UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270-2102

SEP 26 2019

CERTIFIED MAIL – RETURN RECEIPT REQUESTED 7005 1820 0003 7456 1845

Mr. Michael G. Altavilla, P.E.
Operations Manager
Westmoreland Jewett Mining L.L.C.
P.O. Box 915
4336 FM 39 South
Jewett, TX 75846-0915

Re: Resolution of
Docket No. CWA 06-2019-2703, Administrative Order on Consent
Docket No. CWA 06-2019-2704, Administrative Order on Consent

Dear Mr. Altavilla:

As recently discussed with Mr. Tom Nystrom of our Water Resources Section, enclosed are copies of the two Orders listed above. These Orders resolve the Clean Water Act, Section 404, permit issues at the two mining areas involved at the Westmoreland Jewett coal mine. The Orders require the equivalent mitigation and reclamation activities that would have been required by a Corps of Engineers permit, and that has been done at similar areas of the Jewett mine. This has been a long process and we greatly appreciate the cooperation of you and your staff from start to finish.

To proceed with this settlement, please sign both documents and return them to:

Tom Nystrom (ECD-WR)
EPA Region 6, Water Resources Section
Enforcement and Compliance Assurance Division
1201 Elm St., Suite 500
Dallas, TX 75270

When we receive your signed documents, we will sign and issue the Orders and provide you with copies. If you have any questions, please contact Mr. Nystrom at (214) 665-8331, or our attorney in this matter, Mr. Tucker Henson, at (214) 665-8356.

Sincerely,

Cheryl T. Seager, Director
Enforcement and
Compliance Assurance Division

Enclosures

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6

In the Matter of	§	Clean Water Act § 309(a)
	§	
Westmoreland Jewett Mining L.L.C.	§	ADMINISTRATIVE ORDER
	§	ON CONSENT
	§	
Respondent	§	Docket No. CWA 06-2019-2704

I. AUTHORITY

The following findings of violations are made and Administrative Order on Consent ("Order") issued under the authority vested in the Administrator of the United States Environmental Protection Agency ("EPA") by Section 309(a) of the Clean Water Act ("Act"), 33 U.S.C. § 1319(a). The Administrator delegated this authority to the Regional Administrator of EPA Region 6, who has further delegated such authority to the Director of the Enforcement and Compliance Assurance Division, EPA Region 6.

II. FINDINGS OF VIOLATIONS

1. Westmoreland Jewett Mining L.L.C. ("Respondent") is a corporation created under the laws of the State of Delaware, and as such, Respondent is a "person" as defined by Section 502(5) of the Act, 33 U.S.C. § 1362(5). Respondent has taken over operations from Texas Westmoreland Coal Co. at the sites referred to in this document and intends to complete the resolution of this matter.

2. At all times relevant to the violations alleged herein, Respondent owned and operated a surface coal mine complex known as the Jewett Mine, including a tract of approximately 9,341 acres known herein as Jewett Mine 47A RCT Permit Area, located northwest of Jewett, Leon County, Texas with a mailing address of 4336 FM 39 South, Jewett, Texas, 75846 ("Subject Property").

3. On multiple dates between 2004 and 2014, Respondent and/or other persons or entities acting at Respondent's direction and/or on its behalf ("Respondent's Agents") discharged pollutants from point

sources into navigable waters without a permit issued under the Act. On April 15, 2002, the U.S. Army Corps of Engineers ("COE") authorized NWP 21 Number 2000-00006 for impacts at the Jewett Mine 47A RCT Permit Area. On June 30, 2008 Respondent submitted an Amendment/Reverification to add additional areas, and on May 27, 2009, Respondent submitted a revision to include additional areas for authorization. Specifically, Respondent and/or Respondent's Agents discharged "dredged material" and/or discharged "fill material," as those terms are defined by 40 C. F. R. § 232.2, by means of heavy equipment into approximately 144.53 acres of wetlands and 8.09 acres of stream channel within the subject property in areas known as 2000-00006 A/R. The impacted wetlands and streams are adjacent to, or hydrologically connected to either Linn Creek, Wilkerson Spring Branch, Bow Branch, and other un-named streams which all flow into Upper Keechi Creek, which flows into the Trinity River, a traditionally navigable water of the United States.

4. During a review of permit files Respondent discovered that the COE had not issued formal approval for work in area 2000-00006 A/R of Jewett Mine 47A RCT Permit Area, yet mining activities had moved through the area, which involved land clearing, mining, and/or filling of the wetlands and streams by Respondent. These discharges were duly reported to the COE. The areas subject to these discharges were included in the permit submittals referenced in paragraph 3.

5. Equipment used to carry out the discharges referenced in paragraph 3 was a "point source" as that term is defined in Section 502(14) of the Act, 33 U.S.C. § 1362(14).

6. The dredged and fill material referenced in paragraph 3 was a "pollutant" as defined by Section 502(6) of the Act, 33 U.S.C. § 1362(6).

7. The impacted wetlands and streams referenced in paragraph 3 are tributaries of "navigable waters" as that term is defined by Section 502(7) of the Act, 33 U.S.C. § 1362(7).

8. Under Section 301(a) of the Act, 33 U.S.C. § 1311(a), it is unlawful for any person to discharge a pollutant from a point source to navigable waters, except with the authorization of, and in compliance with, a permit issued under the Act. Section 404 of the Act, 33 U.S.C. § 1344, provides that the Secretary

of the Army, acting through the Chief of Engineers for the COE, may issue permits for the discharge of dredged or fill material into navigable waters.

9. Respondent did not have a permit issued by the COE that authorized the discharges described in paragraph 3 above.

10. Each day of unauthorized discharge was a violation of Section 301(a) of the Act, 33 U.S.C. § 1311(a).

11. In entering into this Order, Respondent does not admit or deny any of the findings of violations or conclusions of law set out in this Order. Moreover, actions undertaken by Respondent in accordance with this Order do not constitute an admission of any liability. Respondent retains the right to controvert in any subsequent proceedings the validity of the findings of violations or conclusions of law with the exception that Respondent waives its right to contest the validity of the findings of violations and conclusions of law in any subsequent action to enforce the terms of this Agreed Order, specifically Section IV (Compliance Order).

12. Respondent has complied with two previous EPA Orders to resolve this matter and this Order will be the final step in full resolution. The State of Texas and the Fort Worth District, U.S. Army Corps of Engineers have reviewed the attachment referred to in Paragraph 14 below.

III. CONSENT AGREEMENT

13. EPA and Respondent agree that settlement of this matter will save time and resources and is in the public interest and that issuance of this Administrative Order on Consent is the most appropriate means of resolving this matter with respect to Respondent's restoration of certain wetlands referenced herein and described in Section IV below. Respondent concurs in the issuance of this Administrative Order on Consent and agrees to comply with the Order.

IV. COMPLIANCE ORDER

14. Based on the foregoing Findings of Violations and pursuant to the authority of Section 309(a) of the Act, 33 U.S.C. § 1319(a), EPA orders, and Respondent agrees to implement the corrective actions, restoration, reclamation, and mitigation required for the impacted areas as described in Attachment 1: Administrative Oder on Consent No. CWA-06-2019-2704, Appendix 1, Resolution Documentation, Jewett Mine, RCT Permit 47A (E/F Area), August 12, 2019.

V. GENERAL PROVISIONS

15. Respondent waives any and all claims for relief and otherwise available rights or remedies to judicial or administrative review that Respondent may have with respect to any issue or fact or law set forth in this Order, including, but not limited to, any right of judicial review of this Order on Consent under Sections 701 through 708 of the Administrative Procedure Act, 5 U.S.C. §§ 701-708.

16.Respondent acknowledges the jurisdiction of EPA to issue the Section 309(a)(3) Administrative Order on Consent.

17. Issuance of this Order shall not be deemed an election by EPA to forego any administrative or judicial, civil or criminal action to seek penalties, fines or any other relief appropriate under the Act for the violations cited herein or other violations that become known to EPA.

CERTIFICATE OF SERVICE

I hereby certify that on the 30th day of September, 2019, the original of the foregoing Administrative Order on Consent was hand delivered to the Regional Hearing Clerk, U.S. EPA, Region 6 (6RCD), 1201 Elm Street, Suite 500, Dallas, Texas 75270, and that a true and correct copy was placed in the United States Mail, by certified mail, return receipt requested, addressed to the following:

Mr. Michael G. Altavilla, P.E.
Operations Manager
Westmoreland Jewett Mining L.L.C.
P.O. Box 915
4336 FM 39 South
Jewett, TX 75846-0915

Copy hand-delivered:

Mr. Tucker Henson
Office of Regional Counsel (6RCEW)
U.S. EPA Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270

Certified by

18. If EPA issues an administrative complaint or a civil judicial action is initiated by the U.S. Department of Justice, Respondent may be subject to a monetary penalty. The failure to comply with this Order or the Act can result in civil penalties of up to $37,500 per day of violation. If a criminal action is initiated by the U.S. Department of Justice, Respondent may be subject to a fine and/or imprisonment and may also become ineligible for certain government contracts, grants or loans under Section 508 of the Act, 33 U.S.C. § 1368.

19. Compliance with the terms and conditions of this Order on Consent does not relieve Respondent of the obligation to comply with any applicable federal, state or local law or regulation.

20. The effective date of this Order is the date a signed copy is received by Respondent.

21. Each undersigned representative of the parties to this agreement certifies that he or she is fully authorized by the party represented to enter into the terms and conditions of this agreement and to execute and legally bind that party to it.

In recognition and acceptance of the foregoing:

Michael G. Altavilla — 09/26/2019

Mr. Michael G. Altavilla, P.E.
Operations Manager
Westmoreland Jewett Mining L.L.C.

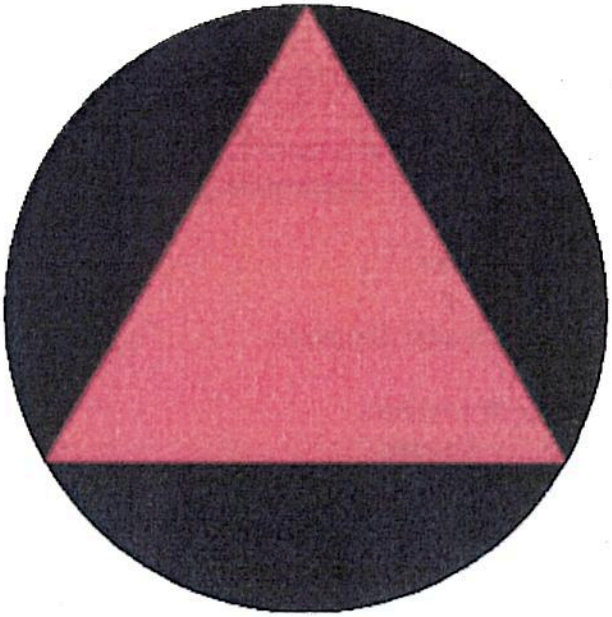
Date

[signature] — 09/26/2019

Cheryl T. Seager, Director
Enforcement and
Compliance Assurance Division

Date

WESTMORLAND JEWETT MINING LLC



U.S. ENVIRONMENTAL PROTECTION AGENCY

ADMINISTRATIVE ORDER ON CONSENT NO. CWA-06-2019-2704

APPENDIX 1

RESOLUTION DOCUMENTATION

Jewett Mine, RCT Permit 47A (E/F Area)

August 12, 2019

Prepared for:
Westmorland Jewett Mining LLC
P.O. Box 915
Jewett, Texas 75846-0915

Prepared by:
HDR Engineering, Inc.
17111 Preston Rd., Suite 300
Dallas, TX 75248-1232

Administrative Order on Consent No. CWA-06-2019-2704
Resolution Documentation

Introduction of Appendix 1:

Appendix 1 of this Resolution Documentation is provided at the request of Region 6 of the Environmental Protection Agency. The documentation supports findings in the Administrative Order on Consent and provides information on specifics related to the Jewett Mine's permit 47A (E/F area). **Appendix 1** is formatted as follows:

Part 1 - Project Information

Part 2 - Project Impacts and Mitigation

Part 3 - Supporting Information
- Attachment 1 – Figures
- Attachment 2 – Impacts Analysis
- Attachment 3 – Proposed Mitigation Plan

Note that this information has been created using excerpts from various documents associated with Section 404 pre-construction notifications.

Part 1 - Project Information

Project Name:	**Responsible Party Name**
Jewett E/F Area Mine Railroad Commission of Texas Permit No. 47A	Michael G. Altavilla
Applicant Title	**Company, Agency, etc.**
Operations Manager	Westmorland Jewett Mining LLC (hereafter referred to as Applicant or WJM) (previously also referred to as Texas Westmoreland Coal Company)
Mailing Address Westmorland Jewett Mining LLC P.O. Box 915 Jewett, Texas 75846-0915	Tracking Number (if any) Not Applicable

Work Phone with area code	Cell Phone with area code	Fax #	E-mail Address
903-626-6387	903-777-8101	903-626-6826	maltavilla@westmoreland.com

Project location, including street address, city, county, state, and zip code where proposed activity will occur:

Jewett Mine office location for Westmorland Jewett Mining LLC is:

Physical Address:
4336 FM 39 South
Jewett, Texas 75846-0915
From Jewett, Texas at US-79 and FM 39, go north on FM 39 approximately 9 miles;
Jewett Mine entrance is on the left.

Nature of Activity:

Westmorland Jewett Mining LLC (WJM), a subsidiary of Westmoreland Coal Company, operates the Jewett E/F Area Mine near the town of Jewett, Texas. The existing Jewett E/F Area Mine consists of 9,341 acres. For the purposes of this documentation, the term "Project Area" will be used to describe the entire area, while the term "Impact Area" will refer only to the area that was impacted by mining activities (152.62 acres) associated with the Administrative Order on Consent. See the figures in **Attachment 1** for reference.

The Jewett E/F Area Mine (Project Area), is an existing lignite mining operation at the Jewett Mine located in central Texas. Mining began in the Project Area, north of Jewett, Texas, in 2002. See **Figure 1** for a location map and other general information. Mined lignite (coal) from the Jewett E/F Area Mine was provided to fuel NRG's Limestone Electric Generating Station (NRG-LEGS) located in Limestone County, Texas. The mine was in operation since 2002. However, the mine began a reclamation only operation in January 2017 as a result of (1) the age of the mine and depleted fuel, (2) changes in the

generation station's fueling plan, and (3) to some degree the overall cost of mining at the Jewett Mine.

