with coir rolls and re-establishment of riparian vegetation. KBA developed the stream mitigation plan for the project and provided construction oversight.

**Project:** Stream Restoration at FM 1382 Bridge (KBA)  
**Location:** Dallas, Texas  
**Client:** Clotey Engineering/TxDOT  
**Completed:** 2003

Dr. Forbes provided design and environmental support for stream restoration associated with construction of two 2-lane bridges over an intermittent stream on FM 1382. Velocity dissipaters, in stream habitat features, and establishment of native vegetation were incorporated into the design. KBA performed the jurisdictional waters delineation and developed NEPA documentation for the project. The project qualified as a Categorical Exclusion. KBA prepared and submitted the Preconstruction Notification to the Corps of Engineers.

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Enwright NE, Forbes MG, Doyle RD, Hunter B, Forbes W. 2011. Using Geographic Information Systems to Inventory Coastal Prairie Wetlands along the Upper Gulf Coast, Texas. *Wetlands* 31:687-697.

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**Flood study** to define special flood hazard areas. (Royse City, Texas)

**Channel Flood Study and Channel Improvements- Cottonwood Creek (Tributary of Rowlett Creek) (McKinney, Texas).** Performed flood study for Village Park residential development. Channel improvements along the creek, installation of control structures of areas with high velocities and gabion baskets by Maccaferri along the creek along with RecycleX TRM by American Excelsior for slope stabilization.

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**Attachment C. Delineation of Waters of the U.S., Including Wetlands**



**DELINEATION  
OF  
WATERS  
OF THE  
UNITED STATES**

**Rockin' K on Chambers Creek  
County Road NW0020  
Navarro County, Texas**

Prepared for:

**Rockin' K on Chambers Creek LP  
1601 Elm Street, Suite 3700  
Dallas, Texas 75201**

Prepared by

**KBA EnviroScience, Ltd.  
101 E. Southwest Parkway, Suite 114  
Lewisville, Texas 75067  
972-436-9669**

**September 2013**



**DELINEATION  
OF  
WATERS  
OF THE  
UNITED STATES**

**Rockin' K on Chambers Creek  
County Road NW0020  
Navarro County, Texas**



Kirsten Ward, Project Manager

September 9, 2013

Date



Joseph Schwartz, Quality Control Review

September 9, 2013

Date



C. Keith Bradley, REP 5734, CWB

September 9, 2013

Date

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## **APPENDICES**

**Appendix A:** Routine Wetland Determination Data Forms

**Appendix B:** Stream Data Sheets

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## INTRODUCTION

KBA EnviroScience, Ltd. (KBA) performed a delineation of wetlands and other "waters of the United States" (as defined by the Clean Water Act) for a 880-acre tract located north of County Road NW0020 and west of the Southern Pacific railroad tracks, in Navarro County, Texas. "Waters of the U.S." are referred to herein as "jurisdictional" waters, as they are potentially subject to federal regulation pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899 under the jurisdiction of the U.S. Army Corps of Engineers (USACE). The delineation was performed by Sean Fletcher, Margaret Forbes, Joseph Schwartz, and Kirsten Ward of KBA on July 15, 16, and 17, 2013.

### *Project Area*

The project site is an approximately 880-acre tract of mostly pasture located in a rural area north of Corsicana, Texas. The property is located north of County Road NW0020, northeast of County Road NW0010, west of the Southern Pacific railroad tracks, and southwest of Chambers Creek (**Figure 1**).

The site is bordered by open pasture, wooded land, and Chambers Creek to the north-northeast; railroad tracks to the east; County Road NW0020, pasture and rural residences to the south; and rural residences, open pasture, and County Road NW0010 to the west. The subject site is predominantly open pasture with scattered wooded groves, several ponds, a residence, sheds, and barns. An unnamed tributary to Charm Creek (The Ditch) flows northwest to southeast across the central portion of the site and Charm Creek flows north to south across the eastern portion of the site before joining The Ditch and turning east and flowing offsite. Chambers Creek flows along the northeastern property boundary of the site. Multiple stock ponds are also scattered throughout the site. The area examined is shown on **Figure 2**.

The majority of the project site is located within "Zone A", an area determined to be within the 100-year floodplain. The extreme western-southwestern portion of the site is located within "Zone X," an area determined to be outside the 500-year floodplain, as mapped by the Federal Emergency Management Agency (FEMA) (Flood Insurance Rate Map Q3 Digital Data) (**Figures 3 and 4**).

The site generally slopes to the northeast, toward Chambers Creek. The site has an elevation range of 340 to 400 feet above mean sea level as indicated on the United States Geologic Survey (USGS) topographic map (Navarro County Mosaic, Natural Resource Conservation Service (NRCS) Geospatial Data Gateway, 2013) (**Figure 5**). An intermittent stream, The Ditch, is indicated in the central portion of the site extending from northwest to southeast. Another intermittent stream, Charm Creek, is indicated in the eastern portion of the site extending from north to south. Several isolated ponds are scattered throughout the site. A perennial stream, Chambers Creek, flows along the northeastern property boundary.

The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Wetland Mapper depicts surface waters regardless of their federal or state jurisdiction. The NWI map that includes this site (**Figure 6**) shows eight features on the project site. One palustrine, forested, broad-leaved deciduous, temporarily flooded feature (PFO1A) is located along Chambers Creek.

Chambers Creek is indicated as a riverine, lower perennial, open water, permanently flooded feature. One palustrine, forested, broad-leaved deciduous, seasonally flooded feature (PFO1C) is indicated along Charm Creek. Three palustrine, open water, permanently flooded, excavated ponds (POWHx) are located at various locations on the site. One palustrine, open water, permanently flooded, diked/impounded pond (POWHh) is indicated near the southwest portion of the site. One palustrine, emergent, persistent, temporarily flooded, excavated pond (PEM1Ax) is indicated in the western portion of the site.

Navarro County and all of north-central Texas had been experiencing a moderate to severe drought for several years prior to the field work. Conditions at the Rockin' K Ranch were extremely dry during the time of this evaluation.



## DESCRIPTION OF SOILS

Soils on the project site are described in the USDA Natural Resources Conservation Service (NRCS) Soil Survey of Navarro County, obtained via Soil Data Mart (NRCS 2008b). The soil survey map is provided as **Figure 7**; the soil type designations (e.g., “[BuA]”) correspond to the designations on the soil survey map. Twelve soil types are described for the project site:

- **BuA – Burleson clay, 0 to 1 percent slopes.** This component is on circular gilgai on stream terraces on river valleys. The parent material consists of clayey alluvium of Pleistocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **BuB – Burleson clay, 1 to 3 percent slopes.** This component is on circular gilgai on stream terraces on river valleys. The parent material consists of clayey alluvium of Pleistocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **FeD2 –Ferris clay, 3 to 8 percent slopes, eroded.** This component is on linear gilgai on ridges on plains. The parent material consists of residuum weathered from calcareous shale in Eagleford Shale and Taylor Marl formations of Cretaceous age. Depth to a root restrictive layer, bedrock, densic, is 40 to 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **FhE2 –Ferris and Heiden clays, 5 to 15 percent slopes, eroded.**

### **Ferris, eroded.**

The Ferris, eroded component makes up 67 percent of the map unit. This component is on linear gilgai on ridges on plains. The parent material consists of residuum weathered from calcareous shale in Eagleford Shale and Taylor Marl formations of Cretaceous age. Depth to a root restrictive layer, bedrock, densic, is 40 to 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.

**Heiden, eroded.**

The Heiden, eroded component makes up 28 percent of the map unit. This component is on linear gilgai on ridges on plains. The parent material consists of residuum weathered from calcareous shale in Eagleford Shale and Taylor Marl formations of Cretaceous age. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.

- **HaD – Heiden clay, 5 to 8 percent slopes.** This component is on linear gilgai on ridges on plains. The parent material consists of clayey residuum weathered from clayey shale of Eagleford Shale or Taylor Marl. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **HaD2 – Heiden clay, 5 to 8 percent slopes, eroded.** This component is on linear gilgai on ridges on plains. The parent material consists of clayey residuum weathered from clayey shale of Eagleford Shale or Taylor Marl. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **HbB – Houston Black clay, 1 to 3 percent slopes.** This component is on circular gilgai on ridges on plains. The parent material consists of residuum weathered from calcareous shale of Eagleford Shale and Taylor Marl. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Shrink-swell potential is very high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **LaD – Lamar clay loam, 3 to 8 percent slopes.** This component is on stream terraces on plains. The parent material consists of calcareous loamy alluvium of Quaternary age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **LaE2 – Lamar clay loam, 5 to 12 percent slopes, eroded.** This component is on stream terraces on plains. The parent material consists of calcareous loamy alluvium of Quaternary age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded or ponded. There is no zone of

water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.

- **Tn – Trinity clay.** This component is on circular gilgai on floodplains on river valleys. The parent material consists of clayey alluvium of Holocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is high. Shrink-swell potential is very high. This soil is occasionally flooded but not ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.
- **Tr – Trinity clay, frequently flooded.** This component is on circular gilgai on floodplains on river valleys. The parent material consists of clayey alluvium of Holocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is high. Shrink-swell potential is very high. This soil is frequently flooded but not ponded. There is no zone of water saturation within a depth of 72 inches. This soil is rated as hydric by the NRCS.
- **WnB – Wilson clay loam, 1 to 3 percent slopes.** This component is on stream terraces on plains. The parent material consists of clayey alluvium of Quaternary age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is high. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. This soil is not considered hydric by the NRCS.

## FIELD METHODOLOGY

### *General*

After review of available information, including the relevant topographic map, NWI map, and the soil survey, the field delineation was performed in accordance with the USACE Wetland Delineation Manual (USACE 1987), as later amended by USACE memoranda, and the Regional Supplement for the Great Plains Region (USACE 2010).

Twenty-two delineation transects traversed the site. Transects were selected to run perpendicular to hydrological gradients and intercept suspected wetland areas, based on the aforementioned review of available documents. On each transect, at least one plot was evaluated for each community type that was evidenced by a change in dominant vegetation type or hydrology. Field observations were recorded on a Corps of Engineers Wetland Determination Data Form – Great Plains Region (forms taken from USACE, 2010) (**Appendix A**). The Stream Data Forms are included as **Appendix B**.

Photographs were taken from various positions at the site (**Appendix C**). Jurisdictional waters and delineation transects are provided as **Figures 8 - 12**.

### *Streams*

Streams are identified as channels that have regular flow at a frequency and duration resulting in the formation of ordinary high water marks (OHWM). The OHWM is defined as “the line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

### *Wetlands*

Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include but are not limited to swamps, marshes, bogs, and similar areas. Wetlands have the following three diagnostic environmental characteristics: hydrophytic (or wetland) vegetation, wetland hydrology, and hydric soils. Evidence of all three parameters must be found in order to make a positive wetland determination.

### *Vegetation*

The plant species in each vegetation stratum in the immediate vicinity of the plot were identified and recorded. The plot radius for each stratum is indicated on the Wetland Determination Data Form. For rapid delineations in relatively simple plant communities, dominant species were selected visually using the 50/20 Rule as a general guide. Dominant species were chosen independently from each stratum of the community. In general, dominant species were the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least

20 percent of the total. Absolute percent cover is the recommended abundance measure for plants in all vegetation strata.

Hydrophytic vegetation decisions were based on the wetland indicator status (Lichvar 2013) of species that make up the plant community. The indicator status for vegetation in USDA Land Resource Great Plains subregion was recorded for each of the species listed. The following abbreviations were used on the data forms:

OBL:	Obligate wetland plants
FACW:	Facultative wetland plants
FAC:	Facultative plants
FACU:	Facultative upland plants
UPL:	Upland plants

The dominance test is the basic hydrophytic vegetation indicator, and is used in most situations. This test indicates that hydrophytic vegetation is present at the observation point when more than 50 percent of the dominant species have an indicator status of OBL, FACW, and/or FAC. If indicators of hydric soil and wetland hydrology are present on the site, but the vegetation initially fails the dominance test, then the prevalence index is used. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code and weighting is by absolute percent cover. Plus and minus indicators are not considered for the prevalence indicator test.

For species listed as NI (reviewed but given no regional indicator) or NO (no know occurrence in the region at the time the list was compiled), the indicator status assigned to the species in the nearest adjacent region is applied. If the species is listed but no adjacent regional indicator is assigned, the species is not used to calculate hydrophytic vegetation indicators. In general, species that are not listed on the wetland plant list are assumed to be UPL species. However, recent changes in plant nomenclature have resulted in a number of species that are not listed but are not necessarily UPL plants.

### ***Soils***

Information regarding soils was recorded for each community at the site. A soil sample of at least the upper 16 inches was examined. The color of the matrix and any redox features in the sample were determined for each apparent layer in the sample using a soil color chart (Munsell, 1994). Indicators of iron and manganese reduction, translocation, or accumulation, sulfate reduction, or organic matter accumulation were recorded. Soil characteristics were reported on the data form and checked against the mapped soil type to determine if the mapped soil type appeared to be accurate for the plot. A hydric soil indicator was chosen for the plot if the observed characteristics matched the conditions of the listed indicators for the Great Plains Region.

### ***Hydrology***

At each plot, visual indications of wetland hydrology were recorded. Wetland hydrology indicators fall into four groups:



1. Group A – Observation of surface water or saturated soils
2. Group B – Evidence of recent inundation
3. Group C – Evidence of current or recent soil saturation
4. Group D – Evidence from other site conditions or data

Additionally, the result of the FAC-neutral test was recorded. The FAC-neutral test is determined by first eliminating all FAC species from consideration. The FAC-Neutral test is positive if the number of remaining dominant species wetter than FAC (OBL, FACW) are greater than the number of dominant species drier than FAC (UPL, FACU). The FAC-neutral test is a Group D indicator.

### ***Other Observations***

Other observations pertinent to the outcome of the wetland delineation were recorded. Primarily, these observations were directed to land alterations that would impact hydrology, such as dams or other blockages, man-made drainage channels, or changes to onsite or offsite topography that would modify drainage patterns.

## RESULTS

The project site consists of an 880-acre tract of land comprised mainly of pasture with forested areas in the northeastern portion. Eight jurisdictional features were observed on the project site: a perennial stream (Chambers Creek), two intermittent streams (Charm Creek and The Ditch), one ephemeral stream, a wetland fringe along a portion of the unnamed tributary to Charm Creek, a pond, a wetland fringe around a portion of the pond, and an emergent wetland east of the pond. Chambers Creek, the perennial stream, forms the northern property boundary. This stream flows northwest to east for approximately 3,230lf within the project site. An unnamed ephemeral tributary to Chambers Creek is located in the northern corner of the property and flows 477 lf before draining into Chambers Creek. The North Pond is located adjacent to the unnamed tributary, separated by an earthen berm with a culvert to connect the two. The North Pond totals 0.13 acres. An emergent wetland and fringe wetland is located around and adjacent to the North Pond and totals 0.27 acres. Charm Creek, an intermittent stream, is the old stream bed of Chambers Creek. This feature is located in the eastern portion of the site and flows from north to southeast for approximately 6,584 lf and exits the site at the eastern property boundary. An earthen berm extends through the central portion of the site from west to east. An intermittent stream and fringe wetlands are located adjacent to the berm and comprise The Ditch, which drains the southern and western portion of the site. The Ditch flows 9,131 lf through the site before draining into Charm Creek in the eastern portion of the site. A wetland fringe is located along The Ditch and totals 0.9 acres.

Twenty-one isolated, non-jurisdictional ponds are also located on the property. In addition, several ephemeral channels are located in the southern and southwestern portion of the site. These features display OHWM for a short distance and then transition to grassy swales or open pasture where the topographic gradient decreases and use by cattle is prevalent. These features are not considered Waters of the US and were, therefore, not delineated because there it not a continuous OHWM nor is there a significant nexus between the channels and a tributary to a traditionally navigable water (TNW).

### *Community Types*

Six community types were identified on the delineated portion of the site:

Community Type A: Perennial Stream. This community refers to Chambers Creek located along the northeast property boundary.

Community Type B: Intermittent Stream. This community refers to the portion Charm Creek that extends northwest to southeast in the northeastern portion of the property and The Ditch that extends through the property from west to east.

Community Type C: Ephemeral Stream. This community refers to the tributary to Chambers Creek located in the northern corner of the property,

Community Type D: Open Water. This community refers to the North Pond located on the property.

Community Type E: Wetland. This community refers to the wetland around the north pond and at various locations along the Ditch. These areas are dominated by hydrophytic vegetation, and displayed wetland hydrology and hydric soils.

Community Type F: Upland. This community refers to the majority of the site, which is comprised of open pasture and forested areas. These areas are not considered to be wetlands because they do not exhibit all three wetland characteristics.

A summary of onsite jurisdictional waters of the U.S. is provided in **Table 1**. A map of waters of the U.S. and delineation transects for the site are provided as **Figures 8-12**. Routine Wetland Determination Data Forms for each observation location ("Plot ID") are included in **Appendix A**. The Stream Data Forms are included in **Appendix B**, and photographs of plot locations are provided in **Appendix C**.

Community Type A represents the area below the OHWMs of the perennial stream on site. This stream has an average width between the OHWMs of 40 feet. The total length of Community A is 3,230 linear feet (lf).

Community Type B represents the area below the OHWMs of the intermittent streams on site. Charm Creek has an average width between the OHWMs of 8.75 feet. The total length of Charm Creek is 6,584 lf. The Ditch has an average width between the OHWMs of 11.8 feet. The total length of The Ditch is 9,131 lf. The total length of Community B is 15,715 lf.

Community Type C represents the area below the OHWMs of the ephemeral stream on site. The tributary to Chambers Creek has an average width between the OHWMs of 1.5 feet. The length of the tributary is 477 lf.

Community Type D represents the area below the OHWM of the North Pond located near the northern corner of the project site. The area of this pond totals approximately 0.13 acres.

Community Type E (**Table 2**) represents the emergent wetland and wetland fringe located on the project site. The dominant vegetation noted within these areas includes: *Eleocharis sp.* (spikerush), *Carex crus-corvi* (raven-foot sedge), *Cephalanthus occidentalis* (buttonbush), *Polygonum sp.* (smartweed), *Salix nigra* (black willow), and *Xanthium strumarium* (rough cocklebur). The area of wetland on site totals 1.17 acres.

Community Type F (**Table 3**) represents the majority of the site. This area was dominated by *Ambrosia trifida* (giant ragweed), *Asclepias hirtella* (green milkweed), *Bromus tectorum* (downy brome), *Carya illinoensis* (pecan), *Celtis occidentalis* (common hackberry), *Chasmanthium latifolium* (Indian wood oats), *Cornus drummondii* (rough-leaf dogwood), *Cynodon dactylon* (bermudagrass), *Elymus virginicus* (Virginia wildrye), *Fraxinus pennsylvanica* (green ash), *Melia azedarch* (chinaberry), *Morus rubra* (red mulberry), *Rudbeckia maxima* (great

coneflower), *Smilax bona-nox* (saw greenbriar), *Sorghum halepense* (Johnsongrass), *Toxicodendron radicans* (poison ivy), and *Ulmus americana* (American elm). Some areas of this community have hydrophytic vegetation and wetland hydrology but do not have hydric soils.

## SUMMARY AND CONCLUSIONS

Chambers Creek, a perennial stream, forms the northern property boundary of the site. This stream extends approximately 3,230lf with an average width between the OHWM of 40 ft for a total area of approximately 2.96 acres. An unnamed, ephemeral tributary to Chambers Creek was observed within the project site. This ephemeral tributary extends approximately 477 lf with an average width between the OHWM of 1.5 ft for a total area of approximately 0.02 acres. Charm Creek, an intermittent stream, is located in the eastern portion of the property and extends approximately 6,584 lf with an average width between the OHWM of 8.75 ft for a total area of approximately 1.32 acres. The Ditch is an intermittent tributary to Charm Creek that extends across the property from west to east for approximately 9,131 lf with an average OHWM of 11.8 ft for a total area of approximately 2.47 acres. Several emergent wetlands were also observed on site. The on-site wetlands total approximately 1.17 acres. One jurisdictional pond, North Pond, connected by a culvert to the unnamed tributary to Chambers Creek and is located near the northern corner of the property with a total area of approximately 0.13 acres. Chambers Creek, the unnamed tributary to Chambers Creek, Charm Creek, The Ditch, the North Pond, and the emergent wetlands are considered “waters of the United States,” and are therefore subject to Federal regulation under the jurisdiction of the USACE. A summary of all jurisdictional waters of the U.S. located within the project site is provided in **Table 1**.

Several non-jurisdictional ponds are located on site. In addition, several short, ephemeral channels that transition to grassy swales or open pasture downstream when the topographic gradient decreases and the streams enter the active ranching area are also located on site. There is no continuous OHWM between these channels and a tributary to a TNW and the channels have no significant nexus to a TNW and were not delineated due to their presumed non-jurisdictional nature.

As mentioned previously, north-central Texas had been experiencing a severe drought for several years prior to the field work. The area that was evaluated was extremely dry and very little water was observed on site other than in the ponds and Chambers Creek, a perennial stream. There was no water in the intermittent streams during the field survey.

A map of waters of the U.S. and delineation transects for the project site are provided as Figures 8-12.

The length and area measurements provided herein are estimates based on GIS measurements.



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## TABLES

**Table 1: Summary of Jurisdictional Waters for the Rockin' K on Chambers Creek, Located North of County Road NW0020, in Navarro County, Texas.**

Stream/Pond Name	Total Length (feet)	Average Width at OHWM (feet)	Area (acres)
<b>POND</b>			
North Pond	---	---	0.13
<b>POND TOTAL</b>	---	---	<b>0.13</b>
<b>WETLAND</b>			
Emergent Wetland (North Pond)	---	---	0.27
Emergent Wetland (The Ditch)	---	---	0.90
<b>WETLAND TOTAL</b>	---	---	<b>1.17</b>
<b>INTERMITTENT STREAM</b>			
Charm Creek	6,584	8.75	1.32
The Ditch	9,131	11.8	2.47
<b>INTERMITTENT STREAM TOTAL</b>	<b>15,715</b>	---	<b>3.79</b>
<b>EPHEMERAL STREAM</b>			
Unnamed Tributary to Chambers Creek	477	1.5	0.02
<b>EPHEMERAL STREAM TOTAL</b>	<b>477</b>	---	<b>0.02</b>
<b>PERRENIAL STREAM</b>			
Chambers Creek	3,230	40	2.97
<b>PERRENIAL STREAM TOTAL</b>	<b>3,230</b>	---	<b>2.97</b>
<b>TOTAL WATERS</b>	<b>19,422</b>	---	<b>8.08</b>

**Table 2: Summary of Field Data for Community Type C – Wetland**

Observation	Status	DT1 P2	DT1 P4	DT2 P2	DT2 P3	DT4 P2	DT4 P4	DT5 P2	DT5 P4	DT5 P5	DT7 P2	DT7 P4	DT8 P2	CHR T1P2	CHR2 T5P7	CHR2 T5P9	CHR2 T5P11	CHR2 T5P12
<b>Dominant Vegetation</b>																		
<i>Ambrosia trifida</i> (great ragweed)	FAC												•					
<i>Ampelopsis arborea</i> (peppervine)	FAC			•										•				
<i>Carex crux-corvi</i> (raven-foot sedge)	OBL	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•
<i>Cephalanthus occidentalis</i> (buttonbush)	OBL													•		•		
<i>Eleocharis sp.</i> (spikerush)	FACW															•		
<i>Elymus virginicus</i> (Virginia wildrye)	FAC								•									
<i>Euphorbia bicolor</i> (snow on the prairie)	NI													•				
<i>Fraxinus pennsylvanica</i> (green ash)	FAC													•				
<i>Iva amua</i> (annual marsh elder)	FAC					•	•	•	•									
<i>Polygonum sp.</i> (smartweed)	FACW														•			
<i>Salix nigra</i> (black willow)	FACW																•	
<i>Xanthium strumarium</i> (rough cocklebur)	FAC																	•
<b>Summary</b>																		
Hydrophytic vegetation?		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hydric soils?		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Wetland hydrology?		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

**Table 3: Summary of Field Data for Community Type D – Upland**

Observation	CHR T1P1	CHR T1P3	CHR T2P1	CHR T2P2	CHR T2P3	CHR T2P1	CHR2 T2P2	CHR2 T2P4	CHR2 T2P5	CHR2 T3P1	CHR2 T3P2	CHR2 T3P4	CHR2 T3P5	CHR2 T4P1	CHR2 T4P2	CHR2 T4P4	CHR2 T4P5
<b>Dominant Vegetation</b>	Status																
<i>Ambrosia trifida</i> (giant ragweed)	FAC						•	•			•	•					
<i>Asclepias hirtella</i> (green milkweed)	FACU					•			•				•				•
<i>Bromus tectorum</i> (downy brome)	NI	•	•	•													
<i>Carex crux-corvi</i> (raven-footed sedge)	OBL			•													
<i>Carya illinoensis</i> (pecan)	FAC						•	•			•	•					
<i>Celtis occidentalis</i> (hackberry)	FACU						•	•			•	•			•		
<i>Cynodon dactylon</i> (bermudagrass)	FACU					•			•				•				•
<i>Elymus virginicus</i> (Virginia wildrye)	FAC	•	•	•	•		•	•			•	•			•		
<i>Fraxinus pennsylvanica</i> (green ash)	FAC						•	•			•	•					
<i>Lolium perenne</i> (perennial ryegrass)	FACU													•			
<i>Rudbeckia maxima</i> (great coneflower)	FACW	•	•	•	•		•	•			•	•					
<i>Smilax bona-nox</i> (saw greenbriar)	FACU						•	•			•	•			•	•	
<i>Sorghum halepense</i> (Johnson grass)	FACU					•			•				•	•			•
<i>Ulmus crassifolia</i> (cedar elm)	FAC														•	•	
<b>Summary</b>																	
Hydrophytic vegetation?	Y	Y	Y	Y	Y	N	Y	Y	N	N	Y	Y	N	N	N	N	N
Hydric soils?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Wetland hydrology?	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N



**Table 3: Summary of Field Data for Community Type D – Upland (Cont.)**

Observation	CHR2 T5P1	CHR2 T5P2	CHR2 T5P4	CHR2 T5P5	CHR2 T5P6	CHR2 T5P8	CHR2 T5P13	CHR2 T5P14	CHR2 T5P16	CHR2 T5P17	CHR2 T5aP1	CHR2 T5aP3	CC T1 P0	CC T1 P1	CC T1 P2	CC T1 P4	CC T1 P5
<b>Dominant Vegetation</b>	Status																
<i>Ambrosia trifida</i> (giant ragweed)	FAC	•	•					•	•		•	•				•	
<i>Asclepias hirtella</i> (green milkweed)	FACU	•															
<i>Bromus tectorum</i> (downy brome)	NI																
<i>Carya illinoensis</i> (pecan)	FAC																•
<i>Celtis occidentalis</i> (hackberry)	FACU	•	•	•			•	•	•	•	•	•	•	•	•	•	•
<i>Cornus drummondii</i> (roughleaf dogwood)	FAC							•		•							
<i>Crataegus marshallii</i> (parsley hawthorne)	FAC			•													
<i>Cynodon dactylon</i> (bermudagrass)	FACU	•															
<i>Elymus canadensis</i> (Canada wildrye)	FACU												•				
<i>Elymus virginicus</i> (Virginia wildrye)	FAC	•	•	•			•			•	•	•					•
<i>Fraxinus americana</i> (American ash)	FAC																•
<i>Fraxinus pennsylvanica</i> (green ash)	FAC	•	•				•		•				•	•		•	
<i>Grindellia squarrosa</i> (curlycup gumweed)	FACU																
<i>Ilex decidua</i> (deciduous holly)	FAC			•													
<i>Ilex vomitoria</i> (youpon holly)	FAC													•			
<i>Lolium perenne</i> (perennial ryegrass)	FACU				•												
<i>Melita azedarach</i> (chinaberry)	FACU													•			
<i>Populus deltoides</i> (cottonwood)	FAC							•								•	
<i>Salix nigra</i> (black willow)	FACW							•								•	
<i>Sorghum halepense</i> (Johnsongrass)	FACU	•						•								•	
<i>Symphoricarpos orbiculatus</i> (coralberry)	FACU									•							
<i>Toxicodendron radicans</i> (poison ivy)	FACU	•	•							•			•				•
<i>Ulmus americana</i> (American elm)	FAC							•								•	
<i>Ulmus crassifolia</i> (cedar elm)	FAC			•						•				•			
<i>Vitis sp.</i> (grapevine)	FAC							•								•	
<b>Summary</b>																	
Hydrophytic vegetation?	N	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	N	N	Y	N	N
Hydric soils?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Observation	CHR2 T5P1	CHR2 T5P2	CHR2 T5P4	CHR2 T5P5	CHR2 T5P6	CHR2 T5P8	CHR2 T5P13	CHR2 T5P14	CHR2 T5P16	CHR2 T5P17	CHR2 T5aP1	CHR2 T5aP3	CC T1 P0	CC T1 P1	CC T1 P2	CC T1 P3	CC T1 P4	CC T1 P5
Dominant Vegetation																		
Wetland hydrology?	Status																	
		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

**Table 3: Summary of Field Data for Community Type D – Upland (Cont.)**

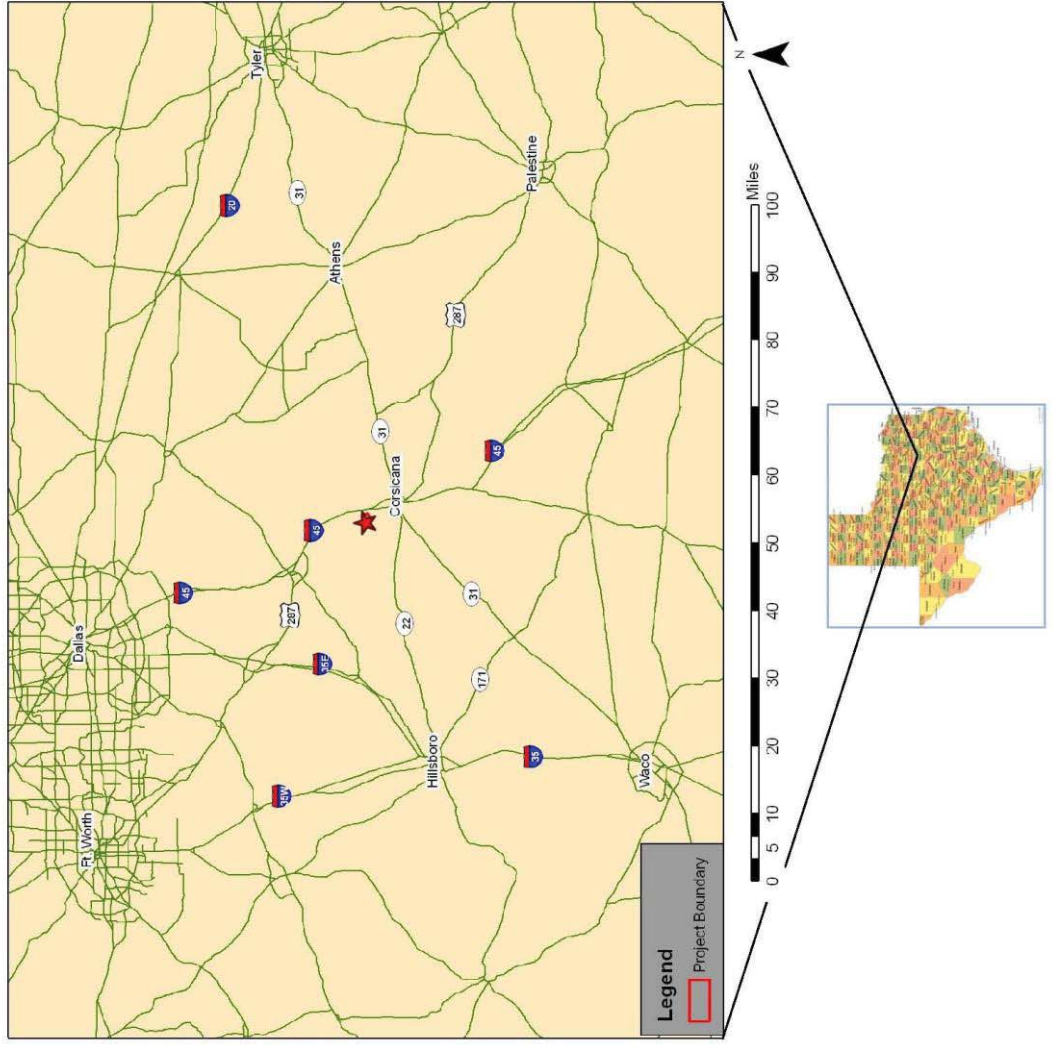
Observation	CC T2 P1	CC T2 P2	CC T2 P4	CC T2 P5	CC T11 P1	CC T11 P2	CC T11 P3	T1 P1	T1 P2	T1 P4	T1a P1	T1a P2	T1a P3	T1a P4	T1a P5	DT0 P1	DT0 P3	DT1 P1	DT1 P5	DT1a P1	DT1a P3
Dominant Vegetation	Status																				
<i>Acer negundo</i> (box elder)	FAC	•																			
<i>Ambrosia trifida</i> (giant ragweed)	FAC		•														•				
<i>Bromus tectorum</i> (downy brome)	NI	•						•	•		•		•	•	•						
<i>Carex crux-corvi</i> (raven footed sedge)	OBL																				
<i>Carya illinoensis</i> (pecan)	FAC	•			•																
<i>Celtis occidentalis</i> (hackberry)	FACU	•	•	•	•													•			
<i>Chasmanthium latifolium</i> (Indian woodoats)	FACU						•														
<i>Cynodon dactylon</i> (bermudagrass)	FACU							•	•	•	•	•	•	•	•	•	•			•	•
<i>Elymus canadensis</i> (Canada wildrye)	FACU	•																			
<i>Elymus virginicus</i> (Virginia wildrye)	FAC			•	•	•		•											•		
<i>Fraxinus pennsylvanica</i> (green ash)	FAC		•	•	•																
<i>Gutierrezia sarothrae</i> (broom snakeweed)	NI									•											
<i>Helianthus annuus</i> (common sunflower)	FAC							•			•										
<i>Melia azedarach</i> (chinaberry)	FACU			•																	
<i>Parthenocissus quinquefolia</i> (Virginia creeper)	FACU	•			•																
<i>Rhynchospora tracyi</i> (Tracy's beakrush)	OBL											•									
<i>Rudbeckia maxima</i> (common coneflower)	FACW																•	•	•	•	•
<i>Smilax bona-nox</i> (saw greenbriar)	FACU	•	•	•	•																
<i>Sorghum halepense</i> (Johnsongrass)	FACU	•																			
<i>Toxicodendron radicans</i> (poison ivy)	FACU	•	•	•	•																
<i>Ulmus americana</i> (american elm)	FAC	•		•	•																
<i>Ulmus crassifolia</i> (cedar elm)	FAC					•															

Observation	CC T2 P1	CC T2 P2	CC T2 P4	CC T2 P5	CC T11 P1	CC T11 P2	CC T11 P3	CC T1 P1	CC T1 P2	CC T1 P4	CC T1 P5	T1a P1	T1a P2	T1a P3	T1a P4	T1a P5	DT0 P1	DT0 P3	DT1 P1	DT1 P5	DT1a P1	DT1a P3
Dominant Vegetation																						
<i>Xanthium strumarium</i> (rough cocklebur)																						
Summary																						
Hydrophytic vegetation?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N
Hydric soils?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Wetland hydrology?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

**Table 3: Summary of Field Data for Community Type D – Upland (Cont.)**

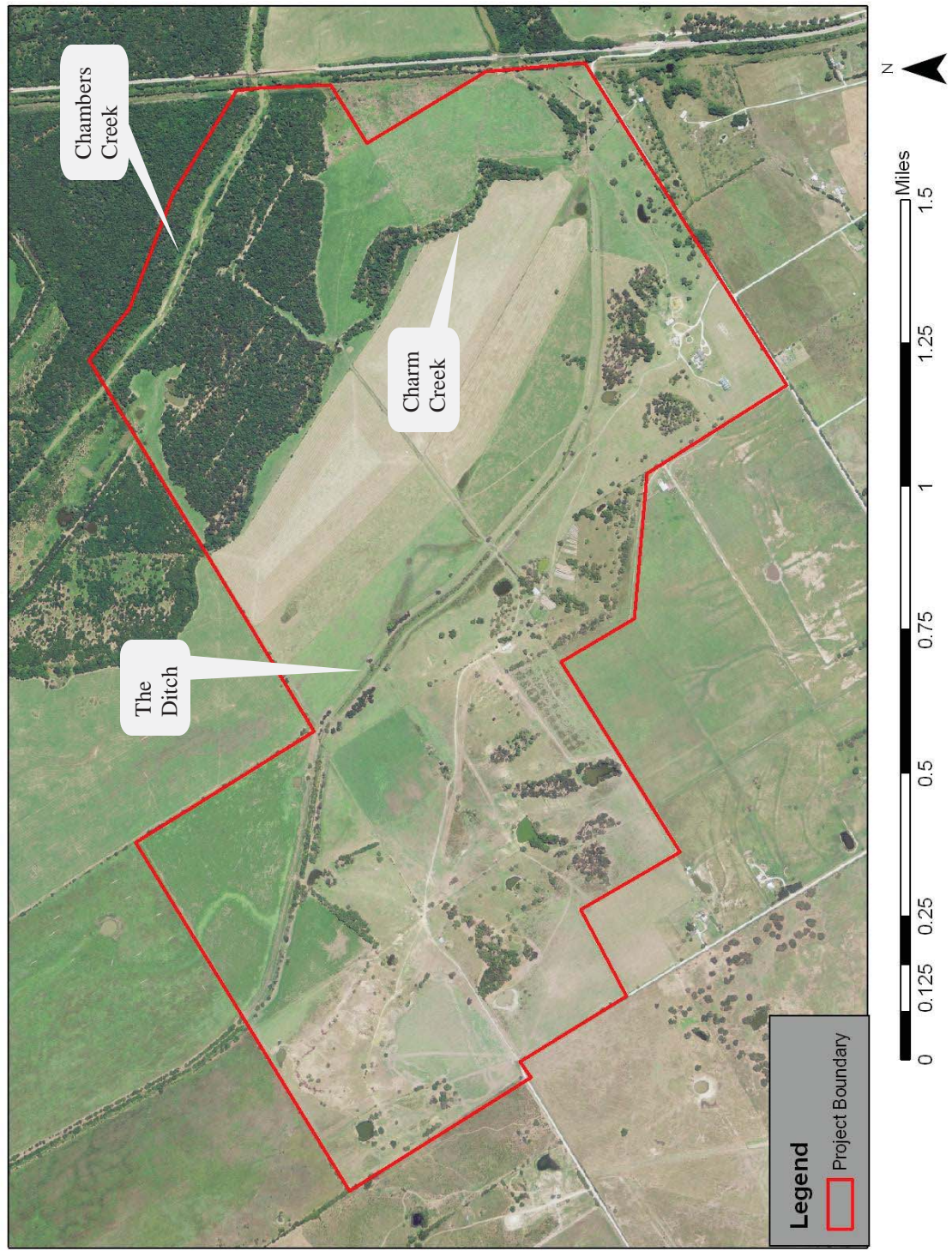
Observation	DT2 P1	DT2 P4	DT3 P1	DT3 P3	DT4 P1	DT4 P5	DT5 P1	DT5 P6	DT5 P1	DT6 P1	DT6 P3	DT7 P1	DT7 P5	DT8 P1	DT8 P4	WR T1P1	WR T1P1	F10 P1
Dominant Vegetation																		
<i>Ambrosia trifida</i> (great ragweed)																		
<i>Bromus tectorum</i> (downy brome)																		
<i>Celtis occidentalis</i> (hackberry)																		
<i>Cynodon dactylon</i> (bermudagrass)																		
<i>Elymus virginicus</i> (Virginia wildrye)																		
<i>Eryngium hookeri</i> (Hooker's eryngo)																		
<i>Rudbeckia maxima</i> (common coneflower)																		
Summary																		
Hydrophytic vegetation?	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	N	Y
Hydric soils?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Wetland hydrology?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

## FIGURES



**Figure 1:** Site Location Map for the Rockin' K on Chambers Creek, Located North of County Road NW0020, Navarro County, Texas.

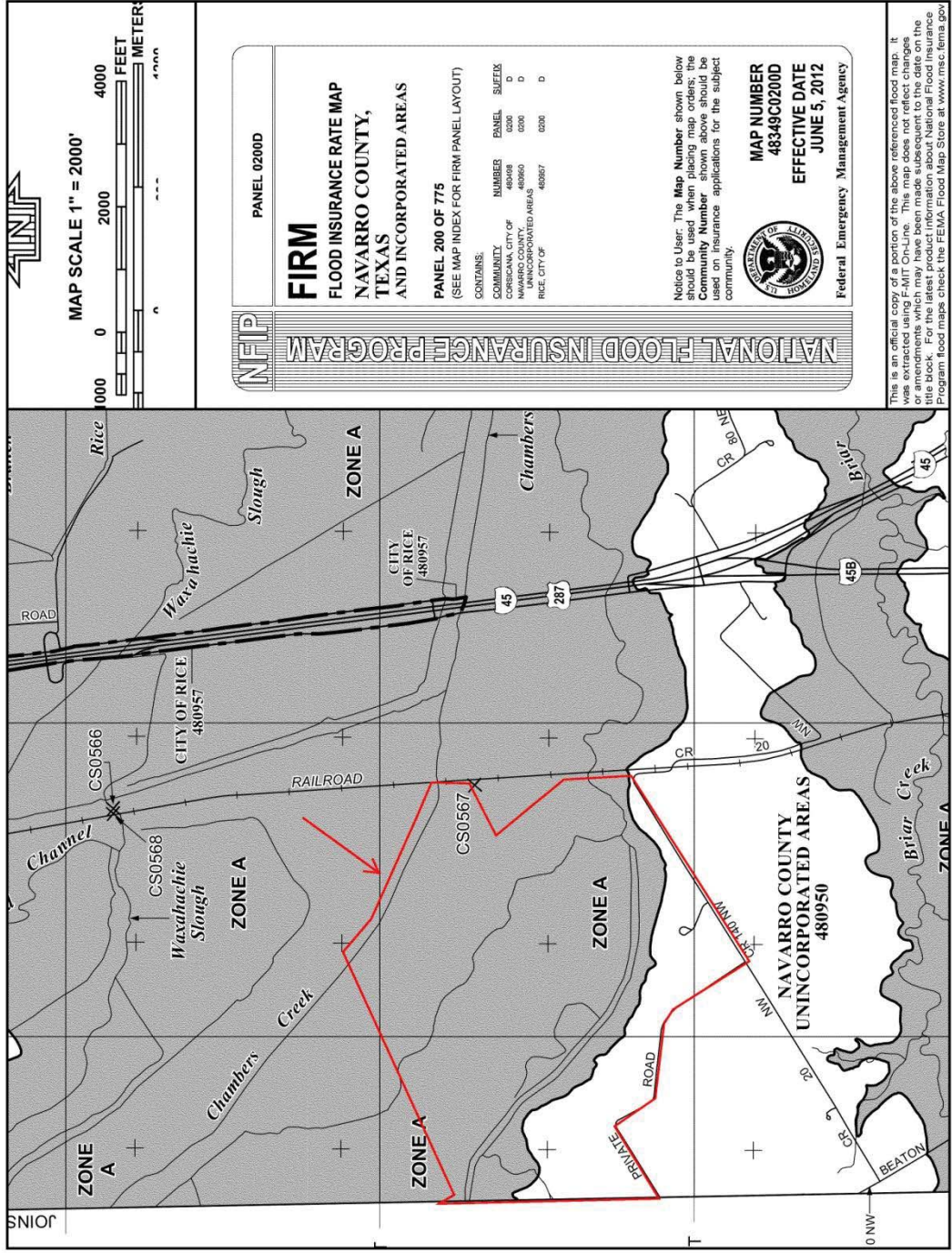




**Figure 2:** Aerial Photograph of Rockin' K on Chambers Creek, Located North of County Road NW0020, in Navarro County, Texas  
(Base Map Source: 2012 NAIP, NRCS 2013).

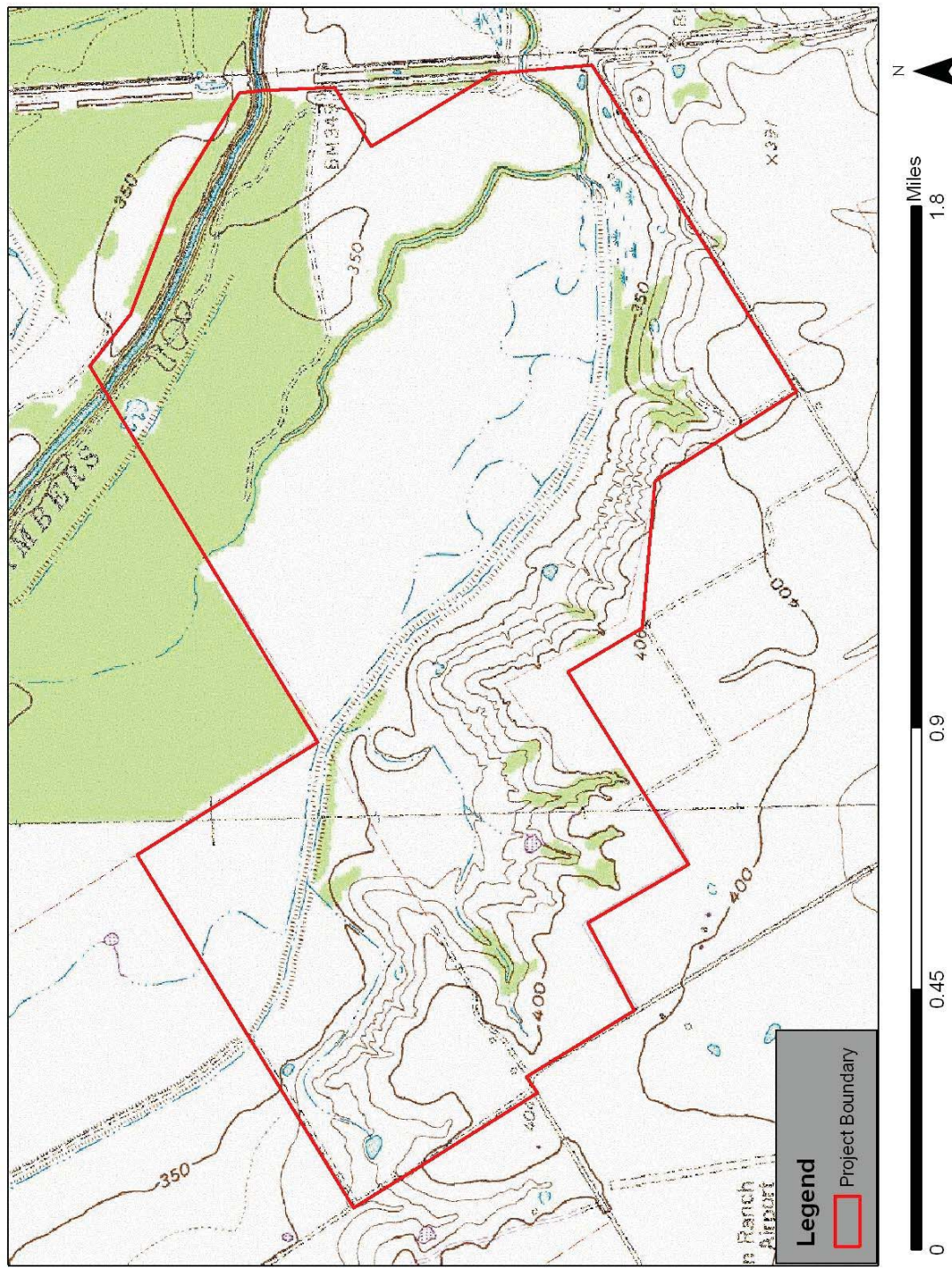
24





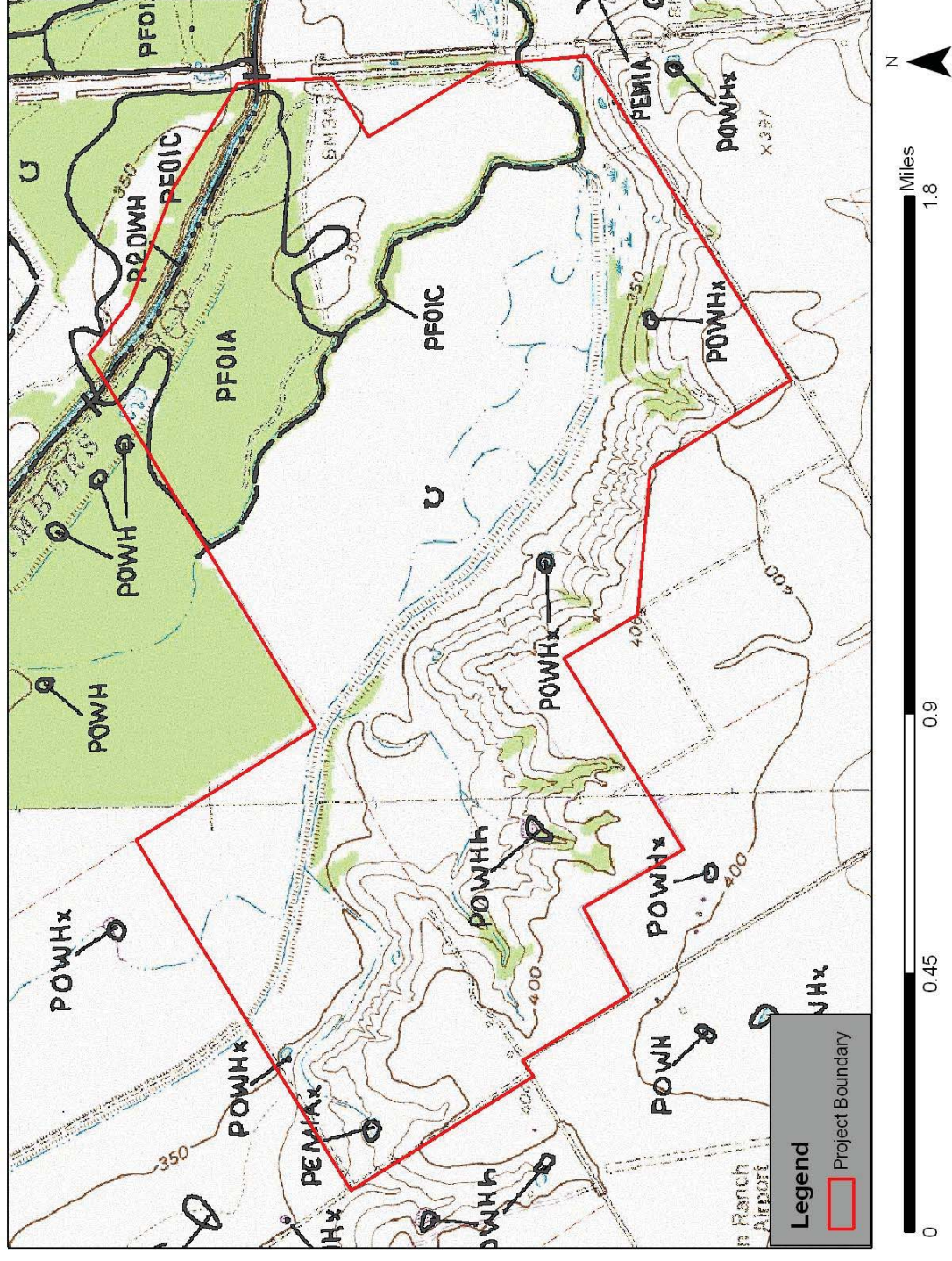
**Figure 4:** Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel No. 48349C0200D for the Eastern Portion of the Rockin' K on Chambers Creek Project Site, North of County Road NW0020, Navarro County, Texas.





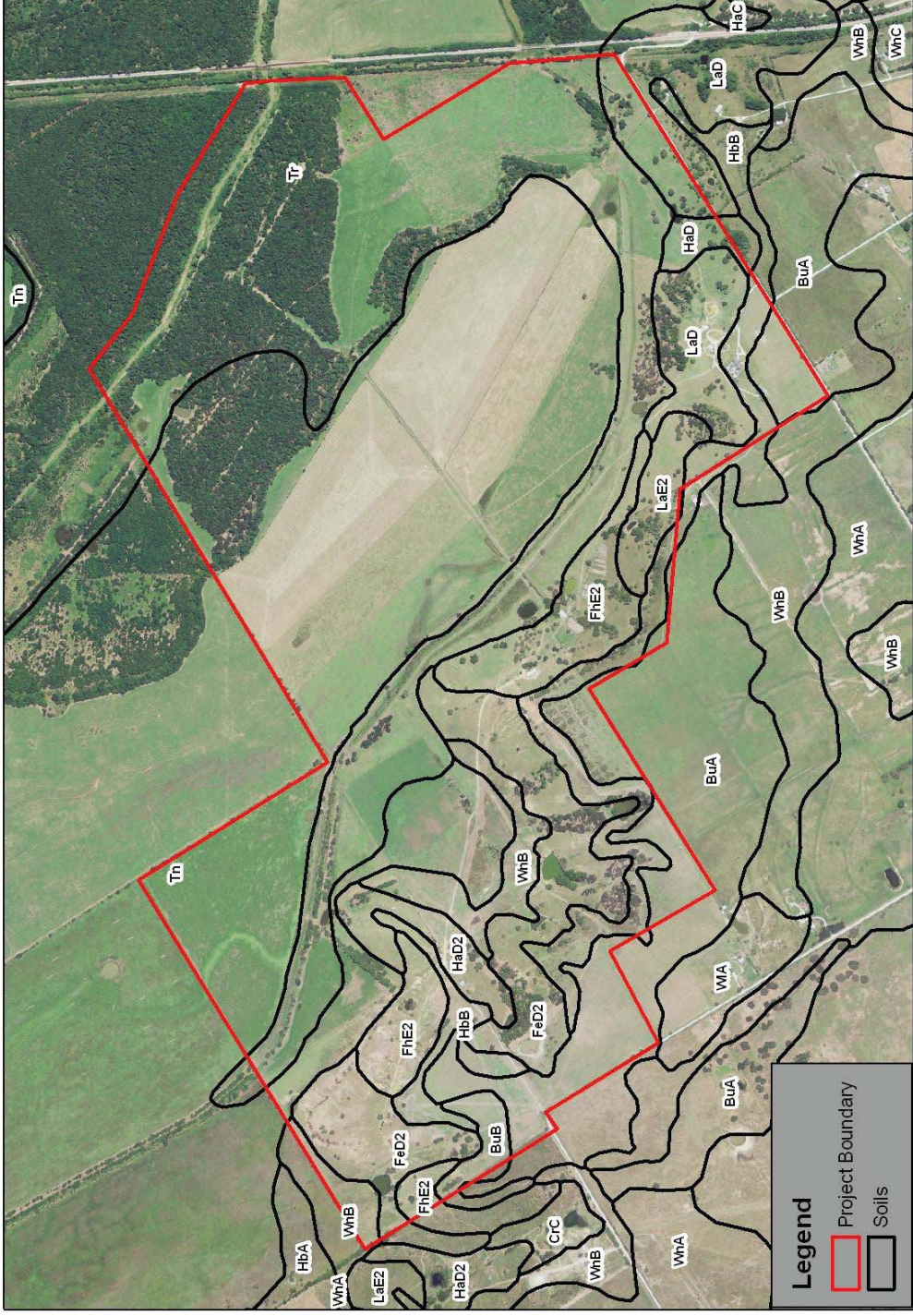
**Figure 5:** United States Geological Survey Topographic Map (Navarro County Mosaic, Texas, NRCs 2008a) for the Rockin' K on Chambers Creek, Located North of County Road NW0020, Navarro County, Texas.





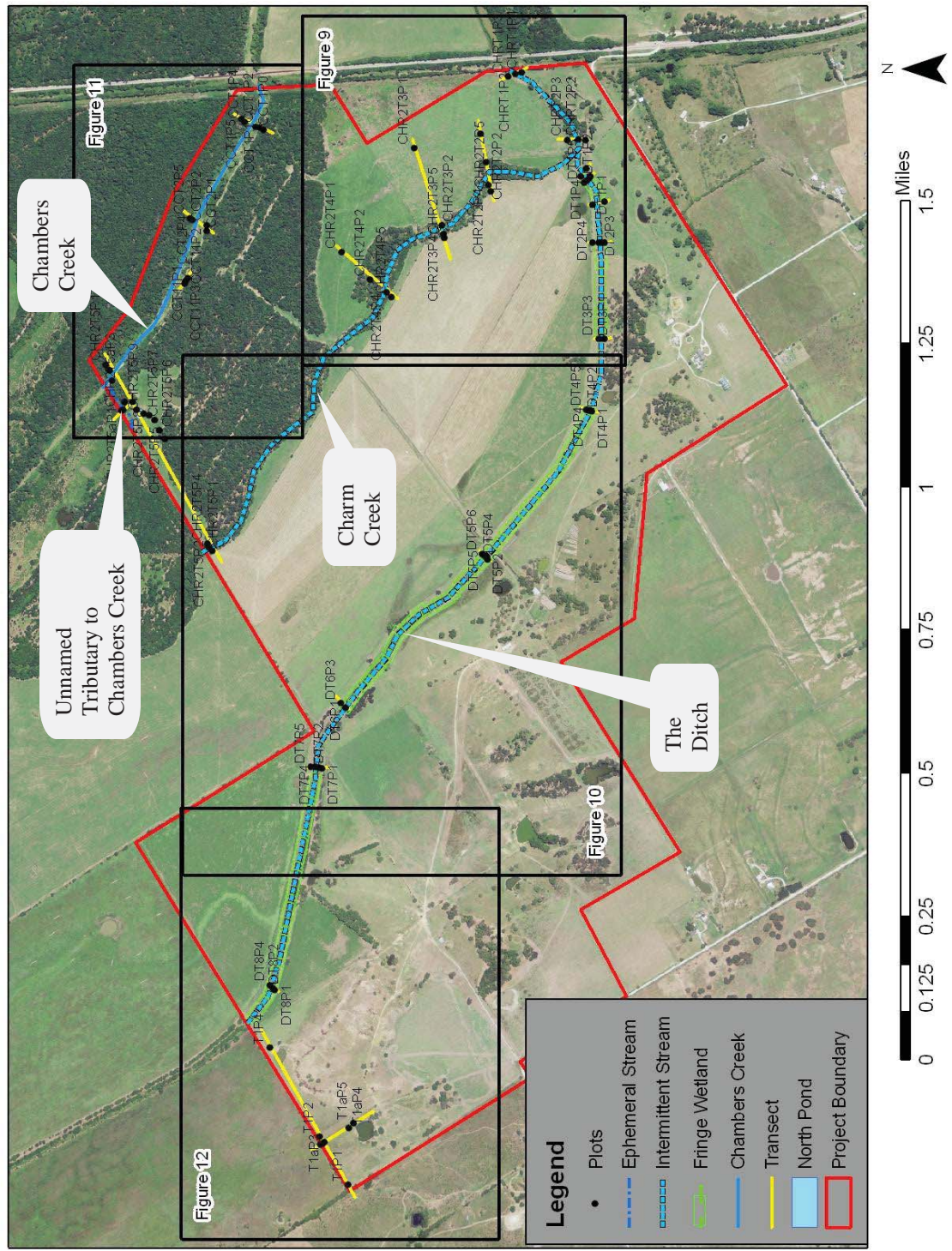
**Figure 6:** USFWS National Wetland Inventory (NWD) Wetland Mapper for the Rockin' K on Chambers Creek, Located North of County Road NW0020, Navarro County, Texas.





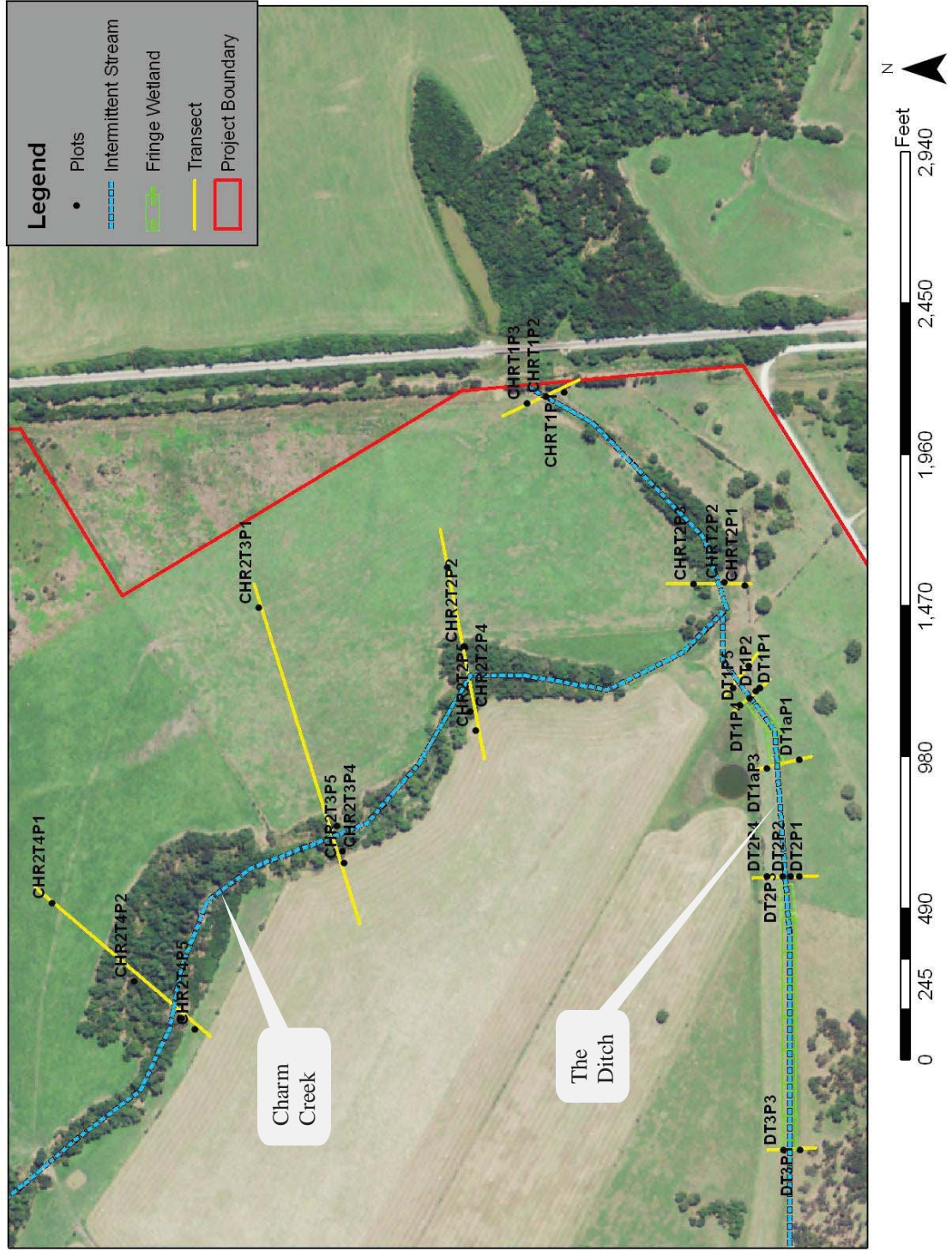
**Figure 7:** USDA Soils Map (Navarro County, Texas, NRCS 2008b) for the Rockin' K on Chambers Creek, Located North of County Road NW0020, Navarro County, Texas (Base Map Source: 2012 NAIP, NRCS 2013).





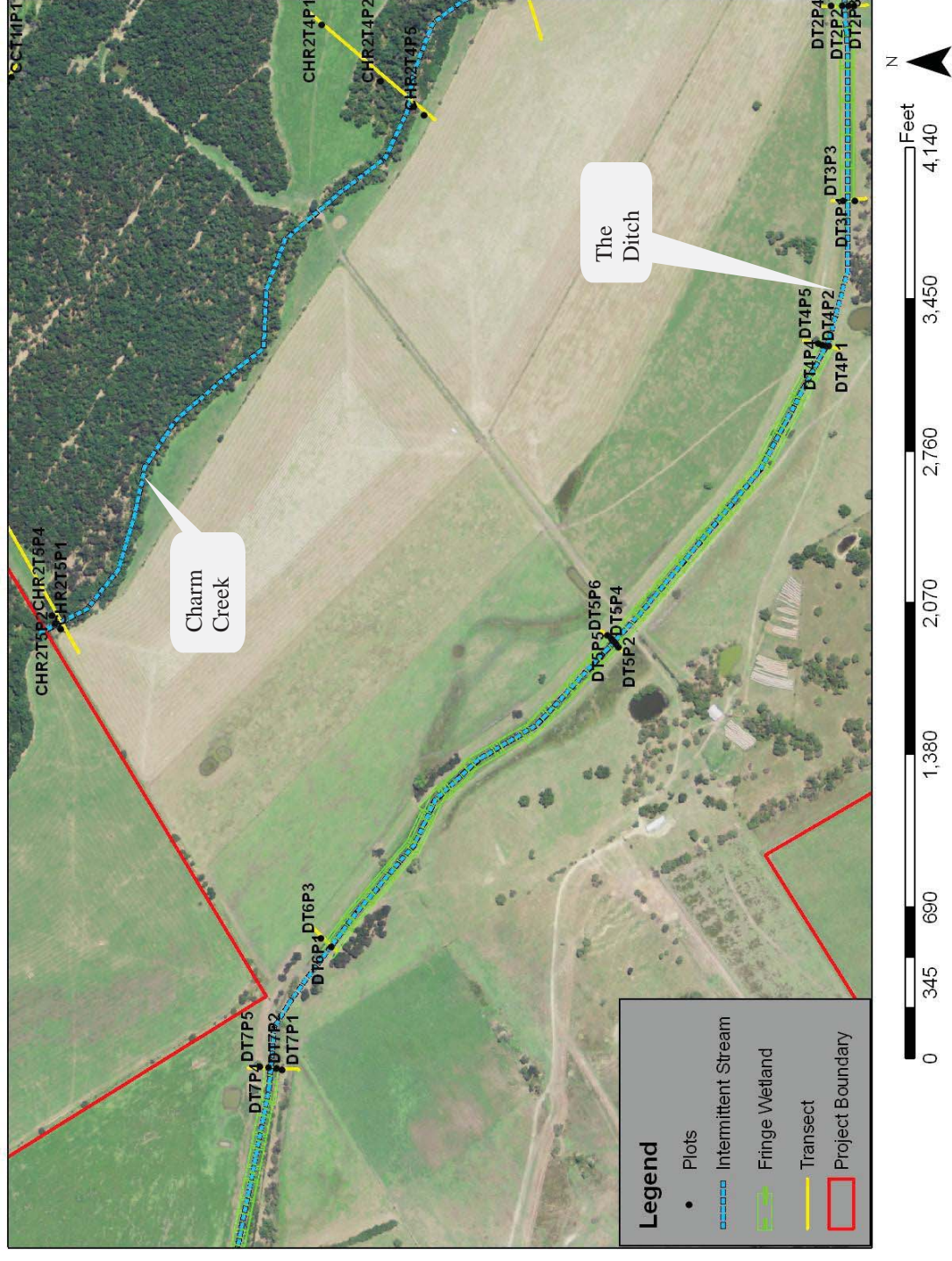
**Figure 8:** Overview of Jurisdictional Waters and Delineation Transects for Rockin' K on Chambers Creek, Located North of County Road NW0020, in Navarro County, Texas (Base Map Source: 2012 NAIP, NRCS 2013).





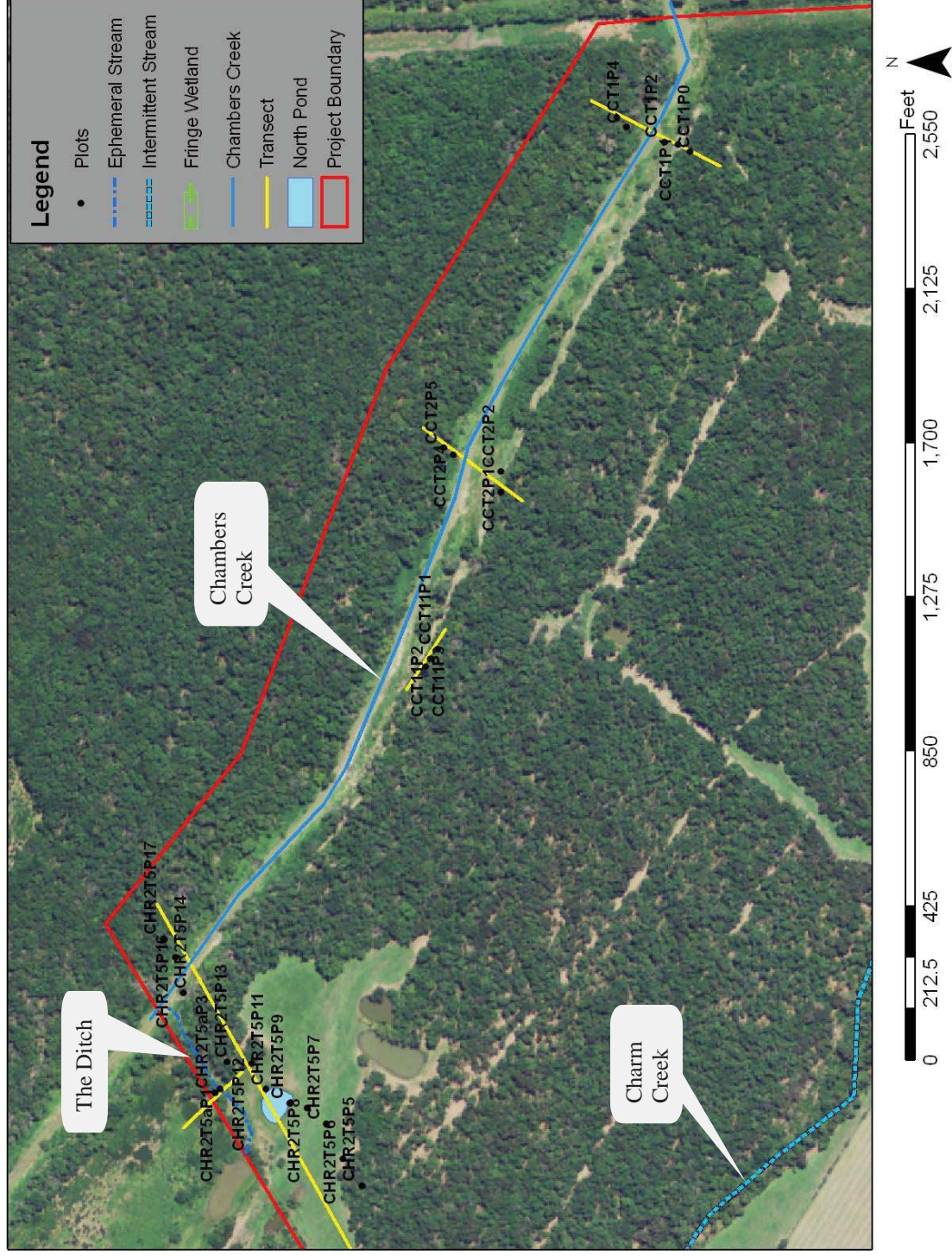
**Figure 9:** Jurisdictional Waters and Delineation Transects for the Southeastern Portion of Rockin' K on Chambers Creek, Located North of County Road NW0020, in Navarro County, Texas (Base Map Source: 2012 NAIP, NRCS 2013).





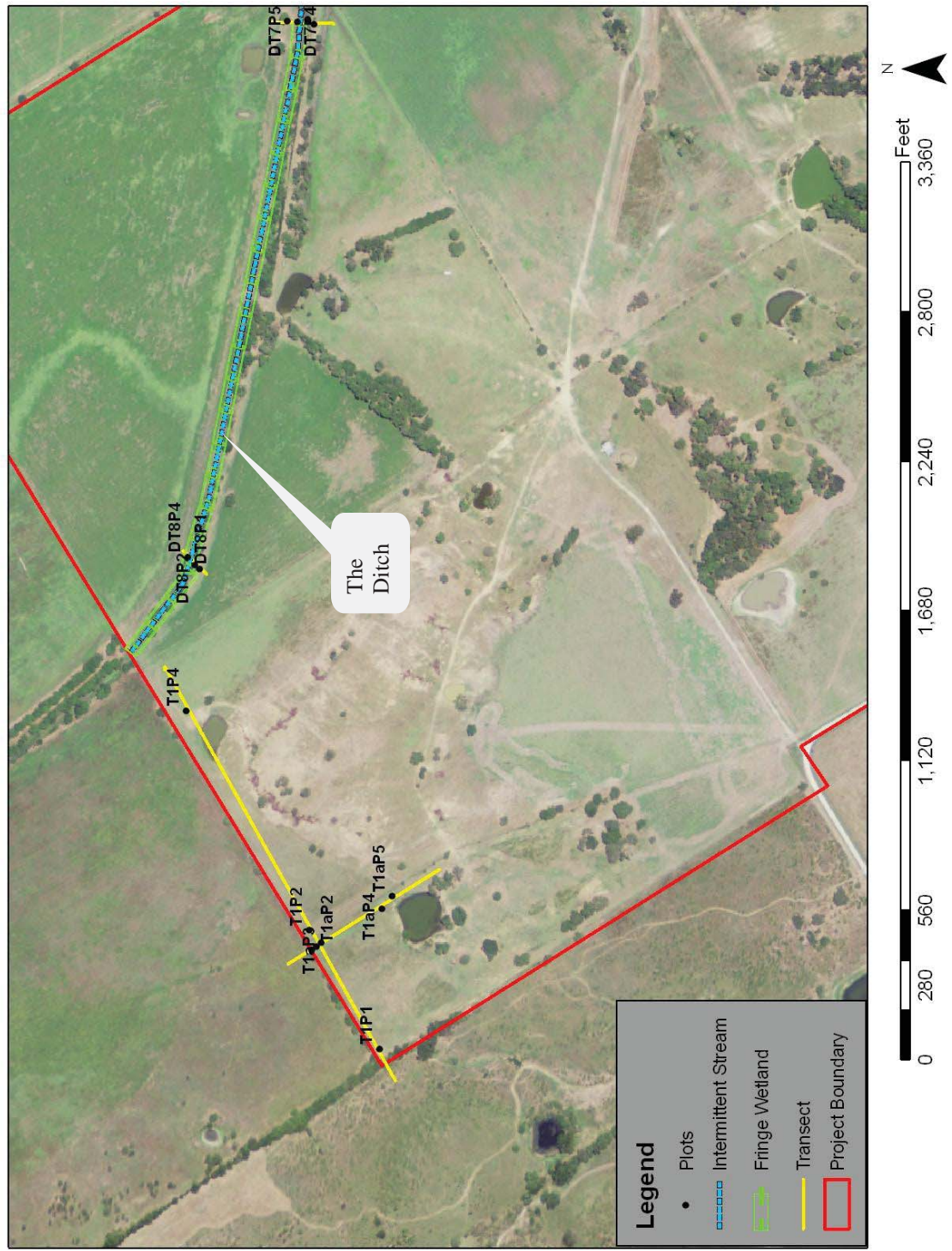
**Figure 10:** Jurisdictional Waters and Delineation Transects for the Central Portion of Rockin' K on Chambers Creek, Located North of County Road NW0020, in Navarro County, Texas (Base Map Source: 2012 NAIP, NRCS 2013).





