APPENDIX D
SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

AND

EROSION AND SEDIMENT CONTROL PLANS AND STORM WATER POLLUTION PREVENTION PLANS FOR ARKANSAS AND MISSISSIPPI

APPENDIX D-1

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

TEXAS GAS TRANSMISSION LLC

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

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SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

1.0 Introduction

The intent of this plan is to provide practices to prevent and/or minimize the impact of and facilitate clean up of a spill during construction of pipeline segments associated with Texas Gas Transmission LLC (Texas Gas). This plan establishes emergency response procedures and line of communication and responsibilities.

The Spill Prevention, Control, and Countermeasure (SPCC) plan restricts the location of fuel and other hazardous material storage and construction equipment maintenance along the construction right-of-way and provides procedures and material requirements to contain and clean-up spills of fuel and other hazardous materials, should they occur. The goal of the plan is to minimize the potential for a spill of these materials, contain any spillage to the smallest area possible, and to protect areas which are considered environmentally sensitive (i.e., in the vicinity of streams, groundwater wells, wetlands, sensitive plant species, etc.).

It is the policy of Texas Gas to comply with all environmental and safety laws and regulations and to provide training and materials designed to prevent pollution. It is the intent of Texas Gas that everything practicable be done to minimize the potential for and consequences of a spill during construction of the project.

A copy of this plan is to be made available to all construction crews. It is the responsibility of the Chief Inspector to assure that the contractor is fully briefed on the content and requirements of this plan.

2.0 Hazardous Materials Used During Construction and Spill Prevention Measures

Potential spills from construction are limited primarily to: 1) diesel used to fuel construction equipment;and 2) lubricating oils and hydraulic fluid used by construction equipment. Particular attention should be paid to equipment (such as trackhoes) operating in the vicinity of streams and wetlands.

2.1 Product Storage

To prevent these materials from reaching waterways, hazardous substances, chemicals, fuels and lubricating oils will not be stored within 100 feet of stream banks or wetlands. No construction equipment refueling or maintenance of equipment will be allowed within 100 feet of any stream bank or wetland (if project specific variances are not requested). In addition, areas within 100 feet of sensitive plant populations or goundwater wells may not be utilized for these activities.

Proper management of these materials is the first step in reducing the potential impact of a spill to the environment. The Chief Inspector must grant **prior approval** to the location of all fuel storage and refueling areas, material storage areas, and construction equipment maintenance areas.

2.2 Secondary Containment

All stationary fuel storage tanks will be located inside secondary containment designed to hold 1.5 times the capacity of the largest tank within the containment area. The containment area will incorporate a liner in its design. The tank will be set directly on the liner. Non-abrasive padding may be used under the tank to provide stability as long as the integrity of the liner is not compromised. The purpose of this liner is to protect soils located under the tank. Any spilled materials located on the liner will be removed prior to dismantling the tank and secondary containment.

Catch basins will be installed at each of the fueling locations to collect residual materials which may drain from hoses used to fuel the construction equipment. **Materials collected in the catch basin or spillage collected in the liner will be placed in a drum for disposal. It is preferable to locate these catch basins within the secondary containment area; however, they need to be protected from overflow from storm water.**

2.3 Inspections

Prior to their use, the construction contractor will visually inspect each tank for cracks, excessive corrosion, or other flaws that may compromise the integrity of the tank. Hoses and valves will be similarly inspected. If the construction contractor determines that the equipment is in good mechanical condition, it may be moved onto the construction right-of-way, which includes staging areas and pipe yards. Otherwise, the equipment will be rejected and alternate equipment in good condition employed. Each tank will be similarly inspected as it is moved down the construction right-of-way.

In addition, the construction contractor will inspect the integrity of all secondary containment areas and liners at least daily and repair the containment area or replace the liner immediately if they become breached or torn.

2.4 Stormwater Management

It may be necessary to drain accumulated storm water from within the secondary containment area containing the fuel storage tanks. If the storm water has been contaminated with diesel fuel or other pollutants, the Texas Gas Environmental Department will arrange for its disposal. If no oil sheen is present and there are no other visible signs of pollution, the storm water may be left to evaporate within the containment area after the tank has been removed. **Under no circumstances will the construction contractor allow the surface discharge or other release of water contained within the containment area without the prior approval of the Environmental Representative of Texas Gas.**

2.5 Trench Dewatering

During trench dewatering in the vicinity (within 100 feet) of streams and wetlands (if project specific variances are not requested), pumps will be set in a containment structure. This structure will consist of a straw bale dike that completely encloses the pumps. The dike area will be covered with at least two continuous sheets of plastic sheeting. The plastic sheeting must be laid such that it extends over the tops of all straw bales and drapes onto the ground outside the dike area. **Under no circumstances will fuel or lubricants be stored in these dike areas. When it is necessary to refuel the pumps, the fuel will be carried by hand to the dike area and immediately removed once refueling is completed. When the dike area is dismantled, the plastic sheeting will be placed in trash bags and immediately hauled away from the site for disposal.**

2.6 Construction Equipment Maintenance

Construction equipment maintenance requiring the draining and replacement of fluids will occur only on areas of the right-of-way approved by the Chief Inspector. Before lubricants are drained from the construction equipment, a layer of plastic sheeting will be placed under the equipment to collect any spilled material. Spilled material will be drained from the liner and disposed with the fluids removed from the construction equipment. **Under no circumstances will the construction contractor allow material from the liner to spill on the ground surface.**

3.0 Training Procedure

All contractor employees and subcontractors that could be responsible for spill containment or clean-up or who will be involved with transporting or handling of fuel, fueling equipment or maintenance of construction equipment will be required to complete spill training prior to the start of construction. The training program will be conducted by the Environmental Representative of Texas Gas and attendance for those employees listed above will be mandatory. The construction contractor will be required to maintain a record of workers receiving training.

The training program will incorporate the following:

1. Review of the provisions of the SPCC Plan and a discussion of the responsibilities of each employee.
2. Operation of spill prevention and control equipment and the location of spill control materials;
3. Inspection procedures for spill prevention and containment equipment and materials;
4. Spill reporting procedures, sequence and personnel;
5. Phone numbers and verification of correctness;
6. Contractor/employee responsibility in the event of a spill; and
7. Maintenance and monitoring requirements for possible sources of spills.

4.0 Response Team Configuration, Agency Notification and Disposal Procedures

INSPECTOR

Texas Gas will employ an inspector(s) that are trained in spill prevention, control and cleanup. The contractor will be provided with the name and telephone number of the EI assigned to the project. In addition, the contractor will be provided with the name of an alternate contact should the EI not be available.

CONSTRUCTION CONTRACTOR SPILL MATERIAL COORDINATOR

The construction contractor will designate one individual who will be primarily responsible for maintenance and placement of spill control materials and equipment. This individual will assure that all control equipment is in place and operational prior to the start of construction.

EMERGENCY RESPONSE CONTACTS

Attachment A of the SPCC Plan provides a list of emergency contact phone numbers.

DISPOSAL OF HYDROCARBON CONTAMINATED MATERIALS

Should a spill occur, Texas Gas will be responsible for characterizing and disposing of any waste generated during the clean up.

5.0 Emergency Coordinator

The Chief Inspector will be designated as the Emergency Coordinator, with responsibility for coordinating all emergency response measures. The Chief will be thoroughly familiar with all aspects of the construction activities, the location and characteristics of all hazardous substances and waste materials handled, location of all records associated with the

construction spread, location and condition of spill materials, and the spread layout. Futhermore, the Chief has been trained and has the authority to commit resources (manpower and dollars) necessary to implement this plan.

If a spill occurs, only those persons involved in the oversight or performance of emergency operations will be allowed within the spill areas.

6.0 Emergency Equipment

All construction projects will have on hand and maintain emergency response equipment. While construction activities are ongoing, all such equipment will be inspected daily for operability and accessibility. The location of fire extinguishers and related emergency response equipment will be clearly marked with signs. Each foreman in charge of construction activities at a given site will be provided with and will maintain readily accessible, a copy of this plan.

Prior to any vegetation clearing or other construction activities at any wetland, river or stream crossing, spill absorbent material and booms of adequate size and number to handle a spill of diesel fuel or other hazardous materials will be stored in the immediate crossing area. If these materials are not stockpiled at the site as required by this plan, construction will not be allowed to commence.

The Chief Inspector will determine the need and placement for booms downstream of stream and river crossings. Absorbent booms, if required, will be placed in all rivers and streams prior to any construction activities including blading, grading, or placement of the temporary equipment crossing bridge. The booms will be kept fully functional and clear of all debris during the entire crossing process.

As an example, a supply of the following spill control materials (example only) will be located at each listed stream and river crossing and at all open water wetlands:

- Six bales (200 count each) of absorbent mat pads (Pigalog MAT215 or equivalent);
- Four boxes of absorbent spaghetti strips (Pigalog PLP402 or equivalent);
- Four boxes of absorbent pulp (Pigalog SA8010 or equivalent);
- 500 Foot of 6 or 8 inch diameter absorbent skimmer boom material (not
- necessary for wetland crossing unless the wetland has standing water at a
- depth sufficient to float the boom) (Pigalog SA2010 or equivalent);
- 10 packages of heavy duty trash bags;
- 20 straw bales (additional straw bales may be required at larger crossings).

Absorbent pads, spaghetti, pulp, and booms will be of the type that is capable of absorbing petroleum products but repels water.

The construction contractor will designate a single individual who will be responsible for maintenance of these materials. In addition, the construction contractor will stock pile bales of straw on or adjacent to the right-of-way for the sole purpose of emergency response.

In addition, one bale (200 count) of absorbent pads and ten straw bales will be stored at each stationary fuel tank location and construction equipment areas (one bale of pads is sufficient if water bodies/wetlands are not present).

All fuel trucks will be supplies with one bale of absorbent pads.

7.0 Emergency Response Procedures

In cases of an imminent or actual spill or emergency situation, the person observing the incident will implement the following procedures.

7.1 Initial Response

- Make every effort to stop the source of the spill;
- Warn all personnel at the construction site; and
- Immediately contact the Chief and report the observer's name, location and the nature and extent of the incident.

The first rule of response to any spill is to contain the spill to the smallest area possible and to stop the spill from reaching a waterway or other sensitive area (i.e., a groundwater well).

The following procedures are recommended for containment of small spills:

a. For a spill on the ground surface where it can be blocked using a backhoe or other equipment, construct a ditch or dike to stop the flow of the spilled material and contain the spill to the smallest area possible.

b. In a moving water channel, set up a barrier as follows:
   (i) Dam the channel with a bypass siphon or tube;
   (ii) Use a straw barrier;
   (iii) Install additional booms if the water is deep enough to float the boom;
   (iv) Excavate a side pool or holding pond to isolate the spilled material; or
   (v) Re-channel the water around the spilled material.

Use the following procedures for major spills:

a. For a spill on the ground where it can be blocked using a backhoe or other equipment, construct a ditch or dike to stop the flow of the spilled material and contain the spill to the smallest area possible;

b. Skim into a truck or tank or use a pump and a vacuum truck to pick up the spilled material;

c. Provide for water removal if raining;

d. In a moving water channel set up a barrier immediately. It may be necessary to provide more than one barrier downstream. Make sure as many as are needed are installed to contain the flow of the spill material. Side channels can be used with collecting ponds and it will be necessary to pick up the accumulated spilled material.

   All fuel or oil or trace of fuel or oil must be soaked up by the use of straw or other absorbent material.

7.2 Spill Response

In the event of a spill, the release will be contained, to the extent possible, and as soon as possible, any hazardous material, contaminated materials or soil cleaned up. The following general procedures will be used for rapid and safe response and control of the situation and to prevent the recurrence or spread of a release.

7.2.1 Hazard Assessment

If a spill is discovered, the individual first discovering the spill will immediately report it to the Chief Inspector and provide the following information:

- The material spilled or released,
- Location of the release or spillage,
- The location in which the spill is heading,
- The rate at which the spill is released,
- Any threat to waterways, and
- Any injuries involved.

This information will help the Chief to assess the magnitude and potential seriousness of the spill or release. The Chief will contact and deploy the necessary personnel. If the accident is beyond the capabilities of the equipment and material located on site to handle, the Chief will contact necessary local emergency assistance (i.e., County Hazmat Team) and Texas Gas' Environmental Representative.

7.2.2 Response Coordination

The initial response to an emergency will be to protect human health and safety, and then the environment. Identification, containment, treatment and disposal assessment will be the secondary response. Because of the potential fire hazard associated with diesel fuels used during construction, possible sources of ignition will be eliminated to prevent such an occurrence. Vehicular traffic and work in the immediate area will cease until the spill is contained. If the spilled material is flammable, fire equipment will be made ready.

If a spill is not contained within the dike, an area of isolation will be established around the spill. The size of this area will generally depend on the size of the spill and the materials involved. The Chief will be responsible for determining the extent of the isolation area. When any spill occurs, only those persons involved in the oversight or performance of emergency operations will be allowed within the designated hazardous area.