This information and attachments have been prepared to support resolution of consent orders associated with unauthorized impacts to waters of the U.S. These documents, based on discussions with the Environmental Protection Agency (EPA), used documentation from previous permit applications prepared in accordance with Fort Worth District of the U.S. Army Corps of Engineers (USACE) recommendations and requirements.

Additional background information is contained in Railroad Commission of Texas (RCT) permit renewal applications for the Jewett E/F Area Mine, Permit No. 47A, which was approved by the RCT Surface Mining and Reclamation Division on March 9, 2010.

Surface mining operations within the Jewett E/F Area Mine were conducted using conventional open pits excavated by large draglines and supported by standard earth moving equipment such as loading shovels, dozers, end dumps, and scrapers. Infrastructure in support of the operation included (1) construction of ponds and diversions to control surface water drainage; (2) placement of groundwater well fields to dewater overburden and relieve underburden pressures; (3) relocation of pipelines; (4) construction of service roads; and (5) closure and/or relocation of a number of county roads to facilitate mine operations and protect public safety. Various construction projects and mining operations involved impacts, by filling or dredging, to waters of the U.S., including wetlands.

As noted and discussed in this document, impacts to waters of the U.S. were projected to occur from the date of authorization by the Fort Worth District, U.S. Army Corps of Engineers, until the lignite resource was exhausted (previously projected in 2018) or further mining is not feasible. Based on multiple factors, the mining of lignite was suspended in late 2016, and the mine is now a reclamation only operation. The reclamation only operation goal is to finalize mine reclamation and mitigation in accordance with the RCT permits, Section 404 permit authorizations, and Administrative Order on Consent No. CWA-06-2019-2704.

Project Purpose:

The original purpose of the project was to continue WJM's lignite mining operations in order to continue to provide a reliable, continuous, and economically stable fuel source to WJM's client—NRG's Limestone Electric Generating Station (NRG-LEGS). WJM planned to utilize a local lignite resource to continue providing economic benefits through local employment, increased tax base, and indirect job growth in Freestone, Leon, Limestone, and surrounding counties. WJM's goal was to continue to operate the E & F Areas in an environmentally-acceptable manner.

The proposed Project Area was needed because WJM was nearing the end of currently-permitted reserves within the existing Jewett E/F Area Mine. Therefore, WJM was seeking to continue supplying fuel for electricity production until new mine areas could be permitted. The client (NRG-LEGS) requires approximately nine million tons of fuel per year in order to generate 1,690 MW of baseload electricity. Lignite (from Permits 47A and 32G) provided approximately four million tons, or about 45 percent, of this requirement, with the balance coming from western coal shipped to the plant.

Associated Waterbody(ies):

Bow Branch, Buffalo Creek, Alligator Creek

Tributary(ies) to what known, downstream waterbody(ies):

Buffalo Creek flows into Upper Keechi Creek, which flows into the Trinity River several miles downstream of the mine.

Latitude and longitude (Decimal Degrees at center of project):

Mine (center): 31.489°N and 96.119°W

USGS Quad map name(s):

Buffalo, Dew, Donie, and Lanely
[7.5 Minute Series]

Watershed(s) and other location descriptions, if known:

The Project Area is within the Alligator Creek (HUC 120302010501) and Linn Creek-Buffalo Creek (HUC 120302010502) watersheds that flow ultimately to the Trinity River.

Directions to the project location:

Public access to the majority of the mine is limited by its rural nature and previous mining. General directions to the Project Area are as follows: From the intersection of IH 45 and SH 164 northwest of Buffalo, Texas, proceed west on SH 164 approximately 1.4 mile. The Project Area will be on the right. See **Attachment 1** for figures showing general and detailed features within the mine.

Part 2 - Project Impacts and Mitigation

Reason(s) for Discharge into waters of the U.S.:

The reasons for discharges into waters of the U.S. related to this surface mining project include the following: (1) construction of infrastructure projects that support the mine operation, (2) overburden removal, (3) removal of lignite from excavated areas of the mine, and (4) reclamation of impacted areas.

Impacts Analysis

See **Attachment 2**.

Impacts to waters of the U.S.
Associated with the Administrative Order on Consent

Indicate the adverse impacts to **waters of the U.S.** in ACRES (for wetlands, impoundments, and stream channels) and identify the impact(s) as permanent and/or temporary for each waterbody type listed below. The table below is intended to summarize impacts by resource type for planning compensatory mitigation.

Table 1

	Permanent Impacts
Waterbody Type	**Acres**
Non-forested wetland	27.37
Forested wetland	6.45
Mosaic wetland	109.11
Wetlands Subtotal	142.93
Stream	8.09
Stream Subtotal	8.09
Impoundment	1.60
Impoundment Subtotal	1.06
Total:	152.62

Potential indirect and/or cumulative impacts of proposed discharge:

Indirect impacts (e.g., flooding or significant modification to the hydrologic regime) to waters of the U.S. outside of areas directly impacted by mining or infrastructure projects or to areas outside the RCT permit boundary are not projected or anticipated. Areas outside of the RCT permit boundary are protected by regulatory requirements that require infrastructure projects to be designed, constructed, and operated to avoid off-site impacts from mining operations or associated discharges from constructed water control structures. All discharge water is required to meet TCEQ water quality discharge parameters and reduce sediment transport from the mine.

A cumulative impact to approximately 152.62 acres of waters of the U.S. occurred within the proposed Project Area. These impacts were incrementally spread over the life of the mine, so only a subset of the 152.62 acres was being impacted at any time. This minimized cumulative impacts, resulting in limited net impact to local and regional aquatic environments. See **Attachment 2** for a discussion of adverse impacts to Waters of the U.S. and **Attachment 3** (Proposed Mitigation Plan) for additional discussion.

Proposed Conceptual Mitigation Plan Summary:
Measures taken to avoid and minimize impacts to waters of the U.S. (if any):

See the Proposed Mitigation Plan (**Attachment 3**).

Proposed Projected Mitigation

Indicate in ACRES (for wetlands, impoundments, and stream channels) the total quantity of waters of the U.S. proposed to be created, restored, enhanced, and/or preserved for purposes of providing compensatory mitigation. Indicate mitigation site type (on- or off-site) and numbers. Indicate waterbody type (non-forested wetland, forested wetland, perennial stream, intermittent stream, ephemeral stream, impoundment, other) or non-jurisdictional (uplands).

Table 2

Mitigation Site Type and Number	Waterbody Type	Proposed Projected Mitigation
On-site general*	Non-forested wetland	41.06
On-site general*	Forested wetland	12.90
On-site general*	Mosaic wetland	218.22
	Projected Wetlands Subtotal	272.18
On-site general*	Impoundment	1.60
	Impoundment Subtotal	1.60
On-site general*	Stream	8.09 ac
	Stream Subtotal	8.09 ac
	Totals: (acres)	281.87

* Permittee Responsible Mitigation

Forested wetland mitigation projections in the table above include mitigation for impacted scrub-shrub wetlands.

Mitigation ratios used to project proposed compensatory mitigation are consistent with past USACE-approved Section 404 permit actions for mining projects at the Jewett E/F Area Mine.

Provide a detailed explanation of how appropriate and practicable steps have been taken to avoid, minimize, or mitigate, the adverse impact of the proposed project on the aquatic ecosystem:

See **Attachment 2** and Parts II and III of the Mitigation Plan (**Attachment 3**).

Has a proposed mitigation plan been prepared in accordance with the USACE regulations and guidelines? ☒ Yes, see **Attachment 3** ☐ No (explain):

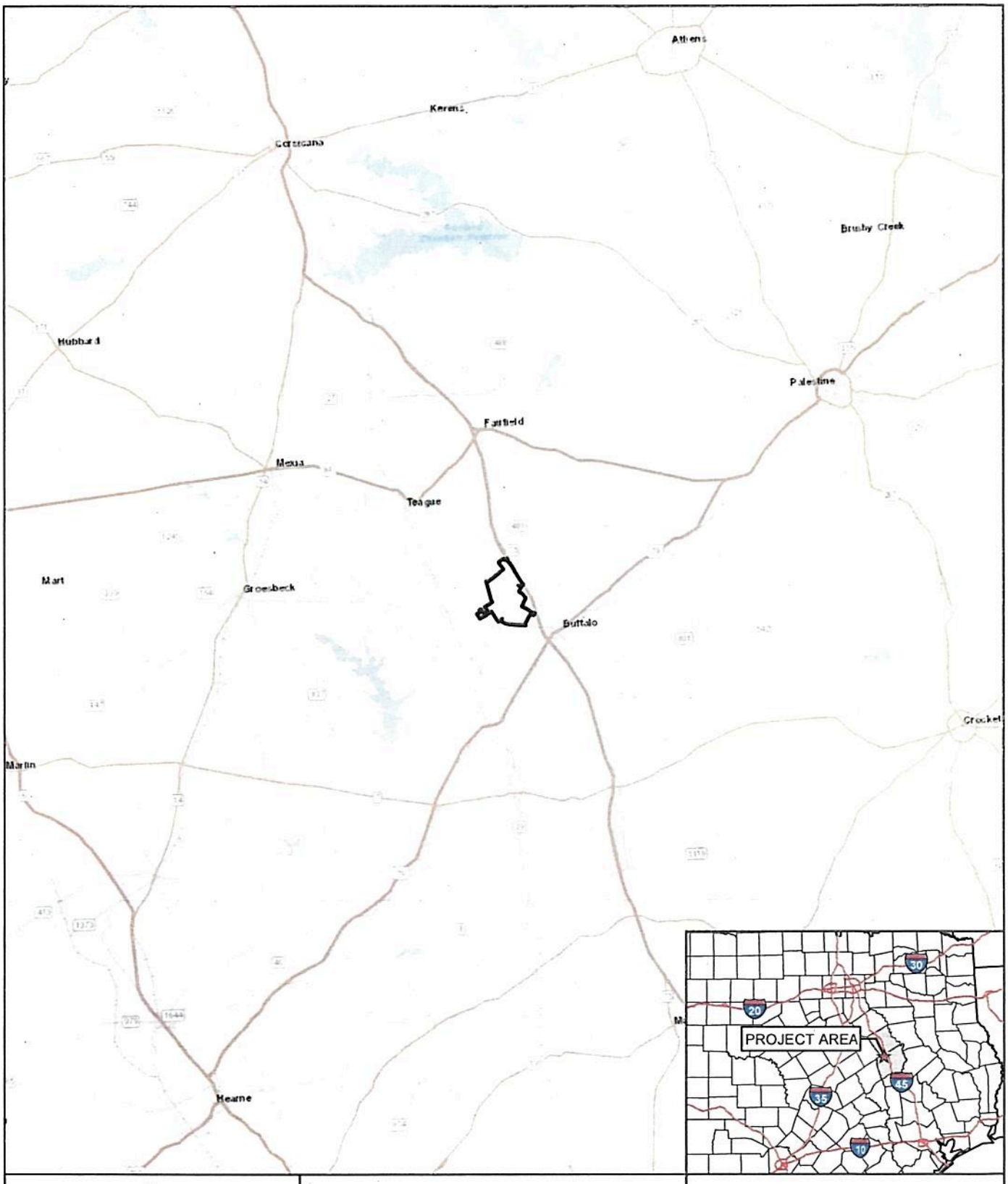
Part 3 - Supporting Information

Attachments

		Included
1	Figures	☒
2	Impacts Analysis	☒
3	Proposed Mitigation Plan	☒

Attachment 1

Figures

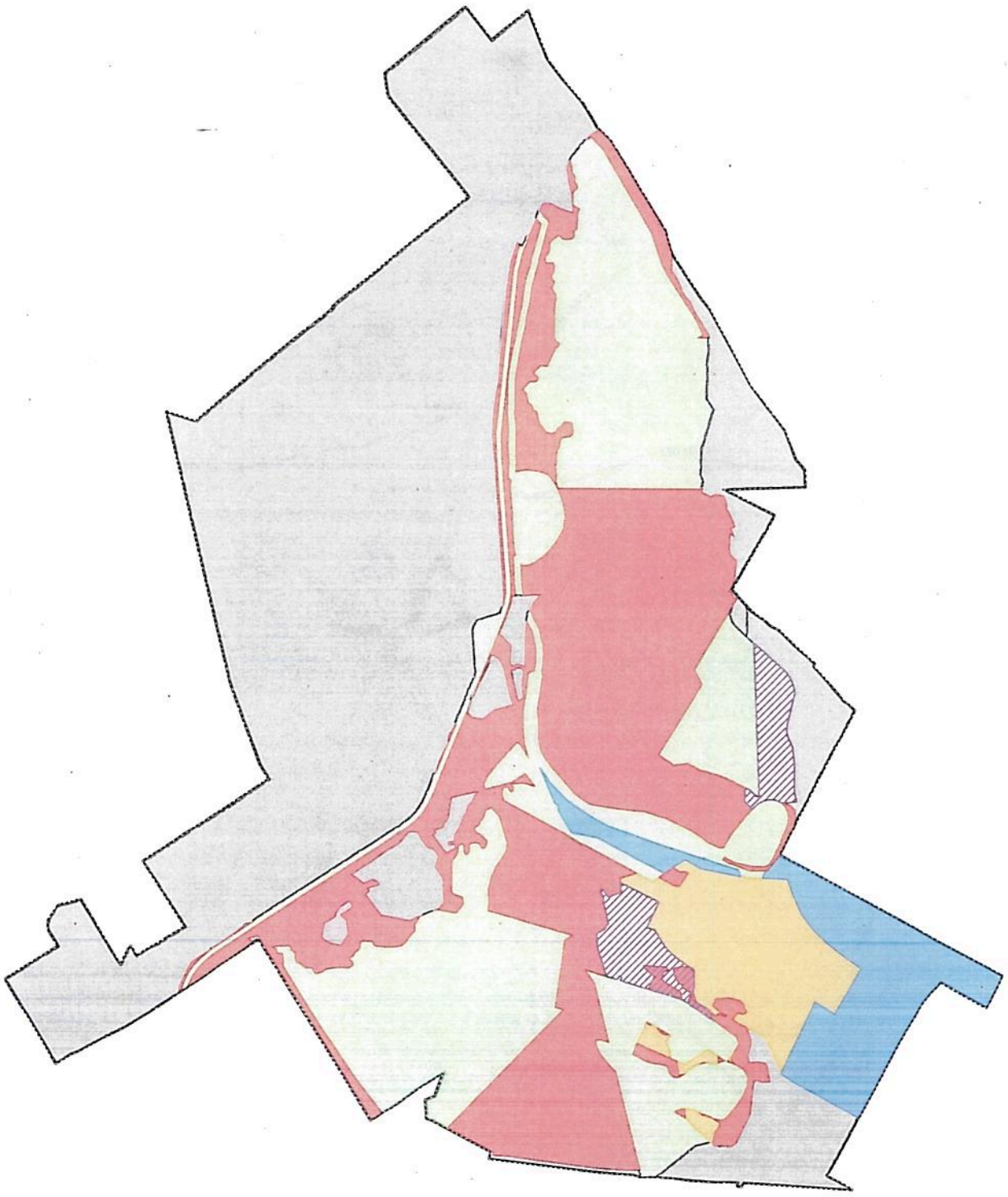


GENERAL LOCATION

JEWETT E/F AREA MINE
APPENDIX 1
RESOLUTION DOCUMENTATION

FIGURE 1

PATH: O:\188869_037_TWCC_WETLAND_WORK\MAPDOCS\ARCMAP\RESOLUTIONDOCUMENTATION\47\JEWETT47_RESOLUTIONDOCUMENT_FIG1_GENLOC_8X11.MXD - USER: BJANIK - DATE: 6/14/2018