**Figure 11:** Jurisdictional Waters and Delineation Transects for the Northern Portion of Rockin' K on Chambers Creek, Located North of County Road NW0020, in Navarro County, Texas (Base Map Source: 2012 NADP, NRCS 2013).





**Figure 12:** Jurisdictional Waters and Delineation Transects for the Western Portion of Rockin' K on Chambers Creek, Located North of County Road NW0020, in Navarro County, Texas (Base Map Source: 2012 NAIP, NRCS 2013).

## APPENDICES

**APPENDIX A  
ROUTINE WETLAND DETERMINATION  
DATA FORMS**

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT1P0  
 Investigator(s): K Ward, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'53.975"N Long: 96°28'48.259"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
3. <u>Ulmus americana</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
<u>65</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30'</u> )				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 = _____
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Cornus florida</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>20</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Elymus canadensis</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Smilax bona nox</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. <u>Callicarpa americana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>80</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. <u>Vitis sp.</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
<u>20</u> = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  10% woody debris				



# SOIL

Sampling Point: CCT1P0

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
1/2	humus	100						Forest litter
1/2 - 14	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT1P1  
 Investigator(s): K Ward, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'54.329"N Long: 96°28'47.829"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ulmus crassifolia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Melia azedarach</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	
<u>25</u> = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>30'</u> )				<b>Prevalence Index worksheet:</b> 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 = _____
1. <u>Celtis occidentalis</u>	<u>3</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ilex vomitoria</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>6</u> = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Sorghum halepense</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
2. <u>Bromus tectorum</u>	<u>90</u>	<u>Y</u>	<u>NI</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: <u>Species with no indicator status not used to calculate dominance test.</u>				

## SOIL

Sampling Point: CCT1P1

[illegible]

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>					
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> <b>(where not tilled)</b>	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<input type="checkbox"/> Water-Stained Leaves (B9)					
<b>Field Observations:</b>					
Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): _____	<b>Wetland Hydrology Present? Yes _____ No <u>X</u></b>		
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____			
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u>	Depth (inches): _____			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT1P2  
 Investigator(s): K Ward, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): None Slope (%): 2.5  
 Subregion (LRR): J Lat: 32°9'54.668"N Long: 96°28'47.806"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: Shelf along South bank of Chambers Creek Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Cornus drummondii</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>15</u> = Total Cover <b>Sapling/Shrub Stratum</b> (Plot size: <u>30'</u> )				<b>Prevalence Index worksheet:</b> 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 = _____
1. <u>Ulmus americana</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Populus deltoides</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Salix nigra</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Celtis occidentalis</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
5. <u>Melia azedarach</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>22</u> = Total Cover <b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Sorghum halepense</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Toxicodendron radicans</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
10. _____	_____	_____	_____	
<u>100</u> = Total Cover <b>Woody Vine Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Vitis sp.</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>5</u> = Total Cover % Bare Ground in Herb Stratum _____				
Remarks:				



# SOIL

Sampling Point: CCT1P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT1P4  
 Investigator(s): J Schwartz, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR): J Lat: 32°9'55.776"N Long: 96°28'47.287"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? No Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? No (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum (Plot size: <u>30'</u>)</u>	_____	_____	_____	
1. <u>Celtis occidentalis</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum (Plot size: <u>30'</u>)</u>	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Ambrosia trifida</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum (Plot size: <u>30'</u>)</u>	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
1. <u>Toxicodendron radicans</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:

## SOIL

Sampling Point: CCT1P4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <div> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Salt Crust (B11) </div> <div> <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Invertebrates (B13) </div> <div> <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) </div> <div> <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Dry-Season Water Table (C2) </div> <div> <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) </div> <div> <input type="checkbox"/> Drift Deposits (B3) <div>(where not tilled)</div> </div> <div> <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) </div> <div> <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) </div> <div> <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) </div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) </div> </div> <div> <div>Secondary Indicators (minimum of two required)</div> <div> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) </div> <div> <div>(where tilled)</div> <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) </div> </div> </div>		
<div> <div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches):</div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches):</div> </div> <div> <div>Saturation Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches):</div> </div> <div> <div>(includes capillary fringe)</div> </div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT1P5  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested Plain Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'56.012"N Long: 96°28'47.067"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus americana</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>70</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	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 = _____
1. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>10</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Smilax bona-nox</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>Elymus virginicus</u>	<u>75</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Fraxinus americana</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Ambrosia trifida</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>92</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				



# SOIL

Sampling Point: CCT1P5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	7.5YR3/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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: Depleted matrix due to parent material.

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT2P1  
 Investigator(s): K Ward, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'59.44"N Long: 96°28'58.948"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? ☐ Yes X Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? ☐ Yes X (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Morus rubra</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. <u>Ulmus americana</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
<u>60</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	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 = _____
1. <u>Celtis occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>40</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Chasmanthium latifolium</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>Elymus canadensis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>45</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Parthenocissus quinquefolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
<u>20</u> = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

# SOIL

Sampling Point: CCT2P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
1/2	humus	100						Forest litter
1/2 - 14	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT2P2  
 Investigator(s): K Ward, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'59.387"N Long: 96°28'58.362"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks: South bank of Chambers Creek Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A)
1. <u>Acer negundo</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Celtis occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20</u> (A/B)
4. _____	_____	_____	_____	
<u>20</u> = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: <u>30'</u> )				
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>20</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )				
1. <u>Sorghum halepense</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Bromus tectorum</u>	<u>60</u>	<u>Y</u>	<u>NI</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )				
1. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: Species with no indicator status not used to calculate dominance test.				



## SOIL

Sampling Point: CCT2P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT2P4  
 Investigator(s): J Schwartz, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): J Lat: 32°10'0.859"N Long: 96°28'58.077"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: <u>30'</u>)</b> 1. <u>Celtis occidentalis</u> 5 Y FACU 2. <u>Fraxinus pennsylvanica</u> 5 Y FAC 3. _____ 4. _____ 5. _____				
_____ = Total Cover				
<b>Herb Stratum (Plot size: <u>30'</u>)</b> 1. <u>Ambrosia trifida</u> 50 Y FAC 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____				
_____ = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b> 1. <u>Toxicodendron radicans</u> 50 Y FACU 2. _____ _____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum _____ _____ = Total Cover				

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No X

Remarks:

## SOIL

Sampling Point: CCT2P4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT2P5  
 Investigator(s): J Schwartz, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): J Lat: 32°10'1.596"N Long: 96°28'57.481"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>43</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	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 = _____
1. <u>Ulmus americana</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Melia azedarach</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>20</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Elymus virginicus</u>	<u>90</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Melia azedarach</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. <u>Smilax bona-nox</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:



# SOIL

Sampling Point: CCT2P5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	7.5YR3/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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: Depleted matrix due to parent material

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT11P1  
 Investigator(s): K Ward, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested Plain Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): J Lat: 32°10'1.508"N Long: 96°29'4.531"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Morus rubra</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. <u>Ulmus americana</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
<u>60</u> = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>30'</u>)</b>				<b>Prevalence Index worksheet:</b> 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 = _____
1. <u>Celtis occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>40</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>30'</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Chasmanthium latifolium</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>45</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
1. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Parthenocissus quinquefolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
<u>20</u> = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

# SOIL

Sampling Point: CCT11P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1/2	humus	100	none					Forest litter
1/2-14	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT11P2  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain/Forest Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): Linear 1%  
 Subregion (LRR): J Lat: 32.167069 Long: -96.484522 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			
Remarks: <u>Slough/channel that flows from Chambers Creek into interior</u> <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Fraxinus pennsylvanica</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>5</u> (A)
2. <u>Celtis occidentalis</u>	<u>20</u>	<u>N</u>	<u>FACU</u>	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____	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:	
				<u>X</u> 1 - Rapid Test for Hydrophytic Vegetation	
				<u>X</u> 2 - Dominance Test is >50%	
				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present?	
				Yes <u>X</u> No _____	

Sapling/Shrub Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ulmus crassifolia</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
<u>80</u> = Total Cover			
Herb Stratum (Plot size: <u>30'</u> )			
1. <u>Chasmanthium latifolium</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2. <u>Elymus virginicus</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
3. <u>Ambrosia trifida</u>	<u>2</u>	<u>N</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
<u>12</u> = Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
_____ = Total Cover			
% Bare Ground in Herb Stratum <u>88%</u>			

Remarks: \_\_\_\_\_

# SOIL

Sampling Point: CCT11P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 14	10YR4/2	100	none					

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**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: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CCT11P3  
 Investigator(s): J Schwartz, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested plain Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): J Lat: 32°10'1.363"N Long: 96°29'4.07"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>38</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Morus rubra</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. <u>Ulmus americana</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
			<u>60</u> = Total Cover	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 = _____
Sapling/Shrub Stratum (Plot size: <u>30'</u> )				
1. <u>Celtis occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			<u>40</u> = Total Cover	
Herb Stratum (Plot size: <u>30'</u> )				
1. <u>Chasmanthium latifolium</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<u>45</u> = Total Cover	
Woody Vine Stratum (Plot size: <u>30'</u> )				
1. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Parthenocissus quinquefolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
			<u>20</u> = Total Cover	
% Bare Ground in Herb Stratum _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Remarks:				

# SOIL

Sampling Point: CCT11P3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1/2	humus	100						Forest litter
1/2-14	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T2P1  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR): J Lat: 32°9'34.243"N Long: 96°28'49.306"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				<b>Prevalence Index worksheet:</b> 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 = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Asclepias hirtella</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Sorghum halepense</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Cynodon dactylon</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

# SOIL

Sampling Point: CHR2T2P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T2P2  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR): J Lat: 32°9'34.292"N Long: 96°28'52.632"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	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 = _____
3. <u>Salix nigra</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
<u>55</u> = Total Cover				Hydrophytic Vegetation Indicators: <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>30'</u> )				
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )				
1. <u>Ambrosia trifida</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
3. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:



## SOIL

Sampling Point: CHR2T2P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> </div> <div> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T2P4  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR): J Lat: 32°9'33.664"N Long: 96°28'54.726"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Salix nigra</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
<u>55</u> = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>30'</u>)</b>				
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	<b>Prevalence Index worksheet:</b> 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 = _____
2. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>30'</u>)</b>				
1. <u>Ambrosia trifida</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>75</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				
1. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
<u>10</u> = Total Cover				
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____				
% Bare Ground in Herb Stratum _____ Remarks: _____				

## SOIL

Sampling Point: CHR2T2P4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR3/1	100					clay	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.							<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> ( <b>LRR H outside of MLRA 72 &amp; 73</b> )		
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> )			<input type="checkbox"/> High Plains Depressions (F16)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )			<input type="checkbox"/> ( <b>MLRA 72 &amp; 73 of LRR H</b> )					
<b>Restrictive Layer (if present):</b>								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks:								

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)		<input type="checkbox"/> Surface Soil Cracks (B6)		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)		<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)		
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)		<b>(where tilled)</b>		
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>		<input type="checkbox"/> Crayfish Burrows (C8)		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Water-Stained Leaves (B9)			<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)		
<b>Field Observations:</b>					
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T2P5  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR): J Lat: 32°9'33.655"N Long: 96°28'55.089"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Asclepias hirtella</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Sorghum halepense</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Cynodon dactylon</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

# SOIL

Sampling Point: CHR2T2P5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T3P1  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'40.388"N Long: 96°28'50.597"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Asclepias hirtella</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Sorghum halepense</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Cynodon dactylon</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: CHR2T3 P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>							<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<b>(LRR H outside of MLRA 72 &amp; 73)</b>		
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> )			<input type="checkbox"/> High Plains Depressions (F16)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )			<b>(MLRA 72 &amp; 73 of LRR H)</b>					
<b>Restrictive Layer (if present):</b>								
Type: _____						<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>		
Depth (inches): _____								
Remarks:								

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b>			<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T3P2  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR): J Lat: 32°9'38.062"N Long: 96°28'58.942"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Salix nigra</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
<u>55</u> = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>30'</u>)</b>				<b>Prevalence Index worksheet:</b> 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 = _____
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>30'</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Ambrosia trifida</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>75</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
1. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: CHR2T3P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b>					
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T3P4  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR): J Lat: 32°9'37.897"N Long: 96°28'59.887"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Salix nigra</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
<u>55</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	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 = _____
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carya illinoensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Ambrosia trifida</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:



## SOIL

Sampling Point: CHR2T3P4

[illegible]

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>					
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<input type="checkbox"/> Water-Stained Leaves (B9)					
<b>Field Observations:</b>					
Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): _____	<b>Wetland Hydrology Present? Yes _____ No <u>X</u></b>		
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____			
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u>	Depth (inches): _____			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T3P5  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): J Lat: 32°9'37.764"N Long: 96°29'0.079"W Datum: NAD83

Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none

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

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Asclepias hirtella</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Sorghum halepense</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Cynodon dactylon</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
10. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: CHR2T3P5

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> Wetland Hydrology Present? </div> </div>		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<input type="checkbox"/>
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<input type="checkbox"/>
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T4P1  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'47.216"N Long: 96°29'1.567"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
				<b>Prevalence Index worksheet:</b> 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 = _____
_____ = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: _____)				
1. <u>Sorghum halepense</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Lolium perenne</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: CHR2T4P1

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<b>Field Observations:</b>		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
(includes capillary fringe)		<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T4P2  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°29'44.601"N Long: 96°29'4.596"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
1. <u>Ulmus crassifolia</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Celtis occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Carya illinoensis</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
<u>35</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	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 = _____
1. <u>Celtis occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carya illinoensis</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>35</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Elymus virginicus</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Ambrosia trifida</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
3. <u>Toxicodendron radicans</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>90</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Smilax bona-nox</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:

## SOIL

Sampling Point: CHR2T4P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <div> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) </div> <div> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <div>(where not tilled)</div> <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </div> </div> </div> <div> <div>Secondary Indicators (minimum of two required)</div> <div> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <div>(where tilled)</div> <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) </div> </div>		
<div> <div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div> <div>Saturation Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div>(includes capillary fringe)</div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T4P4  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°29'43.451"N Long: 96°29'5.461"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
1. <u>Ulmus crassifolia</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Celtis occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Carya illinoensis</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
<u>35</u> = Total Cover				
<b>Prevalence Index worksheet:</b> 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 = _____				
<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____				
Remarks:				

## SOIL

Sampling Point: CHR2T4P4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> Wetland Hydrology Present? </div> </div>		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T4P5  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'42.946"N Long: 96°29'6.497"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>30'</u>)</b> 1. <u>Asclepias hirtella</u> <u>20</u> <u>Y</u> <u>FACU</u> 2. <u>Sorghum halepense</u> <u>20</u> <u>Y</u> <u>FACU</u> 3. <u>Cynodon dactylon</u> <u>60</u> <u>Y</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>



## SOIL

Sampling Point: CHR214P5

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5AP1  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain/Berm Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR): J Lat: 32°10'7.477"N Long: 96°29'17.928"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30'</u> )	_____	_____	_____	
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: <u>30'</u> )	_____	_____	_____	
1. <u>Ambrosia trifida</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Grindellia Squarossa</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
<u>Woody Vine Stratum</u> (Plot size: _____)	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum _____	_____	_____	_____	
Remarks:				

# SOIL

Sampling Point: CHR2T5AP1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	2.5YR 3/1	100					dry	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5AP3  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain/Berm Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR): J Lat: 32°10'7.578"N Long: 96°29'18.041"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30'</u> )	_____	_____	_____	
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: <u>30'</u> )	_____	_____	_____	
1. <u>Ambrosia trifida</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Grindellia Squarossa</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Woody Vine Stratum</u> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: _____				

## SOIL

Sampling Point: CHR2T5AP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	2.5YR 3/1	100					dry	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.							<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
<b>Hydric Soil Indicators:</b> (Applicable to all LRRs, unless otherwise noted.)						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<b>(LRR H outside of MLRA 72 &amp; 73)</b>		
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> )			<input type="checkbox"/> High Plains Depressions (F16)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )			<b>(MLRA 72 &amp; 73 of LRR H)</b>					
<b>Restrictive Layer (if present):</b>								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks:								

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b>			<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P1  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'59.725"N Long: 96°29.33.373"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>30'</u>)</b> 1. <u>Asclepias hirtella</u> <u>20</u> <u>Y</u> <u>FACU</u> 2. <u>Sorghum halepense</u> <u>20</u> <u>Y</u> <u>FACU</u> 3. <u>Cynodon dactylon</u> <u>60</u> <u>Y</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>				

## SOIL

Sampling Point: CHR2T5P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.							<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<b>(LRR H outside of MLRA 72 &amp; 73)</b>		
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> )			<input type="checkbox"/> High Plains Depressions (F16)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )			<b>(MLRA 72 &amp; 73 of LRR H)</b>					
<b>Restrictive Layer (if present):</b>								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks:								

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <div> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Salt Crust (B11) </div> <div> <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Invertebrates (B13) </div> <div> <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) </div> <div> <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Dry-Season Water Table (C2) </div> <div> <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) </div> <div> <input type="checkbox"/> Drift Deposits (B3) <div>(where not tilled)</div> </div> <div> <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) </div> <div> <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) </div> <div> <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) </div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) </div> </div> <div> <div>Secondary Indicators (minimum of two required)</div> <div> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) </div> <div> <div>(where tilled)</div> <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) </div> </div> </div>		
<div> <div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches):</div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches):</div> </div> <div> <div>Saturation Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches):</div> </div> <div> <div>(includes capillary fringe)</div> </div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P2  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR): J Lat: 32°9'59.852"N Long: 96°29'32.852"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Plot located on SW bank of Charm Creek</u> <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A)
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Celtis occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
4. _____	_____	_____	_____	
<u>45</u> = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Elymus virginicus</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Ambrosia trifida</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>80</u> = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (Plot size: <u>30'</u> )				
1. <u>Toxicodendron radicans</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>15</u> = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:

## SOIL

Sampling Point: CHR2T5P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P4  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR): J Lat: 32°9'59.985"N Long: 96°29'32.622"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Plot located on SW bank of Charm Creek</u> <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A)
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Celtis occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
4. _____	_____	_____	_____	
<u>45</u> = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Elymus virginicus</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Ambrosia trifida</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>80</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Toxicodendron radicans</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	Remarks:
<u>15</u> = Total Cover				
% Bare Ground in Herb Stratum _____				



## SOIL

Sampling Point: CHR2T5P4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where not tilled)</b> <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where tilled)</b> <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<div> <div> Field Observations: </div> <div> </div> </div>		
Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P5  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°10'3.634"N Long: 96°29'21.211"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
1. <u>Celtis occidentalis</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ulmus crassifolia</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	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 = _____
1. <u>Celtis occidentalis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>Crataegus marshallii</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Ilex decidua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>40</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Elymus virginicus</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Toxicodendron radicans</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>55</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks: \_\_\_\_\_

## SOIL

Sampling Point: CHR2T5P5

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <div> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Salt Crust (B11) </div> <div> <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Invertebrates (B13) </div> <div> <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) </div> <div> <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Dry-Season Water Table (C2) </div> <div> <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) </div> <div> <input type="checkbox"/> Drift Deposits (B3) <div>(where not tilled)</div> </div> <div> <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) </div> <div> <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) </div> <div> <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) </div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) </div> </div> <div> <div>Secondary Indicators (minimum of two required)</div> <div> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) </div> <div> <div>(where tilled)</div> <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) </div> </div> </div>		
<div> <div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div> <div>Saturation Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div> <div>(includes capillary fringe)</div> </div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> </div> </div>		
<div>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</div>		
<div>Remarks:</div>		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P6  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°10'4.193"N Long: 96°29'20.29"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Upland pasture Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Lolium perenne</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: CHR2T5P6

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> Wetland Hydrology Present? </div> </div>		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P7  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR): J Lat: 32°10'4.555"N Long: 96°29'19.117"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks: <u>Swale located at base of berm, drains SE, E toward pond.</u> <u>Extreme drought.</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>10'</u> )				Column Totals:	<u>_____</u> (A) <u>_____</u> (B)
1. <u>Carex crus-corvi</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	Prevalence Index = B/A = _____	
2. <u>Polygonum sp.</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: <u>10'</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Ampelopsis arborea</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. _____	_____	_____	_____	<u>X</u> 2 - Dominance Test is >50%	
_____ = Total Cover				___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
				___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
% Bare Ground in Herb Stratum _____				___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	

Remarks:

## SOIL

Sampling Point: CHR2T5P7

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> (includes capillary fringe) </div> </div> <div> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P8  
 Investigator(s): K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°10'4.985"N Long: 96°29'18.653"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Upland pasture Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Lolium perenne</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: CHR2T5P8

<b>Profile Description:</b> (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	2.5YR3/1	100					clay	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>							<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<b>(LRR H outside of MLRA 72 &amp; 73)</b>		
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> )			<input type="checkbox"/> High Plains Depressions (F16)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )			<b>(MLRA 72 &amp; 73 of LRR H)</b>					
<b>Restrictive Layer (if present):</b>								
Type: _____						<b>Hydric Soil Present?</b> Yes _____ No <u>X</u> _____		
Depth (inches): _____								
Remarks: _____								

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b>					
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P9  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): 3  
 Subregion (LRR): J Lat: 32°10'5.54"N Long: 96°29'18.412"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks:  Fringe around pond Extreme flood.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30'</u> )				
1. <u>Cephalenxus occidentalis</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: <u>30'</u> )				
1. <u>Eleocharis sp</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Polygonum sp</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
3. <u>Carex crus-corvi</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum _____				Remarks:
Remarks:				



## SOIL

Sampling Point: CHR2T5P9

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/>		
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P11  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): 0  
 Subregion (LRR): J Lat: 32°10'6.221"N Long: 96°29'17.931"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: <u>Fringe along pond edge</u> <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30'</u> )				
1. <u>Salix nigra</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Cephalanthus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Herb Stratum</u> (Plot size: <u>30'</u> )				
1. <u>Carex crus-corvi</u>	<u>70</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Justicia americana</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
3. <u>Eleocharis sp.</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
4. <u>Sagittaria lanceolata</u>	<u>3</u>	<u>N</u>	<u>OBL</u>	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum _____				<b>Remarks:</b> _____ _____
Remarks:				

## SOIL

Sampling Point: CHR2T5P11

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>	
<b>Field Observations:</b>						
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>				
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <input type="text" value="8"/>				
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <input type="text"/>				
(includes capillary fringe)			<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P12  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): J Lat: 32°10'6.67"N Long: 96°29'17.045"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			
Remarks: Ring of wetland around pond Extreme drought.					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>30'</u> )				Column Totals:	<u>_____</u> (A) <u>_____</u> (B)
1. <u>Xanthium strumarium</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. <u>Carex crus-corvi</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators:	
3. <u>Polygonum Sp.</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	<u>X</u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
4. <u>Eryngium hookeri</u>	<u>2</u>	<u>N</u>	<u>FACW</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____	Yes <u>X</u> No _____	
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>12%</u>					
Remarks:					

## SOIL

Sampling Point: CHR2T5P12

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<div>(where tilled)</div>
<input type="checkbox"/> Drift Deposits (B3)	<div>(where not tilled)</div>	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> (includes capillary fringe) </div> </div> <div> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P13  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Forested plain Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR): J Lat: 32°10'7.276"N Long: 96°29'17.048"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)
1. <u>Celtis occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	
<u>20</u> = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: <u>30'</u> )				
1. <u>Celtis occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>10</u> = Total Cover				
Herb Stratum (Plot size: <u>30'</u> )				
1. <u>Elymus virginicus</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Helianthus annuus</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>12</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:

## SOIL

Sampling Point: CHR2T5P13

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b>			<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P14  
 Investigator(s): K Ward, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): None Slope (%): 2.5  
 Subregion (LRR): J Lat: 32°10'8.508"N Long: 96°29'14.8"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Shelf along South bank of Chambers Creek</u> <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Cornus drummondii</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>15</u> = Total Cover <b>Sapling/Shrub Stratum (Plot size: <u>30'</u>)</b>				<b>Prevalence Index worksheet:</b> 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 = _____
1. <u>Ulmus americana</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Populus deltoides</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Salix nigra</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Celtis occidentalis</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
5. <u>Melia azedarach</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>22</u> = Total Cover <b>Herb Stratum (Plot size: <u>30'</u>)</b>				
1. <u>Sorghum halepense</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Toxicodendron radicans</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
10. _____	_____	_____	_____	
<u>100</u> = Total Cover <b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				
1. <u>Vitis sp.</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>5</u> = Total Cover % Bare Ground in Herb Stratum _____				

Remarks:

# SOIL

Sampling Point: CHR2T5P14

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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 <u>X</u> | Depth (inches): _____ |
| Water Table Present?                               | Yes _____ No <u>X</u> | Depth (inches): _____ |
| Saturation Present?<br>(includes capillary fringe) | Yes _____ No <u>X</u> | Depth (inches): _____ |

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P16  
 Investigator(s): J Schwartz, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): J Lat: 32°10'8.471"N Long: 96°29'13.477"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? No Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? No (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u> (A/B)
4. _____	_____	_____	_____		
				= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>30'</u> )					
1. <u>Celtis occidentalis</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index worksheet:	
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	Multiply by:
3. _____	_____	_____	_____	OBL species _____	x 1 = _____
4. _____	_____	_____	_____	FACW species _____	x 2 = _____
5. _____	_____	_____	_____	FAC species _____	x 3 = _____
				FACU species _____	x 4 = _____
				UPL species _____	x 5 = _____
				Column Totals:	(A) _____ (B) _____
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Ambrosia trifida</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
3. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Present?	
1. <u>Toxicodendron radicans</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Yes _____	No <u>X</u>
2. _____	_____	_____	_____		
				= Total Cover	
% Bare Ground in Herb Stratum _____					

Remarks:



## SOIL

Sampling Point: CHR2T5P16

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> Wetland Hydrology Present? </div> </div>		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/17/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHR2T5P17  
 Investigator(s): J Schwartz, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): J Lat: 32°10'8.795"N Long: 96°29'12.677"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Celtis occidentalis</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>4</u> (A)
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata:	<u>6</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>66</u> (A/B)
4. _____	_____	_____	_____	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:	
				___ 1 - Rapid Test for Hydrophytic Vegetation	
				<u>X</u> 2 - Dominance Test is >50%	
				___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
				___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present?	
				Yes <u>X</u> No _____	
Remarks:					

## SOIL

Sampling Point: CHR2T5P17

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)		<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)		<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)		<b>(where tilled)</b>	
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>		<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)			<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>	
<b>Field Observations:</b>				
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:				

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHRT1P1  
 Investigator(s): M Forbes, J Schwartz, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'30.407"N Long: 96°28'42.758"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Bromus tectorum</u>	<u>30</u>	<u>Y</u>	<u>NI</u>	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>				

# SOIL

Sampling Point: CHRT1P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHRT1P2  
 Investigator(s): M Forbes, J Schwartz, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainage channel Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32°9'30.993"N Long: 96°28'42.883"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>4</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: <u>30'</u> )				Total % Cover of: _____ Multiply by: _____	
1. <u>Cephalanthus occidentalis</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	OBL species _____ x 1 = _____	
2. _____	_____	_____	_____	FACW species _____ x 2 = _____	
3. _____	_____	_____	_____	FAC species _____ x 3 = _____	
4. _____	_____	_____	_____	FACU species _____ x 4 = _____	
5. _____	_____	_____	_____	UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>30'</u> )				Column Totals:	<u>_____</u> (A) <u>_____</u> (B)
1. <u>Carex crus-corvi</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	Prevalence Index = B/A = _____	
2. <u>Xanthium strumarium</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
3. <u>Sorghum halepense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	1 - Rapid Test for Hydrophytic Vegetation	
4. <u>Euphorbia bicolor</u>	<u>15</u>	<u>Y</u>	<u>NI</u>	<u>X</u> 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	3 - Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____	_____	_____	_____	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present?	
10. _____	_____	_____	_____	Yes <u>X</u> No _____	
Woody Vine Stratum (Plot size: <u>30'</u> )					
1. <u>Ampelopsis arborea</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>		
2. _____	_____	_____	_____		
% Bare Ground in Herb Stratum <u>40</u>					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					

## SOIL

Sampling Point: CHRT1P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHRT1P3  
 Investigator(s): M Forbes, J Schwartz, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'31.443"N Long: 96°28'43.113"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
				Column Totals:	_____ (A) _____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Bromus tectorum</u>	<u>30</u>	<u>Y</u>	<u>NI</u>	<u>X</u> 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	<u>X</u> 2 - Dominance Test is >50%	
3. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					

# SOIL

Sampling Point: CHRT1P3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHRT2P1  
 Investigator(s): J Schwartz, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): convex Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'25.217"N Long: 96°28'49.998"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Bromus tectorum</u>	<u>30</u>	<u>Y</u>	<u>NI</u>	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: <u>Species with no indicator status not used to calculate dominance test.</u>				



## SOIL

Sampling Point: CHRT2P1

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>	
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHRT2P2  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): drainage channel Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'25.559"N Long: 96°28'49.929"W Datum: NAD83  
 Soil Map Unit Name: Trinity Clay frequently flooded NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) _____ <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Carex crus-corvi</u>	<u>75</u>	<u>Y</u>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>25</u>				

Remarks:

# SOIL

Sampling Point: CHRT2P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12 "	10YR3/1	100						Upland soil

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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: Depleted matrix of 3/1 same as adjacent upland soil

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- X Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X 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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**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: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: CHRT2P3  
 Investigator(s): J Schwartz, M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'26.471"N Long: 96°28'50.105"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks: <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
				Column Totals:	_____ (A) _____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Bromus tectorum</u>	<u>30</u>	<u>Y</u>	<u>NI</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Elymus virginicus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	<u>X</u> 2 - Dominance Test is >50%	
3. <u>Rudbeckia maxima</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____	Yes <u>X</u>	No _____
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks: <u>Species with no indicator status not used to calculate dominance test.</u>					

# SOIL

Sampling Point: CHRT2P3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR3/1	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT0P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.157220 Long: -96.481387 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carex crus-corvi</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
3. <u>Rudbeckia maxima</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
4. <u>Bromus tectorum</u>	<u>15</u>	<u>N</u>	<u>NI</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>				

## SOIL

Sampling Point: DT0P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR5/3	100					clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>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)  
☐ 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<sup>3</sup>:**

- ☐ 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)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>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)

- ☐ 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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT0P3  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.157157 Long: -96.481355 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
				<b>Prevalence Index worksheet:</b> 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 = _____
_____ = Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Rudbeckia maxima</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Bromus tectorum</u>	<u>5</u>	<u>N</u>	<u>NI</u>	
4. <u>Carex crus-corvi</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: <u>Species with no indicator status not used to calculate dominance test.</u>				

# SOIL

Sampling Point: DT0P3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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)
- X 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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT1AP1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.156679 Long: -96.482154 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u> radius)</b> 1. <u>Cynodon dactylon</u> <u>60</u> <u>Y</u> <u>FACU</u> 2. <u>Carex crus-corvi</u> <u>5</u> <u>N</u> <u>OBL</u> 3. <u>Rudbeckia maxima</u> <u>20</u> <u>Y</u> <u>FACW</u> 4. <u>Bromus tectorum</u> <u>15</u> <u>N</u> <u>NI</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>				



## SOIL

Sampling Point: DT1AP1

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where not tilled)</b> <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where tilled)</b> <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____  Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____  Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____  (includes capillary fringe) </div> <div> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT1AP3  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.156575 Long: -96.482120 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carex crus-corvi</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
3. <u>Rudbeckia maxima</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
4. <u>Bromus tectorum</u>	<u>15</u>	<u>N</u>	<u>NI</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
2. _____	_____	_____	_____	
_____ = Total Cover				
<b>% Bare Ground in Herb Stratum</b> _____				
<b>Remarks:</b>  <u>Species with no indicator status not used to calculate dominance test.</u>				

## SOIL

Sampling Point: DT1AP3

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT1P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): J Lat: 32.15712 Long: -96.48183 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>		
Wetland Hydrology Present?	Yes _____	No <u>X</u>		
Remarks: <u>Extreme drought</u>				

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
				Column Totals:	_____ (A) _____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>5' radius</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Ambrosia trifida</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	_____ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Rudbeckia maxima</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	<u>X</u> 2 - Dominance Test is >50%	
3. <u>Carex crus-corvi</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	_____ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	_____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____	Yes <u>X</u> No _____	
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>45</u>					
Remarks:					

# SOIL

Sampling Point: DT1P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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 <u>X</u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u>	Depth (inches): _____

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT1P2  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 1  
 Subregion (LRR): J Lat: 32.15704 Long: -96.48178 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks: <u>Extreme drought</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Carex crus-corvi</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Ampelopsis arborea</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
<b>% Bare Ground in Herb Stratum</b> <u>30</u>				
Remarks:				

# SOIL

Sampling Point: DT1P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR3/1	100					clay	dry
4-12	10YR3/1	97	2.5YR5/6	3	C	PL	clay	moist

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

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 ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT1P4  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 1  
 Subregion (LRR): J Lat: 32.156985 Long: -96.481687 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: <u>Extreme drought</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<u>Herb Stratum</u> (Plot size: <u>5' radius</u> )				
1. <u>Carex crus-corvi</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Ampelopsis arborea</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
3. <u>Ambrosia trifida</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Iva annua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>30</u>				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____

Remarks:

# SOIL

Sampling Point: DT1P4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR3/1	100					clay	dry
4-12	10YR3/1	97	2.5YR5/6	3	C	PL	clay	moist

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

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 ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT1P5  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): J Lat: 32.15697 Long: -96.48164 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)</b> 1. <u>Celtis laevigata</u> <u>3</u> <u>Y</u> <u>FAC</u> 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5' radius</u>)</b> 1. <u>Elymus virginicus</u> <u>60</u> <u>Y</u> <u>FAC</u> 2. <u>Rudbeckia maxima</u> <u>30</u> <u>Y</u> <u>FACW</u> 3. <u>Carex crus-corvi</u> <u>5</u> <u>N</u> <u>OBL</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u>				

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
X 2 - Dominance Test is >50%  
 \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No \_\_\_\_\_

Remarks:



# SOIL

Sampling Point: DT1P5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR4/2	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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 <u>X</u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u>	Depth (inches): _____

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT2P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.15649 Long: 96.48441 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5' radius</u>)</b> 1. <u>Cynodon dactylon</u> 80 Y FACU 2. <u>Bromus tectorum</u> 20 Y NI 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____				
<b>Remarks:</b> <u>Species with no indicator status not used to calculate dominance test.</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>				

## SOIL

Sampling Point: DT2P1

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<b>Field Observations:</b>		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT2P2  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.15654 Long: -96.48439 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks:  <u>Extreme drought.</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: <u>5' radius</u> )				
1. <u>Carex crus-corvi</u>	<u>75</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Ampelopsis arborea</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u>				

Remarks:

## SOIL

Sampling Point: DT2P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)				
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)				
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)				
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)				
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>				
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)				
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)				
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)				
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)				
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>				
<b>Field Observations:</b>						
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>				
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>				
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>				
(includes capillary fringe)			<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT2P4  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.15657 Long: -96.48441 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks:  Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Iva annua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
2. <u>Carex crus-corvi</u>	<u>65</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Ampelopsis arborea</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u>				
Remarks:				

## SOIL

Sampling Point: DT2P4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR3/1	96	2.5YR5/6	4	C	M	clay	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.							<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>							<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> )		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<b>(LRR H outside of MLRA 72 &amp; 73)</b>		
<input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> )			<input type="checkbox"/> High Plains Depressions (F16)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )			<b>(MLRA 72 &amp; 73 of LRR H)</b>					
<b>Restrictive Layer (if present):</b>								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input checked="" type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT2P5  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): J Lat: 32.15660 Long: -96.48435 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Bromus tectorum</u>	<u>20</u>	<u>Y</u>	<u>NI</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  Species with no indicator status not used to calculate dominance test.				

# SOIL

Sampling Point: DT2P5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR3/1	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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 <u>X</u> | Depth (inches): _____ |
| Water Table Present?                               | Yes _____ No <u>X</u> | Depth (inches): _____ |
| Saturation Present?<br>(includes capillary fringe) | Yes _____ No <u>X</u> | Depth (inches): _____ |

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT3P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.156795 Long: -96.487953 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	Remarks:
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				



# SOIL

Sampling Point: DT3 P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay loam	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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 <u>X</u> | Depth (inches): _____ |
| Water Table Present?                               | Yes _____ No <u>X</u> | Depth (inches): _____ |
| Saturation Present?<br>(includes capillary fringe) | Yes _____ No <u>X</u> | Depth (inches): _____ |

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT3P3  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.156665 Long: -96.488022 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: DT3 P3

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> </div> <div> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT4P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.157268 Long: -96.489209 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
Herb Stratum (Plot size: <u>5' radius</u> )				Column Totals:	_____ (A) _____ (B)
1. <u>Cynodon dactylon</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index = B/A = _____	
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
4. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

# SOIL

Sampling Point: DT4P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR4/2	100					clay loam	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT4P2  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.15720 Long: -96.48923 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks:  Extreme drought. Area is 2' wide			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>5' radius</u> )				Column Totals: _____ (A)	_____ (B)
1. <u>Iva annua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. <u>Carex crus-corvi</u>	<u>55</u>	<u>Y</u>	<u>OBL</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. _____	_____	_____	_____	<u>X</u> 2 - Dominance Test is >50%	
_____ = Total Cover				___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
				___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
% Bare Ground in Herb Stratum _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
Remarks:  Wetland at DT4P2 is 5' wide					

# SOIL

Sampling Point: DT4P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR3/1	97	2.5YR5/6	3	C	PL	clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

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 ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT4 P4  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.15720 Long: -96.48923 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks:  Extreme drought. Area is 5' wide			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
				Column Totals: _____ (A) _____ (B)	
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>5' radius</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Iva annua</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Carex crus-corvi</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	<u>X</u> 2 - Dominance Test is >50%	
3. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____	Yes <u>X</u> No _____	
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

## SOIL

Sampling Point: DT4 P4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<div>(where tilled)</div> <input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<div>(where not tilled)</div> <input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Water-Stained Leaves (B9)		
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> (includes capillary fringe) </div> </div> <div> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT4P5  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.157173 Long: -96.489264 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:	
_____ = Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____	x 1 = _____
1. _____	_____	_____	_____	FACW species _____	x 2 = _____
2. _____	_____	_____	_____	FAC species _____	x 3 = _____
3. _____	_____	_____	_____	FACU species _____	x 4 = _____
4. _____	_____	_____	_____	UPL species _____	x 5 = _____
5. _____	_____	_____	_____	Column Totals:	(A) _____ (B) _____
_____ = Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>5' radius</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Cynodon dactylon</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	___ 2 - Dominance Test is >50%	
3. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____	___	
7. _____	_____	_____	_____	___	
8. _____	_____	_____	_____	___	
9. _____	_____	_____	_____	___	
10. _____	_____	_____	_____	___	
_____ = Total Cover				___	
Woody Vine Stratum (Plot size: _____)				___	
1. _____	_____	_____	_____	___	
2. _____	_____	_____	_____	___	
_____ = Total Cover				___	
% Bare Ground in Herb Stratum _____				___	
Remarks:					



# SOIL

Sampling Point: DT4P5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR4/2	100					clay loam	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT5P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16067 Long: -96.49410 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				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 = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' radius</u> )				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Cynodon dactylon</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Bromus tectorum</u>	<u>40</u>	<u>Y</u>	<u>NI</u>	
3. <u>Ambrosia trifida</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  Species with no indicator status not used to calculate dominance test.				

# SOIL

Sampling Point: DT5P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR3/2						clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT5P2  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16068 Long: -96.49404 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5' radius</u>)</b> 1. <u>Carex crus-corvi</u> 50 Y OBL 2. <u>Iva annua</u> 20 Y FAC 3. <u>Justicia americana</u> 2 N OBL 4. <u>Ampelopsis arborea</u> 3 N FAC 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  <u>Wetland fringe ~ 3 ft. wide</u>				<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____

# SOIL

Sampling Point: DT5P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR2/1	97	2.5YR4/8	3	C	PL	clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

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 ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks:



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT5P4  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32°9'34.752"N Long: 96°29'34.568"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: <u>5' radius</u> )	_____	_____	_____	
1. <u>Carex crus-corvi</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Iva annua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Justicia americana</u>	<u>2</u>	<u>N</u>	<u>OBL</u>	
4. <u>Ampelopsis arborea</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Woody Vine Stratum</u> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  <u>Wetland fringe ~ 2 ft. wide</u>				

## SOIL

Sampling Point: DT5 P4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <div> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) </div> <div> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <div>(where not tilled)</div> <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </div> </div> </div> <div> <div>Secondary Indicators (minimum of two required)</div> <div> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <div>(where tilled)</div> <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) </div> </div>		
<div> <div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div> <div>Saturation Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): <input type="text"/></div> </div> <div>(includes capillary fringe)</div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT5P5  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16058 Long: -96.49410 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5' radius</u>)</b> 1. <u>Carex crus-corvi</u> 50 Y OBL 2. <u>Elymus virginicus</u> 10 Y FAC 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>40</u>				
Remarks:  <u>Fringe is ~ 2 ft. wide</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. <b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____

## SOIL

Sampling Point: DT5P5

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT5P6  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16057 Long: -96.49410 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  Extreme drought.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Bromus tectorum</u>	<u>40</u>	<u>Y</u>	<u>NI</u>	
3. <u>Ambrosia trifida</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:  Species with no indicator status not used to calculate dominance test.				



## SOIL

Sampling Point: DT5 P6

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

[illegible]

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      | <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )               |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              | <input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> ) |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          | <input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      | <input type="checkbox"/> High Plains Depressions (F16)                    |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      | <b>(LRR H outside of MLRA 72 &amp; 73)</b>                                |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          | <input type="checkbox"/> Reduced Vertic (F18)                             |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       | <input type="checkbox"/> Red Parent Material (TF2)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    | <input type="checkbox"/> Very Shallow Dark Surface (TF12)                 |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        | <input type="checkbox"/> Other (Explain in Remarks)                       |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) | <sup>3</sup> Indicators of hydrophytic vegetation and                     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     | wetland hydrology must be present,  |

## 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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT6P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.163884 Long: -96.497778 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>100</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:

## SOIL

Sampling Point: DT6 P1

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

[illegible]

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      | <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )               |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              | <input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> ) |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          | <input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      | <input type="checkbox"/> High Plains Depressions (F16)                    |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      | <b>(LRR H outside of MLRA 72 &amp; 73)</b>                                |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          | <input type="checkbox"/> Reduced Vertic (F18)                             |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       | <input type="checkbox"/> Red Parent Material (TF2)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    | <input type="checkbox"/> Very Shallow Dark Surface (TF12)                 |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        | <input type="checkbox"/> Other (Explain in Remarks)                       |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) | <sup>3</sup> Indicators of hydrophytic vegetation and                     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     | wetland hydrology must be present,  |

## 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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT6P3  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.163686 Long: -96.497914 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>100</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:

## SOIL

Sampling Point: DT6 P3

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where not tilled)</b> <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <b>(where tilled)</b> <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT7P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.164105 Long: -96.499152 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				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 = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' radius</u> )				
1. <u>Cynodon dactylon</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: DT7P1

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT7P2  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16407 Long: 96.49917 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
				Column Totals: _____ (A)	_____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>5' radius</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Carex crus-corvi</u>	<u>90</u>	<u>Y</u>	<u>OBL</u>	<u>X</u> 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Smilax bona-nox</u>	<u>3</u>	<u>N</u>	<u>FACU</u>	<u>X</u> 2 - Dominance Test is >50%	
3. <u>Elymus virginicus</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. <u>Ambrosia trifida</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____	Yes <u>X</u>	No _____
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					

Remarks:

# SOIL

Sampling Point: DT7P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR3/1	95	2.5YR5/6	5	C	PL	clay	

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

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

Remarks:

# HYDROLOGY

## Wetland Hydrology Indicators:

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

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

### 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 ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT7P4  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16402 Long: -96.49918 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks:  <u>Extreme drought.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
<u>Herb Stratum</u> (Plot size: <u>5' radius</u> )	_____	_____	_____	
1. <u>Carex crus-corvi</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Ambrosia trifida</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
3. <u>Ampelopsis arborea</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
<u>Woody Vine Stratum</u> (Plot size: _____)	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u>10</u>	_____	_____	_____	

Remarks:



# SOIL

Sampling Point: DT7P4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR3/1	95	2.5YR5/6	5	C	PL	clay	

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

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

Remarks:

# HYDROLOGY

## Wetland Hydrology Indicators:

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

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

### 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 ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT7P5  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.163975 Long: -96.499194 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:  Extreme drought.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15' radius</u> )	_____	_____	_____	
1. <u>Celtis laevigata</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Ulmus crassifolia</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: <u>5' radius</u> )	_____	_____	_____	
1. <u>Cynodon dactylon</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Rudbeckia maxima</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Ambrosia trifida</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Elymus virginicus</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Woody Vine Stratum</u> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum _____				Remarks:

## SOIL

Sampling Point: DT7P5

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> </div> <div> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT8P1  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16580 Long: -96.50628 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Ambrosia trifida</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Elymus virginicus</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
3. <u>Rudbeckia maxima</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Helianthus annuus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks:

## SOIL

Sampling Point: DT8 P1

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b>					
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT8P2  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16574 Long: -96.50627 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks:  <u>Extreme drought.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: <u>5' radius</u> )	_____	_____	_____	
1. <u>Carex crus-corvi</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Ambrosia trifida</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Rudbeckia maxima</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. <u>Elymus virginicus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Woody Vine Stratum</u> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u>	_____ = Total Cover			

Remarks:

# SOIL

Sampling Point: DT8P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR3/1	97	2.5YR5/6	3	C	PL	clay	

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

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

Remarks:

# HYDROLOGY

## Wetland Hydrology Indicators:

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

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

### 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 ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT8P4  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.1652 Long: 96.50629 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks:  <u>Extreme drought.</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )				
1. <u>Carex crus-corvi</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Ambrosia trifida</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

## SOIL

Sampling Point: DT8 P4

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

[illegible]

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           | <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )               |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   | <input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> ) |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               | <input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           | <input type="checkbox"/> High Plains Depressions (F16)                    |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           | <b>(LRR H outside of MLRA 72 &amp; 73)</b>                                |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               | <input type="checkbox"/> Reduced Vertic (F18)                             |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         | <input type="checkbox"/> Very Shallow Dark Surface (TF12)                 |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             | <input type="checkbox"/> Other (Explain in Remarks)                       |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      | <sup>3</sup> Indicators of hydrophytic vegetation and                     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          | wetland hydrology must be present,  |

## Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No       

Remarks:

## HYDROLOGY

### Wetland Hydrology Indicators:

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

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

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: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 8/22/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: DT8P5  
 Investigator(s): M Forbes Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): J Lat: 32.16402 Long: -96.49918 Datum: NAD83  
 Soil Map Unit Name: Trinity clay, frequently flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>		
Wetland Hydrology Present?	Yes _____	No <u>X</u>		
Remarks:  Extreme drought.				

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' radius</u> )				
1. <u>Ambrosia trifida</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Elymus virginicus</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Rudbeckia maxima</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Helianthus annuus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
% Bare Ground in Herb Stratum _____				
Remarks:				



## SOIL

Sampling Point: DT8P5

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

[illegible]

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      | <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR I, J</b> )               |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              | <input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR F, G, H</b> ) |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          | <input type="checkbox"/> Dark Surface (S7) ( <b>LRR G</b> )               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      | <input type="checkbox"/> High Plains Depressions (F16)                    |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      | <b>(LRR H outside of MLRA 72 &amp; 73)</b>                                |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          | <input type="checkbox"/> Reduced Vertic (F18)                             |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       | <input type="checkbox"/> Red Parent Material (TF2)                        |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    | <input type="checkbox"/> Very Shallow Dark Surface (TF12)                 |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        | <input type="checkbox"/> Other (Explain in Remarks)                       |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) | <sup>3</sup> Indicators of hydrophytic vegetation and                     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     | wetland hydrology must be present,  |

## 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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/15/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1AP1  
 Investigator(s): J Schwartz, M Forbes, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'50.885"N Long: 96°30'37.427"W Datum: NAD83  
 Soil Map Unit Name: Wilson clay loam, 1 to 3% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>		
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Remarks:  <u>Extreme drought.</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>30'</u> )				Column Totals: _____ (A)	_____ (B)
1. <u>Bromus tectorum</u>	<u>50</u>	<u>Y</u>	<u>NI</u>	Prevalence Index = B/A = _____	
2. <u>Cynodon dactylon</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
4. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					

## SOIL

Sampling Point: T1AP1

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> </div> <div> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/16/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1AP2  
 Investigator(s): M Forbes, J Schwartz Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR): J Lat: 32°9'50.925"N Long: 96°30'37.426"W Datum: NAD83  
 Soil Map Unit Name: Wilson clay loam, 1 to 3% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:  <u>Extreme drought.</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) _____  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Helianthus annuus</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Xanthium strumarium</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Rhynchospora tracyi</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

# SOIL

Sampling Point: T1AP2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	2.5Y3/1	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/15/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1AP3  
 Investigator(s): M Forbes, J Schwartz, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'50.714"N Long: 96°30'37.001"W Datum: NAD83  
 Soil Map Unit Name: Wilson clay loam, 1 to 3% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? NO (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>		
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Remarks:  <u>Extreme drought.</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:	
_____ = Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____	x 1 = _____
1. _____	_____	_____	_____	FACW species _____	x 2 = _____
2. _____	_____	_____	_____	FAC species _____	x 3 = _____
3. _____	_____	_____	_____	FACU species _____	x 4 = _____
4. _____	_____	_____	_____	UPL species _____	x 5 = _____
5. _____	_____	_____	_____	Column Totals:	(A) _____ (B) _____
_____ = Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Bromus tectorum</u>	<u>50</u>	<u>Y</u>	<u>NI</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Cynodon dactylon</u>	<u>30</u>	<u>N</u>	<u>FACU</u>	___ 2 - Dominance Test is >50%	
3. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____	___ 1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present?	
8. _____	_____	_____	_____	Yes _____ No <u>X</u>	
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					

## SOIL

Sampling Point: T1AP3

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b>			<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/15/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1AP4  
 Investigator(s): M Forbes, J Schwartz, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'48.578"N Long: 96°30'35.912"W Datum: NAD83  
 Soil Map Unit Name: Wilson clay loam, 1 to 3% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
Herb Stratum (Plot size: <u>30'</u> )				Column Totals:	<u>_____</u> (A) <u>_____</u> (B)
1. <u>Bromus tectorum</u>	<u>50</u>	<u>Y</u>	<u>NI</u>	Prevalence Index = B/A = _____	
2. <u>Cynodon dactylon</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
4. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present?	
10. _____	_____	_____	_____	Yes _____ No <u>X</u>	
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					

## SOIL

Sampling Point: T1AP4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>			
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>			
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)			<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/15/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1AP5  
 Investigator(s): J Schwartz, M Forbes, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'47.991"N Long: 96°30'35.02"W Datum: NAD83  
 Soil Map Unit Name: Ferris clay, 3 to 8% slopes, eroded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>		
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Remarks:  <u>Extreme drought.</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>30'</u> )				Column Totals: _____ (A)	_____ (B)
1. <u>Bromus tectorum</u>	<u>50</u>	<u>Y</u>	<u>NI</u>	Prevalence Index = B/A = _____	
2. <u>Cynodon dactylon</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
4. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					



## SOIL

Sampling Point: T1AP5

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> </div> <div> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/15/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1P1  
 Investigator(s): J Schwartz, M Forbes, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): J Lat: 32°9'48.615"N Long: 96°30'41.585"W Datum: NAD83  
 Soil Map Unit Name: Wilson clay loam, 1 to 3% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:  <u>Extreme drought.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
Herb Stratum (Plot size: <u>30'</u> )				Column Totals:	_____ (A) _____ (B)
1. <u>Bromus tectorum</u>	<u>50</u>	<u>Y</u>	<u>NI</u>	Prevalence Index = B/A = _____	
2. <u>Cynodon dactylon</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
4. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present?	
10. _____	_____	_____	_____	Yes _____ No <u>X</u>	
80 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					

# SOIL

Sampling Point: T1P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	2.5Y3/1	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/15/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1P2  
 Investigator(s): J Schwartz, M Forbes, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 5  
 Subregion (LRR): J Lat: 32°9'54.306"N Long: 96°30'29.56"W Datum: NAD83  
 Soil Map Unit Name: Wilson clay loam, 1 to 3% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks: <u>Extreme drought.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:	
_____ = Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____	x 1 = _____
1. _____	_____	_____	_____	FACW species _____	x 2 = _____
2. _____	_____	_____	_____	FAC species _____	x 3 = _____
3. _____	_____	_____	_____	FACU species _____	x 4 = _____
4. _____	_____	_____	_____	UPL species _____	x 5 = _____
5. _____	_____	_____	_____	Column Totals:	<u>      </u> (A) <u>      </u> (B)
_____ = Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>30'</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Bromus tectorum</u>	<u>50</u>	<u>Y</u>	<u>NI</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Cynodon dactylon</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	___ 2 - Dominance Test is >50%	
3. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks: <u>Species with no indicator status not used to calculate dominance test.</u>					

## SOIL

Sampling Point: T1P2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div> Primary Indicators (minimum of one required; check all that apply) </div> <div> Secondary Indicators (minimum of two required) </div> </div>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<div> <div> Field Observations: </div> <div> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> <div> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): </div> </div> <div> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rockin' K on Chambers Creek City/County: Navarro County Sampling Date: 7/15/13  
 Applicant/Owner: Rockin' K on Chambers Creek LP State: TX Sampling Point: T1P4  
 Investigator(s): M Forbes, J Schwartz, K Ward, S Fletcher Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 5  
 Subregion (LRR): J Lat: 32°9'55.444"N Long: 96°30'26.67"W Datum: NAD83  
 Soil Map Unit Name: Trinity clay NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? no Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? no (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>		
Wetland Hydrology Present?	Yes _____	No <u>X</u>		
Remarks:  <u>Extreme drought.</u>				

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
Herb Stratum (Plot size: <u>30'</u> )				Column Totals:	<u>_____</u> (A) <u>_____</u> (B)
1. <u>Helianthus annuus</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. <u>Gutierrezia sarothrae</u>	<u>30</u>	<u>Y</u>	<u>NI</u>	Hydrophytic Vegetation Indicators:	
3. <u>Elymus virginicus</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	<u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% _____ <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> _____ <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
4. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:  <u>Species with no indicator status not used to calculate dominance test.</u>					

# SOIL

Sampling Point: T1P4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-14	7.5YR5/3	100					clay	
4-16	10YR4/3	100					clay	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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)

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

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? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No X

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

Remarks:

## **APPENDIX B STREAM DATA SHEET**

# Stream Data Sheet

Stream #: CCT1P3

Date: 7/17/13

Project Name: Rockin' K on Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes, K Ward

Stream Name: Chambers Creek

## Stream Characteristics

a) Avg. Bank Width 200 In.(Ft.)

b) Average Width of Water 40 In.(Ft.)

c) Avg. Water Depth 5 In.(Ft.)

Min./Max Depth 2-5 In.(Ft.)

d) Depth of Streambed below top of bank 80 In.(Ft.)

Stream flow: ☒ Perennial ☐ Intermittent ☐ Ephemeral

OHWM Width 50 In.(Ft.)

Height of OHWM above streambed 7 In.(Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock☐ Boulder☐ Cobble☐ Gravel☐ Sand☒ Silt/Clay☐ Organic☐ Concrete☐ Other (Describe)

## Instream Cover

☐ Undercut Banks☒ Logs/Brush☐ Emergent☐ Oxbows☐ Boulders☒ Overhanging Vegetation☐ Deep Pools☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☒ Forest☐ Scrub/Shrub☐ Old-Field/ROW☐ Pasture☐ Row-Crop☐ Wetland☐ Paved☐ Residential/Park☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left &gt;20 In.(Ft.)

Right &gt;20 In.(Ft.)

**Notes/Comments:** Left bank: vegetated, active erosion minimal (ragweed and trees), wooded at top of bank. Right bank: active erosion, top of bank cleared ATV path. Depth of stream inferred, visibility poor.

# Stream Data Sheet

Stream #: CCT2P3

Date: 7/17/13

Project Name: Rockin' K on Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes, K Ward

Stream Name: Chambers Creek

## Stream Characteristics

a) Avg. Bank Width 200 In. (Ft.)

b) Average Width of Water 20 In. (Ft.)

c) Avg. Water Depth 4 In. (Ft.)

Min./Max Depth 1-5 In. (Ft.)

d) Depth of Streambed below top of bank 75 In. (Ft.)

Stream flow:

☒ Perennial☐ Intermittent☐ Ephemeral

OHWM Width 30 In. (Ft.)

Height of OHWM above streambed 7 In. (Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock☐ Boulder☐ Cobble☐ Gravel☐ Sand☒ Silt/Clay☐ Organic☐ Concrete☐ Other (Describe)

## Instream Cover

☐ Undercut Banks☐ Logs/Brush☐ Emergent☐ Oxbows☐ Boulders☒ Overhanging Vegetation☐ Deep Pools☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☒ Forest☐ Scrub/Shrub☐ Old-Field/ROW☐ Pasture☐ Row-Crop☐ Wetland☐ Paved☐ Residential/Park☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left &gt;20 In. (Ft.)

Right &gt;20 In. (Ft.)

## Notes/Comments:



# Stream Data Sheet

Stream #: CHR2T2P3

Date: 7/16/13

Project Name: Rockin' K on Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: K Ward, S Fletcher

Stream Name: Charm Creek

## Stream Characteristics

a) Avg. Bank Width 30 In.(Ft.)

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft.

Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 8 In.(Ft.)

Stream flow:

☐ Perennial☒ Intermittent☐ Ephemeral

OHWM Width 10 In.(Ft.)

Height of OHWM above streambed 1 In.(Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth c)

## Substrate

☐ Bedrock☐ Boulder☐ Cobble☐ Gravel☐ Sand☒ Silt/Clay☒ Organic☐ Concrete☐ Other (Describe)

## Instream Cover

☐ Undercut Banks☐ Logs/Brush☐ Emergent☐ Oxbows☐ Boulders☒ Overhanging Vegetation☐ Deep Pools☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☒ Forest☐ Scrub/Shrub☐ Old-Field/ROW☒ Pasture☐ Row-Crop☐ Wetland☐ Paved☐ Residential/Park☐ Other

(Describe other or differences between banks): Pasture right bank. Forest Left Bank

Width of Riparian Zone (Left or right bank looking downstream)

Left &gt;50 In.(Ft.)

Right &gt;20 In.(Ft.)

## Notes/Comments:

# Stream Data Sheet

Stream #: CHR2T3P4

Date: 7/16/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: K Ward, S Fletcher

Stream Name: Charm Creek

## Stream Characteristics

a) Avg. Bank Width 25 In. (Ft.)

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft.

Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 7 In. (Ft.)

Stream flow:

☐ Perennial☒ Intermittent☐ Ephemeral

OHWM Width 10 In. (Ft.)

Height of OHWM above streambed 6 In. (Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock☐ Boulder☐ Cobble☐ Gravel☐ Sand☒ Silt/Clay☐ Organic☐ Concrete☐ Other (Describe)

## Instream Cover

☐ Undercut Banks☐ Logs/Brush☒ Emergent☐ Oxbows☐ Boulders☒ Overhanging Vegetation☐ Deep Pools☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☒ Forest☐ Scrub/Shrub☐ Old-Field/ROW☐ Pasture☐ Row-Crop☐ Wetland☐ Paved☐ Residential/Park☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 50 In. (Ft.)

Right 15 In. (Ft.)

Notes/Comments: Dry

# Stream Data Sheet

Stream #: CHR2T4P3

Date: 7/16/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: S Fletcher, K Ward

Stream Name: Charm Creek

## Stream Characteristics

a) Avg. Bank Width 30 In. (Ft.) b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 7 In. (Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 10 In. (Ft.) Height of OHWM above streambed 6 (In.) Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay

☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders

☒ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☒ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☐ Pasture ☐ Row-Crop ☐ Wetland ☐ Paved

☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 50 In. (Ft.)

Right 75 In. (Ft.)

Notes/Comments: Channel dry

# Stream Data Sheet

Stream #: CHR2T5AP2 Date: 7/17/13

Project Name: Rockin' K at Chambers Creek Project #: 13.034.01.T

Location (County/State): Navarro/Texas Field Crew: S Fletcher, K Ward

Stream Name: Unnamed tributary to Charm Creek

## Stream Characteristics

a) Avg. Bank Width 15 In. (Ft.) b) Average Width of Water Dry In./Ft.

c) Avg. Water Depth Dry In./Ft. Min./Max Depth Dry In./Ft.

d) Depth of Streambed below top of bank 8 In. (Ft.)

Stream flow: ☐ Perennial ☐ Intermittent ☒ Ephemeral

OHWM Width 1.5 In. (Ft.) Height of OHWM above streambed 1 In. (Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay

☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders

☒ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☒ Scrub/Shrub ☐ Old-Field/ROW ☐ Pasture ☐ Row-Crop ☐ Wetland ☐ Paved

☐ Residential/Park ☐ Other

(Describe other or differences between banks): pasture and wooded area within riparian zone

Width of Riparian Zone (Left or right bank looking downstream) Left >20 In. (Ft.) Right >20 In. (Ft.)

Notes/Comments: Ephemeral channel that flows from the pond located just north west of property. Tributary to Chambers Creek. Concrete culvert from on site pond (South of channel).

# Stream Data Sheet

Stream #: CHR2T5P3

Date: 7/16/13

Project Name: Rockin' K on Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: K Ward, S Fletcher

Stream Name: Charm Creek

## Stream Characteristics

a) Avg. Bank Width 30 In. (Ft.) b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 5 In. (Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 5 In. (Ft.) Height of OHWM above streambed 6 (In.) Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay

☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders

☒ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☒ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☐ Pasture ☐ Row-Crop ☐ Wetland ☐ Paved

☐ Residential/Park ☐ Other

(Describe other or differences between banks): Pasture right bank. Forest Left Bank

Width of Riparian Zone (Left or right bank looking downstream) Left<sup>100</sup> In. (Ft.) Right<sup>30</sup> In. (Ft.)

Notes/Comments: Vegetative swale



# Stream Data Sheet

Stream #:CHR2T5P10

Date: 7/16/13

Project Name: Rockin' K on Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes, J Schwartz

Stream Name: Pond at T5

## Stream Characteristics

a) Avg. Bank Width 120 In. (Ft.)

b) Average Width of Water 80 In. (Ft.)

c) Avg. Water Depth unknown In./Ft.

Min./Max Depth unknown In./Ft.

d) Depth of Streambed below top of bank unknown, poor visibility In./Ft.

Stream flow:



Perennial



Intermittent



Ephemeral

OHWM Width In./Ft.

Height of OHWM above streambed In./Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate



Bedrock



Boulder



Cobble



Gravel



Sand



Silt/Clay



Organic



Concrete



Other (Describe)

## Instream Cover



Undercut Banks



Logs/Brush



Emergent



Oxbows



Boulders



Overhanging Vegetation



Deep Pools



Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

Buffer



Forest



Scrub/Shrub



Old-Field/ROW



Pasture



Row-Crop



Wetland



Paved



Residential/Park



Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left In./Ft.

Right In./Ft.

## Notes/Comments:

# Stream Data Sheet

Stream #: DT0P2

Date: 8/22/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch

## Stream Characteristics

a) Avg. Bank Width 6 In. ☒ Ft.

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft.

Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 1.5 In. ☒ Ft.Stream flow: ☐ Perennial ☒ Intermittent ☐ EphemeralOHWM Width 1.5 In. ☒ Ft.Height of OHWM above streambed 8 ☒ In. ☐ Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth c)

## Substrate

☐ Bedrock☐ Boulder☐ Cobble☐ Gravel☐ Sand☒ Silt/Clay☐ Organic☐ Concrete☐ Other (Describe)

## Instream Cover

☐ Undercut Banks☐ Logs/Brush☒ Emergent☐ Oxbows☐ Boulders☐ Overhanging Vegetation☐ Deep Pools☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest☐ Scrub/Shrub☐ Old-Field/ROW☒ Pasture☐ Row-Crop☐ Wetland☐ Paved☐ Residential/Park☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 0 In. ☒ Ft.Right 0 In. ☒ Ft.

Notes/Comments: Confluence with Charm Creek 140 ft. long

# Stream Data Sheet

Stream #: DT1AP2

Date: 8/22/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch 32.156621 -96.482141

## Stream Characteristics

a) Avg. Bank Width 6 In. ☒ Ft. b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 1.5 In. ☒ Ft.Stream flow: ☐ Perennial ☒ Intermittent ☐ EphemeralOHWM Width 3 In. ☒ Ft. Height of OHWM above streambed 8 ☒ Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders☐ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☒ Pasture ☐ Row-Crop ☐ Wetland ☐ Paved☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 0 In. ☒ Ft.Right 0 In. ☒ Ft.

Notes/Comments: Area has been mowed, this reach 672 feet.

# Stream Data Sheet

Stream #: DT1P3

Date: 8/22/13

Project Name: Rockin' K at Chambers Creek Project #: 13.034.01.T

Location (County/State): Navarro/Texas Field Crew: M Forbes

Stream Name: Ditch 32.157012 -96.481738

## Stream Characteristics

a) Avg. Bank Width 4 In. (Ft.) b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 3 In. (Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 3 In. (Ft.) Height of OHWM above streambed 6 (In.) Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay

☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders

☐ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☐ Pasture ☐ Row-Crop ☒ Wetland ☐ Paved

☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream) Left 20 In. (Ft.) Right 20 In. (Ft.)

Notes/Comments: Area with emergent Carex wetland ~100 feet long.

# Stream Data Sheet

Stream #: DT2P3

Date: 8/23/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch

## Stream Characteristics

a) Avg. Bank Width 20 In. ☒ Ft. b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank ~8 In. ☒ Ft.Stream flow: ☐ Perennial ☒ Intermittent ☐ EphemeralOHWM Width 4 In. ☒ Ft. Height of OHWM above streambed 1 In. ☒ Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders☐ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☒ Pasture ☐ Row-Crop ☐ Wetland ☐ Paved☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 0 In. ☒ Ft.Right 0 In. ☒ Ft.

## Notes/Comments:



# Stream Data Sheet

Stream #: DT3P2

Date: 8/23/13

Project Name: Rockin' K at Chambers Creek Project #: 13.034.01.T

Location (County/State): Navarro/Texas Field Crew: M Forbes

Stream Name: Ditch 32.15675 -96.48798

## Stream Characteristics

a) Avg. Bank Width 20 In.(Ft.) b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank ~8 In.(Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 4 In.(Ft.) Height of OHWM above streambed 1 In.(Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay

☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders

☐ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☒ Pasture ☐ Row-Crop ☐ Wetland ☐ Paved

☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream) Left 0 In.(Ft.) Right 0 In.(Ft.)

Notes/Comments: Wetland fringe ends, tapers to 0 ft. wide, reach is 420 lf.

# Stream Data Sheet

Stream #: DT4P3

Date: 8/22/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch 32.15725 -96.48922

## Stream Characteristics

a) Avg. Bank Width 22 In. (Ft.)

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 3 In. (Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 8 In. (Ft.) Height of OHWM above streambed 6 In. (Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders☒ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☒ Pasture ☐ Row-Crop ☒ Wetland ☐ Paved☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream) Left 5 In. (Ft.) Right 5 In. (Ft.)

Notes/Comments: Stream channel with fringe wetland, reach is 1,300 lf.

# Stream Data Sheet

Stream #: DT5P3

Date: 8/22/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch 32.16063 -96.49407

## Stream Characteristics

a) Avg. Bank Width 50 In.(Ft.)

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft.

Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 6 In.(Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 25 In.(Ft.)

Height of OHWM above streambed 1 In.(Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth c)

## Substrate

☐ Bedrock☐ Boulder☐ Cobble☐ Gravel☐ Sand☒ Silt/Clay☐ Organic☐ Concrete☐ Other (Describe)

## Instream Cover

☐ Undercut Banks☒ Logs/Brush☒ Emergent☐ Oxbows☐ Boulders☒ Overhanging Vegetation☐ Deep Pools☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest☐ Scrub/Shrub☐ Old-Field/ROW☒ Pasture☐ Row-Crop☐ Wetland☐ Paved☐ Residential/Park☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 1 In.(Ft.)

Right 1 In.(Ft.)

**Notes/Comments:** Just last of mitigation area, reach = 590 lf. Mitigation area not included in delineation.

# Stream Data Sheet

Stream #: DT6P2

Date: 8/22/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch 32.16374 -96.49785

## Stream Characteristics

a) Avg. Bank Width 25 In.(Ft.)

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft.

Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 2.5 In.(Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 26 In.(Ft.)

Height of OHWM above streambed 1 In.(Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☐ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders☒ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☒ Pasture ☐ Row-Crop ☐ Wetland ☐ Paved☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 0 In.(Ft.)

Right 0 In.(Ft.)

Notes/Comments: Wetland transect has no wetland fringe here, reach ~ 400 lf.

# Stream Data Sheet

Stream #: DT7P3

Date: 8/23/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch 32.16404 -96.49917

## Stream Characteristics

a) Avg. Bank Width 30 In.(Ft.)

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 4 In.(Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 22 In.(Ft.) Height of OHWM above streambed 3 In.(Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☒ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders☒ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☐ Pasture ☐ Row-Crop ☒ Wetland ☐ Paved☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 4 In.(Ft.)

Right 4 In.(Ft.)

Notes/Comments: Begin wetland fringe, reach is ~1,910 lf.



# Stream Data Sheet

Stream #: DT8P3

Date: 8/23/13

Project Name: Rockin' K at Chambers Creek

Project #: 13.034.01.T

Location (County/State): Navarro/Texas

Field Crew: M Forbes

Stream Name: Ditch 32.16572 -96.50628

## Stream Characteristics

a) Avg. Bank Width 40 In. (Ft.)

b) Average Width of Water dry In./Ft.

c) Avg. Water Depth dry In./Ft. Min./Max Depth N/A In./Ft.

d) Depth of Streambed below top of bank 5 In. (Ft.)

Stream flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral

OHWM Width 20 In. (Ft.) Height of OHWM above streambed 1.5 In. (Ft.)

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

## Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☒ Silt/Clay☐ Organic ☐ Concrete ☐ Other (Describe)

## Instream Cover

☐ Undercut Banks ☒ Logs/Brush ☒ Emergent ☐ Oxbows ☐ Boulders☒ Overhanging Vegetation ☐ Deep Pools ☐ Shallows (in slow water)

## Riparian Zone (check all that are appropriate)

☐ Forest ☐ Scrub/Shrub ☐ Old-Field/ROW ☐ Pasture ☐ Row-Crop ☒ Wetland ☐ Paved☐ Residential/Park ☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 3 In. (Ft.)

Right 4 In. (Ft.)

Notes/Comments: reach is 825 lf.

## **APPENDIX C SITE PHOTOGRAPHS**



Photo 1. Typical view, facing north, of south bank of Chambers Creek. Plot CCT1P1.



Photo 2. Typical view, facing downstream, of Chambers Creek. Plot CCT1P2 in foreground.





Photo 3. Typical view, facing north, of wooded area along Chambers Creek. Plot CCT1P0.



Photo 4. View, facing south, of plot CCT1P2.





Photo 5. View, facing northwest, of CHRT1, plot P2 in foreground, P3 in background.



Photo 6. View, facing downstream, of Charm Creek at plot CHRT1P2.





Photo 7. View, facing west, of plot CHR2T2P1. Typical view of pasture on eastern portion of site.



Photo 8. Typical view of wooded corridor along Charm Creek.





Photo 9. View, facing downstream, of Charm Creek at plot CHR2T3P3.



Photo 10. View, facing northwest, of North Pond. CHR2T5P8 in foreground, P13 in background.





Photo 11. View, facing south, of CHR2T5aP1.



Photo 12. View, facing downstream of the unnamed tributary to Chambers Creek.





Photo 13. Typical view of T1 and T1a plots P1 and P2, facing northwest.



Photo 14. View of T1aP5 in foreground P4 in background, facing northwest.



Photo 15. View, facing west, of T1P3.