For all large spills or serious leaks in storage tanks, the following guidelines will be followed as closely as possible:

(1) If a leak develops or a spill occurs, the person discovering the incident will contact the Chief. The Chief will obtain the following information:

   (a) Person(s) injured and seriousness of the injury
   (b) Location of the spill or leak, material involved and source; and
   (c) The approximate amount of spillage.

(2) Next, the Chief will:

   (a) Initiate evacuation of the hazard area;
   (b) Obtain medical attention for any injured persons and call the hospital;
   (c) Dispatch emergency personnel to the site to take the appropriate action;
   (d) Contact appropriate local emergency coordination centers so that any down-stream water users can be notified; and
   (e) Contact Texas Gas' Environmental Representative who can assist with notifications of appropriate State and Federal agencies.

(3) Cleanup personnel will:

(a) Make sure all unnecessary persons are removed from the hazard area;
(b) If possible, try to stop the leak;
(c) Contain, divert and clean up the spill; and
(d) Properly contain and store all contaminated materials and await disposal instructions from Texas Gas.

7.2.3 Required Notification

When reporting a spill to any of the agencies, be prepared to provide the following:

- The name, address and phone number of the person reporting the spill;
- Date, time and type of incident,
- Quantity and type of hazardous waste or material involved in the incident,
- Extent of injuries, if any; and
- Estimated quantity and disposition of recovered materials, if any.

8.0 Cleanup and Disposal of Spills

Any soils, regardless of amount, contaminated by fuels, lubrication oils or other hazardous materials will be cleaned up, removed from the right-of-way and stored for disposal. Any stored soil must be protected from the weather.

Cleanup of contaminated soils includes the removal of all soils which have been subjected to the pollutant. If necessary, the Chief may require the construction contractor to collect samples of soil strata below the spill to assure that all hydrocarbon contaminated soils have been removed from the site.

All materials used to clean-up the spill will be double bagged and inspected prior to removal from the spill site. All vegetation contaminated by the spilled material will be similarly collected and bagged.

The Texas Gas Environmental Department will be responsible for characterizing and disposing of all wastes generated from a spill.

Attachment A

Emergency Contact Phone Numbers

Report spills into or upon the navigable waters of the United States or adjoining shorelines, as soon as there is knowledge of the spill, to the National Response Center and the appropriate state agency as listed below:

Jurisdiction	Agency	Phone Number
United States	National Response Center	(800) 424-8802
Arkansas	Arkansas Dept. of Emergency Management	(501) 730-9751
Illinois	Illinois Emergency Management Agency	(217) 782-7860
Indiana	Indiana Department of Environmental Management	(888) 233-7745
Kentucky	Kentucky Department for Environmental Protection	(800) 928-2380
Louisiana	Louisiana Department of Public Safety Louisiana Department of Environmental Quality	(225) 925-6113 (225) 342-1234
Mississippi	Mississippi Emergency Management Agency	(601) 352-9100
Ohio	Ohio Environmental Protection Agency	(800) 282-9378
Tennessee	Tennessee Emergency Management Agency	(800) 258-3300
Texas	Texas Commission on Environmental Quality	(512) 239-2507

Report all spills, as soon as there is knowledge of the spill, to the Texas Gas environmental department.

Texas Gas Contacts

Name	Phone Number
John Hein	(270) 688-6956
Doug Webster	(270) 688-6953 (270) 302-3214 (Cell)
Darrell Morgan	(270) 688-6957

SPCC Compliance Checklist

- Report spills into or upon the navigable waters of the United States or adjoining shorelines, as soon as there is knowledge of the spill, to the National Response Center, the appropriate state agency, and Texas Gas Environmental personnel as listed in Attachment A of the Plan.

- Petroleum products shall not be stored within 100 feet of stream banks, wetlands, groundwater wells, or sensitive plant areas.

- No construction equipment refueling or maintenance shall occur within 100 feet of stream banks, wetlands, groundwater wells, or sensitive plant areas.

- All stationary fuel tanks shall have lined secondary containment designed to hold 1.5 times the volume of the tank.

- All secondary containment areas shall be inspected daily

- Each tank and hose shall be visually inspected prior to use.

- Catch basins shall be used at each refueling point to collect residual fuel which may drain from hoses.

- No contaminated stormwater (as indicated by a sheen) shall be discharged from a secondary containment area.

- Under no circumstances shall water be drained from a containment area without the prior approval of a Texas Gas representative.

- During trench dewatering within 100 feet of stream banks, wetlands, groundwater wells, or sensitive plant areas, pumps shall be placed in lined containment areas.

- Construction equipment maintenance requiring the draining of fluids will occur only in areas approved by the Chief Inspector. Under no circumstances will fluids be allowed to drain on the ground.

- All contractor and subcontractor employees responsible for spill containment, fuel management, or construction equipment maintenance must complete spill control and response training prior to construction.

- Emergency response equipment must be maintained as described in Section 6 of the Plan.

- Texas Gas will be responsible for the disposal of spilled material and all wastes generated during a clean up.

APPENDIX D-2

EROSION AND SEDIMENT CONTROL PLAN
AND STORM WATER POLLUTION PREVENTION PLAN
FOR ARKANSAS

FAYETTEVILLE/GREENVILLE LATERAL EXPANSION PROJECT

EROSION AND SEDIMENT CONTROL PLAN AND STORM WATER POLLUTION PREVENTION PLAN FOR ARKANSAS

SUBMITTED BY TEXAS GAS TRANSMISSION, LLC

JULY 2007

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1.0 INTRODUCTION

1.1 Proposed Project Name and Description

Texas Gas Transmission, LLC (Texas Gas), a Boardwalk Pipeline Partners, LP company, is seeking authorization from the Commission pursuant to Section 7(c) of the Natural Gas Act (NGA) to construct and operate the proposed Project. The Project includes:

- Two pipeline laterals totaling approximately 262.6 miles (the Fayetteville Lateral, located primarily in Arkansas, crossing the Mississippi River and into western Mississippi, and the 96.4 mile Greenville Lateral, located entirely in Mississippi);
- One (1) compressor station on the Greenville Lateral, totaling 10,650 horsepower (hp);
- The 0.8 mile Kosciusko 36" Pipeline and 0.4 mile Kosciusko/Southern Natural 20" Pipeline tie-ins, located at the terminus of the Greenville Lateral in Mississippi;
- Certain piping modifications at the existing Greenville Compressor Station located on the Texas Gas Main Line Pipeline System at Greenville, Mississippi; and
- Ancillary facilities such as interconnects, metering and regulating (M&R) stations, block valves, etc.

The Project is proposed to develop an interstate pipeline transportation system to deliver approximately 841 thousand decatherms per day (mdthd) of natural gas from Southwestern Energy Company's (Southwestern Energy) Fayetteville Shale natural gas production field in Arkansas through the Texas Gas system to several interconnects at Kosciusko, Mississippi.

Per discussions with both Arkansas and Mississippi, natural gas lines are exempt from applying for the construction permit, however, the project must meet state water quality requirements, Federal Energy Regulatory Commission (FERC) requirements, U.S. Army Corps of Engineers (Corps) Section 404 permits, and State 401 certifications. This Erosion and Sediment Control Plan addresses the National Pollution Discharge Elimination System (NPDES) General I Permit Program requirements of the Arkansas Department of Environmental Quality (ADEQ) and Stormwater Pollution Prevention Plan (SWPPP), and FERC erosion control requirements. The contractor will select and implement specific BMPs to meet or exceed the performance requirements outlined in this plan.

1.2 Applicant

Prepared for: Steven J. Law

Company Name: Texas Gas Transmission, LLC
3800 Frederica Street
Address: Owensboro, KY 42304-00008

Telephone: (207) 688-6954

Email: steven.law@bwpmlp.com

1.3 Preparer Information

Prepared by: Ela Whelan, PE and Anne MacDonald, CEG

Company Name: URS Corporation

Address: 111 SW Columbia, Suite 1500
Portland OR 97201

Telephone: 503-948-7268

Fax: 503-222-4292

Email: Ela_Whelan@urscorp.com;
Anne_Macdonald@urscorp.com

1.4 Preparer's Credentials

Ela Whelan is registered as a professional engineer in the State of Oregon.

1.5 Purpose/Objectives of the Erosion Control Sediment Plan (ESCP) and Storm Water Pollution Prevention Plan (SWPPP)

The purpose of this plan is to describe the proposed construction activities and all temporary and permanent erosion and sediment control (TPESC) measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that would be implemented during the proposed construction project. The objectives of the ESCP and SWPPP are to:

1. Implement Best Management Practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent storm water contamination and water pollution from construction activity.
2. Prevent violations of surface water quality, ground water quality, or sediment management guidelines in Arkansas.
3. Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water by controlling peak flow rates and volumes of storm water runoff.

1.6 Organization of the ESCP and SWPPP

The ESCP plan was prepared following Environmental Protection Agency (EPA) Sedimentation and Erosion Control Guidelines for Pipeline Projects, Arkansas requirements for a Storm Water Pollution Prevention Plan (SWPPP) for Construction Activities, and FERC Upland Erosion Control, Revegetation and Maintenance Plan (Plan) requirements. This report is divided into seven main sections with several appendices that include storm water related reference materials. The topics presented in the each of the main sections are:

- Section 1 – INTRODUCTION. This section provides a summary description of the project, and the organization of this document.
- Section 2 – SITE DESCRIPTION. This section provides a detailed description of the existing site conditions, proposed construction activities.

- Section 3 – CONSTRUCTION STORMWATER BMPs. This section provides a detailed description of the BMPs to be implemented based on requirements of FERC and ADEQ.
- Section 4 – CONSTRUCTION PHASING AND BMP IMPLEMENTATION. This section provides a description of construction activities and the timing of the BMP implementation in relation to the project schedule.
- Section 5 – STATE ENVIRONMENTAL COMPLIANCE, TRAINING, AND INSPECTION. This section identifies the appropriate contact names (emergency and non-emergency), monitoring personnel, and the onsite temporary erosion and sedimentation control inspector
- Section 6 – SITE INSPECTIONS AND MONITORING. This section provides a description of the inspection and monitoring requirements.
- Section 7 – RECORDKEEPING. This section describes the requirements for documentation of the BMP implementation, site inspections, monitoring results, and changes to the implementation of certain BMPs due to site factors experienced during construction.

2.0 SITE DESCRIPTION

2.1 Pipeline Route

The proposed approximately 262.6-mile long Fayetteville/Greenville Lateral Expansion Pipeline Project (Project) is located in the States of Arkansas and Mississippi , as shown in Figure 1. Figure 2 depicts the Fayetteville Lateral, whose eastern portion is located in Mississippi. Areas affected by construction include agricultural, forested, residential, commercial and industrial land uses. Runoff from the construction site would enter the following streams listed as water quality impaired under the requirements of the federal Clean Water Act, section 303(d):

Cadron Creek – Listed for siltation/turbidity.

Little Red River – Listed for bacteria and unknown parameters.

Overflow Creek – Listed for agriculture and bacteria.

Glaise Creek – Listed for agriculture.

Cache River – Listed for agriculture and siltation/turbidity.

Bayou de View – Listed for agriculture and siltation/turbidity.

Caney Creek – Listed for agriculture.

Big Creek – Listed for agriculture.

2.2 Proposed Construction Site Description

Of the two laterals proposed to be constructed by Texas Gas, one is proposed to be located in Arkansas. The Fayetteville Lateral is approximately 157.8 miles of 36-inch-diameter pipeline beginning in north central Arkansas, traversing east-southeast across Arkansas to and across the Mississippi River near Helena, Arkansas, before continuing an additional 8.4 miles into west central Mississippi where it would tie into Texas Gas' existing mainline system near Lula, Mississippi. See Table 1 and Figure 2.

The pipeline route would traverse steep terrain, uplands, floodplains, forested land, agricultural land, wetlands, rivers, and creeks.

Table 1 Description of Pipeline Facilities in Arkansas

Pipeline Type	Diameter (inches)	Milepost From	Milepost To	Length (miles)	County
Steel Natural Gas Pipeline	36	0	7.8	7.8	Conway County
	36	7.8	29.2	21.4	Faulkner County
	36	29.2	41.1	11.9	White County
	36	41.1	41.6	0.5	Cleburne County
	36	41.6	42.5	0.9	White County
	36	42.5	44.2	1.7	Cleburne County
	36	44.2	69.6	25.4	White County
	36	69.6	108.0	38.4	Woodruff County
	36	108.0	116.5	8.5	St. Francis County
	36	116.5	139.2	22.7	Lee County
	36	139.2	157.7	18.5	Phillips County
Total Length				**157.8**	

2.3 Aboveground Facilities

The aboveground facilities would consist of a new compressor station, 29 Metering and Regulating (M&R) stations, 30 interconnects (tie-ins), 21 Mainline Valves (MLVs), and 3 launcher and receiver assemblies. The Fayetteville Lateral facilities within Arkansas will include 18 of the M&Rs and 10 of the MLVs, along with two launchers and one receiver.

Proposed aboveground facilities will be built and installed within the permanent pipeline right-of-way and will not require additional space. A summary of aboveground facility land requirements is provided in Table 2. Site plans for the Attala County compressor station, depicting the locations of the proposed facility modifications, will be provided in the Mapping Supplement to the FERC filing (Volume II, submitted separately as Non-Internet Public Information).