N

0 2,500 5,000
FEET

JEWETT E/F AREA MINE RCT
PERMIT 47A BOUNDARY

AUTHORIZATION STATUS

- APPROVED
- AVOIDANCE
- NOT APPROVED
- PROPOSED (IP)
- UNDISTURBED
- FUTURE RECLAMATION

AUTHORIZATION STATUS
JEWETT E/F AREA MINE
APPENDIX 1
RESOLUTION DOCUMENTATION

FIGURE 2

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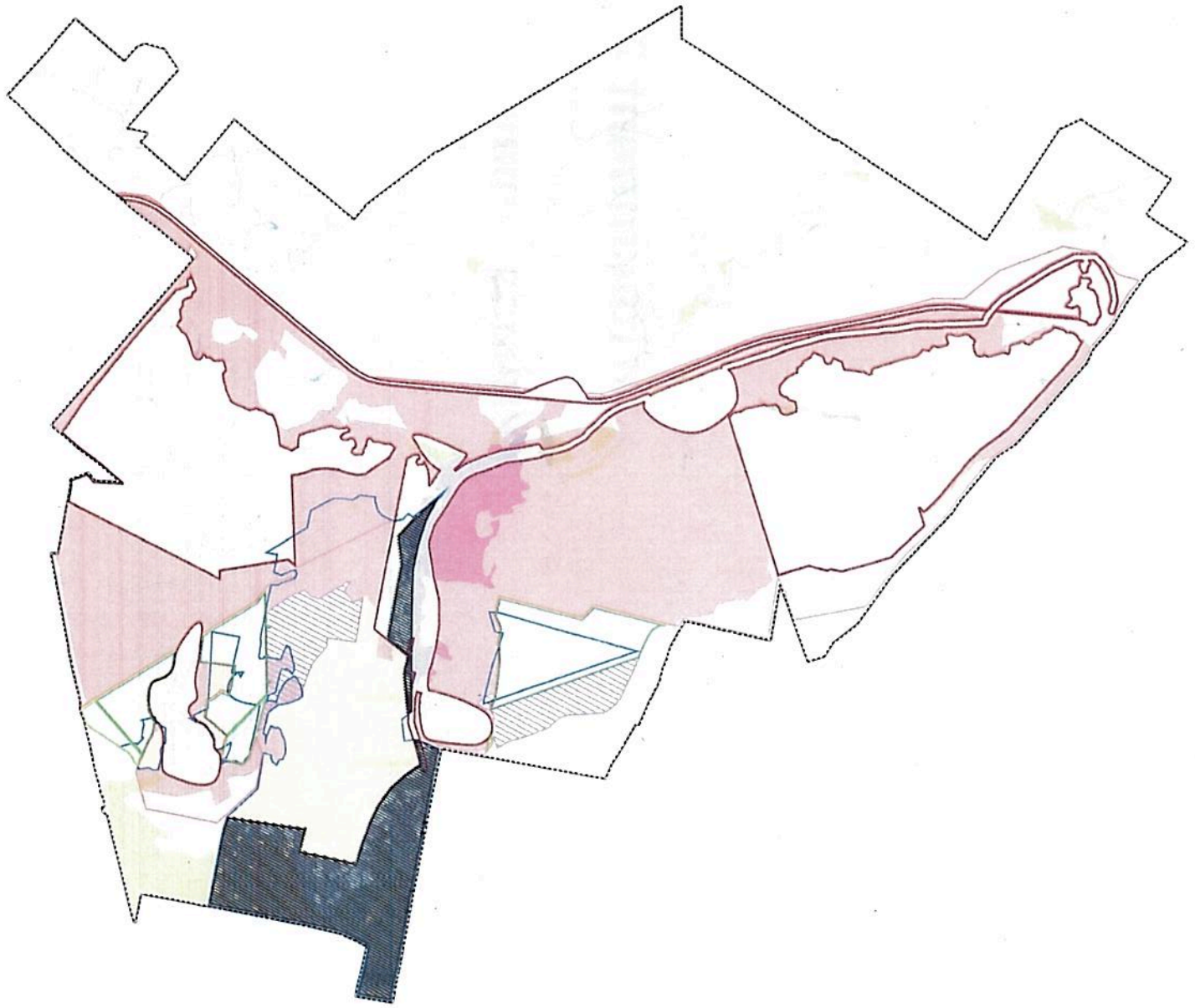

* FORESTED WETLANDS (61.3%) NON-JURISDICTIONAL (38.7%) MOSAIC

0 1,000 2,000 4,000
FEET

JEWETT EF AREA MINE ACT 3/PERMIT ETA BOUNDARY
STREAM
FORESTED WETLAND
MOSAIC WETLAND*
SCRUB-SHRUB WETLAND
NON-FORESTED WETLAND
POND

AUTHORIZED
MMP 21, SMP-2008-09406
MMP 21, SMP-2008-09406 AR (03/2018)
MMP 21, 2000000006

PROPOSED
MMP 21, 2000000006 AR (03/2018)
IP, SMP-2013-00005 (01/ 01/)

PROTECTED
AVOIDANCE

AUTHORIZATION STATUS
APPROVED
AVOIDANCE
NOT APPROVED

PROPOSED (IP)
UNDISTURBED
FUTURE RECLAMATION

AUTHORIZATION DETAILS AND WOTUS

JEWETT EF AREA MINE
APPENDIX 1
RESOLUTION DOCUMENTATION

HDR

FIGURE 3

Attachment 2

Impacts Analysis

Impacts Analysis

Avoidance and Minimization

Wherever practical, waters of the U.S., including wetlands, (WOTUS) were avoided altogether. In some instances, however, wetland areas were disturbed in order to recover mined fuel resources (lignite) or to develop support facilities such as roads, sedimentation impoundments, and diversions. These disturbances were minimized wherever practical. Wetland areas that are disturbed are addressed utilizing reclamation techniques discussed in **Attachment 3** through the overall reclamation planning effort. The entire mined and reclaimed area is considered in a holistic manner to focus on reestablishing premining hydrogeomorphic conditions when possible. Adverse impacts may be direct or indirect. Direct adverse impacts come from mining or construction actions in streams or wetlands, and indirect impacts are adverse impacts caused subsequently to the proposed activity, such as flooding or effects of drainage on adjacent WOTUS.

Avoidance and minimization of adverse impacts to WOTUS were a part of the design of the SMCRA permit and Section 404 permitting submittals. Substantial areas that are potentially mineable and contain WOTUS were avoided (e.g., Alligator Creek and Buffalo Creek). **Figures 2 and 3**, located in **Attachment 1**, shows avoidance and minimization at these locations, and additional detail is provided below.

Environmental Impact—Adverse and Beneficial Effects

As noted, mining within the RCT boundary of the Jewett E/F Area Mine did adversely impact the aquatic environment within that area. However, it is important to note that impacts were incrementally spread over the life of the mine, so only a subset of the total impacts to WOTUS were being impacted at any one time. This minimized cumulative impacts, resulting in limited net impact to local and regional aquatic environments, fulfilling mitigation requirements and minimizing significant overall net impact to local and regional aquatic environments.

The aquatic ecosystems at the local and regional levels were protected by mine operations using the best available technology and best management practices. In addition, multiple regulatory requirements dictate that every aspect of mining minimizes the effects to the environment and local areas. Examples include contemporaneous reclamation, use of erosion control practices, water quality standards, creation of sediment and reclamation ponds, and design of mining structures to meet specific engineering design criteria. Mine reclamation, at some locations, provided beneficial land uses that replaced historic agricultural land uses that contributed to degradation of the aquatic environment.

Adverse Impacts Analysis

Various proposed jurisdictional determination documents were previously submitted, with some accepted by the Fort Worth District. **Figure 3** (**Attachment 1**) provides reference detail showing the relationship of WOTUS to adverse mine impacts and adverse impacts from infrastructure construction projects. The areal extent of adverse impacts to WOTUS associated with the Administrative Order on Consent are summarized in **Table 1 of Part 2** of this document.

Review of the delineation mapping in **Figure 3** in **Attachment 1** shows that not all Project Area WOTUS were adversely or temporarily impacted by mining or other activities during the life of the mine. Final mitigation has been based upon the actual acreage of WOTUS adversely impacted.

Typical Impacts from Mining Activities

Road and Dragline Walkway Construction

The construction of roads and walkways in advance of mine pit progression is an essential premine activity. Roads are established to facilitate construction of surface water control structures, to assist in relocation of utility lines, and to allow access to the mine area for land clearing and other site preparation activities.

All proposed road construction in the mine area is subject to RCT permitting requirements. The RCT Coal Mining Regulations (16 TAC § 12.400 through 12.402) establish a precise set of engineering and construction criteria as well as environmental management practices for roads constructed in mine permit areas which must be followed.

According to RCT criteria, roads are to be located, insofar as possible, on ridges or on the most stable available slopes in order to minimize erosion. Vegetation clearing must be limited to the width necessary for road and associated ditch construction.

No part of any road may be located in the channel of an intermittent or perennial stream unless specifically approved by the RCT. Stream fords are prohibited unless they are approved by the RCT as temporary routes during periods of construction. The fords shall not adversely affect stream sedimentation or fish, wildlife, and related environmental values.

All other stream crossings are required to utilize bridges, culverts, or other structures designed, constructed, and maintained to meet RCT drainage requirements. Drainage structures cannot affect the normal flow or gradient of the stream or adversely affect fish migration and aquatic habitat or related environmental values. The road drainage structure system must be designed to safely pass the peak runoff from a 10-year, 24-hour precipitation event or a greater event if required by the RCT.

Impacts to fish, wildlife, and related environmental values by roads or other infrastructure are avoided to the extent practicable through the use of the best technology currently available. Roads and infrastructure will be constructed to minimize additional contributions of sediments to stream flow or to runoff outside the RCT permit area to the extent practicable.

Finally, natural drainage ways cannot be altered or relocated for road construction without RCT approval. Alterations approved by the RCT cannot block the natural channel drainage, cause significant damage to the hydrologic balance, or adversely impact adjacent landowners.

Pond Construction

Surface mining and reclamation require the construction of numerous ponds for the following:

1. control surface water runoff from disturbed areas;
2. collect groundwater from dewatering operations;
3. collect contaminated water which collects in open mine pits;
4. provide water for dust suppression and other operations;
5. serve as water supply for reclamation activities; and
6. provide suitable wildlife habitat through the establishment of aquatic vegetation.

The RCT permit includes detailed operational plans that demonstrate measures that are taken during pond design and construction to protect the hydrologic balance within the mine permit and adjacent areas, prevent material damages to the hydrologic balance outside the permit area, and assure the protection or replacement of water rights.

Waters of the U.S., including wetlands, impacted by the construction of sedimentation ponds are planned to be mitigated according to the Mitigation Plan in **Attachment 3**. Wherever practical, especially with regard to ponds which are constructed as permanent features and are intended to remain after the completion of mining and reclamation, design elements which assure the successful formation and propagation of emergent vegetation and riparian habitats are incorporated. Such elements include gradual slopes and shallow shelves. In addition, impacts will be minimized by the use of Best Management Practices (BMPs) including limiting disturbance to the minimum area necessary for construction of the pond, and minimizing sediment runoff and erosion.

Typical methods of minimizing sediment runoff and erosion include, but are not limited to:

1. stabilizing disturbed areas through land shaping;
2. diverting runoff;
3. establishing quick-growing temporary vegetation;
4. establishing permanent vegetation;
5. regulating the channel velocity of water;
6. lining drainage channels with rock or vegetation; and
7. mulching.

Utility Line Relocations

The progression of surface mining into a new mine area sometimes requires the relocation of utility lines (e.g., oil and gas pipelines, telecommunications lines, water supply lines, and electric distribution and transmission lines). The relocation of these lines is considered a vital step in surface preparation for mine pit progression.

For underground utility lines relocated in WOTUS, the BMPs to be employed by the Company generally correspond with the conditions of Nationwide Permit 12 (Utility Line Activities), including:

1. Material resulting from trench excavation may be temporarily sidecast (up to three months) into wetlands and other waters of the U.S. provided that the material is not placed in such a manner that it is dispersed by currents or other forces;
2. The area of waters of the U.S. that is disturbed must be limited to the minimum necessary to construct the utility line;
3. In wetlands, the top 6 to 12 inches of the trench should generally be backfilled with topsoil from the trench;
4. Excess material will be removed to upland areas immediately upon completion of construction; and
5. Any exposed slopes or stream banks must be stabilized immediately upon completion of the utility line.

In addition to the material handling BMPs listed above, the relocation of aerial utility lines will span waters of the U. S., where practicable, and/or minimize impacts by the selective placement of support structures.

Mine Pit Progression

The removal of overburden for purposes of recovering lignite typically represents a direct, adverse impact to WOTUS within a mine area. The mine pit progression and subsequent reclamation provide the greatest opportunity during the course of the project for the mitigation of adverse impacts to WOTUS.

Whether a project represents new mining or the logical progression of adjacent currently-authorized mining operations, a temporal lag exists between adverse impacts and mitigation. This temporal lag is minimized by the contemporaneous reclamation requirements of the Surface Mining Control and Reclamation Act and plans contained in the RCT permit.

Site Specific Adverse Impacts Analysis

[Site specific and baseline data is summarized from recent permitting documentation and Railroad Commission of Texas (RCT) permit renewal application documents to provide a representative view of the areas tied to Administrative Order on Consent No. CWA-06-2019-2704.]