Photo 16. View, facing east, of T1P4.



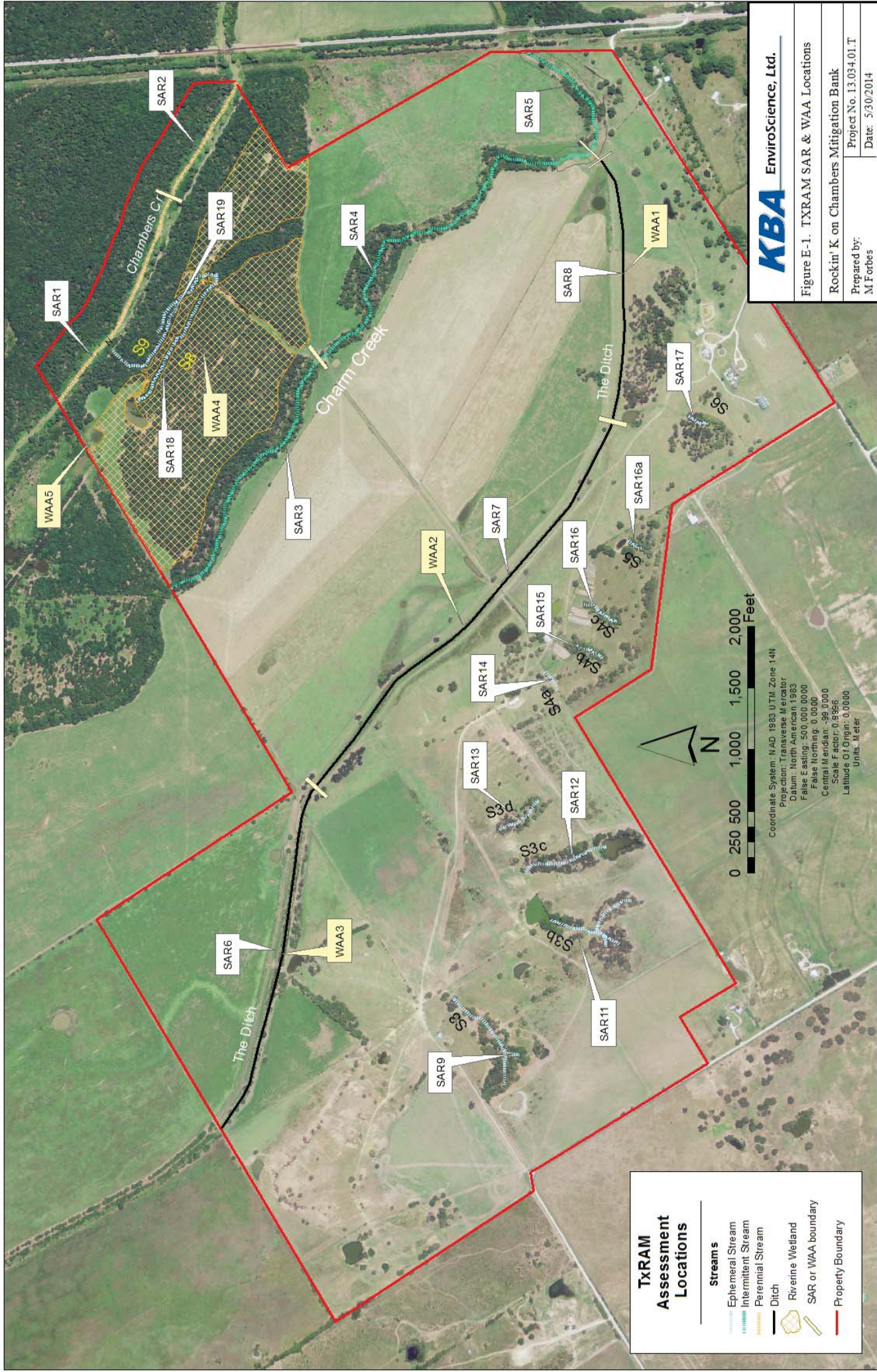


Photo 17. View, facing west, of the ditch near DT4P3.

**Attachment D. Site Photos (see Delineation)**

**Attachment E. Functional/Conditional Assessment**





## **STREAM ASSESSMENT REACHES (SAR)**



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Chambers SAR No.: 1 Size (LF): 2000 Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Per Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): ag / pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): channelization Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

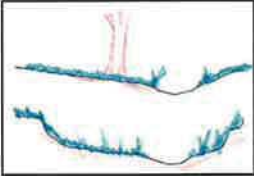
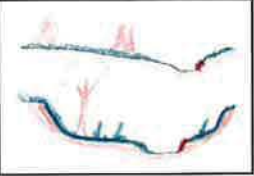
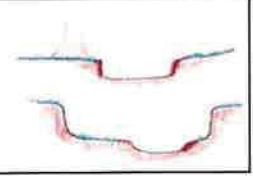
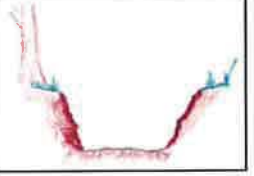
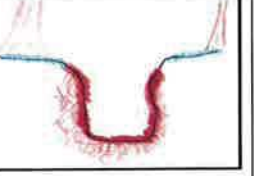
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 100	Avg. Banks: 55
Avg. Waters Edge: 33	Avg. Water: 1-5
Avg. OHWM: 30	Avg. OHWM: 3-7

Notes: Vertically incised and horizontally widened. Extreme drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	③	2	1

Score: 3

**Bank Condition**

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 80 % Average: 45  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: johnsongrass, ragweed, saplings

Score: 1

**Sediment Deposition**

- ☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: \_\_\_\_\_

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	mod	4	70	2.8
2. Herbs (ragweed)		mixed	low	4	30	1.2
3.						
4.						
5.						

Score: 4.0

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	mod	4	40	1.6
2. Herbs (ragweed)		mixed	low	4	50	2.0
3. Dirt/grass road		mixed	high	2	10	0.2
4.						
5.						

Score: 3.8

**IN-STREAM CONDITION**

**Substrate Composition (estimate percentages)** Cannot see bottom

Boulder:	Gravel:	Fines (silt, clay, muck): X 80%	Artificial:
Cobble:	Sand: 20%	Bedrock:	Other:

Score: 2

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris	✓	✓											
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1											

Average: 1 Score: 1

**HYDROLOGIC CONDITION****Flow Regime**

<input type="checkbox"/> Noticeable surface flow present (4)	<input type="checkbox"/> Isolated pools and no evidence of surface or interstitial flow (1)
<input checked="" type="checkbox"/> Continual pool of water but lacking noticeable flow (3)	<input type="checkbox"/> Dry channel and no observable pools or interstitial flow (0)
<input type="checkbox"/> Isolated pools and interstitial (subsurface) flow (2)	

Score: 3

**Channel Flow Status**

<input checked="" type="checkbox"/> Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
<input type="checkbox"/> Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
<input type="checkbox"/> Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
<input type="checkbox"/> Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
<input type="checkbox"/> No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Chambers SAR No.: 1 Size (LF): 2000 Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Per Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture, ag Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): channelization Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 100	Avg. Banks: 55
Avg. Waters Edge: 33	Avg. Water: 1-5
Avg. OHWM: 38	Avg. OHWM: 3-7

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	13.3
	Bank condition	1		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	4	Sum of bank scores / 10 x 25	19.5
	Riparian buffer (right bank)	3.8		
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
Sum of core element scores = overall TXRAM stream score				62.2
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				62.2

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Chambers SAR No.: 2 Size (LF): 1230 Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Per Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): ag, pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): channelization Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

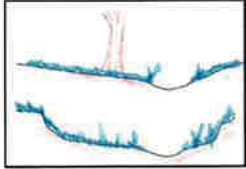
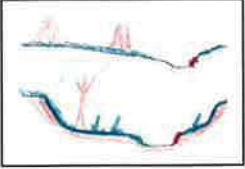
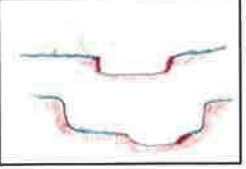
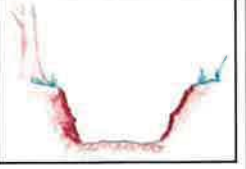
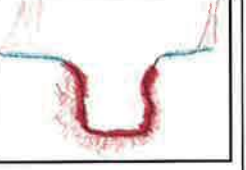
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 80	Avg. Banks: 45
Avg. Waters Edge: 18	Avg. Water: 1-5
Avg. OHWM: 30	Avg. OHWM: 3-7

Notes: Extreme drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	③	2	1

Score: 3

**Bank Condition**

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 80 % Average: 45  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: woody debris, grass

Score: 1

**Sediment Deposition**

- ☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☒ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 3



**RIPARIAN BUFFER CONDITION***Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.***Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 115

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	mod	4	90	3.6
2. Grass/herbs	0	mixed	low	4	10	0.4
3.						
4.						
5.						

Score: 4.0

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	mod	4	40	1.6
2. Grass/herbs	0	mixed	low	4	50	2.0
3. Dirt/grass road	0	mixed	high	2	10	0.2
4.						
5.						

Score: 3.8

**IN-STREAM CONDITION****Substrate Composition (estimate percentages)** Cannot see bottom

Boulder:	Gravel:	Fines (silt, clay, muck): 80%	Artificial:
Cobble:	Sand: 20%	Bedrock:	Other:

Score: 2

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris	✓	✓											
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1											

Average: 1

Score: 1

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Continual pool of water but lacking noticeable flow (3)
 ☐ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 3

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2



**TXRAM STREAM FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Chambers SAR No.: 2 Size (LF): 1230 Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Per Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture, ag Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): channelization Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 80	Avg. Banks: 45
Avg. Waters Edge: 18	Avg. Water: 1-5
Avg. OHWM: 30	Avg. OHWM: 3-7

**Scoring Table**

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	11.67
	Bank condition	1		
	Sediment deposition	3		
Riparian buffer condition	Riparian buffer (left bank)	4	Sum of bank scores / 10 x 25	19.5
	Riparian buffer (right bank)	3.8		
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	15.62
	Channel flow status	2		
Sum of core element scores = overall TXRAM stream score				54.3
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				54.3

**Representative Site Photograph:**

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**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: CHARM SAR No.: 3 Size (LF): 2400 lf Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Int Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture, forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

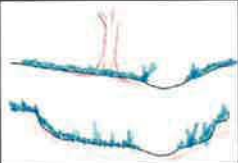
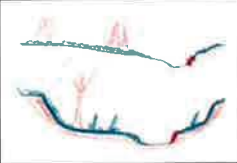
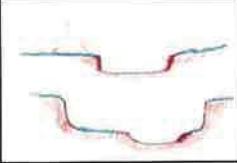
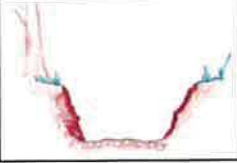
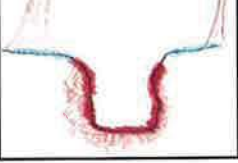
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 25	Avg. Banks: 6
Avg. Waters Edge: 20 (dry)	Avg. Water: 3 (dry)
Avg. OHWM: 20' (dry) and 2' (dry)	Avg. OHWM: dry (~2')

Notes: This reach ~2400 lf. Historic channel of chambers, now orphaned from regular flow. Extreme drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	③	2	1

Score: 3

**Bank Condition**

Left Bank Active Erosion: 30 % Right Bank Active Erosion: 0 % Average: 15  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 4

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION***Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.**Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 37.5

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	high	3	100	3
2.						
3.						
4.						
5.						

Score: 3

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	high	3	20	0.6
2. Pasture	0	native	high	1	80	0.8
3.						
4.						
5.						

Score: 1.4**IN-STREAM CONDITION***Substrate Composition (estimate percentages)*

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1*In-stream Habitat (check all habitat types that are present)*

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation	✓	✓	✓										
Rootmats	✓		✓										
Rootwads		✓	✓										
Woody/Leafy Debris	✓	✓	✓										
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	3	3	4										

Average: 3.3 Score: 4**HYDROLOGIC CONDITION***Flow Regime*

- |  |  |
|--|--|
| <input type="checkbox"/> Noticeable surface flow present (4)                     | <input type="checkbox"/> Isolated pools and no evidence of surface or interstitial flow (1)      |
| <input type="checkbox"/> Continual pool of water but lacking noticeable flow (3) | <input checked="" type="checkbox"/> Dry channel and no observable pools or interstitial flow (0) |
| <input type="checkbox"/> Isolated pools and interstitial (subsurface) flow (2)   |  |

Score: 0*Channel Flow Status*

- |   |
|---|
| <input type="checkbox"/> Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)             |
| <input type="checkbox"/> Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)                              |
| <input type="checkbox"/> Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)                              |
| <input type="checkbox"/> Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1) |
| <input checked="" type="checkbox"/> No water present in the channel; 100% of channel substrate exposed (0)  |

Score: 0

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: CHARM SAR No.: 3 Size (LF): 2,400 Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Int Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture, forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

### Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 25	Avg. Banks: 6
Avg. Waters Edge: 20 (dry)	Avg. Water: 3 (dry)
Avg. OHWM: 2 and 20 (dry)	Avg. OHWM: (-2) dry

### Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	20
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	3	Sum of bank scores / 10 x 25	11
	Riparian buffer (right bank)	1.4		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				43.5
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				43.5

### Representative Site Photograph:





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**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: CHARM SAR No.: 4 Size (LF): 4000 lf Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Int Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture, forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

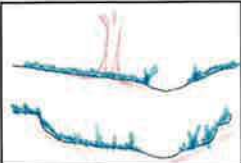
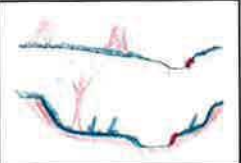
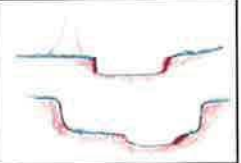
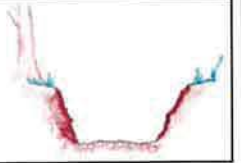
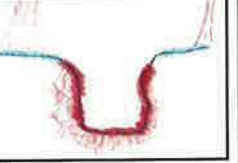
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 25-30	Avg. Banks: 6
Avg. Waters Edge: 20 (dry)	Avg. Water: 3 (dry)
Avg. OHWM: 20 (smaller one at 2)	Avg. OHWM: 2 and 5 (dry)

Notes: Downgradient reach of Charm. Total length = ~4,000 lf. Extreme drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	③	2	1

Score: 3

**Bank Condition**

Left Bank Active Erosion: 30 % Right Bank Active Erosion: 0 % Average: 15  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 4

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5



**RIPARIAN BUFFER CONDITION****Riparian Buffer** - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank

Buffer Distance: 60

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	native	high	3	85	2.55
2. Pasture	0	native	high	1	15	0.15
3.						
4.						
5.						

Score: 2.7

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	native	high	3	80	2.4
2. Pasture	0	native	high	1	20	0.2
3.						
4.						
5.						

Score: 2.6

**IN-STREAM CONDITION****Substrate Composition** (estimate percentages)

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat** (check all habitat types that are present)

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation	✓	✓											
Rootmats	✓	✓											
Rootwads													
Woody/Leafy Debris	✓	✓											
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	3	3											

Average: 3 Score: 3

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: CHARM SAR No.: 4 Size (LF): 4,000 Date: 7/17/13 Evaluator(s): M Forbes, K Ward  
 Stream Type: Int Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture, forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)		Stream Height/Depth (Feet)	
Avg. Bank to Bank:	25-30	Avg. Banks:	6
Avg. Waters Edge:	20 (dry)	Avg. Water:	3 (dry)
Avg. OHWM:	20 & 2 (dry)	Avg. OHWM:	2 & 5 (dry)

## Scoring Table

Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	20
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.7	Sum of bank scores / 10 x 25	13.3
	Riparian buffer (right bank)	2.6		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	10
	In-stream habitat	3		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				43.3
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				43.3

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: CHARM SAR No.: 5 Size (LF): 1384 Date: 4/1/14 Evaluator(s): MF, JK  
 Stream Type: Int Ecoregion: Tx Blackland prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture, forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle, drought Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

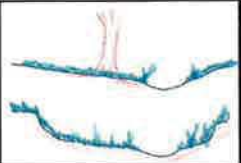
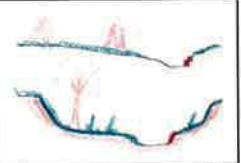
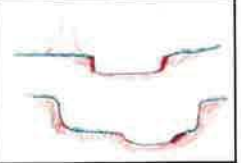
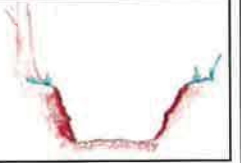
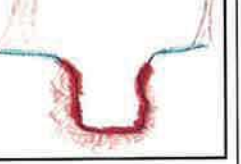
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 55	Avg. Banks: 6
Avg. Waters Edge: 5	Avg. Water: 0.5
Avg. OHWM: 45	Avg. OHWM: 3

Notes: Drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	✓	3	2	1

Score: 4

**Bank Condition**

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 0 % Average: 5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 5

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 72.5 ft

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	mod	4	50	2
2. Pasture	0	mixed	mod	1	50	0.5
3.						
4.						
5.						

Score: 2.5

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	mod	4	50	2
2. Pasture	0	mixed	mod	1	50	0.5
3.						
4.						
5.						

Score: 2.5**IN-STREAM CONDITION**

**Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation	✓	✓											
Rootmats													
Rootwads	✓	✓											
Woody/Leafy Debris	✓	✓											
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence	✓	✓											
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: 4 Score: 4**HYDROLOGIC CONDITION**

**Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☐ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 1

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1



## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Charm SAR No.: 5 Size (LF): 1384 Date: 4/1/14 Evaluator(s): MF, JK  
 Stream Type: INT Ecoregion: Tx Blackland prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): Pasture, forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No  
 Stressor(s): Cattle, drought Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Persistent drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 55	Avg. Banks: 6
Avg. Waters Edge: 5	Avg. Water: 0.5
Avg. OHWM: 45	Avg. OHWM: 3

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.33
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.5	Sum of bank scores / 10 x 25	12.50
	Riparian buffer (right bank)	2.5		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	12.50
	In-stream habitat	4		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.25
	Channel flow status	1		
Sum of core element scores = overall TXRAM stream score				54.58
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				54.58

## Representative Site Photograph:





**TXRAM STREAM DATA SHEET**

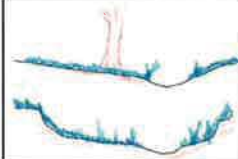
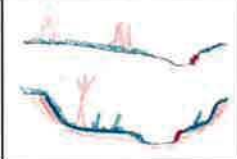
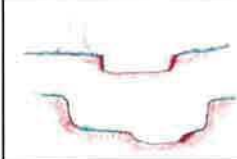
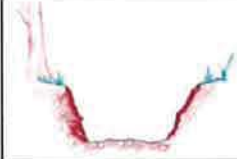
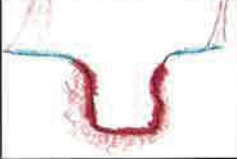
Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Ditch SAR No.: 6 Size (LF): 2800 Date: 8/22/13 Evaluator(s): M Forbes  
 Stream Type: INT/EPH Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

**Stream Characteristics**

Stream Width (Feet)		Stream Height/Depth (Feet)	
Avg. Bank to Bank:	40	Avg. Banks:	5
Avg. Waters Edge:	0	Avg. Water:	0
Avg. OHWM:	20	Avg. OHWM:	1.5

Notes: Extreme drought.

**CHANNEL CONDITION****Floodplain Connectivity**

				
5	4	3	②	1

Score: 2**Bank Condition**

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 5**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION****Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.****Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 40

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Wetland fringe	0	native	mod	2	10	0.2
2. Upland pasture	0	mixed	mod	1	90	0.9
3.						
4.						
5.						

Score: 1.1

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Wetland	0	native	mod	2	10	0.2
2. Shrub	40	native	mod	3	25	0.75
3. Pasture	0	mixed	mod	1	65	0.65
4.						
5.						

Score: 1.60

**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): x 100%	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation	✓	✓											
Rootmats	✓												
Rootwads													
Woody/Leafy Debris	✓	✓											
Boulders/Cobbles													
Aquatic Macrophytes		✓											
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	3	3											

Average: 3

Score: 3

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Ditch SAR No.: 6 Size (LF): 2800 Date: 8/22/13 Evaluator(s): M Forbes  
 Stream Type: INT Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 40	Avg. Banks: 5
Avg. Waters Edge: 0	Avg. Water: 0
Avg. OHWM: 20	Avg. OHWM: 1.5

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	20.00
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.1	Sum of bank scores / 10 x 25	6.75
	Riparian buffer (right bank)	1.6		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	10.00
	In-stream habitat	3		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.00
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				36.75
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				36.75

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Ditch SAR No.: 7 Size (LF): 2060 Date: 8/22/13 Evaluator(s): M Forbes  
 Stream Type: INT Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently <sup>D4 & D5</sup>  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

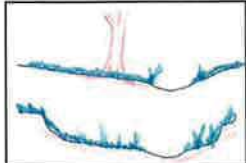

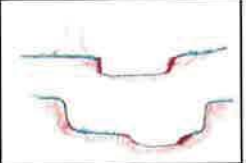
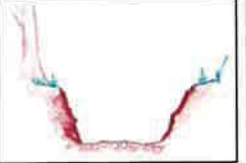
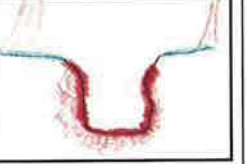
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 50	Avg. Banks: 6
Avg. Waters Edge: dry	Avg. Water: dry
Avg. OHWM: 25	Avg. OHWM: 1

Notes: Extreme drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	3	②	1

**Score:** 2

**Bank Condition**

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

**Score:** 5

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

**Score:** 5



**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 62

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Trees/shrubs	40	native	mod	3	20	0.6
2. Wetland	0	mixed	mod	2	10	0.2
3. Pasture	0	mixed	high	1	70	0.7
4.						
5.						

Score: 1.5

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Trees/shrubs	40	native	mod	3	20	0.6
2. Wetland	0	native	mod	2	10	0.2
3. Pasture	0	mixed	high	1	70	0.7
4.						
5.						

Score: 1.5

**IN-STREAM CONDITION**

**Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100%	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation	✓	✓											
Rootmats	✓	✓	✓										
Rootwads													
Woody/Leafy Debris	✓	✓	✓										
Boulders/Cobbles													
Aquatic Macrophytes	✓												
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	4	3	2										

Average: 3 Score: 3

**HYDROLOGIC CONDITION**

**Flow Regime**

- |  |  |
|--|--|
| <input type="checkbox"/> Noticeable surface flow present (4)                     | <input type="checkbox"/> Isolated pools and no evidence of surface or interstitial flow (1)      |
| <input type="checkbox"/> Continual pool of water but lacking noticeable flow (3) | <input checked="" type="checkbox"/> Dry channel and no observable pools or interstitial flow (0) |
| <input type="checkbox"/> Isolated pools and interstitial (subsurface) flow (2)   |  |

Score: 0

**Channel Flow Status**

- |   |
|---|
| <input type="checkbox"/> Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)             |
| <input type="checkbox"/> Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)                              |
| <input type="checkbox"/> Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)                              |
| <input type="checkbox"/> Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1) |
| <input checked="" type="checkbox"/> No water present in the channel; 100% of channel substrate exposed (0)  |

Score: 0



## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Ditch SAR No.: 7 Size (LF): 2060 Date: 8/22/13 Evaluator(s): M Forbes  
 Stream Type: INT Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 50	Avg. Banks: 6
Avg. Waters Edge: dry	Avg. Water: dry
Avg. OHWM: 25	Avg. OHWM: 1

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	20.00
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.5	Sum of bank scores / 10 x 25	7.5
	Riparian buffer (right bank)	1.5		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	12.50
	In-stream habitat	4		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.00
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				40.00
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				40.00

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Ditch SAR No.: 8 Size (LF): 2540 Date: 8/22/13 Evaluator(s): M Forbes  
 Stream Type: INT Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently <sup>D0 & D3</sup>  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

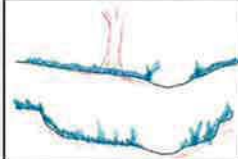

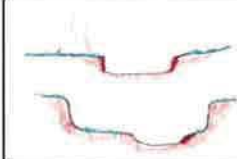

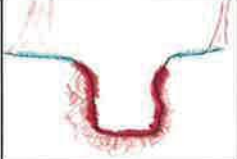
**Stream Characteristics**

Stream Width (Feet)		Stream Height/Depth (Feet)	
Avg. Bank to Bank:	50	Avg. Banks:	2
Avg. Waters Edge:	dry	Avg. Water:	dry
Avg. OHWM:	2.5	Avg. OHWM:	1

Notes: Extreme drought. Corresponds to D0-D3 of delineation.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	(4)	3	2	1

Score: 4

**Bank Condition**

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 5

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION***Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.**Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 51

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Wetland	0	native	mod	2	20	0.4
2. Pasture	0	mixed	high	1	80	0.8
3.						
4.						
5.						

Score: 1.2

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Wetland	40	native	mod	2	20	0.4
2. Pasture	0	mixed	high	1	80	0.8
3.						
4.						
5.						

Score: 1.2

**IN-STREAM CONDITION***Substrate Composition (estimate percentages)*

Boulder:	Gravel:	Fines (silt, clay, muck): 100%	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

*In-stream Habitat (check all habitat types that are present)*

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats	✓	✓	✓										
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes	✓	✓	✓										
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	2	2	2										

Average: 2

Score: 2

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: Ditch SAR No.: 8 Size (LF): 2540 Date: 8/22/13 Evaluator(s): M. Forbes  
 Stream Type: INT Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 5	Avg. Banks: 2
Avg. Waters Edge: dry	Avg. Water: dry
Avg. OHWM: 2.5	Avg. OHWM: 1

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.33
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.2	Sum of bank scores / 10 x 25	6.0
	Riparian buffer (right bank)	1.2		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	2		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.00
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				36.83
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				36.8

## Representative Site Photograph:





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**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S3 SAR No.: 9 Size (LF): 971 Date: 7/15/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Eph Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: TNRIS 2010 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

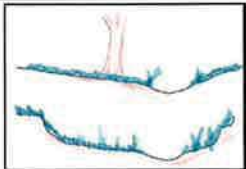
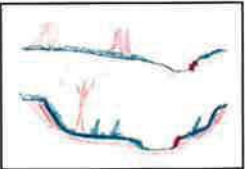
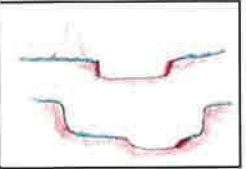
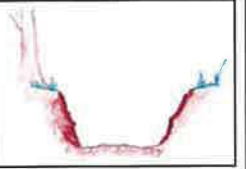
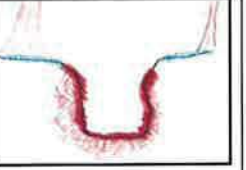
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 6	Avg. Banks: 4
Avg. Waters Edge: 2	Avg. Water: dry
Avg. OHWM: not discernable	Avg. OHWM: not discernable

Notes: Channel begins below pond, ends at toe of slope. Total length approximately 950 lf. Light rain day of survey.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	3	②	1

Score: 2

**Bank Condition**

Left Bank Active Erosion: 90 % Right Bank Active Erosion: 90 % Average: 90  
 Bank Protection/Stabilization: ☒ Natural ☒ Artificial: brush, trash, woody debris

Score: 1

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5



**RIPARIAN BUFFER CONDITION***Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.***Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 28

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Pasture		mixed	high	1	5	.05
2. Forest	50	native	high	3	95	2.85
3.						
4.						
5.						

Score: 2.9

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Pasture		mixed	high	1	5	.05
2. Forest	50	native	high	3	95	2.85
3.						
4.						
5.						

Score: 2.9

**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks	✓												
Overhanging Vegetation	✓	✓	✓										
Rootmats													
Rootwads	✓												
Woody/Leafy Debris	✓	✓	✓										
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	4	2	2										

Average: 2.7 Score: 2.7

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

# **TXRAM STREAM FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: S3 SAR No.: 9 Size (LF): 971 Date: 7/15/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Eph Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: TNRIS 2010 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): Cattle Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)  
 Notes: Extreme drought

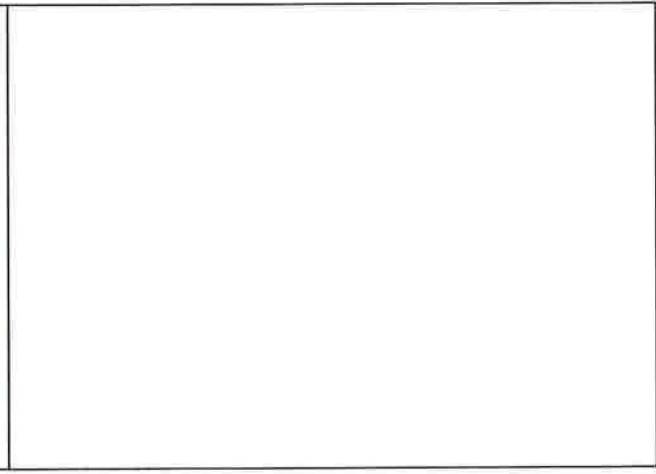
## **Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 6	Avg. Banks: 4
Avg. Waters Edge: 2	Avg. Water: NA
Avg. OHWM: not discernable	Avg. OHWM: not discernable

## **Scoring Table**

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	13.33
	Bank condition	1		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.9	Sum of bank scores / 10 x 25	14.5
	Riparian buffer (right bank)	2.9		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				30.3
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R				0
<input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height				
<input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				30.3

## **Representative Site Photograph:**



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: S3b SAR No.: 11 Size (LF): 823 Date: 3/31/14 Evaluator(s): MF, JK  
 Stream Type: EPH Ecoregion: Tx Blackland Prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 1230109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): Cattle, drought, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

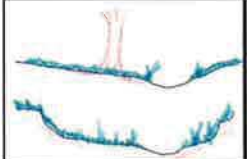
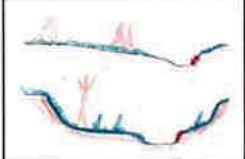
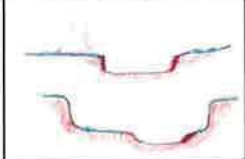
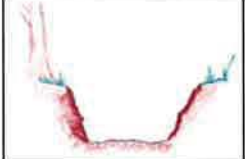
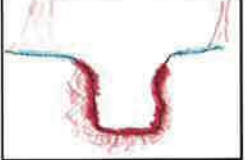
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 32	Avg. Banks: 6
Avg. Waters Edge: 0	Avg. Water: 0
Avg. OHWM: 6	Avg. OHWM: 1.5

Notes: Persistent drought

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	3 <input checked="" type="checkbox"/>	2	1

Score: 3

**Bank Condition**

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 3

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION****Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.****Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 28 ft

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	high	3	50	1.5
2. Pasture	0	native	high	1	50	0.5
3.						
4.						
5.						

Score: 2

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	high	3	50	1.5
2. Pasture	0	native	high	1	50	0.5
3.						
4.						
5.						

Score: 2.0**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0



## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S3b SAR No.: 11 Size (LF): 823 Date: 3/31/14 Evaluator(s): M Forbes, J Kemmey  
 Stream Type: EPH Ecoregion: \_\_\_\_\_ Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No  
 Stressor(s): Cattle, drought, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Persistent drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 32	Avg. Banks: 6
Avg. Waters Edge: 0	Avg. Water: 0
Avg. OHWM: 6	Avg. OHWM: 1.5

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.33
	Bank condition	3		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2	Sum of bank scores / 10 x 25	10
	Riparian buffer (right bank)	2		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				30.83
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				30.83

## Representative Site Photograph:





Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S3c SAR No.: 12 Size (LF): 1000 Date: 3/31/14 Evaluator(s): MF,JK  
 Stream Type: EPH Ecoregion: Tx Blackland Prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No  
 Stressor(s): cattle, drought, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

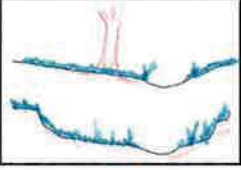
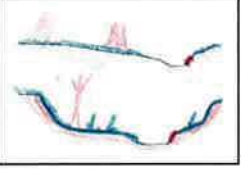
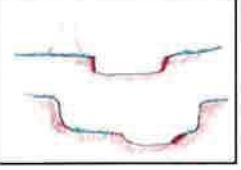
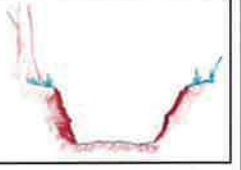
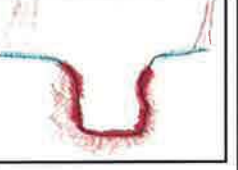
**Stream Characteristics**

Stream Width (Feet)		Stream Height/Depth (Feet)	
Avg. Bank to Bank:	40	Avg. Banks:	6
Avg. Waters Edge:	0	Avg. Water:	1.5
Avg. OHWM:	15	Avg. OHWM:	1.9

Notes: Persistent drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	3 <input checked="" type="checkbox"/>	2	1

**Score:** 3

**Bank Condition**

Left Bank Active Erosion: 25 % Right Bank Active Erosion: 15 % Average: 20  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

**Score:** 3

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

**Score:** 5

**RIPARIAN BUFFER CONDITION****Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.****Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: \_\_\_\_\_

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	native	high	3	80	2.4
2. Pasture	0	mixed	high	1	20	0.2
3.						
4.						
5.						

Score: 2.6

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	native	high	3	80	2.4
2. Pasture	0	mixed	high	1	20	0.2
3.						
4.						
5.						

Score: 2.6**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0**HYDROLOGIC CONDITION****Flow Regime**

<input type="checkbox"/> Noticeable surface flow present (4)	<input type="checkbox"/> Isolated pools and no evidence of surface or interstitial flow (1)
<input type="checkbox"/> Continual pool of water but lacking noticeable flow (3)	<input checked="" type="checkbox"/> Dry channel and no observable pools or interstitial flow (0)
<input type="checkbox"/> Isolated pools and interstitial (subsurface) flow (2)	

Score: 0**Channel Flow Status**

<input type="checkbox"/> Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
<input type="checkbox"/> Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
<input type="checkbox"/> Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
<input type="checkbox"/> Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
<input checked="" type="checkbox"/> No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

**TXRAM STREAM FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S3c SAR No.: 12 Size (LF): 1000 Date: 3/31/14 Evaluator(s): M Forbes, J Kermey  
 Stream Type: EPH Ecoregion: \_\_\_\_\_ Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No  
 Stressor(s): Drought, cattle, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Persistent drought

**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 40	Avg. Banks: 6
Avg. Waters Edge: 0	Avg. Water: 1.5
Avg. OHWM: 15	Avg. OHWM: 1.9

**Scoring Table**

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.33
	Bank condition	3		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.6	Sum of bank scores / 10 x 25	13
	Riparian buffer (right bank)	2.6		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				33.8
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				33.8

**Representative Site Photograph:**



**TXRAM STREAM DATA SHEET**

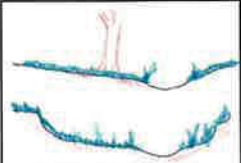
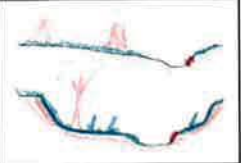
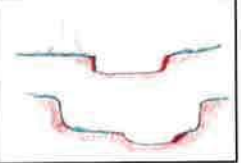
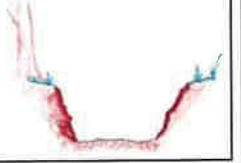
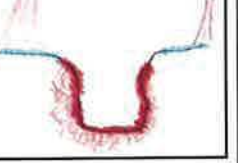
Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: S3d SAR No.: 13 Size (LF): 434 Date: 3/31/14 Evaluator(s): M Forbes, J Kemmey  
 Stream Type: EPH Ecoregion: Tx Blackland Prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No  
 Stressor(s): cattle, drought, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 35	Avg. Banks: 5
Avg. Waters Edge: 0	Avg. Water: 1.25
Avg. OHWM: 8	Avg. OHWM: 1.5

Notes: Persistent drought.

**CHANNEL CONDITION****Floodplain Connectivity**

				
5	4	3 ✓	2	1

Score: 3**Bank Condition**

Left Bank Active Erosion: 30 % Right Bank Active Erosion: 35 % Average: 32.5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 2**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION***Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.**Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: \_\_\_\_\_

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	native	high	3	50	1.5
2. Pasture	0	native	high	1	50	0.5
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	native	high	3	50	1.5
2. Pasture	0	native	high	1	50	0.5
3.						
4.						
5.						

Score: 2.0**IN-STREAM CONDITION***Substrate Composition (estimate percentages)*

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1*In-stream Habitat (check all habitat types that are present)*

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0



**TXRAM STREAM FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S3d SAR No.: 13 Size (LF): 464 Date: 3/31/14 Evaluator(s): M Forbes, J Kemmey  
 Stream Type: EPH Ecoregion: \_\_\_\_\_ Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No  
 Stressor(s): Drought, cattle, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Persistent drought

**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 35	Avg. Banks: 5
Avg. Waters Edge: 0	Avg. Water: 1.25
Avg. OHWM: 8	Avg. OHWM: 1.5

**Scoring Table**

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.66
	Bank condition	2		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.00
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.50
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.00
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				29.16
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				29.16

**Representative Site Photograph:**

Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S4a SAR No.: 14 Size (LF): 195 Date: 4/1/14 Evaluator(s): MF,JK  
 Stream Type: EPH Ecoregion: Tx Blackland Prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle, drought, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

**Stream Characteristics**

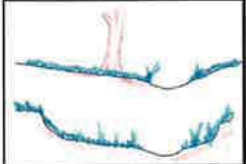
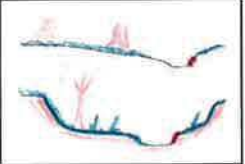
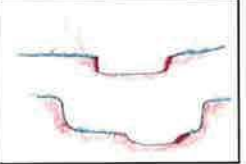
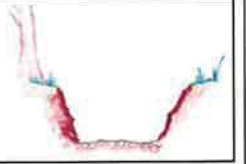
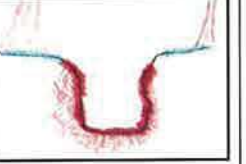
Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 8	Avg. Banks: 5
Avg. Waters Edge: 0	Avg. Water: 1.0
Avg. OHWM: 3	Avg. OHWM: 1.5

Notes:

Persistent drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4 ✓	3	2	1

Score: 4

**Bank Condition**

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 5 % Average: 7.5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 5

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION****Riparian Buffer** - See Table 22 to determine appropriate buffer distance. Confirm in office review.**Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 26.5 ft

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	high	3	10	0.3
2. Pasture	0	native	high	1	90	0.9
3.						
4.						
5.						

Score: 1.2

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	high	3	10	0.3
2. Pasture	0	native	high	1	90	0.9
3.						
4.						
5.						

Score: 1.2

**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0



## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S4a SAR No.: 14 Size (LF): 195 Date: 4/1/14 Evaluator(s): M Forbes, J Kemmey  
 Stream Type: EPH Ecoregion: \_\_\_\_\_ Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No  
 Stressor(s): Drought, cattle, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Persistent drought

### Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 8	Avg. Banks: 5
Avg. Waters Edge: 0	Avg. Water: 1.
Avg. OHWM: 3	Avg. OHWM: 1.5

### Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.33
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.2	Sum of bank scores / 10 x 25	6.00
	Riparian buffer (right bank)	1.2		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.50
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.00
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				31.83
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				31.83

### Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

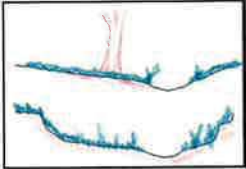
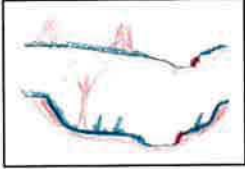
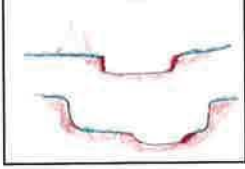
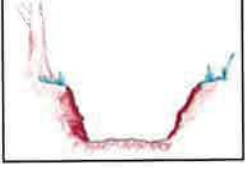
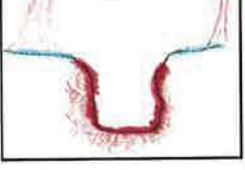
Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S4b SAR No.: 15 Size (LF): 247 Date: 7/15/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Eph Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: TNRIS 2010 / GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 12	Avg. Banks: 6
Avg. Waters Edge: 10 (dry)	Avg. Water: NA
Avg. OHWM: cannot discern	Avg. OHWM: NA

Notes: Channel approximately 350 lf total. Extreme drought.

**CHANNEL CONDITION**  
**Floodplain Connectivity**

				
5	4	(3)	2	1

Score: 3

**Bank Condition**

Left Bank Active Erosion: 50 % Right Bank Active Erosion: 60 % Average: 55  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: woody debris

Score: 1

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5



**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 31

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	mod*	4	100	4.0
2.						
3.						
4.						
5.						

Score: 4

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	native	mod*	4	100	4.0
2.						
3.						
4.						
5.						

\*mod because cattle fenced out of this area.

Score: 4

**IN-STREAM CONDITION**

**Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: 0 Score: 0

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S4b SAR No.: 15 Size (LF): 247 Date: 7/15/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Eph Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): Cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 12	Avg. Banks: 6
Avg. Waters Edge: 10 (dry)	Avg. Water: NA
Avg. OHWM: not discernable	Avg. OHWM: NA

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	15
	Bank condition	1		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	4	Sum of bank scores / 10 x 25	20
	Riparian buffer (right bank)	4		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				37.5
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				37.5

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: S4c SAR No.: 16 Size (LF): 230 Date: 7/15/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Eph Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: TNRIS 2010 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

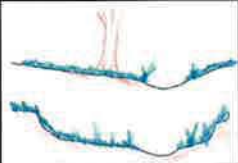
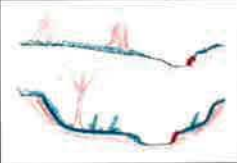
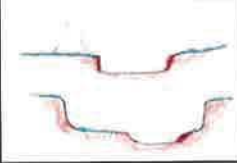

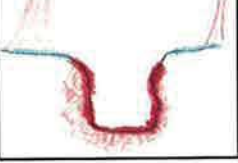
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 10	Avg. Banks: 6
Avg. Waters Edge: dry	Avg. Water: NA
Avg. OHWM: 8	Avg. OHWM: 3

Notes: Channel approximately 400 lf total. Extreme drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	3	②	1

Score: 2

**Bank Condition**

Left Bank Active Erosion: 90 % Right Bank Active Erosion: 90 % Average: 90  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: brush, trash, woody debris

Score: 1

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 31

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	mod*	3	90	2.7
2. Pasture	0	mixed	high	1	10	.1
3.						
4.						
5.						

Score: 2.8

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	mod*	3	90	2.7
2. Pasture	0	mixed	high	1	10	.1
3.						
4.						
5.						

\* Land use = mod because cattle fenced from area.

Score: 2.8

**IN-STREAM CONDITION**

**Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0



## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S4c SAR No.: 16 Size (LF): 230 Date: 7/15/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Eph Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: TNRIS 2010 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): Cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 10	Avg. Banks: 6
Avg. Waters Edge: dry	Avg. Water: NA
Avg. OHWM: 8	Avg. OHWM: 3

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	13.33
	Bank condition	1		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.8	Sum of bank scores / 10 x 25	14
	Riparian buffer (right bank)	2.8		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				29.83
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				29.83

## Representative Site Photograph:





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**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S5 SAR No.: 16a Size (LF): 157 Date: 4/1/14 Evaluator(s): MF, JK  
 Stream Type: Eph Ecoregion: TX Blackland prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: TNRIS 2010 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

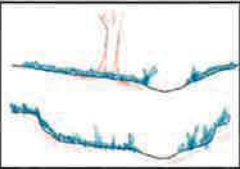
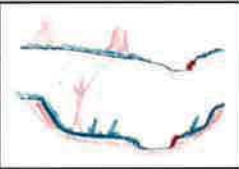
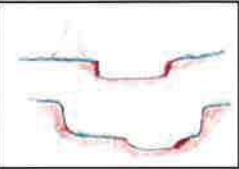
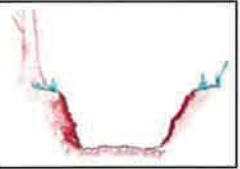
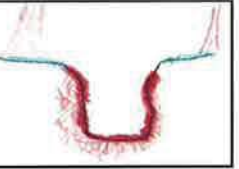
**Stream Characteristics**

Stream Width (Feet)		Stream Height/Depth (Feet)	
Avg. Bank to Bank:	10	Avg. Banks:	6
Avg. Waters Edge:	dry	Avg. Water:	NA
Avg. OHWM:	8	Avg. OHWM:	3

Notes: Excess debris in channel. Extreme drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4	3	②	1

**Score:** 2

**Bank Condition**

Left Bank Active Erosion: 90 % Right Bank Active Erosion: 90 % Average: 90  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: brush, trash, woody debris

**Score:** 1

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

**Score:** 5

**RIPARIAN BUFFER CONDITION***Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.**Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 31

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	mod*	3	95	2.85
2. Pasture	0	mixed	high	1	5	0.05
3.						
4.						
5.						

Score: 2.9

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	mod*	3	95	2.85
2. Pasture	0	mixed	high	1	5	0.05
3.						
4.						
5.						

Score: 2.9

\* Land use = mod because cattle fenced from area.

**IN-STREAM CONDITION***Substrate Composition (estimate percentages)*

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

*In-stream Habitat (check all habitat types that are present)*

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: S5 SAR No.: 16a Size (LF): 157 Date: 4/1/14 Evaluator(s): M Forbes, J Kemmey  
 Stream Type: Eph Ecoregion: Tx Blackland prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: TNRIS 2010 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☐ No (If no, explain in Notes)  
 Notes: \_\_\_\_\_

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 10	Avg. Banks: 6
Avg. Waters Edge: dry	Avg. Water: NA
Avg. OHWM: 8	Avg. OHWM: 3

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	13 . 33
	Bank condition	1		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2 . 9	Sum of bank scores / 10 x 25	14 . 5
	Riparian buffer (right bank)	2 . 9		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2 . 5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				30 . 33
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				30 . 33

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S6 SAR No.: 17 Size (LF): 113 Date: 4/1/14 Evaluator(s): MF,JK  
 Stream Type: EPH Ecoregion: Tx Blackland Prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle, drought, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

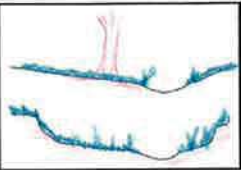
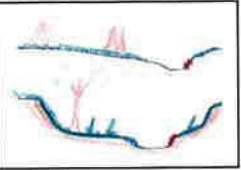
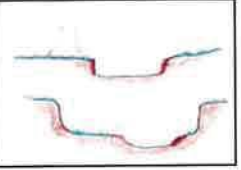
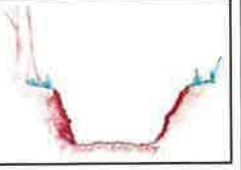
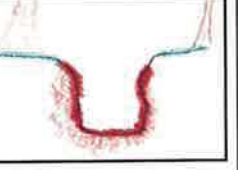
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 20	Avg. Banks: 5
Avg. Waters Edge: 0	Avg. Water: 1.0
Avg. OHWM: 8	Avg. OHWM: 1.5

Notes: Persistent drought.

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4 ✓	3	2	1

Score: 4

**Bank Condition**

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 5 % Average: 7.5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 5

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5



**RIPARIAN BUFFER CONDITION**

**Riparian Buffer** - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank

Buffer Distance: 26.5 ft

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	high	3	90	2.7
2. Pasture	0	native	high	1	10	0.1
3.						
4.						
5.						

Score: 2.8

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	high	3	90	2.7
2. Pasture	0	native	high	1	10	0.1
3.						
4.						
5.						

Score: 2.8

**IN-STREAM CONDITION**

**Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0

**HYDROLOGIC CONDITION**

**Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0



## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S6 SAR No.: 17 Size (LF): 113 Date: 4/1/14 Evaluator(s): M Forbes, J Kemmey  
 Stream Type: EPH Ecoregion: \_\_\_\_\_ Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): Drought, cattle, debris Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Persistent drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 20	Avg. Banks: 8
Avg. Waters Edge: 0	Avg. Water: 1.0
Avg. OHWM: 8	Avg. OHWM: 1.5

## Scoring Table

Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.33
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.8	Sum of bank scores / 10 x 25	14.00
	Riparian buffer (right bank)	2.8		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.50
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.00
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				39.83
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				39.83

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S8 SAR No.: 18 Size (LF): 1078 Date: 7/15/13 Evaluator(s): MF, JS  
 Stream Type: EPH Ecoregion: Tx Blackland Prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): Drought, cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

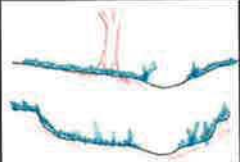
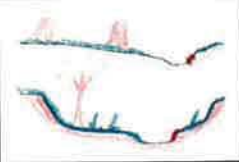
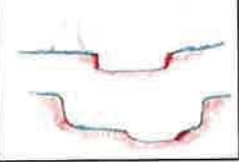
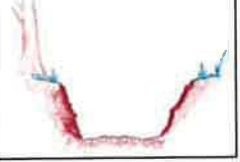
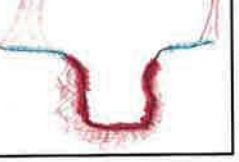
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 30	Avg. Banks: 5
Avg. Waters Edge: dry	Avg. Water: 0
Avg. OHWM: 12	Avg. OHWM: 1

Notes: Severe drought

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4 <input checked="" type="checkbox"/>	3	2	1

Score: 4

**Bank Condition**

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 15 % Average: 10  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 4

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION**

**Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.**

**Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: \_\_\_\_\_

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forested	75	native	high	3	100	3
2.						
3.						
4.						
5.						

Score: 3

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forested	80	native	high	3	100	3
2.						
3.						
4.						
5.						

Score: 6

**IN-STREAM CONDITION**

**Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0



## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S8 SAR No.: 18 Size (LF): 1078 Date: 7/17/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: EPH Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 30	Avg. Banks: 3
Avg. Waters Edge: dry	Avg. Water: dry
Avg. OHWM: 12	Avg. OHWM: 1

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	3	Sum of bank scores / 10 x 25	15.0
	Riparian buffer (right bank)	3		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				39.2
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				39.2

## Representative Site Photograph:



Version 1.0 - Final Draft  
**TXRAM STREAM DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S9 SAR No.: 19 Size (LF): 1116 Date: 7/15/13 Evaluator(s): MF, JS  
 Stream Type: EPH Ecoregion: Tx Blackland Prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: \_\_\_\_\_ Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): Drought, cattle Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

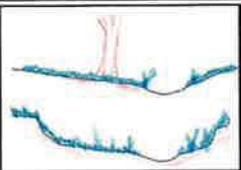
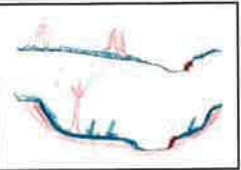
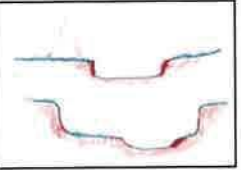
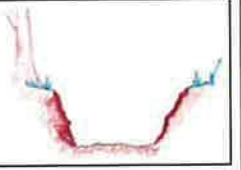
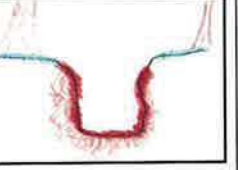
**Stream Characteristics**

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 40	Avg. Banks: 6
Avg. Waters Edge: dry	Avg. Water: 0
Avg. OHWM: 15	Avg. OHWM: 1.5

Notes: Severe drought

**CHANNEL CONDITION**

**Floodplain Connectivity**

				
5	4 <input checked="" type="checkbox"/>	3	2	1

Score: 4

**Bank Condition**

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 5

**Sediment Deposition**

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5



**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: \_\_\_\_\_

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forested	75	native	high	3	100	3
2.						
3.						
4.						
5.						

Score: 3

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forested	80	native	high	3	100	3
2.						
3.						
4.						
5.						

Score: 6**IN-STREAM CONDITION**

*Substrate Composition (estimate percentages)*

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

*In-stream Habitat (check all habitat types that are present)*

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☒ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 0**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: S9 SAR No.: 19 Size (LF): 1116 Date: 7/17/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: EPH Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): forest Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Extreme drought

### Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 45	Avg. Banks: 3
Avg. Waters Edge: dry	Avg. Water: dry
Avg. OHWM: 15	Avg. OHWM: 1.5

### Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	3	Sum of bank scores / 10 x 25	15.0
	Riparian buffer (right bank)	3		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.00
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				40.8
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				40.8

### Representative Site Photograph:



# REF 1: REFERENCE FOR CHAMBERS

Version 1.0 - Final Draft

## TXRAM STREAM DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Richland Creek SAR No.: Ref 1 Size (LF): 200 Date: 7/17/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Perennial Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030108 Watershed Condition (developed, pasture, etc.): forest, pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

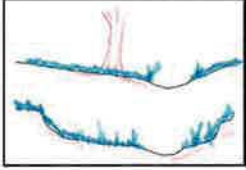
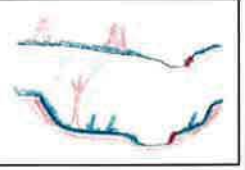
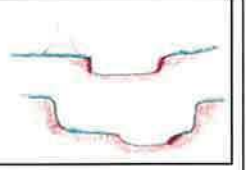
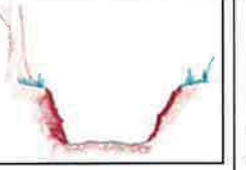
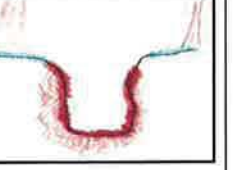
### Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 60	Avg. Banks: 20
Avg. Waters Edge: 50	Avg. Water: 4
Avg. OHWM: 55	Avg. OHWM: 7

Notes: Extreme drought. Located above road crossing at SWCR0020 confluence of Pin Oak Creek. Only upstream reach used.

### CHANNEL CONDITION

#### Floodplain Connectivity

				
5	4	3	2	1

Score: 4

#### Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5  
 Bank Protection/Stabilization: ☐ Natural ☐ Artificial: leaves and woody debris

Score: 5

#### Sediment Deposition

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION***Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.***Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: \_\_\_\_\_

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forested	90	native	low	5	100	5
2.						
3.						
4.						
5.						

Score: 5

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	low	5	100	5
2.						
3.						
4.						
5.						

Score: 5**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 80%	Artificial:
Cobble:	Sand: 20	Bedrock:	Other:

Score: 2**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation	✓	✓											
Rootmats	✓	✓											
Rootwads	✓	✓											
Woody/Leafy Debris	✓	✓											
Boulders/Cobbles													
Aquatic Macrophytes	✓	✓											
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	5	5											

Average: 5 Score: 5**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Continual pool of water but lacking noticeable flow (3)
 ☐ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 3**Channel Flow Status**

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4



## REF 1: REFERENCE FOR CHAMBERS

Version 1.0 - Final Draft

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Richland Creek SAR No.: Ref 1 Size (LF): 200 Date: 7.17/13 Evaluator(s): M Forbes, J Schwartz  
 Stream Type: Perennial Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030108 Watershed Condition (developed, pasture, etc.): forest, pasture Watershed Size: 470 ac  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)  
 Notes: Extreme drought. Located above road crossing at SWCR0020 confluence of Pin Oak Creek. Only upstream reach used.

## Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 60	Avg. Banks: 20
Avg. Waters Edge: 50	Avg. Water: 4
Avg. OHWM: 55	Avg. OHWM: 7

## Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.33
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	5	Sum of bank scores / 10 x 25	25
	Riparian buffer (right bank)	5		
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	17.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.88
	Channel flow status	4		
Sum of core element scores = overall TXRAM stream score				87.71
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				4.39
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				92.10

## Representative Site Photograph:





## REF 2: REFERENCE FOR CHARM

Version 1.0 - Final Draft

### TXRAM STREAM DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Cummins SAR No.: Ref 2 Size (LF): 100 Date: 7/17/13 Evaluator(s): M Forbes  
 Stream Type: INT Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): forest, pasture Watershed Size: 28 sq mi  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

#### Stream Characteristics

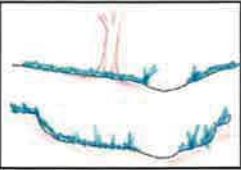
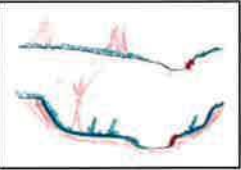
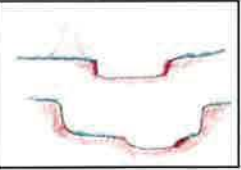
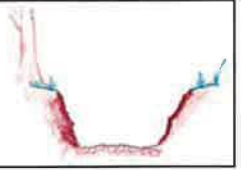
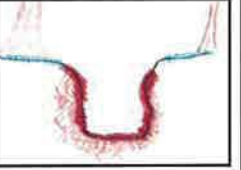
Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 18	Avg. Banks: 8
Avg. Waters Edge: 10	Avg. Water: 2
Avg. OHWM: 14	Avg. OHWM: 4

#### Notes:

Fish, mollusks present. location: 32.208608, 96.504531

#### CHANNEL CONDITION

##### Floodplain Connectivity

				
5	4	3	2	1

Score: 5

##### Bank Condition

Left Bank Active Erosion: 0 % Right Bank Active Erosion: 5 % Average: 2.5  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: leaves and woody debris

Score: 5

##### Sediment Deposition

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION****Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.****Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 57

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	low	5	100	5
2.						
3.						
4.						
5.						

Score: 5

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	native	low	5	100	5
2.						
3.						
4.						
5.						

Score: 5

**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel: 10	Fines (silt, clay, muck): 65	Artificial:
Cobble:	Sand: 20	Bedrock:	Other: 5% shells

Score: 2

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks		✓											
Overhanging Vegetation	✓	✓											
Rootmats	✓	✓											
Rootwads	✓	✓											
Woody/Leafy Debris	✓	✓											
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence	✓												
Artificial Habitat Enhancement													
Other fish, mollusks		✓											
Total No. Present	5	5											

Average: 5.5 Score: 5

**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☐ Dry channel and no observable pools or interstitial flow (0)
- ☒ Isolated pools and interstitial (subsurface) flow (2)

Score: 2

**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

## REF 2: REFERENCE FOR CHARM

### TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Cummins Creek SAR No.: Ref 2 Size (LF): 100 Date: 7/18/13 Evaluator(s): M Forbes  
 Stream Type: INT Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)  
 Notes: Extreme drought. Fish and mollusks. Located above road crossing at 1126. 32.208.608 -96.504.531

#### Stream Characteristics

Stream Width (Feet)		Stream Height/Depth (Feet)	
Avg. Bank to Bank:	18	Avg. Banks:	8
Avg. Waters Edge:	10	Avg. Water:	2
Avg. OHWM:	14	Avg. OHWM:	4

#### Scoring Table

Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	5	Sum of metric scores / 15 x 25	25
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	5	Sum of bank scores / 10 x 25	25
	Riparian buffer (right bank)	5		
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	17.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	3		
Sum of core element scores = overall TXRAM stream score				80
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				4
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				84

#### Representative Site Photograph:



# REF 3: REFERENCE FOR ROCKIN' CREEK AND SOUTHFORK CHARM

Version 1.0 - Final Draft

## TXRAM STREAM DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: INT REF SAR No.: Ref 3 Size (LF): 300 Date: 8/21/13 Evaluator(s): M Forbes  
 Stream Type: INT Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: 470 ac  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

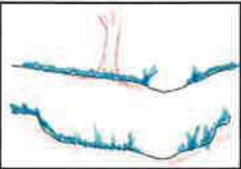
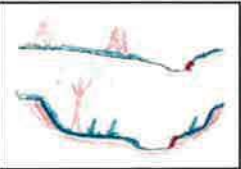
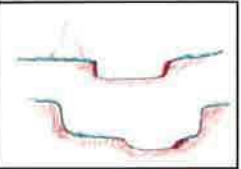
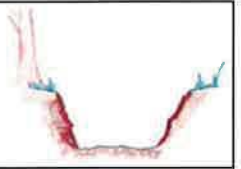
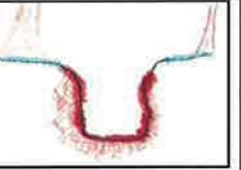
### Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 12	Avg. Banks: 4
Avg. Waters Edge: dry	Avg. Water: dry
Avg. OHWM: 8	Avg. OHWM: 2

Notes: Extreme drought. Location 32.18994, -96.59326

### CHANNEL CONDITION

#### Floodplain Connectivity

				
5	4	3	2	1

Score: 5

#### Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 20 % Average: 15  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: leaves and woody debris

Score: 4

#### Sediment Deposition

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5



**RIPARIAN BUFFER CONDITION****Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.****Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 54'

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	mod	4	90	3.6
2. Pasture	0	mixed	high	1	10	0.1
3.						
4.						
5.						

Score: 3.7

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	native	mod	4	90	3.6
2. Pasture	0	mixed	high	3	10	0.3
3.						
4.						
5.						

Score: 3.9

**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks	✓	✓											
Overhanging Vegetation	✓	✓	✓										
Rootmats	✓	✓	✓										
Rootwads	✓		✓										
Woody/Leafy Debris	✓	✓	✓										
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other fish, mollusks													
Total No. Present	5	4	4										

Average: 4.33

Score: 5

**HYDROLOGIC CONDITION****Flow Regime**

<input type="checkbox"/> Noticeable surface flow present (4)	<input type="checkbox"/> Isolated pools and no evidence of surface or interstitial flow (1)
<input type="checkbox"/> Continual pool of water but lacking noticeable flow (3)	<input type="checkbox"/> Dry channel and no observable pools or interstitial flow (0)
<input checked="" type="checkbox"/> Isolated pools and interstitial (subsurface) flow (2)	

Score: 2

**Channel Flow Status**

<input type="checkbox"/> Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
<input type="checkbox"/> Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
<input type="checkbox"/> Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
<input checked="" type="checkbox"/> Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
<input type="checkbox"/> No water present in the channel; 100% of channel substrate exposed (0)

Score: 1



# REF 3: REFERENCE FOR ROCKIN' CREEK AND SOUTHFORK CHARM

Version 1.0 Final Draft

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: INT Ref SAR No.: Ref 3 Size (LF): 300 Date: 8/21/13 Evaluator(s): M Forbes  
 Stream Type: Unnamed trib Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: 470 ac  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): \_\_\_\_\_ Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)  
 Notes: Extreme drought. Location = 32.18994, -96.59326

### Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 12	Avg. Banks: 4
Avg. Waters Edge: dry	Avg. Water: dry
Avg. OHWM: 8	Avg. OHWM: 2

### Scoring Table

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	5	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	5	Sum of bank scores / 10 x 25	19
	Riparian buffer (right bank)	4.8		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	15
	In-stream habitat	5		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	9.38
	Channel flow status	1		
Sum of core element scores = overall TXRAM stream score				66.7
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				3.3
Sum of overall TXRAM stream score and additional points = <b>total overall TXRAM stream score</b>				70

### Representative Site Photograph:



## REF 4: REFERENCE FOR EPHEMERAL STREAMS S1-S9

Version 1.0 - Final Draft

## TXRAM STREAM DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Stream ID/Name: Eph Stream Reference SAR No.: Eph Ref Size (LF): 100 Date: 8/2/13 Evaluator(s): M Forbes, K Bradley  
 Stream Type: Eph Ecoregion: TX Blackland prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): grassland Watershed Size: ~88 ac  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☒ No  
 Stressor(s): cattle, debris Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

## Stream Characteristics

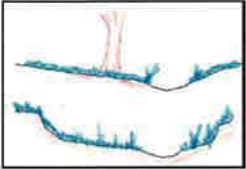
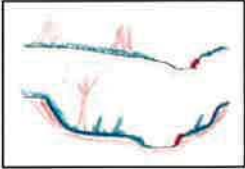
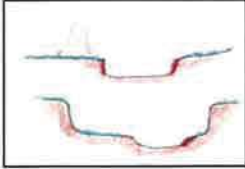
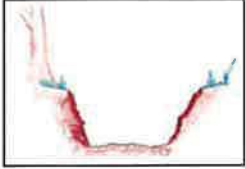
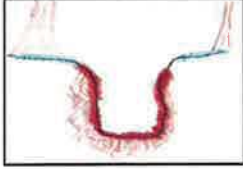
Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 15	Avg. Banks: 1.5
Avg. Waters Edge: NA	Avg. Water: NA
Avg. OHWM: 4	Avg. OHWM: 1.0

## Notes:

This reach of S3b located above pond.

## CHANNEL CONDITION

## Floodplain Connectivity

				
5	4	3	2	1

Score: 5

## Bank Condition

Left Bank Active Erosion: 0 % Right Bank Active Erosion: 0 % Average: 0  
 Bank Protection/Stabilization: ☒ Natural ☐ Artificial: \_\_\_\_\_

Score: 5

## Sediment Deposition

- ☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)  
☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)  
☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)  
☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)  
☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

**RIPARIAN BUFFER CONDITION****Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.****Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).**

Left Bank

Buffer Distance: 27

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	native	high	3	100	3.0
2.						
3.						
4.						
5.						

Score: 3.0

Right Bank

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	native	high	3	100	3.0
2.						
3.						
4.						
5.						

Score: 3.0**IN-STREAM CONDITION****Substrate Composition (estimate percentages)**

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1**In-stream Habitat (check all habitat types that are present)**

Habitat Type	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: \_\_\_\_\_ Score: 0**HYDROLOGIC CONDITION****Flow Regime**

- ☐ Noticeable surface flow present (4)
 ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Continual pool of water but lacking noticeable flow (3)
 ☐ Dry channel and no observable pools or interstitial flow (0)
- ☐ Isolated pools and interstitial (subsurface) flow (2)

Score: 1**Channel Flow Status**

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

# REF 4: REFERENCE FOR EPHEMERAL STREAMS S1-S9

Version 1.0 - February 2014

## TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Stream ID/Name: REF4 (S3b up) SAR No.: REF4 Size (LF): 200 Date: 4/1/14 Evaluator(s): MF, JK  
 Stream Type: EPH Ecoregion Tx Blackland prairie Delineation Performed: ☒ Previously ☐ Currently  
 8-Digit HUC: 12030109 Watershed Condition (developed, pasture, etc.): pasture Watershed Size: \_\_\_\_\_  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
 Stressor(s): cattle, drought Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)  
 Notes: Persistent drought

### Stream Characteristics

Stream Width (Feet)	Stream Height/Depth (Feet)
Avg. Bank to Bank: 32	Avg. Banks: 6
Avg. Waters Edge: 0	Avg. Water: 0
Avg. OHWM: 6	Avg. OHWM: 4

### Scoring Table

Scoring Table				
Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Channel condition	Floodplain connectivity	5	Sum of metric scores / 15 x 25	25
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	3	Sum of bank scores / 10 x 25	15
	Riparian buffer (right bank)	3		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0
	Channel flow status	0		
Sum of core element scores = overall TXRAM stream score				42.5
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R <input type="checkbox"/> <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = total overall TXRAM stream score				42.5

### Representative Site Photograph:



**BUFFER ASSESSMENT REACHES (BAR)**



BAR No. 1

Stream ID/Name Chambers SAR No. 1 Date: 4/4/14 Evaluators M. Forbes Width 100 ft. each

**Notes:**

Existing condition of Secondary and Tertiary Buffers (they are the same)

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 100 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	100	4
2.						
3.						
4.						
5.						

Score: 4

Right Bank

Buffer Distance: 100 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	90	3.6
2. Pasture	0	Mixed	High	1	10	.1
3.						
4.						
5.						

Score: 3.7

BAR No. 2

Stream ID/Name Chambers SAR No. 2 Date: 4/4/14 Evaluators M. Forbes Width 100 ft. each

**Notes:**

Existing condition of Secondary and Tertiary Buffers (they are the same)

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 100 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	100	4
2.						
3.						
4.						
5.						

Score: 4

Right Bank

Buffer Distance: 100 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	100	4
2.						
3.						
4.						
5.						

Score: 4

BAR No. 3

Stream ID/Name Charm SAR No. 3 Date: 4/4/14 Evaluators M. Forbes Width 50 ft. each

Notes:

Existing condition of Secondary and Tertiary Buffers

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 50 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	90	Native	MOD	4	95	3.80
2. Pasture	0	Mixed	High	1	5	0.05
3.						
4.						
5.						

Score: 3.85

Right Bank

Buffer Distance: 50 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Pasture	0	Mixed	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1

BAR No. 4s

Stream ID/Name Charm SAR No. 4 Date: 4/4/14 Evaluators M. Forbes Width 50 ft. each

Notes:

Existing condition of Secondary

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank

Buffer Distance: 50 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	50	2.0
2. Pasture	0	Mixed	High	1	50	0.5
3.						
4.						
5.						

Score: 2.5

Right Bank

Buffer Distance: 50 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	20	0.8
2. Pasture	0	Mixed	High	1	80	0.8
3.						
4.						
5.						

Score: 1.6

BAR No. 4t

Stream ID/Name Charm 4 SAR No. 4 Date: 4/4/14 Evaluators M. Forbes Width 50 ft. each

Notes:

Existing condition of Tertiary Buffers

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 50 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	Native	MOD	4	20	0.8
2. Pasture	0	Mixed	High	1	80	0.8
3.						
4.						
5.						

Score: 1.6

Right Bank

Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Pasture	0	Mixed	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1

BAR No. 6

Stream ID/Name S3 SAR No. 9 Date: 4/4/14 Evaluators M. Forbes Width 25 ft. each

Notes:

Existing condition of Secondary and Tertiary Buffers (they are the same)

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Pasture	0	Mixed	High	1	92	0.92
2. Forest	50	Native	High	2	5	0.10
3. Open Water	0	NA	NA	3	3	0.09
4.						
5.						

Score: 1.11

Right Bank

Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Pasture	0	Mixed	High	1	98	0.98
2. Open Water	0	NA	NA	3	2	0.06
3.						
4.						
5.						

Score: 1.04

BAR No. 7s

Stream ID/Name S4b SAR No. 7s Date: 4/4/14 Evaluators M. Forbes Width 25 ft. each

Notes:

Secondary

#### RIPARIAN BUFFER CONDITION

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	Native	High	3	80	2.4
2. Pasture	0	Mixed	High	1	20	0.2
3.						
4.						
5.						

Score: 2.6

Right Bank

Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	70	Native	High	3	90	2.7
2. Pasture	0	Mixed	High	1	10	0.1
3.						
4.						
5.						

Score: 2.8

BAR No. 7t

Stream ID/Name S4b SAR No. 7t Date: 4/4/14 Evaluators M. Forbes Width 25 ft. each

Notes:

Tertiary

#### RIPARIAN BUFFER CONDITION

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	Native	High	3	40	1.2
2. Pasture	0	Mixed	High	1	60	0.6
3.						
4.						
5.						

Score: 1.8

Right Bank

Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	Native	High	3	20	0.6
2. Pasture	0	Mixed	High	1	80	0.8
3.						
4.						
5.						

Score: 1.4



BAR No. 8s

Stream ID/Name S4c SAR No. 8s Date: 4/4/14 Evaluators M. Forbes Width 25 ft. each

Notes:

Secondary

#### RIPARIAN BUFFER CONDITION

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	Native	High	3	30	0.9
2. Pasture	0	Mixed	High	1	70	0.7
3.						
4.						
5.						

Score: 1.6

Right Bank

Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	Native	High	3	20	0.6
2. Pasture	0	Mixed	High	1	80	0.8
3.						
4.						
5.						

Score: 1.4

BAR No. 8t

Stream ID/Name S4c SAR No. 8t Date: 4/4/14 Evaluators M. Forbes Width 25 ft. each

Notes:

Tertiary

#### RIPARIAN BUFFER CONDITION

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	Native	High	3	15	0.45
2. Pasture	0	Mixed	High	1	85	0.85
3.						
4.						
5.						

Score: 1.30

Right Bank

Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	65	Native	High	3	20	0.6
2. Pasture	0	Mixed	High	1	80	0.8
3.						
4.						
5.						

Score: 1.4



BAR No. 9s

Stream ID/Name S4e SAR No. 16a Date: 4/4/14 Evaluators M. Forbes Width 25 ft. each

**Notes:**

Existing condition of Secondary Buffer

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	2	50	1.0
2. Pasture	0	Mixed	High	1.2	50	0.6
3.						
4.						
5.						

Score: 1.6

Right Bank

Buffer Distance: 25

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	20	0.8
2. Pasture	0	Mixed	High	0.75	80	0.6
3.						
4.						
5.						

Score: 1.4

BAR No. 9t

Stream ID/Name S4e SAR No. 16a Date: 4/4/14 Evaluators M. Forbes Width 25 ft. each

**Notes:**

Existing condition of Tertiary Buffer

**RIPARIAN BUFFER CONDITION**

*Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.*

*Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).*

Left Bank Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	2	50	1.0
2. Pasture	0	Mixed	High	0.60	50	0.3
3.						
4.						
5.						

Score: 1.3

Right Bank

Buffer Distance: 25 ft.

Buffer Type	Canopy Cover	Vegetation Community	Land Use	Score	Percentage of Area	Subtotal
1. Forest	80	Native	MOD	4	20	0.8
2. Pasture	0	Mixed	High	0.75	80	0.6
3.						
4.						
5.						

Score: 1.4

**WETLAND ASSESSMENT AREA (WAA)**

Version 1.0 - Final Draft  
**TXRAM WETLAND DATA SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
Wetland ID/Name: Ditch WAA No.: 1 Size: 100 Date: 7/16/13 Evaluator(s): M Forbes, J Schwartz  
Wetland Type: Depressional Ecoregion: TX Blackland Prairie Delineation Performed: ☐ Previously ☒ Currently  
Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

Notes: Bermed on left side only. This WAA has no woody vegetation. Separated by upland on 3 sides. Feature is man made to drain site. Upgradient streams not connected.