Table 2 Land Requirements for Aboveground Facilities in Arkansas

County	Project Component	Milepost	Temporary Land Use (acres)	Permanent Land Use (acres)
Fayetteville Lateral				
Conway	Launcher	0.0	0.1	0.1
Conway	MLV No. 1	0.0	0.1	0.1

County	Project Component	Milepost	Temporary Land Use (acres)	Permanent Land Use (acres)
Conway	Southwestern Energy M&R Station	0.0	1.4	1.4
Conway	Southwestern Energy M&R Station	3.1	1.0	1.0
Conway	Southwestern Energy M&R Station	6.7	0.9	0.9
Conway		**Subtotal:**	**3.5**	**3.5**
Faulkner	Southwestern Energy M&R Station	9.4	0.9	0.9
Faulkner	Southwestern Energy M&R Station	13.4	1.6	1.6
Faulkner	Southwestern Energy M&R Station	16.5	0.9	0.9
Faulkner	Southwestern Energy M&R Station	19.6	1.1	1.1
Faulkner	Southwestern Energy M&R Station	23.7	0.9	0.9
Faulkner	Southwestern Energy M&R Station	28.4	0.9	0.9
Faulkner	MLV No. 2	19.6	0.1	0.1
Faulkner		**Subtotal:**	**6.4**	**6.4**
White	Southwestern Energy M&R Station	32.8	0.9	0.9
White	Southwestern Energy M&R Station	35.9	0.9	0.9
White	MLV No. 3	38.9	0.1	0.1
White	Southwestern Energy M&R Station	39.2	1.1	1.1
White	Centerpoint M&R Station	45.9	0.9	0.9
White	Southwestern Energy M&R Station	50.4	0.9	0.9
White	MLV No. 4	54.2	0.1	0.1
White	Southwestern Energy M&R Station	55.5	1.0	1.0
White	NGPL M&R Station	64.1	1.2	1.2
White	Mississippi River Transmission M&R Station (twin M&R facilities)	65.6	2.3	2.3
White	Texas Eastern Transmission M&R Station	65.9	0.9	0.9
White	Launcher/Receiver	66.0	0.3	0.3
White	MLV No. 5	66.0	0.1	0.1
White		**Subtotal:**	**10.7**	**10.7**
Woodruff	MLV No. 6	85.4	0.1	0.1
Woodruff	MLV No. 7	105.2	0.1	0.1
Woodruff		**Subtotal:**	**0.2**	**0.2**
Lee	MLV No. 8	120.2	0.1	0.1
Lee	MLV No. 9	136.0	0.1	0.1
Lee		**Subtotal:**	**0.2**	**0.2**
Phillips	MLV No. 10	153.2	0.1	0.1
Phillips		**Subtotal:**	**0.1**	**0.1**
		Total	**12.1**	**12.1**

Note: The acreage numbers in this table have been rounded for presentation purposes. As a result, the values may not reflect the exact sum of the addends in all cases.

2.4 Location Maps, Detailed Route Maps, and Plot/Site Plans

Location of the proposed pipeline is shown on Figure 1 with more detail on the Fayetteville Lateral in Figure 2.

2.5 Disturbance Area Summary

To the greatest extent possible, while providing safe distance between pipelines, rights-of-way will parallel and overlap the existing Texas Gas mainline right-of-way or follow other existing utility corridors where construction constraints require installation outside the mainline right-of-way. In areas where the Project is co-located with existing utility right-of-ways, Texas Gas proposes to utilize 10 feet of the existing right-of-way during construction for trench spoil placement.

Table 3 summarizes the land requirements associated with the project including access roads.

The construction right-of-way (ROW) would be 100 ft. wide in upland areas. The construction ROW would be reduced to 75 ft. in wetlands crossings. The 100 ft. wide crossing in uplands is proposed to be supplemented by a request for an additional 20 feet of construction corridor width where full-width topsoil segregation will be required in areas of rice production. Although no additional temporary workspace is requested for topsoil segregation at this time, it is likely that Texas Gas will request temporary workspace for topsoil segregation for several locations along the pipeline by the time of construction.

Table 3 Land Requirements for Pipeline Segments in Arkansas

Pipeline Type	County	Length (miles)	Construction Right of Way (acres)	New Operational Right of Way (acres)
Steel Natural Gas Pipeline	Conway County	7.8	112.9	47.0
	Faulkner County	21.4	318.4	129.4
	White County	38.1	564.4	230.3
	Cleburne County	2.3	31.8	13.9
	Woodruff County	38.4	565.4	232.6
	St. Francis County	8.6	134.0	52.0
	Lee County	22.7	312.4	137.5
	Phillips County	18.5	283.1	112.2
Total		**157.8**	**2,322.4**	**954.9**

Note: The acreages for the construction right-of-way include additional temporary workspaces. The values in this table have been rounded for presentation purposes. As a result, the totals may not reflect the exact sum of the addends in all cases.

The typical overland pipeline construction will require a 65-foot working side and 35-foot trench spoil side. Where the Project will be co-located adjacent to an existing pipeline, the construction corridor will be no closer than 15 feet from the existing pipeline to keep construction equipment off the operation right-of-way.

2.6 Temporary Extra Work Space

Additional temporary workspace areas will be required for construction activities requiring additional area outside the construction corridor. These construction activities include but are not limited to:

- Road and railroad crossings;
- Wetland and waterbody crossings;
- Foreign pipeline crossings and interconnects;
- Foreign utility crossings;
- Topsoil segregation;
- Areas with steep side slopes or other difficult terrain;
- Pipeline access and truck turnarounds;
- Fabrication and staging areas;
- Hydrostatic test water withdrawal and discharge locations;
- Horizontal directional drill (HDD) sites; and
- Rock disposal sites.

Extra work space may also be required where special construction techniques would be used. The size and configuration of each extra workspace is unique and dependent upon the existing conditions (e.g., available or accessible space, the presence of buildings and other structures, crossing angle, crossing depth, length of crossing, terrain, the presence of trees or sensitive habitat, etc.) at each work location. The requirements for extra work spaces would be determined during the design of the pipeline ROW. Extra work spaces are included in the total acreage of area to be affected by construction, identified in Table 3. In most areas with steep side slopes, Texas Gas will construct the pipeline by expanding the workspace. The dimensions of these additional temporary workspaces will vary, depending upon the degree and length of the slope; these areas are summarized below and included in acreages listed in Table 3.

2.7 Operational Right-of-Way

Texas Gas proposes an operational right-of-way totaling 50 feet to maintain the mainline system. Texas Gas will typically maintain a right-of-way of 25 feet on either side of the pipeline in areas not co-located with another pipeline. MLVs will be contained within the operational right-of-way. Additional construction right of way is expected to be required for areas with rugged terrain, as described in Table 4. Table 4 also includes the temporary extra work space associated with rugged terrain crossings; this temporary area is included in Table 3 as well.

Table 4 Land Requirements for Rugged Terrain Crossings

County	Milepost Range	Approximate Length (feet)	Additional Construction Right-of-Way Width	Additional Temporary Workspace Acreage
Conway	4.3 to 4.8	2500	25	1.4
Conway	7.1 to 7.3	950	25	0.5
Celburne	41.7 to 41.7	300	50	0.3
Celburne	42.6 to 43.1	2350	25	1.3
White	44.1 to 44.2	450	25	0.3
White	44.3 to 44.4	525	25	0.3
White	56.0 to 56.8	850	25	0.5
White	59.8 to 60.3	2340	25	1.3
White	61.4 to 61.6	1150	25	0.7
White	62.2 to 62.3	430	25	0.2
White	62.4 to 62.4	100	25	0.1
White	62.4 to 62.5	300	50	0.3
White	62.5 to 62.8	1625	25	0.9
White	63.1 to 63.2	250	50	0.3
White	63.2 to 63.2	200	25	0.1
White	63.2 to 63.3	600	25	0.3

2.8 Access Roads

To the extent possible, Texas Gas will use existing access roads. Field investigation indicates that the availability of previously used roads and other existing roads is sufficient to preclude the need to construct any new roads. Maintenance may be required on some of the existing roads prior to hauling construction equipment and materials.

2.9 Pipe Storage and Contractor Yards

Texas Gas will use pipe storage yards to stockpile pipe, fabricate and concrete-coat joints, as necessary. Texas Gas will use contractor yards during construction to stage construction operations, store materials, park equipment, and setup temporary construction offices.

2.10 Soils

Pipeline construction, above ground facilities, and temporary workspaces would come into contact with a number of soil series. Soils information was provided by the National Resource Conservation Service (NRCS). Soil interpretations at the broadest scale in the United States are based on Major Land Resource Areas (MLRAs). MLRAs are geographically associated land resource units, usually encompassing several thousand acres, characterized by a particular pattern of soils, geology, climate, water resources, and land use (USDA, 2005).

In Arkansas, the Fayetteville Lateral will cross three MLRAs recognized by the NRCS: the Arkansas Valley and Ridges (MLRA 118); the Southern Mississippi Valley Alluvium (MLRA 131); and the Southern Mississippi Valley Silty Uplands (MLRA 134).

Arkansas Valley and Ridges (MLRA 118):

About 57 percent of this MLRA is forested. About one-third of the wooded area is federally owned, and most of the remaining two-thirds of the wooded area consist of farm woodlots. Twenty-six percent of the MLRA is grazed land, 11 percent is cropland, and 6 percent is used for miscellaneous purposes. Most of the cropland is in the less sloping valleys areas, but some is on flat mountain tops. (USDA NRCS, 2005).

Southern Mississippi Valley Alluvium (MLRA 131)

Most of this area is in agricultural production. About 55 percent is cropland, 35 percent woodland, 7 percent pastureland, and about 3 percent is used for miscellaneous purposes. Cropland makes up about three-fourths of the acreage in the north and less than one-fourth in the south. The proportion of forest land varies inversely with that of planted crops; the proportion of pasture is a little higher in the south. Controlling surface water and artificially draining the wet soils are major concerns for cropland management. (USDA NRCS, 1981).

Southern Mississippi Valley Silty Uplands (MLRA 134)

Most of this area is in farms; a small acreage is federally owned. About 35 percent of the area is cropland, but the proportion varies greatly from county to county, depending on the soils and the topography. About 16 percent of the area is in pasture or hay. About 46 percent is in a forest of mixed pine and hardwoods. About 3 percent of the area is used for urban development or other purposes. There is an increase in urban development near the metropolitan areas. (USDA NRCS, 1981).

Soil resource issues identified on the Fayetteville Lateral route include:

a) Prime Farmland

Approximately 49 percent of soil along the proposed Fayetteville Lateral is classified as Prime Farmland. Another 19 percent is classified as Prime Farmland, when adequately drained. An additional 8 percent is classified as Farmland of Statewide Importance. A total of 76 percent of soil along the proposed route is considered agriculturally important (i.e., Prime Farmland or Farmland of Statewide Importance).

b) Hydric Soils

Approximately 32 percent of the soil along the Fayetteville Lateral is considered predominantly hydric. Hydric soils are more common in the eastern counties of the Fayetteville Lateral compared to the western counties.

c) Erosion Potential

Soils with a high percentage of silt and fine sand, as well as those that occur at steeper slopes along the Fayetteville Lateral are more susceptible to erosion than those with a high clay content and in relatively flat areas. Approximately 53 percent of the soils along the Fayetteville Lateral are classified as highly erodible or potentially highly erodible. The erosion potential of soil mapping units crossed by the Fayetteville Lateral is identified in Table 5. In nearly all cases, soil erodibility is correlated with land

slope, as soils are almost uniformly fine-grained silt or fine sandy loams: land slopes greater than 1 to 3 percent usually result in highly or potentially highly erodible soils.

d) Shrink-Swell Potential

Soils with a high shrink-swell potential underlie about 8 percent of the Fayetteville Lateral, while an additional 16 percent has a moderate shrink-swell potential.