Various RCT approved mining permits and renewal applications for the Jewett E/F Area Mine have been approved and covered in detail various mine plan impact periods since 2002. Adverse impacts to WOTUS related to these impact periods are described below and are consistent with information contained in this document and baseline environmental data contained in the RCT permit.

Review of baseline environmental data, jurisdictional determinations, and delineations of waters of the U. S. shows the Jewett E/F Area Mine is located in the interior of the Gulf Coastal Plain. Specifically, the area is in Freestone and Leon counties within the Post Oak Savannah vegetational area of Texas. The surface topography of the region is characterized as gently rolling to hilly. As noted in Section 132 (Vegetative Information) of the RCT permit application, approximately 12.0 percent of the area contains aquatic,

hydric, or riparian features. These areas are associated with shallow drainage patterns interspersed within a local area of relatively low relief.

Avoidance of impacts to streambeds and other WOTUS is projected as shown on **Figure 3** (**Attachment 1**). Historically, extensive areas in the region and within the Jewett E/F Area Mine were converted from forest and range areas to cropland, and later to pastureland for cattle grazing and the production of hay. All of these various land uses led to large areas of erosional features (gullies) and heavy sedimentation downstream. This is confirmed in baseline environmental data and review of historic aerial photography. Narrow to non-existent riparian buffers occur along some of the smaller streams in the area, and the main stream systems maintain primarily a forested or non-forested riparian corridor.

The hydrology and hydraulics associated with the area are detailed in the RCT permit. Variables such as premine topography, watershed size, land uses, and soils—and these same variables following mine impacts—are used to address mining impacts to hydrology and hydraulics in the area. Following mining, the stratified overburden materials removed during mining are replaced with unstratified and unconsolidated materials. Initially this results in a more porous material with vertical permeability greater than premine conditions; however, with settlement of the reclaimed surface, there is a decrease in porosity and vertical permeability. Mined land affects rainfall runoff by intercepting storm water runoff and temporarily storing that water in impoundments (sedimentation and reclamation ponds) and then releasing the water at a controlled rate. The total volume of runoff is not expected to change appreciably. Peak flows downstream of impoundments are decreased, while base flows are increased. Overall, off-site impacts are expected to be minimal since local and regional flows are variable based on seasonal and climatic variations from year to year.

The Proposed Mitigation Plan (**Attachment 3**) provides details relative to the course of action which plans to compensate for mining impacts. Specific locations and design plans for compensatory mitigation projects are not known during application preparation; however, they are tied to mining in general, spoil placement, leveling, and reclamation actions. Outcomes are estimated, based on past compensatory mitigation, to include the following:

- Developed Water Resources (an RCT defined land use) may be interspersed over mined areas to support final land uses and enhance land values.
- Drainage patterns may be established as necessary to move water through the reclaimed landscape and when necessary through the above-mentioned water resources. In some cases, premine stream channels may be reestablished near their premine location.
- Wetlands (forested and non-forested) may be established in or around developed water resources and drainage patterns. In most cases, establishment of compensatory mitigation is the result of project designs that provide topographic features that were not present in premine conditions. This allows establishment of additional acreage to meet compensatory mitigation ratios. Additionally, the vegetation species planted in these areas are matched to the region and mimic conditions prior to historic deforestation, the primary example being higher quality hard mast producers (oaks for example) placed back into the environment.

- Riparian buffer zones, which are land areas adjacent to drainage patterns, are established and provide a larger, higher functioning "buffer" than existed in some premine conditions. Adjacent uplands are similarly planted with appropriate tree and herbaceous cover to provide additional benefits to water quality and the overall local and regional aquatic ecosystems.

Baseline Data

The Jewett E/F Area Mine is located in Freestone and Leon counties with a landscape dominated by historic agricultural impacts—mainly related to crop production and later by livestock operations. As detailed in the RCT permit application, approximately 99.1 percent of the area is categorized by the land uses pastureland, undeveloped land, and grazingland. The other 0.9 percent falls in the land use categories industrial/commercial and developed water resources. Aquatic resources, including streams, are tied to the 0.3 percent developed water resources land use or are included within the pastureland, undeveloped, or grazingland land uses.

The riparian woodland community occupies approximately 8.0% of the E/F Area. Within the Mine Area, riparian woodlands generally occur along narrow drainages and broader floodplains. Riparian woodland stands which occur in the floodplains of larger streams are characterized by dense overstory layers and relatively well-developed understory and shrub layers.

Vegetation in existing riparian woodland corridors consists dominantly of pecan (*Carya illinoensis*), water oak (*Quercus nigra*), American elm (*Ulmus americana*), cedar elm (*Ulmus crassifolia*), black gum (*Nyssa sylvatica*), Carolina basswood (*Tilia caroliniana*), black hickory (*Carya texana*), and sugar hackberry (*Celtis laevigata*). The understory and shrub layers are generally similar to the woodlands with yaupon (*Ilex vomitoria*), flowering dogwood (*Cornus florida*), American holly (*Ilex opaca*), American beautyberry (*Callicarpa americana*), coralberry (*Symphoricarpos orbiculatus*), farkleberry (*Vaccinium arboretum*), and eastern red cedar (*Juniperus virginiana*) being common. A variety of vine species, predominately greenbriar (*Smilax spp.*), poison ivy (*Toxicodendron radicans*), Alabama supplejack (*Berchemia scandens*), Virginia creeper (*Parthenocissus quinquefolia*), peppervine (*Ampelopsis arborea*), and grape (*Vitis spp.*) commonly grow on trees in the overstory and understory. The herbaceous vegetation is generally moderate to patchy, depending on density of the canopy and abundance of litter. Panic grasses (*Panicum spp.*), sedges (*Carex spp.*), white crownbeard (*Verbesina virginica*), woodoats (*Chasmanthium latifolium*), honeysuckle (*Lonicera spp.*), and green dragon (*Arisaema dracontium*) are commonly occurring herbaceous species. In wetter areas, willow oak (*Quercus phellos*), green ash (*Fraxinus pennsylvanica*), river birch (*Betula nigra*), dwarf palmetto (*Sabal minor*), smartweed (*Polygonum spp.*), lizard's tail (*Saururus cernuus*), and arrowhead (*Sagittaria spp.*) are common.

Riparian woodlands along the smaller intermittent or ephemeral tributaries are usually very narrow and will frequently include species of the upland woodland community with riparian species being restricted to the channel and immediate banks.

Impacts Analysis

Avoidance and Minimization of Impacts

Impacts to waters of the U.S. have been avoided and minimized by the following:

- Mining activities will avoid areas adjacent to and nearby to specific mine areas. This will result in avoidance of approximately > 200 acres to waters of the U.S., including wetlands. Mining of several substantial areas has been avoided since mining began in 2002 at the Jewett E/F Area Mine (e.g., Alligator Creek and Rena Branch).
- Best Management Practices (BMPs) were utilized during construction activities across the mine during construction of infrastructure projects and during mining of the lignite resource and during reclamation and mitigation activities.

Attachment 3

Proposed Mitigation Plan

Preface to Attachment 3

Note to Reader:

The **Attachment 3** document contains the previous company name of Texas Westmoreland Coal Company. This document is not changed or edited from its original submittal. Details of the company name change are previously noted in this document.

Attachment 3 to this resolution documentation is provided to support Administrative Order on Consent No. CWA-06-2019-2704 and shows the following:

1. At the Jewett E/F Area Mine, reclamation and associated mitigation for Clean Water Act, Section 404 Permitting followed a Proposed Mitigation Plan (**Attachment 3**). Note that this plan is an example of a previous plan and is provided in its entirety.
2. Proposed Mitigation Plans have been submitted to the Fort Worth District (FWD) as part of several Pre-Construction Notifications and Individual for the Jewett E/F Area Mine.
3. The Proposed Mitigation Plan is in the same format and contains similar methodologies, implementation strategies, criteria, performance standards, protections, management, monitoring, assurances, and alternatives for creating required permittee required mitigation across the entire Jewett E/F Area Mine, and similar plans have been in use for many years.
4. Areas of impact outside of FWD authorized permits followed (1) mitigation plans (like **Attachment 3**) and (2) requirements found in Surface Mining Control and Reclamation Act (SMCRA) permits to conduct reclamation and mitigation activities in essentially the same manner as in authorized areas of the Jewett E/F Area Mine.

TEXAS WESTMORELAND COAL COMPANY

U.S. ARMY CORPS OF ENGINEERS

PROPOSED MITIGATION PLAN
for
NATIONWIDE PERMIT 21

Jewett E/F Area Mine

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JEWETT E/F AREA MINE

PROPOSED MITIGATION PLAN
for
NATIONWIDE PERMIT 21

TABLE OF CONTENTS

Page

1.0 Background 1

2.0 Goals and Objectives [332.4(c)(2)] 1

2.1 Other Considerations 2

3.0 Baseline Information [332.4(c)(5)] 3

4.0 Mitigation Plan Implementation [332.4(c)(7)] 4

4.1 Mitigation for Adverse Impacts to Streams [NWP General Condition 20(d) 4

4.2 Stream Restoration Practices 6

4.3 Mitigation for Adverse Impacts to Wetlands [332.3(d)] 7

4.4 Revegetation of Uplands, Streams, and Created, Restored, and Enhanced Wetland Areas [332.4(c)(7)] 10

4.5 Erosion Repair [332.4(c)(7and 8)] 13

5.0 Success Criteria and Performance Standards for Anticipated Functions [332.4(c)(9)] and [332.5(a) and (b)] 14

6.0 Site Protection [NWP General Condition 20(F) [332.4(c)(4) and 334.7(a)] 17

7.0 Adaptive Management [332.4(c)(12) and 332.7(c)] 18

8.0 Monitoring and Long-Term Management [332.4(c)(10-11); 332.6; and 332.7(d)] ... 18

8.1 Self-Monitoring and Reporting 19

9.0 Financial Assurances [332.3(n) and 332.4(c)(13)] 19

10.0 Compensatory Mitigation Alternatives [NWP General Condition 20(G)] 20

11.0 References and Supporting Documentation 21

JEWETT E/F AREA MINE

PROPOSED MITIGATION PLAN
for
NATIONWIDE PERMIT 21

TABLE OF CONTENTS (Continued)

LIST OF APPENDICES

Appendix

Appendix 1 Figures

Figure 1: Conceptual Plans for Wetland Reclamation [332.4(c)(7)]
Figure 2: Typical Cross-Sections for Reclaimed Stream Channel With and Without Wetland Areas [332.4(c)(7)]
Figure 3: Typical Section Restored Stream [332.4(c)(7)]
Figure 4: Typical Longitudinal Profile for Stream With and Without Wetland Areas [332.4(c)(7)]

Appendix 2 Revegetation List

Table 1: Vegetation Suitable for Reclamation in the Jewett Mine Region [332.4(c)(7)]

JEWETT E/F AREA MINE

PROPOSED MITIGATION PLAN
for
Nationwide Permit 21

1.0 BACKGROUND

Texas Westmoreland Coal Company (TWCC) operates the Jewett Lignite Mine located in Freestone, Leon, and Limestone counties Texas. Mined lignite (coal) fuels the Limestone Electric Generating Station located in Limestone County, Texas, and supplies electricity to the public through NRG Energy and is owned and operated by NRG Texas LLC. The proposed Jewett Mine (Areas E and F are located in Freestone and Leon counties) is an expansion of the existing mine. This Proposed Mitigation Plan is prepared in support of a Pre-Construction Notification (PCN) provided to the Fort Worth District of the U.S. Army Corps of Engineers to initiate the process for a Nationwide Permit 21 authorization for impacts to waters of the United States (U.S.), including wetlands.

Additional detailed background information is contained in the permit application for a Surface Mining and Reclamation Permit for the Jewett Mine that was submitted to the Railroad Commission of Texas (RCT) Surface Mining and Reclamation Division on October 31, 2006. The RCT permit application details mining for a five-year permit term. The RCT has not approved the permit application; however, it is anticipated that the application will be approved during the fourth quarter of 2008. All subsequent references to the RCT permit application refer to the aforementioned document.

Please note that cross-references to NWP General Conditions (FR Vol. 72, No. 47, Monday, March 12, 2007) and the 2008 mitigation regulations (FR Vol. 73, No. 70, Thursday, April 10, 2008) are noted throughout the PLAN in section titles or with brackets at specific paragraphs. These cross-references direct the reader to PLAN information corresponding to specific regulatory requirements.

2.0 GOALS AND OBJECTIVES [332.4(c)(2)]

The goal of the TWCC, Proposed Mitigation Plan (PLAN) is to provide a comprehensive overview of planned efforts to provide mitigation (including compensatory mitigation) for adverse impacts to waters of the U.S., including wetlands, at the Jewett Mine, Areas E and F. This goal is supported by the following objectives:

- In accordance with Nationwide Permit (NWP) General Condition 20(a), provide for a sequential mitigation process of avoidance, minimization, and compensation.

- Offset adverse mining impacts to waters of the U.S. in reclaimed areas of the Jewett Mine, Areas E and F. [332.3(a)(1)]

- The PLAN, in accordance with NWP 21 requirements and NWP General Condition 20(a) and (b), will provide appropriate offset for adverse mining impacts that result in unavoidable permanent and temporary losses of aquatic functions and values and will ensure those losses result in minimal adverse effects on the aquatic environment. [332.3(a)(1) and 332.3(m)]

- The PLAN will provide adequate mitigation to meet the requirements of NWP General Condition 20(c). See PCN sections 5.0 and 6.0 that address 332.3(f) and 332.4(c)(6) requirements.

- PLAN development follows General Condition 20 of the NWPs, the Corps Regulatory Guidance Letter 02-2 dated December 24, 2002, Mitigation Guidelines developed by the Fort Worth District Regulatory Program, Draft - December 24, 2003, and new mitigation regulations published in the Federal Register dated April 10, 2008.

- Provide reference to applicable sections of the RCT permit application to support the Memorandum of Understanding Among The U.S. Army Corps of Engineers, The U.S. Office of Surface Mining, The U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service For The Purpose of Providing Concurrent and Coordinated Review and Processing of Surface Coal Mining Applications Proposing Placement of Dredged and/or Fill Material in Waters of the United States.