**LANDSCAPE**

**Connectivity – Confirm in office review. See figures in section 2.3.1.1 for examples.**

Notes on any barriers or alterations that prevent connectivity: Upland, berm.

Aquatic resources within 1,000 feet of WAA to which wetland connects (including number for other considerations): 6 Score: 4

**Buffer – Evaluate to 500 feet from WAA boundary. Confirm in office review. See figures in section 2.3.1.2 for examples.**

Buffer Type/Description	Score (See Narratives)	Percentage	Subtotal
1. Non-native pasture	1	80%	0.8
2. Forest-grazed	2	20%	0.4
3. Ponds	-	5%	0
4.			
5.			

Score: 1.2

**HYDROLOGY**

**Water Source – Degree of natural or unnatural/artificial influence. Confirm in office review for watershed.**

Natural: ☒ Precipitation ☐ Groundwater ☒ Overbank flow/stream discharge ☒ Overland flow ☐ Beaver activity ☐ Other: \_\_\_\_\_

Unnatural/Manipulated: ☒ Impoundment ☐ Outfall ☐ Irrigation/pumping ☐ Other artificial influence or control: \_\_\_\_\_

Watershed: ☐ Development ☐ Irrigated agriculture ☐ Wastewater treatment plant ☒ Impoundment ☒ Other: ag and pasture

Degree of artificial influence/control: ☐ Complete ☐ High ☒ Low ☐ None

Wetland created/restored/enhanced: ☐ Sustainable/replicates natural ☐ Controlled

Score: 3

**Hydroperiod – Variability and recent alteration of the duration, frequency, and magnitude of inundation/saturation.**

Evaluate the hydroperiod including natural variation: Seasonally flooded

Direct evidence of alteration: Natural: ☐ Log-jam ☐ Channel migration ☐ Other: \_\_\_\_\_

Human: ☐ Diversions ☒ Ditches ☒ Levees ☒ Impoundments ☐ Other: Slough is a ditch with levees, impoundments upgradient

Riverine only: ☐ Recent channel in-stability/dis-equilibrium (☐ Degradation or ☐ Aggradation)

Indirect evidence of alteration: ☒ Wetland plant stress: \_\_\_\_\_ ☐ Plant morphology: \_\_\_\_\_

☐ Upland species encroachment: \_\_\_\_\_ ☐ Plant Community: \_\_\_\_\_ ☒ Soil: dry and cracked

Change/Alteration of hydroperiod: ☐ None ☐ Due to natural events ☒ Human influences (☒ Slight or ☐ High)

Degree hydroperiod of wetland created/restored/enhanced replicates natural patterns: N/A

Lacustrine fringe on human impoundment: ☐ High variability ☐ Low variability ☐ Recent changes to hydroperiod Score: 2

**Hydrologic Flow – Movement of water to or from surrounding area and openness to water moving through the WAA.**

Flow: ☒ Inlets: 1 ☒ Outlets: 1 ☐ Signs of water movement to or from WAA: \_\_\_\_\_

Restrictions: ☒ Levee ☒ Berm/dam ☐ Diversion ☐ Other: \_\_\_\_\_

High flowthrough: ☐ Floodplain ☐ Drift deposits ☐ Drainage patterns ☐ Sediment deposits ☐ Other: \_\_\_\_\_

Low flowthrough: ☐ High landscape position ☒ Stagnant water ☒ Closed contours ☒ Other: levees Score: 2

**SOILS**

**Organic Matter – Use data and indicators from wetland determination data form(s) based on applicable regional supplement.**

☐ High (organic soil or indicator A1, A2, A3)

☐ Moderate (indicator A9, S1, F1 in AW or A9, S1, S2, F1 in GP or A6, A7, A9, S7, F13 in AGCP)

☐ Low (indicated by thin organic or organic-mineral layer) ☒ None observable in surface layer as described herein Score: 1

**Sedimentation – Deposition of excess sediment due to human actions. Confirm in office review for landscape.**

Landscape with stress that could lead to excess sedimentation? ☐ Yes ☒ No Landscape position: ☐ High ☒ Low  
 Magnitude of recent runoff/flooding events: ☐ High ☒ Low Percent of WAA with excess sediment deposition: 0  
☐ Sand deposits: \_\_\_\_\_% of area, \_\_\_\_\_ average thickness ☐ Silt/Clay deposits: \_\_\_\_\_% of area, \_\_\_\_\_ average thickness  
 Lacustrine fringe only: ☐ Upper end of impoundment ☐ Degrades wetland ☐ Contributes to wetland processes **Score: 4**

**Soil Modification – Physical changes by human activities. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Farming R/P ☐ Logging R/P ☐ Mining R/P ☐ Filling R/P  
☒ Grading R(P) ☐ Dredging R(P) ☐ Off-road vehicles R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent soil modification: \_\_\_\_\_% Degree of modification: ☐ High ☐ Low  
 Indicators of past modification: ☐ High bulk density ☐ Low organic matter ☐ Lack of soil structure ☐ Lack of horizons ☐ Hardpan  
☐ Dramatic change in texture/color ☐ Heterogeneous mixture ☐ Other: none  
 Indicators of recovery: ☐ Organic matter ☐ Structure ☐ Horizons ☐ Mottling ☐ Hydric soil ☐ Other: \_\_\_\_\_  
 Percent of WAA with past modification: 100% Recovery: ☒ Complete ☐ High ☐ Moderate ☐ Low ☐ None **Score: 4**

**PHYSICAL STRUCTURE****Topographic Complexity – See figures in section 2.3.4.1. Record % micro-topography and % WAA for each elevation gradient.**

Elevation gradients (EG): 1 Evidence: ☒ Plant assemblages ☐ Level of saturation/inundation ☐ Path of water flow ☐ Slope  
 Micro-topography: 0% of WAA (By EG: \_\_\_\_\_)  
 Types: ☐ Depressions ☐ Pools ☐ Burrows ☐ Swales ☐ Wind-thrown tree holes ☐ Mounds ☐ Gilgai ☐ Islands  
☐ Variable shorelines ☐ Partially buried debris ☐ Debris jams ☐ Plant hummocks/roots ☐ Other: \_\_\_\_\_ **Score: 1**

**Edge Complexity – Confirm in office review. See figure in section 2.3.4.2 to evaluate wetland-to-upland boundary.**

Variability: ☐ High ☐ Moderate ☐ Low ☒ None Edge (feet) to Area (square feet) ratio: \_\_\_\_\_ **Score: 1**

**Physical Habitat Richness – See definitions and table in section 2.3.4.3 for habitat types applicable to each wetland type.**

Label of habitat types qualifying as present in WAA: K Total: 1 **Score: 1**

**BIOTIC STRUCTURE****Plant Strata – Use applicable wetland delineation regional supplement and data from determination data form(s).**

Number of plant strata: ☐ ≥ 4 ☐ 3 ☐ 2 ☒ 1 ☐ 0 **Score: 1**

**Species Richness – Use data from determination data form(s) to count species with 5% or more relative cover in a stratum.**

Number of species across all strata and determination data forms (not counting a species more than once): 3 **Score: 2**

**Non-Native/Invasive Infestation – Use data from determination data form(s). See tables in section 2.3.5.3 for examples.**

Average total relative cover of non-native/invasive species across all strata and determination data forms: 0% **Score: 4**

**Interspersion – Confirm in office review. Use figure in section 2.3.5.4 to determine the degree of interspersion of plant zones.**

Degree of horizontal/plan view interspersion: ☐ High ☐ Moderate ☐ Low ☒ None **Score: 1**

**Strata Overlap – Use strata defined in plant strata metric using applicable regional supplement. See figures in section 2.3.5.5.**

High overlap (≥ 3 strata overlapping): 0% of WAA Moderate overlap (2 strata overlapping): 0% of WAA  
 Herbaceous species/dense litter overlap (only in portion where there are no other strata overlapping): 0% of WAA  
 Total percentage of WAA with some form of overlap (if more than one present): 0% of WAA **Score: 0**

**Herbaceous Cover – Estimate for entire WAA.**

Total cover of emergent and submergent plants: ☒ > 75% ☐ 51–75% ☐ 26–50% ☐ ≤ 25% **Score: 4**

**Vegetation Alterations – Unnatural (human-caused) stressors. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Disking R/P ☐ Mowing/shredding R/P ☐ Logging R/P  
☐ Cutting R/P ☐ Trampling R/P ☐ Herbicide treatment R/P ☒ Herbivory R(P) ☐ Disease R/P ☐ Chemical spill R/P  
☐ Pollution R/P ☐ Feral hog rooting R/P ☐ Woody debris removal R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent vegetation alteration: 10% Severity of alteration: ☐ High ☒ Low  
 Percent of WAA with past vegetation alteration: 0% Degree of recovery: ☐ Complete ☐ High ☐ Moderate ☐ Low  
☐ Alteration to improve wetland (degree of natural community recovery): N/A **Score: 3**



**TXRAM WETLAND FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☐ Mitigation/Conservation  
 Wetland ID/Name: Ditch WAA No.: 1 Size: 200 lf Date: 7/16/13 Evaluator(s): M Forbes, J Schwartz  
 Wetland Type: Depressional Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

Notes: \_\_\_\_\_

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Landscape	Connectivity	4	Sum of metric scores / 8 x 20	13
	Buffer	1.2		
Hydrology	Water source	3	Sum of metric scores / 12 x 20	11.67
	Hydroperiod	2		
	Hydrologic flow	2		
Soils	Organic matter	1	Sum of metric scores / 12 x 20	15
	Sedimentation	4		
	Soil modification	4		
Physical Structure	Topographic complexity	1	Sum of metric scores / 12 x 20	5
	Edge complexity	1		
	Physical habitat richness	1		
Biotic Structure	Plant strata	1	Sum of metric scores / 28 x 20	10.71
	Species richness	2		
	Non-native/invasive infestation	4		
	Interspersion	1		
	Strata overlap	0		
	Herbaceous cover	4		
	Vegetation alterations	3		
Sum of core element scores = overall TXRAM wetland score				55.38
Additional points for unique resources = overall TXRAM wetland score x 0.10 if: <input type="checkbox"/> Area of Caddo Lake designated a "Wetland of International Importance" under the Ramsar Convention <input type="checkbox"/> Bald cypress – water tupelo swamp <input type="checkbox"/> Pitcher plant bog <input type="checkbox"/> Spring				0
Additional points for limited habitats = overall TXRAM wetland score x 0.05 if: <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM wetland score and additional points = <b>total overall TXRAM wetland score</b>				55.38

**Representative Site Photograph:**



## TXRAM WETLAND DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Wetland ID/Name: Ditch WAA No.: 2 Size: 100 Date: 7/16/13 Evaluator(s): M Forbes, J Schwartz  
 Wetland Type: Depressional Ecoregion: TX Blackland Prairie Delineation Performed: ☐ Previously ☒ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

## Notes:

Bermed on both sides. Some woody vegetation. Same hydrology as WAA 1.

## LANDSCAPE

**Connectivity – Confirm in office review. See figures in section 2.3.1.1 for examples.**

Notes on any barriers or alterations that prevent connectivity: \_\_\_\_\_

Aquatic resources within 1,000 feet of WAA to which wetland connects (including number for other considerations): 5 Score: 3

**Buffer – Evaluate to 500 feet from WAA boundary. Confirm in office review. See figures in section 2.3.1.2 for examples.**

Buffer Type/Description	Score (See Narratives)	Percentage	Subtotal
1. Non-native pasture	1	95%	0.95
2. Trees-grazed	2	5%	0.10
3. Ponds	-	2%	-
4.			
5.			

Score: 1.05

## HYDROLOGY

**Water Source – Degree of natural or unnatural/artificial influence. Confirm in office review for watershed.**

Natural: ☒ Precipitation ☐ Groundwater ☒ Overbank flow/stream discharge ☒ Overland flow ☐ Beaver activity ☐ Other: \_\_\_\_\_

Unnatural/Manipulated: ☒ Impoundment ☐ Outfall ☐ Irrigation/pumping ☐ Other artificial influence or control: \_\_\_\_\_

Watershed: ☐ Development ☐ Irrigated agriculture ☐ Wastewater treatment plant ☒ Impoundment ☒ Other: upstream ag and pasture

Degree of artificial influence/control: ☐ Complete ☐ High ☒ Low ☐ None

Wetland created/restored/enhanced: ☐ Sustainable/replicates natural ☐ Controlled

Score: 3

**Hydroperiod – Variability and recent alteration of the duration, frequency, and magnitude of inundation/saturation.**

Evaluate the hydroperiod including natural variation: Seasonally flooded

Direct evidence of alteration: Natural: ☐ Log-jam ☐ Channel migration ☐ Other: \_\_\_\_\_

Human: ☐ Diversions ☒ Ditches ☒ Levees ☒ Impoundments ☐ Other: upstream

Riverine only: ☐ Recent channel in-stability/dis-equilibrium (☐ Degradation or ☐ Aggradation)

Indirect evidence of alteration: ☒ Wetland plant stress: \_\_\_\_\_ ☐ Plant morphology: \_\_\_\_\_

☒ Upland species encroachment: \_\_\_\_\_ ☐ Plant Community: \_\_\_\_\_ ☐ Soil: \_\_\_\_\_

Change/Alteration of hydroperiod: ☐ None ☐ Due to natural events ☒ Human influences (☒ Slight or ☐ High)

Degree hydroperiod of wetland created/restored/enhanced replicates natural patterns: N/A

Lacustrine fringe on human impoundment: ☐ High variability ☐ Low variability ☐ Recent changes to hydroperiod Score: 2

**Hydrologic Flow – Movement of water to or from surrounding area and openness to water moving through the WAA.**

Flow: ☒ Inlets: 1 ☒ Outlets: 1 ☐ Signs of water movement to or from WAA: \_\_\_\_\_

Restrictions: ☒ Levee ☒ Berm/dam ☐ Diversion ☐ Other: \_\_\_\_\_

High flowthrough: ☐ Floodplain ☐ Drift deposits ☐ Drainage patterns ☐ Sediment deposits ☐ Other: \_\_\_\_\_

Low flowthrough: ☐ High landscape position ☒ Stagnant water ☒ Closed contours ☒ Other: no OHWM Score: 2

no scouring

## SOILS

**Organic Matter – Use data and indicators from wetland determination data form(s) based on applicable regional supplement.**

☐ High (organic soil or indicator A1, A2, A3)

☐ Moderate (indicator A9, S1, F1 in AW or A9, S1, S2, F1 in GP or A6, A7, A9, S7, F13 in AGCP)

☐ Low (indicated by thin organic or organic-mineral layer) ☒ None observable in surface layer as described herein Score: 1

**Sedimentation – Deposition of excess sediment due to human actions. Confirm in office review for landscape.**

Landscape with stress that could lead to excess sedimentation? ☐ Yes ☒ No Landscape position: ☐ High ☒ Low  
 Magnitude of recent runoff/flooding events: ☐ High ☒ Low Percent of WAA with excess sediment deposition: 0  
☐ Sand deposits: 0 % of area, 0 average thickness ☐ Silt/Clay deposits: 0 % of area, 0 average thickness  
 Lacustrine fringe only: ☐ Upper end of impoundment ☐ Degrades wetland ☐ Contributes to wetland processes **Score: 4**

**Soil Modification – Physical changes by human activities. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Farming R/P ☐ Logging R/P ☐ Mining R/P ☐ Filling R/P  
☒ Grading R(P) ☐ Dredging R/P ☐ Off-road vehicles R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent soil modification: \_\_\_\_\_ % Degree of modification: ☐ High ☐ Low  
 Indicators of past modification: ☐ High bulk density ☐ Low organic matter ☐ Lack of soil structure ☐ Lack of horizons ☐ Hardpan  
☐ Dramatic change in texture/color ☐ Heterogeneous mixture ☐ Other: none  
 Indicators of recovery: ☐ Organic matter ☐ Structure ☐ Horizons ☐ Mottling ☐ Hydric soil ☐ Other: \_\_\_\_\_  
 Percent of WAA with past modification: 100 % Recovery: ☒ Complete ☐ High ☐ Moderate ☐ Low ☐ None **Score: 4**

**PHYSICAL STRUCTURE****Topographic Complexity – See figures in section 2.3.4.1. Record % micro-topography and % WAA for each elevation gradient.**

Elevation gradients (EG): 2 Evidence: ☒ Plant assemblages ☐ Level of saturation/inundation ☐ Path of water flow ☒ Slope  
 Micro-topography: <10 % of WAA (By EG: \_\_\_\_\_)  
 Types: ☒ Depressions ☐ Pools ☐ Burrows ☐ Swales ☐ Wind-thrown tree holes ☐ Mounds ☐ Gilgai ☐ Islands  
☐ Variable shorelines ☐ Partially buried debris ☐ Debris jams ☐ Plant hummocks/roots ☐ Other: \_\_\_\_\_ **Score: 2**

**Edge Complexity – Confirm in office review. See figure in section 2.3.4.2 to evaluate wetland-to-upland boundary.**

Variability: ☐ High ☐ Moderate ☐ Low ☒ None Edge (feet) to Area (square feet) ratio: \_\_\_\_\_ **Score: 1**

**Physical Habitat Richness – See definitions and table in section 2.3.4.3 for habitat types applicable to each wetland type.**

Label of habitat types qualifying as present in WAA: E, K, N Total: 3 **Score: 1**

**BIOTIC STRUCTURE****Plant Strata – Use applicable wetland delineation regional supplement and data from determination data form(s).**

Number of plant strata: ☐ ≥ 4 ☒ 3 ☐ 2 ☐ 1 ☐ 0 **Score: 3**

**Species Richness – Use data from determination data form(s) to count species with 5% or more relative cover in a stratum.**

Number of species across all strata and determination data forms (not counting a species more than once): 6 **Score: 3**

**Non-Native/Invasive Infestation – Use data from determination data form(s). See tables in section 2.3.5.3 for examples.**

Average total relative cover of non-native/invasive species across all strata and determination data forms: 0 % **Score: 4**

**Interspersion – Confirm in office review. Use figure in section 2.3.5.4 to determine the degree of interspersion of plant zones.**

Degree of horizontal/plan view interspersion: ☐ High ☐ Moderate ☒ Low ☐ None **Score: 2**

**Strata Overlap – Use strata defined in plant strata metric using applicable regional supplement. See figures in section 2.3.5.5.**

High overlap (≥ 3 strata overlapping): 50 % of WAA Moderate overlap (2 strata overlapping): 10 % of WAA  
 Herbaceous species/dense litter overlap (only in portion where there are no other strata overlapping): 0 % of WAA  
 Total percentage of WAA with some form of overlap (if more than one present): 60 % of WAA **Score: 3**

**Herbaceous Cover – Estimate for entire WAA.**

Total cover of emergent and submergent plants: ☐ > 75% ☐ 51–75% ☒ 26–50% ☐ ≤ 25% **Score: 2**

**Vegetation Alterations – Unnatural (human-caused) stressors. Confirm in office review for past.**

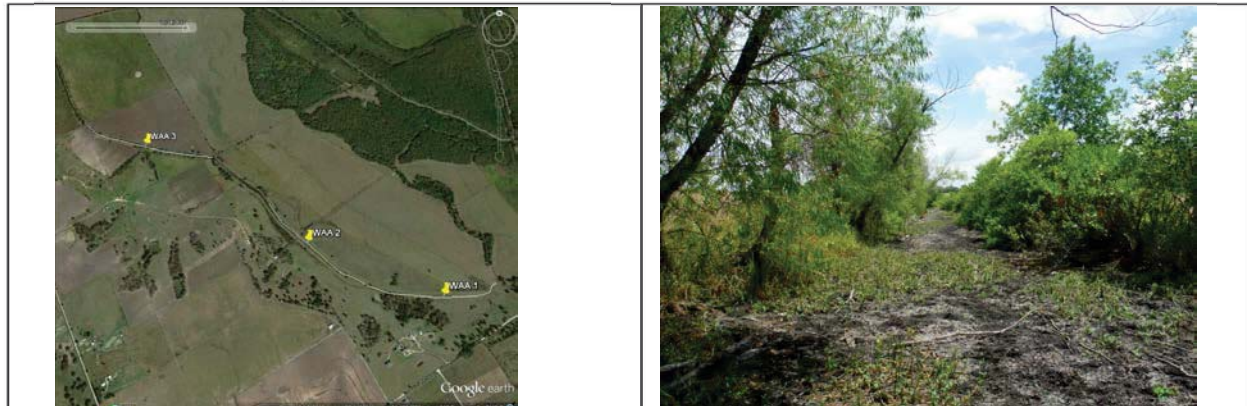
Type (Check those applicable and circle R for recent or P for past): ☐ Disking R/P ☐ Mowing/shredding R/P ☐ Logging R/P  
☐ Cutting R/P ☐ Trampling R/P ☐ Herbicide treatment R/P ☐ Herbivory R/P ☐ Disease R/P ☐ Chemical spill R/P  
☐ Pollution R/P ☐ Feral hog rooting R/P ☐ Woody debris removal R/P ☐ Other R/P: none  
 Percent of WAA with recent vegetation alteration: 0 % Severity of alteration: ☐ High ☐ Low  
 Percent of WAA with past vegetation alteration: 0 % Degree of recovery: ☐ Complete ☐ High ☐ Moderate ☐ Low  
☐ Alteration to improve wetland (degree of natural community recovery): \_\_\_\_\_ **Score: 4**

**TXRAM WETLAND FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☐ Mitigation/Conservation  
 Wetland ID/Name: Ditch WAA No.: 2 Size: 200 lf Date: 7/16/13 Evaluator(s): M Forbes, J Schwartz  
 Wetland Type: Depressional Ecoregion: Tx Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

Notes: \_\_\_\_\_

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Landscape	Connectivity	3	Sum of metric scores / 8 x 20	10.125
	Buffer	1.05		
Hydrology	Water source	3	Sum of metric scores / 12 x 20	11.67
	Hydroperiod	2		
	Hydrologic flow	2		
Soils	Organic matter	1	Sum of metric scores / 12 x 20	15
	Sedimentation	4		
	Soil modification	4		
Physical Structure	Topographic complexity	2	Sum of metric scores / 12 x 20	6.67
	Edge complexity	1		
	Physical habitat richness	1		
Biotic Structure	Plant strata	3	Sum of metric scores / 28 x 20	15
	Species richness	3		
	Non-native/invasive infestation	4		
	Interspersion	2		
	Strata overlap	3		
	Herbaceous cover	2		
	Vegetation alterations	4		
Sum of core element scores = overall TXRAM wetland score				58.47
Additional points for unique resources = overall TXRAM wetland score x 0.10 if: <input type="checkbox"/> Area of Caddo Lake designated a "Wetland of International Importance" under the Ramsar Convention <input type="checkbox"/> Bald cypress – water tupelo swamp <input type="checkbox"/> Pitcher plant bog <input type="checkbox"/> Spring				0
Additional points for limited habitats = overall TXRAM wetland score x 0.05 if: <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM wetland score and additional points = <b>total overall TXRAM wetland score</b>				58.47

**Representative Site Photograph:**



## TXRAM WETLAND DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Wetland ID/Name: Ditch WAA No.: 3 Size: 100 Date: 7/16/13 Evaluator(s): M Forbes, J Schwartz  
 Wetland Type: Depressional Ecoregion: TX Blackland Prairie Delineation Performed: ☐ Previously ☒ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

## Notes:

This reach has shrubs, saplings, trees.

## LANDSCAPE

**Connectivity – Confirm in office review. See figures in section 2.3.1.1 for examples.**

Notes on any barriers or alterations that prevent connectivity: \_\_\_\_\_

Aquatic resources within 1,000 feet of WAA to which wetland connects (including number for other considerations): 3 Score: 2

**Buffer – Evaluate to 500 feet from WAA boundary. Confirm in office review. See figures in section 2.3.1.2 for examples.**

Buffer Type/Description	Score (See Narratives)	Percentage	Subtotal
1. Non-native pasture	1	90%	0.9
2. Trees-grazed	2	10%	0.2
3.			
4.			
5.			

Score: 1.1

## HYDROLOGY

**Water Source – Degree of natural or unnatural/artificial influence. Confirm in office review for watershed.**

Natural: ☒ Precipitation ☐ Groundwater ☒ Overbank flow/stream discharge ☒ Overland flow ☐ Beaver activity ☐ Other: \_\_\_\_\_

Unnatural/Manipulated: ☒ Impoundment ☐ Outfall ☐ Irrigation/pumping ☐ Other artificial influence or control: \_\_\_\_\_

Watershed: ☐ Development ☐ Irrigated agriculture ☐ Wastewater treatment plant ☒ Impoundment ☒ Other: ag and pasture

Degree of artificial influence/control: ☐ Complete ☐ High ☒ Low ☐ None

Wetland created/restored/enhanced: ☐ Sustainable/replicates natural ☐ Controlled Score: 3

**Hydroperiod – Variability and recent alteration of the duration, frequency, and magnitude of inundation/saturation.**

Evaluate the hydroperiod including natural variation: Seasonally flooded

Direct evidence of alteration: Natural: ☐ Log-jam ☐ Channel migration ☐ Other: \_\_\_\_\_

Human: ☐ Diversions ☒ Ditches ☒ Levees ☒ Impoundments ☐ Other: upstream

Riverine only: ☐ Recent channel in-stability/dis-equilibrium (☐ Degradation or ☐ Aggradation)

Indirect evidence of alteration: ☒ Wetland plant stress: \_\_\_\_\_ ☐ Plant morphology: \_\_\_\_\_

☒ Upland species encroachment: \_\_\_\_\_ ☐ Plant Community: \_\_\_\_\_ ☐ Soil: \_\_\_\_\_

Change/Alteration of hydroperiod: ☐ None ☐ Due to natural events ☒ Human influences (☒ Slight or ☐ High)

Degree hydroperiod of wetland created/restored/enhanced replicates natural patterns: N/A

Lacustrine fringe on human impoundment: ☐ High variability ☐ Low variability ☐ Recent changes to hydroperiod Score: 2

**Hydrologic Flow – Movement of water to or from surrounding area and openness to water moving through the WAA.**

Flow: ☒ Inlets: 1 ☒ Outlets: 1 ☐ Signs of water movement to or from WAA: \_\_\_\_\_

Restrictions: ☒ Levee ☒ Berm/dam ☐ Diversion ☐ Other: \_\_\_\_\_

High flowthrough: ☐ Floodplain ☐ Drift deposits ☐ Drainage patterns ☐ Sediment deposits ☐ Other: \_\_\_\_\_

Low flowthrough: ☐ High landscape position ☒ Stagnant water ☒ Closed contours ☒ Other: no OHWM Score: 2

## SOILS

**Organic Matter – Use data and indicators from wetland determination data form(s) based on applicable regional supplement.**

☐ High (organic soil or indicator A1, A2, A3)

☐ Moderate (indicator A9, S1, F1 in AW or A9, S1, S2, F1 in GP or A6, A7, A9, S7, F13 in AGCP)

☐ Low (indicated by thin organic or organic-mineral layer) ☒ None observable in surface layer as described herein Score: 1

**Sedimentation – Deposition of excess sediment due to human actions. Confirm in office review for landscape.**

Landscape with stress that could lead to excess sedimentation? ☐ Yes ☒ No Landscape position: ☐ High ☒ Low  
 Magnitude of recent runoff/flooding events: ☐ High ☒ Low Percent of WAA with excess sediment deposition: 0  
☐ Sand deposits: \_\_\_\_\_% of area, \_\_\_\_\_ average thickness ☐ Silt/Clay deposits: \_\_\_\_\_% of area, \_\_\_\_\_ average thickness  
 Lacustrine fringe only: ☐ Upper end of impoundment ☐ Degrades wetland ☐ Contributes to wetland processes **Score: 4**

**Soil Modification – Physical changes by human activities. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Farming R/P ☐ Logging R/P ☐ Mining R/P ☐ Filling R/P  
☒ Grading R(P) ☐ Dredging R/P ☐ Off-road vehicles R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent soil modification: \_\_\_\_\_% Degree of modification: ☐ High ☐ Low  
 Indicators of past modification: ☐ High bulk density ☐ Low organic matter ☐ Lack of soil structure ☐ Lack of horizons ☐ Hardpan  
☐ Dramatic change in texture/color ☐ Heterogeneous mixture ☐ Other: none  
 Indicators of recovery: ☐ Organic matter ☐ Structure ☐ Horizons ☐ Mottling ☐ Hydric soil ☐ Other: \_\_\_\_\_  
 Percent of WAA with past modification: 100% Recovery: ☒ Complete ☐ High ☐ Moderate ☐ Low ☐ None **Score: 4**

**PHYSICAL STRUCTURE****Topographic Complexity – See figures in section 2.3.4.1. Record % micro-topography and % WAA for each elevation gradient.**

Elevation gradients (EG): 2 Evidence: ☐ Plant assemblages ☐ Level of saturation/inundation ☐ Path of water flow ☐ Slope  
 Micro-topography: 0% of WAA (By EG: \_\_\_\_\_)  
 Types: ☒ Depressions ☐ Pools ☐ Burrows ☐ Swales ☐ Wind-thrown tree holes ☐ Mounds ☐ Gilgai ☐ Islands  
☐ Variable shorelines ☐ Partially buried debris ☐ Debris jams ☐ Plant hummocks/roots ☐ Other: \_\_\_\_\_ **Score: 2**

**Edge Complexity – Confirm in office review. See figure in section 2.3.4.2 to evaluate wetland-to-upland boundary.**

Variability: ☐ High ☐ Moderate ☐ Low ☒ None Edge (feet) to Area (square feet) ratio: \_\_\_\_\_ **Score: 1**

**Physical Habitat Richness – See definitions and table in section 2.3.4.3 for habitat types applicable to each wetland type.**

Label of habitat types qualifying as present in WAA: E, K, M, N Total: 4 **Score: 1**

**BIOTIC STRUCTURE****Plant Strata – Use applicable wetland delineation regional supplement and data from determination data form(s).**

Number of plant strata: ☐ ≥ 4 ☒ 3 ☐ 2 ☐ 1 ☐ 0 **Score: 3**

**Species Richness – Use data from determination data form(s) to count species with 5% or more relative cover in a stratum.**

Number of species across all strata and determination data forms (not counting a species more than once): 6 **Score: 3**

**Non-Native/Invasive Infestation – Use data from determination data form(s). See tables in section 2.3.5.3 for examples.**

Average total relative cover of non-native/invasive species across all strata and determination data forms: 0% **Score: 4**

**Interspersion – Confirm in office review. Use figure in section 2.3.5.4 to determine the degree of interspersion of plant zones.**

Degree of horizontal/plan view interspersion: ☐ High ☐ Moderate ☒ Low ☐ None **Score: 2**

**Strata Overlap – Use strata defined in plant strata metric using applicable regional supplement. See figures in section 2.3.5.5.**

High overlap (≥ 3 strata overlapping): 60% of WAA Moderate overlap (2 strata overlapping): 10% of WAA  
 Herbaceous species/dense litter overlap (only in portion where there are no other strata overlapping): 0% of WAA  
 Total percentage of WAA with some form of overlap (if more than one present): 70% of WAA **Score: 3**

**Herbaceous Cover – Estimate for entire WAA.**

Total cover of emergent and submergent plants: ☐ > 75% ☐ 51–75% ☒ 26–50% ☐ ≤ 25% **Score: 2**

**Vegetation Alterations – Unnatural (human-caused) stressors. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Disking R/P ☐ Mowing/shredding R/P ☐ Logging R/P  
☐ Cutting R/P ☐ Trampling R/P ☐ Herbicide treatment R/P ☐ Herbivory R/P ☐ Disease R/P ☐ Chemical spill R/P  
☐ Pollution R/P ☐ Feral hog rooting R/P ☐ Woody debris removal R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent vegetation alteration: 0% Severity of alteration: ☐ High ☐ Low  
 Percent of WAA with past vegetation alteration: 0% Degree of recovery: ☐ Complete ☐ High ☐ Moderate ☐ Low  
☐ Alteration to improve wetland (degree of natural community recovery): \_\_\_\_\_ **Score: 4**



**TXRAM WETLAND FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☐ Mitigation/Conservation  
 Wetland ID/Name: Ditch WAA No.: 3 Size: 200 lf Date: 7/16/13 Evaluator(s): M Forbes, J Schwartz  
 Wetland Type: Depressional Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☒ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

Notes: \_\_\_\_\_

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Landscape	Connectivity	2	Sum of metric scores / 8 x 20	7.75
	Buffer	1.1		
Hydrology	Water source	3	Sum of metric scores / 12 x 20	11.67
	Hydroperiod	2		
	Hydrologic flow	2		
Soils	Organic matter	1	Sum of metric scores / 12 x 20	15
	Sedimentation	4		
	Soil modification	4		
Physical Structure	Topographic complexity	2	Sum of metric scores / 12 x 20	6.67
	Edge complexity	1		
	Physical habitat richness	1		
Biotic Structure	Plant strata	3	Sum of metric scores / 28 x 20	15
	Species richness	3		
	Non-native/invasive infestation	4		
	Interspersion	2		
	Strata overlap	3		
	Herbaceous cover	2		
	Vegetation alterations	4		
Sum of core element scores = overall TXRAM wetland score				56.09
Additional points for unique resources = overall TXRAM wetland score x 0.10 if: <input type="checkbox"/> Area of Caddo Lake designated a "Wetland of International Importance" under the Ramsar Convention <input type="checkbox"/> Bald cypress – water tupelo swamp <input type="checkbox"/> Pitcher plant bog <input type="checkbox"/> Spring				0
Additional points for limited habitats = overall TXRAM wetland score x 0.05 if: <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM wetland score and additional points = <b>total overall TXRAM wetland score</b>				56.1

**Representative Site Photograph:**

## TXRAM WETLAND DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation  
 Wetland ID/Name: Forest WAA No.: 4 Size: 240 ac Date: 8/22/13 Evaluator(s): M Forbes  
 Wetland Type: Riverine Ecoregion: TX Blackland Prairie Delineation Performed: ☒ Previously ☐ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

Notes: Extreme drought. Corresponds to CCT2P1

## LANDSCAPE

**Connectivity – Confirm in office review. See figures in section 2.3.1.1 for examples.**

Notes on any barriers or alterations that prevent connectivity: berm through center of area

Aquatic resources within 1,000 feet of WAA to which wetland connects (including number for other considerations): 4 Score: 3

**Buffer – Evaluate to 500 feet from WAA boundary. Confirm in office review. See figures in section 2.3.1.2 for examples.**

Buffer Type/Description	Score (See Narratives)	Percentage	Subtotal
1. Forest	4	60	2.4
2. Pasture	2	40	0.8
3.			
4.			
5.			

Score: 3.2

## HYDROLOGY

**Water Source – Degree of natural or unnatural/artificial influence. Confirm in office review for watershed.**

Natural: ☒ Precipitation ☐ Groundwater ☒ Overbank flow/stream discharge ☒ Overland flow ☐ Beaver activity ☐ Other: \_\_\_\_\_

Unnatural/Manipulated: ☐ Impoundment ☐ Outfall ☐ Irrigation/pumping ☒ Other artificial influence or control: berm

Watershed: ☐ Development ☐ Irrigated agriculture ☐ Wastewater treatment plant ☐ Impoundment ☒ Other: ag and pasture

Degree of artificial influence/control: ☐ Complete ☐ High ☒ Low ☐ None

Wetland created/restored/enhanced: ☐ Sustainable/replicates natural ☐ Controlled Score: 3

**Hydroperiod – Variability and recent alteration of the duration, frequency, and magnitude of inundation/saturation.**

Evaluate the hydroperiod including natural variation: temporarily flooded

Direct evidence of alteration: Natural: ☐ Log-jam ☐ Channel migration ☐ Other: \_\_\_\_\_

Human: ☐ Diversions ☐ Ditches ☒ Levees ☐ Impoundments ☒ Other: river channelization

Riverine only: ☐ Recent channel in-stability/dis-equilibrium (☐ Degradation or ☐ Aggradation)

Indirect evidence of alteration: ☐ Wetland plant stress: \_\_\_\_\_ ☐ Plant morphology: \_\_\_\_\_

☒ Upland species encroachment: \_\_\_\_\_ ☐ Plant Community: \_\_\_\_\_ ☐ Soil: \_\_\_\_\_

Change/Alteration of hydroperiod: ☐ None ☒ Due to natural events ☐ Human influences (☐ Slight or ☐ High)

Degree hydroperiod of wetland created/restored/enhanced replicates natural patterns: N/A

Lacustrine fringe on human impoundment: ☐ High variability ☐ Low variability ☐ Recent changes to hydroperiod Score: 3

**Hydrologic Flow – Movement of water to or from surrounding area and openness to water moving through the WAA.**

Flow: ☐ Inlets: \_\_\_\_\_ ☐ Outlets: \_\_\_\_\_ ☐ Signs of water movement to or from WAA: bank erosion

Restrictions: ☐ Levee ☒ Berm/dam ☐ Diversion ☐ Other: \_\_\_\_\_

High flowthrough: ☒ Floodplain ☐ Drift deposits ☐ Drainage patterns ☐ Sediment deposits ☐ Other: \_\_\_\_\_

Low flowthrough: ☒ High landscape position ☐ Stagnant water ☐ Closed contours ☐ Other: \_\_\_\_\_ Score: 3

## SOILS

**Organic Matter – Use data and indicators from wetland determination data form(s) based on applicable regional supplement.**

☐ High (organic soil or indicator A1, A2, A3)

☐ Moderate (indicator A9, S1, F1 in AW or A9, S1, S2, F1 in GP or A6, A7, A9, S7, F13 in AGCP)

☒ Low (indicated by thin organic or organic-mineral layer) ☒ None observable in surface layer as described herein Score: 2

**Sedimentation – Deposition of excess sediment due to human actions. Confirm in office review for landscape.**

Landscape with stress that could lead to excess sedimentation? ☐ Yes ☒ No Landscape position: ☒ High ☒ Low  
 Magnitude of recent runoff/flooding events: ☐ High ☒ Low Percent of WAA with excess sediment deposition: 0  
☐ Sand deposits: 0 % of area, \_\_\_\_\_ average thickness ☐ Silt/Clay deposits: 0 % of area, \_\_\_\_\_ average thickness  
 Lacustrine fringe only: ☐ Upper end of impoundment ☐ Degrades wetland ☐ Contributes to wetland processes **Score: 4**

**Soil Modification – Physical changes by human activities. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Farming R/P ☐ Logging R/P ☐ Mining R/P ☐ Filling R/P  
☐ Grading R/P ☐ Dredging R/P ☐ Off-road vehicles R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent soil modification: \_\_\_\_\_ % Degree of modification: ☐ High ☐ Low  
 Indicators of past modification: ☐ High bulk density ☐ Low organic matter ☐ Lack of soil structure ☐ Lack of horizons ☐ Hardpan  
☐ Dramatic change in texture/color ☐ Heterogeneous mixture ☐ Other: none  
 Indicators of recovery: ☐ Organic matter ☐ Structure ☐ Horizons ☐ Mottling ☐ Hydric soil ☐ Other: \_\_\_\_\_  
 Percent of WAA with past modification: 0 % Recovery: ☐ Complete ☐ High ☐ Moderate ☐ Low ☐ None **Score: 4**

**PHYSICAL STRUCTURE****Topographic Complexity – See figures in section 2.3.4.1. Record % micro-topography and % WAA for each elevation gradient.**

Elevation gradients (EG): 2 Evidence: ☐ Plant assemblages ☐ Level of saturation/inundation ☐ Path of water flow ☒ Slope  
 Micro-topography: 4 % of WAA (By EG: EG 1=25% WAA \*5%MT, EG 2=5% WAA \*50% MT)  
 Types: ☒ Depressions ☐ Pools ☐ Burrows ☒ Swales ☒ Wind-thrown tree holes ☐ Mounds ☐ Gilgai ☐ Islands  
☐ Variable shorelines ☐ Partially buried debris ☐ Debris jams ☐ Plant hummocks/roots ☐ Other: \_\_\_\_\_ **Score: 2**

**Edge Complexity – Confirm in office review. See figure in section 2.3.4.2 to evaluate wetland-to-upland boundary.**

Variability: ☒ High ☐ Moderate ☐ Low ☒ None Edge (feet) to Area (square feet) ratio: 0.002 **Score: 1**

**Physical Habitat Richness – See definitions and table in section 2.3.4.3 for habitat types applicable to each wetland type.**

Label of habitat types qualifying as present in WAA: B, C, E, K, L, M, N, O, P, R Total: 10 **Score: 4**

**BIOTIC STRUCTURE****Plant Strata – Use applicable wetland delineation regional supplement and data from determination data form(s).**

Number of plant strata: ☒ ≥ 4 ☐ 3 ☐ 2 ☐ 1 ☐ 0 **Score: 4**

**Species Richness – Use data from determination data form(s) to count species with 5% or more relative cover in a stratum.**

Number of species across all strata and determination data forms (not counting a species more than once): 8 **Score: 3**

**Non-Native/Invasive Infestation – Use data from determination data form(s). See tables in section 2.3.5.3 for examples.**

Average total relative cover of non-native/invasive species across all strata and determination data forms: 0 % **Score: 4**

**Interspersion – Confirm in office review. Use figure in section 2.3.5.4 to determine the degree of interspersion of plant zones.**

Degree of horizontal/plan view interspersion: ☐ High ☐ Moderate ☐ Low ☒ None **Score: 1**

**Strata Overlap – Use strata defined in plant strata metric using applicable regional supplement. See figures in section 2.3.5.5.**

High overlap (≥ 3 strata overlapping): 50 % of WAA Moderate overlap (2 strata overlapping): 30 % of WAA  
 Herbaceous species/dense litter overlap (only in portion where there are no other strata overlapping): \_\_\_\_\_ % of WAA  
 Total percentage of WAA with some form of overlap (if more than one present): 80 % of WAA **Score: 3**

**Herbaceous Cover – Estimate for entire WAA.**

Total cover of emergent and submergent plants: ☐ > 75% ☐ 51–75% ☐ 26–50% ☒ ≤ 25% **Score: 1**

**Vegetation Alterations – Unnatural (human-caused) stressors. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Disking R/P ☐ Mowing/shredding R/P ☒ Logging R/P  
☐ Cutting R/P ☐ Trampling R/P ☐ Herbicide treatment R/P ☐ Herbivory R/P ☐ Disease R/P ☐ Chemical spill R/P  
☐ Pollution R/P ☐ Feral hog rooting R/P ☐ Woody debris removal R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent vegetation alteration: \_\_\_\_\_ % Severity of alteration: ☐ High ☐ Low  
 Percent of WAA with past vegetation alteration: 100 % Degree of recovery: ☐ Complete ☐ High ☒ Moderate ☐ Low  
☐ Alteration to improve wetland (degree of natural community recovery): \_\_\_\_\_ **Score: 2**



**TXRAM WETLAND FINAL SCORING SHEET**

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☐ Mitigation/Conservation  
 Wetland ID/Name: Forest WAA No.: 4 Size: 240 ac Date: 8/22/13 Evaluator(s): M Forbes  
 Wetland Type: Riverine Ecoregion: TX Blackland prairie Delineation Performed: ☒ Previously ☐ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

Notes: \_\_\_\_\_

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Landscape	Connectivity	3	Sum of metric scores / 8 x 20	15.5
	Buffer	3.2		
Hydrology	Water source	3	Sum of metric scores / 12 x 20	15.0
	Hydroperiod	3		
	Hydrologic flow	3		
Soils	Organic matter	2	Sum of metric scores / 12 x 20	16.67
	Sedimentation	4		
	Soil modification	4		
Physical Structure	Topographic complexity	2	Sum of metric scores / 12 x 20	11.67
	Edge complexity	1		
	Physical habitat richness	4		
Biotic Structure	Plant strata	4	Sum of metric scores / 28 x 20	12.86
	Species richness	3		
	Non-native/invasive infestation	4		
	Interspersion	1		
	Strata overlap	3		
	Herbaceous cover	1		
	Vegetation alterations	2		
Sum of core element scores = overall TXRAM wetland score				71.7
Additional points for unique resources = overall TXRAM wetland score x 0.10 if: <input type="checkbox"/> Area of Caddo Lake designated a "Wetland of International Importance" under the Ramsar Convention <input type="checkbox"/> Bald cypress – water tupelo swamp <input type="checkbox"/> Pitcher plant bog <input type="checkbox"/> Spring				0
Additional points for limited habitats = overall TXRAM wetland score x 0.05 if: <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM wetland score and additional points = <b>total overall TXRAM wetland score</b>				71.7

**Representative Site Photograph:**

## WETLAND REF 5: REFERENCE FOR DEPRESSIONAL WETLANDS

Version 1.0 - Final Draft

## TXRAM WETLAND DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Wetland ID/Name: Pond North WAA No.: REF 5 Size: 0.25 ac Date: 7/16/13 Evaluator(s): M Forbes, K Ward  
 Wetland Type: Depressional Ecoregion: TX Blackland Prairie Delineation Performed: ☐ Previously ☒ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☐ Yes ☐ No

## Notes:

Wetland fringe around shallow pond.

## LANDSCAPE

**Connectivity – Confirm in office review. See figures in section 2.3.1.1 for examples.**Notes on any barriers or alterations that prevent connectivity: levee along western-southwestern side, upland to southeastAquatic resources within 1,000 feet of WAA to which wetland connects (including number for other considerations): 3 Score: 2**Buffer – Evaluate to 500 feet from WAA boundary. Confirm in office review. See figures in section 2.3.1.2 for examples.**

Buffer Type/Description	Score (See Narratives)	Percentage	Subtotal
1. Non-native pasture	2	50	1
2. Forest	3	30	0.9
3. Pond	-	10	0
4. Wetland depressional	3	10	.03
5.			

Score: 2.2

## HYDROLOGY

**Water Source – Degree of natural or unnatural/artificial influence. Confirm in office review for watershed.**Natural: ☒ Precipitation ☐ Groundwater ☒ Overbank flow/stream discharge ☒ Overland flow ☐ Beaver activity ☐ Other: \_\_\_\_\_Unnatural/Manipulated: ☒ Impoundment ☒ Outfall ☐ Irrigation/pumping ☐ Other artificial influence or control: \_\_\_\_\_Watershed: ☐ Development ☐ Irrigated agriculture ☐ Wastewater treatment plant ☒ Impoundment ☒ Other: ag and pastureDegree of artificial influence/control: ☐ Complete ☐ High ☒ Low ☐ NoneWetland created/restored/enhanced: ☒ Sustainable/replicates natural ☐ Controlled Score: 3**Hydroperiod – Variability and recent alteration of the duration, frequency, and magnitude of inundation/saturation.**

Evaluate the hydroperiod including natural variation: \_\_\_\_\_

Direct evidence of alteration: Natural: ☐ Log-jam ☐ Channel migration ☐ Other: \_\_\_\_\_Human: ☐ Diversions ☐ Ditches ☒ Levees ☒ Impoundments ☐ Other: \_\_\_\_\_Riverine only: ☐ Recent channel in-stability/dis-equilibrium (☐ Degradation or ☐ Aggradation)Indirect evidence of alteration: ☐ Wetland plant stress: \_\_\_\_\_ ☐ Plant morphology: \_\_\_\_\_☐ Upland species encroachment: \_\_\_\_\_ ☐ Plant Community: \_\_\_\_\_ ☐ Soil: \_\_\_\_\_Change/Alteration of hydroperiod: ☐ None ☐ Due to natural events ☒ Human influences (☒ Slight or ☐ High)Degree hydroperiod of wetland created/restored/enhanced replicates natural patterns: highLacustrine fringe on human impoundment: ☐ High variability ☐ Low variability ☐ Recent changes to hydroperiod Score: 3**Hydrologic Flow – Movement of water to or from surrounding area and openness to water moving through the WAA.**Flow: ☐ Inlets: \_\_\_\_\_ ☒ Outlets: 1 ☐ Signs of water movement to or from WAA: \_\_\_\_\_Restrictions: ☒ Levee ☐ Berm/dam ☐ Diversion ☐ Other: \_\_\_\_\_High flowthrough: ☐ Floodplain ☐ Drift deposits ☐ Drainage patterns ☐ Sediment deposits ☐ Other: \_\_\_\_\_Low flowthrough: ☐ High landscape position ☐ Stagnant water ☒ Closed contours ☐ Other: \_\_\_\_\_ Score: 3

## SOILS

**Organic Matter – Use data and indicators from wetland determination data form(s) based on applicable regional supplement.**☐ High (organic soil or indicator A1, A2, A3)☐ Moderate (indicator A9, S1, F1 in AW or A9, S1, S2, F1 in GP or A6, A7, A9, S7, F13 in AGCP)☐ Low (indicated by thin organic or organic-mineral layer) ☒ None observable in surface layer as described herein Score: 1



**Sedimentation – Deposition of excess sediment due to human actions. Confirm in office review for landscape.**

Landscape with stress that could lead to excess sedimentation? ☐ Yes ☒ No Landscape position: ☐ High ☒ Low  
 Magnitude of recent runoff/flooding events: ☐ High ☒ Low Percent of WAA with excess sediment deposition: \_\_\_\_\_  
☐ Sand deposits: \_\_\_\_\_% of area, \_\_\_\_\_ average thickness ☐ Silt/Clay deposits: \_\_\_\_\_% of area, \_\_\_\_\_ average thickness  
 Lacustrine fringe only: ☐ Upper end of impoundment ☐ Degrades wetland ☐ Contributes to wetland processes **Score: 4**

**Soil Modification – Physical changes by human activities. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Farming R/P ☐ Logging R/P ☐ Mining R/P ☐ Filling R/P  
☒ Grading R/P ☐ Dredging R/P ☐ Off-road vehicles R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent soil modification: \_\_\_\_\_% Degree of modification: ☐ High ☐ Low  
 Indicators of past modification: ☐ High bulk density ☐ Low organic matter ☐ Lack of soil structure ☐ Lack of horizons ☐ Hardpan  
☐ Dramatic change in texture/color ☐ Heterogeneous mixture ☒ Other: none  
 Indicators of recovery: ☐ Organic matter ☐ Structure ☐ Horizons ☐ Mottling ☐ Hydric soil ☐ Other: \_\_\_\_\_  
 Percent of WAA with past modification: 100% Recovery: ☒ Complete ☐ High ☐ Moderate ☐ Low ☐ None **Score: 4**

**PHYSICAL STRUCTURE****Topographic Complexity – See figures in section 2.3.4.1. Record % micro-topography and % WAA for each elevation gradient.**

Elevation gradients (EG): 2 Evidence: ☒ Plant assemblages ☐ Level of saturation/inundation ☐ Path of water flow ☐ Slope  
 Micro-topography: 10% of WAA (By EG: \_\_\_\_\_)  
 Types: ☒ Depressions ☒ Pools ☐ Burrows ☐ Swales ☐ Wind-thrown tree holes ☐ Mounds ☐ Gilgai ☒ Islands  
☐ Variable shorelines ☐ Partially buried debris ☐ Debris jams ☒ Plant hummocks/roots ☐ Other: \_\_\_\_\_ **Score: 2**

**Edge Complexity – Confirm in office review. See figure in section 2.3.4.2 to evaluate wetland-to-upland boundary.**

Variability: ☐ High ☐ Moderate ☒ Low ☐ None Edge (feet) to Area (square feet) ratio: 0.05 **Score: 1**

**Physical Habitat Richness – See definitions and table in section 2.3.4.3 for habitat types applicable to each wetland type.**

Label of habitat types qualifying as present in WAA: A, D, J, K, M, Q Total: 6 **Score: 3**

**BIOTIC STRUCTURE****Plant Strata – Use applicable wetland delineation regional supplement and data from determination data form(s).**

Number of plant strata: ☐ ≥ 4 ☐ 3 ☐ 2 ☐ 1 ☐ 0 **Score: 3**

**Species Richness – Use data from determination data form(s) to count species with 5% or more relative cover in a stratum.**

Number of species across all strata and determination data forms (not counting a species more than once): 8 **Score: 4**

**Non-Native/Invasive Infestation – Use data from determination data form(s). See tables in section 2.3.5.3 for examples.**

Average total relative cover of non-native/invasive species across all strata and determination data forms: 0% **Score: 4**

**Interspersion – Confirm in office review. Use figure in section 2.3.5.4 to determine the degree of interspersion of plant zones.**

Degree of horizontal/plan view interspersion: ☐ High ☐ Moderate ☒ Low ☐ None **Score: 2**

**Strata Overlap – Use strata defined in plant strata metric using applicable regional supplement. See figures in section 2.3.5.5.**

High overlap (≥ 3 strata overlapping): 5% of WAA Moderate overlap (2 strata overlapping): 15% of WAA  
 Herbaceous species/dense litter overlap (only in portion where there are no other strata overlapping): 5% of WAA  
 Total percentage of WAA with some form of overlap (if more than one present): 25% of WAA **Score: 3**

**Herbaceous Cover – Estimate for entire WAA.**

Total cover of emergent and submergent plants: ☐ > 75% ☒ 51–75% ☐ 26–50% ☐ ≤ 25% **Score: 3**

**Vegetation Alterations – Unnatural (human-caused) stressors. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Disking R/P ☐ Mowing/shredding R/P ☐ Logging R/P  
☐ Cutting R/P ☐ Trampling R/P ☐ Herbicide treatment R/P ☐ Herbivory R/P ☐ Disease R/P ☐ Chemical spill R/P  
☐ Pollution R/P ☐ Feral hog rooting R/P ☐ Woody debris removal R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent vegetation alteration: 0% Severity of alteration: ☐ High ☐ Low  
 Percent of WAA with past vegetation alteration: 0% Degree of recovery: ☐ Complete ☐ High ☐ Moderate ☐ Low  
☒ Alteration to improve wetland (degree of natural community recovery): planted native species **Score: 4**

# WETLAND REF 5: REFERENCE FOR DEPRESSIONAL WETLANDS

Version 1.0 – Final Draft

## TXRAM WETLAND FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☐ Mitigation/Conservation  
Wetland ID/Name: Pond North WAA No.: REF5 Size: 0.25 ac Date: 7/16/13 Evaluator(s): MF, KW  
Wetland Type: Depressional Ecoregion: TX Blackland Prairie Delineation Performed: ☐ Previously ☒ Currently  
Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
Notes: \_\_\_\_\_

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Landscape	Connectivity	2	Sum of metric scores / 8 x 20	10.5
	Buffer	2.2		
Hydrology	Water source	3	Sum of metric scores / 12 x 20	15.0
	Hydroperiod	3		
	Hydrologic flow	3		
Soils	Organic matter	1	Sum of metric scores / 12 x 20	15.0
	Sedimentation	4		
	Soil modification	4		
Physical Structure	Topographic complexity	2	Sum of metric scores / 12 x 20	10.0
	Edge complexity	1		
	Physical habitat richness	3		
Biotic Structure	Plant strata	3	Sum of metric scores / 28 x 20	16.4
	Species richness	4		
	Non-native/invasive infestation	4		
	Interspersion	2		
	Strata overlap	3		
	Herbaceous cover	3		
	Vegetation alterations	4		
Sum of core element scores = overall TXRAM wetland score				66.9
Additional points for unique resources = overall TXRAM wetland score x 0.10 if: <input type="checkbox"/> Area of Caddo Lake designated a "Wetland of International Importance" under the Ramsar Convention <input type="checkbox"/> Bald cypress – water tupelo swamp <input type="checkbox"/> Pitcher plant bog <input type="checkbox"/> Spring				0
Additional points for limited habitats = overall TXRAM wetland score x 0.05 if: <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM wetland score and additional points = total overall TXRAM wetland score				66.9

### Representative Site Photograph:



## WETLANDS REF 6: REFERENCE FOR RIVERINE WETLANDS

Version 1.0 - Final Draft

## TXRAM WETLAND DATA SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
 Wetland ID/Name: LLELA WAA No.: REF 6 Size: 120 ac Date: 8/28/13 Evaluator(s): M Forbes  
 Wetland Type: Riverine Ecoregion: TX Blackland Prairie Delineation Performed: ☐ Previously ☐ Currently  
 Aerial Photo Date and Source: GE 2012 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No

Notes: LLELA flood plain wetland 33.062673, -96.970747  
below Lake Lewisville dam along Trinity River

## LANDSCAPE

**Connectivity – Confirm in office review. See figures in section 2.3.1.1 for examples.**

Notes on any barriers or alterations that prevent connectivity: next to dam levee

Aquatic resources within 1,000 feet of WAA to which wetland connects (including number for other considerations): 4 Score: 3

**Buffer – Evaluate to 500 feet from WAA boundary. Confirm in office review. See figures in section 2.3.1.2 for examples.**

Buffer Type/Description	Score (See Narratives)	Percentage	Subtotal
1. Forest	4	40	1.6
2. Grassland, Native	3	30	0.9
3. Scrub/Shrub	3	10	0.3
4. Road/Dam	0	20	0
5.			

Score: 2.8

## HYDROLOGY

**Water Source – Degree of natural or unnatural/artificial influence. Confirm in office review for watershed.**

Natural: ☒ Precipitation ☒ Groundwater ☒ Overbank flow/stream discharge ☒ Overland flow ☐ Beaver activity ☐ Other: \_\_\_\_\_

Unnatural/Manipulated: ☐ Impoundment ☐ Outfall ☐ Irrigation/pumping ☒ Other artificial influence or control: dam outlet

Watershed: ☐ Development ☐ Irrigated agriculture ☐ Wastewater treatment plant ☐ Impoundment ☐ Other: mixed land use

Degree of artificial influence/control: ☐ Complete ☐ High ☒ Low ☐ None

Wetland created/restored/enhanced: ☐ Sustainable/replicates natural ☐ Controlled

Score: 3

**Hydroperiod – Variability and recent alteration of the duration, frequency, and magnitude of inundation/saturation.**

Evaluate the hydroperiod including natural variation: \_\_\_\_\_

Direct evidence of alteration: Natural: ☐ Log-jam ☒ Channel migration ☐ Other: \_\_\_\_\_

Human: ☐ Diversions ☐ Ditches ☐ Levees ☐ Impoundments ☐ Other: \_\_\_\_\_

Riverine only: ☐ Recent channel in-stability/dis-equilibrium (☐ Degradation or ☐ Aggradation)

Indirect evidence of alteration: ☐ Wetland plant stress: \_\_\_\_\_ ☐ Plant morphology: \_\_\_\_\_

☐ Upland species encroachment: \_\_\_\_\_ ☐ Plant Community: \_\_\_\_\_ ☐ Soil: \_\_\_\_\_

Change/Alteration of hydroperiod: ☒ None ☐ Due to natural events ☐ Human influences (☐ Slight or ☐ High)

Degree hydroperiod of wetland created/restored/enhanced replicates natural patterns: \_\_\_\_\_

Lacustrine fringe on human impoundment: ☐ High variability ☐ Low variability ☐ Recent changes to hydroperiod Score: 4

**Hydrologic Flow – Movement of water to or from surrounding area and openness to water moving through the WAA.**

Flow: ☐ Inlets: \_\_\_\_\_ ☐ Outlets: \_\_\_\_\_ ☐ Signs of water movement to or from WAA: \_\_\_\_\_

Restrictions: ☐ Levee ☒ Berm/dam ☐ Diversion ☐ Other: \_\_\_\_\_

High flowthrough: ☒ Floodplain ☐ Drift deposits ☐ Drainage patterns ☒ Sediment deposits ☒ Other: water marks trees

Low flowthrough: ☐ High landscape position ☐ Stagnant water ☐ Closed contours ☐ Other: \_\_\_\_\_ Score: 4

## SOILS

**Organic Matter – Use data and indicators from wetland determination data form(s) based on applicable regional supplement.**

☐ High (organic soil or indicator A1, A2, A3)

☐ Moderate (indicator A9, S1, F1 in AW or A9, S1, S2, F1 in GP or A6, A7, A9, S7, F13 in AGCP)

☒ Low (indicated by thin organic or organic-mineral layer) ☐ None observable in surface layer as described herein Score: 2

**Sedimentation – Deposition of excess sediment due to human actions. Confirm in office review for landscape.**

Landscape with stress that could lead to excess sedimentation? ☐ Yes ☒ No Landscape position: ☐ High ☒ Low  
 Magnitude of recent runoff/flooding events: ☒ High ☐ Low Percent of WAA with excess sediment deposition: 0  
☐ Sand deposits: 0 % of area, \_\_\_\_\_ average thickness ☐ Silt/Clay deposits: 0 % of area, \_\_\_\_\_ average thickness  
 Lacustrine fringe only: ☐ Upper end of impoundment ☐ Degrades wetland ☐ Contributes to wetland processes **Score: 4**

**Soil Modification – Physical changes by human activities. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☐ Farming R/P ☐ Logging R/P ☐ Mining R/P ☐ Filling R/P  
☐ Grading R/P ☐ Dredging R/P ☐ Off-road vehicles R/P ☐ Other R/P: \_\_\_\_\_  
 Percent of WAA with recent soil modification: 0 % Degree of modification: ☐ High ☐ Low  
 Indicators of past modification: ☐ High bulk density ☒ Low organic matter ☐ Lack of soil structure ☐ Lack of horizons ☐ Hardpan  
☐ Dramatic change in texture/color ☐ Heterogeneous mixture ☐ Other: \_\_\_\_\_  
 Indicators of recovery: ☒ Organic matter ☐ Structure ☐ Horizons ☒ Mottling ☐ Hydric soil ☐ Other: \_\_\_\_\_  
 Percent of WAA with past modification: \_\_\_\_\_ % Recovery: ☐ Complete ☐ High ☐ Moderate ☐ Low ☐ None **Score: 4**

**PHYSICAL STRUCTURE****Topographic Complexity – See figures in section 2.3.4.1. Record % micro-topography and % WAA for each elevation gradient.**

Elevation gradients (EG): 3 Evidence: ☒ Plant assemblages ☒ Level of saturation/inundation ☐ Path of water flow ☐ Slope  
 Micro-topography: 12 % of WAA (By EG: EG1=15% MT\* 50% WAA, EG2=20% MT\* 20% WAA, EG3=15% MT\* 5% WAA)  
 Types: ☒ Depressions ☒ Pools ☐ Burrows ☒ Swales ☐ Wind-thrown tree holes ☒ Mounds ☐ Gilgai ☐ Islands  
☒ Variable shorelines ☐ Partially buried debris ☐ Debris jams ☒ Plant hummocks/roots ☐ Other: \_\_\_\_\_ **Score: 3**

**Edge Complexity – Confirm in office review. See figure in section 2.3.4.2 to evaluate wetland-to-upland boundary.**

Variability: ☐ High ☐ Moderate ☒ Low ☐ None Edge (feet) to Area (square feet) ratio: 0.002 **Score: 1**

**Physical Habitat Richness – See definitions and table in section 2.3.4.3 for habitat types applicable to each wetland type.**

Label of habitat types qualifying as present in WAA: B, C, D, E, L, M, N, O, P, R Total: 10 **Score: 4**

**BIOTIC STRUCTURE****Plant Strata – Use applicable wetland delineation regional supplement and data from determination data form(s).**

Number of plant strata: ☒ ≥ 4 ☐ 3 ☐ 2 ☐ 1 ☐ 0 **Score: 4**

**Species Richness – Use data from determination data form(s) to count species with 5% or more relative cover in a stratum.**

Number of species across all strata and determination data forms (not counting a species more than once): 12 **Score: 4**

**Non-Native/Invasive Infestation – Use data from determination data form(s). See tables in section 2.3.5.3 for examples.**

Average total relative cover of non-native/invasive species across all strata and determination data forms: 0 % **Score: 4**

**Interspersion – Confirm in office review. Use figure in section 2.3.5.4 to determine the degree of interspersion of plant zones.**

Degree of horizontal/plan view interspersion: ☐ High ☐ Moderate ☒ Low ☐ None **Score: 1**

**Strata Overlap – Use strata defined in plant strata metric using applicable regional supplement. See figures in section 2.3.5.5.**

High overlap (≥ 3 strata overlapping): 40 % of WAA Moderate overlap (2 strata overlapping): 25\* % of WAA  
 Herbaceous species/dense litter overlap (only in portion where there are no other strata overlapping): 0 % of WAA  
 Total percentage of WAA with some form of overlap (if more than one present): 70 % of WAA **Score: 3**

**Herbaceous Cover – Estimate for entire WAA.**

Total cover of emergent and submergent plants: ☐ > 75% ☐ 51–75% ☐ 26–50% ☒ ≤ 25% **Score: 1**

**Vegetation Alterations – Unnatural (human-caused) stressors. Confirm in office review for past.**

Type (Check those applicable and circle R for recent or P for past): ☒ Disking R(P) ☐ Mowing/shredding R/P ☒ Logging R(P)  
☐ Cutting R/P ☐ Trampling R/P ☐ Herbicide treatment R/P ☐ Herbivory R/P ☐ Disease R/P ☐ Chemical spill R/P  
☐ Pollution R/P ☐ Feral hog rooting R/P ☐ Woody debris removal R/P ☒ Other R(P): construction of dam 1940's-50's  
 Percent of WAA with recent vegetation alteration: 0 % Severity of alteration: ☐ High ☐ Low  
 Percent of WAA with past vegetation alteration: 80 % Degree of recovery: ☐ Complete ☒ High ☐ Moderate ☐ Low  
☒ Alteration to improve wetland (degree of natural community recovery): planted native species **Score: 3**



# WETLANDS REF 6: REFERENCE FOR RIVERINE WETLANDS

## TXRAM WETLAND FINAL SCORING SHEET

Project/Site Name/No.: Rockin K Project Type: ☐ Fill/Impact ☐ Linear ☐ Non-linear ☒ Mitigation/Conservation  
Wetland ID/Name: LLELA WAA No.: REF 6 Size: 120 ac Date: 8/28/13 Evaluator(s): M Forbes  
Wetland Type: Riverine Ecoregion: TX Blackland prairie Delineation Performed: ☐ Previously ☐ Currently  
Aerial Photo Date and Source: GE 2009 Site Photos: \_\_\_\_\_ Representative: ☒ Yes ☐ No  
Notes: \* achievable with planned restoration

Core Element	Metric	Metric Score	Core Element Score Calculation	Core Element Score
Landscape	Connectivity	3	Sum of metric scores / 8 x 20	14.5
	Buffer	2.8		
Hydrology	Water source	3	Sum of metric scores / 12 x 20	18.33
	Hydroperiod	4		
	Hydrologic flow	4		
Soils	Organic matter	2	Sum of metric scores / 12 x 20	16.67
	Sedimentation	4		
	Soil modification	4		
Physical Structure	Topographic complexity	3	Sum of metric scores / 12 x 20	13.33
	Edge complexity	1		
	Physical habitat richness	4		
Biotic Structure	Plant strata	4	Sum of metric scores / 28 x 20	14.3
	Species richness	4		
	Non-native/invasive infestation	4		
	Interspersion	1		
	Strata overlap	3		
	Herbaceous cover	1		
	Vegetation alterations	3		
	Sum of core element scores = overall TXRAM wetland score			
Additional points for unique resources = overall TXRAM wetland score x 0.10 if: <input type="checkbox"/> Area of Caddo Lake designated a "Wetland of International Importance" under the Ramsar Convention <input type="checkbox"/> Bald cypress – water tupelo swamp <input type="checkbox"/> Pitcher plant bog <input type="checkbox"/> Spring				0
Additional points for limited habitats = overall TXRAM wetland score x 0.05 if: <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input checked="" type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				1.93
Sum of overall TXRAM wetland score and additional points = total overall TXRAM wetland score				79.05

### Representative Site Photograph:





## **Attachment F. Credit Evaluation**

Table F-1. Summary of TXRAM Scores and Mitigation Credits for Streams and Riparian Buffers, Rockin' K on Chambers Creek Mitigation Bank.