Table 5 Fayetteville Lateral Soil Map Units and Description

County	Soil Series	Map Unit Description	Hydric	Erodibility	Drainage	Topographic Setting	Slope %
White	Allen	Allen fine sandy loam, 3 to 8 percent slopes	No	Potentially highly erodible land	Well drained	hillside	5.0
Phillips, Woodruff	Amagon	Amagon silt loam, 0 to 1 percent slopes	Yes	Not highly erodible land	Poorly drained	stream terrace	0.5
Faulkner	Amy	Amy soils, frequently flooded	Yes	Not highly erodible land	Poorly drained	flood plain	0.5
Woodruff	Askew	Askew fine sandy loam, 1 to 3 percent slopes	Yes	Not highly erodible land		depressions	0.0
White	Barling	Barling silt loam, occasionally flooded	No	Not highly erodible land	Moderately well drained	flood plain	0.5
Woodruff	Bulltown	Bulltown loamy fine sand, 1 to 8 percent slopes	Yes	Not highly erodible land		depressions	0.0
Lee, While, Woodruff	Calhoun	Calhoun silt loam	Yes	Not highly erodible land	Poorly drained	stream terrace	0.5
Lee, St. Francis, White, Woodruff	Calloway	Calloway silt loam, 0 to 1 percent slopes	No	Not highly erodible land	Somewhat poorly drained	stream terrace	0.5
Lee, Phillips, St. Francis, Woodruff		Calloway silt loam, 1 to 3 percent slopes	No	Potentially highly erodible land	Somewhat poorly drained	terraces	2.0
Phillips	Commerce	Commerce silt loam	No	Not highly erodible land	Somewhat poorly drained	natural levee	0.5
Phillips	Convent	Convent silt loam	No	Not highly erodible land	Somewhat poorly drained	natural levee	0.5
Phillips	Crevasse	Crevasse soils, frequently flooded	No	Not highly erodible land	Excessively drained	flood plain	1.0
St. Francis	Crowley	Crowley silt loam, 0 to 1 percent slopes	No	Not highly erodible land	Somewhat poorly drained	stream terrace	0.5
St. Francis		Crowley silt loam, 1 to 3 percent slopes	No	Potentially highly erodible land	Somewhat poorly drained	stream terrace	2.0

County	Soil Series	Map Unit Description	Hydric	Erodibility	Drainage	Topographic Setting	Slope %
Woodruff	Dubbs	Dubbs silt loam, 0 to 1 percent slopes	No	Not highly erodible land	Well drained	natural levees, stream terraces	0.5
Woodruff		Dubbs silt loam, 1 to 3 percent slopes	Yes	Potentially highly erodible land		depressions	0.0
Woodruff		Dubbs silt loam, 3 to 8 percent slopes	No	Potentially highly erodible land	Well drained	natural levees, stream terraces	5.0
Phillips, Woodruff	Dundee	Dundee silt loam, 0 to 1 percent slopes	No	Not highly erodible land	Somewhat poorly drained	natural levee	0.5
White	Enders	Enders fine sandy loam, 3 to 8 percent slopes	Yes	Not highly erodible land		depressions	0.0
Faulkner		Enders gravelly fine sandy loam, 3 to 8 percent slopes	No	Highly erodible land	Well drained	ridge	5.0
Conway		Enders gravelly fine sandy loam, 8 to 12 percent slopes	No	Potentially highly erodible land	Well drained	hill	5.0
White		Enders stony fine sandy loam, 3 to 12 percent slopes	No	Highly erodible land	Well drained	ridge	10.0
Cleburne		Enders-Steprock complex, 8 to 20 percent slopes	No	Highly erodible land	Well drained	hillside	8.0
White		Enders-Steprock Complex, 12 to 30 percent slopes	No	Highly erodible land	Well drained	hillside	21.0
Cleburne		Enders-Steprock complex, 20 to 40 percent slopes	No	Highly erodible land	Well drained	hillsides or mountainsides, ridges	30.0
Phillips	Falaya	Falaya silt loam	No	Not highly erodible land	Somewhat poorly drained	flood plain	0.5
Lee		Falaya silt loam, occasionally flooded	No	Not highly erodible land	Somewhat poorly drained	drainageway	0.5
Phillips	Fluvaquents	Fluvaquents, frequently flooded	Unranked	Not highly erodible land			0.0
Phillips	Foley	Foley silt loam	Yes	Not highly erodible land	Poorly drained	stream terrace	0.5
Lee, Woodruff		Foley-Bonn complex, 0 to 1 percent slopes	Yes	Not highly erodible land	Poorly drained	stream terrace	0.5
Lee, Phillips, Woodruff	Grenada	Grenada silt loam, 1 to 3 percent slopes	Yes	Potentially highly erodible land		depressions	0.0
Woodruff		Grenada silt loam, 3 to 8 percent slopes, eroded	No	Highly erodible land	Moderately well drained	terraces	5.0
Woodruff	Grubbs	Grubbs silt loam, 1 to 3 percent slopes	Yes	Potentially highly erodible land		depressions	0.0
Woodruff		Grubbs silt loam, 3 to 8 percent slopes, eroded	No	Highly erodible land	Moderately well drained	terraces, escarpments	5.0
White	Guthrie	Guthrie silt loam, 0 to 1 percent slopes	Yes	Not highly erodible land	Poorly drained	depression	0.5

County	Soil Series	Map Unit Description	Hydric	Erodibility	Drainage	Topographic Setting	Slope %
Lee, Phillips, St. Francis, Woodruff	Henry	Henry silt loam	Yes	Not highly erodible land	Poorly drained	terraces	0.5
Woodruff	Hillemann	Hillemann silt loam, 0 to 1 percent slopes	No	Not highly erodible land	Somewhat poorly drained	terraces	0.5
Woodruff	Jackport	Jackport silty clay loam, 0 to 1 percent slopes	Yes	Not highly erodible land	Poorly drained	terraces	0.5
Lee	Jeanerette	Jeanerette silt loam	No	Not highly erodible land	Somewhat poorly drained	stream terrace	0.5
Woodruff	Kobel	Kobel silty clay loam, 0 to 1 percent slopes, frequently flooded	Yes	Not highly erodible land	Poorly drained	flood plains, backswamps	0.5
Woodruff		Kobel silty clay loam, 0 to 1 percent slopes, ponded	Yes	Not highly erodible land	Very poorly drained	oxbows, backswamps	0.5
White		Kobel silty clan, frequently flooded	Yes	Not highly erodible land	Poorly drained	backswamp	0.5
Woodruff	Lafe	Lafe silt loam, 0 to 1 percent slopes	No	Highly erodible land	Somewhat poorly drained	terraces	0.5
Lee	Lagrange	LaGrange fine sandy loam	Yes	Not highly erodible land	Poorly drained	alluvial flat	0.5
Conway, Faulkner, White	Leadvale	Leadvale silt loam, 1 to 3 percent slopes	No	Potentially highly erodible land	Moderately well drained	valley floor	2.0
Cleburne, Conway, White		Leadvale silt loam, 3 to 8 percent slopes	No	Highly erodible land	Moderately well drained	valley floor	5.0
Faulkner	Linker	Linker fine sandy loam, 1 to 3 percent slopes	No	Potentially highly erodible land	Well drained	hillside	5.0
Cleburne, Conway, Faulkner, While		Linker fine sandy loam, 3 to 8 percent slopes	No	Highly erodible land	Well drained	ridge	5.0
Conway, Faulkner, White		Linker fine sandy loam, 8 to 12 percent slopes	No	Highly erodible land	Well drained	mountain slope	10.0
Cleburne, While		Linker gravelly fine sandy loam, 3 to 8 percent slopes	No	Potentially highly erodible land	Well drained	hillsides, benches, ridges	5.0
Cleburne		Linker-Mountainburg complex, 3 to 8 percent slopes	No	Potentially highly erodible land	Well drained	hillsides, benches, ridges, ledges	5.0
Cleburne		Linker-Mountainburg complex, 8 to 20 percent slopes	No	Highly erodible land	Well drained	benches, hillsides, ledges, ridges	10.0

County	Soil Series	Map Unit Description	Hydric	Erodibility	Drainage	Topographic Setting	Slope %
Lee, Phillips, St. Francis, White	Loring	Loring silt loam, 1 to 3 percent slopes	No	Potentially highly erodible land	Moderately well drained	loess hill	2.0
St. Francis		Loring silt loam, 1 to 3 percent slopes, eroded	No	Potentially highly erodible land	Moderately well drained	terrace	2.0
White		Loring silt loam, 3 to 8 percent slopes	No	Highly erodible land	Moderately well drained	terrace	5.0
St. Francis, Lee		Loring silt loam, 3 to 8 percent slopes, eroded	No	Highly erodible land	Moderately well drained	loess hill	5.0
Lee	Marvell	Marvell fine sandy loam	No	Not highly erodible land	Well drained	stream terrace	0.5
Woodruff	McCrory	McCrory fine sandy loam, 0 to 1 percent slopes	Yes	Not highly erodible land		depressions	0.0
Lee, Phillips	Memphis	Memphis silt loam, 1 to 3 percent slopes	No	Potentially highly erodible land	Well drained	loess hill	2.0
Phillips		Memphis silt loam, 1 to 3 percent slopes, eroded	No	Potentially highly erodible land	Well drained	loess hill	5.0
Conway, Faulkner	Mountainburg	Mountainburg gravelly fine sandy loam, 3 to 8 percent slopes	No	Highly erodible land	Well drained	ridge	5.0
Faulkner		Mountainburg stony fine sandy loam, 3 to 12 percent slopes	No	Highly erodible land	Well drained	hill	10.0
Conway, Faulkner		Mountainburg gravelly fine sandy loam, 8 to 12 percent slopes	No	Highly erodible land	Well drained	ridge	26.0
Faulkner		Mountainburg very stony fine sandy loam, 8 to 12 percent slopes	No	Highly erodible land	Well drained	ridge	8.0
Conway		Mountainburg stony fine sandy loam, 12 to 40 percent slopes	No	Highly erodible land	Well drained	bench, hill, ledge	26.0
Faulkner		Mountainburg very stony fine sandy loam, 12 to 40 percent slopes	No	Highly erodible land	Well drained	hill	10.0
Cleburne, White	Nauvoo	Nauvoo fine sandy loam, 3 to 8 percent slopes	No	Potentially highly erodible land	Well drained	ridge	5.0
Phillips	Newellton	Newellton silty clay	No	Not highly erodible land	Somewhat poorly drained	slackwater	0.5
Phillips		Newellton silty clay, gently undulating	No	Not highly erodible land	Somewhat poorly drained	slackwater	1.0
Phillips		Newellton soils, frequently flooded	No	Not highly erodible land	Somewhat poorly drained	slackwater	0.5

County	Soil Series	Map Unit Description	Hydric	Erodibility	Drainage	Topographic Setting	Slope %
White	Oaklimeter	Oaklimeter silt loam, frequently flooded	No	Not highly erodible land	Moderately well drained	flood plain	0.5
Faulkner	Ouachita	Ouachita silt loam, occasionally flooded	No	Not highly erodible land	Well drained	flood plain, natural levee	0.5
Woodruff	Overcup	Overcup silt loam, 0 to 1 percent slopes	Yes	Not highly erodible land	Poorly drained	terraces	0.5
Woodruff	Patterson	Patterson fine sandy loam, 0 to 2 percent slopes	No	Not highly erodible land	Somewhat poorly drained	terraces, depressions	0.5
White	Rexor	Rexor silt loam, occasionally flooded	No	Not highly erodible land	Well drained	flood plain	0.5
Phillips	Robinsonville	Robinsonville fine sandy loam	No	Not highly erodible land	Well drained	natural levee	0.5
White		Robinsonville fine sandy loam, frequently flooded	No	Not highly erodible land	Well drained	flood plain	0.5
Phillips	Sharkey	Sharkey silty clay	Yes	Not highly erodible land	Poorly drained	backswamp	0.5
White	Sidon	Sidon loam, 1 to 3 percent slopes	No	Potentially highly erodible land	Moderately well drained	ridge	2.0
Cleburne, White		Sidon fine sandy loam, 3 to 8 percent slopes	No	Highly erodible land	Moderately well drained	ridge	5.0
Faulkner	Spadra	Spadra fine sandy loam, 1 to 3 percent slopes	No	Not highly erodible land	Well drained	stream terrace	2.0
White	Steprock	Steprock-Enders Complex, 12 to 30 percent slopes	No	Highly erodible land	Well drained	hillslope	21.0
White		Steprock-Linker Complex, 3 to 8 percent slopes	No	Potentially highly erodible land	Well drained	hillslope	5.0
White		Steprock-Mountainburg Complex, 8 to 12 percent slopes	No	Highly erodible land	Well drained	hillside	10.0
Cleburne		Steprock-Mountainburg complex, 8 to 20 percent slopes	No	Highly erodible land	Well drained	hillsides, ridges	14.0
Cleburne		Steprock-Mountainburg-Rock outcrop complex, 40 to 60 percent slopes	No	Highly erodible land	Well drained	hillsides or mountainsides, ridges	50.0
Cleburne		Steprock-Nella-Mountainburg complex, 20 to 40 percent slopes	No	Highly erodible land	Well drained	hillsides or mountainsides, ridges	30.0
Conway, Faulkner, White	Taft	Taft silt loam, 0 to 2 percent slopes	No	Not highly erodible land	Somewhat poorly drained	depression	1.0
Woodruff	Taylorbay	Taylorbay silt loam, 0 to 3 percent slopes, frequently flooded	Yes	Not highly erodible land	Well drained	flood plains	1.0

County	Soil Series	Map Unit Description	Hydric	Erodibility	Drainage	Topographic Setting	Slope %
Woodruff	Teksob	Teksob loam, 0 to 1 percent slopes	No	Not highly erodible land	Well drained	terraces	0.5
Woodruff		Teksob loam, 1 to 3 percent slopes	No	Not highly erodible land	Well drained	terraces	2.0
Woodruff		Teksob loam, 3 to 8 percent slopes	No	Potentially highly erodible land	Well drained	terraces	5.0
Woodruff	Tichnor	Tichnor silt loam, 0 to 1 percent slopes, frequently flooded	Yes	Not highly erodible land	Poorly drained	flood plains	0.5
Woodruff	Tipp	Tipp silty clay loam, 0 to 3 percent slopes, frequently flooded	Yes	Not highly erodible land	Well drained	flood plains	1.0
Woodruff	Tuckerman	Tuckerman loam, 0 to 1 percent slopes, frequently flooded	Yes	Not highly erodible land	Poorly drained	flood plains, stream terraces	0.5
Woodruff	Tuckerman	Tuckerman silty clay loam, 0 to 1 percent slopes, frequently flooded	Yes	Not highly erodible land	Poorly drained	flood plains, stream terraces	0.5
Phillips	Tunica	Tunica silty clay	No	Not highly erodible land	Poorly drained	backswamp	0.5
Woodruff	Wiville	Wiville fine sandy loam, 0 to 1 percent slopes	No	Not highly erodible land	Well drained	dunes	0.5
Woodruff		Wiville fine sandy loam, 1 to 3 percent slopes	No	Not highly erodible land	Well drained	dunes	2.0
Woodruff	Yancopin	Yancopin silty clay loam, 0 to 3 percent slopes, frequently flooded	No	Not highly erodible land	Somewhat poorly drained	flood plains	1.0
St. Francis	Zachary	Zachary silt loam	Yes	Not highly erodible land	Poorly drained	flood plain	0.5
Lee	Zachary	Zachary soils, frequently flooded	Yes	Not highly erodible land	Poorly drained	flood plain	0.5

Above Ground Facilities

Each of the permanent aboveground facilities on the Fayetteville Lateral is expected to utilize about 0.92 acre and all occur within the mapped pipeline corridor. Soils at each of the aboveground facilities will be considered permanently unavailable for other uses. This includes about 50 acres in use for aboveground facilities.