- Provide specific information in regard to mining at the Jewett Mine, Areas E and F in relation to: (1) minimization of impacts; (2) reclamation actions that create mitigation; (3) temporal loss; (4) mitigation for adverse impacts to streams and wetlands; (5) detail methodologies for creation, restoration, enhancement, and preservation; (6) revegetation strategies; and (7) protection of aquatic environments. [332.3(a)(3)]

2.1 Other Considerations

In accordance with NWP General Conditions 20(b) and (c) and 2008 mitigation regulations, Jewett E/F Area Mine activities and ancillary non-mining, non-RCT regulated activities (such as rail spur, pipeline, and utility relocations) are planned to avoid and minimize, to the extent practicable, adverse impacts to waters of the U.S., including wetlands. Some adverse impacts (both direct and indirect) are expected and understandable based on mining methods, the location of the mine, and types of ancillary impacts. Mining operations and ancillary activities within waters of the U.S., including wetlands that cannot be avoided are addressed with mitigation activities through the overall reclamation planning effort. Based on 25 years

experience with mining and reclamation, the philosophy of TWCC's reclamation effort is to consider the entire area in a holistic manner and focus on reestablishing pre-mining hydrogeomorphic conditions when possible. Uplands, wetlands, streams, and open water are considered together to protect local and regional watersheds and aquatic environments. [332.3(b)(1) and 333.3(c)(1), (2) and (3)]

Temporal loss of wetland and other aquatic ecosystem functions are considered in the reclamation planning process to allow (1) adequate replacement of functions and (2) required acreage or other physical characteristics in accordance with Army Corps of Engineers (USACE) permit authorization(s). In some locations, mitigation may exhibit higher functional value than impacted pre-mine conditions. More or less acreage or stream length may then be required for mitigation depending on whether the mitigation efforts result in higher or lower quality ecosystem function(s). An important factor is the general focus toward restoring or enhancing the function of the local aquatic ecosystem. Adversely impacted waters of the U.S., including wetlands, and mitigation are accounted for in a Wetland Accounting database. This database provides information for annual reporting, when required, and for closure of permit authorizations.

Mitigation activities will be concurrent with authorized impacts when feasible; however, due to the large scale, complexity, and sequential manner in which mines operate, some mitigation activities will occur after impacts have taken place. The PLAN considers the above factors in conjunction with the associated temporal loss of functions. [332.3(b)(5)]

Closure documentation for permit authorizations will comply with requirements stated in the General and Special Conditions of applicable permit authorizations. Assessment of function for delineated mitigation is monitored as waters of the U.S., including wetlands, develop and mature. This assessment is summarized and certified in closure documentation.

3.0 BASELINE INFORMATION [332.4(c)(5)]

Extensive site specific baseline information is not detailed in the PLAN. Details related to specific baseline information and adverse impacts are located in applicable PCN sections (PCN dated October 17, 2008) and the RCT permit application. These documents provide extensive environmental data regarding soils, vegetation, aquatic environments, wetlands, fish and wildlife resources, and land uses. That documentation forms the basis of site specific mitigation planning, but is not duplicated due to the volume of information, the large areas impacted by mining and associated mine activities, the dynamic nature of mine planning and operations, and the potential lengthy time frames of adverse mine impacts.

The PLAN and projected outcome (mitigation) will be compatible with historic and current agricultural land uses. Historic land uses included heavy use of the area for cattle production and other agricultural uses. Mitigation created by reclamation of mined lands will be compatible with historic land uses by correcting past impacts to riparian habitats and associated bottomland hardwood forests and forested habitats. Similarly, this mitigation will be compatible with the current land uses in the area. The majority of the current land uses is pastureland (approximately 47.7%) and undeveloped land (approximately 44.8%) with the balance being grazingland,

industrial/commercial land, and developed water resources (approximately 7.5%). The proposed postmine land uses within the five-year permit term and at the end of mining include pastureland, grazingland, and developed water resources. At the end of mining and reclamation the projected outcome will generally be pastureland (approximately 99%), cropland, and developed water resources (approximately 1%). These land uses are compatible with current economic drivers in the local area. Additionally, the land uses provide a future marketable product for landowners, and initially the high percentage of pastureland provides Jewett E/F Area Mine with hay production to use as mulch during reclamation.

Incorporated within the pastureland land use will be reclaimed habitats for fish and wildlife that will be compatible with this predominant postmine land use. These areas will include drainage features with riparian habitats and other aquatic sites that provide mitigation for impacts to waters of the U.S., including wetlands. Associated with the drainages will be increased developed water resources. These areas will provide additional areas for mitigation due to increased hydrology and aquatic resources. Another positive aspect of these land uses is the introduction of enhanced species diversity and travel corridors. Both will be beneficial to wildlife and the overall aquatic environment.

4.0 MITIGATION PLAN IMPLEMENTATION [332.4(c)(7)

Minimization efforts related to mining the five-year mining area, including construction of mining and ancillary non-mining infrastructure projects, are contained in the RCT permit application in Sections .144 (Fish and Wildlife Plan) and .145 (Reclamation Plan). Both RCT (SMCRA) approved plans contain details related to avoiding waters of the U.S., including wetlands; reclaiming the mined landscape in a contemporaneous manner to reduce temporal loss of function; planning postmine land uses that support uses equal to premine uses, or higher and better uses, as approved by the regulatory authority. In accordance with 2008 mitigation regulations, created mitigation is planned to be self-sustainable with minimal use of features or structures that require maintenance or long-term management. [332.7(b)]

Void areas, where no lignite exists or where no mine related impacts are projected, are protected from disturbance. These areas are specifically identified by early mine planning efforts and avoided when possible. Some of these areas contain aquatic ecosystems and waters of the U.S., including wetlands. To ensure these areas are not adversely impacted, best management practices (BMP) are used to control erosion, deposition of water transported sediment, and contact with untreated runoff. BMPs include creation of sediment control ponds, water treatment basins, streams with grade control designs to reduce channel velocities, silt fencing, shallow berms, diversion ditches, grassed waterways, terraces, placement of rip rap and natural boulder clusters, placement of geotextile and natural fiber mats, and temporary sediment basins.

4.1 Mitigation for Adverse Impacts to Streams [NWP General Condition 20(d)]

Streams identified in the PCN may be adversely impacted by mining activities and other ancillary non-mining activities. Adverse impacts may be direct or indirect. Direct adverse impacts come from mining or construction actions in streams or wetlands, and indirect impacts may occur when

hydrology is reduced and results in impacts to downstream or down-slope waters of the U.S., including wetlands. Mitigation, including compensatory mitigation, if necessary, to account for these adverse impacts will be accomplished by reestablishment of streams or other waterways, drainages, and diversions through the mine reclamation process. Evaluation of premine streams (evaluation of fluvial geomorphology) is conducted, for incorporation into PCNs and RCT permit applications, to understand whether reestablishment of adversely impacted streams is practicable and ecologically desirable.

Permanent stream diversions will be constructed to mimic premine conditions, if practicable; however, the locations and size of postmining drainage watershed basins may differ from premine watershed basins. For drainage channels that have a drainage basin less than one square mile, the combination of channel, bank and floodplain will be adequate to safely pass the 10-year, six-hour precipitation event. For drainage channels that have a drainage basin greater than one square mile, the combination of channel, bank, and floodplain will be adequate to safely pass the 100-year, six-hour precipitation event to meet RCT regulatory requirements. **Appendix 1, Figures 1, 2, and 3** provide cross-section views of typical configurations for bankfull channels designed for low and medium flows inside wide channels. Wide channels with internal bankfull channels combined with wetlands provide stable systems that mimic or enhance premine conditions (fluvial geomorphology). Stream channel designs specific to the PLAN are provided in the RCT permit application and are not duplicated in this PLAN.

The size and configuration of re-established streams will be a function of the type of system being restored and the size of the reestablished watershed basin. Once established, these areas provide connection between open water areas and wetlands, and are complementary of adjacent vegetated upland areas. All areas together provide important enhancements, in terms of both acreage and function, to local aquatic environments and larger regional watersheds.

Reestablished streams will be revegetated with permanent vegetative cover to create riparian areas (buffer zones). The focus is to manage these areas to enhance aquatic functions and increase overall ecological functioning of mitigation and aquatic resources in the area. This improves the overall mitigation plan and enhances streams by providing functional wildlife habitat, runoff filtration (reduced silt loading to streams), moderation of water temperature changes, and detritus for aquatic food webs. Details regarding revegetation are discussed in Section 4.4.

Stream restoration practices will be used, where practicable, during the reclamation process to reestablish streams into functional aquatic environments. The restoration practices detailed in this PLAN are considered applicable to the Jewett E/F Area Mine mining operations based on the nature of mining operations, mining methods, local geology, regulatory requirements, and other location specific factors. See sub-section 4.2 for details related to stream restoration practices incorporated into the PLAN.

4.2 Stream Restoration Practices

Examples of stream restoration practices, civil engineering techniques, and structures used during reclamation actions are provided below from a USACE guidance document and focus on principles of fluvial geomorphology. Implementation of all the listed examples is likely not feasible for each case of stream reestablishment. Each location is assessed and the appropriate practices, techniques, or structures applied as necessary.

- Riparian areas are established as soon as practicable by planting trees, shrubs, and herbaceous vegetation. [332.3(i)]
- Re-established streams are constructed with slopes appropriate to soil conditions, engineering design, grade, and as necessary to reduce erosion.
- Re-established stream slopes are mulched, to the extent possible, after planting vegetative species.
- The timing of revegetation is monitored to ensure some form of vegetation is in place in a timely manner. If the season for permanent vegetation has passed, temporary vegetation is planted until the next appropriate planting season for permanent vegetation.
- Geotextile and natural fiber mats, in conjunction with vegetation, are used, when necessary, to protect slopes from overland flow and surface erosion.
- Diversions are terraced where appropriate in order to create broad floodplains for development of streamside vegetation and riparian systems.
- Silt fencing is used to capture silt load before it enters a drainage or stream.
- Grade control structures (concrete drop structures) are used, when necessary, to reduce velocity and dissipate energy in locally steep sloped areas with erosive soils. This technique is a last resort in reestablishment of stream channels and in most cases is used at non-jurisdictional locations (ephemeral or less areas and where sheet flow collects in hillside swales) higher in a watershed.
- Weirs and sills (berms), constructed of natural or inert beneficially reused materials (e.g., concrete riprap), are located to dissipate energy and create microhabitats.
- Boulder clusters using native rock are located to provide reduced flow and microhabitats.
- Anchored vegetative cuttings are used for slope stability, when necessary.
- Wing deflectors are added to help divert flow away from easily eroded areas or other structures.
- Streams are designed to meander, when possible.

- Riprap is used to protect slopes, structures, and the inside curve of stream meanders.
- Sediment basins are constructed on- and off-channel to capture sediment.
- Livestock is excluded or managed to reduce impact to slopes or other sensitive locations to reduce adverse impacts that may occur close to or adjacent to streams.

4.3 Mitigation for Adverse Impacts to Wetlands [332.3(d)]

In accordance with Regulatory Guidance Letter No. 02-2 (RGL 02-2) and 2008 mitigation regulations, mitigation wetlands established for Jewett E/F Area Mine areas will fall into one or more of the following categories: (1) establishment [creation], (2) restoration, (3) enhancement, or (4) protection/maintenance [preservation]. Definitions and plan specific details are provided below. [332.3(a)(2)]

. . . excerpts from 332.2 - Definitions

Establishment (Creation): *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.* [332.2]

Restoration: *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. [332.2]*

Enhancement: *The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). [332.2]*

Protection/Maintenance (Preservation): *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. [332.2]*

Following unavoidable adverse impacts to wetlands, the mitigation plan and reclamation planning process establishes mitigation wetlands in mined and reclaimed, or non-mined areas. These wetlands will be characteristic of premine systems, when possible, or otherwise appropriate for the hydrogeomorphic features of the watershed. In the event that wetlands cannot be generated to match premine conditions, mitigation will be generated to exceed or be equal to premine wetlands that were lost or damaged. The majority of mitigation wetlands will be established by creation within reclaimed areas of the mine. In some cases, mitigation wetlands may be generated by restoration, enhancement, or preservation of non-mined (non-Jewett E/F Area Mine impacts), "historically" disturbed wetlands. These areas are typically adversely impacted by previous landowners for agricultural or industrial reasons. These areas may or may not be within the boundary of properties covered by USACE authorizations and may

be outside the boundary permitted by the RCT. See sub-sections 4.3.1, 4.3.2, 4.3.3, and 4.3.4 for additional details related to creation, restoration, enhancement, and preservation. [332.3(e)]

Creation

Mitigation areas may be created along the banks of waterways, drainages, and permanent stream channel diversions, in small depressional areas, and in specially designed areas. Additionally, there will be wetlands created around the perimeter of impoundments that are added to the landscape to support postmine land uses and fulfill regulatory requirements related to the approved postmine land uses.

Wetlands around the perimeter of impoundments are created by providing shallow areas along the margins of these structures. This creates a diverse wetland habitat ranging from emergent vegetation in areas that are continually inundated to shrub and forested wetlands in areas periodically submerged by fluctuating water levels.

The creation of wetlands along the banks of streams and in specially designed areas will focus on replacement of aquatic features that are environmentally preferable to the adversely impacted wetlands. This will be accomplished by using appropriate civil engineering techniques or constructing structures that promote proper hydrology.

Examples of civil engineering techniques and structures are provided below.

- construct wide, flat, or undulating floodplains
- vary the stream gradient to create stream reaches with low gradients
- construct constrictions in stream channels (these may be constructed with a low berm across the floodplain upstream of the constriction)
- design and construct mitigation areas to mimic gently sloped or undulating forested wetlands

The reclaimed surface will be contoured to promote the creation of wetlands, where appropriate, and may include reestablishment of topographic highs and lows that act as micro-ecosystems. These small areas of internal drainage (depressions) will be created to promote collection of surface water runoff. These areas will enhance recharge of near surface aquifers.

Examples of conceptual plans for wetland reclamation are shown in **Appendix 1, Figures 1 through 4**.

Restoration

Restoration of wetlands, for the purpose of mitigation, is an activity undertaken to return a wetland from a disturbed or altered condition with lesser acreage or fewer functions to a previous condition with greater wetlands acreage or functions. Wetlands that may be restored will be

identified based on historical information in combination with existing soils, vegetation, and hydrology information. In these areas, several methods may be used to obtain the desired results.

Methods may involve any or all of the following:

- civil engineering techniques to restore topography and hydrology
- placement of fill material to restore hydrology
- removal of man-made structures to restore topography and hydrology
- selective removal of unwanted or invasive vegetative species
- design and construction of mitigation areas to mimic gently sloped or undulating forested wetlands
- addition of specific native vegetative species (e.g., oak and other appropriate location specific species) to achieve appropriate diversity

The acreage of a restored site that can be used as mitigation will be based on the total restored acreage, the types of restored functions, and the types of wetlands that are involved.