SAR No.	Stream Name	Length (ft)	Channel Condition		Channel Condition Total	In-Stream Condition		Hydrologic Condition		Primary Riparian Buffer Condition		Sub-Total Score	Add Points (Max)	Total	Percent In channel	In-channel Credits	Primary Riparian Buffer Credits	SUB-TOTAL	Secondary Buffer Credits		Tertiary Buffer Credits		Total Expanded Riparian Buffer Credits	Total Riparian Buffer Credits	TOTAL CREDITS																	
			Flats/Plain Connect	Bank Condition		Sediment Deposit	Substrate Comp.	In-stream Habitat	In-stream Condition Total	Flow Regime	Channel Flow Status								Hydrologic Condition Total	Left Bank	Right Bank	Left Bank				Right Bank	Left Bank	Right Bank														
PERENNIAL STREAMS																																										
Existing Condition																																										
1	Chambers	2000	3	1	4	13.3	2	1	7.5	3	4	21.9	4.0	3.8	19.5	62.2	0.0	62.2	NA	NA	See Table F-2 for existing condition		NA	NA	NA																	
2	Chambers	990	3	1	3	11.7	2	1	7.5	3	2	15.6	4.0	3.8	19.5	54.3	0.0	54.3	NA	NA	-		NA	NA	NA																	
Reference Stream																																										
REF1	Richland		4	5	5	23.3	2	5	17.5	3	4	21.9	5	5	25.0	87.7	4.4	92.1	NA	NA	See Table F-2 for proposed condition		NA	NA	NA																	
Proposed Condition <sup>a</sup> :																																										
1	LIFT	2000	1	4	0	8.3	0	4	10.0	0	0	0.0	1	1.2	5.5	23.8	4.3	28.1	77%	562.71	0.00	5.00	6.50	34.50	NA																	
2	LIFT	990	1	4	1	10.0	0	4	10.0	0	2	6.3	1	1.2	5.5	31.8	4.3	36.1	83%	356.92	0.00	4.95	2.48	14.85	NA																	
TOTAL PERENNIAL STREAMS (CHAMBERS)																		919.62	0.00	919.62	14.95	17.95	7.48	8.98	49.35	49.35	968.97															
INTERMITTENT STREAMS																																										
Existing Condition																																										
3	Charm	2568	3.0	4.0	5.0	20.0	1.0	4.0	12.5	0.0	0.0	0.0	3.0	1.4	11.0	43.5	0.0	43.5	NA	NA	-		NA	NA	NA																	
4	Charm	3308	3.0	4.0	5.0	20.0	1.0	3.0	10.0	0.0	0.0	0.0	2.7	2.6	13.3	43.3	0.0	43.3	NA	NA	See Table F-2 for existing condition		NA	NA	NA																	
5	Charm	1105	4.0	5.0	5.0	23.3	1.0	4.0	12.5	1.0	1.0	6.3	2.5	2.5	12.5	54.6	0.0	54.6	NA	NA	-		NA	NA	NA																	
Reference Stream																																										
REF2	Cummins		3.0	5.0	5.0	21.7	2.0	5.0	17.5	2.0	3.0	15.6	5.0	5.0	25.0	79.8	4.0	83.8	NA	NA	See Table F-2 for proposed condition		NA	NA	NA																	
Proposed Condition <sup>b,c,d,f</sup> :																																										
3	Charm	2568	1.0	1.0	0.0	3.3	0.0	1.0	2.5	2.0	2.0	12.5	2.0	3.6	14.0	32.3	1.6	34.0	57%	871.84	0.00	7.38	25.68	99.19	NA																	
4	Charm	3308	1.0	1.0	0.0	3.3	0.0	2.0	5.0	2.0	2.0	12.5	2.3	2.4	11.8	32.6	1.6	34.2	64%	1131.75	0.00	28.12	33.08	158.78	NA																	
5	Charm	1105	0.0	0.0	0.0	0.0	0.0	1.0	2.5	1.0	1.0	6.3	2.5	2.5	12.5	21.3	1.1	22.3	41%	246.55	0.00	0.00	0.00	0.00	246.55	NA																
TOTAL CHARM																		2003.59	246.55	2250.14	56.12	107.60	35.50	58.76	257.97	504.53	2508.11															
Existing Condition																																										
No SAR	SF Charm	7759	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	NA	0.00	See Table F-2 for existing condition		NA	NA	NA																	
Reference Stream																																										
REF3	Enhouse	4722	5	4	5	23.3	1	5	15.0	2	1	9.4	3.7	3.9	19.0	66.7	0.0	66.7	NA	NA	See Table F-2 for proposed condition		NA	NA	NA																	
Proposed Lift																																										
7759	SF Charm		5	4	5	23.3	1	5	15.0	2	1	9.4	5	5	25.0	72.7	3.6	76.3	66%	5923.51	0.00	96.99	96.99	581.93	581.93	NA																
TOTAL SOUTH FORK CHARM																		5923.51	0.00	5923.51	193.98	193.98	96.99	96.99	581.93	581.93	6505.44															
Existing Condition																																										
No SAR	Rockin Cr	6586	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	NA	0.00	See Table F-2 for existing condition		NA	NA	NA																	
Reference Stream																																										
REF3	Enhouse	4722	5	4	5	23.3	1	5	15.0	2	1	9.4	3.7	3.9	19.0	66.7	0.0	66.7	NA	NA	See Table F-2 for proposed condition		NA	NA	NA																	
Proposed Condition <sup>a,f</sup> :																																										
6586	Rockin Cr		5	4	5	23.3	1	5	15.0	2	1	9.4	5	5	25.0	72.7	3.6	76.3	66%	5028.00	0.00	82.33	82.33	493.95	493.95	NA																
TOTAL ROCKIN CREEK																		5028.00	0.00	5028.00	164.65	164.65	82.33	82.33	493.95	493.95	5521.95															
Existing Condition																																										
6	Ditch	2800	2	5	5	20.0	1.0	3.0	10.0	0	0	0.0	1.1	1.6	6.75	36.8	0.0	36.8	NA	NA	-		NA	NA	NA																	
7	Ditch	2051	2	5	5	20.0	1	4	12.5	0	0	0.0	1.5	1.5	7.5	40.0	0.0	40.0	NA	NA	-		NA	NA	NA																	
8	Ditch	2420	4	5	5	23.3	1	2	7.5	0	0	0.0	1.2	1.2	6.0	36.8	0.0	36.8	NA	NA	-		NA	NA	NA																	
TOTAL DITCH <sup>a</sup>																		-2740.77	0.00	-2740.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL INTERMITTENT STREAMS																		10214.33	246.55	10460.88	0.00	0.00	0.00	0.00	0.00	1333.85	1580.40	11794.73														

SAR No.			Stream Name		Length (ft.)	Channel Condition		In-Stream Condition		Hydrologic Condition		Primary Riparian Buffer Condition		Primary Riparian Buffer Credits		Secondary Buffer Credits		Tertiary Buffer Credits		Total Expanded Riparian Buffer Credits		Total Riparian Buffer Credits		TOTAL CREDITS																																																																																																																																																																																																																																																																							
Floodplain		Bank Condition	Sediment Deposit		Channel Condition Total	Substrate Comp.	Instream Condition	Flow Regime	Channel Flow Status	Hydrologic Condition Total	Left Bank		Right Bank		Percent In Channel	Sub-TOTAL	Left Bank	Right Bank	Left Bank	Right Bank	Total	Left Bank	Right Bank	TOTAL																																																																																																																																																																																																																																																																							
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9	S3	1033	2	1	5	13.3	1	0	2.5	0	0.0	2.9	2.9	14.5	30.3	0.0	30.3	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
11	S3b	1130	3	3	5	18.3	1	0	2.5	0	0.0	2.0	2.0	10.0	30.8	0.0	30.8	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
12	S3c	722	3	3	5	18.3	1	0	2.5	0	0.0	2.6	2.6	13.0	33.8	0.0	33.8	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
13	S3d	428	3	2	5	16.7	1	0	2.5	0	0.0	2.0	2.0	10.0	29.2	0.0	29.2	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
14	S4a	195	4	5	5	23.3	1	0	2.5	0	0.0	1.2	1.2	6.0	31.8	0.0	31.8	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
15	S4b	255	3	1	5	15.0	1	0	2.5	0	0.0	4.0	4.0	20.0	37.5	0.0	37.5	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
16	S4c	334	2	1	5	13.3	1	0	2.5	0	0.0	2.8	2.8	14.0	29.8	0.0	29.8	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
16a	S5	157	2	1	5	13.3	1	0	2.5	0	0.0	2.9	2.9	14.5	30.3	0.0	30.3	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
17	S6	174	4	5	5	23.3	1	0	2.5	0	0.0	2.8	2.8	14.0	39.8	0.0	39.8	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
18	S8	1294	4	4	5	21.7	1	0	2.5	0	0.0	3.0	3.0	15.0	39.2	0.0	39.2	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
19	S9	1664	4	5	5	23.3	1	0	2.5	0	0.0	3.0	3.0	15.0	40.8	0.0	40.8	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
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REF4	S3b up	200	5	5	5	25.0	1	0	2.5	0	0.0	3.0	3.0	15.0	42.5	0.0	42.5	NA	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
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9	S3	1033	3	4	0	11.7	0	0	0.0	0	0.0	2.1	2.1	10.50	22.2	1.1	23.3	53%	240.43	0.00	240.43	20.09	20.45	10.05	10.23																																																																																																																																																																																																																																																																						
11	S3b	1130	2	2	0	6.7	0	0	0.0	0	0.0	3.0	3.0	15.00	21.7	1.1	22.8	31%	257.08	0.00	257.08	Does not qualify for expanded buffer credit	Does not qualify for expanded buffer credit	Does not qualify for expanded buffer credit	Does not qualify for expanded buffer credit																																																																																																																																																																																																																																																																						
12	S3c	722	2	2	0	6.7	0	0	0.0	0	0.0	2.4	2.4	12.00	18.7	0.9	19.6	36%	141.51	0.00	141.51	3.06	2.81	2.04	2.30																																																																																																																																																																																																																																																																						
13	S3d	428	2	3	0	8.3	0	0	0.0	0	0.0	3.0	3.0	15.00	23.3	1.2	24.5	36%	104.86	0.00	104.86	3.06	2.81	2.04	2.30																																																																																																																																																																																																																																																																						
14	S4a	195	1	0	0	1.7	0	0	0.0	0	0.0	3.8	3.8	19.00	20.7	1.0	21.7	8%	42.32	0.00	42.32	3.06	2.81	2.04	2.30																																																																																																																																																																																																																																																																						
15	S4b	255	2	4	0	10.0	0	0	0.0	0	0.0	1.0	1.0	5.00	15.0	0.8	15.8	67%	40.16	0.00	40.16	3.06	2.81	2.04	2.30																																																																																																																																																																																																																																																																						
16	S4c	334	3	4	0	11.7	0	0	0.0	0	0.0	2.2	2.2	11.00	22.7	1.1	23.8	51%	79.49	0.00	79.49	5.68	6.01	3.09	3.01																																																																																																																																																																																																																																																																						
16a	S5	157	3	4	0	11.7	0	0	0.0	0	0.0	2.1	2.1	10.50	22.2	1.1	23.3	53%	36.54	0.00	36.54	5.63	5.63	2.81	2.81																																																																																																																																																																																																																																																																						
17	S6	174	1	0	0	1.7	0	0	0.0	0	0.0	2.2	2.2	11.00	12.7	0.6	13.3	13%	23.14	0.00	23.14	Does not qualify for expanded buffer credit	Does not qualify for expanded buffer credit	Does not qualify for expanded buffer credit	Does not qualify for expanded buffer credit																																																																																																																																																																																																																																																																						
18	S8	1294	1	1	0	3.3	0	0	0.0	0	0.0	2.0	2.0	10.00	13.3	0.7	14.0	25%	181.16	0.00	181.16	181.16	181.16	181.16	181.16																																																																																																																																																																																																																																																																						
19	S9	1664	1	0	0	1.7	0	0	0.0	0	0.0	2.0	2.0	10.00	11.7	0.6	12.3	14%	203.84	0.00	203.84	203.84	203.84	203.84	203.84																																																																																																																																																																																																																																																																						
Sub-Total Ephem Enhancement															subtotal	396.63	953.90	1350.53	34.45	34.90	17.99	18.34	105.68	1059.58	1456.21																																																																																																																																																																																																																																																																						
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Reference Stream																																																																																																																																																																																																																																																																																															
REF4	S3b up	200	5	5	5	25.0	1	0	2.5	0	0.0	3.0	3.0	15.0	42.5	0.0	42.5	65%	NA	NA	NA	NA	NA	NA	NA																																																																																																																																																																																																																																																																						
Proposed Condition <sup>e,f</sup> :																																																																																																																																																																																																																																																																																															
Proposed Lift																																																																																																																																																																																																																																																																																															
S1	2550		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	1405.69	0.00	1405.69	63.75	63.75	31.88	31.88																																																																																																																																																																																																																																																																						
S2	1980		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	1091.48	0.00	1091.48	49.50	49.50	24.75	24.75																																																																																																																																																																																																																																																																						
S2a	817		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	450.37	0.00	450.37	20.43	20.43	10.21	10.21																																																																																																																																																																																																																																																																						
S3	3034		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	1672.49	0.00	1672.49	75.85	75.85	37.93	37.93																																																																																																																																																																																																																																																																						
S3a	1440		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	793.80	0.00	793.80	36.00	36.00	18.00	18.00																																																																																																																																																																																																																																																																						
S3b	1117		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	615.75	0.00	615.75	27.93	27.93	13.96	13.96																																																																																																																																																																																																																																																																						
S3c	635		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	350.04	0.00	350.04	15.88	15.88	7.94	7.94																																																																																																																																																																																																																																																																						
S3d	699		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	385.32	0.00	385.32	17.48	17.48	8.74	8.74																																																																																																																																																																																																																																																																						
S3e	1071		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	590.39	0.00	590.39	26.78	26.78	13.39	13.39																																																																																																																																																																																																																																																																						
S4	1047		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	577.16	0.00	577.16	26.18	26.18	13.09	13.09																																																																																																																																																																																																																																																																						
S4a	507		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	279.48	0.00	279.48	12.68	12.68	6.34	6.34																																																																																																																																																																																																																																																																						
S4b	894		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	492.82	0.00	492.82	22.35	22.35	11.18	11.18																																																																																																																																																																																																																																																																						
S4c	225		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	124.03	0.00	124.03	5.63	5.63	2.81	2.81																																																																																																																																																																																																																																																																						
S5	1228		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	676.94	0.00	676.94	30.70	30.70	15.35	15.35																																																																																																																																																																																																																																																																						
S6	1141		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	628.98	0.00	628.98	28.53	28.53	14.26	14.26																																																																																																																																																																																																																																																																						
S7	4086		5.0	5.0	5.0	25.0	1.0	0.0	2.5	0.0	0.0	5.0	5.0	25.0	52.5	2.6	55.1	52%	2252.41	0.00	2252.41	102.15	102.15	51.08	51.08																																																																																																																																																																																																																																																																						
Sub-Total Ephem Restoration															12387.14	561.78	280.89	561.78	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33	1685.33

- NA = Not applicable
- a. Some excess sediment deposition is likely to remain in Chambers Creek channel due to sediment transport from upstream sources that are not part of the RKMBC.
- b. Reference stream is more incised and disconnected from floodplain than expected Charm Creek condition.
- c. Reference stream substrate includes fine gravel and sand. Substrate composition in Charm Creek not expected to change.
- d. Reference stream flows appears to have greater channel coverage than is expected for Charm Creek.
- e. The reference riparian buffer condition (left bank) is more degraded than is expected for the restored buffers.
- f. The reference riparian buffer condition (right bank) is more degraded than is expected for the restored buffers.
- g. Measurement of ditch does not include deed restricted area of 1,860 ft.

**Table F-2. Summary of TXRAM Scores and Mitigation Credits for Expanded Riparian Buffers, Rockin' K on Chambers Creek Mitigation Bank.**

Adjacent Stream					Expanded Riparian Buffer Condition						TXRAM LIFT						CREDITS					
					Secondary			Tertiary			Secondary			Tertiary			Secondary			Tertiary		
BAR No.	SAR	Type	Stream Name	Length (ft)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right				
Proposed Condition <sup>a</sup> :					5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00			
Existing Condition:					4.00	3.70	4.00	4.00	3.70	4.00	1.00	1.30	1.00	1.30	10.00	13.00	5.00	6.50				
1	1	PER	Chambers	2000	4.00	3.70	4.00	4.00	3.70	4.00	1.00	1.30	1.00	1.30	10.00	13.00	5.00	6.50				
2	2	PER	Chambers	990	4.00	4.00	4.00	4.00	4.00	4.00	1.00	1.00	1.00	1.00	4.95	4.95	2.48	2.48				
3	3	INT	Charm	2568	3.85	1.00	3.85	1.00	1.00	1.00	1.15	4.00	1.15	4.00	14.77	51.36	7.38	25.68				
4	4	INT	Charm	3308	2.50	1.60	1.60	1.00	1.00	1.00	2.50	3.40	3.40	4.00	41.35	56.24	28.12	33.08				
5	5	INT	Charm	1105	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	27.63	27.63	13.81	13.81				
	NA	INT	SF Charm	7759	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	193.98	193.98	96.99	96.99				
	NA	INT	Rockin	6586	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	164.65	164.65	82.33	82.33				
	NA	EPH	S1_R	2550	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	63.75	63.75	31.88	31.88				
	NA	EPH	S2_R	1980	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	49.50	49.50	24.75	24.75				
	NA	EPH	S2a_R	817	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	20.43	20.43	10.21	10.21				
6	9	EPH	S3_E	1033	1.11	1.04	1.11	1.04	1.04	1.04	3.89	3.96	3.89	3.96	20.09	20.45	10.05	10.23				
	NA	EPH	S3_R	3034	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	75.85	75.85	37.93	37.93				
	NA	EPH	S3a_R	1440	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	36.00	36.00	18.00	18.00				
	NA	EPH	S3b_R	1117	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	27.93	27.93	13.96	13.96				
	NA	EPH	S3c_R	635	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	15.88	15.88	7.94	7.94				
	NA	EPH	S3d_R	699	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	17.48	17.48	8.74	8.74				
	NA	EPH	S3e_R	1071	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	26.78	26.78	13.39	13.39				
	NA	EPH	S4_R	1047	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	26.18	26.18	13.09	13.09				
	NA	EPH	S4a_R	507	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	12.68	12.68	6.34	6.34				
7	14	EPH	S4b_E	255	2.60	2.80	1.80	1.40	1.40	1.40	2.40	2.20	3.20	3.60	3.06	2.81	2.04	2.30				
	NA	EPH	S4b_R	894	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	22.35	22.35	11.18	11.18				
8	15	EPH	S4c_E	334	1.60	1.40	1.30	1.40	1.40	1.40	3.40	3.60	3.70	3.60	5.68	6.01	3.09	3.01				
	NA	EPH	S4c_R	225	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	5.63	5.63	2.81	2.81				
9	16a	EPH	S5_E	157	1.60	1.40	1.30	1.40	1.40	1.40	3.40	3.60	3.70	3.60	2.67	2.83	1.45	1.41				
	NA	EPH	S5_R	1228	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	30.70	30.70	15.35	15.35				
	NA	EPH	S6_R	1141	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	28.53	28.53	14.26	14.26				
	NA	EPH	S7_R	4086	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	5.00	102.15	102.15	51.08	51.08				

Note:

a. A score of 5.0 is proposed for the RKMB riparian buffers, regardless of the condition of the reference site.

Table F-3. Summary of TXRAM Scores and Mitigation Credits for Wetlands, Rockin' K on Chambers Creek Mitigation Bank.

WAA No.	Wetland Name	Wetland Type	Size (ac)	Landscape Condition		Hydrology Condition		Soils Condition		Physical Structure Condition		Biotic Structure Condition						Sum of Core Elements	Add'l Points Hard Mast	Credits		Total Credits																													
				Connectivity	Buffer	Water Source	Hydroperiod	Hydrology Score	Organic matter	Sedimentation	Soils Score	Physical Complexity		Physical Structure Score	Plant strata	Species richness	Non-native/invasive			Interspersion	Strata overlap		Herbaceous cover	Vegetation alterations																											
												Topo Complexity	Edge complexity					Depres	Riverine																																
Existing Condition:																																																			
1	Ditch	Depres	0.05	4	1.20	13.00	3	2	2	11.67	1	4	4	15.00	1	1	1	5.00	1	2	4	1	0	4	3	10.71	55.38	0.00	55.38	NA	NA																				
2	Ditch	Depres	0.40	3	1.05	10.13	3	2	2	11.67	1	4	4	15.00	2	1	1	6.67	3	3	4	2	3	2	4	15.00	58.46	0.00	58.46	NA	NA																				
3	Ditch	Depres	0.45	2	1.10	7.75	3	2	2	11.67	1	4	4	15.00	2	1	1	6.67	3	3	4	2	3	2	4	15.00	56.08	0.00	56.08	NA	NA																				
4	Forest	Riverine	63.0	3	3.20	15.50	3	3	3	15.00	2	4	4	16.67	2	1	4	11.67	4	3	4	1	3	1	2	12.86	71.69	0.00	71.69	NA	NA																				
Reference Wetlands:																																																			
REF5	Pond North	Depres	0.25	2	2.20	10.50	3	3	3	15.00	1	4	4	15.00	2	1	3	10.00	3	4	4	2	3	3	4	16.43	66.93	0.00	66.93	NA	NA																				
Proposed Condition <sup>a,b,c,d,e,f,g,h</sup>																																																			
REF6	LLEILA	Riverine	120	3	2.80	14.50	3	4	4	18.33	2	4	4	16.67	3	1	4	13.33	4	4	4	1	3	1	3	14.29	77.12	1.93	79.05	NA	NA																				
Proposed Condition <sup>i,j,k,l</sup>																																																			
Proposed Life:																																																			
1	Ditch	Depres	0.05	4	1.20	13.00	3	2	2	11.67	1	4	4	15.00	1	1	1	5.00	1	2	4	1	0	4	3	10.71	55.38	0.00	55.38	-0.03	0.00	-0.03																			
2	Ditch	Depres	0.40	3	1.05	10.13	3	2	2	11.67	1	4	4	15.00	2	1	1	6.67	3	3	4	2	3	2	4	15.00	58.46	0.00	58.46	-0.23	0.00	-0.23																			
3	Ditch	Depres	0.45	2	1.10	7.75	3	2	2	11.67	1	4	4	15.00	2	1	1	6.67	3	3	4	2	3	2	4	15.00	56.08	0.00	56.08	-0.25	0.00	-0.25																			
W1		Depres	0.72	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	4	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	0.58	0.00	0.58																			
W2		Depres	1.80	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	1.44	0.00	1.44																			
W3		Depres	1.73	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	1.39	0.00	1.39																			
W4		Depres	4.88	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	3.91	0.00	3.91																			
W5		Depres	4.25	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	3.41	0.00	3.41																			
W6		Depres	5.00	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	4.01	0.00	4.01																			
W7		Depres	3.63	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	2.91	0.00	2.91																			
W8		Depres	1.99	3	2.20	13.00	4	4	4	20.00	1	4	3	13.33	4	3	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	1.59	0.00	1.59																			
Stock Ponds																																																			
Riverine/ Forested																																																			
TOTAL																						20.61	5.74	26.36																											

NA = Not applicable

- The reference wetland has fewer potential hydrologic connections than the proposed wetlands.
- The reference wetland has a man-made outfall, the proposed wetlands will not have man-made outfalls.
- The proposed wetlands will be shallower and are expected to have a higher variation in inundation/drying than the reference wetland.
- The reference wetland is mostly surrounded by uplands and a levee (barrier) whereas the proposed wetland will allow for greater movement of water to and from surrounding areas.
- The proposed wetlands are not expected to develop the same degree of soil organic matter as the reference wetland due to their young age and frequent wet/dry hydroperiods.
- The reference wetland has few elevation gradients whereas the proposed wetlands will have a greater number of elevation gradients.
- The reference wetland has low edge complexity whereas the proposed wetlands will have high edge complexity.
- The reference wetland has a low degree of interspersions whereas the proposed wetlands will have a moderate degree of interspersions.
- The reference wetland buffer includes a dam and road, plus other minor differences than the proposed riverine wetland buffer.
- The water source of the reference wetland is controlled by dam releases, whereas the water source of the riverine wetland will not be.
- The reference site has a higher degree of topographic complexity than the proposed riverine wetland. Sponsor does not intend to increase topographic complexity.
- Much of the reference site was cleared of vegetation in the late 1950's whereas vegetation within the proposed riverine wetland was not cleared.



Table F-4. Riparian Buffer Credit Releases by Phase and Release, Rockin' K on Chambers Creek Mitigation Bank.

		Potential Riparian Buffer Credits Released							Total
		Initial Release	Post Planting	2nd Growing Season	Interim Release 1	Interim Release 2	Interim Release 3	Final Release	
SAR	Stream Name								
PHASE 1									
Intermittent:									
3	Charm Creek	14.88	19.84	14.88	9.92	9.92	9.92	19.84	99.19
4	Charm Creek	23.82	31.76	23.82	15.88	15.88	15.88	31.76	158.78
5	Charm Creek	36.98	49.31	36.98	24.66	24.66	24.66	49.31	246.55
NA (restoration)	South Fork Charm Creek	87.29	116.39	87.29	58.19	58.19	58.19	116.39	581.93
NA (restoration)	Rockin' Creek	74.09	98.79	74.09	49.40	49.40	49.40	98.79	493.95
Total Intermittent:		237.06	316.08	237.06	158.04	158.04	158.04	316.08	1580.40
Ephemeral:									
9	S3	9.12	12.16	9.12	6.08	6.08	6.08	12.16	60.82
11	S3b	38.56	51.42	38.56	25.71	25.71	25.71	51.42	257.08
12	S3c	21.23	28.30	21.23	14.15	14.15	14.15	28.30	141.51
13	S4	15.73	20.97	15.73	10.49	10.49	10.49	20.97	104.86
14	S4a	6.35	8.46	6.35	4.23	4.23	4.23	8.46	42.32
15	S4b	1.53	2.04	1.53	1.02	1.02	1.02	2.04	10.20
16	S4c	2.67	3.56	2.67	1.78	1.78	1.78	3.56	17.79
16a	S5	2.53	3.38	2.53	1.69	1.69	1.69	3.38	16.88
17	S6	3.47	4.63	3.47	2.31	2.31	2.31	4.63	23.14
NA (restoration)	S1	28.69	38.25	28.69	19.13	19.13	19.13	38.25	191.25
NA (restoration)	S2	22.28	29.70	22.28	14.85	14.85	14.85	29.70	148.50
NA (restoration)	S2a	9.19	12.26	9.19	6.13	6.13	6.13	12.26	61.28
NA (restoration)	S3	34.13	45.51	34.13	22.76	22.76	22.76	45.51	227.55
NA (restoration)	S3a	16.20	21.60	16.20	10.80	10.80	10.80	21.60	108.00
NA (restoration)	S3b	12.57	16.76	12.57	8.38	8.38	8.38	16.76	83.78
NA (restoration)	S3c	7.14	9.53	7.14	4.76	4.76	4.76	9.53	47.63
NA (restoration)	S3d	7.86	10.49	7.86	5.24	5.24	5.24	10.49	52.43
NA (restoration)	S3e	12.05	16.07	12.05	8.03	8.03	8.03	16.07	80.33
NA (restoration)	S4	11.78	15.71	11.78	7.85	7.85	7.85	15.71	78.53
NA (restoration)	S4a	5.70	7.61	5.70	3.80	3.80	3.80	7.61	38.03
NA (restoration)	S4b	10.06	13.41	10.06	6.71	6.71	6.71	13.41	67.05
NA (restoration)	S4c	2.53	3.38	2.53	1.69	1.69	1.69	3.38	16.88
NA (restoration)	S5	13.82	18.42	13.82	9.21	9.21	9.21	18.42	92.10
NA (restoration)	S6	12.84	17.12	12.84	8.56	8.56	8.56	17.12	85.58
Total ephemeral:		308.02	410.69	308.02	205.35	205.35	205.35	410.69	2053.46
Total Phase 1:		545.08	726.77	545.08	363.39	363.39	363.39	726.77	3633.86
PHASE 2									
Ephemeral:									
18	S8	27.17	36.23	27.17	18.12	18.12	18.12	36.23	181.16
19	S9	30.58	40.77	30.58	20.38	20.38	20.38	40.77	203.84
NA (restoration)	S7	45.97	61.29	45.97	30.65	30.65	30.65	61.29	306.45
Total ephemeral:		103.72	138.29	103.72	69.15	69.15	69.15	138.29	691.45
Total Phase 2:		103.72	138.29	103.72	69.15	69.15	69.15	138.29	691.45
PHASE 3									
Perennial:									
1	Chambers Creek	5.18	6.90	5.18	3.45	3.45	3.45	6.90	34.50
2	Chambers Creek	2.23	2.97	2.23	1.49	1.49	1.49	2.97	14.85
Total perennial:		7.40	9.87	7.40	4.94	4.94	4.94	9.87	49.35
Total Phase 3:		7.40	9.87	7.40	4.94	4.94	4.94	9.87	49.35
PHASE 4:									
None									0
Total Phase 4:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL:		656.20	874.93	656.20	437.47	437.47	437.47	874.93	4374.66

Table F-5. In-Channel Credit Releases by Phase and Release, Rockin' K on Chambers Creek Mitigation Bank.

SAR	Stream Name	Restoration <sup>a</sup>	Potential In-Channel Credits Released <sup>b</sup>									
			Initial Release	Post Planting	1st Bank- Full Event	2nd Bank-Full Event	Two Season Survival	Interim Release 1	Interim Release 2	Interim Release 3	Final Release	Total
<b>PHASE 1</b>												
Intermittent:												
3	Charm Creek	Partial	174.37	130.78	43.59	43.59	43.59	87.18	87.18	87.18	174.37	871.84
4	Charm Creek	Partial	226.35	169.76	56.59	56.59	56.59	113.17	113.17	113.17	226.35	1131.75
5	Charm Creek	Partial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NA (restoration)	South Fork Charm Creek	Complete	1777.05	592.35	296.18	296.18	NA	592.35	592.35	592.35	1184.70	5923.51
NA (restoration)	Rockin' Creek	Complete	1508.40	502.80	251.40	251.40	NA	502.80	502.80	502.80	1005.60	5028.00
Fill/Abandon	Ditch		-2740.77				NA					-2740.77
Total Intermittent:			3686.17	-1345.08	647.75	647.75	100.18	1295.51	1295.51	1295.51	2591.02	10214.33
Ephemeral:												
9	S3	Complete	72.13	24.04	12.02	12.02	NA	24.04	24.04	24.04	48.09	240.43
11	S3b	Complete	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00
12	S3c	Complete	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00
13	S4	Complete	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00
14	S4a	Complete	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00
15	S4b	Complete	12.05	4.02	2.01	2.01	NA	4.02	4.02	4.02	8.03	40.16
16	S4c	Complete	23.85	7.95	3.97	3.97	NA	7.95	7.95	7.95	15.90	79.49
16a	S5	Complete	10.96	3.65	1.83	1.83	NA	3.65	3.65	3.65	7.31	36.54
17	S6	Complete	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00
NA (restoration)	S1	Complete	421.71	140.57	70.28	70.28	NA	140.57	140.57	140.57	281.14	1405.69
NA (restoration)	S2	Complete	327.44	109.15	54.57	54.57	NA	109.15	109.15	109.15	218.30	1091.48
NA (restoration)	S2a	Complete	135.11	45.04	22.52	22.52	NA	45.04	45.04	45.04	90.07	450.37
NA (restoration)	S3	Complete	501.75	167.25	83.62	83.62	NA	167.25	167.25	167.25	334.50	1672.49
NA (restoration)	S3a	Complete	238.14	79.38	39.69	39.69	NA	79.38	79.38	79.38	158.76	793.80
NA (restoration)	S3b	Complete	184.72	61.57	30.79	30.79	NA	61.57	61.57	61.57	123.15	615.75
NA (restoration)	S3c	Complete	105.01	35.00	17.50	17.50	NA	35.00	35.00	35.00	70.01	350.04
NA (restoration)	S3d	Complete	115.60	38.53	19.27	19.27	NA	38.53	38.53	38.53	77.06	385.32
NA (restoration)	S3e	Complete	177.12	59.04	29.52	29.52	NA	59.04	59.04	59.04	118.08	590.39
NA (restoration)	S4	Complete	173.15	57.72	28.86	28.86	NA	57.72	57.72	57.72	115.43	577.16
NA (restoration)	S4a	Complete	83.85	27.95	13.97	13.97	NA	27.95	27.95	27.95	55.90	279.48
NA (restoration)	S4b	Complete	147.85	49.28	24.64	24.64	NA	49.28	49.28	49.28	98.56	492.82
NA (restoration)	S4c	Complete	37.21	12.40	6.20	6.20	NA	12.40	12.40	12.40	24.81	124.03
NA (restoration)	S5	Complete	203.08	67.69	33.85	33.85	NA	67.69	67.69	67.69	135.39	676.94
NA (restoration)	S6	Complete	188.69	62.90	31.45	31.45	NA	62.90	62.90	62.90	125.80	628.98
Total ephemeral:			3159.41	1053.14	526.57	526.57	0.00	1053.14	1053.14	1053.14	2106.27	10531.36
Total Phase 1:			6845.58	-291.94	1174.32	1174.32	100.18	2348.65	2348.65	2348.65	4697.29	20745.69
<b>PHASE 2</b>												
Ephemeral:												
18	S8	Partial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	S9	Partial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NA (restoration)	S7	Complete	675.72	225.24	112.62	112.62	NA	225.24	225.24	225.24	450.48	2252.41
Total ephemeral:			675.72	225.24	112.62	112.62	0.00	225.24	225.24	225.24	450.48	2252.41
Total Phase 2:			675.72	225.24	112.62	112.62	0.00	225.24	225.24	225.24	450.48	2252.41
<b>PHASE 3</b>												
Perennial:												
1	Chambers Creek	Partial	112.54	84.41	28.14	28.14	28.14	56.27	56.27	56.27	112.54	562.71
2	Chambers Creek	Partial	71.38	53.54	17.85	17.85	17.85	35.69	35.69	35.69	71.38	356.92
Total perennial:			183.92	137.94	45.98	45.98	45.98	91.96	91.96	91.96	183.92	919.62
Total Phase 3:			183.92	137.94	45.98	45.98	45.98	91.96	91.96	91.96	183.92	919.62
<b>PHASE 4:</b>												
None												0
TOTAL:			7705.22	71.24	1332.92	1332.92	146.16	2665.85	2665.85	2665.85	5331.70	23917.72

Table F-6. Wetland Credit Releases by Phase and Release, Rockin' K on Chambers Creek Mitigation Bank.

		Potential Wetland Credits Released							Total
		Initial Release	Post Planting	2nd Growing Season	Interim Release 1	Interim Release 2	Interim Release 3	Final Release	
WAA No.	Wetland Type								
PHASE 1									
1 (Ditch)	Depressional	0.00	-0.03	0.00	0.00	0.00	0.00	0.00	-0.03
2 (Ditch)	Depressional	0.00	-0.23	0.00	0.00	0.00	0.00	0.00	-0.23
3 (Ditch)	Depressional	0.00	-0.25	0.00	0.00	0.00	0.00	0.00	-0.25
Stock Ponds	Depressional	0.28	0.38	0.28	0.19	0.19	0.19	0.38	1.90
Total Phase 1:		0.28	-0.13	0.28	0.19	0.19	0.19	0.38	1.38
PHASE 2									
Riverine/Forested	Riverine/Forested	0.86	1.15	0.86	0.57	0.57	0.57	1.15	5.74
Total Phase 2:		0.86	1.15	0.86	0.57	0.57	0.57	1.15	5.74
PHASE 3									
None									
Total Phase 3:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHASE 4:									
W1	Depressional	0.09	0.12	0.09	0.06	0.06	0.06	0.12	0.58
W2	Depressional	0.22	0.29	0.22	0.14	0.14	0.14	0.29	1.44
W3	Depressional	0.21	0.28	0.21	0.14	0.14	0.14	0.28	1.39
W4	Depressional	0.59	0.78	0.59	0.39	0.39	0.39	0.78	3.91
W5	Depressional	0.51	0.68	0.51	0.34	0.34	0.34	0.68	3.41
W6	Depressional	0.60	0.80	0.60	0.40	0.40	0.40	0.80	4.01
W7	Depressional	0.44	0.58	0.44	0.29	0.29	0.29	0.58	2.91
W8	Depressional	0.24	0.32	0.24	0.16	0.16	0.16	0.32	1.59
Total Phase 4:		2.88	3.85	2.88	1.92	1.92	1.92	3.85	19.23
Total									26.36

## **Attachment G. Site Protection Instrument**

## CONSERVATION EASEMENT AGREEMENT

THE STATE OF TEXAS                   §  
  §       KNOW ALL PERSONS BY THESE PRESENTS:  
COUNTY OF NAVARRO

**EFFECTIVE DATE:** \_\_\_\_\_, 2014

**PROPERTY:** **Rockin' K on Chambers Creek Mitigation Bank**

**GRANTOR:** **Rockin' K Ranch LP**

**GRANTEE:** **Connemara Conservancy Foundation**

**SPONSOR:** **Rockin' K on Chambers Creek LP**

This CONSERVATION EASEMENT AGREEMENT ("Conservation Easement") is executed as of this \_\_\_\_\_ day of \_\_\_\_\_, 2014, by and between the Rockin' K Ranch LP ("Grantor"), and Rockin' K on Chambers Creek LP ("Sponsor"), each with an address of 1601 Elm Street, Suite 3700, Dallas, Texas 75201, care of Raymond J. Kane, in favor of Connemara Conservancy Foundation ("Grantee"), with an address of 1314 W. McDermott, Suite 106-812, Allen, Texas 75013.

**Recitals:**

- A. Grantor is the record owner of fee simple title to certain parcels of real property consisting of approximately 550 acres located and situated in Navarro County, Texas and more particularly described in **Exhibit "A"** (legal description of the "Property") attached hereto and made a part hereof. The obligations of the Sponsor with respect to the Property are referenced in Permit No.SWF-2012-00323, and the related Mitigation Banking Instrument and Mitigation Plan; and,
- B. Grantee is qualified to hold a conservation easement, and is either:
- (i) A governmental body empowered to hold an interest in real property under the laws of this State or the United States; or
- (ii) a charitable, not-for-profit or educational corporation, association, or trust, qualified under Sections 170(h), 501(c)(3), and 2055 of the Internal Revenue Code of 1986, as amended, 26 U.S.C. §§ 170(h), 501(c)(3), and 2055, and under Sections 1.170A-14 of the Treasury Regulations, 26 CFR §§ 1.170A-14 and 20.2055-2, the purposes or powers of which include one or more of the Purposes described in **Recital E** below; and,
- C. Grantee protects natural habitats of fish, wildlife, plants, and the ecosystems that support them. The Grantee also preserves open spaces, including ranches, farms, and forests, where such preservation is pursuant to clearly delineated governmental conservation policies and where it will yield a significant public benefit; and,



- D. The preservation of the Property is a condition of the Department of the Army Section 404 permit for Mitigation Bank Project Number SWF-2012-00323, dated \_\_\_\_\_, or a revision thereof (collectively, the "Permit"), and attached hereto as **Exhibit "B"**. The Permit and/or Mitigation Banking Instrument ("MBI") included herein by reference require certain restrictions to be placed on the Property in order to provide compensation for unavoidable adverse impacts to waters of the United States. It is the intent of this Conservation Easement granted herein to assure that the Property will be retained and maintained forever in the vegetative and hydrologic condition described in the success criteria of the Mitigation Plan ("MP"), included herein by reference. Any activities not included in the Permit or MBI that may be conducted on the Property and that will affect the vegetative and hydrologic conditions outlined in the success criteria of the MP, must be approved in writing by the United States Army Corps of Engineers (the "USACE"), Fort Worth District, Regulatory Branch, prior to initiation. The Conservation Easement granted pursuant hereto is created pursuant to the Texas Uniform Conservation Easement Act of 1983 contained in Chapter 183 of the Texas Natural Resources Code; and,
- E. The purpose of the Conservation Easement is to conserve forever the Conservation Values ("Conservation Values") on the Property, which are generally described in Section 4 of this Conservation Easement, and includes but is not limited to one or more of the following (the "Purposes") as established for conservation purposes pursuant to Sections 170(h)(1)-(6), 2031(c), 2055, and 2522 of the Internal Revenue Code, 26 USC, §§ 170(h)(1)-(6), 2031(c), 2055, and 2522, and to Sections 1.170A-14 and 20.2055-2 of the Treasury Regulations, 26 CFR §§ 1.170A-14 and 20.2055-2 :
- (i) retaining or protecting natural, scenic, or open-space aspects of the Property;
  - (ii) ensuring the availability of the Property for recreational and educational activities, provided same are conducted in a manner which has a minimal impact on aquatic resources;
  - (iii) protecting natural resources;
  - (iv) maintaining or enhancing air and water quality;
  - (v) to serve as a mitigation bank pursuant to the regulation and guidelines of the United States Environmental Protection Agency ("EPA") and the United States Army Corps of Engineers ("USACE") promulgated under authority of Section 404 of the Clean Water Act (33 USC § 1344 et seq.) and Section 10 of the Rivers and Harbors Act of 1899 (33 USC § 403 et seq.). Any uses of the Property that may impair or interfere with these Purposes of the Conservation Easement are expressly prohibited, in accordance with the terms, provisions and conditions of the Permit and the MBI; and,
- F. The preservation of the Property is a condition of the Permit and/or MBI, required to mitigate for unavoidable adverse impacts to waters of the United States. Grantor, Sponsor and Grantee agree that third-party rights of enforcement shall be held by the USACE, Fort Worth District, and any successor agencies, and that such rights are in addition to, and do not limit, the rights of enforcement under the Permit and/or the MBI.

- G. The following Exhibits are attached to this Conservation Easement and incorporated by reference:

<b>Exhibit A</b>	Legal Description of the Property
<b>Exhibit B</b>	U.S. Army Corps of Engineers Permit
<b>Exhibit C</b>	Mitigation Banking Instrument
<b>Exhibit D</b>	Baseline Documentation Report

**Agreement:**

NOW THEREFORE, for good and valuable consideration paid by Grantee, the receipt and legal sufficiency of which are hereby acknowledged by Grantor, and in consideration of the covenants, mutual agreements and conditions herein contained, Grantor has GRANTED, ASSIGNED, SET OVER and DELIVERED, and by these presents does GRANT, ASSIGN, SET OVER and DELIVER, to Grantee a conservation easement on, over, under, across, along and through the Property on the terms set forth herein, together with all other rights reasonably necessary or desirable to accomplish the objectives of the Permit and the Mitigation Plan, and the rights granted under this Conservation Easement, subject to the following terms, reservations, covenants, limitations and exceptions:

1. **Duration of Easement.** The Conservation Easement shall be perpetual. The Conservation Easement is an easement in gross, runs with the land, and is enforceable by Grantee against Grantor, and Grantor's successors, assigns, lessees, agents, and licensees.
2. **Property Description.** In addition, the metes and bounds legal description of the Property set forth in **Exhibit "A"** and incorporated herein by reference are, for all purposes, metes and bounds surveys of the Property made by a Texas Registered Professional Land Surveyor. In connection with the application for the Permit, Grantor has previously provided to the USACE a copy of a jurisdictional determination that delineates all waters of the United States, including jurisdictional wetlands and streams that lie within the Property. In addition to the jurisdictional determination, Grantor has provided photographs of the Property to the USACE.
3. **Present Condition of the Property.** Neither Grantor, its agents, assigns, successors, or personal representatives, nor any purchasers, lessees, or other users of the Property may use, disturb, or allow through intent or negligence, the Property in any manner that is inconsistent with the purposes of this Conservation Easement. The Property's attributes and other natural characteristics of the Property, and its current use and state of improvement, are described in the Baseline Documentation Report ("BDR") which is attached hereto as **Exhibit "C"**, the MBI, and Mitigation Plan. Grantor, Sponsor and Grantee acknowledge the BDR to be complete and accurate as of the date of its preparation, and each party possesses copies of this report. The purpose of the BDR is to allow the parties to ensure that any future changes in the use of the Property will be consistent with the terms of this Conservation Easement. However, the BDR is not intended to preclude the use of other evidence to establish the present condition of the

Property if there is a controversy over its use. An updated BDR may be prepared upon completion of the mitigation bank project to document contemporaneous conditions to assist in the long term monitoring of the Property. Grantor, Sponsor and Grantee acknowledge the MBI and Mitigation Plan to be complete and accurate as of the date of its preparation, and each party possesses copies of such documents.

4. **The Conservation Values of the Property Include the Following:**

4.1 **Public Policy.** The Property is preserved pursuant to a clearly delineated federal, state, or local conservation policy, and yields a significant public benefit. Legislation, regulations, and policy statements that establish relevant public policy include, but are not limited to:

- (i) Third-party conservation of lands to serve as a mitigation bank pursuant to the regulation and guidelines of the United States Army Corps of Engineers ("USACE") promulgated under authority of Section 404 of the Clean Water Act, 33 USC § 1344, and Section 10 of the Rivers and Harbors Act of 1899, 33 USC § 403;
- (ii) Conservation easements, as stipulated in the Texas Natural Resources Code, Section 183.001(1) et seq.;
- (iii) Protection of all wild animals as property of the State of Texas as stipulated in the Texas Natural Resources Code, Section 1.011 et seq.; and,
- (iv) Conservation of water resources as stipulated in the Texas Water Code, Sections 16.053, 16.054, 26.003, and 26.012.

4.2 **Wildlife Habitat.** The Property:

- (i) Contains significant natural habitat in which fish, wildlife, plants, or the ecosystems that support them, live in a relatively natural condition;
- (ii) Contains and supports sustainable habitat for a biologically diverse collection of animal and plants;
- (iii) Has a significant amount of undeveloped, enhanceable, or restorable ephemeral and intermittent stream corridor;
- (iv) Contains wetlands areas which provide habitat for aquatic invertebrates, reptiles, amphibians, and aquatic and/or emergent vegetation;
- (v) Is dominated by pasture and forests that include areas of invasive/non-native grasses and forbs, many associated with prolonged cattle grazing. Dominant species include cheatgrass (*Bromus tectorum*), Virginia wild-rye (*Elymus virginicus*), Johnsongrass (*Sorghum halapense*), giant ragweed (*Ambrosia trifida*), and Bermudagrass (*Cynodon dactylon*).

Non-native or invasive species are estimated to occupy approximately 60 percent of the pasture areas.

Hydrophytic vegetation at the site is limited to the central drainage ditch and around the edges of some of the ponds. Dominant species include black willow (*Salix nigra*), common button-bush (*Cephalanthus occidentalis*), water willow (*Justicia americana*), crowfoot sedge (*Carex crus-corvi*), muskgrass (*Chara* sp.), and water primrose (*Ludwigia peploides*). Non-native or invasive hydrophytic species were not observed at the site.

In general, forested floodplain and riparian areas at the property contain native species such as cedar elm, American elm, sugarberry, pecan (*Carya illinoensis*), green ash, *Smilax* species (greenbriars), gum bumelia (*Bumelia lanuginosa*), and honey locust (*Gleditsia triacanthos*). With the exception of pecan trees, the area lacks hard mast-producing species. No trees with a diameter at breast height (dbh) greater than 24 inches were observed. The forested areas were generally low in species diversity, but no non-native/invasive species were observed;

- (vi) Contains natural features, streams in particular, that currently represent medium-quality examples of terrestrial, or aquatic communities; and,
- (vii) Contains a diversity of plant and animal life in a broad range of habitats.

5. **Prohibited Activities and Grantor's Reserved Property Rights.** Any activity on, or use of, the Property inconsistent with the purpose of the Conservation Easement is prohibited. The Property shall be preserved in its natural condition and restricted from any development that would impair or interfere with the Conservation Values of the Property. Without limiting the generality of the foregoing, the following activities and uses are expressly prohibited, restricted, or reserved as indicated hereunder:

- 5.1 **Vegetation:** There shall be no removing, destroying, cutting, trimming, mowing, shredding, burning, harming, or altering of any vegetation, or disturbing or changing in any way the natural habitat existing on the Property except as expressly allowed in the Mitigation Plan and in order to fulfill the objectives and standards of that plan. Grantor may remove diseased, invasive or non-native trees, shrubs, or plants; cut and mow firebreaks and existing road rights-of-way; and, remove trees, shrubs, or plants to accommodate maintenance of permitted improvements or other uses expressly permitted under the terms of this Conservation Easement. Grantor may remove potentially invasive plants from the Property for habitat management purposes consistent with the intent of this Conservation Easement and the Mitigation Plan. Except as necessary for activities expressly permitted in this Conservation Easement and with written permission from Grantee, there shall be no farming, tilling, or destruction and removal of native vegetation on the Property, except for removal of excess forage material as permitted in accordance with the Mitigation Plan. There shall be no

planting of invasive or potentially-invasive non-native plant species anywhere on the Property. There shall be no use of pesticides or herbicides, including but not limited to insecticides, fungicides, rodenticides, and herbicides, except as expressly allowed in the Mitigation Plan and to preserve the installed native plant material.

- 5.2 Predator and Nuisance Species Control: Grantor shall have the right to control, destroy, or trap predatory, exotic, invasive, and problem animals that pose a material threat to people, livestock, other animals, or habitat conditions in accordance with applicable state and federal laws and requirements, and the Mitigation Plan.
- 5.3 Uses: No residential or industrial activity shall be conducted upon the Property. No commercial activity shall be conducted upon the Property other than the development of the mitigation bank. There shall be no storing or dumping of soil, trash, ashes, garbage, waste, abandoned vehicles, appliances, machinery, or hazardous substances, or toxic or hazardous waste, or any placement of underground or aboveground storage tanks or other materials on the Property that may negatively impact or be detrimental to the Property or to the surface or subsurface water resources of the Property, except as provided in the Mitigation Plan. Upon commencement of each phase of the work described in the MBI and Mitigation Plan, and the delivery of the financial assurances related thereto, as described in the MBI, livestock shall not be allowed on that portion of the Property, except when expressly approved by Grantee and the USACE as part of a "flash" grazing plan. Prior to any flash grazing, USACE must first approve the terms and conditions of any flash grazing plan, in accordance with the MBI and Mitigation Plan.
- 5.4 Subdivision: The Property may not be further divided, subdivided, or partitioned other than any project subdivision or phasing described in the Mitigation Plan.
- 5.5 Topography: There shall be no change in the topography of the Property except as expressly provided in the Mitigation Plan. There shall be no surface mining, filling, excavating, grading, dredging, mining or drilling upon the Property, and there shall be no removing of topsoil, peat, sand, gravel, rock, minerals or other materials from the Property except to restore natural topography or drainage patterns, and as permitted by the MBI.
- 5.6 Soil or Water Degradation: Except as set forth in the Mitigation Plan, there shall be no use of, or the conducting of any activity on, the Property that causes or is likely to cause soil degradation, erosion, depletion or pollution of, or siltation on, any surface or subsurface waters of the Property, and there shall be no change to the surface or subsurface hydrology of the Property in any manner. There shall be no diking, draining, dredging, channeling, filling, leveling, pumping, impounding, or related activities, or altering or tampering with water control structures or devices, or disruption or alteration of the restored, enhanced, or created drainage patterns except as expressly allowed in the Mitigation Plan. In addition, diverting



or causing or permitting the diversion of surface or underground water into, within or out of the Property by any means, removal of wetlands, polluting or discharging into waters, springs, seeps, or wetlands, or use of pesticide or biocides is prohibited except as expressly allowed in the Mitigation Plan. It is understood that with respect to the prohibited activities set forth in this Section 5, Grantor may not and will not engage in any such prohibited activities on the Property.

- 5.7 Construction: There shall be no constructing or placing of any building, mobile home, asphalt or concrete pavement, billboard or other advertising display, antenna, utility pole, tower, conduit, line, pier, landing, dock, or any other temporary or permanent structure or facility or any other man-made structures on the Property except as expressly allowed in the Mitigation Plan and except in connection with the repair, maintenance, or replacement (but not expansion) of any structures and other improvements located on the Property as of the Effective Date of this Conservation Easement, and to install permitted stream crossings. Grantor shall have the right to maintain, renovate, and repair existing buildings, structures, fences, pens, wells, dams and reservoirs, utilities, soft-surface roads, and other improvements, and in the event of their destruction, to reconstruct any such existing improvement with another of similar size, function, capacity, location, and material.
- 5.8 Roads: There shall be no construction of roads, trails, or walkways on the Property, nor any enlargement, widening, improvement or modification to any existing roads, trails, or walkways or any other rights of way on the Property, except as expressly allowed in the Mitigation Plan. Maintenance of existing roads shall be limited to removal of dead vegetation, necessary pruning or removal of obstructing trees and plants, and/or application of permeable materials (e.g., sand, gravel, and crushed stone) as necessary to correct or prevent erosion.
- 5.9 Waters: There shall be no polluting, altering, manipulating, depleting or extracting of surface or subsurface water (including, but not limited to, ponds, creeks or other water courses) or any other permanent or ephemeral water bodies on the Property, except for existing or installed water wells for irrigation purposes, and there shall be no conducting or (to the extent in Grantor's control) allowing any entity or person to conduct activities on the Property that would be detrimental to water purity or that alter the natural water level or flow in, underneath, or over the Property (including, but not limited to, damming, dredging or construction in any free flowing water body, the extraction of groundwater that would materially affect the volume or flow of ground water, nor any manipulation or alteration of natural water courses, fresh water lake and pond shores, marshes or other water bodies outside of the construction activities detailed in the Mitigation Plan). It is understood that with respect to the prohibited activities set forth in this Section 5, Grantor may not and will not engage in any such prohibited activities on the Property.

- 5.10 Vehicles: Use of vehicles off of designated roadways and pathways shall be limited to access to the site for site construction, monitoring, maintenance, fire protection/emergency action, or other approved activities, as specified in the MBI.
- 5.11 Easements: Except as permitted in the Mitigation Plan, there shall be no granting or conveying of any easements on, over, under, across, along or through the Property, including, but not limited to, access easements and utility easements; provided, however, that pursuant to the Conservation Easement and in order to access the Property to take such actions which are consistent with the Conservation Easement and the Permit, Grantee and the USACE have the right of pedestrian and vehicular ingress and egress to and from the Property.
- 5.12 Signage: Construction or placement of any signs, billboards, or other advertising displays on the Property is not permitted, except that signs whose placement, number, and design do not significantly diminish the scenic character of the Property may be placed to state the name and address of the Property and the names of persons living on the Property, to advertise or regulate permitted on-site activities, to advertise the Property for sale or rent, to post the Property to control unauthorized entry or use, or to identify the property as being protected by this Conservation Easement.
- 5.13 Development Rights: No development rights that have been encumbered or extinguished by this Conservation Easement granted herein shall be transferred pursuant to a transferable development rights scheme, a cluster development arrangement, or any other development plan, in violation of this Conservation Easement.
- 5.14 Recreational and Educational Activities: Grantor and Grantor's lessees and guests may conduct recreational and educational activities in accordance with appropriate federal, state and local laws and restrictions that conform to terms of this Conservation Easement, the Permit and Mitigation Plan, provided same are conducted in a manner which has a minimal impact on aquatic resources.
- 5.15 Dumping: There shall be no dumping or storing of any material, such as trash, wastes, ashes, sewage, garbage, scrap material, sediment discharges, oil and petroleum by products, leached compounds, toxic materials or fumes, or any "hazardous substances," "hazardous wastes" or "solid" wastes." For the purposes of this paragraph, the phrase "hazardous substances" shall be defined as in the federal Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9601, et seq., while the terms "solid" and "hazardous wastes" shall have the meanings set out in the Resource Conservation Act ("RCRA"), 42 U.S.C. § 6901 et seq., and the Texas Solid Waste Disposal Act ("TSWDA"), Health and Safety Code Chapter 361.5.16, respectively.
- 5.16 Reserved Rights of the Grantor. The Grantor expressly reserves for itself, its successors and assigns, the right of access to and the right of continued use of the Property for all purposes not inconsistent with this Agreement and the

Conservation Easement granted herein, including, but not limited to, the right to quiet enjoyment of the Property, the rights of ingress and egress with respect to the Property, the right to fence the Property and to prohibit public access thereto, and the right to the right to sell, transfer, gift or otherwise convey the Property, in whole or in part, provided such sale, transfer, or gift conveyance is subject to the terms of, and shall specifically reference, the Conservation Easement. Except as may be expressly provided otherwise in this Agreement, neither this Agreement nor the Conservation Easement granted herein in any way limits, restricts or in any way affects any property of Grantor other than the Property, including without limitation, any property adjacent to, surrounding or near the Property. The rights conveyed by this Agreement and the Conservation Easement granted herein do not constitute a conveyance of a fee interest in the Property, nor of any of the mineral rights therein and thereunder. The rights retained by Grantor as set forth in this Section 5.16 are referred to hereinafter as the "Reserved Rights".

6. **Rights of Grantee.**

- 6.1 **Right to Enter.** Grantee or its authorized representatives, successors and assigns, and the USACE, shall have the right to enter the Property at all reasonable times upon prior notice to Grantor for the purpose of inspecting the Property to determine if the Grantor or any of its successors and assigns is complying with the terms, conditions, restrictions, and Purposes of the Conservation Easement. The easement rights granted herein do not include any public access rights. Grantee shall indemnify, defend and hold harmless Grantor and its affiliates, partners, members, directors, officers, employees, agents and contractors and the heirs, personal representatives, successors and assigns of each of them from and against any and all liability, loss, cost or damage arising out of or in connection with Grantee's exercise of its rights under the Conservation Easement. Nothing construed herein shall constitute an agreement by the USACE to indemnify, defend or hold harmless either Party, or any of the above-listed parties, from and against any liability, loss, cost or damage.
- 6.2 **Right to Preserve.** The Grantee has the right, through the remedies set forth in Section 9, to prevent any activity on or use of the Property that is inconsistent with the Purposes of this Conservation Easement.
- 6.3 **Right to Require Restoration.** The Grantee has the right through remedies set forth in Section 9 of this document, to require the Grantor to restore the areas or features of the Property that are damaged by any activity that is inconsistent with the Purposes of this Conservation Easement. The Grantor agrees to restore promptly the damaged area or feature to its prior condition. Before undertaking the restoration work, the Grantor shall:
- (i) confer with the Grantee regarding a plan for the restoration of the Property;
  - (ii) prepare and provide to the Grantee a detailed restoration plan; and

- (iii) obtain Grantee's written approval of proposed restoration plan, which will not be unreasonably held.

6.4 Grantee or its successors in interest may determine that a disturbance at the Property is necessary to maintain the Purposes of this Conservation Easement for the life of this Conservation Easement. Additionally, in the event of an emergency, Grantee or its successors in interest may determine that a disturbance at the Property is necessary to reduce the threat to human health or the environment. However, any such determination must be reasonable, made in writing, and signed by Grantee after effective notification and approval of the USACE or its designated representative.

6.5 The USACE shall have the same right to enforce the terms and conditions of the Conservation Easement as the Grantee.

- 7. **Mineral Interests and Other Encumbrances.** This Conservation Easement is subject and subordinate to the existing rights of mineral estate owner(s), ground leases and other encumbrances to the title of the Property. Grantor is the surface owner of the Property. Since the mineral interests in the Property have been severed in the past, it is the intent of the Grantor to: (a) protect the surface estate of the Property; (b) protect the health and the property of visitors to the Property; and (c), ensure the perpetuation of fish, wildlife, and plant resources and their habitats contained within the Property. In recognition of the legal doctrine whereby landowners in the State of Texas who have severed mineral interests under their land cannot control a mineral owner's access to those minerals, Grantor will cause a tract adjacent to the Property to be designated as a drilling site, in accordance with the MBI.
- 8. **Liens and Taxes.** Grantor shall keep the Property free of any and all liens, including, without limitation, liens arising out of any work performed for, materials furnished to, or obligations incurred by Grantor. Grantor shall pay before delinquency all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Property by competent authority, and shall upon written request by Grantee furnish Grantee with satisfactory evidence of payment.
- 9. **Enforcement.** In the event of a breach of this Conservation Easement by Sponsor or Grantor, the Grantee, any third party or any third party working for or under the direction of Grantor or the Grantee, the Parties and the USACE shall be notified immediately. If the USACE becomes aware of a breach of this Conservation Easement, it will notify the Grantee and Grantor of the breach.

Grantor and/or Sponsor shall have thirty (30) days after receipt of such notice to undertake actions that are reasonably calculated to correct the conditions constituting the breach. If the conditions constituting the breach are corrected in a timely and reasonable manner, no further action shall be warranted or authorized. If the conditions constituting the breach require more than thirty (30) days to cure, Grantor and/or Sponsor shall not be in default hereunder if Grantor and/or Sponsor undertakes the cure of such breach during the thirty (30) day period following notice of the breach and diligently pursues the cure of

the breach to completion. If Grantor and/or Sponsor fails to initiate such corrective action within thirty (30) days or fails to complete the necessary corrective action, the Grantee may enforce the Conservation Easement by appropriate legal proceedings, including an action for damages, injunctive and other relief. Notwithstanding the foregoing, the Grantee reserves the immediate right, without notice, to obtain a temporary restraining order, other injunctive relief, or any other appropriate relief if the breach of any provision of the Conservation Easement materially impairs or would irreversibly or otherwise materially impair the benefits to be derived from the Conservation Easement. Grantor, Sponsor and the Grantee acknowledge that under such circumstances, damage to the Grantee would be irreparable and remedies at law will be inadequate. The rights and remedies of the Grantee provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available to Grantee in connection with the Conservation Easement. The costs of a breach of this Conservation Easement and the costs of any correction or restoration, including the Grantee's expenses, court costs and attorney's fees, shall be paid by Grantor and/or Sponsor. The USACE shall have the same right to enforce the terms and conditions of the Conservation Easement as the Grantee.

The Grantor and Sponsor agree that the Grantee reserves the right to assert the following hierarchy of corrective actions to any and all material violations of this Conservation Easement (subject to the provisions in this Section of this Conservation Easement):

- (i) Grantor and/or Sponsor shall restore, according to a plan approved by the Grantee, the damaged area or feature of the Property to its condition prior to the violation; or
- (ii) If the Grantee determines that restoration is not likely to be successful with regard to all of the damaged area or feature of the Property, then to the extent reasonably practicable, the Grantor and/or Sponsor shall convey, within one year of the notice of violation, a new Conservation Easement acceptable to and approved by the Grantee on a nearby parcel of land that has Conservation Values equivalent to those that existed on the damaged area, or feature of the Property prior to the violation.

The preceding remedies of the Grantee are cumulative. The Grantee may invoke any, or all, of the remedies if there is an actual or threatened violation of the Conservation Easement. Any forbearance or failure on the part of the Grantee or the USACE to exercise its rights in the event of a violation shall not be deemed or construed to be a waiver of either Grantee's or the USACE's rights hereunder. Nor shall forbearance or failure to enforce any covenant or provision hereof shall discharge or invalidate such covenant or provision or any other covenant, condition, or provision hereof or affect the right to the Grantee and the USACE to enforce the same in the event of a subsequent breach or default.

The Grantee may not bring an action against the Grantor and/or Sponsor for modification to or damage of the Property resulting from causes beyond the Grantor's control, including but not limited to, unauthorized actions by third party(ies), natural disasters such as unintentional fires, floods, storms, or natural earth movement, provided such



modification or damage does not adversely and materially affect the Purposes of the Property. In the event of such an emergency, Grantor may respond to such emergency in a way that is consistent with the purposes of the Conservation Easement and the Permit.

Nothing contained in this Agreement or the Conservation Easement granted herein shall be construed to entitle the Grantee to bring any action against Grantor and/or Sponsor for any injury to or change in the Property, or for any violation of any covenant or provision of this Conservation Easement, resulting from any prudent action taken in good faith by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to life, damage to property or harm to the Property resulting from any of such causes.

10. **Duration.** The burdens of this Agreement and the Conservation Easement shall run with the Property and shall be enforceable against Grantor and Sponsor, and all future interests in and to the Property in perpetuity. Grantor agrees that the future transfer or conveyance of any interest in or to the Property shall at all times be subject and subordinate to the terms, conditions, restrictions and purposes of the Conservation Easement and a reference to this Agreement shall be included in each instrument of transfer or conveyance of any interest in or to the Property from and after the Effective Date; provided, however, that nothing in this Conservation Easement shall be construed to in any way limit Grantee's ability to freely sell, convey, assign, or otherwise transfer the property interest and rights, or any portions thereof, granted by this Conservation Easement to any other person or entity, upon Grantor's prior written consent.

## 11. General Provisions.

- 11.1 Notices. Any notice, request for approval, or other communication required under this Conservation Easement shall be sent by registered or certified mail, postage prepaid, to the following addresses (or such address as may be hereafter specified by notice pursuant to this paragraph):

To Grantor: Rockin' K Ranch LP  
Attn: Raymond J. Kane  
1601 Elm Street, Suite 3700  
Dallas, Texas 75201  
Tel: 214-777-4290

To Sponsor: Rockin' K on Chambers Creek LP  
Attn: Raymond J. Kane  
1601 Elm Street, Suite 3700  
Dallas, Texas 75201  
Tel: 214-777-4290

To Grantee: Connemara Conservancy Foundation  
1314 W. McDermott, Suite 106-812  
Allen, Texas 75013  
Contact: Conservation Director  
Tel: 469) 200-4085  
Email: conservation@connemaraconservancy.org

To the USACE: Fort Worth District Regulatory Branch  
U.S. Army Corps of Engineers  
P. O. Box 17300  
Fort Worth, Texas 76102

- 11.2 Severability. In the event any provision of this Conservation Easement is determined by the appropriate court of competent jurisdiction to be void and unenforceable, all remaining terms shall remain valid, binding, and in full force and effect.
- 11.3 Agreement Binding. The terms, covenants, and conditions of this Conservation Easement shall be binding upon and shall inure to the benefit of Grantor, Sponsor, Grantee and their respective executors, administrators, heirs, legal representatives, successors and assigns. Notwithstanding the foregoing, Grantee not may assign (i) this Conservation Easement, or (ii) any rights or interests in this Conservation Easement, without the prior written approval of Grantor and the USACE.
- 11.4 Warranty. Grantor warrants, covenants, and represents that it owns the Property in fee simple, and that Grantor either owns all interests in the Property that may be impaired by the granting of the Conservation Easement or that there are no outstanding mortgages, tax liens, encumbrances, or other interests in the Property that have not been expressly subordinated to the Conservation Easement. The Grantor warrants that the Grantor has no actual knowledge of the deposit of, release, or storage of hazardous substances or hazardous wastes, as those terms are defined under CERCLA, RCRA, TSDWA, or by any other applicable local, state, or federal law, on or underneath the Property. The Grantor warrants that the Grantor has no actual knowledge of any pending or threatened litigation relating in any way to the Property. The Grantor also warrants that the Grantor has no actual knowledge of any civil or criminal proceedings or investigations against Grantor that have at any time related to the Property. Grantor further warrants that Grantee shall have the use of and shall enjoy all the benefits derived from and arising out of the Conservation Easement, and that Grantor will warrant and defend title to the Property against all persons claiming by, through or under Grantor, but not otherwise.
- 11.5 Subsequent Transfers. Grantor agrees to incorporate the terms of this Agreement and the Conservation Easement in any deed or other legal instrument that transfers any interest in all or any portion of the Property. Grantor agrees to provide written notice of such transfer at least thirty (30) days prior to the date of the transfer. Grantor, Sponsor and Grantee agree that the terms of the

Conservation Easement shall survive any transfer of the fee and easement interests in the Property or any portion thereof and shall not be amended, modified or terminated without the prior written consent and approval of the USACE. In the event that the Grantee acquires an interest in all or a portion of the fee interest subject to the Conservation Easement, then Grantee shall be required to simultaneously convey the Conservation Easement over said fee land to a qualified holder as described below in Section 11.6. A Party's rights and obligations under this Conservation Easement terminate upon transfer of that Party's interest in the Property. Liability for acts or omissions occurring prior to transfer will survive the transfer.

- 11.6 Assignment or Transfer. The parties recognize and agree that the benefits of the Conservation Easement are in gross and assignable by the Grantee; provided, however, that the Grantee hereby covenants and agrees that in the event it transfers or assigns the Conservation Easement, the organization receiving the interest will be a qualified holder under applicable state and federal law. The Grantee further covenants and agrees that the terms of the transfer or assignment will be such that the transferee or assignee will be required to continue in perpetuity the conservation purposes described in this Conservation Easement and that the balance of any stewardship funds allocated to this Conservation Easement holding be transferred to the new easement holder.
- 11.7 Obligations of Ownership. Grantee shall not be responsible for any costs or liability of any kind related to the ownership, operation, insurance, upkeep, or maintenance of the Property, except as expressly provided herein. Nothing herein shall relieve the Grantor of the obligation to comply with any federal, state, or local laws, regulations and permits that may apply to the Property in connection with the exercise by Grantor of the Reserved Rights.
- 11.8 Extinguishment. In the event that changed conditions render impossible the continued use of the Property for the conservation purposes as contemplated by this Conservation Easement, the Conservation Easement may only be extinguished, in whole or in part, by judicial proceeding in any court of competent jurisdiction following written notification and agreement by the USACE, and in a manner that complies with Treas. Reg. § 1.170A-14(c)(2).
- 11.9 Eminent Domain. Whenever all or any part of the Property is taken in the exercise of eminent domain so as to abrogate substantially the restrictions imposed by this Deed of Conservation Easement, Grantor and Grantee shall join in appropriate actions at the time of such taking to recover the full value of the taking, and all incidental and direct damages due to the taking. Grantor and the Grantee shall act jointly to determine the action most favored by the Grantee according to the following hierarchy:
- (i) Avoiding the Property and preserving it in its present condition: Both the Grantor and Grantee shall jointly take actions to request formally that the intended proceedings completely avoid the taking of this Property;

- (ii) Minimizing and supplementing the loss to the Property: If the Property cannot be wholly preserved as a result of the intended proceeding, both the Grantor and Grantee shall jointly take actions to request formally that the intended proceeding minimize the taking of this Property and supplement, on at least a 1:1 acreage basis of nearby land possessing equivalent over-all value, including without limitation Conservation Values (Section 4) and Texas Rapid Assessment Method ("TXRAM") mitigation values, the loss of the Property with a supplemental Conservation Easement conveyed to the Grantee within one year of notice of the intended proceeding.
- (iii) Mitigation for the loss of the Property: If the above two options are not acceptable to the Grantee, both Grantor and the Grantee shall jointly take actions to request formally that the intended proceeding mitigate its taking of this Property, on at least 1:1 acreage basis of nearby land possessing equivalent over-all value, including without limitation Conservation Values (Section 4) and TXRAM mitigation values, by conveying replacement Conservation Easement to the Grantee within two (2) years of notice of intended proceeding; or
- (iv) Recover full value: If the above three options are not acceptable to the Grantee, both Grantor and Grantee shall jointly take actions to recover the full value of the interests in the Property subject to the taking or in lieu purchase and all direct or incidental damages resulting from the taking or in lieu purchase. All expenses reasonably incurred by the Grantor and the Grantee in connection with the taking or in-lieu purchase shall be paid out of the amount recovered in proportion to the value of the interests taken from each party (including the value of the mitigation credits no longer able to be sold by Grantor). If the Conservation Easement is terminated and the Property is sold or taken for public use, then, as required by Treas. Reg. § 1.170A-14(g)(6), Grantee shall be entitled to a percentage of the gross sales proceeds or condemnation award (minus any amount attributable to new improvements made after the date of this conveyance, which amount shall be reserved to Grantor) equal to the ratio of the appraised value of this Conservation Easement to the unrestricted fair market value of the Property, as these values are determined on the date of this Conservation Easement.

11.10 Proceeds. The Conservation Easement constitutes a real property interest immediately vested in Grantee. In the event that all or a portion of the Property is sold, exchanged, or involuntarily converted following an extinguishment of all or any portion of the Conservation Easement, or following the exercise of eminent domain, then as required by Treas. Reg. § 1.170A-14(g)(6), Grantee shall be entitled to the fair market value of the Conservation Easement. The parties stipulate that the fair market value of the Conservation Easement shall be determined by multiplying the fair market value of the Property unencumbered by the Conservation Easement (minus any increase in value after the Effective attributable to improvements) by the ratio of the value of the Conservation

Easement as of the Effective Date to the value of the Property (without deduction for the value of the Conservation Easement) at the time of this grant. The values as of the Effective Date and as referenced in this Section shall be the values used, or which would have been used, to calculate a deduction for federal income tax purposes, pursuant to Section 170(h) of the Internal Revenue Code of 1986, as amended, (whether eligible or ineligible for such a deduction). Grantee shall use its share of any proceeds in a manner consistent with the purposes of the Conservation Easement.

Nothing herein shall constitute a grant of real property or proceeds to the USACE.

- 11.11 Failure of Grantee. If at any time Grantee is unable or fails to enforce the Conservation Easement, or if Grantee ceases to be a qualified grantee, and if within a reasonable period of time after the occurrence of any of such events, Grantee fails to make an assignment of its interest pursuant to the Conservation Easement, then Grantee's interest shall become vested in another qualified grantee in accordance with and as provided by an appropriate and final, non-appealable proceeding in a court of competent jurisdiction.
- 11.12 Amendment. This Agreement and the Conservation Easement granted herein may be amended, but only in a writing signed by the Parties hereto; provided, however, that such amendment does not affect the qualification of the Conservation Easement or the status of the Grantee under any applicable laws, is consistent with the conservation purposes of this Agreement and the Conservation Easement granted herein, shall not diminish the Conservation Values of the Property as described in Section 4, and does not conflict with the USACE Permit No. SWF-2012-00323 or its related Mitigation Plan. Notice of such amendment shall be provided to the USACE.

TO HAVE AND TO HOLD the Conservation Easement for the purposes herein described, subject, however, to the matters herein set forth and to all matters of record with respect to the Property, unto Grantee, its successors and assigns, forever; and Grantor does hereby bind itself, its successors and assigns to warrant and defend the Conservation Easement and the rights granted herein, unto Grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Grantor, but not otherwise.

[SIGNATURE PAGE FOLLOWS]



**After recording, return Conservation Easement document to:**

Conservation Director  
Connemara Conservancy  
1314 W. McDermott, Suite 106-812  
Allen, Texas 75013

EXECUTED and DELIVERED to be effective as of the Effective Date.

**GRANTOR:**

ROCKIN' K RANCH LP,  
a Texas limited partnership

By: Rockin' K Ranch GP LLC,  
a Texas limited liability company,  
its general partner

By: \_\_\_\_\_  
Raymond J. Kane, Manager

STATE OF TEXAS                   §  
   §  
COUNTY OF DALLAS

This instrument was acknowledged before me on \_\_\_\_\_, 2014 by  
\_\_\_\_\_, on behalf of \_\_\_\_\_.

\_\_\_\_\_  
Name:  
Notary Public, State of Texas

My commission expires:\_\_\_\_\_

**SPONSOR:**

ROCKIN' K ON CHAMBERS CREEK LP,  
a Texas limited partnership

By: RKMB GP LLC,  
a Texas limited liability company,  
its general partner

By: \_\_\_\_\_  
Raymond J. Kane, Manager

STATE OF TEXAS                   §  
   §  
COUNTY OF DALLAS

This instrument was acknowledged before me on \_\_\_\_\_, 2014 by  
\_\_\_\_\_, on behalf of \_\_\_\_\_.

\_\_\_\_\_  
Name:  
Notary Public, State of Texas  
  
My commission expires:\_\_\_\_\_

**GRANTEE:**

**Connemara Conservancy Foundation**

By: \_\_\_\_\_  
    Marcus Yarbrough  
    President

STATE OF TEXAS                   §  
   §  
COUNTY OF COLLIN\_\_\_\_\_ §

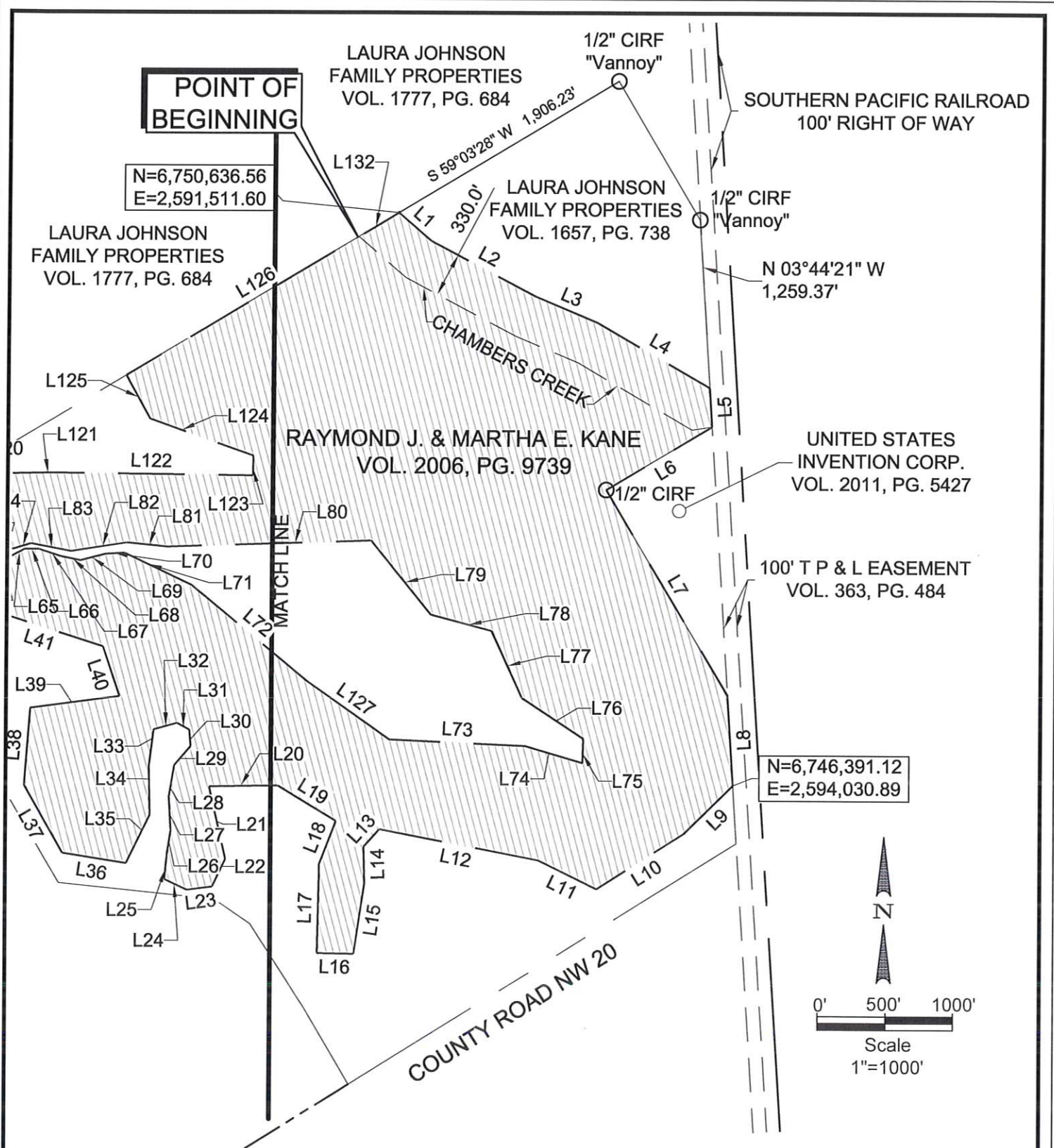
        This instrument was acknowledged before me on \_\_\_\_\_, 2014 by  
\_\_\_\_\_, on behalf of \_\_\_\_\_.