Ancillary Facilities

Additional temporary workspace (ATWS) will be required at road and railroad crossings, waterbody crossings, and in areas with steep side slopes or other difficult terrain. ATWS will also be required for topsoil segregation, truck turnarounds, hydrotest water withdrawal and discharge locations, crossovers,

tie-ins, staging and fabrication areas, and at foreign utility crossings. Additionally, ATWS will be needed wherever special construction techniques are required.

Impacts to soil at ancillary facilities are considered temporary, and conditions will be restored upon completion of construction.

Upon completion of the Project, the land within the pipe storage and contractor yards will be returned to preconstruction conditions, so no permanent impacts on Prime Farmland or other soil would result from use of the site.

3.0 CONSTRUCTION STORMWATER BMPS

3.1 General Description of Construction Activities

Proposed construction activities include:

- Clearing and grading activities necessary to build the pipeline. Orange construction fencing, or approved equivalent, would be used to define the limits of disturbance.
- Horizontal directional drilling (HDD) underneath selected streams and the Mississippi River.
- Trenching through topsoil in pastures.
- Trenching through wetlands and across smaller waterbodies.
- Improvements to existing access roads.

3.2 ESCP and SWPPP Elements

Implementation of the BMPs identified herein meet erosion control and construction requirements for ADEQ (ESCP) and the Arkansas Storm Water Pollution Prevention Plan (SWPPP). Construction approaches and BMP details expected to be employed during construction are provided in Appendix A. Alternate BMPs would be implemented in the event the BMP(s) listed herein are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the NPDES General I Permit Program issued by ADEQ (Appendix B).

3.2.1 Mark Clearing Limits

To protect adjacent properties and to reduce the area of soil exposed to construction, the limits of construction would be clearly marked before land-disturbing activities begin. Trees that are to be preserved, as well as all sensitive areas and their buffers, should be clearly delineated in the field. In general, natural vegetation and native topsoil should be retained in an undisturbed state to the maximum extent possible. The BMPs relevant to marking the clearing limits that would be applied for this project include:

- Preservation of Existing Vegetation/Bufferstrips

  Clearing would be limited to within the construction easement and only where necessary. Natural vegetation would be protected to the extent possible, particularly on steep slopes.

- Silt Fence

  Silt fencing would be used downslope of construction activities along the length of the pipeline, unless there is dense vegetation that prevents sediment from leaving the site, or other protection is in place. Silt fences made of filter fabric would be buried at the bottom, stretched, and supported by posts.

3.2.2 Establish Construction Access

Construction access or activities occurring on unpaved areas should be minimized. Where access points are necessary, they should be stabilized to minimize the tracking of sediment onto public roads. Street sweeping should be employed to prevent sediment from entering state waters. All wash wastewater should be controlled on site. The specific BMPs related to establishing construction access that would be used on this project include:

- Stabilized Construction Entrance/Exit

  Graveled construction entrances would be used to reduce the amount of sediment tracked onto paved roads by vehicles or equipment. These areas would be shown on the final plans.

3.2.3 Control Flow Rates

In order to protect the properties and waterways downstream of the project site, stormwater discharges from the site would be controlled, using the following methods as applicable:

- Diversion

  Gradient terraces would be used on steep slopes to limit the quantity of concentrated runoff and minimize erosion. Water collected from the terraces would be treated, as necessary, and piped to a stable part of the site for discharge into the drainage way.

- Slope Breakers

  Texas Gas will construct slope breakers across the pipeline construction right-of-way to slow the velocity of runoff and move water off the right-of-way. Temporary slope breakers (e.g., hay bales, silt fence, and earthen berms) will be used during construction, and permanent slope breakers will be installed during final grading. Permanent slope breakers will not be installed on active agricultural lands unless requested by landowners.

- Permanent Trench Breaker

  Trench breakers consisting of sacks of soil or sand, polyurethane foam, or bentonite clay bags will be installed around the pipe in the trench to prevent subsurface channeling of water along the trench. In agricultural lands, trench breakers will be installed to a depth that does not encroach into the typical plow zone. Topsoil will not be used for trench breakers. Permanent trench breakers will be installed on slopes just before backfilling. Trench breakers will also be installed on slopes greater than 5 percent that are adjacent to waterbodies and wetlands.

- Level Spreader

  Level spreaders provide a nonerosive outlet for concentrated runoff by dispersing flow uniformly across a stable slope. Level spreaders should be used prior to concentrated flows entering a buffer zone or vegetative filter area.

Sediment controls, identified in the next section, would be used to control both sediment and runoff from the construction site.

3.2.4 Install Sediment Controls

All stormwater runoff from disturbed areas should pass through an appropriate sediment removal BMP before leaving the construction site or prior to being discharged to an infiltration facility. The specific BMPs to be used for controlling sediment on this project include, as applicable:

- Level Spreader

  See Section 3.2.3.

- Straw Bale Barrier

  Straw bales would be used in two ways: to create a barrier to pond water for treatment prior to discharging from the site; and, as cover to prevent erosion, the bales would be taken apart and spread onto the bare ground. Straw should be weed-free.

- Temporary Sediment Barrier

  Sediment barriers (e.g., silt fences, and staked hay or straw bales) protect surface waters and roadways by controlling the flow of sediment on the construction right-of-way and by preventing the flow of sediment off the construction right-of-way. Texas Gas will install and maintain these devices at the base of slopes adjacent to road crossings, waterbody crossings, and wetlands, as appropriate, and in other areas as necessary, until permanent revegetation measures have been judged successful and the potential for siltation has been minimized.

- Revegetation

  Texas Gas will make every effort to ensure the rapid, successful establishment of vegetation on areas requiring revegetation. Following final grading and cleanup, Texas Gas will condition the construction right-of-way for planting including the preparation of a seedbed and application and incorporation of soil amendments at rates agreed to by the landowner or land management agency, or specified in writing by an appropriate soil conservation authority. Texas Gas will seed areas to be revegetated in accordance with written recommendations for seed mixes, rates, and dates obtained from the appropriate soil conservation authorities or land management agencies.

- Silt Fence

  See Section 3.2.1.

- Detention Pond

  Ponded storm water shall be settled or filtered for sediment removal prior to discharge.

- Materials on Hand

  Quantities of erosion prevention and sediment control materials would be kept on site at all times to be used for emergency situations such as unexpected heavy rains. Materials to be kept on hand include, but are not limited to, clear plastic, weed-free straw bales for mulching, and coconut blankets for lining channels and swales.

3.2.5 Stabilize Soils

Exposed and unworked soils should be stabilized with the application of effective BMPs to prevent erosion throughout the life of the project. The specific BMPs for soil stabilization that should be used on this project include, as applicable:

- Temporary Seeding and Planting and Permanent Seeding

  Seeding reduces erosion by stabilizing exposed soils and would be used on all areas following final grading and testing of pipe. Temporary seeding would be used on areas that would remain unworked for over 30 days. Seeding should be with weed-free, native herbaceous seed mix. See Sections 4.4.5 and 4.4.6 for additional details.

- Topsoiling

  Topsoiling is the practice of stripping and stockpiling existing topsoil and then spreading it in graded areas to encourage future vegetation growth.

- Diversion

  See Section 3.2.3 above.

- Wind Erosion/Dust Control

  Water trucks would be kept accessible to provide dust control as necessary. Covering of materials and dust palliatives would be used as necessary.

All soils should be stabilized at the end of the shift before a holiday or weekend if needed based on weather forecasts.

In general, cut and fill slopes would be stabilized as soon as possible and soil stockpiles would be temporarily covered with plastic sheeting. All stockpiled soils should be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

3.2.6 Protect Slopes

All cut and fill slopes would be designed, constructed, and protected in a manner that minimizes erosion. The following specific BMPs would be used to protect slopes for this project, as applicable:

- Slope Breakers

  See Section 3.2. 3.

- Permanent Trench Breaker

  See Section 3.2.3.

- Temporary Seeding and Planting and Permanent Seeding

  See Section 3.2.5.

- Diversion

  See Section 3.2.3.

- Grassed Waterway

Vegetated lining of ditches or channels would be used to remove sediment from stormwater runoff prior to drainage leaving the construction easement.

- Rock Outlet Protection/Riprap outlet protection

  Installation of riprap type energy dissipators, as necessary.

- Mulching

  Mulching in the form of placing hay, grass, wood chips, straw or synthetic material on the soil would be used as necessary to control runoff on steep slopes.

3.2.7 Protect Drain Inlets

Drain inlets would be protected as applicable with the following:

- Storm Drain Inlet Protection

  Prevent course sediment from entering drainage systems prior to permanent stabilization of the disturbed area. Protect storm drain inlets with hay bales, silt fence, biobags, or other protective measure.

3.2.8 Stabilize Channels and Outlets

Where site runoff is to be conveyed in channels, or discharged to a stream or some other natural drainage point, efforts would be taken to prevent downstream erosion. The specific BMPs for channel and outlet stabilization that would be used on this project include:

- Grassed Waterway

  See Section 3.26.

- Rock Outlet Protection/Riprap outlet protection

  See Section 3.26.

- Mulching

  See Section 3.26.

3.2.9 Control Pollutants

All pollutants, including waste materials and demolition debris, oils, grease, gasoline, solvents, litter, and sanitary waste, that occur onsite should be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures would be taken as applicable to ensure that the site would be kept clean, well organized, and free of debris.

- Good Housekeeping Practices

  Equipment maintenance and repair and area for equipment wash off would be limited to contractor yards or temporary storage yards.

  Waste receptacles would be provided at convenient locations with regularly scheduled collection of the waste.

  Protected storage areas would be provided for chemicals, paints, solvents, fertilizers, and other potentially toxic materials.

Sanitary facilities would be provided and adequately maintained.

- Develop a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan)

  Texas Gas will develop a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) that specifies cleanup procedures in the event of soil contamination from spills or leaks of fuel, lubricants, coolants, or solvents. Texas Gas and its contractors will use the SPCC Plan to prevent and contain, if necessary, accidental spills of any material that may contaminate soils, and to ensure that inadvertent spills of fuels, lubricants, or solvents are contained, cleaned up, and disposed of in an appropriate manner.

  An individual SPCC Plan will be implemented at each aboveground facility that stores oil in excess of the volumes identified in 40 CFR 112 to protect groundwater resources during operation.

- Contaminated Soils Response

  If contaminated or suspect soils (e.g., oil-stained soils) are identified during trenching operations, Texas Gas will be notified and work in the area of the suspected contamination will be halted until the type and extent of the contamination is determined. The response action will be identified based on the type and extent of contamination; the responsible party; and local, state, and federal regulations.

- Groundwater Protection

  Construction, operation, and maintenance of the proposed facilities are not expected to have significant or long-term impacts on groundwater resources. Impacts will be minimized or avoided by implementation of the construction practices outlined in FERC's Plan and Procedures. Texas Gas will develop a Project-specific SPCC Plan for implementation during construction. The SPCC Plan will describe preventive measures such as personnel training, equipment inspection, and refueling procedures to reduce the likelihood of spills. It will also include mitigation measures, such as containment and cleanup, to minimize potential impacts should a spill occur.

  If contaminated soil and/or groundwater are encountered during construction, Texas Gas will notify the affected landowner and will coordinate with the appropriate Federal and state agencies in accordance with applicable notification requirements.

  Texas Gas environmental inspectors have been trained to detect direct and indirect evidence of soil and/or groundwater contamination. Should a contaminated site be identified during construction, Texas Gas would notify the affected landowner and will coordinate with the appropriate Federal and state agencies in accordance with applicable notification requirements.