Enhancement

Enhancement of wetlands, for the purpose of mitigation, is any activity that increases the value of one or more functions in existing wetlands. Wetlands that can be enhanced will be identified based on historical information in combination with existing soils, vegetation, and hydrology information. In these areas, several methods may be used to obtain the desired results.

Methods may involve any or all of the following:

- civil engineering techniques to enhance topography and hydrology
- placement of fill material to enhance hydrology
- removal of man-made structures to enhance topography and hydrology
- selective removal of unwanted or invasive vegetative species
- addition of specific native vegetative species (e.g., oak and other appropriate location specific species) to achieve appropriate diversity
- design and construction of mitigation areas to mimic gently sloped or undulating forested wetlands

The acreage of an enhanced site that can be used as mitigation will be based on the total enhanced acreage, the functions that are being enhanced, and the types of wetlands that are involved.

Preservation

Mitigation credits may be established in areas where non-mined properties are used for restoration or enhancement. These credits would be incidental to the other processes. Nevertheless, they provide overall benefit to local and regional watersheds and aquatic environments due to their proximity to mitigation areas. Credits for this type of mitigation will only be granted by the USACE following discussions with the Fort Worth District.

4.4 Revegetation of Uplands, Streams, and Created, Restored, and Enhanced Wetland Areas [332.4(c)(7)]

Revegetation of mined lands and areas created, restored, and enhanced for mitigation will be conducted during the first normal period of favorable conditions using approved plant species that are appropriate for the season. Equipment commonly used for seedbed preparation, planting, and maintenance of agricultural lands will be used. Additional details regarding reclamation processes are located in the Reclamation Plan and Fish & Wildlife Plan contained in the RCT permit covering this mine location.

Herbaceous species will include a variety of native species. A variety of selected hardwood and shrub species are proposed in order to provide features that will enhance wildlife habitat, increase diversity, and provide cover and forage. See **Appendix 2, Table 1**. The selection of revegetation species will be based on water regime, topography, soils, the intended final species mix, and species availability. Seeds and other propagules and tree/shrub stock will be from local sources when possible. See Section 4.4.1 for detailed discussion regarding species selection for mitigation and reclamation areas.

In some mitigation areas, seed banking will be used as a method to introduce desirable vegetative species to a wetland or stream system. This method will only be used where feasible and when appropriate seed bank materials exist in close proximity to the work area.

Species Selection for Mitigation and Revegetation

Selection of Preferred Species is Based on This Criteria

- Reclamation should emphasize native plant species that occur locally; i.e., in the area to be revegetated. Mast producers, especially a diversity of oaks, walnut, hickories, persimmon, and plums, are examples. They are important food and cover plants.

- Weedy, native invader species should be limited in the plan (e.g., ash, cottonwood, pine, sycamore, and willow). In general, such species have great capacity for natural dispersal and are adapted to disturbed soil sites. Under special conditions, these species might be used for erosion control; i.e., creation of a "willow wattle".

- Oaks, walnuts, and hickories should be planted because they have limited capacity for dispersal. In contrast, trees, shrubs, and woody vines with winged or fleshly fruits are dispersed by wind or animals. Thus, these plants can be provided more sparingly in the plan.

- Native plants are adapted to the local environment and will persist through periods of environmental stress. Most exotic plants cannot similarly persist and are also overrated as wildlife food and cover. However, a few exotic species can establish themselves by out-competing native plants. They then become serious persistent pests, difficult if not impossible to control or eradicate. Exotic species should, therefore, be omitted from permanent revegetation plans.

Desirable Characteristics of Native Plants for Erosion Control and Wildlife Use

Native plants considered for erosion control and wildlife use should possess as many of the following characteristics as possible.

- Thrive under specific climatic and soil conditions.

- Compete with other plant species occurring in these conditions.

- Cover as much area as possible. Desirable characteristics include spreading by stolons, runners, or rhizomes; forming thickets, mats, or coppices; rooting from decumbent or declining branches, or forming root shoots (suckers).

- Produce fertility-enriching litter with high water holding capacity.

- Inexpensive, readily available from local sites or nurseries, and easy to propagate and maintain. Use local seed or propagules.

- Rapid growing and long-lived.

- Possess hardy characteristics such as resistance or adaptability to grazing or browsing, drought, fire, shade, insect damage, and diseases; and grow rapidly on soils with a wide range of fertility and chemical characteristics.

- Produce dense foliage (deciduous and evergreen) stems, or thorns, preferably close to the ground.

- Produce seasonally abundant shoots, leaves, buds, and fruits that have high nutritive value for many species of animal life.

- Produce annual, persistent fruits that have high seed germination ratios.

- For tall-growing plants, they should not produce inhibitors that prevent other plant species from growing beneath them.

- Preferably, non-poisonous to man and livestock.

Desirable Characteristics of Native Plant Associations For Erosion Control and Wildlife Use

- Selected plants should be of the same local climatic and ecological region, topography, and soil conditions.
- Selected plants should be noncompetitive, i.e., compatible.
- The association should cover as much area as possible (overlapping canopies).
- The association should form at least two canopy layers above the soil surface.
- Selected plants should include a mixture of physical and habit forms, e.g., deciduous, evergreen, tree, shrubs, vine, forb, grass.
- The association should provide annual, all-season fruits.
- The association should provide areas of adequate cover.
- Some components of the association should establish quickly and provide rapid growth.
- Selected plants should include at least one nitrogen-fixing species, if feasible.
- Planting should be arranged in irregular groups rather than uniform rows so that the association will produce a more natural form.

Notes related to Section 4.4.1 and Appendix 2 of the PLAN

1. The information provided has been developed by the Texas Parks and Wildlife Department—Wildlife Division in conjunction with various mine operators within Texas.
2. Species selection should emphasize plants native to the local area. Other factors important to the selection of plant species and their establishment and success include:
    a) Physiographic features,
    b) Land management considerations,
    c) The amount of area to be developed,
    d) Planting methods,
    e) Plant material availability, and

f) Intended management during the period of extended responsibility.

3. Information provided in the species lists is not intended as a restrictive listing of species to be planted in reclamation. Other species may be planted as allowed by the regulatory authorities. Some of the listed species may not be planted due to plant material availability and propagation limitations.

4. Section 4.4.1 provides general guidance related to criteria and characteristics related to species selection for mitigation and revegetation. In keeping with the fact that this is general guidance, strict adherence with parts of this information may be difficult in some situations. This is due to factors such as: (1) the actual species planted, (2) species availability, (3) the type of mitigation proposed, or (4) the feasibility of implementing specific guidance. In some cases, TWCC's past experience with large reclamation and mitigation projects provides methodologies that are proven to provide (1) better species survival, (2) the ability to meet the intent of regulations and permits, and (3) cost effectiveness.

4.5 Erosion Repair [332.4(c)(7 and 8)]

Erosion of landscapes is a naturally occurring process. The rate and extent of its occurrence are dependent on factors such as amount/intensity of rainfall, roughness of the land surface, slope length/steepness, soil type, vegetative cover, and erosion control practices. These factors are taken into consideration during regrading of disturbed areas to minimize erosion problems. Rills and gullies that may form in reclaimed areas and which either disrupt the reestablishment of the permanent vegetative cover, disrupt the land use, or cause/contribute to a violation of water quality standards for receiving streams will be filled, regraded, or stabilized. The affected area will then be reseeded or replanted.

5.0 SUCCESS CRITERIA AND PERFORMANCE STANDARDS FOR ANTICIPATED FUNCTIONS [332.4(c)(9) and 332.5(a) and (b)]

The following information provides discussion of success criteria and performance standards for anticipated functions that result on reclaimed areas used for mitigation. These criteria and standards are provided by specific categories of waters of the U.S. or generally when applied to all categories. Details of anticipated functions are provided in PCN Section 5.1.

Stream Channels

Success Criteria -

1. Stream channels will not exhibit adverse impacts from erosion, head cutting, and excessive silt accumulation.
2. Planted riparian zones will be measured to ensure that at least 25 to 50 (ref. GC 20(f)) feet are in place on each planted side of the stream channel.
3. Stream restoration practices discussed in Section 4.2 will be utilized when necessary.

Variations to the above criteria may be necessary, if justified by local conditions during the five-year monitoring period. Plantings will be monitored and deficiencies rectified by replanting, controlling competing vegetation, guarding against herbivory, or installing temporary water control structures.

Forested Wetlands

Planting Success Criteria -

Tree and shrub plantings:

1. Five years after planting, a minimum density of 100 trees per acre will be established.
2. Eligible trees will be species detailed in Section 4.4 and **Appendix 2** of the PLAN.
3. Trees will be 1 inch DBH or 6 feet tall.
4. If the density is less than the minimum five years after planting, the area will be replanted as necessary to achieve the minimum density five years after the most recent remedial planting.
5. Volunteer growth that meets the species and size criteria is eligible for counting.
6. Of the most dominate tree species in the planted area, three must be native species typically dominant in the local landscape.
7. No one species may constitute more than 30% of the surviving planted trees.

Variations to the above criteria may be necessary, if justified by local conditions during the five year monitoring period. Plantings will be monitored and deficiencies rectified by replanting, controlling competing vegetation, guarding against herbivory, or installing temporary water

control structures. No water control structures are planned at this time beyond those typically used in the reclamation process.

Non-forested Wetlands

Planting Success Criteria -

Herbaceous plantings:

1. Planted areas will exhibit an 80% ground cover three years after planting.
2. If the ground cover is less than the minimum three years after planting, the area will be replanted as necessary to achieve the minimum density three years after the most recent remedial planting.
3. None of the three most dominant species may be non-native, noxious, or invasive species.

Ponds

Success Criteria -

1. Ponds proposed as permanent structures will not exhibit excessive bank erosion or silt accumulation.
2. Ponds proposed as permanent structures will be designed to meet RCT regulatory requirements.

Shared Functions

Success Criteria Related to -

Aesthetics
Sediment retention
Water storage
Groundwater recharge
Nutrient cycling
Vegetation
Wildlife habitat
Water quality

1. Reclaimed areas will be aesthetically pleasing with no excessive erosion or bare soils.
2. Sediment retention in stream channels, ponds, and associated non-forested wetlands will not accumulate beyond levels that would impair water quality or aquatic life movements.
3. Water storage and groundwater storage will not be impaired by unnecessary water control structures.

4. Vegetation will be healthy and contribute to nutrient cycling, water quality, and wildlife habitat.
5. Water quality will meet regulatory standards of the RCT and the Texas Commission on Environmental Quality, if required for specific impoundments under regulatory control.

Performance Standards

The permittee shall be responsible for maintaining the mitigation areas to comply with conditions above until such time as the permittee provides documentation to, and receives verification from the USACE, that areas within the property (designated as compensatory mitigation) meet the following requirements:

1. Waters of the U.S. meet the definition of waters of the U.S. under the Regulatory Program regulations applicable at the time the project is authorized.
2. Wetlands that are waters of the U.S. will meet the definition of a wetland under the Regulatory Program regulations applicable at the time the project is authorized.
3. Waters of the U.S. are functioning as the intended type of waters of the U.S., and at the level of ecological performance prescribed in the mitigation plan.
4. Buffer and riparian zones and other areas integral to the enhancement of the aquatic ecosystem are functioning as the intended type of ecosystem.

6.0 SITE PROTECTION [NWP GENERAL CONDITION 20(F)] [332.4(c)(4) and 332.7(a)]

Site protection would be warranted for compensatory mitigation areas constructed by this project. Compensatory mitigation is mitigation required beyond that which would be provided by a 1.0 to 1.0 replacement ratio. Site protection for compensatory mitigation may include legal real estate arrangements such as deed restrictions, notices of restriction, and/or conservation easements as well as transfer(s) of property title(s) to resource agencies or conservation organizations. Site protection use will be assessed based on how mitigation areas (including compensatory mitigation) fall across the mine's reclaimed or non-mined landscape or if the mitigation area(s) are located outside the RCT-approved permit boundary.

Compensatory mitigation areas located **outside** the RCT-approved permit boundary will be protected by legal real estate arrangements such as deed restrictions, notices of restriction, and/or conservation easements as well as transfer(s) of property title(s) to resource agencies or conservation organizations.

Compensatory mitigation areas located **inside** the RCT-approved permit boundary will be assessed to determine the particular legal and factual situation associated with the property tracts where such areas occur. Compensatory mitigation areas located on leased properties cannot legally be encumbered by the surface mining operator, so site protection is not practicable. Additionally, cost prohibitive lease amendments or adding new lease agreements are not practicable and are wholly within the discretion of the landowner. Compensatory mitigation areas falling on Texas Westmoreland Coal Company-owned or NRG-owned properties will be afforded additional site protection (beyond that contemplated by internal protections provided by mine operations) as follows. Property tracts that include (as part of surface features) compensatory mitigation areas will be protected by legal real estate arrangements such as deed restrictions, notices of restriction, and/or conservation easements as well as transfer(s) of property title(s) to resource agencies or conservation organizations.

Compensatory mitigation areas protected by deed restriction (for example) may at a future point in time need a change in site protection methodology to ensure long-term protection and management. If this situation does occur, the deed restriction may be eliminated, with USACE approval, and site protection re-established by transfer of property title to an appropriate resource agency or conservation organization.

The only exception to site protection requirements shall be related to property interests in existence prior to the date of the real estate arrangements, conservation easements, or title transfers.

The Permittee will provide details of site protection needs to the USACE, within 365 days, following Phase III release of property from the RCT performance bond for the entire RCT permit area or incremental parts of the permit area containing compensatory mitigation. The protective covenant restrictions shall not be removed from the real estate instruments, conservation easements or transfer agreements, or modified, without written approval of the USACE, and conveyance of any interest in the property must be subject to the protective covenant restrictions.

7.0 ADAPTIVE MANAGEMENT [332.4(c)(12) and 332.7(c)]

Mitigation and compensatory mitigation areas that result from this PLAN are vulnerable (but no more so than any other reclaimed areas) to acts of nature such as wildfires, climatic instability, and disease as well as unauthorized human activities that may cause the site to become non-compliant with the PLAN. Occurrence of such acts of nature following attainment of performance standards may require changes to the PLAN to allow for maintenance activities to offset and counteract negative impacts. Depending upon the circumstances, however, it may be appropriate to let nature take its course, particularly when wetland vegetation is expected to reestablish due to continued existence of seed sources, wetland hydrology, hydric soils, and restrictions on incompatible land uses. As appropriate, TWCC will discuss options and management decisions on such issues with the USACE.