\_\_\_\_\_  
Name:  
Notary Public, State of Texas

My commission expires:\_\_\_\_\_

**Exhibit A**  
**to**  
**Conservation Easement**

Metes and Bounds Legal Description of the Property



**Winkelmann  
& Associates, Inc.**

CONSULTING CIVIL ENGINEERS ■ SURVEYORS  
 6750 HILLCREST PLAZA DRIVE, SUITE 325 (972) 490-7090  
 DALLAS, TEXAS 75230 (972) 490-7099 FAX

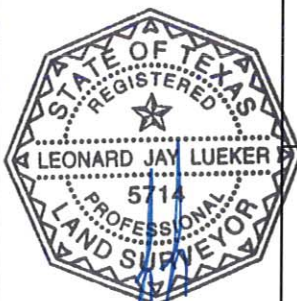
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Date: 06.20.14

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Project No.: 62201



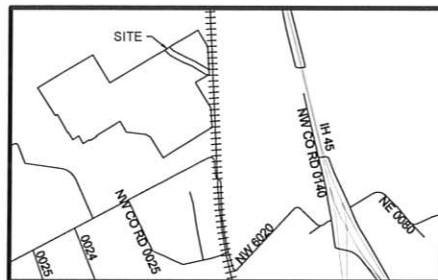
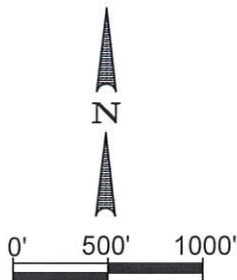
BANK/CONSERVATION  
 EASEMENT BOUNDARY  
 550.272 ACRES  
 (23,969,856 SQ. FT.)

RAYMOND J. KANE  
 ROCKIN' K MITIGATION BANK  
 NAVARRO COUNTY, TX

**SHEET  
1  
OF  
11**

12/15/14





N=6,750,636.56  
E=2,591,511.60

Scale  
1"=1000'

N=6,749,645.53  
E=2,586,105.93

VICINITY MAP  
NOT TO SCALE

S 59°57'17" W 1,036.50'

T POST  
FOUND

LAURA JOHNSON  
FAMILY PROPERTIES  
VOL. 1777, PG. 684

LAURA JOHNSON  
FAMILY PROPERTIES  
VOL. 1777, PG. 684

N=6,748,803.89  
E=2,584,674.80

N 58°54'15" E 1,081.58'

JAMES A.  
A. ACKER  
VOL. 2013, PG. 6935

RAYMOND J. KANE  
VOL. 2010, PG. 6376

WILLIAM B. McCARTNEY  
VOL. 1317, PG. 507

COUNTY ROAD NW 10

COUNTY ROAD NW 10

MATCHLINE



**Winkelmann  
& Associates, Inc.**

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DALLAS, TEXAS 75230 (972) 490-7099 FAX

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Date: 06.20.14

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Project No.: 62201



BANK/CONSERVATION  
EASEMENT BOUNDARY  
550.272 ACRES  
(23,969,856 SQ. FT.)

RAYMOND J. KANE  
ROCKIN' K MITIGATION BANK  
NAVARRO COUNTY, TX

**SHEET  
2  
OF  
11**

12/15/14

LINE TABLE			LINE TABLE			LINE TABLE		
LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE
L1	S49°19'04"E	318.55'	L21	S12°55'44"E	549.43'	L41	N72°18'09"W	942.96'
L2	S62°13'38"E	880.69'	L22	S25°10'25"W	229.72'	L42	S68°53'56"W	341.24'
L3	S67°12'55"E	511.16'	L23	S82°28'01"W	188.06'	L43	S33°00'32"E	635.99'
L4	S59°48'35"E	968.54'	L24	N64°59'29"W	186.20'	L44	S25°10'33"W	288.89'
L5	S03°44'21"E	282.90'	L25	N05°12'56"E	188.17'	L45	S55°23'55"W	815.43'
L6	S59°10'14"W	915.51'	L26	N09°07'26"E	183.40'	L46	S15°12'42"E	520.40'
L7	S30°57'50"E	1778.00'	L27	N03°36'39"W	248.65'	L47	S57°35'18"W	276.21'
L8	S03°41'26"E	667.74'	L28	N09°28'07"E	231.18'	L48	N57°09'23"W	263.79'
L9	S45°24'39"W	513.14'	L29	N40°41'40"E	188.71'	L49	S73°11'04"W	283.11'
L10	S57°37'42"W	766.63'	L30	N05°17'37"W	121.24'	L50	N65°29'18"W	394.81'
L11	N63°56'49"W	481.66'	L31	N61°47'57"W	104.08'	L51	N01°46'50"W	421.34'
L12	N79°07'48"W	1206.50'	L32	S74°26'55"W	183.45'	L52	N50°25'29"W	636.33'
L13	S42°07'12"W	171.04'	L33	S06°53'11"W	261.22'	L53	S61°58'37"W	274.25'
L14	S01°20'56"E	268.45'	L34	S01°23'23"E	368.98'	L54	S78°30'52"W	547.15'
L15	S08°27'42"W	535.37'	L35	S26°03'12"W	404.95'	L55	N44°09'57"W	371.32'
L16	N88°51'32"W	271.97'	L36	N80°53'41"W	479.14'	L56	N50°40'22"E	281.45'
L17	N01°08'28"E	664.11'	L37	N29°45'39"W	584.21'	L57	N82°16'07"E	524.53'
L18	N20°56'11"E	338.24'	L38	N04°26'31"E	569.13'	L58	N38°59'39"E	277.41'
L19	N58°59'30"W	507.51'	L39	N82°26'45"E	670.91'	L59	N57°00'49"E	365.24'
L20	S89°17'35"W	510.67'	L40	N18°53'09"W	389.52'	L60	N78°27'45"E	1045.35'



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& Associates, Inc.**

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DALLAS, TEXAS 75230 (972) 490-7099 FAX

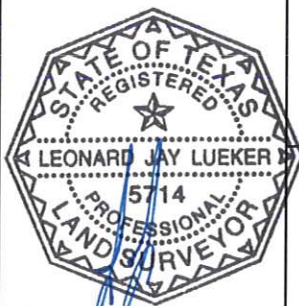
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Project No.: 62201



BANK/CONSERVATION  
EASEMENT BOUNDARY  
550.272 ACRES  
(23,969,856 SQ. FT.)

RAYMOND J. KANE  
ROCKIN' K MITIGATION BANK  
NAVARRO COUNTY, TX

**SHEET  
3  
OF  
11**

12/15/14



LINE TABLE			LINE TABLE			LINE TABLE		
LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE	LINE #	BEARING	DISTANCE
L61	N63°03'59"E	766.87'	L81	N84°22'54"W	304.11'	L101	N75°17'03"W	367.77'
L62	N74°52'11"E	183.31'	L82	S81°14'48"W	418.23'	L102	N79°44'09"W	345.27'
L63	S88°35'20"E	259.10'	L83	N79°25'10"W	303.11'	L103	S65°18'45"W	501.90'
L64	N55°24'20"E	144.58'	L84	S73°21'48"W	137.17'	L104	S31°00'16"W	543.84'
L65	N62°50'46"E	93.70'	L85	S88°44'22"W	137.85'	L105	S08°11'29"E	544.89'
L66	S89°26'28"E	109.01'	L86	S77°21'21"W	141.30'	L106	S50°30'10"W	190.65'
L67	S71°34'43"E	167.92'	L87	S82°49'28"W	180.09'	L107	N33°15'08"W	273.74'
L68	S78°39'09"E	148.30'	L88	S72°44'56"W	192.43'	L108	N06°06'32"W	569.43'
L69	N75°48'09"E	194.23'	L89	S87°21'26"W	351.80'	L109	N37°38'00"E	800.68'
L70	N86°38'27"E	143.87'	L90	N84°51'05"W	508.70'	L110	N58°54'16"E	654.97'
L71	S64°39'00"E	554.40'	L91	N62°25'17"W	627.54'	L111	N86°46'02"E	207.55'
L72	S50°37'44"E	1128.72'	L92	S49°19'42"W	1234.22'	L112	S42°49'47"E	454.88'
L73	S87°30'04"E	1009.34'	L93	N51°46'48"W	682.10'	L113	S07°37'01"E	382.18'
L74	S73°44'13"E	446.29'	L94	N10°54'39"E	273.66'	L114	S84°57'01"E	832.96'
L75	N01°32'20"E	180.67'	L95	N31°20'46"E	184.09'	L115	S57°39'51"E	248.45'
L76	N56°50'19"W	547.54'	L96	N77°09'02"E	215.16'	L116	S14°32'56"E	235.72'
L77	N24°43'21"W	547.02'	L97	S81°30'04"E	246.69'	L117	S68°58'00"E	131.14'
L78	N75°14'48"W	466.84'	L98	S75°39'36"E	303.60'	L118	N77°18'21"E	220.87'
L79	N39°26'17"W	711.20'	L99	N65°44'25"E	127.55'	L119	N66°45'52"E	129.74'
L80	S88°08'01"W	1521.84'	L100	N21°48'54"W	98.17'	L120	N48°28'38"E	186.63'



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& Associates, Inc.**

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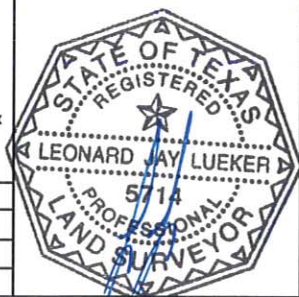
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Date: 06.20.14

Dwg. File: 62201-Ex

Project No.: 62201



BANK/CONSERVATION  
EASEMENT BOUNDARY  
550.272 ACRES  
(23,969,856 SQ. FT.)

RAYMOND J. KANE  
ROCKIN' K MITIGATION BANK  
NAVARRO COUNTY, TX

**SHEET  
4  
OF  
11**

12/15/14

# LINE TABLE

LINE #	BEARING	DISTANCE
L121	N88°49'33"E	555.89'
L122	S89°21'43"E	1514.01'
L123	N00°42'50"E	147.14'
L124	N70°35'04"W	816.43'
L125	N29°10'22"W	371.74'
L126	N59°04'03"E	2010.21'
L127	S55°02'40"E	745.17'
L128	N86°53'25"W	148.42'
L129	N36°14'09"W	105.84'
L130	N59°57'17"E	1005.36'
L131	N59°03'31"E	347.73'
L132	N59°03'31"E	347.73'



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& Associates, Inc.**

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6750 HILLCREST PLAZA DRIVE, SUITE 325 (972) 490-7090  
DALLAS, TEXAS 75230 (972) 490-7099 FAX

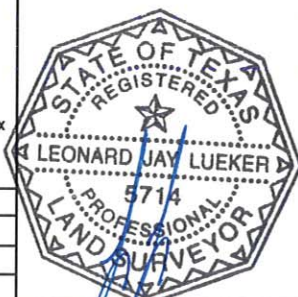
Texas Engineers Registration No. 89  
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Project No.: 62201



BANK/CONSERVATION  
EASMENT BOUNDARY  
550.272 ACRES  
(23,969,856 SQ. FT.)

RAYMOND J. KANE  
ROCKIN' K MITIGATION BANK  
NAVARRO COUNTY, TX

**SHEET  
5  
OF  
11**

12/15/14



## PROPERTY DESCRIPTION

STATE OF TEXAS §  
COUNTY OF Navarro§

BEING a tract of land situated in the DAVID McCANDLISS SURVEY (640 acres), ABSTRACT NO. 515, in Navarro County, Texas, and being part of a tract of land described in deed to Laura Johnston Family Properties, Ltd. as recorded in Book 1657, Page 738, and a portion of a tract of land conveyed to Raymond J. Kane recorded in Volume 2010 Pg. 6376 and a portion of a tract of land conveyed to Raymond & Martha E. Kane recorded in Volume 2006 Pg. 9739, Official Public Records, Navarro County, Texas(O.P.R.N.C.T.), and being more particularly described as follows:

BEGINNING at a point for corner at the intersection of the North line of said David McCandliss Survey, with the approximate centerline of Chambers Creek, said point being the most Northerly corner of said Kane tract Volume 2006 Pg. 9739;

THENCE along the Northerly line of said Johnson tract North 59 deg 03 min 31 sec East, a distance of 347.73 to a point for corner (N=6,750,636.56 E=2,591,511.60 NAD 83 Grid) from which a 1/2" iron rod, with cap, stamped "Vannoy", bears North 59 deg 03 min 31 sec East, a distance of 1,906.23 feet;

THENCE departing the North line of said David McCandliss Survey, over and across said Laura Johnston Family Properties tract the following courses and distances:

South 49 deg 19 min 04 sec East, a distance of 318.55 feet to a point for corner;

South 62 deg 13 min 38 sec East, a distance of 880.69 feet to a point for corner;

South 67 deg 12 min 55 sec East, a distance of 511.16 feet to a point for corner;

South 59 deg 48 min 35 sec East, a distance of 968.54 feet to a point for corner on the West right-of-way of T. P. & L. Co. old interurban tract from which a 1/2-inch iron rod with a plastic cap stamped "VANNOY" found for the most Northeasterly corner of said Laura Johnston Family Properties tract bears being North 03 deg 44 min 21 sec West, 1,259.37 feet;

THENCE South 03 deg 44 min 21 sec East along T.P.&L.Co., a distance of 282.90 feet to a point for corner situated in the approximate centerline of Chambers Creek;

THENCE departing T.P.&L.Co. along the easterly line of said Kane tract Volume 2006 Pg. 9739 South 59 deg 10 min 26 sec West, a distance of 915.51 feet to a 1/2" capped iron rod found for corner;

THENCE South 30 deg 57 min 50 sec East, a distance of 1778.00 feet to a point for corner;

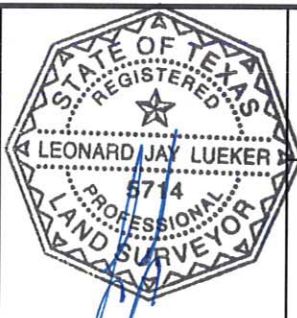
THENCE South 03 deg 41 min 26 sec East, a distance of 667.74 feet to a point for corner (N=6,746,391.12 E=2,594,030.89 NAD 83 Grid);

THENCE departing said Kane tract Volume 2006 Pg. 9739, South 45 deg 24 min 39 sec West, a distance of 513.14 feet to a point for corner;

THENCE South 57 deg 37 min 42 sec West, a distance of 766.63 feet to a point for corner;

THENCE North 63 deg 56 min 49 sec West, a distance of 481.66 feet to a point for corner;

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BANK/CONSERVATION  
EASEMENT BOUNDARY  
550.272 ACRES  
(23,969,856 SQ. FT.)

RAYMOND J. KANE  
ROCKIN' K MITIGATION BANK  
NAVARRO COUNTY, TX

**SHEET**  
**6**  
**OF**  
**11**

Scale: N/A  
Date: 06.20.14  
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Project No.: 62201

12/15/14



THENCE North 79 deg 07 min 48 sec West, a distance of 1206.50 feet to a point for corner;

THENCE South 42 deg 07 min 12 sec West, a distance of 171.04 feet to a point for corner;

THENCE South 01 deg 20 min 56 sec East, a distance of 268.45 feet to a point for corner;

THENCE South 08 deg 27 min 42 sec West, a distance of 535.37 feet to a point for corner;

THENCE North 88 deg 51 min 32 sec West, a distance of 271.97 feet to a point for corner;

THENCE North 01 deg 08 min 28 sec East, a distance of 664.11 feet to a point for corner;

THENCE North 20 deg 56 min 11 sec East, a distance of 338.24 feet to a point for corner;

THENCE North 58 deg 59 min 30 sec West, a distance of 507.51 feet to a point for corner;

THENCE South 89 deg 17 min 35 sec West, a distance of 510.67 feet to a point for corner;

THENCE South 12 deg 55 min 44 sec East, a distance of 549.43 feet to a point for corner;

THENCE South 25 deg 10 min 25 sec West, a distance of 229.72 feet to a point for corner;

THENCE South 82 deg 28 min 01 sec West, a distance of 188.06 feet to a point for corner;

THENCE North 64 deg 59 min 29 sec West, a distance of 186.20 feet to a point for corner;

THENCE North 05 deg 12 min 56 sec East, a distance of 188.17 feet to a point for corner;

THENCE North 09 deg 07 min 26 sec East, a distance of 183.40 feet to a point for corner;

THENCE North 03 deg 36 min 39 sec West, a distance of 248.65 feet to a point for corner;

THENCE North 09 deg 28 min 07 sec East, a distance of 231.18 feet to a point for corner;

THENCE North 40 deg 41 min 40 sec East, a distance of 188.71 feet to a point for corner;

THENCE North 05 deg 17 min 37 sec West, a distance of 121.24 feet to a point for corner;

THENCE North 61 deg 47 min 57 sec West, a distance of 104.08 feet to a point for corner;

THENCE South 74 deg 26 min 55 sec West, a distance of 183.45 feet to a point for corner;

THENCE South 06 deg 53 min 11 sec West, a distance of 261.22 feet to a point for corner;

THENCE South 01 deg 23 min 23 sec East, a distance of 368.98 feet to a point for corner;

THENCE South 26 deg 03 min 12 sec West, a distance of 404.95 feet to a point for corner;

THENCE North 80 deg 53 min 41 sec West, a distance of 479.14 feet to a point for corner;



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RAYMOND J. KANE  
ROCKIN' K MITIGATION BANK  
NAVARRO COUNTY, TX

**SHEET  
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OF  
11**

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THENCE North 29 deg 45 min 39 sec West, a distance of 584.21 feet to a point for corner;  
 THENCE North 04 deg 26 min 31 sec East, a distance of 569.13 feet to a point for corner;  
 THENCE North 82 deg 26 min 45 sec East, a distance of 670.91 feet to a point for corner;  
 THENCE North 18 deg 53 min 09 sec West, a distance of 389.52 feet to a point for corner;  
 THENCE North 72 deg 18 min 09 sec West, a distance of 942.96 feet to a point for corner;  
 THENCE South 68 deg 53 min 56 sec West, a distance of 341.24 feet to a point for corner;  
 THENCE South 33 deg 00 min 32 sec East, a distance of 635.99 feet to a point for corner;  
 THENCE South 25 deg 10 min 33 sec West, a distance of 288.89 feet to a point for corner;  
 THENCE South 55 deg 23 min 55 sec West, a distance of 815.43 feet to a point for corner;  
 THENCE South 15 deg 12 min 42 sec East, a distance of 520.40 feet to a point for corner;  
 THENCE South 57 deg 35 min 18 sec West, a distance of 276.21 feet to a point for corner;  
 THENCE North 57 deg 09 min 23 sec West, a distance of 263.79 feet to a point for corner;  
 THENCE South 73 deg 11 min 04 sec West, a distance of 283.11 feet to a point for corner;  
 THENCE North 65 deg 29 min 18 sec West, a distance of 394.81 feet to a point for corner;  
 THENCE North 01 deg 46 min 50 sec West, a distance of 421.34 feet to a point for corner;  
 THENCE North 50 deg 25 min 29 sec West, a distance of 636.33 feet to a point for corner;  
 THENCE South 61 deg 58 min 37 sec West, a distance of 274.25 feet to a point for corner;  
 THENCE South 78 deg 30 min 52 sec West, a distance of 547.15 feet to a point for corner;  
 THENCE North 44 deg 09 min 57 sec West, a distance of 371.32 feet to a point for corner;  
 THENCE North 50 deg 40 min 22 sec East, a distance of 281.45 feet to a point for corner;  
 THENCE North 82 deg 16 min 07 sec East, a distance of 524.53 feet to a point for corner;  
 THENCE North 38 deg 59 min 39 sec East, a distance of 277.41 feet to a point for corner;  
 THENCE North 57 deg 00 min 49 sec East, a distance of 365.24 feet to a point for corner;  
 THENCE North 78 deg 27 min 45 sec East, a distance of 1045.35 feet to a point for corner;  
 THENCE North 63 deg 03 min 59 sec East, a distance of 766.87 feet to a point for corner;



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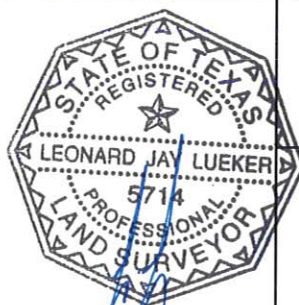
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 550.272 ACRES  
 (23,969,856 SQ. FT.)

RAYMOND J. KANE  
 ROCKIN' K MITIGATION BANK  
 NAVARRO COUNTY, TX

**SHEET  
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OF  
11**

12/15/14



THENCE North 74 deg 52 min 11 sec East, a distance of 183.31 feet to a point for corner;  
 THENCE South 88 deg 35 min 20 sec East, a distance of 259.10 feet to a point for corner;  
 THENCE North 55 deg 24 min 20 sec East, a distance of 144.58 feet to a point for corner;  
 THENCE North 62 deg 50 min 46 sec East, a distance of 93.70 feet to a point for corner;  
 THENCE South 89 deg 26 min 28 sec East, a distance of 109.01 feet to a point for corner;  
 THENCE South 71 deg 34 min 43 sec East, a distance of 167.92 feet to a point for corner;  
 THENCE South 78 deg 39 min 09 sec East, a distance of 148.30 feet to a point for corner;  
 THENCE North 75 deg 48 min 09 sec East, a distance of 194.23 feet to a point for corner;  
 THENCE North 86 deg 38 min 27 sec East, a distance of 143.87 feet to a point for corner;  
 THENCE South 64 deg 39 min 00 sec East, a distance of 554.40 feet to a point for corner;  
 THENCE South 50 deg 37 min 44 sec East, a distance of 1128.72 feet to a point for corner;  
 THENCE South 55 deg 02 min 40 sec East, a distance of 745.17 feet to a point for corner;  
 THENCE South 87 deg 30 min 04 sec East, a distance of 1009.34 feet to a point for corner;  
 THENCE South 73 deg 44 min 13 sec East, a distance of 446.29 feet to a point for corner;  
 THENCE North 01 deg 32 min 20 sec East, a distance of 180.67 feet to a point for corner;  
 THENCE North 56 deg 50 min 19 sec West, a distance of 547.54 feet to a point for corner;  
 THENCE North 24 deg 43 min 21 sec West, a distance of 547.02 feet to a point for corner;  
 THENCE North 75 deg 14 min 48 sec West, a distance of 466.84 feet to a point for corner;  
 THENCE North 39 deg 26 min 17 sec West, a distance of 711.20 feet to a point for corner;  
 THENCE South 88 deg 08 min 01 sec West, a distance of 1521.84 feet to a point for corner;  
 THENCE North 84 deg 22 min 54 sec West, a distance of 304.11 feet to a point for corner;  
 THENCE South 81 deg 14 min 48 sec West, a distance of 418.23 feet to a point for corner;  
 THENCE North 79 deg 25 min 10 sec West, a distance of 303.11 feet to a point for corner;  
 THENCE South 73 deg 21 min 48 sec West, a distance of 137.17 feet to a point for corner;  
 THENCE South 88 deg 44 min 22 sec West, a distance of 137.85 feet to a point for corner;



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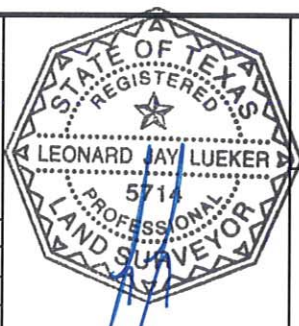
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 (23,969,856 SQ. FT.)

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 NAVARRO COUNTY, TX

**SHEET  
9  
OF  
11**

12/15/14

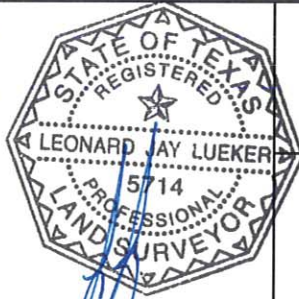
THENCE South 77 deg 21 min 21 sec West, a distance of 141.30 feet to a point for corner;  
 THENCE South 82 deg 49 min 28 sec West, a distance of 180.09 feet to a point for corner;  
 THENCE South 72 deg 44 min 56 sec West, a distance of 192.43 feet to a point for corner;  
 THENCE South 87 deg 21 min 26 sec West, a distance of 351.80 feet to a point for corner;  
 THENCE North 84 deg 51 min 05 sec West, a distance of 508.70 feet to a point for corner;  
 THENCE North 86 deg 53 min 25 sec West, a distance of 148.42 feet to a point for corner;  
 THENCE North 62 deg 25 min 17 sec West, a distance of 627.54 feet to a point for corner;  
 THENCE South 49 deg 19 min 42 sec West, a distance of 1234.22 feet to a point for corner;  
 THENCE North 51 deg 46 min 48 sec West, a distance of 682.10 feet to a point for corner;  
 THENCE North 10 deg 54 min 39 sec East, a distance of 273.66 feet to a point for corner;  
 THENCE North 31 deg 20 min 46 sec East, a distance of 184.09 feet to a point for corner;  
 THENCE North 77 deg 09 min 02 sec East, a distance of 215.16 feet to a point for corner;  
 THENCE South 81 deg 30 min 04 sec East, a distance of 246.69 feet to a point for corner;  
 THENCE South 75 deg 39 min 36 sec East, a distance of 303.60 feet to a point for corner;  
 THENCE North 65 deg 44 min 25 sec East, a distance of 127.55 feet to a point for corner;  
 THENCE North 21 deg 48 min 54 sec West, a distance of 98.17 feet to a point for corner;  
 THENCE North 75 deg 17 min 03 sec West, a distance of 367.77 feet to a point for corner;  
 THENCE North 79 deg 44 min 09 sec West, a distance of 345.27 feet to a point for corner;  
 THENCE South 65 deg 18 min 45 sec West, a distance of 501.90 feet to a point for corner;  
 THENCE South 31 deg 00 min 16 sec West, a distance of 543.84 feet to a point for corner;  
 THENCE South 08 deg 11 min 29 sec East, a distance of 544.89 feet to a point for corner;  
 THENCE South 50 deg 30 min 10 sec West, a distance of 190.65 feet to a point for corner;  
 THENCE North 33 deg 15 min 08 sec West, a distance of 273.74 feet to a point for corner;  
 THENCE North 36 deg 14 min 09 sec West, a distance of 105.84 feet to a point for corner;  
 THENCE North 06 deg 06 min 32 sec West, a distance of 569.43 feet to a point for corner;



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RAYMOND J. KANE  
 ROCKIN' K MITIGATION BANK  
 NAVARRO COUNTY, TX

**SHEET  
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OF  
11**

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THENCE North 37 deg 38 min 00 sec East, a distance of 800.68 feet to a point for corner (N=6,748,803.89 E=2,584,674.80 NAD 83 Grid) in the northerly line of said Kane tract Volume 2010 PG. 6376 from which the most N/W corner of said Kane tract Bears South 58 deg 54 min 16 sec West a distance of 1,081.58 feet;

THENCE along said Kane tract North 58 deg 54 min 16 sec East, a distance of 654.97 feet to a point for corner;

THENCE continuing along said Kane tract North 59 deg 57 min 17 sec East, a distance of 1,005.36 feet to a point for corner(N=6,749,645.53 E=2,586,105.93 NAD 83 Grid) from which the T Post found for the most northeast corner of said Kane tract bears North 59 deg 57 min 17 sec East a distance of 1036.50 feet;

THENCE departing Kane tract North 86 deg 46 min 02 sec East, a distance of 207.55 feet to a point for corner;

THENCE South 42 deg 49 min 47 sec East, a distance of 454.88 feet to a point for corner;

THENCE South 07 deg 37 min 01 sec East, a distance of 382.18 feet to a point for corner;

THENCE South 84 deg 57 min 01 sec East, a distance of 832.96 feet to a point for corner;

THENCE South 57 deg 39 min 51 sec East, a distance of 248.45 feet to a point for corner;

THENCE South 14 deg 32 min 56 sec East, a distance of 235.72 feet to a point for corner;

THENCE South 68 deg 58 min 00 sec East, a distance of 131.14 feet to a point for corner;

THENCE North 77 deg 18 min 21 sec East, a distance of 220.87 feet to a point for corner;

THENCE North 66 deg 45 min 52 sec East, a distance of 129.74 feet to a point for corner;

THENCE North 48 deg 28 min 38 sec East, a distance of 186.63 feet to a point for corner;

THENCE North 88 deg 49 min 33 sec East, a distance of 555.89 feet to a point for corner;

THENCE South 89 deg 21 min 43 sec East, a distance of 1514.01 feet to a point for corner;

THENCE North 00 deg 42 min 50 sec East, a distance of 147.14 feet to a point for corner;

THENCE North 70 deg 35 min 04 sec West, a distance of 816.43 feet to a point for corner;

THENCE North 29 deg 10 min 22 sec West, a distance of 371.74 feet to a point for corner in the northerly line of said Kane tract Volume 2006 PG. 9739;

THENCE along said Kane tract North 59 deg 04 min 03 sec East a distance of 2,010.21 feet to the POINT OF BEGINNING.

CONTAINING within these metes and bounds 23,969,856 square feet or 550.272 acres of land, more or less

Bearings shown hereon are based upon the Geoshack VRS Network NAD 83 Grid Values.



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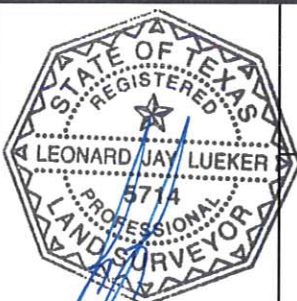
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RAYMOND J. KANE  
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NAVARRO COUNTY, TX

**SHEET  
11  
OF  
11**

12/15/14



**Exhibit B**  
**to**  
**Conservation Easement**

The Section 404 USACE Permit

**Exhibit C**  
**to**  
**Conservation Easement**

Mitigation Banking Instrument

**Rockin' K on Chambers Creek Mitigation Bank  
Mitigation Banking Instrument**

Project Number SWF-2012-00323

**Prepared for**

**Rockin' K on Chambers Creek LP  
Raymond J. Kane  
1601 Elm Street  
Suite 3700  
Dallas, Texas 75201**

**Prepared by**

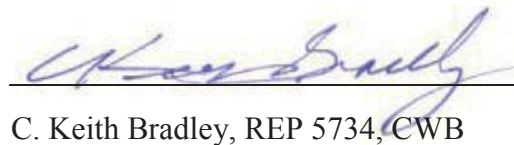
**KBA EnviroScience, Ltd.  
101 E. Southwest Parkway, Ste. 114  
Lewisville, Texas 75067  
972-436-9669**

**December 19, 2014**

## **Rockin' K on Chambers Creek Mitigation Banking Instrument**

Project Number SWF-2012-00323

December 19, 2014

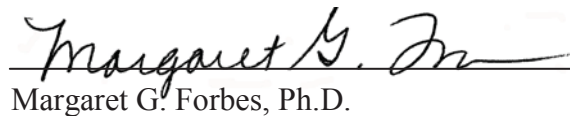


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December 19, 2014

C. Keith Bradley, REP 5734, CWB

Date



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December 19, 2014

Margaret G. Forbes, Ph.D.

Date

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## I. BANK INFORMATION

### 1. Contact Information

Rockin' K on Chambers Creek Mitigation Bank (the Bank, or RKMB) is sponsored and managed by Rockin' K on Chambers Creek LP (the Sponsor), located in Dallas, Texas. The Mitigation Plan and other required documents have been prepared by KBA EnviroScience, Ltd. of Lewisville, Texas.

Rockin' K on Chambers Creek LP  
Raymond J. Kane  
1601 Elm Street  
Suite 3700  
Dallas, Texas 75201  
[rkane@krcl.com](mailto:rkane@krcl.com)  
(214) 777-4290

KBA EnviroScience, Ltd.  
Keith Bradley, REP, CWB  
101 East Southwest Parkway  
Suite 114  
Lewisville, Texas 75067  
[kbradley@kbaenv.com](mailto:kbradley@kbaenv.com)  
(972) 436-9669

### 2. Project Description

The Bank is located in Navarro County, Texas, approximately 1 mile west of Interstate Highway 45 and 4.7 miles north-northwest of the City of Corsicana. The Bank's geographic coordinates are latitude 32.1614° N and longitude -96.4867° W. All of the land comprising the Bank is held in fee simple by Raymond J. and Martha E. Kane, husband and wife, with beneficial interests owned by their children, Kaitlin M. Kane, and John Paul R. Kane. These four individuals are the sole equity owners through their ownership of Rockin' K Ranch, LP. The Bank extends northward beyond Chambers Creek to include the proposed Chambers Creek buffer.

The Sponsor has completed a Mitigation Plan (Attachment B) to restore and enhance wetland and ephemeral, intermittent, and perennial stream habitat. The Mitigation Plan includes the goals and objectives of the Bank, as well as the detailed description of restorative actions, baseline conditions, and standards for operation, performance standards, reporting protocols, and management guidelines.

The Bank's existing conditions include 477 feet of ephemeral stream, 15,715 feet of intermittent stream, 3,230 feet of perennial stream, and 1.30 acres (ac) of palustrine emergent wetland. Following implementation of all phases of the Mitigation Plan, the Bank will consist of 29,857 feet of restored or enhanced ephemeral stream, 21,326 feet of restored or enhanced intermittent stream, 2,990 feet of enhanced perennial stream, 26.4 acres of restored emergent wetlands, 63 acres of restored forested palustrine wetlands, primary stream buffer along the length of all the restored and enhanced streams (54,173 feet) and expanded stream buffer along 48,566 feet of stream. Most of the stream credits created by the proposed work meet the criteria for "in-channel" stream credits, as defined by the "Fort Worth District Stream Mitigation Method", issued October 2, 2013.

### 3. Service Areas

The Bank's service area map is included as Figure 5-1 in the Mitigation Plan (Attachment B). The Bank's service area is based on its native and adjacent Hydrologic Unit Codes (HUCs), within the Trinity River basin, as well as its native and adjacent EPA Level III Ecoregions. All service areas are within the boundaries of the US Army Corps of Engineers (USACE) Fort Worth District.

The Bank's primary service area consists of the USGS 8-digit HUC (12030109) where the Bank is located. The secondary service area is determined by the overlap of the Bank's native Level III Ecoregion (Texas Blackland Prairie) and adjacent 8-digit HUCs within the Upper Trinity River basin. The Bank's secondary service area is comprised of those portions of adjacent HUCs 12030102, 12030105, and 12030108 that are within the Texas Blackland Prairie Ecoregion. Finally, the tertiary service area is comprised of the overlap of the Bank's adjacent HUCs and the Bank's adjacent Level III Ecoregions (Cross Timbers and East Central Texas Plains) within the Trinity River basin. The Bank's tertiary service area is comprised of those portions of HUCs 12030102, 12030105, and 12030108 that are within the Cross Timbers and East Texas Plains Ecoregions. The entire service area comprises all of Ellis County and portions of Parker, Tarrant, Collin, Dallas, Kaufman, Hood, Johnson, Hill, Navarro, Henderson, Limestone, Freestone, and Anderson Counties. Use of Bank credits outside the primary, secondary and tertiary service areas is permissible with USACE approval, to be provided with consultation with the Interagency Review Team (IRT) Authorities.

## II. AUTHORITIES

### 1. Purpose

The purpose of this Mitigation Banking Instrument (MBI) is to establish guidelines and responsibilities for the establishment, use, operation, and maintenance of the Bank. The Bank will be used with the intent to sell credits commercially for compensatory mitigation for unavoidable impacts to waters of the US that result from activities authorized under Sections 401 and 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899, provided such use has met all applicable requirement and is authorized by the USACE.

## 2. Regulatory Authorities

The establishment, use, and operation of the Bank are carried out in accordance with the following authorities:

- Clean Water Act (33 USC 1251 et. seq.)
- Rivers and Harbors Act (33 USC 403)
- Fish and Wildlife Coordination Act (16 USC 661 et. seq.)
- Regulatory Programs of the US Army Corps of Engineers (USACE), Final Rule (33 CFR 320-330)
- Guidelines for Specification of Disposal Sites for Dredged and Fill Materials (40 CFR 230)
- Memorandum of Agreement between the US Environmental Protection Agency (EPA) and the Department of the Army concerning Determination of Mitigation Under the Clean Water Act, Section 404(b) 1 Guidelines (February 6, 1990)
- Final Rule for the Compensatory Mitigation for Losses of Aquatic Resources issued by the USACE and EPA (April 10, 2008)
- Section 7 of the Endangered Species Act
- Section 106 of the National Historic Preservation Act
- Texas State Water Quality Certification [(30 Tex. Admin. Code§279.12 (2001))]
- Texas State Water Quality Standards [30 Tex. Admin. Code§301 (2000)]
- Texas Parks and Wildlife Code Chapter 14 Powers and Duties Concerning Wetlands

## 3. Interagency Review Team (IRT)

The following agencies and representatives comprise the IRT:

<b>Agency</b>	<b>Representative</b>	<b>Phone Number</b>	<b>Email Address</b>
USACE (Chair)	Eric Dephouse	817-886-1670	eric.j.dephouse@usace.army.mil
EPA	Donna Mullins	214-665-2760 x7576	mullins.donna@epa.gov
USFWS	Sid Puder	817 277-1100	sidney_puder@fws.gov
TCEQ	Brittany Lee	512-239-5210	brittany.lee@tceq.texas.gov
TPWD	Tom Heger	512-389-4583	tom.heger@tpwd.texas.gov

## 4. Force Majeure

The Bank sponsor shall be responsible for repair and remediation of any portion of the Bank requiring such repair and remediation as determined by the IRT, except upon events of Force Majeure as defined below:

*Force Majeure shall mean an irreparable material and detrimental impact on the Bank site over which the Bank Sponsor or any entity controlled by the Bank Sponsor could not have anticipated or controlled.*

The IRT has discretion to determine whether an event is a “Force Majeure” event as defined herein, and the Bank Sponsor shall bear the burden of demonstrating to the IRT’s satisfaction that:

- The Force Majeure event was caused by circumstances beyond the control or anticipation of the Bank Sponsor and/or any entity controlled by the Bank Sponsor, including its contractors and consultants;
- Neither the Bank Sponsor nor any entity controlled by the Bank Sponsor, including its contractors and consultants, could have reasonably foreseen and prevented such an event;
- Damage was caused by such circumstances; and
- Damage is irreparable by any practicable and reasonable means as determined in the discretion of the IRT.

## 5. Dispute Resolution

Should disputes arise regarding the application of the MBI, resolution will be in accordance with 33 CFR 332.8(e). USACE approval of this Instrument constitutes the regulatory approval required for the Rockin’ K on Chambers Creek Mitigation Bank to be used to provide compensatory mitigation for Department of the Army permits pursuant to 33 C.F.R. 332.8(a)(1). This Instrument is not a contract between the Sponsor or Property Owner and USACE or any other agency of the federal government. Any dispute arising under this Instrument will not give rise to any claim by the Sponsor or Property Owner for monetary damages. This provision is controlling notwithstanding any other provision or statement in the Instrument to the contrary.

## 6. Validity, Modification, and Termination of the Mitigation Bank

This MBI will become valid upon signature by the U.S. Army Corps of Engineers and Bank Sponsor. The initial credit release is typically authorized following the recordation of the conservation easement, execution of the financial assurances requirements, and any other requirements specified in the MBI. This MBI may be amended, altered, released, or revoked only by written agreement among the parties hereto or their heirs, assigns, or successors-in-interest. The amendment must follow the appropriate procedures listed in 33 CFR 332.8 (d), unless the District Engineer determines that the streamlined review process described in 33 CFR 332.8 (g) (2) is warranted. Any of the IRT members may terminate their participation upon written notification to all signatory parties. Participation of IRT members will terminate 30 days after written notification.

## 7. Controlling Language

To the extent that specific language in this document changes, modifies, or deletes terms and conditions contained in those documents that are incorporated into the MBI by reference, and are not legally binding, the specific language within the MBI shall be controlling.

## III. MITIGATION PLAN

The Mitigation Plan (Plan) is provided as Attachment B.

## IV. BANK OPERATIONS

### 1. Accounting Procedures and Reporting

The Sponsor will maintain the Bank's credit ledger in the Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS). All credit transactions shall be entered into the database no later than seven calendar days after the transaction has occurred or the USACE reserves the right to suspend credit sales until sales transactions are deemed current and compliant. RIBITS entries will include the following:

- Jurisdiction
- Transaction date
- Credits debited
- USACE permit number
- Name of permittee
- Credit classification
- Specific area(s) within the Bank that credits are to be debited

Compliance with RIBITS reporting does not supersede the requirement of the Sponsor to submit individual transaction reports.

### 2. Credit Release Schedule

Release of credits will be tied to performance-based milestones as shown on the following tables for perennial stream credits, ephemeral and intermittent stream credits, and wetland credits. Credit withdrawals shall be in-kind between the impact and bank. The Performance Standards that define satisfaction of the Release Terms are included in Tables 8-1 through 8-5 of the Mitigation Plan.



## Perennial Stream Credit Release Schedule, Rockin' K on Chambers Creek Mitigation Bank

Release Stage	Release Terms	Release Percentage
Initial	<ul style="list-style-type: none"> <li>• Execution of MBI</li> <li>• Financial assurance established</li> <li>• Execution of USACE-approved Conservation Easement</li> <li>• Purchase or execution of easement or other binding agreement on north streambed and bank of Chambers Creek</li> <li>• Phase 1 will be the first phase constructed.</li> </ul>	20%
Post Planting/Construction	<ul style="list-style-type: none"> <li>• Completion of bank stabilization earthwork and riparian planting</li> <li>• Achievement of Performance Standards</li> </ul>	15%
1 <sup>st</sup> Bank-Full Event	<ul style="list-style-type: none"> <li>• One bank-full event after construction completed and planting initiated</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	5%
2 <sup>nd</sup> Bank-Full Event	<ul style="list-style-type: none"> <li>• Event at least one year after 1<sup>st</sup> bank-full event</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	5%
Two-Season Survival: Final	<ul style="list-style-type: none"> <li>• No earlier than 2<sup>nd</sup> Bank Full Event</li> <li>• After two full growing seasons</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	5%
Interim Release 1	<ul style="list-style-type: none"> <li>• Minimum of 2 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 2	<ul style="list-style-type: none"> <li>• Minimum of 3 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 3	<ul style="list-style-type: none"> <li>• Minimum of 5 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Final Release	<ul style="list-style-type: none"> <li>• 2<sup>nd</sup> bank-full event must have occurred</li> <li>• Long-term management non-wasting endowment funded</li> <li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li> </ul>	20%

**Ephemeral and Intermittent Stream Credit Release Schedule,  
Rockin' K on Chambers Creek Mitigation Bank**

<b>Release Stage</b>	<b>Release Terms</b>	<b>Release Percentage by Restoration Type</b>
Initial	<ul style="list-style-type: none"> <li>• Execution of MBI</li> <li>• Financial assurance established</li> <li>• Execution of USACE-approved Conservation Easement</li> <li>• Phase 1 will be the first phase constructed.</li> </ul>	Complete: 30% Partial: 20%
Post Planting/ Construction	<ul style="list-style-type: none"> <li>• Completion of earthwork and planting</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 15%
1 <sup>st</sup> Bank-Full Event (Complete Restoration Streams)	<ul style="list-style-type: none"> <li>• One bank-full event after construction completed and planting initiated</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 5%
2 <sup>nd</sup> Bank Full Event (Complete Restoration Streams)	<ul style="list-style-type: none"> <li>• Event at least one year after 1<sup>st</sup> bank-full event</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 5%
1 <sup>st</sup> Bank-Full Event (Partial Restoration Streams)	<ul style="list-style-type: none"> <li>• One bank-full event after construction completed and planting initiated</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Partial: 5%
2 <sup>nd</sup> Bank-Full Event (Partial Restoration Streams)	<ul style="list-style-type: none"> <li>• Event at least one year after 1<sup>st</sup> bank-full event</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Partial: 5%
Two-Season Survival: Final (Partial Restoration Streams )	<ul style="list-style-type: none"> <li>• No earlier than 2<sup>nd</sup> Bank Full Event</li> <li>• After two full growing seasons</li> <li>• Project survival</li> <li>• Achievement of Performance Standards</li> </ul>	Partial: 5%
Interim Release 1	<ul style="list-style-type: none"> <li>• Minimum of 2 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 10%
Interim Release 2	<ul style="list-style-type: none"> <li>• Minimum of 3 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 10%
Interim Release 3	<ul style="list-style-type: none"> <li>• Minimum of 5 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	Complete: 10% Partial: 10%
Final Release	<ul style="list-style-type: none"> <li>• 2<sup>nd</sup> bank-full event must have occurred</li> <li>• Long-term management non-wasting endowment funded</li> <li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li> </ul>	Complete: 20% Partial: 20%

Secondary and Tertiary Riparian Buffers Credit Release Schedule,  
Rockin' K on Chambers Creek Mitigation Bank

<b>Release Stage</b>	<b>Release Terms</b>	<b>Release Percentage</b>
Initial	<ul style="list-style-type: none"><li>• Execution of MBI</li><li>• Financial assurance established</li><li>• Execution of USACE-approved Conservation Agreement</li><li>• Phase 1 will be the first phase constructed.</li></ul>	15%
Post Planting	<ul style="list-style-type: none"><li>• Completion of planting</li><li>• Achievement of Performance Standards</li></ul>	20%
2 <sup>nd</sup> Growing Season	<ul style="list-style-type: none"><li>• After 2 full growing seasons</li><li>• USACE acceptance of monitoring report and conditional assessment</li><li>• Achievement of Performance Standards</li></ul>	15%
Interim Release 1	<ul style="list-style-type: none"><li>• Minimum of 3 years after planting/construction</li><li>• USACE acceptance of monitoring report and conditional assessment</li><li>• Achievement of Performance Standards</li></ul>	10%
Interim Release 2	<ul style="list-style-type: none"><li>• Minimum of 4 years after planting/construction</li><li>• USACE acceptance of monitoring report and conditional assessment</li><li>• Achievement of Performance Standards</li></ul>	10%
Interim Release 3	<ul style="list-style-type: none"><li>• Minimum of 5 years after planting/construction</li><li>• USACE acceptance of monitoring report and conditional assessment</li><li>• Achievement of Performance Standards</li></ul>	10%
Final Release	<ul style="list-style-type: none"><li>• Long-term management non-wasting endowment funded</li><li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li></ul>	20%

Wetland Credit Release Schedule,  
Rockin' K on Chambers Creek Mitigation Bank

<b>Release Stage</b>	<b>Release Terms</b>	<b>Release Percentage</b>
Initial	<ul style="list-style-type: none"> <li>• Execution of MBI</li> <li>• Financial assurance established</li> <li>• Execution of USACE-approved Conservation Agreement</li> <li>• Phase 1 will be the first phase constructed.</li> </ul>	15%
Post Planting /Construction /Hydrology	<ul style="list-style-type: none"> <li>• Completion of earthwork and planting</li> <li>• Successful hydrology demonstration</li> <li>• Achievement of Performance Standards</li> </ul>	20%
2 <sup>nd</sup> Growing Season	<ul style="list-style-type: none"> <li>• After 2 full growing seasons</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	15%
Interim Release 1	<ul style="list-style-type: none"> <li>• Minimum of 3 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 2	<ul style="list-style-type: none"> <li>• Minimum of 5 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Interim Release 3	<ul style="list-style-type: none"> <li>• Minimum of 7 years after planting/construction</li> <li>• USACE acceptance of monitoring report and conditional assessment</li> <li>• Achievement of Performance Standards</li> </ul>	10%
Final Release	<ul style="list-style-type: none"> <li>• Long-term management non-wasting endowment funded</li> <li>• USACE release from further monitoring, based on final monitoring report and conditional assessment and achievement of Performance Standards</li> </ul>	20%

### 3. Contingency Plans/Remedial Actions

In the event the mitigation bank or a specific phase of the bank fails to achieve performance standards as specified in this MBI, the Sponsor shall develop necessary contingency plans to implement appropriate remedial actions for the Bank or that phase in coordination with the IRT. In the event the Sponsor fails to implement necessary remedial actions within one growing season after notification by the USACE of the necessary remedial action to address any failure in meeting the performance standards, the IRT (acting through Chair), will notify the appropriate authorizing agencies and recommend appropriate remedial actions.

If the authorizing agencies determine that the Bank is operating at a deficit, debiting by the sponsor of deposited credits shall immediately cease, and the authorizing agencies, in consultation with the IRT and the Sponsor, will determine what remedial actions are necessary to correct the situation. As determined by the Chair in coordination with the IRT and the Sponsor, if conditions at the Bank site do not improve or continue to deteriorate within one growing season from the date that the need for remediation was first identified in writing to the Sponsor by the USACE through the Chair of the IRT, the agent responsible for the financial assurances shall be directed by the USACE to transfer the amount necessary to correct the deficiency to Connemara Conservancy to undertake corrective measures.

### 4. Provisions Covering the Use of the Land

The use of the Bank land will be constrained by a conservation easement executed by the Sponsor and Connemara Conservancy as described in Section 3 of the Mitigation Plan and provided as Attachment G to this MBI. Recreational and educational activities on the part of the Sponsor or owner or their invitees are appropriate if conducted so as to have minimal adverse effects on the aquatic resources. Recreational use of vehicles and horses within the Bank will be limited to established roads and pathways. The locations and the typical design of the stream crossings are shown on the Construction Plans. Mineral resources, including natural gas and oil, may exist under Bank or adjacent lands. The existing landowner does not own any substantial amount of subsurface mineral rights. Landowners in the State of Texas cannot generally prevent a mineral owner's access to those minerals.

The exploration for, and production and transportation of, subsurface mineral resources beneath the Bank site is acceptable provided the amount of ground disturbing activities and surface alterations are minimized to the maximum extent practicable; activities are conducted in a manner that minimizes adverse environmental impacts; impacted areas are restored to pre-existing conditions as soon as practicable; reasonable and appropriate compensatory mitigation is achieved; and the entity conducting the activities complies with all applicable regulatory requirements, including Section 404 of the Clean Water Act. If necessary, the permit applicant will provide appropriate compensation to the Sponsor for any impacts. The Sponsor has designated a drilling site outside of Bank boundaries (Attachment B).



## 5. Approved Credit Quantities

Upon signature of this document, the USACE, in consultation with the IRT, grants the Sponsor the proposed quantities of wetland, riparian buffer, and stream credits, as described in the attached Mitigation Plan. The release of these credits shall follow the schedule described in Part IV. In accordance with the Final Rule for the Compensatory Mitigation for Losses of Aquatic Resources issued by the USACE and the EPA, dated April 10, 2008, these quantities can be adjusted downward if performance standards are not met, or adjusted upward if the performance standards are exceeded.

## V. ADDITIONAL INFORMATION

### 1. Financial Assurances

All mitigation banks must have a USACE approved financial assurance mechanism (performance bond, letter of credit, cash escrow, casualty insurance) for the duration of the Bank establishment and monitoring period. The financial assurance mechanism for the RKMB will initially be an insurance policy, the specific form of which is provided in Attachment J. In the event the financial assurance mechanism is due to expire, or the Sponsor elects to replace the financial assurance mechanism with another form, the Sponsor shall notify the USACE at least 120 days prior to the expiration or replacement to allow for USACE review and approval. If an alternate financial assurance mechanism is proposed, but has not been approved by the USACE, the current financial assurance mechanism will be maintained. Under no circumstance will the currently approved financial assurance mechanism be allowed to expire without USACE approval. If an approved financial assurance mechanism has not been established, mitigation bank credits may be suspended until such time financial assurances are approved. -A schedule of proposed financial assurance mechanisms for the duration of the monitoring period is provided on the following page. The schedule shows financial assurance in the amount of 110% of construction costs until after the second bank-full event for Phases 1-3 and after the second growing season for Phase 4, at which time the financial assurance will be reduced to 10% of construction cost. The reduced financial assurance amount (10% of construction cost) represents adequate funding to revegetate the mitigation areas if needed.

**Schedule of Proposed Financial Assurance  
Rockin' K on Chambers Creek Mitigation Bank**

<b>Coverage</b>	<b>Amount</b>	<b>Estimated Date</b>	<b>Comments</b>
Phases 1-3	\$ [REDACTED] (110% of construction cost)	01/15	Financial assurances will be submitted in the form of a mitigation casualty policy with an initial term of three (3) years. Financial assurances must be submitted and approved prior to Initial Release of credits for Phases 1-3. Amount of financial assurance may be decreased to 10% of construction cost after second bank-full event.
Phase 4	\$ [REDACTED] (110% of construction cost)	01/15	Financial assurances will be submitted in the form of a mitigation casualty policy with an initial term of three (3) years. Financial assurances must be submitted and approved prior to Initial Release for Phase 4. Amount decreased to 10% of initial construction cost after second growing season.
Phases 1-3	[REDACTED] (10% of construction cost)	5/17	Financial assurances may be in the form of a mitigation casualty policy, cash escrow or letter of credit, upon the occurrence of the second bank-full event. Replaced by non-wasting endowment prior to Final Release of credits.
Phase 4	[REDACTED] (10% of construction cost)	5/18	Financial assurances may be in the form of a mitigation casualty policy, cash escrow or letter of credit, upon the occurrence of the end of second growing season. Replaced by non-wasting endowment prior to Final Release of credits.
All Phases	[REDACTED]	1/24	Non-wasting endowment for supporting long-term maintenance. Replaces previous financial assurance mechanism. Condition for Final Release of credits. With IRT approval, Sponsor may elect to establish non-wasting endowment earlier to obtain Final Release of credits for mitigation areas that are otherwise eligible for Final Release (e.g., in-channel or riparian buffer credits).

Note: Dates are estimates only. Criteria described in Comments column must be satisfied.

## VI. SIGNATURE PAGE

By signing this Final MBI, the Bank Sponsor hereby reaffirms the fact that the status of the project site relative to liens, encumbrances, or other conditions described in the submittals for this project remain unaltered.

<b>Organization</b>	<b>Name and Title</b>	<b>Signature</b>	<b>Date</b>
U.S. Army Corps of Engineers Fort Worth District			
U.S. Environmental Protection Agency			
U.S. Fish and Wildlife Service			
Texas Commission on Environmental Quality			
Texas Parks and Wildlife Department			
Rockin' K on Chambers Creek LP, a Texas limited partnership	Raymond J Kane, Manager, RKMB GP LLC, a Texas Limited Liability Company, its General Partner		

## Attachments

	Included
<b>A. Figures (see Mitigation Plan and Appendices)</b>	■
<b>B. Mitigation Plan</b>	■
<b>C. Delineation of Waters of the U.S., Including Wetlands</b>	■
<b>D. Site Photos (see Delineation)</b>	■
<b>E. Functional/Conditional Assessment</b>	■
<b>F. Credit Evaluation</b>	■
<b>G. Draft Site Protection Instrument</b>	■
<b>H. Long-term Management Plan (Section 10, Mitigation Plan)</b>	■
<b>I. Letter of Agreement Identifying the Long-term Steward</b>	■
<b>J. Financial Assurances Documents</b>	■
<b>K. Assurance of Water Rights</b>	■
<b>L. Other: Archaeological Evaluation</b>	■

**Exhibit D**  
**to**  
**Conservation Easement**

Baseline Documentation Report



**Connemara Conservancy Foundation**

**BASELINE DOCUMENTATION REPORT**

**PROJECT NAME:**  
**Rockin' K on Chambers Creek Mitigation Bank**

*Prepared by:*  
**John Kemmey, Project Scientist**

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Dates of Site Visits: July 15, 16, and 17, 2013, and April 1 and 2, 2014

Anticipated Date of Conveyance of Conservation Easement: August 2014

**Property Ownership:**

Owner(s): Rockin' K on Chambers Creek, LP

Address: Rockin' K Ranch, latitude 32.1614° N, longitude -96.4867° W  
County Road NW0020  
County: Navarro

Total Acres: Approximately 880 gross acres within Sponsor -owned parcels.  
Approximately 550 gross acres within the mitigation bank

**Directions to Property:**

- Go south from downtown Dallas on Interstate Hwy 45 for 49 miles to Exit 235A;
- Exit and stay straight on Frontage Road;
- Take first right onto County Road 20;
- Continue on County Road 20 for 1.1 miles, County Road 20 becomes NW0020; and
- Enter Property through gate on NW0020.

**General Description of Property:**

The Rockin' K on Chambers Creek Mitigation Bank (RKMB) is located on County Road NW0020 in Navarro County, Texas (**Figure 1**). The boundaries of the RKMB within the surrounding Rockin' K Ranch are depicted in **Figure 2**. The RKMB lies within an irregularly shaped parcel ("site") used as ranch land (Rockin' K Ranch). Chambers Creek flows generally from west to east for 2,990 feet within the RKMB. Charm Creek, an intermittent stream, flows from north to southeast for approximately 6,584 lf and exits the site at the eastern property boundary. An earthen levee extends through the central portion of the site from west to east. A manmade ditch (intermittent stream) and fringe wetlands are located adjacent to the levee, draining the southern and western portion of the site. The ditch flows 9,131 feet through the site before discharging into Charm Creek near the eastern site boundary. A wetland fringe is located along the ditch and totals 0.9 acres. Numerous disconnected ephemeral stream reaches and impoundments are also located throughout the site. A forested tract of land is located in the northern portion of the RKMB.

Land use on the Rockin' K Ranch is primarily agricultural (grazing and haying). Land cover on the site is dominated by pasture. There are several smaller areas of other cover types within the RKMB; the size of each are detailed within **Table 1**.

**Table 1.** Size of each Cover Type within the Rockin' K Mitigation Bank

<b>Current Land Use</b>	<b>Acres</b>
Pasture	379.5 ac
Forest	97.0 ac
Water	9.6 ac
Wetland	63.9 ac
Total	550.0 ac

### **Ecological Description:**

Each of the areas and cover types within the RKMB has had some degree of anthropomorphic disturbance that has affected its ecological function. Hydrology on and around the site has been altered in the past century to promote agricultural production. The relocation and straightening of Chambers Creek, the ditching and berming of the lowlands, and capturing of runoff into man-made stock ponds have degraded ecological and aquatic functions at the site. The overall objective of the mitigation is to restore natural stream, riparian, and wetland ecological and hydrologic functions within the site.

Specific objectives include:

- (1) Restore on-site natural drainage patterns including restoring over-bank flooding to the floodplain.
- (2) Restore channel-forming flows to appropriately sized channels.
- (3) Reduce channel erosion and dissipate flood energy by creating step-pool channels and floodplain benches at the appropriate bank full elevations.
- (4) Restore stable channels (i.e., dimension, pattern and profile) that do not aggrade, degrade, or erode at rates greater than what is natural for reference streams of the same stream type.
- (5) Increase in-stream habitat heterogeneity by constructing stable riffle-pool channels, using native materials to build in-channel structures.
- (6) Restore a riparian buffer using native plants to reduce flood velocities on the floodplain, enhance infiltration, promote sediment deposition, improve channel shade and water quality, and enhance terrestrial habitat.

## Vegetation:

The Rockin' K Mitigation Bank site is located within the Major Land Resource Area (MLRA) 86A, "Texas Blackland Prairie, Northern Part" as described by the NRCS. The Blackland Prairie was historically dominated by little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), Indiangrass (*Sorghastrum nutans*), eastern gama grass (*Tripsacum dactyloides*), silver bluestem (*Bothriochloa saccharoides*), tall dropseed (*Sporobolus asper*), sideoats grama (*Bouteloua curtipendula*), and panic grass (*Panicum obtusum*). Common forbs would have included prairie clover (*Dalea purpurea*), western ragweed (*Ambrosia psilostachya*), Maximilian sunflower (*Helianthus maximiliani*), gayfeather (*Liatris mucronata*), rattlesnake master (*Eryngium yuccifolium*), and Indian plantain (*Cacalia plantaginea*). The ecosystem relied on disturbance (fire and intense, but short-lived grazing) to prevent the encroachment of woody shrubs and trees.

Bottomland forests and riparian areas within the Blackland Prairie would have supported mixed hardwoods such as post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), American elm (*Ulmus americana*), winged elm (*Ulmus alata*), cedar elm (*Ulmus crassifolia*), sugarberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), osage-orange (*Maclura pomifera*), honey mesquite (*Prosopis glandulosa*), and eastern redcedar (*Juniperus virginia*).

Currently, the site is dominated by pasture and forests that include areas of invasive/non-native grasses and forbs, many associated with prolonged cattle grazing. Dominant species include cheatgrass (*Bromus tectorum*), Virginia wild-rye (*Elymus virginicus*), Johnsongrass (*Sorghum halapense*), giant ragweed (*Ambrosia trifida*), and Bermudagrass (*Cyanodon dactylon*). Non-native or invasive species are estimated to occupy approximately 60 percent of the pasture areas.

Hydrophytic vegetation at the site is limited to the central drainage ditch and around the edges of some of the ponds. Dominant species include black willow (*Salix nigra*), common button-bush (*Cephalanthus occidentalis*), water willow (*Justicia americana*), crowfoot sedge (*Carex crus-corvi*), muskgrass (*Chara* sp.), and water primrose (*Ludwigia peploides*). Non-native or invasive hydrophytic species were not observed at the site.

In general, forested floodplain and riparian areas at the RKMB site contain native species such as cedar elm, American elm, sugarberry, pecan (*Carya illinoensis*), green ash, *Smilax* species (greenbriars), gum bumelia (*Bumelia lanuginosa*), and honey locust (*Gleditsia triacanthos*). With the exception of pecan trees, the area lacks hard mast-producing species. No trees with a diameter at breast height (dbh) greater than 24 inches were observed. The forested areas were generally low in species diversity, but no non-native/invasive species were observed.

Vegetation species planned for planting on RKMB are listed in Table 6-1 in the Mitigation Plan and included in this document in **Attachment A**.

## Water Bodies:

**Adjacent water courses/water bodies:** The RKMB is located within the Chambers watershed (HUC 12030109), which is part of the Upper Trinity basin. Chambers Creek

and its tributaries comprise one of the primary water sources for Richland Chambers Reservoir, a 44,000 acre water supply impoundment operated by the Tarrant Regional Water District. The RKMB site is located approximately 10 miles upstream of the reservoir.

**Interior water courses/water bodies:**

- Chambers Creek is a perennial stream that traverses 2,990 ft west to east across the RKMB near its northern boundary.
- Charm Creek is an intermittent stream that flows from west to southeast for approximately 6,584 ft and exits the site at the eastern property boundary.
- An intermittent ditched stream with fringe wetlands flows west to east through the central portion of the site. The ditch flows 9,131 feet through the site before discharging into Charm Creek in the eastern portion of the site. The wetland fringe totals 0.9 acres.
- Numerous ephemeral drainages collect runoff from the southern portion of the site. Most of these drainages convey water into impounded stock ponds, and are disconnected from receiving waters. Some of the drainages contain large woody debris, slash and other refuse that further compromise stream function.
- Man-made impoundments occur on most of the ephemeral drainages within the RKMB, comprising a total of 3.97 acres.

**Topography and Floodplain:**

Topography: The site generally slopes to the northeast, toward Chambers Creek. The site has an elevation range of 340 to 400 feet above mean sea level as indicated on the United States Geologic Survey (USGS) topographic map (Navarro County Mosaic, Natural Resource Conservation Service (NRCS) Geospatial Data Gateway, 2013). The topographic map is included as **Figure 3**.

Floodplain: The majority of RKMB is located within “Zone A”, an area determined to be within the 100-year floodplain. The southern portion of the site is located within “Zone X,” an area determined to be outside the 500-year floodplain, as mapped by the Federal Emergency Management Agency (FEMA). The Flood Insurance Rate Map (Q3 Digital Data) is provided as **Figure 4**.

**Soils:**

Mapped soils, as shown by the NRCS soils map (**Figure 5**), reflect the RKMB site's historic hydrology and geomorphology. Floodplain soils (Trinity clays) occupy the floodplain, while the southern uplands consist primarily of Ferris (3 to 8% slopes, eroded) and Ferris and Heiden (5 to 15% slopes, eroded) clays that occur on ridges above floodplains. These soils are easily damaged by sheet and gully erosion. Burleson clay and Lamar calcareous loamy soil are also present. Soils on the site are all described as deep and generally fine-grained. Soils examined during the site delineation were consistent with the above descriptions, except that the Trinity

clay soils, included on the Texas Hydric Soils list, did not exhibit hydric characteristics in most of the plots examined.

**Land Use:**

Historic Ownership and Uses: Land use in the RKMB watershed is primarily agricultural. Available aerial imagery indicates that the watershed has been a mixture of pasture, and to a lesser extent, row crops, for decades. Land use is likely to remain in agriculture for future decades.

Current Uses: Agriculture, primarily livestock ranching within a mosaic of pasture, grasslands, forest, open water, agriculture, and private residences.

Reserved Uses: Restoration and enhancement of wetland areas and streams as part of the mitigation bank.

Adjacent Land Uses: Adjacent land uses are agricultural. Livestock ranches are present to the north, south, east and west with some row crops (cotton) grown on the bottomland west of the site.

**Property Structures, Developments & Man-made Features:**

- A residence is present on the ranch property but is located outside of the RKMB boundary.
- Three auxiliary buildings are present in the vicinity of the residence but are located outside of the RKMB boundary.
- Two metal sheds for equipment storage are located within the RKMB south of the ditch.
- As previously mentioned, dirt roads, manmade ditches, levees, culverts and impoundments are located throughout the Kane property and within the RKMB.

**Purposes of the Conservation Easement:**

The purpose of the Conservation Easement is to conserve forever the Conservation Values ("Conservation Values") on the Property, which are generally described in Section 4 of this Conservation Easement, and includes but is not limited to one or more of the following (the "Purposes") as established for conservation purposes pursuant to Sections 170(h)(1)-(6), 2031(c), 2055, and 2522 of the Internal Revenue Code, 26 USC, §§ 170(h)(1)-(6), 2031(c), 2055, and 2522, and to Sections 1.170A-14 and 20.2055-2 of the Treasury Regulations, 26 CFR §§ 1.170A-14 and 20.2055-2 :

(i) retaining or protecting natural, scenic, or open-space aspects of the Property;

(ii) ensuring the availability of the Property for recreational and educational activities, provided same are conducted in a manner which has a minimal impact on aquatic resources;



(iii) protecting natural resources;

(iv) maintaining or enhancing air and water quality;

(v) to serve as a mitigation bank pursuant to the regulation and guidelines of the United States Environmental Protection Agency ("EPA") and the United States Army Corps of Engineers ("USACE") promulgated under authority of Section 404 of the Clean Water Act (33 USC § 1344 et seq.) and Section 10 of the Rivers and Harbors Act of 1899 (33 USC § 403 et seq.).

Any uses of the Property that may impair or interfere with these Purposes of the Conservation Easement are expressly prohibited, in accordance with the terms, provisions and conditions of the Permit and the MBI.

**Critical Elements of the Conservation Easement:**

- RKMB will be perpetually preserved in its open space condition including the property's existing, enhanced and restored areas of grassland, woodland, wetland and open water habitats.
- Industrial and commercial activities are prohibited on RKMB (except those commercial activities associated with accepted recreational and educational activities).
- Continuation of compatible land uses (recreational and educational operations) on RKMB as they have been historically conducted in harmony with ecological and open-space values.

**Quality Assessment of Habitats on Property:**

KBA EnviroScience, Ltd. used the *Texas Rapid Assessment Method (TXRAM) Version 1.0 Final Draft* to assess the habitat value of the tract (U.S. Army Corps of Engineers 2010). TXRAM has different assessment modules for streams and wetlands. Riparian assessment is based on the riparian section of the stream assessment module. TXRAM does not include assessment tools for non-aquatic or non-riparian areas such as pasture so the pastures were not assessed.

**Attachment A: Tables F-1 through F-3** summarize the TXRAM results for the aquatic and riparian buffers within the RKMB.

**Observed Wildlife:**

Animal Species of Conservation Interest: Endangered, threatened, or rare plant species - None observed.

General description of habitat:

No formal wildlife surveys were performed as they were not required to complete the mitigation plan. However, it is expected that the RKMB provides habitat for a variety of large and small mammals, birds, reptiles, amphibians, fish, and aquatic and terrestrial

invertebrates, due to the presence of streams, ponds, fields, wetlands, and forested habitat areas.

**Scenic Values:**

While not a purpose of this Conservation Easement or specifically designated as “scenic” by Navarro County, the views from the Rockin’ K Ranch from high ground to the south and east are aesthetically pleasing and offer a unique view of that portion of the Chambers Creek valley.

**Threats:**

This area of Navarro County does not appear to be threatened by urban encroachment or other growth pressures. Arguably the biggest threat to the success of this project is climate instability. More intense and more frequent drought and flooding could compromise restoration of ecological function.

Another possible threat is the disturbances for the construction of gas well pads, drill pits and access roadways associated with the mineral rights not held by the property owner. The property owner has designated preferred locations for the pads outside of the RKMB boundary.

**Photography:**

Aerial photography: An aerial photograph of the RKMB site is provided as **Figure 6**.

Ground photography: Photographs of the RKMB site are provided in the attached **Attachment B**. These photographs were taken during the TXRAM assessments and follow-up surveys. Digital photographs are stored on CDs at Connemara Conservancy office.

**Figures:**

- 1: Site Location Map, Navarro County, Texas, Rockin’ K on Chambers Creek Mitigation Bank.
- 2: Overview of Mitigation Phases. Navarro County, Texas, Rockin’ K on Chambers Creek Mitigation Bank.
- 3: USGS Topographic Map, Navarro County, Texas, Rockin’ K on Chambers Creek Mitigation Bank.
- 4: FEMA Map, Navarro County, Texas, Rockin’ K on Chambers Creek Mitigation Bank.
- 5: NRCS Soil Map, Navarro County, Texas, Rockin’ K on Chambers Creek Mitigation Bank.
- 6: National Agricultural Imagery Program (NAIP) Aerial map, Navarro County, Texas, Rockin’ K on Chambers Creek Mitigation Bank.

**Attachments:**

- A: Tables 6-1 and F-1 through F-3 from Mitigation Plan
- B: Site photographs

**References:**

- KBA EnviroScience, Ltd. 2014. Mitigation Banking Instrument: Attachment B: Mitigation Plan.
- NRCS 2014. Major Land Resource Area (MLRA) 86A, "Texas Blackland Prairie, Northern Part"  
[http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053624)
- NRCS 2008a. U. S. Department of Agriculture, Natural Resources Conservation Service.  
Geospatial Data Gateway. <http://datagateway.nrcs.usda.gov>
- NRCS 2008b. U. S. Department of Agriculture, Natural Resources Conservation Service. Soil  
Data Mart, Soil Survey of Navarro County, Texas.  
<http://soildatamart.nrcs.usda.gov/>
- NRCS 2013. U. S. Department of Agriculture, Natural Resources Conservation Service.  
Geospatial Data Gateway. <http://datagateway.nrcs.usda.gov>
- TNRIS 2008. Texas Natural Resources Information System. Federal Emergency Management  
Agency (FEMA) Q3 Digital Data, Navarro County. Data Search and Download  
<http://www.tnris.state.tx.us/datadownload/download.jsp>
- U.S. Army Corps of Engineers (USACE) 2010. "The Texas Rapid Assessment Method  
(TXRAM) Wetlands and Streams Modules. Version 1.0 Final Draft". Fort Worth and  
Tulsa Districts. October.

### ***Certification***

We, the undersigned signatories, do hereby certify that the information contained in this baseline documentation report, including referenced attachments, for the Rockin' K Mitigation Bank's Conservation Easement as assessed prior to this 10th day of July, 2014, is correct and accurate to the best of our knowledge.