3.2.10 Maintain BMPs

All temporary and permanent erosion and sediment control BMPs should be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair should be conducted in accordance with each particular BMP's specifications. Visual monitoring of the BMPs would be conducted at least once every calendar week and within 24 hours of any rainfall event that causes a discharge from the site. If the site becomes inactive, and is temporarily stabilized, the inspection frequency would be reduced to once every month. Repairs to BMPs must take place within 24 hours of identifying a deficiency.

All temporary erosion and sediment control BMPs should be removed within 30 days after the final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment should be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation should be permanently stabilized.

3.2.11 Manage the Project

Erosion and sediment control BMPs for this project have been designed based on the following principles:

- Design the project to fit the existing topography, soils, and drainage patterns.
- Minimize the extent and duration of the area exposed.
- Emphasize erosion control rather than sediment control.
- Keep runoff velocities low.
- Retain sediment on site.
- Thoroughly monitor site and maintain all ESC measures.
- Where possible, schedule major earthwork during the dry season.

The project would be managed according to the following key project components:

Phasing of Construction

- The construction project is being phased to the extent practicable in order to prevent soil erosion, and, to the maximum extent possible, the transport of sediment from the site during construction.
- Revegetation of exposed areas and maintenance of that vegetation should be an integral part of the clearing activities during each phase of construction.

Seasonal Work Limitations

- Texas Gas is requesting a variance of FERC's typical construction window (June 1 through September 30 and through November 30 for warmwater fisheries) Texas Gas will coordinate with the appropriate state agencies in seeking approval to perform in-stream work outside of the time window specified in FERC's Procedures. Should they be identified in the future, alternative method variances will be sought from FERC.
- From October 1 through May 31, clearing, grading, and other soil disturbing activities would be minimized and BMPs would be in place to show that silt-laden runoff would be prevented from leaving the site through a combination of the following:
    a. Site conditions including existing vegetative coverage, slope, soil type, and proximity to receiving waters;
    b. Limitations on activities and the extent of disturbed areas; and
    c. Proposed erosion and sediment control measures.
- The following activities are exempt from the seasonal clearing and grading limitations:
    a. Routine maintenance and necessary repair of erosion and sediment control BMPs;

b. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil; and

c. Activities where there is 100 percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

Inspection, Maintenance, and Monitoring

Training would be provided for the Environmental Inspectors in proper field implementation of this ESCP, SWPPP, hazardous materials management, and other environmental impact mitigation measures, see Section 5.0. Training sessions would also be provided for Company field construction management personnel and the contractor's personnel prior to and during the proposed pipeline installation. While this training would focus on ESCP implementation, it would also include instructions on the implementation of other mitigation measures, as appropriate.

- All BMPs should be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections should be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control. This person has the necessary skills to:

  a. Assess the site conditions and construction activities that could impact the quality of stormwater, and

  b. Assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

- The Contractor's Environmental Coordinator should be on-site or on-call at all times.

- Whenever inspection and/or monitoring reveals that the BMPs identified in this ESCP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes should be implemented as soon as possible.

Visual and quantitative monitoring for water quality parameters would be required for this project to meet construction permit requirements, see Section 6.0.

An adequate number of copies of the Construction Drawing Package would be distributed to the Environmental Inspectors and to the contractor's supervisory personnel. If, in spite of the Chief Inspector's oversight, the contractors' performance is unsatisfactory, the terms of the contracts would allow use of a stop work order and cause a contractor to begin remedial work. Additional information on Inspection and Monitoring is presented in Section 6.0.

Maintaining an Updated Construction ESCP and SWPPP

- This ESCP and SWPPP should be retained on-site or within reasonable access to the site.

- The document should be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.

- The ESCP and SWPPP should be modified if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the ESCP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The ESCP should be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the ESCP should be completed within seven (7) days following the inspection.

4.0 CONSTRUCTION PHASING AND BMP IMPLEMENTATION

This section provides a detailed description of the construction that would occur and the erosion control measures that would be implemented during construction. The final ESCP would be developed prior to construction, after a construction contractor has been selected.

4.1 General Approach

Those portions of the proposed pipeline facilities located primarily in upland terrain would employ conventional overland construction techniques for large-diameter pipelines. In the typical pipeline construction scenario, the construction spread (crew) would proceed along the pipeline ROW in one continuous operation. As the spread moves along, construction at any single point along the pipeline, from initial surveying and clearing to backfilling, finish grading, and site restoration, would typically last approximately 6 to 10 weeks. The entire process would be coordinated in such a manner as to minimize the total time an individual tract of land is disturbed and, therefore, exposed to erosion and temporarily precluded from its normal use. To minimize the duration of soil disturbance, Texas Gas will attempt to complete final cleanup and installation of permanent erosion control measures in an area within 20 days after backfilling the trench in that area, weather and soil conditions permitting. In no case will restoration of an area be delayed beyond the next available seeding season. An Environmental Inspector would be provided by the Owner, as described in Section 5.0. The Contractor would provide an Environmental Coordinator to implement conditions of this permit.

4.1.1 Preconstruction Activities

A preconstruction meeting with project construction personnel, including the Contractor's Environmental Coordinator and the Owners Environmental Inspector, would be held to discuss erosion and sediment control measures and construction limits. Prior to construction activities, the project monitoring notebooks and submittal protocol would be prepared that would be in use throughout the duration of the project.

4.1.2 Surveying

The initial step in preparing the ROW for construction would be the civil survey. A civil survey crew would stake the outside limits of the ROW, the centerline location of the pipeline, drainage centerlines and elevations, highway and railroad crossings, and any temporary extra workspace, such as laydown areas (for pipe materials) or at stream crossings. Underground utilities (i.e., cables, conduits, and pipelines) will be located and flagged. Affected landowners will be notified prior to surveying and staking of the proposed route, following applicable state/Federal guidelines.

4.1.3 Marking Clearing Limits

Following surveying, clearing limits would be marked, per Section 3.2.1, prior to clearing of the ROW. Prior to initiating construction and related soil-disturbing activities, appropriate erosion prevention and control measures would be implemented and inspected by the Contractor's Environmental Coordinator and/or the Owner's Environmental Inspector. The Environmental Coordinator, who may have other duties, is responsible for ensuring appropriate erosion prevention measures are in place at all times throughout the pipeline construction. The Environmental Inspector may have other duties in addition to environmental compliance but is responsible for inspections and field documentation, including but not limited to, photographs and field notes, that would occur prior to, during, and following installation of erosion prevention and control measures.

Construction work would not occur without installation of appropriate and approved erosion and sediment control devices and/or facilities.

4.1.4 Clearing and Grading

Large obstacles such as trees, rocks, brush, and logs would be removed from the ROW. Timber would only be removed when absolutely necessary for construction purposes. Timber and other vegetative debris cleared from the ROW may be chipped for use as erosion-control mulch, burned, or otherwise disposed in accordance with applicable state and local regulations and landowner agreements. Burning would be conducted in such a manner as to minimize the fire hazard and prevent heat damage to surrounding vegetation. Fences would be cut and braced along the ROW, and temporary gates would be installed to control livestock and limit public access. The ROW would then be graded where necessary to create a reasonably level working surface to allow safe passage of construction equipment and materials. Conserved topsoil would be stockpiled, separate from excavated subsoil, along one side of the right-of-way, allowing the other side to be used for access, material transport, and pipe assembly. Temporary erosion control measures would be installed at this time, per Section 3.0.

4.1.5 Trenching

To bury the pipeline underground, it would be necessary to excavate a trench. The trench would be excavated with a rotary trenching machine, a rock trencher, a track-mounted backhoe, or similar equipment. Explosives will only be used when necessary in areas where rock substrates are found at depths that interfere with conventional excavation of rock-trenching methods. In active agricultural ground and in residential areas, subsoil would be stockpiled separately from topsoil (or the upper 12 inches of topsoil, if the topsoil is deeper). Generally, the trench will be excavated at least 12 inches wider than the diameter of the pipe. Generally, in upland areas, the trench will be excavated to a sufficient depth to allow a minimum of 3 feet of soil cover between the top of the pipe and the final land surface after backfilling. Excavated soils will be stockpiled along the right-of-way on the side of the trench away from the construction traffic and pipe assembly area.

If bedrock is encountered, Texas Gas will take precautions to minimize the mixing of excavated bedrock with backfill and will replace rock in the trench to a level that is not higher than the original bedrock profile. Where necessary, excess rock will be hauled off site from the right-of-way or, subject to landowner approval and applicable permit conditions, disposed of on the right-of-way.

4.1.6 Stringing

Steel pipe for the pipeline would be procured in 40-foot and 80-foot lengths or joints, protected with an epoxy coating and shipped to strategically located materials storage areas or pipe yards. The individual joints would be transported to the ROW by truck and placed along the excavated trench in a single, continuous line, easily accessible to the construction personnel on the working side of the trench, opposite the spoil side. At river crossings, railroads, and roads, the amount of pipe required to span the crossing would be stockpiled in temporary extra workspaces on one or both sides of the crossing.

4.1.7 Pipe Lowering

The completed section of pipe will be lifted off the temporary supports and lowered into the trench by side-boom tractors. Prior to lowering the pipe, the trench will be inspected to ensure that it is free of rocks and other debris that could damage the pipe or the coating. Before lowering the pipe into the trench, the pipe and trench will be inspected to ensure that the pipe and trench configurations are

compatible. In rocky areas, if the bottom is not smooth, a layer of soil may be placed on the bottom of the trench to protect the pipe.

4.1.8 Padding and Backfilling

After the pipe is lowered into the trench, the trench would be backfilled. Previously excavated materials would be pushed back into the trench using bladed equipment or backhoes. Where the previously excavated material contains large rocks or other materials that could damage the pipe or coating, a padding machine would be used to separate the rock from the backfill. In some instances, clean fill or a protective rock shield coating would be placed around the pipe prior to backfilling. Segregated topsoil, where applicable, would be placed after backfilling the trench with subsoil. Following backfilling, a small crown of material would be left to account for any future soil settling that might occur. Excess soil would be distributed evenly on the ROW in upland areas only, while maintaining existing contours.

4.1.9 Hydrostatic Test and Final Tie In

Following backfilling of the trench, the pipeline would be hydrostatically tested to ensure it is capable of safely operating at the design pressures. The completed pipeline would be tested in multiple segments, including separate tests for each HDD pull section before and after being pulled into the borehole. All test water withdrawals and discharges would be in accordance with applicable permits to be obtained prior to construction, and they would be conducted in a manner to minimize impacts to the source and receiving streams.

Test water will be drawn from various sources and, after testing, will generally be discharged to upland areas or, in the case of surface water sources, back to the source from which it was obtained. Water discharged over land will be directed through containment structures such as hay bale structures and filter bags. The discharge rate will be regulated using valves and energy dissipation devices to prevent erosion, and the discharge will be monitored for residual materials being flushed from the tested pipe. Tie-in locations will be cleaned and restored after hydrostatic testing. No chemicals will be added to the test water during hydrostatic testing or pipeline dewatering. Pipeline dewatering will follow similar procedures.

A Hydrostatic Test Water General Permit application for NPDES discharge will be filed with ADEQ.

4.1.10 Cleanup and Restoration

After a segment of pipeline has been installed, backfilled, and successfully tested, the construction ROW, temporary extra work spaces, and other disturbed areas would be finish graded, and the construction debris would be disposed of properly. Original land contours would be restored to conform to adjacent areas. In agricultural areas, subsoil compacted by construction activities would be disked, and the segregated topsoil would be returned to its original horizon. Permanent erosion and sediment control measures, including silt fencing, diversion terraces, and revegetation, per Section 3.0, would be installed at this time. Private and public property, such as fences, gates, driveways, and roads, disturbed by the pipeline construction will be restored to original or better condition.

Soils imported to agricultural and residential areas will be certified as free of noxious weeds and soil pests, and only weed-free straw or hay will be used to construct sediment control devices or used as mulch applications. Texas Gas will evaluate the presence of noxious weeds in the Project area; consult with appropriate federal, state, and local agencies responsible for the containment of noxious plant material: and incorporate recommended seed mixtures into revegetation plans. Specific procedures

will be developed, as necessary, to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and restoration activities.

4.2 Wetlands Pipeline Construction Techniques

The Pipeline route was selected to minimize impacts to wetlands. Where wetlands cannot be avoided, potential impacts are minimized through the use of special wetland construction procedures. Crossing of delineated wetlands would be in accordance with the FERC procedures[1] and any variances requested herein by Texas Gas, if approved by FERC. Wetlands to be crossed during construction along with proposed crossing techniques, are listed in Appendices D and E.

The construction right-of-way width will be 75 feet in wetlands. Operation of construction equipment in wetlands will be limited to that needed to clear the right-of-way, dig the trench, fabricate the pipe, install the pipe, backfill the trench, and restore the right-of-way. Texas Gas will segregate the topsoil in the trench line up to 1 foot in depth in wetlands where hydrologic conditions permit this practice.