8.0 MONITORING AND LONG-TERM MANAGEMENT [332.4(c)(10-11); 332.6; and 332.7(d)]

TWCC will ensure that sufficient financial resources are allocated to perform monitoring activities. Future long-term site protection is addressed in Section 6.0 of this PLAN and Section 6.3 of the PCN. Long-term management practices, through final bond release and after meeting performance standards, may include such activities as:

1. Mechanical vegetation control,
2. Selective herbicide treatments,
3. Use of selected prescribed fire to mimic pre-settlement summer burns,
4. Planting nurse crops to suppress or compete with weed species,
5. Planting native herbaceous vegetation,
6. Selective tree removal to control insect-damaged, diseased, or storm-felled trees, (Although generally discouraged, these activities may be conducted in coordination with the USACE. In some instances, felling trees in place and leaving them on the ground will be acceptable to the USACE.),
7. Water regime management, and
8. Visual monitoring of activities (i.e., hunting, hiking, etc.) on the mitigation site.

8.1 Self-Monitoring and Reporting

The permittee shall establish and implement a self-monitoring program that includes the following actions:

1. Designation, in writing, of a responsible party or position, who shall coordinate with the USACE on-site inspections and compliance with permit conditions;
2. Implementation of a reporting program that includes submittal of written compliance reports to the USACE, due October 1 each year. The first annual report is due [October 1, 20xx – *final date pending final authorization letter*]. These reports must outline compliance with the special conditions, summarize all activities that occurred during the reporting period, and provide notification of completion of all authorized work. These reports shall document the activities that have occurred from June 1 of the preceding year to May 31 of the reporting year.

Compliance reports will follow a similar format as reporting conducted by TWCC for other locations within the Jewett Mine, and are required even if no work is conducted during the reporting period. The permittee shall submit compliance reports until the USACE has verified that all mitigation areas have met the standards of applicable special conditions.

9.0 FINANCIAL ASSURANCES [332.3(n) and 332.4(c)(13)]

Initial financial assurance for the mining and reclamation processes are in-place in accordance with RCT (TWCC) requirements for a performance bond. Financial resources for long-term management will be provided by TWCC. TWCC will ensure that these financial resources are available to protect mitigation areas through final bond release. The financial assurance will also be able to provide for maintenance and remedial actions that may be necessary in the future, up to and through final bond release.

10.0 COMPENSATORY MITIGATION ALTERNATIVES [NWP GENERAL CONDITION 20(G)]

In accordance with NWP General Condition 20(g), special situations may require the use of mitigation bank credits, in-lieu fee arrangements, or separate activity-specific projects to fulfill all compensatory mitigation requirements. Use of these alternatives will only be considered following discussion with the USACE, Fort Worth District and following a thorough investigation of potential on-site (defined as mitigation created by reclamation actions) and off-site compensatory mitigation opportunities. The proposed use of off-site locations for compensatory mitigation will not exempt the TWCC from reclamation requirements detailed in the RCT application or permit sections .144 and .145. Further, it is understood that reclamation activities will result in the creation of all or part of the mitigation, including compensatory mitigation, requirements of USACE permit authorizations for adverse impacts to waters of the U.S., including wetlands.

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Supporting Documentation

The following documents were used in preparation of this Pre-Construction Notification.

1. National Historic Preservation Act of 1966 (amended through 2000), Section 106
2. Surface Mining Control and Reclamation Act 1977 (Revisions through1993)
3. USACE *1987 Wetlands Delineation Manual*
4. Nationwide Permit 21 Guidance, October 6, 1999 [Fort Worth District]
5. Army Corps of Engineers Standard Operating Procedures for the Regulatory Program, dated October 15, 1999 [HQ]
6. Government Accounting Office (GAO) report entitled "Wetlands Protection – Assessments Needed to Determine Effectiveness of In-Lieu-Fee Mitigation", published May 2001
7. National Research Council (NRC) report entitled "Compensating for Wetland Losses Under the Clean Water Act", published August 2001
8. Regulatory Guidance Letter 02-02, December 24, 2002 [HQ]
9. Nationwide Permit 21 (Surface Coal Mining Activities), effective date March 18, 2002
10. Nationwide Regional Conditions for the State of Texas, March 2002 and December 2007 [Fort Worth District]
11. National Wetlands Mitigation Action Plan, December 24, 2002
12. Mitigation Guidelines, Regulatory Program, draft dated December 24, 2003 [Fort Worth District]
13. Standard Operating Procedures for NWP 21 Processing, March 19, 2004
14. Guidance on compensatory mitigation, May 7, 2004 [Fort Worth District]
15. Joint Procedures Framework Memorandum of Understanding, effective date February 8, 2005 [Signatory agencies US Army Corps of Engineers, FWS, OSM, and EPA]
16. Regulatory Guidance Letter 05-03, August 4, 2005 (HQ)
17. The White House Council on Environmental Quality's April 2006 document entitled "Conserving America's Wetlands 2006: Two Years of Progress Implementing the President's Goal"
18. Proposed rule by the EPA and Corps of Engineers, "Compensatory Mitigation for Losses of Aquatic Resources", March 28, 2006
19. Regulatory Guidance Letter 06-03, Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Creation, Restoration, and/or Enhancement of Aquatic Resources, August 3, 2006
20. Nationwide Permit 21 (Surface Coal Mining Operations), effective date March 19, 2007
21. Federal Register (FR Vol. 72, No. 47, Monday, March 12, 2007, Notices) Notice of Reissuance of Nationwide Permits. The effective date for all NWPs, General Conditions, and Definitions is March 19, 2007.

22. Railroad Commission of Texas; permit application dated October 31, 2006 for the Jewett Mine, Permit Number 47 Renewal, and subsequent "supplemental" documents submitted by Applicant.
23. Railroad Commission of Texas - Coal Mining Regulations (16 Texas Admin. Code §12.1 et seq.)
24. Federal Register (Vol. 73, No. 70, Thursday, April 10, 2008, Rules and Regulations) Compensatory Mitigation for Losses of Aquatic Resources

APPENDIX 1: FIGURES

Figure 1

Conceptual Plans for Wetland Reclamation [332.4(c)(7)]

Figure 2

Typical Cross-Sections for Reclaimed Stream Channel With and Without Wetland Area [332.4(c)(7)]

Figure 3

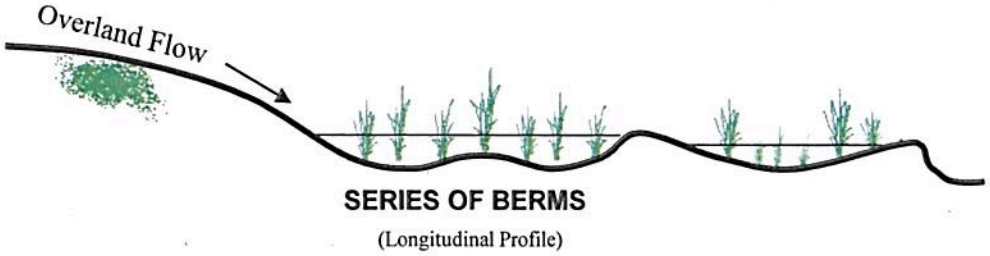
Typical Section Restored Stream [332.4(c)(7)]

Figure 4

Typical Longitudinal Profile for Stream With and Without Wetland Areas [332.4(c)(7)]

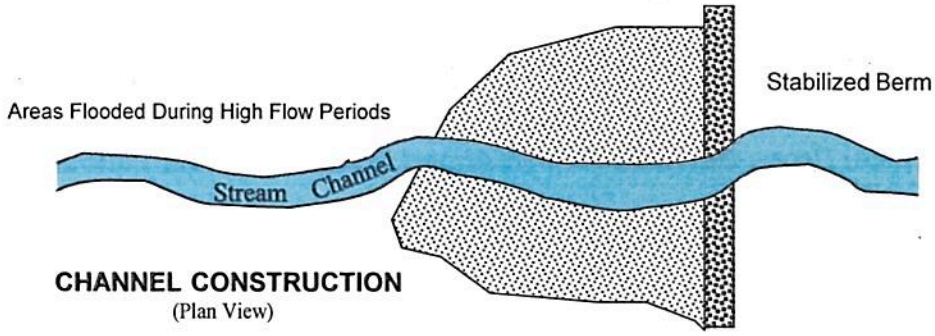
Figure 1

Conceptual Plans for Wetland Reclamation



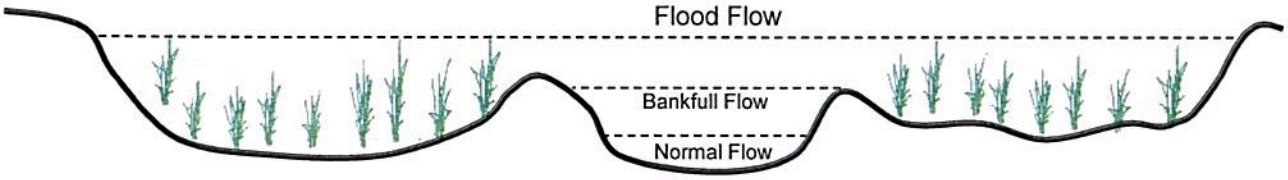
SERIES OF BERMS

(Longitudinal Profile)



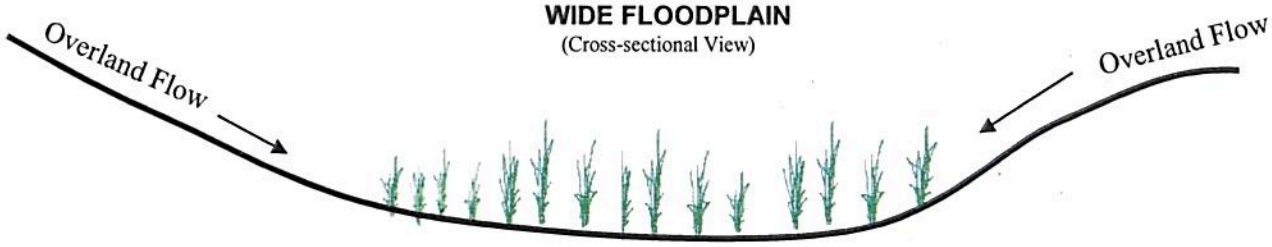
CHANNEL CONSTRUCTION

(Plan View)



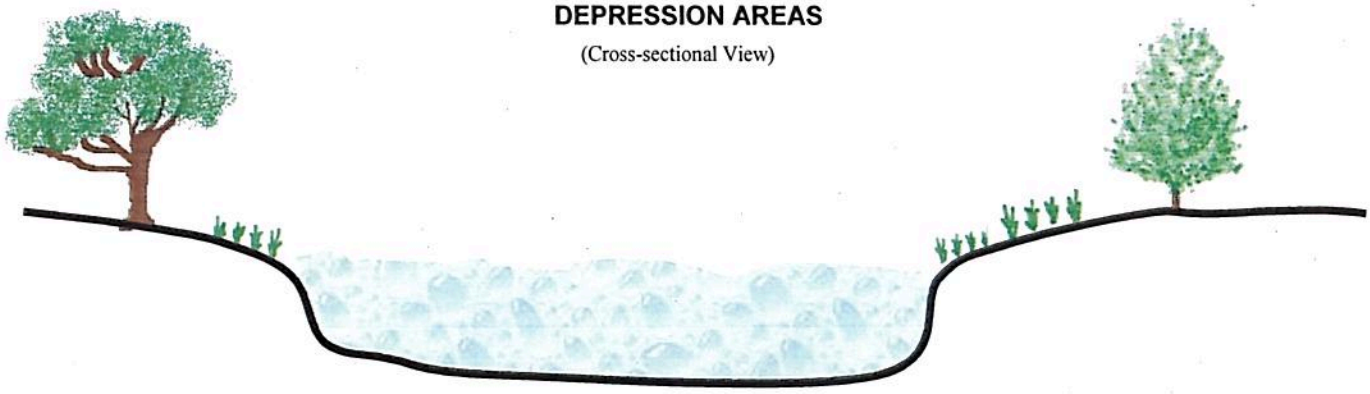
WIDE FLOODPLAIN

(Cross-sectional View)



DEPRESSION AREAS

(Cross-sectional View)



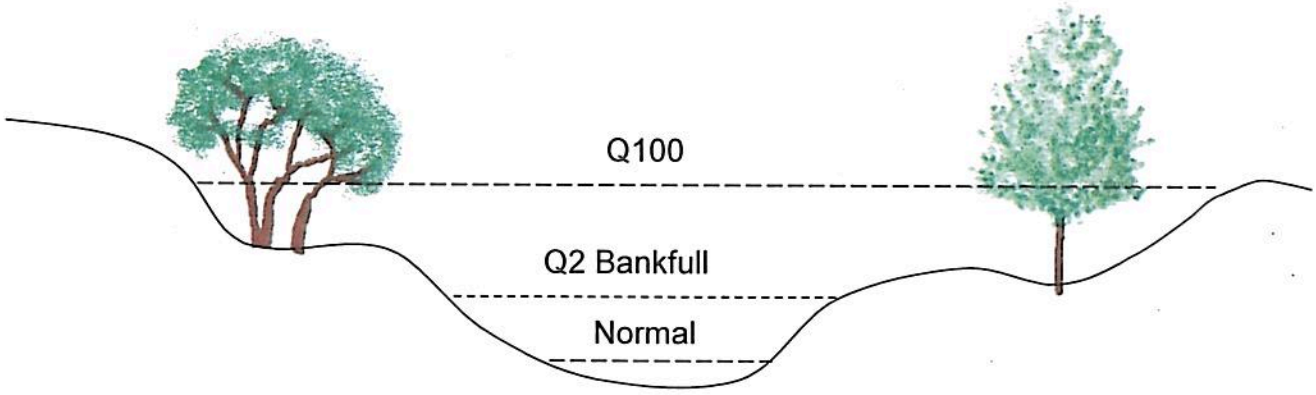
SHALLOW POND MARGINS

(Cross-sectional View)