***Owner:***

\_\_\_\_\_  
Rockin' K Ranch LP

\_\_\_\_\_  
Date

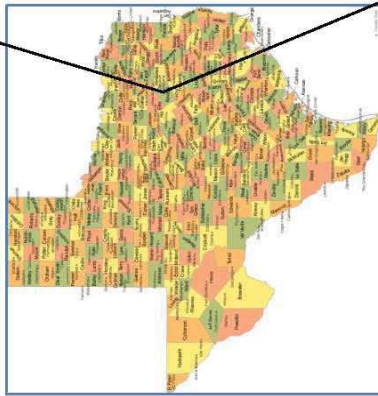
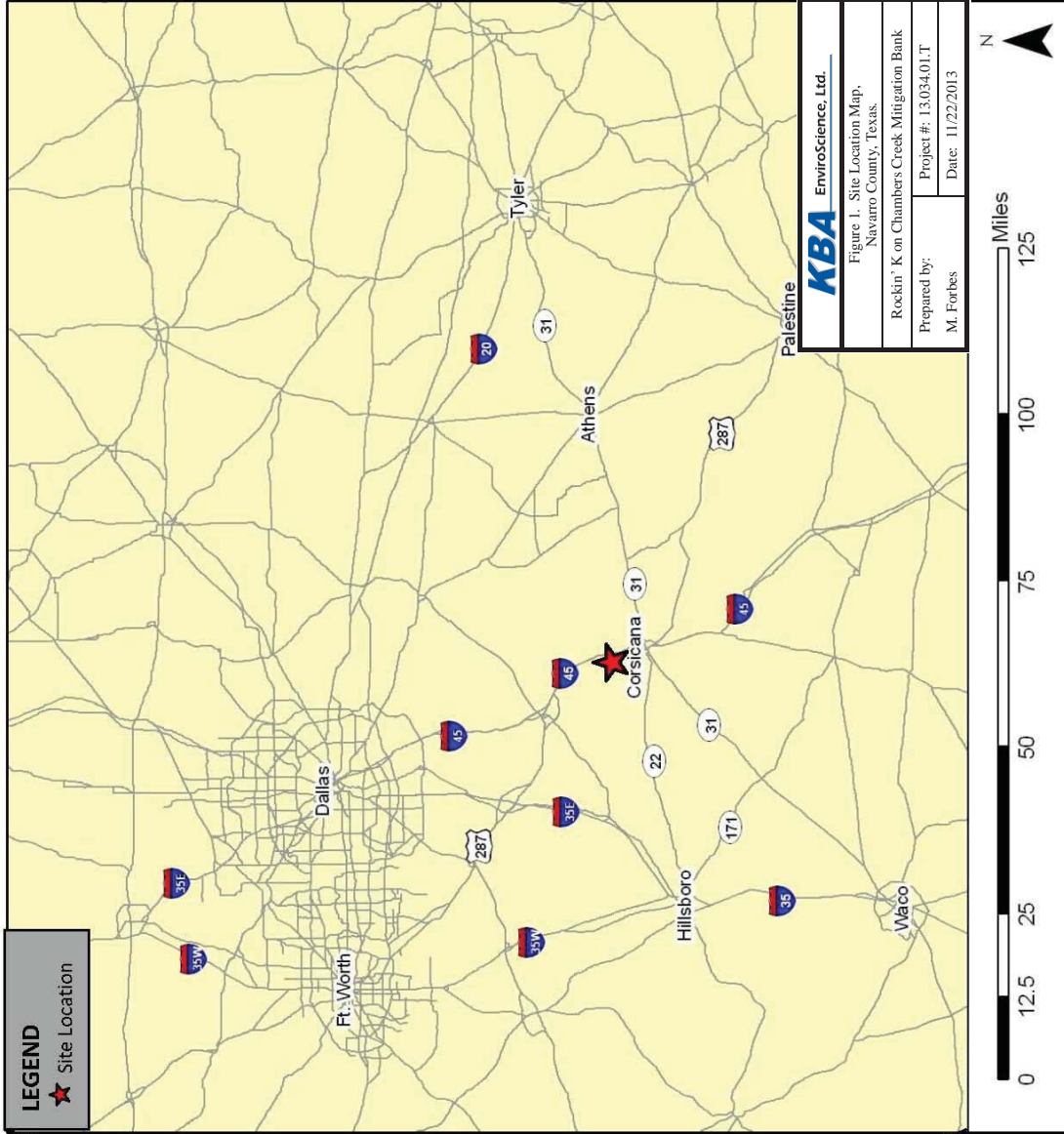
***Connemara Conservancy Foundation:***

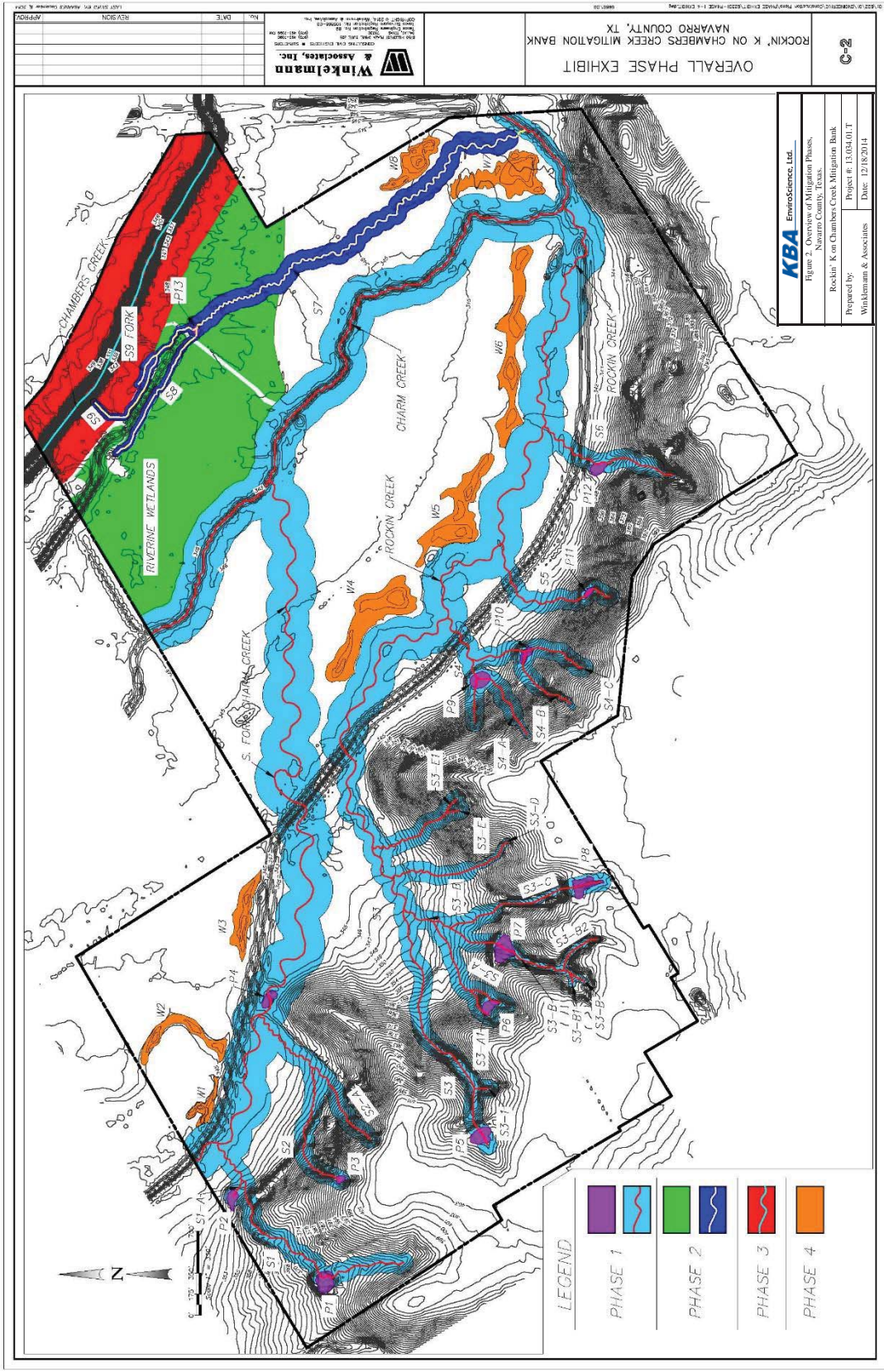
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RJ Taylor, Conservation Director

\_\_\_\_\_  
Date

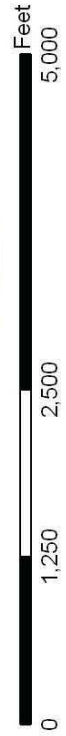
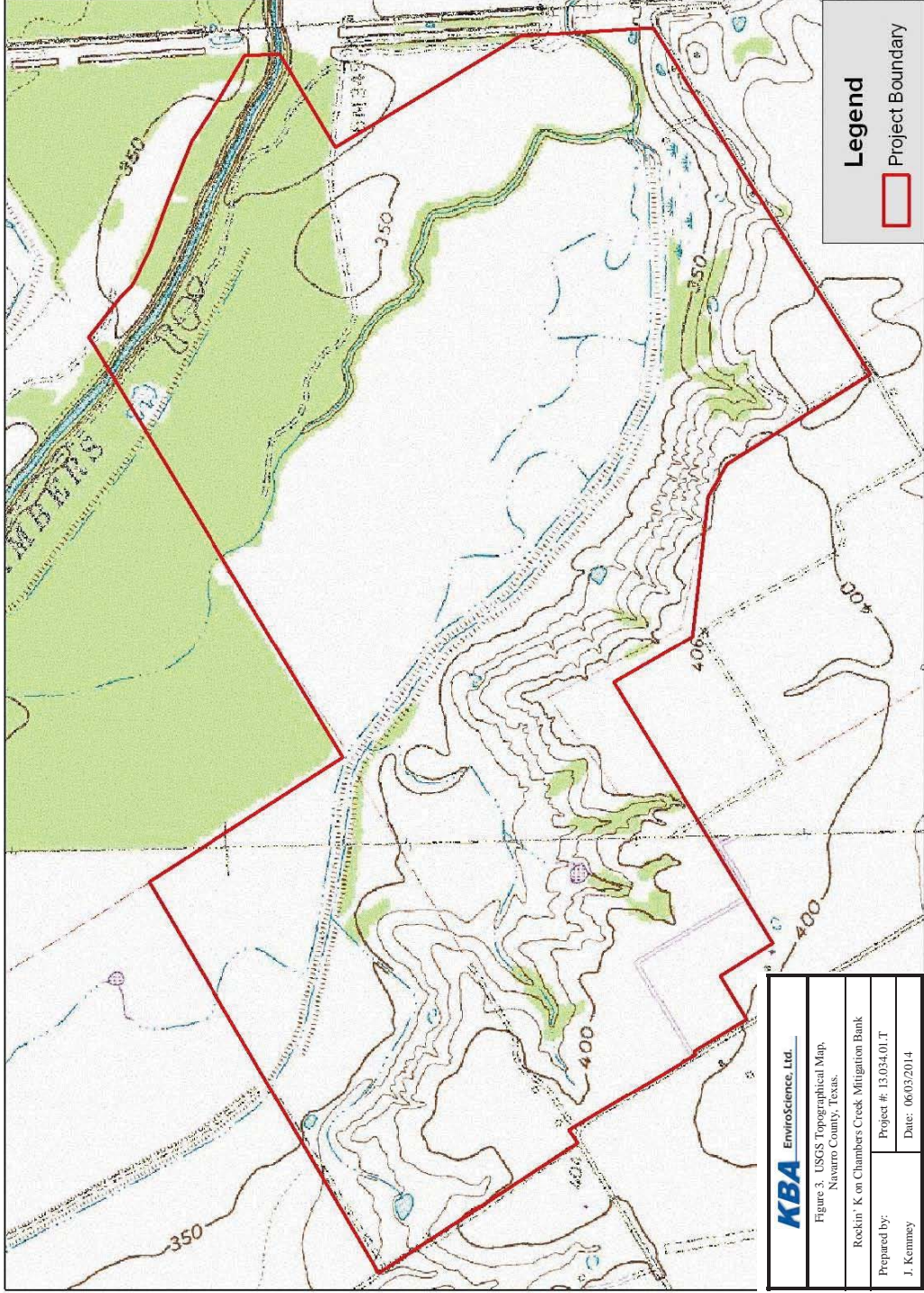
## **FIGURES**



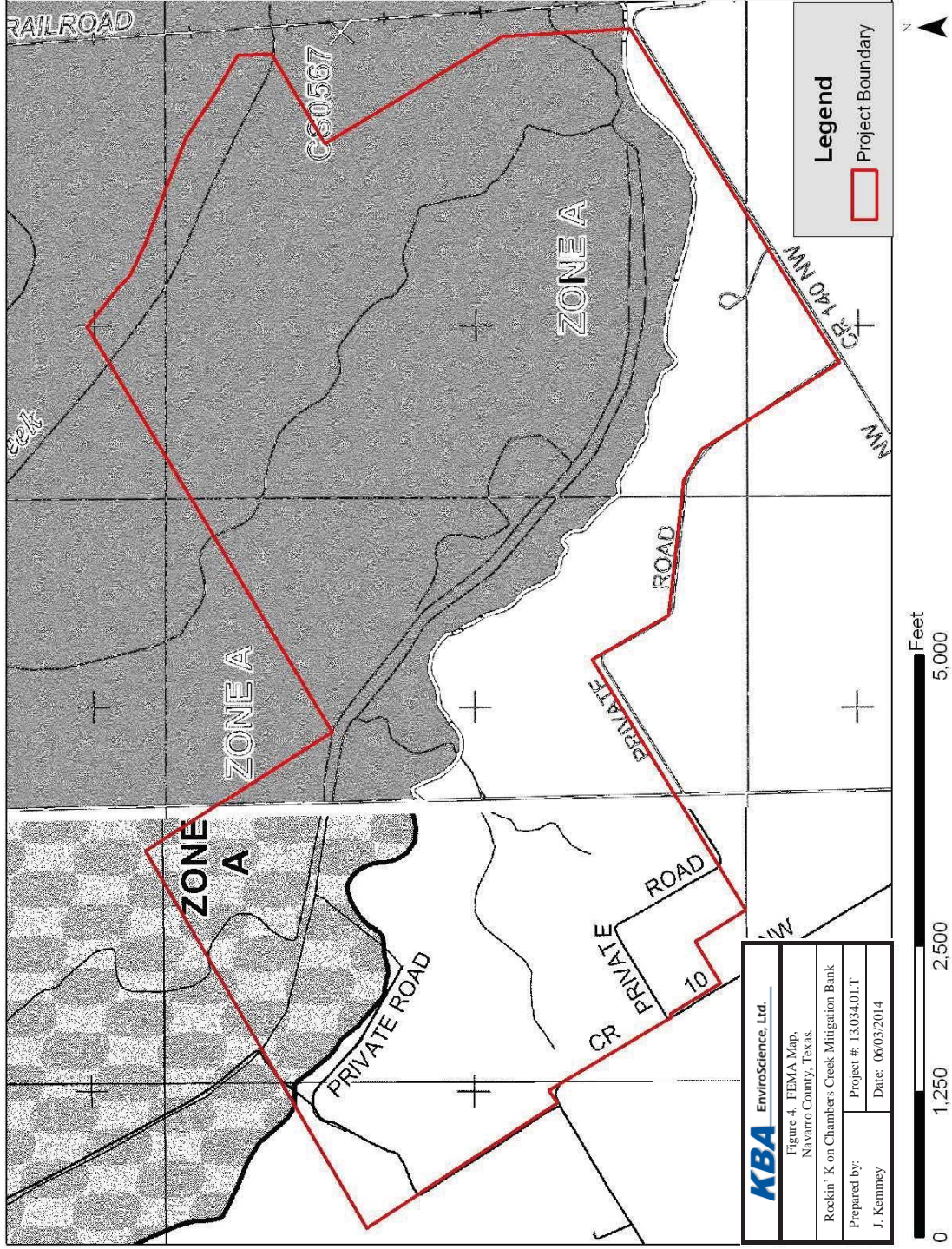




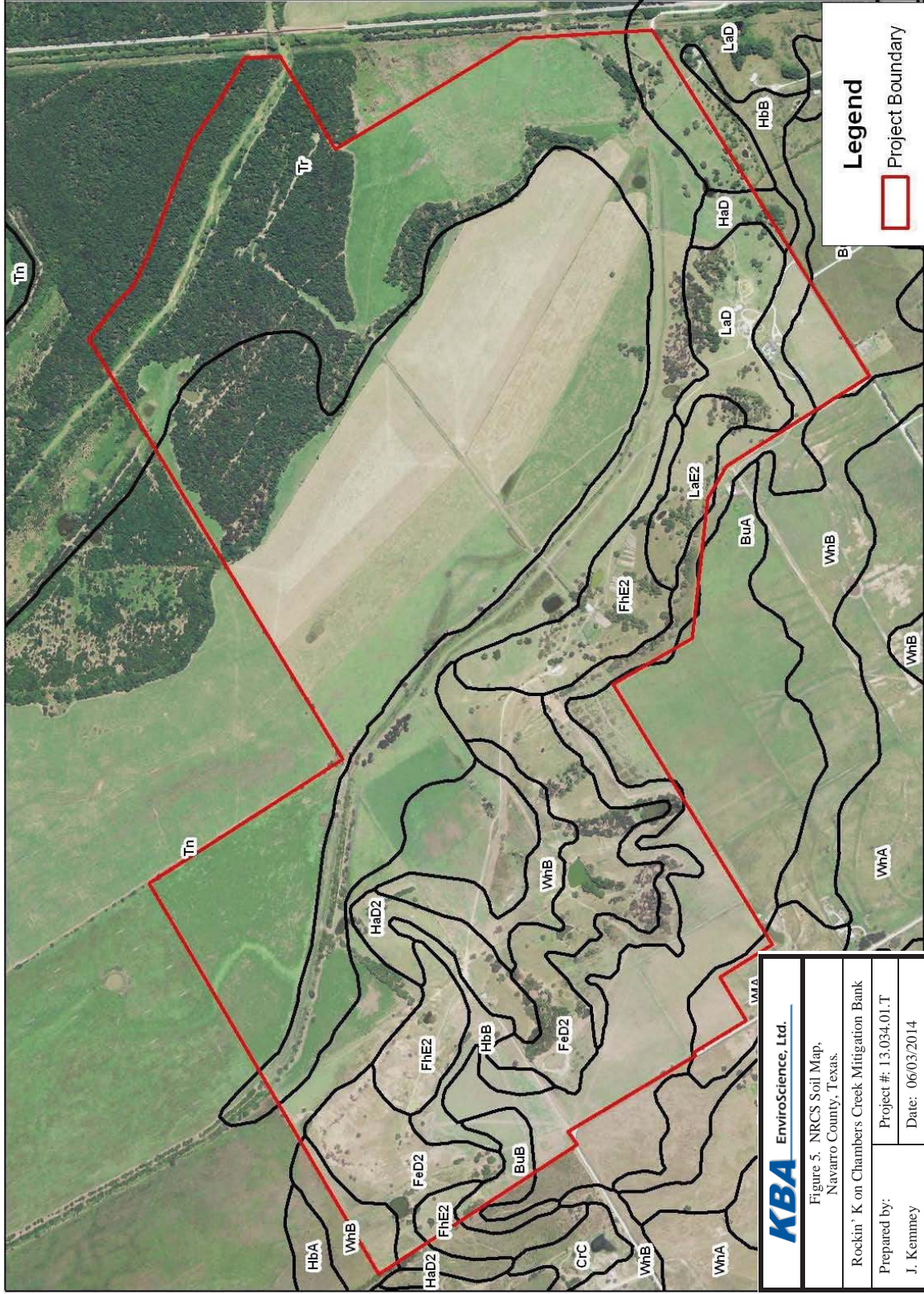






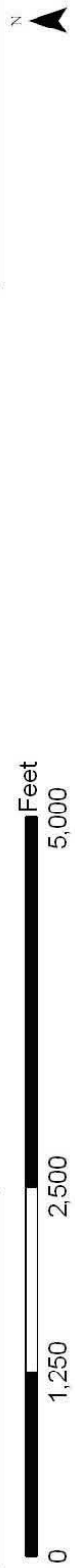
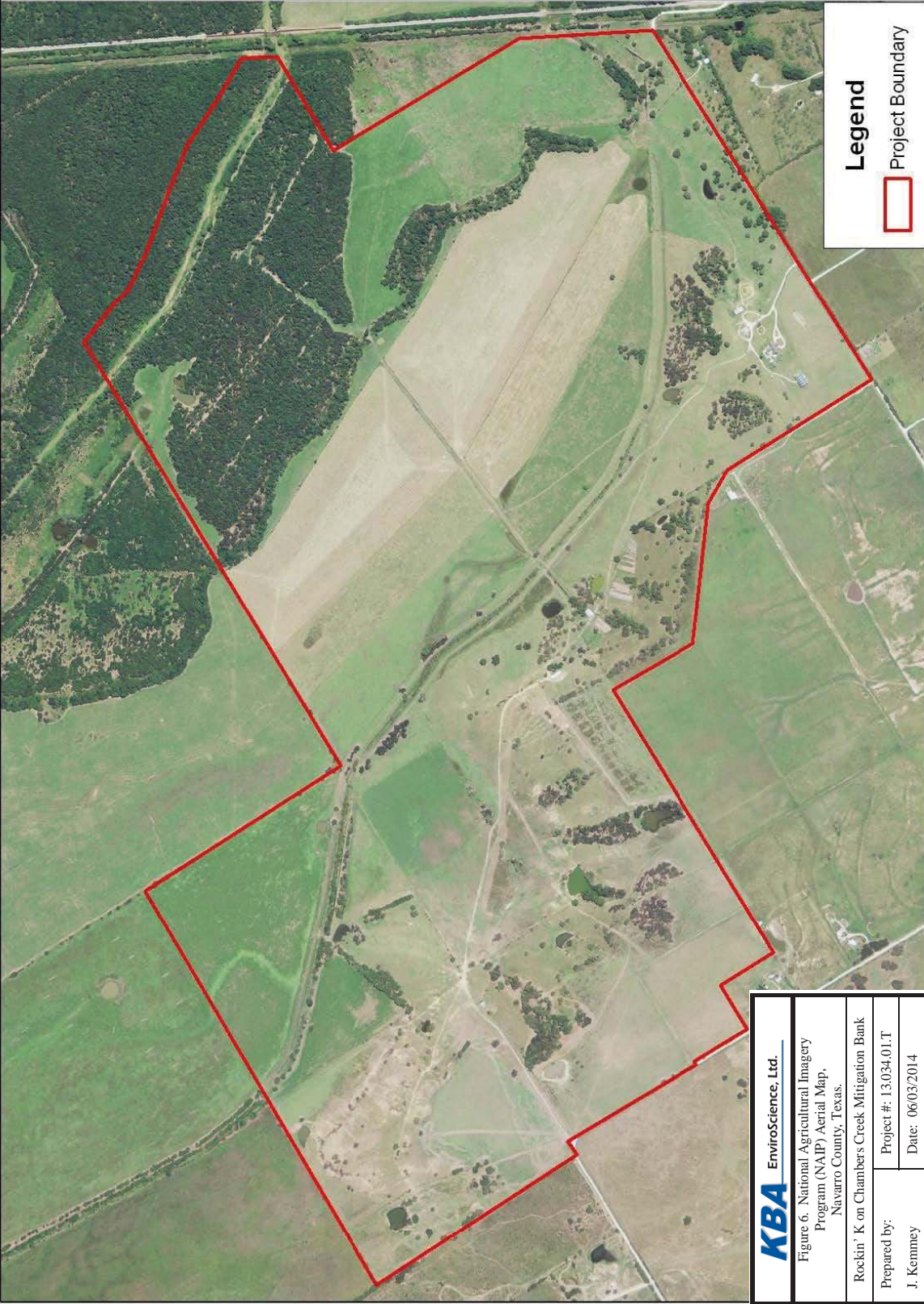






0 1,250 2,500 5,000 Feet





**ATTACHMENT A:**  
**Table 6-1,**  
**Tables F1-F3**

**Table 6.1. Proposed Vegetation for Enhancement and Restoration, Rockin' K on Chambers Creek Mitigation Bank.**

<b>Habitat Type/Species</b>	<b>Common Name</b>
<b>Riparian Trees</b>	
<i>Carya aquatica</i>	Water hickory
<i>Maclura pomifera</i>	Osage-orange
<i>Prunus mexicana</i>	Mexican plum
<i>Quercus stellata</i>	Post oak
<i>Quercus simillis</i>	Bottomland Post Oak
<i>Rhus aromatic</i>	Fragrant sumac
<i>Rhus capallinum</i>	Winter sumac
<i>Rhus glabra</i>	Smooth sumac
<i>Prunus angustifolia</i>	Chickasaw plum
<i>Quercus shumardii</i>	Shumard red oak
<i>Cercis canadensis</i>	Redbud
<i>Carya illinoensis</i>	Pecan
<i>Quercus macrocarpa</i>	Bur oak
<i>Fraxinum pennsylvanica</i>	Green ash
<i>Quercus muehlenbergii</i>	Chinkapin oak
<i>Sophora affinis</i>	Eve's necklace
<i>Amorpha fruticosa</i>	Indigobush
<i>Ilex decidua</i>	Deciduous holly
<i>Sideroxylon lanuginosum</i>	Gum bumelia
<i>Celtis laevegatis</i>	Sugarberry
<i>Ulmus crassifolia</i>	Cedar elm
<i>Myrica cerifera</i>	Wax myrtle
<i>Diospyros virginianum</i>	Common persimmon
<i>Salix nigra</i>	Black willow
<i>Populous deltoids</i>	Cottonwood
<i>Plantanus occidentalis</i>	Sycamore
<b>Riparian Shrubs</b>	
<i>Cephalanthus occidentalis</i>	Buttonbush
<i>Ilex decidua</i>	Possum haw
<i>Cornus drummondii</i>	Roughleaf dogwood
<i>Amorpha fruticosa</i>	Indigobush
<i>Callicarpa americana</i>	American beautyberry
<i>Rhus aromatica</i>	Fragrant sumac
<i>Symphoricarpos orbiculatus</i>	Texas coralberry
<b>Native Grasses</b>	
<i>Schizachyrium scoparium</i>	Little bluestem
<i>Andropogon gerardii</i>	Big bluestem
<i>Bouteloua curtipendula</i>	Sideoats grama
<i>Paspalum floridanum</i>	Florida paspalum

Habitat Type/Species	Common Name
<i>Panicum virgatum</i>	Switchgrass
<i>Tripsacum dactyloides</i>	Eastern gamagrass
<i>Buchloe dactyloides</i>	Buffalograss
<i>Sorghastrum nutans</i>	Indiangrass
<b>Erosion Control</b>	
<i>Panicum virgatum</i>	Switchgrass
<i>Tripsacum dactyloides</i>	Eastern gamagrass
<i>Helianthus annuus</i>	Annual sunflower
<i>Juncus spp.</i>	Juncus
<i>Echinochloa sp.</i>	Barnyard grass
<i>Desmanthus illinoensis</i>	Illinois bundleflower
<i>Chamaecrista fasciculata</i>	Partridge pea
Texas wildflower mix	
<b>Emergent Wetlands</b>	
<b>High Marsh (water depths -0.5 – 0.5 ft.)</b>	
<i>Eleocharis sp.</i>	Spike Rush
<i>Eleocharis parvula</i>	Dwarf spikerush
<i>Eleocharis quadrangulata</i>	Squarestem spikerush
<i>Juncus effusus</i>	Soft rush
<i>Juncus sp.</i>	Rushes
<i>Panicum hemitomon</i>	Maiden cane
<i>Hymenocallis caroliniana</i>	Spider lily
<i>Rhynchospora colorata</i>	White-topped sedge
<i>Cyperus retrorsus</i>	Flatsedge
<i>Proserpinaca palustris</i>	Mermaid weed
<i>Saururus cernuus</i>	Lizard tail
<i>Heteranthera limosa</i>	Blue mud plantain
<i>Polygonum sp.</i>	Smartweeds
<b>Middle Marsh (water depths 0.5 – 1.5 ft.)</b>	
<i>Scirpus validus</i>	Softstem bulrush
<i>Scirpus californicus</i>	California bulrush
<i>Schoenoplectus acutus</i>	Hardstem bulrush
<i>Pontederia cordata</i>	Pickereel weed
<i>Sagittaria sp.</i>	Duck potato
<b>Low Marsh (water depths 1.5 – 4 ft.)</b>	
<i>Nymphaea odorata</i>	White water lily
<i>Nymphaea amexicana or elegans</i>	Mexican water lily
<i>Brasenia schreberi</i>	Water shield
<i>Potamogeton sp.</i>	Pond weeds
<i>Chara sp.</i>	Muskgrass
<i>Lemna sp.</i>	Duck weeds



Table F-4. Summary of TXRAM Scores and Mitigation Credits for Streams and Riparian Buffers, Rockin' K on Chambers Creek Mitigation Bank.

SAR No.	Stream Name	Length (ft)	Channel Condition			Channel Condition Total	In-Stream Condition			In-Stream Condition Total	Hydrologic Condition			Primary Riparian Buffer Condition		Primary Riparian Condition Total	Sub-Total Score	Add Points (Max)	Percent In channel	In-channel Credits	Primary Riparian Buffer Credits	SUB- TOTAL	Secondary Buffer Credits			Tertiary Buffer Credits		Total Expanded Riparian Buffer Credits	Total Riparian Buffer Credits	TOTAL CREDITS				
			Floodplain Connect	Bank Condition	Sediment Deposit		Substrate Comp.	In-Stream Habitat	Flow Regime		Channel Status	Hydrologic Condition Total	Left Bank	Right Bank	Left Bank								Right Bank	Left Bank	Right Bank									
PERENNIAL STREAMS (CHAMBERS)																																		
Existing Condition																																		
2000	1 Chambers	4	3	1	4	13.3	2	1	7.5	3	4	21.9	4.0	3.8	19.5	62.2	0.0	62.2	NA	NA	NA							NA	NA					
990	2 Chambers	3	3	1	3	11.7	2	1	7.5	3	2	15.6	4.0	3.8	19.5	54.3	0.0	54.3	NA	NA	NA							NA	NA					
Reference Stream																																		
REF1	Richland	5	4	5	5	23.3	2	5	17.5	3	4	21.9	5	5	25.0	87.7	4.4	92.1	NA	NA	NA							NA	NA					
Proposed Condition <sup>a</sup> :																																		
2000	1 LIFT	0	1	4	0	8.3	0	4	10.0	0	0	0.0	1	1.2	5.5	23.8	4.3	28.1	77%	562.71	0.00	562.71	10.00	13.00	5.00	6.50	34.50	34.50	14.85					
990	2 LIFT	1	1	4	1	10.0	0	4	10.0	0	2	6.3	1	1.2	5.5	31.8	4.3	36.1	83%	356.92	0.00	356.92	4.95	4.95	2.48	2.48	14.85	14.85						
																	919.62			14.95			17.95		7.48		8.98		49.35		968.97			
TOTAL PERENNIAL STREAMS (CHAMBERS)																																		
INTERMITTENT STREAMS																																		
Existing Condition																																		
2568	3 Charm	5.0	3.0	4.0	5.0	20.0	1.0	4.0	12.5	0.0	0.0	0.0	3.0	1.4	11.0	43.5	0.0	43.5	NA	NA	NA							NA	NA					
3308	4 Charm	5.0	3.0	4.0	5.0	20.0	1.0	3.0	10.0	0.0	0.0	0.0	2.7	2.6	13.3	43.3	0.0	43.3	NA	NA	NA							NA	NA					
1105	5 Charm	5.0	4.0	5.0	5.0	23.3	1.0	4.0	12.5	1.0	1.0	6.3	2.5	2.5	12.5	54.6	0.0	54.6	NA	NA	NA							NA	NA					
Reference Stream																																		
REF2	Cummins	5.0	3.0	5.0	5.0	21.7	2.0	5.0	17.5	2.0	3.0	15.6	5.0	5.0	25.0	79.8	4.0	83.8	NA	NA	NA							NA	NA					
Proposed Condition <sup>a,d</sup> :																																		
2568	3 Charm	0.0	1.0	1.0	0.0	3.3	0.0	1.0	2.5	2.0	2.0	12.5	2.0	3.6	14.0	32.3	1.6	34.0	57%	871.84	0.00	871.84	14.77	51.36	7.38	25.68	99.19	99.19	158.78					
3308	4 Charm	0.0	1.0	1.0	0.0	3.3	0.0	2.0	5.0	2.0	2.0	12.5	2.3	2.4	11.8	32.6	1.6	34.2	64%	1131.75	0.00	1131.75	41.35	56.24	28.12	33.08	158.78	158.78						
1105	5 Charm	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	1.0	1.0	6.3	2.5	2.5	12.5	21.3	1.1	22.3	41%	246.55	0.00	246.55	0.00	0.00	0.00	0.00	0.00	246.55	246.55					
																	2003.59			56.12			107.60		35.50		58.76		257.97		504.53		2508.11	
TOTAL CHARM																																		
Existing Condition																																		
No SAR	SF Charm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	NA	0.00	0.00							NA	NA					
Reference Stream																																		
4722	REF3 Enhouse	5	4	5	5	23.3	1	5	15.0	2	1	9.4	3.7	3.9	19.0	66.7	0.0	66.7	NA	NA	NA							NA	NA					
Proposed Lift																																		
7759	SF Charm	5	4	5	5	23.3	1	5	15.0	2	1	9.4	5	5	25.0	72.7	3.6	76.3	66%	5923.51	0.00	5923.51	193.98	193.98	96.99	96.99	581.93	581.93						
																	5923.51			193.98			193.98		96.99		96.99		581.93		6505.44			
TOTAL SOUTH FORK CHARM																																		
Existing Condition																																		
No SAR	Rockin Cr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	NA	0.00	0.00							NA	NA					
Reference Stream																																		
4722	REF3 Enhouse	5	4	5	5	23.3	1	5	15.0	2	1	9.4	3.7	3.9	19.0	66.7	0.0	66.7	NA	NA	NA							NA	NA					
Proposed Condition <sup>e,f</sup> :																																		
6586	Rockin Cr	5	4	5	5	23.3	1	5	15.0	2	1	9.4	5	5	25.0	72.7	3.6	76.3	66%	5028.00	0.00	5028.00	164.65	164.65	82.33	82.33	493.95	493.95						
																	5028.00			164.65			164.65		82.33		82.33		493.95		6505.44			
TOTAL ROCKIN CREEK																																		
Existing Condition																																		
2800	6 Ditch	5	2	5	5	20.0	1.0	3.0	10.0	0	0	0.0	1.1	1.6	6.75	36.8	0.0	36.8	NA	-1029.00	0.00	-1029.00	NA	NA	NA	NA	NA	NA	NA					
2051	7 Ditch	5	2	5	5	20.0	1	4	12.5	0	0	0.0	1.5	1.5	7.5	40.0	0.0	40.0	NA	-820.40	0.00	-820.40	NA	NA	NA	NA	NA	NA	NA					
2420	8 Ditch	5	4	5	5	23.3	1	2	7.5	0	0	0.0	1.2	1.2	6.0	36.8	0.0	36.8	NA	-891.37	0.00	-891.37	NA	NA	NA	NA	NA	NA	NA					
																	-2740.77			0.00			0.00		0.00		0.00		0.00		0.00			
TOTAL DITCH <sup>g</sup>																																		
																	10214.33			246.55			0.00		0.00		0.00		1333.85		11794.73			
TOTAL INTERMITTENT STREAMS																																		
																	10460.88			0.00			0.00		0.00		0.00		1580.40		11794.73			



**Table F-2. Summary of TXRAM Scores and Mitigation Credits for Expanded Riparian Buffers, Rockin' K on Chambers Creek Mitigation Bank.**

Adjacent Stream			Expanded Riparian Buffer Condition						TXRAM LIFT						CREDITS					
			Secondary			Tertiary			Secondary			Tertiary			Secondary			Tertiary		
			Left	Right		Left	Right		Left	Right		Left	Right		Left	Right		Left	Right	
Proposed Condition <sup>a</sup> :			5.00	5.00		5.00	5.00													
Existing Condition:																				
1	1	PER	Chambers	2000		4.00	3.70		1.00	1.30		1.00	1.30		10.00	13.00		5.00	6.50	
2	2	PER	Chambers	990		4.00	4.00		1.00	1.00		1.00	1.00		4.95	4.95		2.48	2.48	
3	3	INT	Charm	2568		3.85	1.00		1.15	4.00		1.15	4.00		14.77	51.36		7.38	25.68	
4	4	INT	Charm	3308		2.50	1.60		2.50	3.40		3.40	4.00		41.35	56.24		28.12	33.08	
5	5	INT	Charm	1105		0.00	0.00		0.00	5.00		5.00	5.00		27.63	27.63		13.81	13.81	
	NA	INT	SF Charm	7759		0.00	0.00		0.00	5.00		5.00	5.00		193.98	193.98		96.99	96.99	
	NA	INT	Rockin	6586		0.00	0.00		0.00	5.00		5.00	5.00		164.65	164.65		82.33	82.33	
	NA	EPH	S1_R	2550		0.00	0.00		0.00	5.00		5.00	5.00		63.75	63.75		31.88	31.88	
	NA	EPH	S2_R	1980		0.00	0.00		0.00	5.00		5.00	5.00		49.50	49.50		24.75	24.75	
	NA	EPH	S2a_R	817		0.00	0.00		0.00	5.00		5.00	5.00		20.43	20.43		10.21	10.21	
6	9	EPH	S3_E	1033		1.11	1.04		3.89	3.96		3.89	3.96		20.09	20.45		10.05	10.23	
	NA	EPH	S3_R	3034		0.00	0.00		0.00	5.00		5.00	5.00		75.85	75.85		37.93	37.93	
	NA	EPH	S3a_R	1440		0.00	0.00		0.00	5.00		5.00	5.00		36.00	36.00		18.00	18.00	
	NA	EPH	S3b_R	1117		0.00	0.00		0.00	5.00		5.00	5.00		27.93	27.93		13.96	13.96	
	NA	EPH	S3c_R	635		0.00	0.00		0.00	5.00		5.00	5.00		15.88	15.88		7.94	7.94	
	NA	EPH	S3d_R	699		0.00	0.00		0.00	5.00		5.00	5.00		17.48	17.48		8.74	8.74	
	NA	EPH	S3e_R	1071		0.00	0.00		0.00	5.00		5.00	5.00		26.78	26.78		13.39	13.39	
	NA	EPH	S4_R	1047		0.00	0.00		0.00	5.00		5.00	5.00		26.18	26.18		13.09	13.09	
	NA	EPH	S4a_R	507		0.00	0.00		0.00	5.00		5.00	5.00		12.68	12.68		6.34	6.34	
7	14	EPH	S4b_E	255		2.60	2.80		2.40	2.20		3.20	3.60		3.06	2.81		2.04	2.30	
	NA	EPH	S4b_R	894		0.00	0.00		0.00	5.00		5.00	5.00		22.35	22.35		11.18	11.18	
8	15	EPH	S4c_E	334		1.60	1.40		3.40	3.60		3.70	3.60		5.68	6.01		3.09	3.01	
	NA	EPH	S4c_R	225		0.00	0.00		0.00	5.00		5.00	5.00		5.63	5.63		2.81	2.81	
9	16a	EPH	S5_E	157		1.60	1.40		3.40	3.60		3.70	3.60		2.67	2.83		1.45	1.41	
	NA	EPH	S5_R	1228		0.00	0.00		0.00	5.00		5.00	5.00		30.70	30.70		15.35	15.35	
	NA	EPH	S6_R	1141		0.00	0.00		0.00	5.00		5.00	5.00		28.53	28.53		14.26	14.26	
	NA	EPH	S7_R	4086		0.00	0.00		0.00	5.00		5.00	5.00		102.15	102.15		51.08	51.08	

Table F-3. Summary of TXRAM Scores and Mitigation Credits for Wetlands, Rockin' K on Chambers Creek Mitigation Bank.

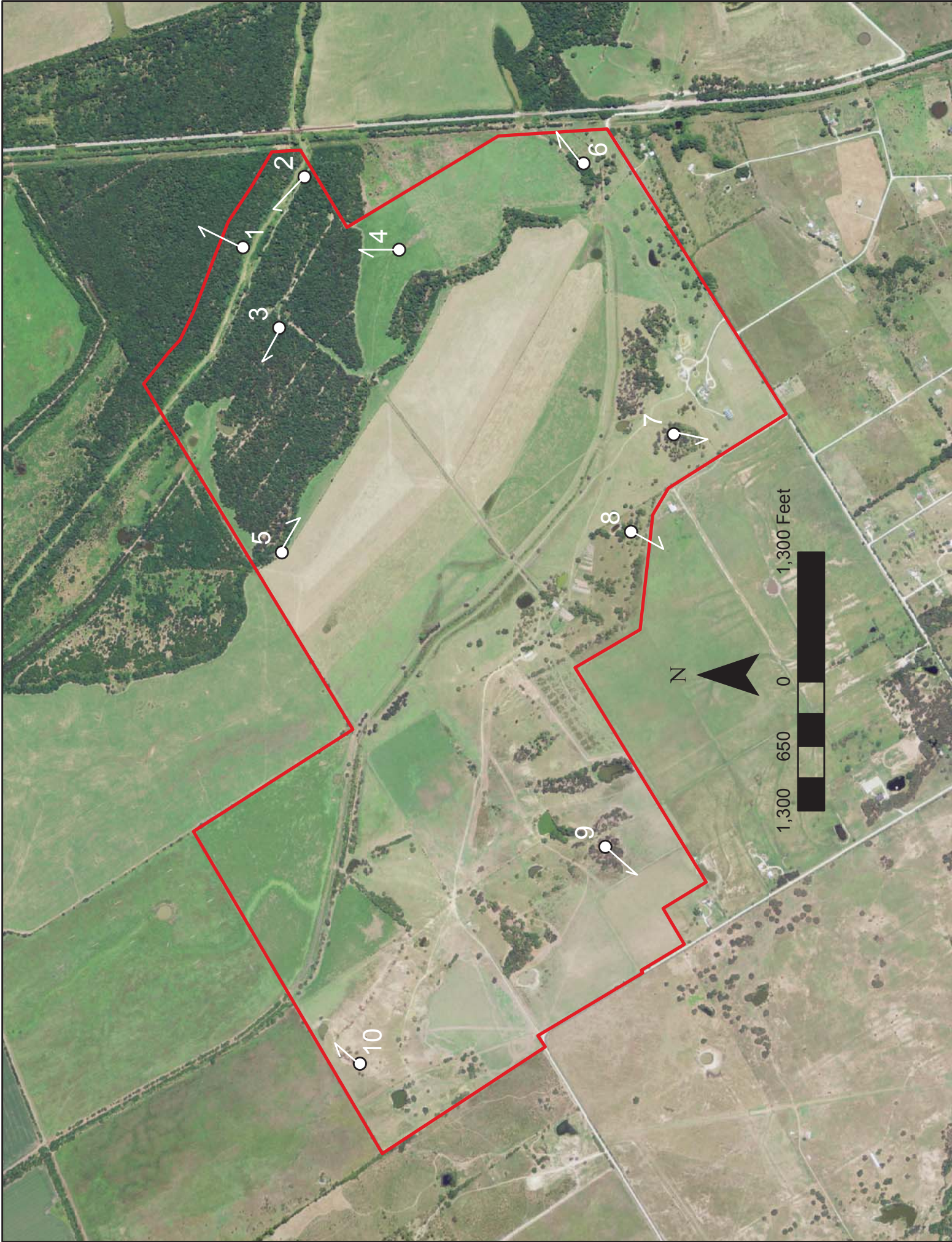
Wetland Name				Wetland Type	Size (ac)	Landscape Condition		Hydrology Condition		Soils Condition		Physical Structure Condition		Biotic Structure Condition						Sum of Core Elements	Add'l Points Hard Mast	Credits		Total Credits								
						Connectivity	Buffer	Water Source	Hydroperiod	Hydrology Score	Organic matter	Sedimentation	Soils Score	Topo Complexity	Edge complexity	Physical habitat richness	Physical Structure Score	Plant strata	Species richness			Non-native/invasive	Interspersion		Strata overlap	Herbaceous cover	Vegetation alterations	Biotic Structure Score	Total Overall Score	Depres	Riverine	
Existing Condition:																																
REF5	1	Ditch	Depres	0.05	4	1.20	13.00	3	2	11.67	1	4	4	15.00	1	1	5.00	1	2	4	1	0	4	3	10.71	55.38	0.00	55.38	NA	NA	NA	
	2	Ditch	Depres	0.40	3	1.05	10.13	3	2	11.67	1	4	4	15.00	2	1	6.67	3	3	4	2	3	2	4	15.00	58.46	0.00	58.46	NA	NA	NA	
	3	Ditch	Depres	0.45	2	1.10	7.75	3	2	11.67	1	4	4	15.00	2	1	6.67	3	3	4	2	3	2	4	15.00	56.08	0.00	56.08	NA	NA	NA	
	4	Forest	Riverine	63.0	3	3.20	15.50	3	3	15.00	2	4	4	16.67	2	1	11.67	4	3	4	1	3	1	2	12.86	71.69	0.00	71.69	NA	NA	NA	
Reference Wetlands:																																
Proposed Condition <sup>a,b,c,d,e,f,g,h</sup>	REF5	Pond North	Depres	0.25	2	2.20	10.50	3	3	15.00	1	4	4	15.00	2	1	3	10.00	3	4	4	2	3	3	4	16.43	66.93	0.00	66.93	NA	NA	NA
	REF6	LLELA	Riverine	120	3	2.80	14.50	3	4	18.33	2	4	4	16.67	3	1	4	13.33	4	4	4	3	3	3	4	17.14	80.14	0.00	80.14	NA	NA	NA
	Proposed Condition <sup>i,j,k,l</sup>		Riverine	120	3	3.20	15.50	4	4	20.00	2	4	4	16.67	2	1	11.67	4	4	4	1	3	1	4	15.00	78.83	1.97	80.80	NA	NA	NA	NA
Proposed Life:																																
Stock Ponds	1	Ditch	Depres	0.05	4	1.20	13.00	3	2	11.67	1	4	4	15.00	1	1	5.00	1	2	4	1	0	4	3	10.71	55.38	0.00	55.38	-0.03	0.00	-0.03	
	2	Ditch	Depres	0.40	3	1.05	10.13	3	2	11.67	1	4	4	15.00	2	1	6.67	3	3	4	2	3	2	4	15.00	58.46	0.00	58.46	-0.23	0.00	-0.23	
	3	Ditch	Depres	0.45	2	1.10	7.75	3	2	11.67	1	4	4	15.00	2	1	6.67	3	3	4	2	3	2	4	15.00	56.08	0.00	56.08	-0.25	0.00	-0.25	
	W1	Depres	Depres	0.72	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	0.58	0.00	0.58	
	W2	Depres	Depres	1.80	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	1.44	0.00	1.44	
	W3	Depres	Depres	1.73	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	1.39	0.00	1.39	
	W4	Depres	Depres	4.88	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	3.91	0.00	3.91	
	W5	Depres	Depres	4.25	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	3.41	0.00	3.41	
Riverine/ Forested	W6	Depres	Depres	5.00	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	4.01	0.00	4.01	
	W7	Depres	Depres	3.63	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	2.91	0.00	2.91	
	W8	Depres	Depres	1.99	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	1.59	0.00	1.59	
Stock Ponds				Depres	2.37	3	2.20	13.00	4	4	20.00	1	4	3	13.33	4	3	16.67	3	4	4	3	3	3	4	17.14	80.14	0.00	80.14	1.90	0.00	1.90
Riverine/ Forested				Riverine	63.02	0	0.00	0.00	1	1	5.00	0	0	0	0.00	0	0	0.00	0	1	0	0	0	0	2	2.14	7.14	1.97	9.11	0.00	5.74	5.74
TOTAL																										20.61		5.74		26.36		

NA = Not applicable

- The reference wetland has fewer potential hydrologic connections than the proposed wetlands.
- The reference wetland has a man-made outfall, the proposed wetlands will not have man-made outfalls.
- The proposed wetlands will be shallower and are expected to have a higher variation in inundation/drying than the reference wetland.
- The reference wetland is mostly surrounded by uplands and a levee (barrier) whereas the proposed wetland will allow for greater movement of water to and from surrounding areas.
- The proposed wetlands are not expected to develop the same degree of soil organic matter as the reference wetland due to their young age and frequent wet/dry hydroperiods.
- The reference wetland has few elevation gradients whereas the proposed wetlands will have a greater number of elevation gradients.
- The reference wetland has low edge complexity whereas the proposed wetlands will have high edge complexity.
- The reference wetland has a low degree of interspersed whereas the proposed wetlands will have a moderate degree of interspersed.
- The reference wetland buffer includes a dam and road, plus other minor differences than the proposed riverine wetland buffer.
- The water source of the reference wetland is controlled by dam releases, whereas the water source of the riverine wetland will not be.
- The reference site has a higher degree of topographic complexity than the proposed riverine wetland. Sponsor does not intend to increase topographic complexity.
- Much of the reference site was cleared of vegetation in the late 1950's whereas vegetation within the proposed riverine wetland was not cleared.

**ATTACHMENT B:**  
**Site Photographs**









1. Riparian area north of Chambers Creek, facing north.



2. South bank of Chambers Creek, facing upstream.





3. Bed of drainage way S8, facing upstream.



4. Pasture south of wooded area, facing north.





5. Charm Creek near western boundary, facing downstream.



6. Charm Creek near eastern boundary, facing downstream.





7. Drainage way S6, facing downstream.



8. Drainage way S5, facing upstream.





9. Drainage way S3b, facing upstream.



10. Grassy swale near western boundary, facing northeast.

**Attachment H. Long-term Management Plan**  
**(Section 10, Mitigation Plan)**



**Attachment I. Letter of Agreement  
Identifying the Long-term Steward**

**EASEMENT PROCESS AGREEMENT**  
**between**  
**Connemara Conservancy Foundation**  
**and**  
**Rockin' K on Chambers Creek, LP**  
**November \_\_\_\_, 2013**

The Connemara Conservancy Foundation (hereinafter "Connemara") is delighted to assist you in the preparation of a conservation easement for all or a portion of your 800 acres, more or less in Navarro County, Texas. Each conservation easement is tailored to the individual property, your needs as the landowner, and the conservation values being protected. We hope you will find the planning process educational and the resulting conservation easement a satisfying legacy.

By entering into this agreement, you (i.e., the undersigned landowners) acknowledge your desire to voluntarily convey and donate a perpetual conservation easement to Connemara. Further, all of the undersigned parties mutually agree that the process required to complete a conservation easement transaction is complex and depends upon the commitment of both parties to take timely actions. Therefore, in consideration of these preceding statements, you hereby voluntarily consent to this Easement Process Agreement (hereinafter "Agreement") and commit to fulfilling or otherwise completing all of the actions listed below, as requested by Connemara and as necessary to complete a conservation easement transaction. Connemara reserves the right to record and enforce this Agreement as it deems necessary.

Conservation easements are a highly technical area of the law, so we want to be sure that you are fully aware of all the implications before proceeding further in this process. If you have any questions, be sure to consult with your legal and financial advisors. This Agreement contains information regarding conservation easements and their preparation. *Please read this Agreement and all information you receive from Connemara carefully and completely as they discuss many important legal issues and costs, which you may not have considered.*

**Expenses to the Landowner**

In order to cover the costs of implementing and developing a conservation easement, Connemara assesses two non-refundable fees as part of the conservation easement process. One fee covers Connemara's costs in preparing the easement and the other establishes an easement stewardship fund (ESF) to cover our perpetual easement monitoring responsibilities. A copy of Connemara Conservancy's policies pertaining to these fees is being provided to you, and your signature(s) below acknowledges receipt of these policies. Both fees are subject to further refinement as we mutually determine the provisions of the easement and the actual extent of the easement area. Please be advised that the estimated fees for easement preparation will be \$1,500.00 based on the attorney's request that only one conservation easement document would be required for the two tracts of land. The calculated stewardship endowment for a single easement on the approximately 800 acres of the designated mitigation bank site will be \$33,898.00, based on our current formula with an anticipated investment net rate of return of 5%. For conservation easement projects involving multiple landowners or multiple easements, the easement preparation fee and stewardship endowment cost will be higher to cover the additional stewardship work associated with those projects.

In addition, you will be responsible for the cost of recording the easement documents in the deed records at the Navarro County Clerk's Office. Potential additional fees for which you will be responsible include the following:

1. Legal and financial advisors to review the easement document and to assist you in your tax planning considerations (variable cost);
2. Legal survey of the proposed conservation easement area, *if necessary* (potentially several thousand dollars);
3. Current title report, if necessary or copy of title insurance policy for the Property showing fee simple ownership;
4. Baseline survey (Connemara can provide this service for a fee to be determined based on the circumstances on and around your property. This survey can also be provided by an outside party subject to Connemara's requirements. Costs for Connemara staff assist you and your consultant in the preparation of this Baseline Survey Report over the approximately 800 acres of property are estimated at a value not to exceed \$600.00.
5. Phase 1 environmental site assessment or Transaction Screen, *if necessary* (unknown cost);
6. Subordination or satisfaction of any mortgage on the property to be encumbered with a conservation easement (unknown cost, if any);
7. Payment or other satisfaction of any liens or delinquent property taxes and the removal of any other encumbrance or "cloud" on the title that we find objectionable in accepting the conveyance of the conservation easement (unknown cost, if any);
8. Purchase of adequate liability insurance and listing Connemara as an additional insured, *if necessary* (unknown cost, if any); and
9. Appraisal of the property as encumbered by the conservation easement (potentially several thousand dollars).

Regarding each of the landowner's expenses listed above, the landowner(s) should consult with appropriate and competent legal and financial advisors to determine any potential tax-deductibility of these project costs. For businesses such as mitigation banks, these fees might be construed as business expenses.

### **Steps to Prepare a Conservation Easement**

The steps necessary to complete a conservation easement transaction include the following:

1. You and a representative of Connemara meet on your property to determine eligibility for a conservation easement (this step may have occurred prior to the signing of this Agreement). We provide you with supplemental information about conservation easements, including our template of a conservation easement to illustrate the content of our document.
2. You and Connemara enter into this Agreement, retaining a copy for your files. You provide a "performance fee" (as described below) to Connemara at that time.
3. You provide a list of desired prohibitions, restrictions, and reserved rights associated with the easement area.
4. You provide a legal survey of the easement area.
5. You provide a current title report (including legible copies of all items identified) on the property to be encumbered with a conservation easement.
6. The landowner and Connemara will decide which party will draft the first easement DRAFT document based on the Connemara easement template. The other party will review the first draft using "Tracked Changes" via word processing. Easement negotiation will continue in this manner until a final document is agreed upon.
7. We conduct a baseline inventory of the proposed easement area after you have indicated a preliminary approval of the easement document.
8. If necessary, you provide a Phase 1 environmental site assessment of the proposed easement area, or similar evaluations.
9. You provide an acceptable conservation plan for the proposed easement area.
10. We provide a baseline documentation report for the proposed easement area.

11. You provide an updated title report (including legible copies of all items identified) on the property to be encumbered with a conservation easement.
12. As necessary, you provide documentation of satisfaction of any “clouds” on the title to the property.
13. We provide a final easement document for your review and acceptance.
14. You accept and sign the easement document.
15. We accept and sign the easement document that you have signed and returned to us along with (i) your payment of the Easement Stewardship Fund amount (to be calculated when we provide you with the initial draft of the proposed conservation easement), or (ii) the return of your signed and notarized original statement describing the mutually acceptable alternative means to fund the ESF (please also refer to the “Stewardship Procedures and Fund Policy” provided to you).
16. You record the fully executed easement document.
17. You return the original recorded document to us, retaining a copy for your records.
18. You provide a copy of the appraisal of the easement area.

The undersigned parties mutually understand and agree that the desired completion date for this conservation easement transaction is during late 2013 or early 2014, and that all parties will take all reasonable steps within their respective control to close this conservation easement transaction by this desired date.

### **Scope of Connemara’s Work to Assist Landowner with Conservation Easement:**

#### **Phase I**

- **Property Assessment & Landowner Notification:**
  - Review/discussion of landowner goals
  - Preliminary site visit and assessment of conservation values of the subject property
  - Consultation with Land Committee
  - Distribution of information packet letter and easement process agreement to landowner (if deemed appropriate to proceed)
- **Preliminary Identification of Key Elements of Conservation Easement:**
  - Meetings/conversations with landowners (and perhaps their advisors) to discuss property assessment findings and Connemara recommendations
  - Additional site visit(s), if necessary or desired by landowner(s)
  - Identification of preliminary key elements of conservation easement (i.e., prohibitions, restrictions and reserved rights)
  - Consideration of landscape context of proposed easement area

#### **Phase II**

- **Data Compilation & Review, Easement (initial draft) Preparation:**
  - Review title report and associated due diligence
  - Review of governmental conservation policies relating to the subject property
  - Review of legal survey and legal description of proposed easement area
  - Preparation of draft easement language and consultation with Connemara’s advising attorney
  - Preparation of Easement Stewardship Fund contribution amount worksheet
  - Distribution of initial draft easement document and cover letter to landowner

#### **Phase III**

- **Preparation of Baseline Documentation Report**

- Environmental due diligence
- Baseline inventory site visit (including ground photography documentation)
- Compilation of site visit findings as Exhibit B of conservation easement
- Preparation and/or compilation of all attachments to Exhibit B

#### **Phase IV**

- **Finalization of Easement**

- Discussion/negotiation of remaining issues with landowners and/or their advisors
- Final review of updated title report and associated due diligence
- Review of conservation plan
- Presentation of proposed conservation easement to Land Committee
- Upon acceptance of proposed easement by landowner, presentation of proposed easement to Board of Trustees
- Delivery of easement documents to landowner
- Archival filing of recorded easement document and associated papers

#### **Preparation and Performance Fee**

The undersigned landowner(s) understand that Connemara Conservancy is a publicly-funded charitable organization under Section 501(c)(3) of the Internal Revenue Code that must commit staff time and resources to consummate the acquisition of the conservation easement. Therefore, Connemara Conservancy ("Connemara") must request a Preparation and Performance Fee ("Fee") from the landowner in order to remain a sustainable organization and to enable it to fund the staff time and resources necessary to provide this service.

Therefore, the undersigned landowner(s) ("Landowner" or "Landowners") agree to provide to Connemara, upon execution of this Easement Process Agreement ("Agreement"), a sum of \$1,500.00 to cover the costs associated with easement preparation and to demonstrate the landowner's good faith and commitment to consummate this conservation easement transaction in a timely manner. Conversely, Connemara Conservancy agrees to consummate this conservation easement transaction in a timely manner.

Termination of this agreement and refund policies applicable to the Fee are described in "Termination of this Agreement" below.

#### **Easement Stewardship Fund**

By accepting the conservation easement donation, Connemara Conservancy agrees to preserve the conservation values of the property...**forever**. The Conservancy must be realistic about the cost of enforcing this conservation over the perpetual long-term as ownership of the property changes hands. We are also required by the IRS to ensure we have adequate funding for each conservation project we assume. Unless a mutually acceptable alternative has been arranged and documented to the satisfaction of Connemara, Connemara shall establish an Easement Stewardship Fund for the easement area, to be funded by a one-time grant of a sum of dollars (to be determined) paid by the landowner(s) at the time of closing of the conservation easement conveyed to Connemara. Connemara is open to an installment plan or bequest arrangement, but this arrangement must be finalized before the easement closing and requires additional documentation.

This Agreement may also be terminated by the written notification of either Connemara or the Landowner(s) where Landowners concur unanimously, to the other party. If the undersigned Landowner(s) or Connemara, determine to terminate this Agreement, this Agreement shall be



terminated upon 60 days' written notice (signed by the undersigned Landowner(s) or by Connemara) to the other party or parties.

**Termination of this Agreement**

If Landowner(s) initiate termination, Landowner or Landowners then forfeit up to 100% of the Fee as described above. If Connemara initiates termination, it can return up to 100% of the Fee to the Landowner(s). If Connemara returns less than 100% of the Fee and the termination is for good cause, upon request, Connemara shall provide an invoice describing the staff hours and costs incurred in the easement preparation, and shall subtract those costs from the Fee and return the remainder to the Landowner(s).

**MUTUALLY AGREED AND ACCEPTED**

EXECUTED this \_\_\_\_\_ day of November, 2013.

Signed:

\_\_\_\_\_ Date: \_\_\_\_\_  
Landowner

**STATE OF TEXAS**

§  
§  
§

**COUNTY OF** \_\_\_\_\_

This instrument was acknowledged before me this the \_\_\_\_\_ day of \_\_\_\_\_, 2013,

By \_\_\_\_\_, \_\_\_\_\_ of \_\_\_\_\_.

\_\_\_\_\_  
Notary Public in and for the State of Texas

My Commission Expires:

Printed Name of Notary:

\_\_\_\_\_

\_\_\_\_\_

Connemara Conservancy Foundation:

\_\_\_\_\_  
Sandra Greenway, Executive Director

Date: \_\_\_\_\_

**STATE OF TEXAS**

§

§

**COUNTY OF** \_\_\_\_\_

§

This instrument was acknowledged before me this the \_\_\_\_\_ day of \_\_\_\_\_, 2013,

by \_\_\_\_\_, \_\_\_\_\_ of \_\_\_\_\_.

\_\_\_\_\_  
Notary Public in and for the State of Texas

My Commission Expires:

Printed Name of Notary:

\_\_\_\_\_

\_\_\_\_\_

## **Attachment J. Financial Assurance**

Policy Number: To be assigned if purchased

Previous Policy Number: \_\_\_\_\_

## MITIGATION BANK INSURANCE POLICY DECLARATIONS

INSURER	UNDERWRITING OFFICE	PRODUCER
<b>Catlin Specialty Insurance Company</b> 160 Greentree Drive Suite 101 Dover, DE 19904	1600 Market Street Suite 1616 Philadelphia, PA 19103	Beacon Hill Services, Inc. P.O. Box 1532 Charlottesville, VA 22902

### CLAIMS MADE AND REPORTED COVERAGE

**NOTICE: THIS IS A CLAIMS-MADE POLICY. THIS POLICY HAS CERTAIN PROVISIONS AND REQUIREMENTS UNIQUE TO IT AND MAY BE DIFFERENT FROM OTHER POLICIES A "NAMED INSURED" MAY HAVE PURCHASED. FOR THERE TO BE COVERAGE UNDER THIS POLICY, A "CLAIM" MUST FIRST BE MADE BY THE "REGULATORY BODY" DURING THE "POLICY PERIOD". THIS POLICY INCLUDES NO DUTY TO DEFEND OR PAY DEFENSE COSTS.**

**PLEASE READ THE ENTIRE POLICY CAREFULLY**

### ITEM 1:

<b>Named Insured:</b>	Rockin'K Ranch LP
<b>Mailing Address:</b>	1601 Elm St. Suite 3700 Dallas, TX 75201

A.)	Mitigation Bank	Rockin'K on Chambers Creek Mitigation Bank
B.)	Insured Property	Rockin'K on Chambers Creek Navarro County TX as more fully delineated in the Rockin'K Mitigation Banking Instrument

### ITEM 2:

**Policy Period:** From: TBD To: TBD (3 years from the effective date)

At 12:01 A.M. both dates at your mailing address shown above.

**THIS INSURANCE CONTRACT IS WITH AN INSURER NOT LICENSED TO TRANSACT INSURANCE IN THIS STATE AND IS ISSUED AND DELIVERED AS SURPLUS LINE COVERAGE UNDER THE TEXAS INSURANCE STATUTES. THE TEXAS DEPARTMENT OF INSURANCE DOES NOT AUDIT THE FINANCES OR REVIEW THE SOLVENCY OF THE SURPLUS LINES INSURANCE PROVIDING THIS COVERAGE, AND THE INSURER IS NOT A MEMBER OF THE PROPERTY AND CASUALTY INSURANCE GUARANTY ASSOCIATION CREATED UNDER CHAPTER 462, INSURANCE CODE, CHAPTER 225 INSURANCE CODE, REQUIRES A PAUMENT OF A ----- tbd----- PERCENT TAX ON GROSS PREMIUM**

**ITEM 3: LIMIT OF LIABILITY**

The Limit of Liability shown below are for the respective terms. Please refer to the endorsement attached to this policy "Amendment of Limit of Liability Endorsement" (EGWL 401) for the actual limit in force.

**Limit of Liability beginning at 12:01 am on the beginning date listed and ending date 12:01 on the ending date listed in the EGWL 401:**

**LIMIT:** Yr 1 \$                       
Yr 2 \$                       
Yr 3 \$                     

**ITEM 4: DEDUCTIBLE** \$ 5,000 Per Claim

**ITEM 5: RETROACTIVE DATE:** Policy Inception date

**ITEM 6:**

**POLICY PREMIUM** \$ TBD **100% minimum and earned on the inception date of the policy**

**TRIA PREMIUM** \$ Included

**STATE TAX OR OTHER (IF APPLICABLE):** \$                     

**TOTAL PREMIUM** \$ TBD **Total Premium 100% minimum and earned on the inception date of the policy.**

**ITEM 7: REGULATORY BODY:**

Name:	US Army Corps of Engineers, Ft Worth District
Address:	619 Taylor St. Ft. Worth, TX 76102

The name and address above will be used for all notices to the "regulatory body".

**ITEM 8:****FORMS AND ENDORSEMENTS FORMING A PART OF THIS POLICY AS OF THE INCEPTION DATE:**

See attached schedule of forms and endorsement:

**STATE AND FEDERAL REQUIRED AMENDATORY ENDORSEMENTS:**


**THESE DECLARATIONS, TOGETHER WITH THE COMMON POLICY CONDITIONS AND COVERAGE FORM(S) AND ANY ENDORSEMENT(S), COMPLETE THE ABOVE NUMBERED POLICY.**

Countersigned:	<b>To follow upon purchase</b>
	By:
Date:	Authorized Representative:



THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## SCHEDULE OF FORMS AND ENDORSEMENTS

Named Insured: <i>Specimen Form</i>	
Policy Number: <i>Specimen Form</i>	Policy Period From: TBD To: TBD
Forms and Endorsements	
PNAP 002 0112	Privacy Policy
PNAP 003 1208	US Treasury Dept office of Foreign Assets Control (OFAC )
PNAP 041 1211	Mitigation Bank Insurance Coverage Forms (USACE Notice)
ABAP 900 1008	Service of Suit
ABAP 401 0807	In Witness Endorsement
ABAP 302 1007	Schedule of Forms and Endorsements
EGWL 001 0312	Mitigation Bank Insurance Policy Declarations
EGWL 050 0312	Mitigation Bank Insurance Coverage Form
EGWL 600 0311	Nuclear Energy Exclusion Endorsement
EGWL 403 0911	Notice to Named Insured Endorsement
EGWL 401 0312	Amendment of Limit of Liability Endorsement
EGWL 402 0911	Minimum Premium Endorsement
EGWL 300 0911	Scheduled Insured Property and Mitigation Banking Instrument Endorsement
EGWL 601 0611	Exclusion of Certified Nuclear, Biological, Chemical or Radiological Acts of Terrorism and Exclusion of other Acts Terrorism Committed Outside the United States; Cap on losses from Certifies Acts of Terrorism
PNCL N12 0811	Claims Notice
EGWL 404 0911	Amendatory Endorsement An Act of God

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## MINIMUM PREMIUM ENDORSEMENT

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This endorsement modifies insurance provided as follows;

It is understood and agreed the premium designated in the declarations is the minimum premium that applies to the policy period shown in the declarations and is 100% earned at inception.

All other terms, conditions and exclusions remain unchanged.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective: \_\_\_\_\_ Policy No.: \_\_\_\_\_ Endorsement No. \_\_\_\_\_

Insured: \_\_\_\_\_ Premium: \_\_\_\_\_

Insurance Company: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## NUCLEAR ENERGY EXCLUSION ENDORSEMENT

In consideration of the payment of the premium for this Policy, it is hereby understood and agreed that the following is added to the Policy:

### NUCLEAR ENERGY EXCLUSION

The Company shall not be liable to make any payment in connection with any "claim":

- (a) arising out of, based upon or in consequence of, directly or indirectly resulting from or in any way involving "**HAZARDOUS PROPERTIES**" of "**NUCLEAR MATERIAL**"; or
- (b) which coverage is provided under a nuclear energy liability policy issued by Nuclear Energy Liability Insurance Association, Mutual Atomic Energy Liability underwriters, or Nuclear Insurance Association of Canada, or would be insured under any such policy but for its termination or exhaustion of its limit of liability; or
- (c) with respect to which:
  - 1. any person or organization is required to maintain financial protection pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof; or
  - 2. the "Named Insured" is, or had this Policy not been issued, would be entitled to indemnity from the United States of America, or any agency thereof, under any agreement entered into by the United States of America, or any agency thereof, with any person or organization.

For the purpose of this Endorsement, the following is added to Section **VII. DEFINITIONS**:

- "**BYPRODUCT MATERIAL**" shall have the meaning given in the Atomic Energy Act of 1954 or in any law amendatory thereof.
- "**HAZARDOUS PROPERTIES**" shall mean radioactive, toxic or explosive properties.
- "**NUCLEAR FACILITY**" means:
  - 1. any "**NUCLEAR REACTOR**";
  - 2. any equipment or device designed or used for:
    - i. separating the isotopes of uranium or plutonium;
    - ii. processing or utilizing "**SPENT FUEL**"; or
    - iii. handling, processing or packaging "**WASTE**";
  - 3. any equipment or device used for the processing, fabricating or alloying of "**SPECIAL NUCLEAR MATERIAL**" if at any time the total amount of such "**SPECIAL NUCLEAR MATERIAL**" in the custody of the "Named Insured" at the premises where such equipment or device is located consists of or contains more

than 25 grams of plutonium or uranium 233 or any combination thereof, or more than 250 grams of uranium 235; or

4. any structure, basin, excavation, premises or place prepared or used for the storage or disposal of **"WASTE"**, and includes the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations.

- **"NUCLEAR REACTOR"** means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material.
- **"NUCLEAR MATERIAL"** means **"SOURCE MATERIAL"**, **"SPECIAL NUCLEAR MATERIAL"** and/or **"BYPRODUCT MATERIAL"**.
- **"SOURCE MATERIAL"** shall have the meaning given in the Atomic Energy Act of 1954 or in any law amendatory thereof.
- **"SPECIAL NUCLEAR MATERIAL"** shall have the meaning given in the Atomic Energy Act of 1954 or in any law amendatory thereof.
- **"SPENT FUEL"** means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in a **"NUCLEAR REACTOR"**.
- **"WASTE"** means any waste material:
  1. containing **"BYPRODUCT MATERIAL"**; or
  2. resulting from the operation by any person or organization of any **"NUCLEAR FACILITY"** included within Paragraph 1. or 2. of the definition of **"NUCLEAR FACILITY"**.

All other terms, conditions and exclusions remain unchanged.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective: \_\_\_\_\_ Policy No.: \_\_\_\_\_ Endorsement No. \_\_\_\_\_

Insured: \_\_\_\_\_ Premium: \_\_\_\_\_

Insurance Company: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## EXCLUSION OF CERTIFIED NUCLEAR, BIOLOGICAL, CHEMICAL OR RADIOLOGICAL ACTS OF TERRORISM AND EXCLUSION OF OTHER ACTS OF TERRORISM COMMITTED OUTSIDE THE UNITED STATES; CAP ON LOSSES FROM CERTIFIED ACTS OF TERRORISM

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This endorsement modifies insurance provided as follows:

**A.** The following exclusion is added:

This insurance does not apply to:

**TERRORISM**

1. "Any Claim" arising, directly or indirectly, out of a "certified act of terrorism". However, this exclusion applies only when one or more of the following are attributed to such act:
  - a. The terrorism involves the use, release or escape of nuclear materials, or directly or indirectly results in nuclear reaction or radiation or radioactive contamination; or
  - b. The terrorism is carried out by means of the dispersal or application of pathogenic or poisonous biological or chemical materials; or
  - c. Pathogenic or poisonous biological or chemical materials are released, and it appears that one purpose of the terrorism was to release such materials.
2. "Any Claim" arising, directly or indirectly, out of an "other act of terrorism" that is committed outside of the United States (including its territories and possessions and Puerto Rico), but within the "coverage territory". However, this exclusion applies only when one or more of the following are attributed to such act:
  - a. The total of insured damage to all types of property exceeds \$25,000,000 (valued in U.S. dollars). In determining whether the \$25,000,000 threshold is exceeded, we will include all insured damage sustained by property of all persons and entities affected by the terrorism and business interruption losses sustained by owners or occupants of the damaged property. For the purpose of this provision, insured damage means damage that is covered by any insurance plus damage that would be covered by any insurance but for the application of any terrorism exclusions; or
  - b. Fifty or more persons sustain death or serious physical injury. For the purposes of this provision, serious physical injury means:
    - (1) Physical injury that involves a substantial risk of death; or
    - (2) Protracted and obvious physical disfigurement; or
    - (3) Protracted loss of or impairment of the function of a bodily member or organ; or
  - c. The terrorism involves the use, release or escape of nuclear materials, or directly or indirectly results in nuclear reaction or radiation or radioactive contamination; or
  - d. The terrorism is carried out by means of the dispersal or application of pathogenic or poisonous biological or chemical materials; or
  - e. Pathogenic or poisonous biological or chemical materials are released, and it appears that one purpose of the terrorism was to release such materials.

With respect to this exclusion, Paragraphs **a.** and **b.** describe the thresholds used to measure the magnitude of an incident of an "other act of terrorism" and the circumstances in which the threshold will apply for the purpose of determining whether this exclusion will apply to that incident



**B.** The following definitions are added:

1. For the purposes of this endorsement, "any claim" means a written notice given by the "regulatory body" to the Company setting forth in detail the information required by Section V.A. under this Coverage Part to which this endorsement is applicable, and includes but is not limited to "any claim" as may be defined in this Coverage Part.
2. "Certified act of terrorism" means an act that is certified by the Secretary of the Treasury, in concurrence with the Secretary of State and the Attorney General of the United States, to be an act of terrorism pursuant to the federal Terrorism Risk Insurance Act. The criteria contained in the Terrorism Risk Insurance Act for a "certified act of terrorism" include the following:
  - a. The act resulted in insured losses in excess of \$5 million in the aggregate, attributable to all types of insurance subject to the Terrorism Risk Insurance Act; and
  - b. The act resulted in damage:
    - (1) Within the United States (including its territories and possessions and Puerto Rico); or
    - (2) Outside of the United States in the case of:
      - (a) An air carrier (as defined in Section 40102 of title 49, United States Code) or United States flag vessel (or a vessel based principally in the United States, on which United States income tax is paid and whose insurance coverage is subject to regulation in the United States), regardless of where the loss occurs; or
      - (b) The premises of any United States mission; and
  - c. The act is a violent act or an act that is dangerous to human life, property or infrastructure and is committed by an individual or individuals as part of an effort to coerce the civilian population of the United States or to influence the policy or affect the conduct of the United States Government by coercion.
3. "Other act of terrorism" means a violent act or an act that is dangerous to human life, property or infrastructure that is committed by an individual or individuals and that appears to be part of an effort to coerce a civilian population or to influence the policy or affect the conduct of any government by coercion, and the act is not a "certified act of terrorism".

Multiple incidents of an "other act of terrorism" which occur within a seventy-two hour period and appear to be carried out in concert or to have a related purpose or common leadership shall be considered to be one incident

**C.** In the event of any incident of a "certified act of terrorism" or an "other act of terrorism: that is not subject to this exclusion, coverage does not apply to any loss or damage that is otherwise excluded under this Coverage Part.

**D.** If aggregate insured losses attributable to terrorist acts certified under the federal Terrorism Risk Insurance Act exceed \$100 billion in a Program Year (January 1 through December 31) and we have met our insurer deductible under the Terrorism Risk Insurance Act, we shall not be liable for the payment of any portion of the amount of such losses that exceeds \$100 billion, and in such case insured losses up to that amount are subject to pro rata allocation in accordance with procedures established by the Secretary of the Treasury.