Texas Gas will minimize rutting of hydric soils by limiting access during wet periods, and if necessary, requiring special equipment in wetland areas. Special construction methods such as concrete coating of pipe and other weighting methods will be used, as necessary, to overcome buoyancy hazards during operation of the pipeline.

Segregated topsoil will be placed in the trench following subsoil backfilling. Restoration and monitoring of wetland crossings will be conducted in accordance with FERC's Procedures to help ensure successful wetland revegetation. In accordance with FERC procedures, fuel will not be stored within wetlands.

Construction in saturated wetland areas may involve the "push technique," "pull technique," or "drag section technique." These techniques minimize disturbance by restricting access in sensitive wetlands to equipment, vehicles, and workers needed for actual pipeline installation, and by limiting the number of crossing events.

Passage of the pipeline through forested wetlands has been minimized to the maximum extent practicable through project design and use of HDDs where appropriate and practical. The use of HDDs for a number of waterbody crossings has been included in the project design; they will substantially reduce the total amount of temporary and permanent wetland impacts associated with the Project.

In an effort to reduce permanent impacts to forested wetlands, clearing within forested wetlands will be limited in right-of-way width and the right-of-way will be maintained such that only the minimum width needed to facilitate periodic pipeline surveillance will be centered on the pipeline and up to 10 feet of width may be maintained in an herbaceous state.

Conditions along the construction corridor in areas proposed for conventional open ditch construction will likely dictate the use of either conventional open ditch lay or open ditch push/float lay. Selection of the most appropriate method will depend on site-specific weather conditions, inundation, soil saturation, and soil stability at the time of construction. The conventional open ditch lay method will be the most frequently used technique for installation of the pipeline in wetlands. The push/float lay method will be used in inundated or saturated wetland areas that support this technique. Selection of the push/float

[1] FERC Wetland and Waterbody Construction and Mitigation Procedures, Section V., WATERBODY CROSSINGS

method will be decided during construction by the construction supervisor and the environmental inspector depending on the conditions at the time of construction.

Conventional Lay Method

Soils that support construction equipment will generally be crossed using conventional open ditch construction methods. Conventional open ditch construction is similar to upland construction. In some areas, site-specific conditions may not support construction equipment proposed for conventional open ditch construction; in these cases, construction mats will be used to minimize disturbances to wetland hydrology and maintain soil structure.

Push/Float Method

The push/float method of construction will be used in inundated lowland or saturated wetland areas where the soils and hydrology cannot support conventional pipe laying equipment and where there are sufficient quantities of water to allow for pipe to be floated through the open ditch. In using this method, the pipe trench will be excavated using low-ground-weight equipment, thus limiting the need for grubbing and grading activities over the trench line or, for safety reasons, on the working side of the right-of-way. The coated and weighted pipe will be welded together at a staging area where floats are attached to the pipe. The welded pipe will then be pushed along the water-filled trench until the pipe string is in place. As necessary, "pulling" of the pipe may be required to move the pipeline along the ditch. The floats will then be cut loose, allowing the pipe to sink to the bottom of the trench. The trench will then be backfilled. The push/float construction method minimizes the number of equipment passes, reducing wetland impacts and soil compaction in the lowland areas. The staging areas will be constructed, to the extent necessary, within the construction corridor. If Texas Gas requires additional temporary workspace in wetlands, approval will be requested from FERC prior to use.

Site-Specific Variances

Texas Gas is committed to constructing the Project in accordance with FERC's Plan and Procedures to the maximum extent practical. Texas Gas will request site-specific variances, if necessary, to Section VI.B.1 (location of extra workspaces in wetlands) of the FERC procedures providing a location-specific justification for each requested variance.

4.3 Special Pipeline Construction Techniques

4.3.1 Horizontal Directional Drills

HDD is a process that allows for trenchless construction across an area by pre-drilling a hole well below the depth of a conventional pipeline lay and then pulling the pipeline through the pre-drilled borehole. HDD will be used by Texas Gas at certain locations to avoid direct impacts to sensitive areas, such as waterbodies, and/or to avoid areas with difficult constructability issues.

For most HDD crossings, electric-grid guide wires will be hand-laid across the land surface along the pipeline right-of-way to help guide the drill bit along the predetermined HDD route. In thickly vegetated areas, a swath approximately 2 to 3 feet wide may be cut across the land surface using hand tools to lay these electric-grid guide wires, resulting in minimal ground and vegetation disturbance. No large-diameter trees will be cut to accomplish guide wire installation. Following guide wire installation, a directional drilling rig will be set up and a small-diameter pilot hole will be drilled along a prescribed profile.

Electromagnetic sensors located on the tip of the drill bit will follow an electromagnetic field created by the guide wires to follow the prescribed path. In other instances, bit tip positioning sensors will guide the drill bit. Once the pilot hole is completed, it will be enlarged, using reaming tools to the diameter of the pipe. The reaming tools will be attached to the drill string at the exit point of the pilot hole and then rotated and drawn back to the drilling rig, thus progressively enlarging the pilot hole with each pass. During this process, drilling fluid consisting of bentonite clay and water will be continuously pumped into the hole to remove cuttings and maintain the integrity of the hole. Once the hole has been sufficiently enlarged, a prefabricated segment of pipe will be attached behind the reaming tool on the exit side of the crossing and pulled back through the drill hole toward the drill rig, completing the crossing.

The primary disadvantage of directional drilling is its significantly higher cost. Drilling is sometimes used for some very special environmental reasons or in unusual cases where there is a unique construction need. HDD locations are initially determined without benefit of geotechnical investigations, which generally follow in the design phase. Geotechnical investigations generally confirm the absence of unusual conditions, which are detrimental to drilling (boulders, large cobbles, fractured materials, or karst conditions), and provide guidance to the driller on mud thickness, drill speed, and other operational factors.

Geotechnical investigations for proposed HDD will begin in early June and should be completed by the end of July. Once the geotechnical data is reviewed and analyzed, the results will be used to guide the design of the HDD profiles or determine if the drill is not feasible.

4.3.2 Waterbody Crossings

Numerous water bodies will be crossed during the pipeline construction; many of these are waters of significant resource value (Table 6) or waters that have already impaired water quality and require additional care (Table 7). Construction across waterbodies will be performed to minimize the time that ditches for pipeline crossings of flowing streams and rivers will be left open. The trenching operation will skip the water body crossing, stopping on each side near the high bank. The waterbody section of the pipeline will be bent and fabricated as the work progresses along the right-of-way so that the excavation of the waterbody crossing is only completed immediately prior to pipe installation by the lowering-in crew.

Implementation of FERC's Plan and Procedures, specifically with respect to erosion and sedimentation control, bank stabilization, and bank revegetation, will minimize impacts related to sediment transport into adjacent waterbodies. Additional measures will include:

- All extra work areas shall be located 50 feet away from the water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land.
- Texas Gas will limit the amount of vegetation cleared between the waterbody and the extra work area and minimize the amount of extra work space to the greatest extent possible.
- Texas Gas will continue to consult with state agencies during the permitting process to identify appropriate site-specific mitigation measures.
- Crossings will be aligned as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions allow.
- If the pipeline parallels a waterbody, Texas Gas will attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way.

Construction methods at waterbody crossings will vary with the characteristics of the waterbody encountered and will be performed consistent with permit requirements outlined in right-of-way and permit stipulations.

Normal backfill cover requirements will be met. Compaction of backfill, trench breakers, sandbags, or dry soil may also be used to keep backfill from sloughing in toward the center of the waterbody. All waterbody banks will be restored to the original grade and all foreign objects will be removed from the waterbody. Excavated material not required for backfill will be removed and disposed of at an upland site.

Texas Gas will follow FERC procedures to limit water quality impacts to waterbodies during and following construction. Construction activities will be scheduled so that the pipeline trench is excavated immediately prior to pipe laying activities. In accordance with FERC procedures, the duration of construction will be limited to 24 hours across minor waterbodies (10 feet wide or less) and 48 hours across intermediate waterbodies (between 10 and 100 feet wide).

Table 6 Major and Sensitive Waterbodies [a]

County	Waterbody Name	Approximate Beginning Milepost	Approximate Width at Crossing (feet)	Crossing Method [b]	Sensitive Feature
Faulkner	Cadron Creek	14.0	105	OCM	EXR, NRI, MC
White	Big Creek	46.1	140	HDD	EXR, NRI, MC
	Little Red River	52.3	200	HDD	TFS, MC
	Departee Creek	67.9	34	OCM	ECS (near)
Woodruff	White River	70.3	700	HDD	MC
	Taylor Bay	73.4	215	HDD	MC
	Cache River	82.4	140	HDD	EXR, MC
	Bayou De View	96.0	250	HDD	NRI, MC
	Long Lake Bayou	153.0	210	OCM	MC
	Tributary to Long Lake Bayou	154.6	500	HDD	MC
Phillips-Coahoma	Mississippi River	157.3	4,000	HDD	MC

[a]Sensitive Features include those that are listed as Major Crossings (MC) (greater than 100 feet wide at crossing); are on the Nationwide Rivers Inventory (NRI) (NPS, 2004); are state-designated extraordinary resources (EXR), ecologically sensitive (ECS), are a trout fishery stream (TFS) (APCEC, 2006); and/or do not currently support designated uses (see Table 7 below).

[b]HDD = horizontal directional drill, OCM = open cut method (includes both conventional [i.e., without work area isolation] and variations [with work area isolation] on conventional methods)

Table 7 Impaired Waterbodies Crossed by the Proposed Pipeline Route

County	Approximate Milepost	Waterbody Name	Crossing Type [a]	Cause [b]
Faulkner	14.0	Cadron Creek	OCM	Siltation/Turbidity
White	52.3	Little Red River	HDD	Unknown, Bacteria
White	61.8	Overflow Creek	OCM	Agriculture, Bacteria
White	66.6	Glaise Creek	OCM	Agriculture
Woodruff	82.4	Cache River	HDD	Agriculture, Siltation/Turbidity
Woodruff	96.0	Bayou De View	HDD	Agriculture, Siltation/Turbidity
Woodruff	100.1	Caney Creek	OCM	Agriculture
St. Francis	111.6	Big Creek	OCM	Agriculture

[a] HDD = horizontal directional drill, OCM = open cut method (includes both conventional [i.e., without work area isolation] and variations [with work area isolation] on conventional methods)

[b] U.S. Environmental Protection Agency. 2004. Review of Arkansas' 2004 Section 303(d) List. http://www.epa.gov/□aterbod/6wq/npdes/tmdl/2006/waterbod/rod_final.pdf

Specific waterbody crossing construction methods are described below. Texas Gas will follow FERC's Plan and Procedures when constructing across waterbodies and restoring the ecological functions and values of the water resources and adjacent floodplain habitats to the extent practicable. HDD techniques will be used to avoid disturbance to streambed and banks where suitable. Where HDD techniques are not employed, the streambed and banks will be restored to pre-construction contours or to a stable angle of repose. To support restoration of ecological functions and values of the waterbody, streambank stabilization and streambed recontouring will be designed to match pre-construction conditions of channel conveyance over a range of flows from baseflow to bankfull flow. Because of the expected generally erodible streambanks within the project alignment, native riparian woody vegetation will be used to provide streambank stability, unless not consistent with adjacent streambank vegetation. Bioengineering techniques (e.g., live staking, wattles) may be employed to provide suitable short- and intermediate-term stability to disturbed streambanks. If necessary, rip-rap will be used to supplement this vegetation (particularly below low-water elevations). A summary description of the HDD method and four variants of the open cut method are provided below.

Horizontal Directional Drill Method

The HDD method has become a more common crossing technique for large streams and those with particularly sensitive resources associated with the stream. A primary advantage to using HDD is that it avoids disturbance of the streambed, stream banks, and upland in the immediate vicinity of the crossing. Hence, the need for re-contouring approaches and stream banks is avoided, as are the challenges of re-establishing vegetation adjacent to these features. A disadvantage of the HDD method in certain waterbody crossing conditions is the possibility of "frac-outs," when the drilling mud under pressure in the "tunnel" being created under a waterbody finds a fracture or weak area and the drilling fluids rise and escape into the waterbody.

Texas Gas presently proposes to install the pipeline using the HDD method at 5 locations on the Fayetteville Lateral, including all major (>100-ft wide) water crossings in Arkansas except Long Lake Bayou. Drilling equipment and materials will be deployed only in approved workspace. Drilling mud containment and disposal will be in accordance with applicable permit requirements.

Conventional Open-Cut Method

Conventional open cut crossings involve trench excavation within the stream channel with no containment or redirection of water flow, should water be present. A backhoe, clam dredge, dragline, or similar equipment will be used for trench excavation. The following stipulations will apply to conventional open cut waterbody crossings:

- Material excavated from the trench will be stockpiled above the stream banks;
- Excavated trench material will generally be used as backfill unless Federal or state permits specify otherwise;
- Any excess material will be removed from the waterbody; and
- The streambed will be returned to its pre-construction contours to the extent practicable.

Where feasible, pipe segments may be welded together and temporarily strung above and across the waterbody feature until the pipeline is installed. The pipeline will not obstruct the highest expected flow of the waterbody. If required, the pipe used for waterbody crossings and in floodplains will be weighted to prevent flotation. The pipe will be welded together in the staging areas and then carried or floated along the right-of-way. After the pipe is lowered into the trench, previously excavated material will be used as backfill, unless precluded by permit requirements.