Figure 2

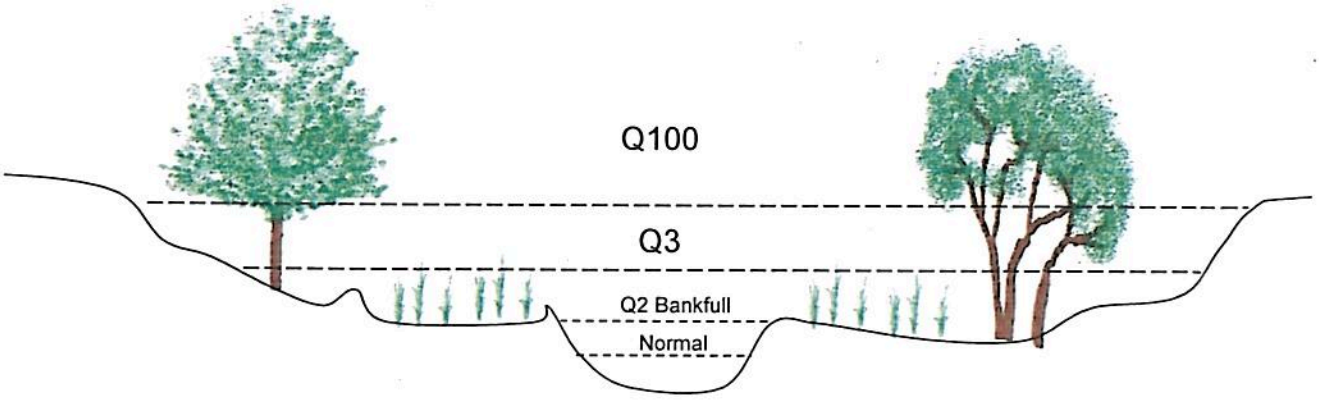
Typical Cross-sections for Reclaimed Stream Channel

With and Without Wetland Area



Reclaimed Stream Channel

Without Wetland Area



Reclaimed Stream Channel

With Wetland Area

Adapted from Classification of Wetlands And Deepwater Habitats of the United States, US Dept Interior, December 1979

Figure 3

Typical Section Restored Stream

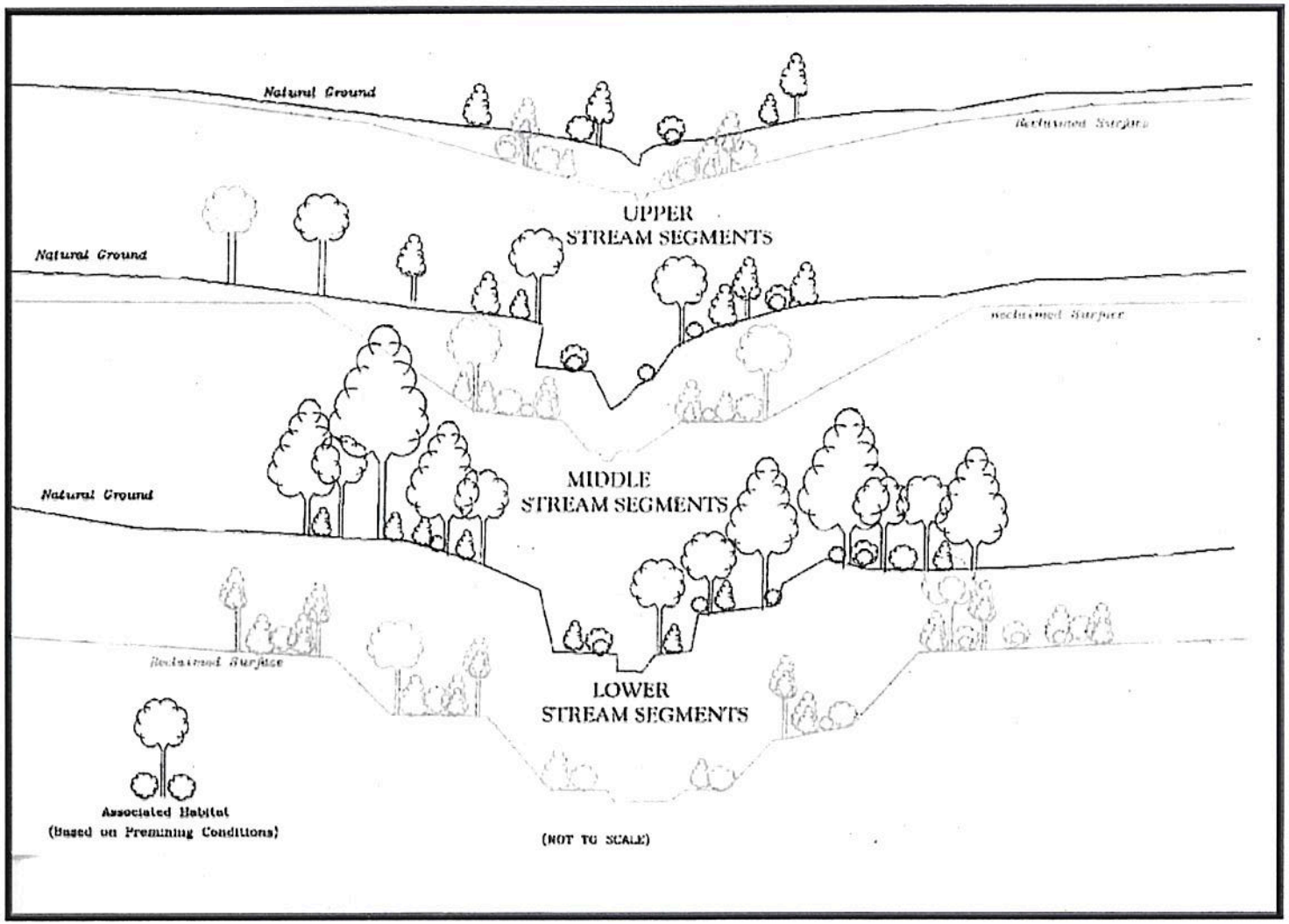
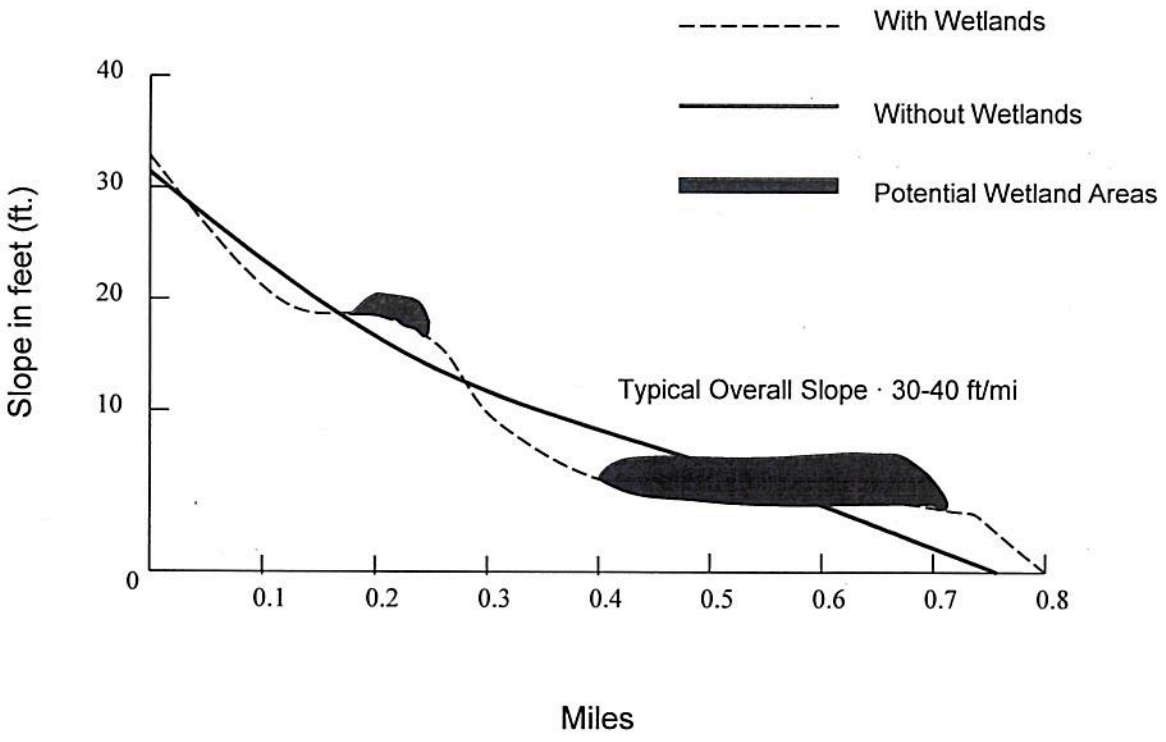


Figure 4

Typical Longitudinal Profile for Stream With and Without Wetland Areas



APPENDIX 2: REVEGETATION LIST

Table 1:

Vegetation Suitable for Reclamation in the Jewett Mine Region [332.4(c)(7)]

Table 1

VEGETATION SUITABLE FOR RECLAMATION IN THE JEWETT MINE REGION

HARDWOOD TREES:		
Bald Cypress*	*Taxodium distichum*	F-4, C-1
Black Walnut	*Juglans nigra*	F-1, C-2
Blackjack Oak	*Quercus marilandica*	F-1, C-1
Bur Oak	*Quercus macrocarpa*	F-1, C-1
Chickasaw Plum	*Prunus angustifolia*	F-1, C-1
Hickory	*Carya spp.*	F-1, C-2
Overcup Oak*	*Quercus lyrata*	F-1, C-1
Persimmon	*Diospyros virginiana*	F-1, C-2
Post Oak	*Quercus stellata*	F-1, C-1
Red Mulberry	*Morus rubra*	F-1, C-2
Redbud	*Cercis canadensis*	F-2, C-2
River Birch	*Betula nigra*	F-3, C-2
Sassafras	*Sassafras albidum*	F-1, C-1
Shumard Oak	*Quercus shumardii*	F-1, C-1
Southern Red Oak	*Quercus falcata*	F-1, C-1
Sugarberry	*Celtis laevigata*	F-1, C-2
Water Oak	*Quercus nigra*	F-1, C-1
Willow Oak	*Quercus phellos*	F-1, C-1
SHRUBS:		
American Beautyberry	*Callicarpa americana*	F-1, C-2
American Holly	*Ilex opaca*	F-1, C-1
Arrowwood	*Viburnum dentatum*	F-1, C-2
Bayberry, Waxmyrtle	*Myrica cerifera*	F-1, C-1
Buttonbush	*Cephalanthus occidentalis*	F-1, C-1
Carolina Buckthorn	*Rhamnus caroliniana*	F-1, C-1
Cherry Laurel	*Prunus caroliniana*	F-2, C-1
Coralberry	*Symphoricarpus orbiculatus*	F-1, C-1
Flowering Dogwood	*Cornus florida*	F-1, C-1
Hawthorn	*Crateagus spp.*	F-1, C-1
Deciduous Holly	*Ilex decidua*	F-1, C-1
Roughleaf Dogwood	*Cornus drummondii*	F-1, C-1
Shining Sumac	*Rhus copallina*	F-1, C-1
Fragrant Sumac	*Rhus aromatica*	F-1, C-1
Yaupon	*Ilex vomitoria*	F-1, C-1
Possumhaw	*Ilex decidua*	F-1, C-2

Table 1 (cont.)

VINES:	SCIENTIFIC NAME	WILDLIFE VALUE
Carolina Jessamine	*Gelsemium sempervirens*	F-2, C-1
Dewberry, Blackberry	*Rubus spp.*	F-1, C-1
Peppervine	*Ampelopsis arborea*	F-1, C-3
Trumpetvine	*Campsis radicans*	F-2, C-1
Virginia Creeper	*Parthenocissous quinquefolia*	F-1, C-1
Wild Grape	*Vitis spp.*	F-1, C-1
LEGUMINOUS FORBS:		
Arrowleaf Clover	*Trifolium vesiculosum*	F-2, C-2
Birdsfoot Trefoil	*Lotus corniculatus*	F-2, C-2
Bundleflower	*Desmanthus spp.*	F-2, C-2
Crimson Clover	*Trifolium incarnatum*	F-2, C-2
Illinois bundleflower	*Desmanthus illinoensis*	F-2, C-2
Japanese Lespedeza	*Lespedeza striata*	F-2, C-2
Prairie Clover*	*Dalea candida*	F-2, C-2
White Clover	*Trifolium repens*	F-2, C-3
White Sweetclover	*Melilotus albus*	F-2, C-2
NONLEGUMINOUS FORBS:		
Common Sunflower	*Helianthus annuus*	F-1, C-1
Coneflowers*	*Rudbeckia spp.*	F-2, C-1
Maximilian Sunflower	*Helianthus maximiliani*	F-1, C-1
GRASSES:		
Switchgrass	*Panicum virgatum*	F-1, C-2
Indiangrass	*Sorgastrum nutans*	F-2, C-2
Green Sprangletop	*Leptochloa dubia*	F-3, C-3
Eastern Gamagrass	*Tripsacum dactyloides*	F-3, C-3
Sideoats Grama	*Bouteloua curtipendula*	F-2, C-3
Big Bluestem	*Andropogon gerardii*	F-3, C-2
Little Bluestem*	*Schizachyrium scoparium*	F-3, C-2
Sand Lovegrass*	*Eragrostis trichodes*	F-1, C-2
MARSH AND AQUATIC PLANTS:		
Arrowheads*	*Sagittaria spp.*	F-3, C-1
Bulrush	*Scirpus spp.*	F-3, C-1
Coontail*	*Ceratophyllum demersum*	F-3, C-1
Japanese Millet	*Echinochloa crus-galli*	F-1, C-2
Long-leaf Pondweed	*Potamogeton nodosus*	F-1, C-4
Pondweed	*Potamogeton spp.*	F-1, C-4
Shoreline Common Reed	*Phragmites australis*	F-4, C-1
Smartweed	*Polygonum spp.*	F-1, C-1
Marshmillet	*Zizaniopsis miliacea*	F-1, C-2

Table 1 (cont.)

Food and cover values were taken from Dickson and Vance (1981).

F = Food;	C = Cover;	1 = Excellent
2 = Good;	3 = Fair;	4 = Limited

Species listed above are those that will occupy fish and wildlife enhancement features and undeveloped areas. They will be the primary species providing forage and cover for wildlife. Species planted as primary producers in tame pasture will be those conducive to cattle grazing. These species will have low wildlife values (e.g. coastal, common bermuda grass, etc.). Species from this list will be planted as borders or strips within tame pastures for wildlife utilization.

If a species is planted outside of this list it will have a value to wildlife that is documented in scientific literature. Also, TWCC will request written approval from the Commission prior to planting.

References:

Dickson, K.L. and Vance D. 1981. Revegetating Surface Mined Lands for Wildlife in Texas and Oklahoma. FWS/OBS - 81/25. U.S. Fish and Wildlife Service, Kearneysville, W.V. 1981.

* Not listed in Dickson and Vance. Estimates based on similar species that are included in Dickson and Vance and from information included in USDA, NRCS. 2008. The PLANTS Database (http://plants.usda.gov, 22 August 2008). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.