All other terms, conditions and exclusions remain unchanged.

Specimen

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective: \_\_\_\_\_ Policy No.: \_\_\_\_\_ Endorsement No. \_\_\_\_\_

Insured: \_\_\_\_\_ Premium: \_\_\_\_\_

Insurance Company: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **SERVICE OF SUIT**

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The following service of suit provision is added and replaces any other Service of Suit provision contained elsewhere in this policy:

The Superintendent, Commissioner or Director of Insurance of the State is hereby designated the true and lawful attorney of the Company upon whom may be served all lawful process in any action, suit or proceeding arising out of this policy. The Company further designates:

**Steve Adams  
Legal Counsel  
3340 Peachtree Road N.E.  
Suite 2950  
Atlanta, GA 30326**

as its agent to whom such process shall be forwarded by the Director of Insurance.

For Illinois exposures, the Insurer further designates the Director of the Illinois Division of Insurance and his successors in office, as its true and lawful attorney upon whom may be served any lawful process in any action, suit or proceeding instituted by or on behalf of the insured or any beneficiary hereunder arising out of an Illinois exposure and this contract of insurance.

All other terms, conditions and exclusions remain unchanged.

## IN WITNESS ENDORSEMENT

### CATLIN SPECIALTY INSURANCE COMPANY

ADMINISTRATIVE OFFICE: 3340 Peachtree Road N.E.  
Tower Place 100  
Suite 2950  
Atlanta, GA 30326

STATUTORY HOME OFFICE: 160 Greentree Drive  
Suite 101  
Dover, Delaware 19904

It is hereby agreed and understood that the following In Witness Clause supercedes any and all other In Witness clauses in this policy.


All other provisions remain unchanged.

IN WITNESS WHEREOF, the Company has caused this policy to be executed and attested, and, if required by state law, this policy shall not be valid unless countersigned by a duly authorized representative of the Company.



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Richard S. Banas  
President



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Steven C. Adams  
Secretary

## NOTICE TO POLICYHOLDERS

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### CLAIMS NOTICE

All claims must be reported to Catlin at:

**Catlin**  
**Attn: Claims**  
**P.O. Box 8049**  
**Scottsdale, AZ 85252**

**E-mail:** [CatlinClaims.Energy@catlin.com](mailto:CatlinClaims.Energy@catlin.com)

**Phone:** 888-443-4910  
**Fax:** 404-443-4912



# U.S. TREASURY DEPARTMENT'S OFFICE OF FOREIGN ASSETS CONTROL ("OFAC")

No coverage is provided by this Policyholder Notice nor can it be construed to replace any provisions of your policy. You should read your policy and review your Declarations page for complete information on the coverages you are provided.

This Policyholder Notice provides information concerning the possible impact on your insurance coverage provided under your policy due to directives issued by OFAC. Please read this Policyholder Notice carefully.

OFAC administers and enforces economic and trade sanctions based on US foreign policy and national security goals based on Presidential declarations of "national emergency." OFAC has identified and listed numerous:

- Foreign agents
- Front organizations
- Terrorists
- Terrorist organizations
- Narcotics traffickers

as "Specially Designated Nationals and Blocked Persons." This list can be found on the United States Treasury's web site – <http://www.treas.gov/ofac>.

In accordance with OFAC regulations, if it is determined that you or any other insured, or any person or entity claiming the benefits of this insurance has violated US sanctions law or is a Specially Designated National and Blocked Person, as identified by OFAC, this insurance will be considered a blocked or frozen contract and all provisions of this insurance will be immediately subject to OFAC. When an insurance policy is considered to be such a blocked or frozen contract, neither payments nor premium refunds may be made without authorization from OFAC. Other limitations on the premiums and payments may also apply.

## PRIVACY POLICY

Catlin insurance group [the “Companies”], believes personal information that we collect about our customers, potential customers, and proposed insureds [referred to collectively in this Privacy Policy as “customers”] must be treated with a high degree of confidentiality. For this reason and in compliance with the Title V of the Gramm-Leach-Bliley Act [“GLBA”], we have developed a Privacy Policy that applies to all of our U.S. based companies. For purposes of our Privacy Policy, the term “personal information” includes all nonpublic information we obtain about a customer and maintain in a personally identifiable way. In order to assure the confidentiality of the personal information we collect and in order to comply with applicable laws, all individuals with access to personal information about our customers are required to follow this policy.

### **Our Privacy Statement**

Your privacy and the confidentiality of your business records are important to us. Information and the analysis of information is essential to the business of insurance and critical to our ability to provide to you excellent, cost-effective service and products. We understand that gaining and keeping your trust depends upon the security and integrity of our records concerning you. Accordingly, our practice is to:

1. Follow appropriate standards of security and confidentiality to protect any information you share with us or information that we receive about you;
2. Verify and exchange information regarding your credit and financial status only for the purposes of underwriting, policy administration, risk management, or claims handling and only with reputable references and clearinghouse services;
3. Collect and use information about you and your business to advise you about and deliver to you excellent service and products and to administer our business;
4. Train our employees to handle personal information about you or your business in a secure and confidential manner and maintain reasonable access controls. Not disclose personal information about you or your business to any organization outside the Catlin insurance group of Companies or to third party service providers unless we disclose to you our intent to do so or we are permitted to do so by law;
5. Not disclose medical information about you, your employees, or any claimants under any policy of insurance, unless you provide us with written authorization to do so, or unless the disclosure is for any specific business exception provided in the law;
6. Attempt, with your help, to keep our records regarding you and your business complete and accurate, and will advise you how and where to access your account information [unless prohibited by law], and will advise you how to correct errors or make changes to that information; and
7. Audit and assess our operations, personnel and third party service providers to assure that your privacy is respected.

### **Collection and Sources of Information**

We collect from a customer or potential customer only the personal information that is necessary for [a] determining eligibility for the product or service sought by the customer, [b] administering the product or service obtained, and [c] advising the customer about our products and services. The information we collect generally comes from the following sources:

**Submission** – During the submission process, you provide us with information about you and your business, such as your name, address, phone number, e-mail address, and other types of personal identification information;

**Quotes** – We collect information to enable us to determine your eligibility for the particular insurance product and to determine the cost of such insurance to you. The information we collect will vary with the type of insurance you seek. We collect most of our information directly from you through our agents or broker. Depending on the nature of your insurance transaction we may need additional information from outside sources such as motor vehicle records, loss information reports, court records or other public records. In some instances, we may send someone to inspect your property and verify information about its value and condition, and a photo of the property may be taken;

# NOTICE TO POLICYHOLDERS

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**Transactions** – We will maintain records of all transactions with us, our affiliates, and our third party service providers, including your insurance coverage selections, premiums, billing and payment information, claims history, and other information related to your account;

**Claims** – If you obtain insurance from us, we will maintain records related to any claims that may be made under your policies. The investigation of a claim necessarily involves collection of a broad range of information about many issues, some of which does not directly involve you. We will share with you any facts that we collect about your claim unless we are prohibited by law from doing so. The process of claim investigation, evaluation, and settlement also involves, however, the collection of advice, opinions, and comments from many people, including attorneys and experts, to aid the claim specialist in determining how best to handle your claim. In order to protect the legal and transactional confidentiality and privileges associated with such opinions, comments and advice, we will not disclose this information to you; and

**Credit and Financial Reports** – We may receive information about you and your business regarding your credit. We use this information to verify information you provide during the submission and quote processes and to help underwrite and provide to you the most accurate and cost-effective insurance quote we can provide. If coverage is declined or the charge for coverage is increased because of information contained in a consumer report, we will tell you as required by law. We will also give you the name and address of the consumer reporting agency making the report.

## **Retention and Correction of Personal Information**

We retain personal information only as long as required by our business practices and applicable law. If we become aware that an item of personal information may be materially inaccurate, we will make reasonable effort to re-verify its accuracy and correct any error as appropriate.

## **Storage of Personal Information**

We have in place safeguards to protect electronic data and paper files containing personal information.

## **Sharing/Disclosing of Personal Information**

We maintain procedures to assure that we do not share personal information with an unaffiliated third party for marketing purposes unless such sharing is permitted by law. Personal information may be disclosed to an unaffiliated third party for necessary servicing of the product or service or for other normal business transactions as permitted by law.

We do not disclose personal information to an unaffiliated third party for servicing purposes or joint marketing purposes unless a contract containing a confidentiality/non-disclosure provision has been signed by us and the third party. Unless a consumer consents, we do not disclose “consumer credit report” type information obtained from an application or a credit report regarding a customer who applies for a financial product to any unaffiliated third party for the purpose of serving as a factor in establishing a consumer’s eligibility for credit, insurance or employment. “Consumer credit report type information” means such things as net worth, credit worthiness, lifestyle information [piloting, skydiving, etc.] solvency, etc. We also do not disclose to any unaffiliated third party a policy or account number for use in marketing. We may share with our affiliated companies information that relates to our experience and transactions with the customer.

## **Policy for Personal Information Relating to Nonpublic Personal Health Information**

We do not disclose nonpublic personal health information about a customer unless an authorization is obtained from the customer whose nonpublic personal information is sought to be disclosed. However, an authorization shall not be prohibited, restricted or required for the disclosure of certain insurance functions, including, but not limited to, claims administration, claims adjustment and management, detection, investigation or reporting of actual or potential fraud, misrepresentation or criminal activity, underwriting, policy placement or issuance, loss control and/or auditing.

# NOTICE TO POLICYHOLDERS

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## **Access to Your Information**

Our employees, employees of our affiliated companies, and third party service providers will have access to information we collect about you and your business as is necessary to effect transactions with you. We may also disclose information about you to the following categories of person or entities:

Your independent insurance agent or broker;

An independent claim adjuster or investigator, or an attorney or expert involved in the claim;

Persons or organizations that conduct scientific studies, including actuaries and accountants;

An insurance support organization;

Another insurer if to prevent fraud or to properly underwrite a risk;

A state insurance department or other governmental agency, if required by federal, state or local laws; or

Any persons entitled to receive information as ordered by a summons, court order, search warrant, or subpoena.

Lienholder, mortgagee, assignee, lessor, or other person shown on our records or our agent's as having a legal or beneficial interest in a policy of insurance.

Parties acting in a fiduciary or representative capacity to you or parties administering transactions as requested or authorized by you.

## **Violation of the Privacy Policy**

Any person violating the Privacy Policy will be subject to discipline, up to and including termination.

For more information or to address questions regarding this privacy statement, please contact your broker.

## NOTICE TO POLICYHOLDERS

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### **MITIGATION BANK INSURANCE COVERAGE FORM**

The US Army Corps of Engineers (Corps) has the authority to require financial assurances for the establishment of mitigation banks, which are designed to offset unavoidable impacts to the waters of the United States authorized through the issuance of Department of the Army permits pursuant to section 404 of the Clean Water Act (33U.S.C. 1344) and/or sections 9 or 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401,403).

The Named Insured proposed a Mitigation Banking Instrument for Corps approval, as described more specifically attached hereto Wetland Mitigation Bank Insurance Coverage Form and affixed endorsements.

The “regulatory body” has the sole obligation, responsibility and accountability for determining compliance with “compensatory mitigation” requirements for the aforementioned mitigation bank.



# MITIGATION BANK INSURANCE COVERAGE FORM

CATLIN

## CLAIMS MADE AND REPORTED COVERAGE

**NOTICE: THIS IS A CLAIMS-MADE POLICY. THIS POLICY HAS CERTAIN PROVISIONS AND REQUIREMENTS UNIQUE TO IT AND MAY BE DIFFERENT FROM OTHER POLICIES A "NAMED INSURED" MAY HAVE PURCHASED. FOR THERE TO BE COVERAGE UNDER THIS POLICY, A "CLAIM" MUST FIRST BE MADE BY THE "REGULATORY BODY" DURING THE "POLICY PERIOD". THIS POLICY INCLUDES NO DUTY TO DEFEND OR PAY DEFENSE COSTS.**

**PLEASE READ THE ENTIRE POLICY CAREFULLY.**

Various provisions in this Policy restrict coverage. Read the entire Policy carefully to determine rights, duties, and what is and is not covered.

Words and phrases that appear in quotation marks have special meaning. Refer to **DEFINITIONS (Section VII.)** The word "Company" when used throughout this policy refers to the Company identified as the insurer in the Declarations.

In consideration of the payment of the premium by the "Named Insured", in reliance upon the statements in the Application made a part hereof, and subject to the Limits of Liability of this insurance as set forth in the Declarations, and the exclusions, conditions, and other terms of this Policy, the Company agrees with the "Named Insured" as follows:

### I. INSURING AGREEMENT

In the event of the "Named Insured's" failure during the "policy period" to meet "performance standards" under the "mitigation banking instrument" at the "insured property," the Company agrees to undertake and complete or secure through payment, whether directly or through a "Third Party," the 'compensatory mitigation' for which the 'Named Insured' is legally responsible under the "Mitigation Banking Instrument," provided the 'regulatory body' first makes a 'claim' to the Company in writing and during the 'policy period'."

### II. TERRITORY

This Policy only applies to a "claim" made or brought in the United States of America.

### III. EXCLUSIONS

This insurance does not apply to "claims" or to any costs arising out of any "claims" based upon, arising out of, or to any extent comprised of any of the following:

- A. An Act of God, including any natural catastrophe or disaster;
- B. Any property or location other than the "insured property"
- C. Liability of the "Named Insured" under or pursuant to any document, contract or agreement other than (i) the "mitigation banking instrument," (ii) any contract entered into to perform work required by the "mitigation banking instrument" and/or (iii) any other contract required by the "regulatory body" to provide for restoration, rehabilitation, adaptive management and/or any contingency plan at the "insured property."

- D. Any legal fees, attorneys' fees, costs, or expenses including expert or consultant fees incurred in the defense of the "Named Insured" for any reason other than for liability under the mitigation banking instrument;
- E. Fluctuation in, short fall of, or devaluation (in whole or in part) of, the monetary value of, or marketability of, mitigation credits or other equivalent credits;
- F. Any "claim" (i) not first made during the "policy period" or (ii) for which notice thereof was not provided by the "regulatory body" to the Company in writing during the "policy period."

#### IV. LIMIT OF LIABILITY AND DEDUCTIBLE

- A. The Company's total liability for all costs shall not exceed the Limit of Liability set forth (i) in Item 3. of the Declarations or (ii) in any endorsement to this Policy modifying or reducing that Limit of Liability in force at the time when the "claim" is first made.
- B. Regardless of the number of "claims" made to the Company the total liability of the Company for any and all "claim(s)" for costs shall be considered a single "claim" subject to the Limit of Liability set forth (i) in Item 3. of the Declarations or (ii) in any endorsement to this Policy modifying or reducing that Limit of Liability in force at the time when the "claim" is first made.
- C. The Limit of Liability set forth (i) in Item 3. of the Declarations or (ii) in any endorsement to this Policy modifying or reducing that Limit of Liability in force at the time when the "claim" is first made, shall remain unchanged unless the "regulatory body" approves in writing a modification or reduction in the Limit of Liability. In that case, the Company shall reduce or adjust the Limit of Liability accordingly by issuing an endorsement to the Policy setting forth the new Limit of Liability.
- D. The Company's financial obligation under this Policy is, at its sole discretion, to undertake and complete or secure through payment "compensatory mitigation" pursuant to a "claim", which financial obligation extends only to such "compensatory mitigation" or its payment as may be undertaken and completed with the difference between (i) the value of the deductible stated in the Declarations and (ii)(a) the Limit of Liability set forth in Item 3. of the Declarations or (ii)(b) in any endorsement to this Policy modifying or reducing that Limit of Liability in force at the time when the "claim" is first made. However, the "Named Insured's" failure to satisfy the deductible does not release the Company's obligation to respond, investigate, adjust or settle any claim including the Company's obligation to pay deductible amount(s) on behalf of the "Named Insured". Thereby; The Company at its sole election and option, may either:
  - 1) Undertake and complete, or pay any amount or all of the deductible amount to a third party to secure, the "compensatory mitigation" and upon notification of the action taken, the "Named Insured" shall promptly reimburse the Company for such part of the deductible amount as had been paid by the Company; or
  - 2) Simultaneously upon receipt of notice of any "compensatory mitigation" or at any time thereafter, call upon the "Named Insured" to pay or deposit with the Company all or any part of the deductible amount, to be held and applied by the Company as herein provided.

The deductible amount indicated is on a per "claim" basis. A separate deductible amount will be applied to each "claim." The deductible will erode the Limits of Liability.

## V. NOTICE PROVISIONS

### A. NOTICE OF CLAIM

The "regulatory body" shall provide written notice to the Company of a "claim" as soon as practicable. Such "claim" notification must be in writing and shall contain the following information:

1. a brief explanation of the events and circumstances that resulted in the "claim";
2. any other information the "regulatory body" deems relevant to the "claim".

The "Named Insured" shall make all responsible personnel and all available information of the "Named Insured" available to the Company upon reasonable request.

### B. NOTICES

1. All notices required by this Item V. Notice Provisions shall be provided in writing and sent to the Company at the address stated on the Claims Notice.
2. The Company shall provide notice to the "Named Insured" and "regulatory body" of all changes, amendments, endorsements to the policy and shall provide all written correspondence to the "regulatory body", including correspondence regarding any "claim" to the "regulatory body" noted in form EGWL 403 Notice to the Named Insured Endorsement.

## VI. CONDITIONS

- A. ASSIGNMENT** — This Policy is not assignable except with the prior written consent of the Company, which consent shall be granted at the Company's sole discretion.
- B. BANKRUPTCY** — Bankruptcy or insolvency of a "Named Insured", or its agents, contractors, or subcontractors, shall not relieve the Company or the "Named Insured" of their obligations under this Policy, including the obligation of the Company to pay "claims" not to exceed the Limit of Liability set forth (i) in Item 3. of the Declarations or (ii) in any endorsement to this Policy modifying or reducing that Limit of Liability in force at the time when the "claim" is first made.
- C. CANCELLATION, TERMINATION AND RELEASE** — Except as provided in paragraph 2 below, the Policy shall remain in effect until cancellation and release is approved by the "regulatory body". The Company shall notify the "regulatory body" of a proposed cancellation and release of the Policy no less than 120 days prior to the proposed cancellation and release date. To approve cancellation of this Policy and a release of the Company, the "regulatory body" shall provide written notice to the Company as soon as practicable that the "regulatory body" has accepted a replacement financial assurance mechanism, deems that such mechanism is no longer required, or has otherwise determined that this Policy is no longer required by law within its authority. The "regulatory body's" written notice to the Company shall include an effective date for the cancellation and release.

On the effective date of the "regulatory body's" approved cancellation and release of the Company, the Company shall be released from any and all liability or obligations under the Policy to the "Named Insured", the "regulatory body" or its designee, including any existing or future liability or obligations arising from "claim(s)" previously reported or pending under the Policy if the "regulatory body" has expressly approved such release from pending "claims" in accordance with the above provisions.

**D. TERMINATION OTHER THAN BY CANCELLATION** — Coverage shall also terminate at the earlier of the following times without "regulatory body" approval:

1. the "policy period" expiration as shown in Item 2. of the Declarations; or
2. a written acknowledgement, certification or other legally equivalent determination by the "regulatory body" that the "Named Insured" has met the "success criteria" set forth in the "mitigation banking instrument" or in the "contingency plan", if the regulatory body determined in writing that the criteria contained in such "contingency plan" have replaced the "success criteria" contained in the "mitigation banking instrument."

Immediately upon termination of the Policy under this paragraph, the Company is released from all liability or obligations under the Policy, except as to any existing liability or obligations arising from "claim(s)" previously reported or pending under the Policy unless the regulatory body has expressly approved in writing the Company's release from such previously reported and/or pending "claims."

**E. CHANGES** — Notice to any broker or knowledge possessed by any broker or by any other person or entity shall not affect a waiver or change in any part of this Policy or stop the Company from asserting any right under the terms of this Policy. The terms of this Policy shall not be waived or changed except by endorsement issued to form a part of this Policy.

**F. CLAIM ADJUSTMENT** — Upon notice of a "Claim" the Company will, as soon as reasonably practicable, perform its due diligence to identify, undertake and complete or secure through payment the "compensatory mitigation" subject to the Limit of Liability. The Company will work with the "Regulatory Body" in good faith to foster agreement concerning all "compensatory mitigation" to be undertaken and completed or secured through payment, including approval of a third party to receive payment, pursuant to a "Claim" and will undertake and complete or secure through payment such "compensatory mitigation" as soon as reasonably practical after notice of a "Claim."

The "Named Insured" shall not be released from any of its obligations to the Company under this Policy by virtue of any such "compensatory mitigation" undertaken and/or completed or secured through payment by the Company or a third party authorized to receive the payment, including the "Named Insured's" duties to pay or reimburse any deductible amount.

**G. CONFLICTS** — In the event of a conflict between (i) any state or federal laws or regulations (including the "Mitigation Banking Instrument") applicable to the "bank" named in this policy and (ii) the "Named Insured's" rights under this policy, the former shall prevail. In no event shall the Company be liable to the "Named Insured" for failure to perform an act precluded by the applicable laws or regulations. Furthermore, any changes in applicable state or federal law or regulations made after the commencement of the "policy period" shall not be deemed to affect the Company's obligations under the Policy unless and until agreed to by the Company and endorsed in writing on this Policy.

**H. LIMIT OF LIABILITY CHANGE** — Any increase in the Limit of Liability shall only occur by endorsement to the Policy upon the Company's consent in its sole discretion. The Company may request as a condition to increasing the Limit of Liability that the "Named Insured" pay an

additional premium and/or provide collateral to the Company, including providing funds in a nominal commutation account as specified in an endorsement if and when endorsed hereto.

- I. DECLARATIONS** — By acceptance of this Policy, the “Named Insured” agrees that the statements in the Declarations and Application are its agreements and representations, that this Policy is issued in reliance upon the truth of such representations and that this Policy embodies all agreements existing between the “Named Insured” and the Company or any of its agents relating to this insurance. The “Named Insured” expressly agrees that in entering into this Policy it has not relied on any statement by any person, agent, or broker not directly employed by the Company regarding the terms, provisions, coverage or interpretation of this Policy. Misrepresentations by the “Named Insured” do not invalidate the Company’s obligation to the “regulatory body” in the event of a claim. Any misrepresentation may result in a dispute between the “Named Insured” and the Company.
- J. INDEPENDENT AGREEMENT** — This Policy is a separate, independent agreement between the Company and the “Named Insured.” Notwithstanding any other provision of this Policy, the Company and the “Named Insured” hereby agree that no other contract or agreement shall be used to interpret any provision of this Policy nor shall this Policy be used to interpret any other contract or agreement.
- K. INSPECTION, REVIEW AND AUDIT** — The Company shall be permitted but not obligated to inspect, sample, audit, review, and monitor on a continuing basis the “Named Insured”, or the “insured property” upon providing reasonable advance notice with consideration for the timing of such notice and any site access requirements. The Company’s actions permitted hereunder shall not interfere with or delay the completion of the “remedial action” as set forth in the “mitigation banking instrument” and/or the “contingency plan”.
- L. MODIFICATION** — The policy shall remain unchanged unless the “regulatory body” approves in writing any endorsement or modification.
- M. NO THIRD PARTY BENEFICIARY** — No third party beneficiaries are created as a result of this Policy, except to the extent that specific rights are conferred on the “regulatory body” by the Policy. This Policy creates no rights by or on behalf of any other third parties. Should the Company elect to undertake and complete any required “compensatory mitigation” any contracts or agreement between the Company and a party or parties undertaking and completing such “compensatory mitigation” shall be a separate, independent agreement from this Policy, and this Policy shall confer no specific or general rights or benefits to any party to such contract or agreement. The Company has no obligation under this Policy to any third party whatsoever (other than the “regulatory body”) and specifically, without limitation, has no obligation to undertake and complete or otherwise secure through payment “compensatory mitigation” for anyone other than the “regulatory body” or its designee as set forth in Item E. above. Nothing in this paragraph shall be construed to restrict any other interests and rights of the “regulatory body” under this Policy as such interests and rights may exist hereunder or may be conferred under applicable law at the time of issuance of the Policy. However, any changes in the applicable regulations shall not be deemed to affect the Company’s obligations under the Policy, unless agreed to and endorsed in writing on this Policy.
- N. OTHER INSURANCE** — The insurance provided under this Policy is primary insurance, except this insurance shall be excess:
1. Over any surety bond or other financial assurance instrument applicable to the “claim” covered under this Policy.

When this insurance is excess over any surety bond, or other financial assurance instrument, the Company shall be obligated to undertake and complete or otherwise secure through payment “compensatory mitigation” of a value up to the amount which exceeds the total amount of that



other surety bond or other financial assurance instrument available to pay for the "claim" in the absence of this insurance.

When this insurance is primary and the "Named Insured" has other insurance which is applicable on an excess basis to any "claim", the amount of the Company's liability under this Policy shall not be reduced by the existence of such excess insurance.

When both this insurance and other insurance apply to the "claim" on the same basis, whether primary, excess, or contingent, the Company shall not be liable under this Policy for a greater proportion than that set out in the declarations or the following contribution provision, whichever method is lower:

- a. Contribution by Equal Shares — Under this approach, each insurer contributes equal amounts measured by the actual value of (i) "compensatory mitigation" work undertaken or completed or otherwise secured through payment by the company or (ii) any funds paid by any other insurer, until it has paid its applicable limit of insurance; or
  - b. Contribution by Limits — Each insurer's share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers.
- O. PREMIUM** — the Policy Premium stated in Item 6. of the Declarations is fully earned on the inception date of this Policy, and any cancellation or termination of the Policy either by the "Named Insured" or by the Company shall not result in the return of any Policy Premium.
- P. SUBROGATION** — In the event of any payment under this Policy, the Company shall be subrogated to any right of recovery that a "Named Insured" may have against any person or organization other than the "regulatory body" or its designee. A "Named Insured" to the extent permitted by applicable law shall execute and deliver instruments and papers and do whatever else is necessary to secure and protect such rights. The "Named Insured" shall do nothing to prejudice such rights under this paragraph and shall cooperate with respect to any subrogation efforts. In the event that the "Named Insured" commits fraud, the Company and the "Named Insured" agree that the Company may subrogate and/or bring suit against the "Named Insured" who commits such fraud. In the event the Company notifies the "Named Insured" that it intends to assert a claim against the "Named Insured" arising out of fraud, the "Named Insured" shall, upon receipt of such notification, be released from its duty of further cooperation with the Company concerning subrogation as set forth in this paragraph solely concerning matters that are the subject of such fraud claims.

## **VII. DEFINITIONS**

- A. "Mitigation Bank" means the mitigation project referenced in the "mitigation banking instrument" and set forth in Item 1. of the Declarations.
- B. "Claim" means a written notice given by the "regulatory body" to the Company setting forth in detail the information required by Section V.A. of this Policy.
- C. "Adaptive Management plan" as defined in 33 CFR 332.4(c)(12) means the written plan that specifies the remedial actions or adaptive management measures that must be taken to meet the "Performance Standards" set forth in the "mitigation banking instrument" and/or approved mitigation plans for the "mitigation bank", provided that such plan is prepared, documented, approved and filed in compliance with applicable law, including "regulatory body" approval.
- D. "Inception date" means the beginning of the "policy period" set forth in the Item 2. of the Declarations.

- E. "Named Insured" means the person or entity set forth in Item 1. of the Declarations.
- F. "Policy period" means the period set forth in Item 2. of the Declarations, or any shorter period arising as a result of cancellation or termination of the policy.
- G. "Regulatory body" means the lead agency or entity set forth in Item 7 of the Declarations.
- H. "Remedial or Adaptive Management measures" means those expenses necessary to implement the "Adaptive Management plan" endorsed to the Policy.

The "remedial action" shall include:

- a. All costs incurred including costs billed by and paid to any contractor(s) or subcontractor(s);
  - b. Administrative and management costs incurred by designated contractor(s) and approved subcontractor(s) directly and exclusively in furtherance of the items set forth in Item a. above, including but not limited to the preparation of mitigation monitoring reports;
  - c. A deposit of sums of money, subject to the limit of liability or remaining limit of liability, sufficient to cover costs described in this section VII(K) into an account with or controlled by the designee of the "regulatory body;" and/or
  - d. The cost to purchase appropriate replacement mitigation credits at another mitigation bank.
- I. "Performance Standards" as defined in 33 CFR 332.2 means those specific performance criteria for restoration set forth in the "mitigation banking instrument" or the "Adaptive Management Plan".
  - J. "Mitigation banking instrument" as defined in 33 CFR 332.2 means the written instrument that is set forth in the declarations or endorsed to the Policy, provided that such plan is prepared, approved, filed, and documented in compliance with applicable law.
  - K. "Compensatory Mitigation" as defined in 33 CFR 332.2 means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved."
  - L. "Insured Property" means the property where coverage solely responds to and that is scheduled to this policy.
  - M. "Third party" means the party selected from a list of qualified vendors provided by the Company and approved by and subject to the regulatory oversight of the U.S. Army Corps of Engineers as the District's designee (as used in 33 C.F.R 332.3(n)(6)) to receive payment from the Company, within the limits of the Policy, to secure or complete the "compensatory mitigation" agreed to within the "Mitigation Banking Instrument."

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## NOTICE TO NAMED INSURED ENDORSEMENT

---

This endorsement modifies insurance provided as follows;

The Company shall provide notice to the "Named Insured" and "regulatory body" of all changes, amendments, endorsements to the policy and shall provide all written correspondence to the "regulatory body", including correspondence regarding any claim to the "regulatory body" at:

US Army Corps of Engineers  
Ft Worth District  
819 Taylor St  
Ft Worth, TX. 76102

[To the "Regulatory Body"] at:

[Insert Corp of Engineers contact point here]

To the: [Named Insured"] at:

[Insert named insured contact point here]

Rockin'K Ranch, LP  
1601 Elm St. Suite 3700  
Dallas, TX 75201

All other terms, conditions and exclusions remain unchanged.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective: \_\_\_\_\_ Policy No.: \_\_\_\_\_ Endorsement No. \_\_\_\_\_

Insured: \_\_\_\_\_ Premium: \_\_\_\_\_

Insurance Company: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **AMENDMENT OF LIMIT OF LIABILITY ENDORSEMENT**

---

This endorsement modifies insurance provided as follows:

It is agreed the Limit of Liability shown in Item 3. of the Declarations page is revised as follows:

### **ITEM 3: LIMIT OF LIABILITY**

**Limit of Liability beginning at 12:01 am on the beginning date listed and ending date 12:01 on the ending date listed:**

Limit: \$ [REDACTED]

Beginning TBD/TBD/2014

Ending TBD/TBD/2017

All other terms, conditions and exclusions remain unchanged.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective: \_\_\_\_\_ Policy No.: \_\_\_\_\_ Endorsement No. \_\_\_\_\_

Insured: \_\_\_\_\_ Premium: \_\_\_\_\_

Insurance Company: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## SCHEDULED INSURED PROPERTY AND MITIGATION BANKING INSTRUMENT ENDORSEMENT

This endorsement modifies insurance provided as follows;

It is agreed the following are considered scheduled "Insured Property" under the policy and the applicable coverage as noted:

Mitigation Bank and Property Location	Mitigation Banking Instrument
latitude 32.1614° N and longitude -96.4867° W In Navarro County TX as more fully delineated in the Rockin'K Ranch MBI	Rockin'K Ranch on Chambers Creek Mitigation Bank

All other terms, conditions and exclusions remain unchanged.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective: \_\_\_\_\_ Policy No.: \_\_\_\_\_ Endorsement No. \_\_\_\_\_

Insured: \_\_\_\_\_ Premium: \_\_\_\_\_

Insurance Company: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## AMENDATORY ENDORSEMENT- AN ACT OF GOD

---

This endorsement modifies insurance provided as follows:

It is hereby agreed and understood that Section **III. EXCLUSIONS**, Paragraph A. is deleted in its entirety.

All other terms, conditions and exclusions remain unchanged.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective: \_\_\_\_\_ Policy No.: \_\_\_\_\_ Endorsement No. \_\_\_\_\_  
Insured: \_\_\_\_\_ Premium: \_\_\_\_\_  
Insurance Company: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

**Attachment K. Assurance of Water Rights**

TCEQ Response

From: Iliana Delgado [iliana.delgado@tceq.texas.gov]  
Sent: Thursday, December 18, 2014 12:42 PM  
To: Keith Bradley  
Cc: Christine Peters; Tracie Donnelly; Michael Gill  
Subject: RE: Proposed Rockin' K Ranch on Chambers Creek Mitigation Bank/SWF-2012-00323

Dear Mr. Bradley,

If the proposed project does not divert or impound state water then a permit is not required. The definition of state water pursuant to 30 Texas Administrative Code 297.1(50) is below.

State water--The water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the stormwater, floodwater, and rainwater of every river, natural stream, and watercourse in the state. State water also includes water which is imported from any source outside the boundaries of the state for use in the state and which is transported through the beds and banks of any navigable stream within the state or by utilizing any facilities owned or operated by the state. Additionally, state water injected into the ground for an aquifer storage and recovery project remains state water. State water does not include percolating groundwater; nor does it include diffuse surface rainfall runoff, groundwater seepage, or springwater before it reaches a watercourse.

If the wetland is considered an off-channel reservoir and does not store state water a Water Use Permit under Chapter 11 of the Texas Water Code would not be required. Please note that flood water is considered state water and if any flood water that would overflow its banks and be stored in the off-channel reservoir would require this project to get a Water Use Permit.

If you still need a response specific to your location, please contact Christine Peters.

Thank you,

Iliana Delgado, Team Leader  
Water Rights Permits Team  
Phone 512-239-3678  
Fax 512-239-4770

**Attachment L. Other: Archaeological Evaluation**

# AR Consultants, Inc.

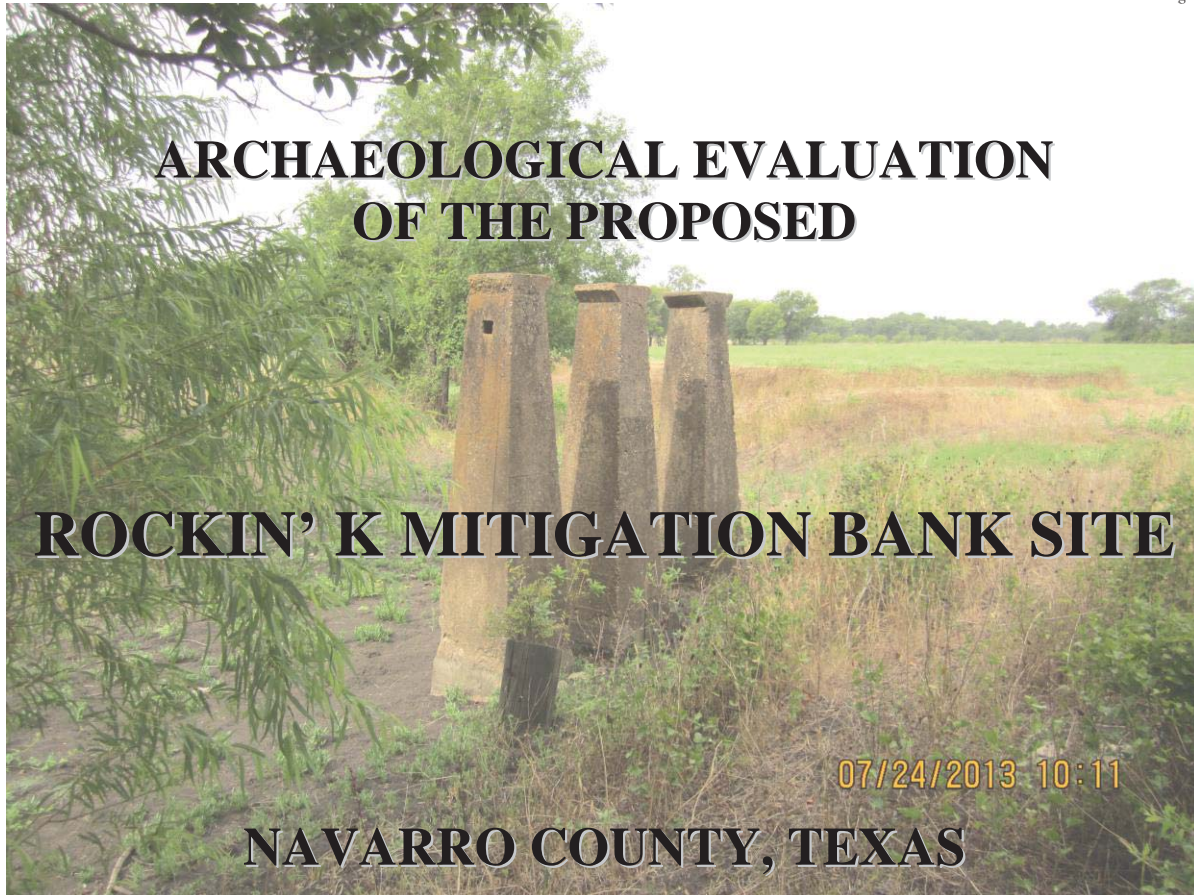
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Archaeological and Environmental Consulting  
805 Business Parkway, Richardson, TX 75081

Phone: (214) 368-0478

Fax: (214) 221-1519

E-mail: [arcdigs@aol.com](mailto:arcdigs@aol.com)



By:  
S. Alan Skinner, PhD  
and  
Molly A. Hall, MA

Submitted to:  
**KBA ENVIROSCIENCE, LTD.**  
101 E. Southwest Pkwy.  
Lewisville, TX 75067

Submitted by:  
**AR CONSULTANTS, INC.**

Cultural Resources Report 2013-36  
August 6, 2013

HISTORICAL BUILDINGS    ARCHAEOLOGY    NATURAL SCIENCES



**ARCHAEOLOGICAL EVALUATION  
OF THE PROPOSED  
ROCKIN' K MITIGATION BANK SITE  
NAVARRO COUNTY, TEXAS**

By:  
S. Alan Skinner, PhD  
and  
Molly A. Hall, MA

Submitted to:  
**KBA ENVIROSCIENCE, LTD.**  
101 E. Southwest Pkwy.  
Lewisville, TX 75067

Submitted by:  
**AR CONSULTANTS, INC.**  
805 Business Parkway  
Richardson, TX 75081

Cultural Resources Report 2013-36  
August 6, 2013

## ABSTRACT

The Rockin' K Mitigation Bank is to be constructed in the valley of Chambers Creek north of Corsicana, Texas. The study area includes the floodplain and valley walls south of the creek channel. A reconnaissance survey of the area found no evidence of prehistoric occupation despite the good exposures provided by the channelized creek banks and the pronounced scar of the older channel that was abandoned when levees were constructed along the new channel. The floodplain and valley slopes have been farmed for decades and berms were constructed in order to direct flood waters away from the fields. The only evidence of non-farming historic utilization within the floodplain is in the form of a linear earthen berm, the bases of creosoted bridge posts, and three concrete piers; these all served to keep the Southern Traction Company railroad crossing of the Chambers Creek floodplain above flood waters. This electric passenger train operated between Dallas and Corsicana from 1913 to 1941. AR Consultants, Inc. concludes that the piers may be a unique cultural resource under the criteria of the National Register of Historic Places and recommends that the concrete piers be avoided during mitigation bank creation and thus be preserved in place.

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## INTRODUCTION

In July of 2013, AR Consultants, Inc. (ARC) conducted a cultural resources evaluation of the proposed Rockin' K Mitigation Bank site in Navarro County, Texas (Figure 1). The 870-acre study area is part of the Rockin' K Ranch which includes the floodplain, the valley slopes, and the adjacent upland south of Chambers Creek. The mitigation bank study area is concentrated in the floodplain and on the valley wall west of Interstate Highway 45 and upstream from the western limit of the Chambers Creek arm of the Richland-Chambers Reservoir.

The following report contains a brief review of the natural environment and the culture history of the area as it relates to the possibility of encountering historic and prehistoric archaeological resources within the study area. The research design and methodology are presented in the next section. The results chapter describes the field investigation including shovel testing of mapped elevations. The findings are placed in a regional perspective at the end of the chapter. Recommendations and references cited conclude the report. This document was prepared following the report guidelines adopted by the Texas Historical Commission (THC). The Texas Historical Commission will review the report for the U.S. Army Corps of Engineers (USACE) but a Texas Antiquities Permit was not required for the investigation.

The archaeological potential of the mitigation bank area is highlighted by the presence of recorded historic and prehistoric sites in the surrounding area. These include the Candelario Garcia Cemetery which is located near the top of the valley slope on the Rockin' K Ranch and by the nearby Providence Cemetery which is just to the southwest. Other discoveries include the surface find of a Clovis dart point on the valley slope near where Interstate 45 crosses Chambers Creek as well as numerous historic and prehistoric sites that were found on floodplain knolls and exposed in the creek banks downstream in Richland-Chambers Reservoir.



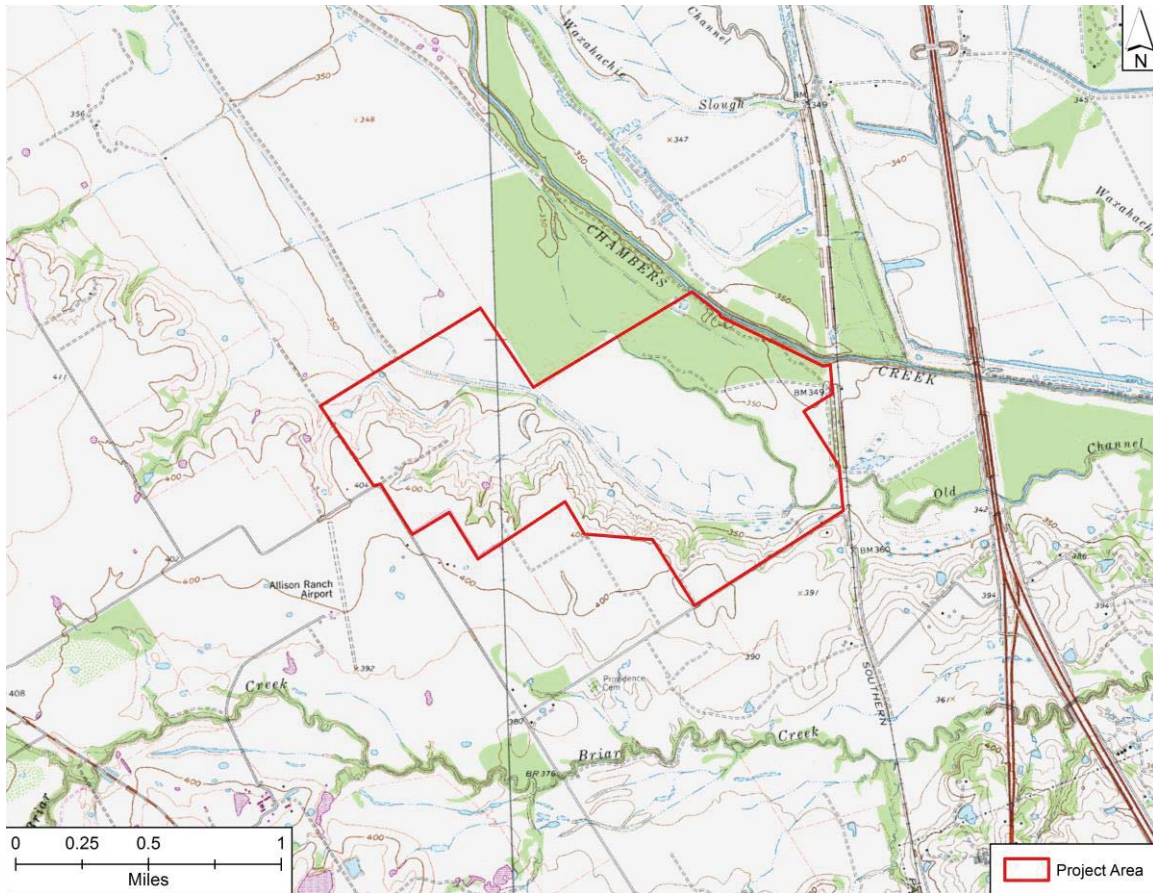


Figure 1. The Rockin' K Mitigation Bank locations shown on sections of the Chatfield and Emhouse, TX 7.5' USGS maps.

### Administrative Information

Sponsor:	Rockin' K Ranch and KBA EnviroScience, Ltd.
Review Agency:	Fort Worth District Corps of Engineers and the Texas Historical Commission
Principal Investigator:	S. Alan Skinner, Ph.D.
Field Crew:	Molly A. Hall and Skinner
Fieldwork Dates:	July 22-24, 2013
Project Person-days:	4

## NATURAL ENVIRONMENT

The portion of Navarro County in which the study area lies is located in the Blackland Prairie physiographic province (Diggs et al. 1999: Figure 2). Geology in the project area is primarily floodplain alluvium (Qal) with Quaternary terrace deposits covering the surface of the divide between Briar Creek to the south and the Chambers Creek floodplain. Wilcox Group sediments underlie the ridge and are exposed on the high point of the ridge west of the study area (Bureau of Economic Geology 1988). The Wilcox Group includes the Calvert Bluff, Simsboro, and Hooper formations, which consist of varying combinations of mudstone and sandstone. The proposed mitigation bank area covers primarily Trinity clay (Tr and Tn). Smaller area of slope soils are also present (Meade et al. 1974: Sheets 15 and 16).

Uvalde gravel deposits are known to occur nearby in the uplands (Skinner et al. 1991: 5). These gravels were utilized by prehistoric inhabitants of the region to manufacture chipped stone tools from the fine grained quartzite and chert cobbles.

The Blackland Prairie was once dominated by Indian grass and other varieties of tall prairie grasses. Bottomland forests occur along rivers and streams and some scattered oak woodlands can be found in the upland. Tree species include Texas ash, shin oak, cedar elm, redbud, Ashe juniper, red-cedar, red oak, live oak, and several other less common varieties. Bison would have once been common in the region, their grazing serving to maintain the balance in favor of tall grass prairie over woodland encroachment. Today, the loss of bison herds, combined with intensive historic agricultural practices, has led to the loss of most of the original Blackland Prairie ecosystem (Diggs et al. 1999:41-42).

## CULTURE HISTORY

This discussion summarizes the cultural history of the Upper and Middle Trinity River Basin from the earliest prehistoric times to the present day (Bever and Meltzer 2007; Young 2011). This information is drawn largely from the investigations at Richland-Chambers Reservoir (Richland Archaeological Project) (Raab 1982; Bruseth and Martin 1987; Bruseth and Moir 1987; Journey and Moir 1987; McGregor and Bruseth 1987; Moir and Journey 1987) and the proposed Tennessee Colony Lake (Richner and Lee 1976:71-133, 1977: 31-68).

### PaleoIndian (11,000-7,000 B.C.)

Early occupation in the region is generally evidenced by a series of projectile point types including Clovis, Folsom, Scottsbluff, Plainview, Meserve, and San Patrice (Young 2011). Virtually all of the known projectile finds have been surface artifacts or have been mixed with more recent Native American artifacts. A cache of Clovis blades was found on the north edge of the Richland-Chambers Reservoir (Young and Collins 1989). The cache had been exposed after the removal of overburden and several of the blades were found in place. Other such discoveries are likely in the region but have yet to be made.

### Archaic (7000 B.C.-A.D. 800)

Archaic remains are more commonly found than the previously mentioned PaleoIndian artifacts. The stage is defined primarily on the basis of material traits, particularly dart points and groundstone tools. Sites are usually found on the first terrace of the major drainages at their confluence with a smaller tributary. At Early Archaic sites, midden deposits usually have chipped stone tools made of exotic cherts, while at later Archaic sites, local cherts and quartzites are more commonly used for tool making. Based on the number of sites present, there are significantly more Late Archaic than Early Archaic sites. This increase in site density has been correlated with a moister climatic period during the Late Archaic.

### Late Prehistoric (A.D. 800-1600)

The Middle Trinity River Basin is considered to be marginal to the Caddo Area of east Texas, thus the phase descriptions used in the Caddo Area do not apply directly, but they are useful in characterizing artifacts that are commonly found in east Texas sites. There is also a similarity to sites to the north along the East Fork of the Trinity River. The least relationship appears to be to contemporary sites in Central Texas. Commonly found artifacts include arrow points and pottery along with chipped stone tools made of local lithic materials.

### Euroamerican Contact (A.D. 1600-1820)

Historic Native American sites attributed to this period are virtually unknown in the area although historic sites are described as being present. During this period, first the Spanish and then the French traded to native groups in this area while at the same time attempting to Christianize them and to establish permanent colonies. No historic Native American sites were found during survey or excavation at Richland-Chambers Reservoir.

### American Era (1820-present)

This era has been divided into four periods by Richner and Lee (1977:48-50). The four periods are frontier (ca. 1820-1840), initial cash crop (ca 1840-1870), tenant farming (ca. 1870-1940), and agribusiness (ca. 1940-present). By the end of the frontier period, Native American populations had disappeared from the region. The second period was divided by the Civil War, but was characterized by the growth of cotton as a cash crop and the use of the river for transportation. After the Civil War, tenant farming replaced the plantation system and railroads replaced river navigation as the means of moving cotton to the market place. Lumbering and oil production were added to the economic base during this period. The fourth period is marked by the consolidation of farms and the use of mechanized equipment to plant and harvest crops that had been done in the past by the once large labor pool. Since the beginning of this period, crop production has been replaced with livestock production and cotton has been replaced by pasturage.

### Previous Investigations

The archaeology of Navarro County is synonymous with investigations by Dr. Frank Autry, Frank Bryan, and Bill Young. All three men lived in Corsicana and enjoyed getting out and recording prehistoric and historic archaeological sites. Bryan (1937) wrote the first report about archaeology in the county. In the late 1900s, weekly newspaper articles describing the local and national archaeology were written and published by Bill Young. Young worked closely with local artifact collectors and was recognized as the archaeological authority in the greater Corsicana area. His most recent publication (Young 2011:286-287) details the 1972 discovery of a complete Clovis point in a drainage bank downstream from the present study area.

Subsequent to the Clovis point discovery, Young's interest in the local archaeology stimulated the Archaeology Research Program at Southern Methodist University to pursue research funds for survey of the proposed Tennessee Colony Lake (Richner and Lee 1976, 1977) and the Trinity River Project (Richner and Bagot 1977). In conjunction with these investigations, Young worked with the SMU field teams in the accessing and evaluation of sites along Chambers Creek just downstream from Corsicana. This awareness highlighted the prominence of prehistoric archaeological resources in Navarro and Freestone counties and led to a synthesis of recorded sites upstream from the junction of Tehuacana, Richland, and Chambers creeks (Burton and Connors 1979).

In the early 1980s, archaeological investigations at the 44,750-acre Richland-Chambers Reservoir were conducted by the Archaeology Research Program at Southern Methodist University. This massive survey project represents the most intensive and comprehensive study in Navarro County to date. Four hundred sixty-three historic properties and 447 prehistoric sites were recorded in conjunction with this investigation (Raab 1982:27, 117). Two of the more significant prehistoric sites discovered are the Bird Point Island (41FT201) and Adams Ranch (41NV177) sites. Bird Point Island is a site that was occupied during four different periods beginning in the Late Archaic Period (170 BC-AD 130). The site is located on a knoll in the Richland Creek floodplain. The site yielded 500 cultural features including burials, post holes, and other features such as large pits with visible surface depressions argued to be Wylie Focus pits (Bruseh and Martin 1987:267-280). The Adams Ranch site is a multi-component site located on an alluvial terrace one km north of Richland Creek (Bruseh and Martin 1987:199). Feature 1 is the largest and most complex at Adams Ranch. Feature 1 contained a greater amount of artifacts dating to the Late Archaic period than Bird Point Island. Other prehistoric sites encountered during the investigations at Richland/Chambers occurred within the floodplains of Richland and Chambers creeks. Investigation of historic sites indicated that the area was inhabited historically by small landowners and tenant farmers practicing cotton farming (Moir and Jurney 1987).

AR Consultants, Inc. has conducted numerous surveys in Navarro County. The first major study was for the Corsicana Landfill Site (Skinner et al. 1991). Three archaeological sites were recorded in the 300 acre study area: 41NV660, 41NV661, and 41NV662, all historic. 41NV662 is the Corsicana Oil Field site area (considered to be the entire landfill study area), which dates from 1902. 41NV661 consists of a cistern and smokehouse chimney, while 41NV660 is a board and batten structure (circa 1915) with an associated cistern. The second survey was for The Shores of Richland Chambers (Craver et al. 2006). Investigations within the 800 acre tract identified seven previously unrecorded sites: five historic sites (41NV386, 41NV690, 41NV691, 41NV692, 41NV694), one prehistoric site (41NV695), and one multi-component site (41NV693). 41NV386 is a collapsed log cabin dating to the mid or late 19<sup>th</sup> century, making it one of the oldest log cabins in the county (Skinner and Craver 2008). Most recently ARC located and described the Montgomery Hill Cemetery on an island in Richland-Chambers Reservoir (Whitley and Skinner 2012)

An initial review of USGS topographic maps and historic county maps of the study area indicate that no roads and no structures are mapped within the study area, which is most likely due to the floodplain environment and historic farming.

The 1926 Navarro County soil map shows that Chamber Creek had been channelized upstream and downstream from the Houston highway crossing of the floodplain (Figure 2). To the west, a levee paralleled the channelized creek and the older channel had been abandoned. By the early 1960s, when aerial photographs were flown for the county soil book, a levee berm had been constructed at the base of the valley slope and served to divert water north into the new channel. A levee had also been constructed across the floodplain for the purpose of keeping water out of the farmed fields just downstream.



These activities could have uncovered buried site deposits but none were found by Bill Young who actively searched for sites along Chambers Creek (TASA 2013).

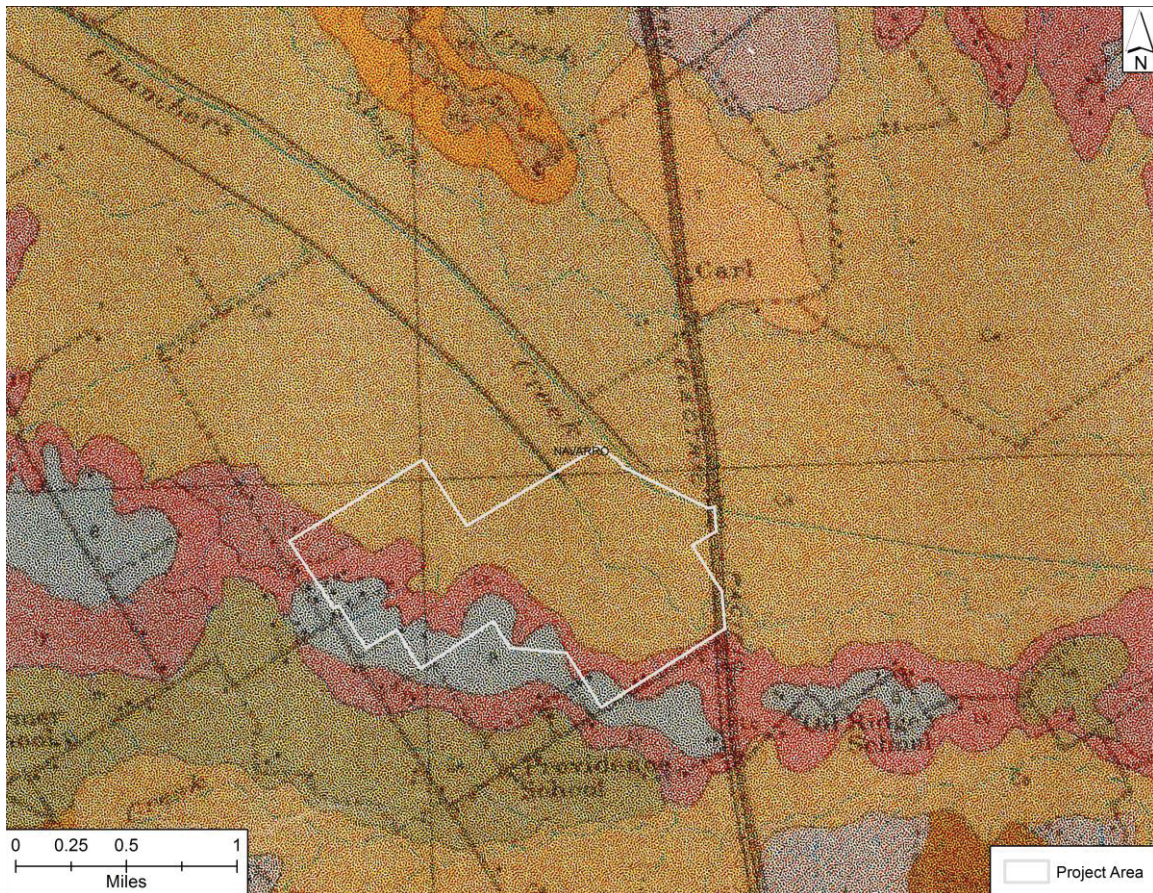


Figure 2. The study area shown on a section of the 1926 Navarro County Soil Map.

## RESEARCH DESIGN AND METHODOLOGY

### Research Design

Based on the archival research and a review of the previous investigations that have recorded scattered sites and historic cemeteries within a mile of the study area, it was determined that the creek bank, the old creek channel scar, and the mapped elevations in the floodplain had a high potential for being locations where prehistoric archaeological sites were likely to be discovered. Since the entire study area appears to have been farmed continuously since the early 1900s, it was considered unlikely that historic residences would be found in the floodplain. On the other hand, evidence of historic occupation might be found on the steep un-farmable valley slopes where houses and family cemeteries might have been built and where trash was likely to have been deposited in eroding drainage channels.

### Methodology

The field crew walked the top of the present creek bank and noted where exposures were present and observed the steep almost vertical creek walls. The creek bank was not scaled because of the dense weed and brush coverage and the height of more than twenty feet from creek level to the bank top. The full length of the old creek channel was walked from west to east, making notes about artifacts exposed on the channel surface or on the channel bank faces, soil types, and disturbed areas. Shovel testing was done on each of the mapped knolls located on the floodplain surface between the present and the old channel. Each shovel test was excavated to at least 45 cm below the surface and some went as deep as 85 cm. They were also done according to THC standards (n.d.). Shovel tests averaged 30 cm in diameter and were supplemented by an auger where necessary. The clay fill from the shovel tests was inspected visually and broken into smaller chunks in order to determine if cultural materials were present. Shovel test matrices were described on the basis of texture and color. The Munsell Soil Color Chart (2009) was used to identify the soil colors in each shovel test. Photographs were taken throughout the survey area using a Canon PowerShot SD1200 IS 10.0 megapixel digital camera. Shovel test and feature locations were recorded with a handheld Garmin GPSmap76 GPS unit.



## RESULTS

Field work began by first exploring the entire study area (Figure 3) from the creek to the fence lines, on and adjacent to the levee berms, on elevated roadways, and cleared paths through the floodplain forest (Figure 4). It was apparent that there was little pronounced elevation in the floodplain. Ground exposure varied significantly with the highest amounts being associated with the ditches adjacent to the levee berms and on the berm surfaces themselves. Surface visibility varied in the mowed and grazed fields but was generally less than 30 percent. The old channel scar provided good visibility although that had to be balanced with the fact that the scar fills with water whenever the creek spills over the banks and covers much of the floodplain. This resulted in silting in the scar bottom but also in the erosion of the scar banks. The present creek banks average about twenty feet from the normal water level to the surface of the floodplain. The eastern end of an earthen levee is present on the northwest corner of the study area and extends further northwest along the channel outside the mitigation bank limits. The purpose of the levee was to keep the water from Chamber Creek off the adjacent farmed floodplain. This levee was constructed sometime before 1926. Thick foliage primarily covers the surface of the north and south banks of the creek so exposures were not good. Despite good and bad surface exposures, no prehistoric cultural materials were encountered during the survey.



Figure 3. Valley slope in the foreground looking northwest into the Chambers Creek floodplain. Trees in the background mark the approximate edge of the creek channel.

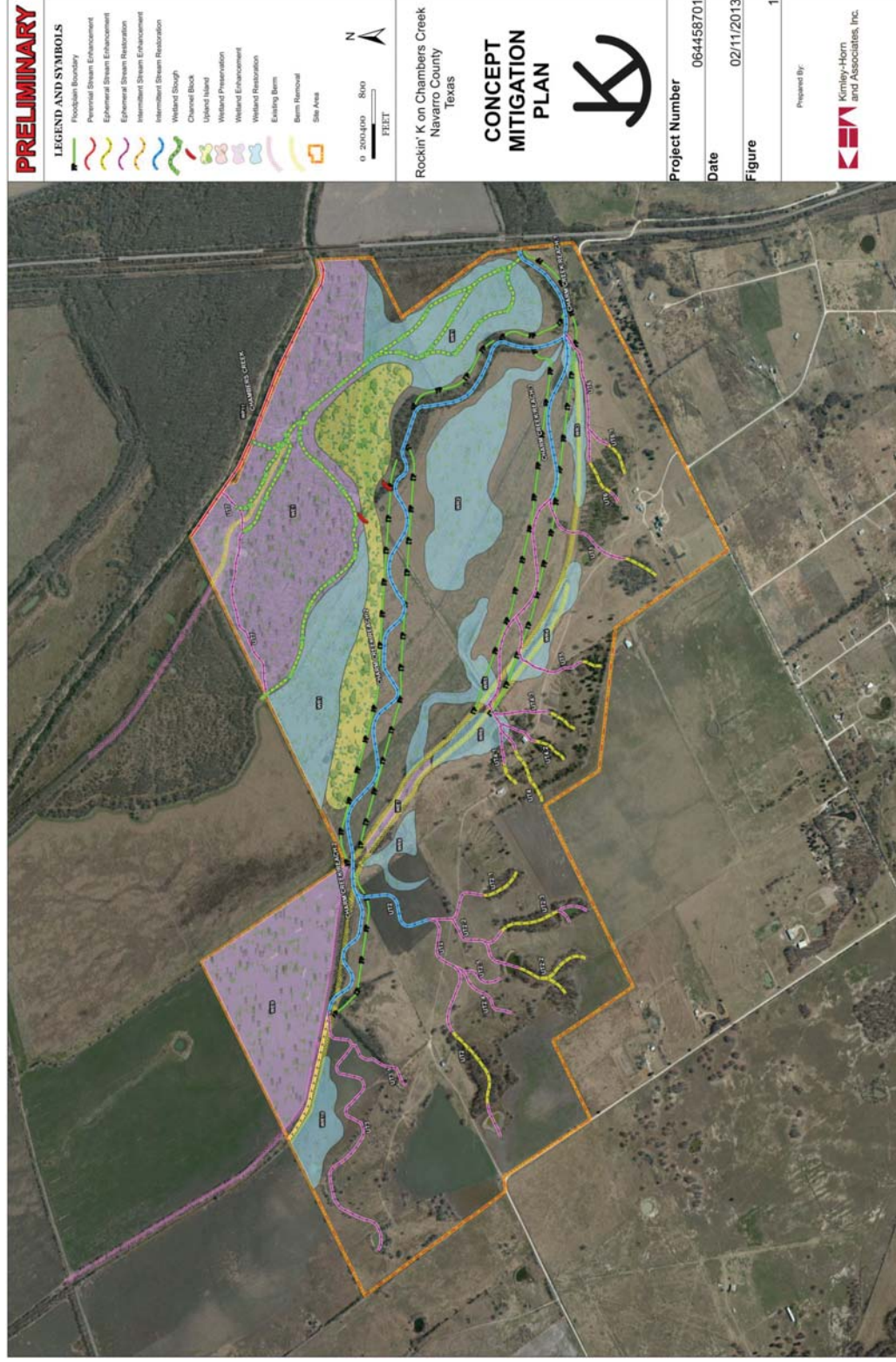


Figure 4. Concept Mitigation Plan for the Rockin' K Mitigation Bank site.





Figure 5. Earthen levee spans the width of the picture and is located at the southern edge of the floodplain. Trees in the background are adjacent to the old Chambers Creek channel scar. View is to the north.



Figure 6. Chambers Creek channel looking northeast and taken from the top of the creek bank. Dense vegetation masks the banks on both sides of the creek.





Figure 7. Better bank exposure adjacent to Chambers Creek. View is to the northeast. A narrow beach is along the water's edge.



Figure 8. One of many several access trails that cross the tree-covered floodplain forest between the old and new channels. View is looking east.





Figure 9. The old channel swale at a point where it is approximately ten meters wide and has one and a half meter high banks. View is to the east.



Figure 10. Root ball of an American elm that was anchored in the swale edge until it was uprooted. Creek scar is to the right. The sediment is dark brown and probably represents deposition in the past century.

Shovel testing (Table 1) was done in the approximate center of the five “knolls” that are mapped as 350’ contours on the USGS map (Figure 11). As it turns out the knolls appear to be more a reflection of drainages that cross the forested floodplain because no pronounced elevations were perceptible on the floodplain surface. Nevertheless shovel testing was done as a means of determining if buried cultural materials were present in the center of the elevations. The sediment was clay throughout, although four of the shovel tests contained a matrix that consisted of laminated clay and sand. The tests were each excavated to depths where the field team could no longer turn the auger. No cultural materials were encountered in any of the shovel tests.

Table 1. Shovel Test Descriptions.

ST#	Depth (cm)	Matrix Description*	Notes
1	0-45 45-85+	Compact dark gray (2.5Y4/1) clay Compact laminated dark gray clay and light yellowish brown (2.5Y6/3) sand	Sand increases from 40% in top of second zone to 80% at the base
2	0-45 45-85+	Compact dark gray clay Compact laminated dark gray clay and light yellowish sand	Sand increases from 20% in top of second zone to 80% by 65 cmbs
3	0-17 17-45+	Compact dark gray clay Compact laminated dark gray clay and light yellowish sand	Sand increases from 40% near 20 cmbs to 60% at the base
4	0-40 40-53+	Compact very dark gray (2.5Y3/1) clay Compact dark gray clay	
5	0-30 30-68+	Compact very dark gray clay Laminated dark gray clay and light yellowish sand	Sand increases from 30% at 30 cmbs to 90% at the base

\*Munsell color chip numbers are not repeated after introduced

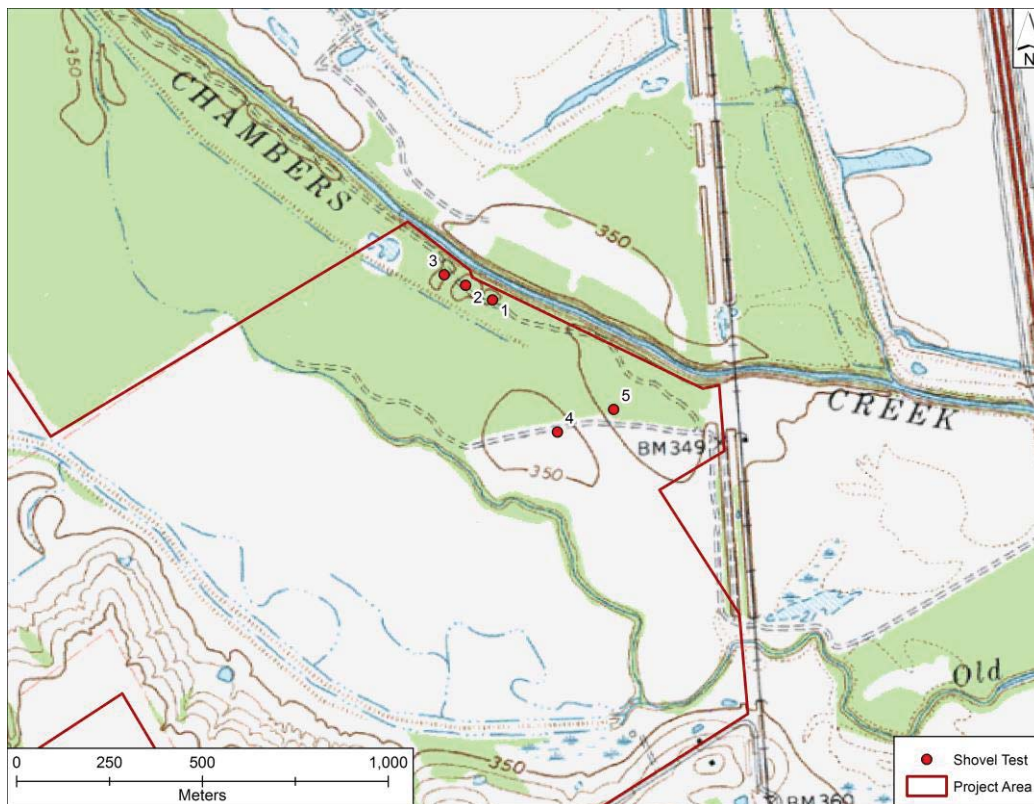


Figure 11. The project area and shovel test locations shown on a portion of the Chatfield, TX 7.5’ USGS map.



The only archaeological site discovered during the Rockin' K Mitigation Bank field investigation consists of two earthen berms, the embedded bases of creosoted wooden piers, and three concrete piers. All of these features were associated with a railroad bridge that spanned the old channel and floodplain of Chambers Creek. The passenger train ran from Dallas to Corsicana along the Texas Electric Railroad. It paralleled the Southern Pacific line which had been the Houston and Texas Central Railroad when first constructed in the 1870s. The Texas Electric was constructed in 1913 and continued in operation until 1941 when it was shut down.

Archaeologically, the three concrete piers shown on the report cover and as Figures 12 and 13 represent the best preserved and most durable evidence of the creek channel and floodplain crossing. The wooden pilings which supported the platform and rails had been cut off at ground level and consist of creosoted posts. Several earthen berm segments are present the width of the floodplain to the north as shown on the Chatfield, TX 7.5' USGS map. Pilings extended almost to the edge of the floodplain south of the creek where a short earthen berm had been constructed. The railroad cut through the upland is apparent to the south where it continued to parallel the Union Pacific Railroad route. No rails, wooden ties, or ballast rock concentrations were observed on the surface along the railroad route.



Figure 12. Concrete piers that supported the Texas Electric Railroad crossing of Chambers Creek and was built before the creek was channelized. An earthen berm is north of the piers and the power pole is set into the top of the berm. View is to the north.



Figure 13. View of the railroad piers looking downstream with the Chambers Creek scar to the right. Note the 4-inch-square holes in the upper part of the two closer piers.

The concrete piers are 29" square at present ground level and stand 124" tall. They may have steel reinforcing but it is not exposed on the surface. The piers taper to about 20" at the top and there is a 6" thick and 24" long concrete cap on the top of each of the piers. The caps appear to have been poured after the rest of the pier had been constructed. There are raised panels on some of the pier faces but on others there are impressions of horizontally oriented form boards. The western pier is 28" from the central pier and it is 18" from the eastern pier. A square hole is located below the cap on the center of the west side of the western and central piers and on the same location on the east side of the eastern pier.

In conclusion, no evidence of prehistoric occupation was found on the surface or exposed in the creek banks in the floodplain. This condition is attributed to the absence of knolls or other natural elevations which would have provided temporary protection against flooding and would have allowed easy access to potable water, aquatic plants and animals, as well as other floodplain food resources. Prehistoric artifacts were not observed in the banks or on the surface of the old Chambers Creek channel. It was not expected that buried sites would have been found in the present creek bank because the creek is a long way from the old creek channel and presented no pronounced and habitable elevations. Based on site exposures along Chambers Creek at Richland-Chambers Reservoir, it seems likely that any buried sites at Rockin' K will be a meter or more below the present surface and thus protected from planned cut and fill activities associated with creation of the mitigation bank.



The remains of the Dallas to Corsicana Southern Traction Company crossing of the Chambers Creek floodplain present a well-preserved remnant of this electric company system (Rieder 2013). Other Southern Traction Company creek crossings are known at the Skyline Landfill in Ellis County just north of Ferris where the route crosses Ten Mile Creek (Davis et al. 1994; Shelton and Skinner 2013). A crossing of Cedar Creek was recorded in south Dallas in conjunction with development of the Dallas Area Rapid Transit rail system (Jurney et al. 1991). No evidence of the Trinity River crossing has been documented. The Southern Traction Company was merged with the Texas Traction Company in 1917 and the combined railway system was named the Texas Electric Railway Company (Rieder 2013). A crossing of Cottonwood Creek north of Allen in Collin County on the Dallas to Sherman route [the Texas Traction Company] was recently recorded (Shelton and Boxwell 2013) adjacent to the Houston and Texas Central creek crossing (Skinner and Skinner 1996; Skinner 2002; Moir n.d.). Concrete and wooden pole piers were used to support the various sections of the lines that are mentioned above but they all appear to be different in construction (Solomon 2007). This may be a reflection of the hydrology of the different drainages, or the design, or section by section contracting of the railroad construction. It would be useful to find and preserve construction drawings from the various floodplain crossings since they were all built at about the same time and essentially for the same client.

## RECOMMENDATIONS

ARC concludes that significant prehistoric sites are not likely to be encountered during construction planned with creation of the mitigation bank. The concrete piers associated with the Southern Traction Company railway may represent the only significant evidence of the historic rail line and may be significant as a unique cultural resource under the criteria of the National Register of Historic Places. As indicated above, other drainage crossings associated with the Texas Electric Railway Company system are present to the north and each appears to represent different construction techniques. Although they may be typical of the time period, this information has not been compiled as part of an analysis of the integrity or the uniqueness of the system or of individual drainage construction approaches. We conclude that an analysis of this type would make a contribution to the better understanding of electric railway systems in North Central Texas. We also recommend that the bridge piers and immediately surrounding area be avoided by construction and by doing so be preserved in place.

Although outside the immediate study area, ARC recommends that detailed mapping and clearing of the area of the Candelario Garcia Family Cemetery be carried out and that the defined limits of the cemetery be fenced. This early twentieth century cemetery is worthy of being preserved in place.

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