The pipeline will be installed to provide a minimum of 5 feet of cover from the waterbody bottom to the top of pipe or placed at sufficient depth under the streambed (below the anticipated scour depth) to maintain the standard 5-foot minimum cover requirement. The pipeline trench will be excavated to a bottom width of at least 12 inches greater than the proposed outside diameter or to a greater width to allow proper backfill beneath and along the side of the pipeline. Trench spoil will be placed on the bank above the high water mark for use as backfill.

Flow, if present at the time of construction, will be maintained at all waterbody crossings and no alteration of the stream's capacity is anticipated as a result of pipeline construction. Crossings will be perpendicular to water flow, to the extent practicable.

The construction procedures described above will ensure that potential impacts at waterbody crossings are minimized or avoided. To limit the time required for in-stream activities, the construction right of way will be prepared on either side of the waterbody prior to in-stream construction. Where banks are wooded, trees will be preserved where possible. In accordance with FERC's Plan and Procedures, construction activities (except for blasting and other rock-breaking measures) will generally be completed within 24 hours at minor waterbodies (i.e., 10 feet wide or less) and within 48 hours at intermediate waterbodies (i.e., greater than 10 feet wide and less than or equal to 100 feet wide). Temporary erosion control measures will be used as appropriate if the construction of a waterway crossing is appreciably delayed. During construction across streams which have high velocity flows or possess erodible banks, rip-rap will be used as appropriate to provide stabilization to the substrate (stream bed and/or banks) following construction activities.

After the completion of construction, streambeds will be restored to their former elevations and grades or to a stable angle of repose. Spoil, debris, piling, cofferdams, construction materials, and any other

obstructions resulting from or used during construction of the pipeline will be removed to prevent interference with normal water flow and use. Any excavated material not used as backfill will be disposed of in a manner and at locations satisfactory to the applicable jurisdictional agencies. Following grading and in accordance with permit requirements, stream banks will be restored to prevent subsequent erosion.

Variations on Conventional Open Cut Methods

On sensitive and impaired water bodies, intermediate-sized crossings, and elsewhere—as long as suitable hydraulic and construction conditions allow—variations on conventional open-cut methods that incorporate work area isolation techniques may be used to further protect instream water quality. These substantially reduce the amount of sediment released to the water column during trenching, placement, and backfilling. Any dewatering water resulting from these methods would be land applied or otherwise sent through a detention pond or similar sediment control BMP described above before being returned to the downstream side of the work area. Pipeline crossing methods are indicated for waterbodies (Appendix F). Note that at this time, Texas Gas is prepared only to differentiate between HDD and open cut methods (OCM), without specifying which waterbody crossings would include the work area isolation measures associated with the variations described below.

Dry-Ditch Method: In intermittent streams without flow at the time of crossing, traditional upland methods may be employed. A trench will be excavated using upland equipment and techniques. Pipeline trench plugs will be installed in the approach trenches to control erosion. Stream banks will be restored to original contour and revegetated following FERC's Plan and Procedures.

Dry Flume Method: A flumed or dry crossing of a waterway involves redirecting stream flow through a flume pipe or pipes near the crossing. This allows for trenching, pipe installation, and restoration in relatively dry conditions, while maintaining continuous downstream flow. Soil characteristics must be very stable and stream flow should be low to moderate for this method to be used successfully and safely. The flume pipes must be long enough to accommodate a potential increase in trench width due to sloughing during excavation. Ideally, the flume pipes will extend from the inlet side of the equipment crossing to the opposite side of the construction right-of-way. An effective seal will be created around the flume pipes so that water will not penetrate and possibly wash out channelized dams on both the inlet and outlet ends. The flume will not be removed until the pipeline has been installed and the stream and banks have been restored.

Dam and Pump Method: The dam and pump method is an "isolated" crossing technique that maintains waterbody flows during in-stream activities. Initially, a dam will be created upstream of the crossing and the water will then be re-rerouted over upland surfaces using a pump and hose to the downstream side of the crossing. In the event a sudden increase in stream flow occurs during the crossing, the flume method will be used as an alternate method to maintain flow and keep the crossing dry. Once the waterbody crossing site is dry, the trench will be excavated, including any upland plugs; the pipe bent and welded; and then lowered into the trench. The crossing pipe will be tied into the upland construction and water flow will be restored. The construction is considered "isolated" as the actual water body crossing and the upland construction occur at different times. If the upland construction occurs first, the upland pipe will be installed in the trench with temporary end caps in place and a hard earth plug is left between the work completed and the work to be done, usually starting at the top of bank.

Mississippi River Crossing

The large size of the Mississippi River presents an involved crossing situation. It will require HDD methods to be used under the levees on both the west and east sides of the river and under the river. The planned pipeline routing at the Mississippi River includes the installation of the pipeline in a parallel and adjacent alignment to the existing Texas Gas Helena 12-inch pipeline river crossing. This crossing was designed by projecting the river crossing alignment perpendicular to the river and back across the levee. This approach was used to minimize right-of-way expansion and to minimize the potential extent of tree clearing and removal that would have been required if this space saving approach had not been used. If Texas Gas follows the existing pipeline to the fullest extent possible at this location, it will result in the pipeline being located on the inside of the levee over a longer distance. Therefore, a route straight across the river is planned for this major crossing to minimize the size of the right of way needed for the crossing, and avoid excess tree clearing and removal at the crossing.

In Arkansas, under the Mississippi West Levee, Texas Gas plans to use the HDD method of crossing. The application of this method is contingent on the receipt of approval from the Corps. In addition to the use of the HDD method, Texas Gas is evaluating the possibility of crossing this levee using conventional crossing methods. The presence of the existing Helena Port Authority Railroad at the toe of the levee represents an engineering constraint on this method. In order to apply the conventional method in this location, Texas Gas would have to dig at the toe of the levee in the same location where the railroad track is situated. The pipeline will be installed under the railroad. Detailed design and engineering consultations are planned with the local Corps districts to evaluate the methods for crossing and consider the constraints on the applicable crossing method to be used.

Following the completion of the HDD under the Mississippi River, the pipeline will be located on the inside of the Mississippi West Levee, parallel and adjacent to the existing Texas Gas 12-inch pipeline river crossing. Texas Gas is currently planning on HDD methods for crossing the east Mississippi River Levee in Mississippi. Conventional methods are also being evaluated. This would require the pipeline to be placed on top of the levee. This method of construction would result in greater tree clearing.

The primary land uses at the Mississippi River crossing, in addition to the levees, are riparian woodland, wetland, and cropland on the west side, and bottomland hardwoods and cropland on the east side. No clear-cutting is proposed with the HDD method, and impacts to the sites of HDD installation are assumed to be minimal. This crossing is currently being evaluated and further details of potential impacts will be provided with the formal application. The Little Rock, Vicksburg and Memphis Corps districts have been provided with the preliminary pipeline route, background descriptive information pertaining to the Project and related to the Commission pre-filing process. The districts have indicated their individual jurisdictions and the general permit process that will be followed for the Project. At present, Texas Gas is intending to conduct detailed consultations with the individual Corps districts and Levee districts in regard to the crossings of flood control levees and site specific permitting requirements.

4.3.3 Road and Railroad Crossings

Road and railroad crossings will be maintained continuously using provisions such as steel plates or alternate access to minimize inconvenience to the public. Construction of the pipeline across hard surface roads will typically be installed through the roadbed by boring, with an excavated hole on either side of the road or railroad to provide a working area for the equipment.

Crossing of non-paved roads shall be installed by open-cut method in coordination and approval by local authorities. Immediately following installation, the pipe will be backfilled by either the flowable fill

method or the granular fill method, topped with dense graded aggregate limestone and a top layer matching the existing roadway.

4.3.4 Foreign Pipeline and Utility Crossings

Foreign pipelines are pipelines other than the proposed Texas Gas Pipeline. Foreign pipelines and other underground utilities are likely to be discovered during the pre-construction shallow hazards survey. Because of the relatively large diameter of the proposed Texas Gas Pipeline and the soil cover and separation requirements, the proposed pipeline would cross under most foreign pipelines and utilities. The larger spoil volumes from increased excavation depths at these crossings and the preference not to place spoil or construction equipment over existing pipelines may require extra work space at each crossing. Precautions would be taken to ensure that the existing pipelines and utilities are not damaged during construction of the proposed pipeline.

4.3.5 Agricultural Areas

Texas Gas conserves topsoil in all actively cultivated and rotated cropland, improved pasture, non-saturated wetlands and residential areas. Up to 12 inches of topsoil will be segregated in these areas, and in other areas at the specific request of the landowner or land management agency. The topsoil and subsoil will be stockpiled separately on the construction right-of-way and will not be allowed to mix. Rock will not be used as backfill in rotated or permanent cropland.

To prevent mixing of the soil horizons or incorporation of additional rock into the topsoil, topsoil segregation will be performed in non-saturated wetlands, croplands, pastures, hayfields, and in areas requested by the landowner. The topsoil will be segregated, as appropriate, from all subsoil and will be replaced in the proper order during backfilling and final grading. Implementation of proper topsoil segregation will help ensure post-construction revegetation success, thereby minimizing loss of crop productivity and the potential for long-term erosion problems. The Arkansas and Mississippi Department of Natural Resources indicated no additional requirements for construction through Prime Farmland areas (Singleton, Arkansas NRCS, personal communication, May 1, 2007; Johnson, Mississippi Department of Natural Resources, personal communication April 29, 2007).

The introduction of subsoil rocks/stones into agricultural topsoil will be minimized by segregating topsoil from trench spoil and replacing topsoil in agricultural areas after cleanup. This practice will prevent subsoil rocks from being brought to the surface and incorporated with the topsoil layer. Texas Gas will make diligent efforts to remove excess rock/stone greater than 4 inches in size from the topsoil and exposed subsoil of all disturbed soils, to the extent practicable, in cultivated and rotated croplands, hayfields, pastures, residential areas, and at the landowner's request, in other areas. Texas Gas will also remove excess rock/stone from surface soils disturbed by construction such that the size, density, and distribution of rock on the construction right-of-way will be similar to adjacent non-right-of-way areas. Texas Gas will not remove rocks from backfilled areas if the rocks/stones in the backfill are consistent in size and density with conditions before construction.

Texas Gas will excavate a trench sufficient for a minimum of 4 feet of cover in all actively tilled, pasture, or previously tilled land. Texas Gas will excavate deeper than the minimum 4 feet of cover in areas where deeper tilling (for example, using parabolic plows) occurs, or excavate deeper in areas in order to maintain existing drainage systems. Upon completing construction, Texas Gas will cooperate with local farmers and agricultural agencies to allow continued agricultural use of property while minimizing impacts to pipeline operations, including development of a grazing deferment plan with willing landowners.

Texas Gas will question landowners and local agricultural agency personnel regarding the potential presence of drain tiles and irrigation systems in affected agricultural fields. In addition, observations will be made before and during construction for evidence of the presence of drain tiles and irrigation systems.

In fields with drain tiles and irrigation systems, pipeline construction will be conducted in accordance with FERC's Plan and Texas Gas' Construction Specifications. The pipe will be installed below agricultural drainage lines, except in the rare circumstance of a deep main drainage line. Agricultural drainage features will be repositioned in a manner consistent with drainage orientation.

Should drainage tiles or irrigation piping be damaged during construction, Texas Gas will repair/restore their function. Texas Gas will carefully mark the location of the damage in a prominent manner, such as a securely staked lath with survey tape attached. Drain tile used for replacement shall be of the same size and quality as the original tile encountered on site. If original tile is not available, replacement tiles will be of appropriate size and materials to connect with the existing line without loss of function.

Operation of the pipeline following construction and repair of any damaged tile and irrigation line is not expected to affect operation of the drainage and irrigation systems.

4.3.6 Residential Areas

Where there are residences in close proximity to the construction right-of-way, Texas Gas will reduce pipeline offset or construction workspace areas, as practical, to minimize inconvenience to property owners. If construction requires the removal of private property features, such as gates or fences, the landowner or tenant will be notified prior to the action. Following completion of major construction, the property will be restored in accordance with Texas Gas' standards regarding right-of-way restoration and maintenance. Property restoration will be in accordance with any agreements between Texas Gas and the landowner.

4.3.7 Commercial and Industrial Areas

Texas Gas would maintain close coordination with business owners to maintain access, decrease construction duration, and generally minimize impacts.

4.3.8 Blasting

Soil survey surficial geological information indicates that bedrock may be encountered in scattered locations along the Fayetteville Lateral, west of MP 63.3. Where unrippable subsurface rock is encountered, blasting for ditch excavation may be necessary. In these areas, care will be taken to prevent damage to underground structures (e.g., cables, conduits, and pipelines) or to springs, water wells, or other water sources. Blasting mats or padding will be used as necessary to prevent the scattering of loose rock. All blasting will be conducted during daylight hours and will not begin until occupants of nearby buildings, stores, residences, places of business, and farms have been notified.

Texas Gas considers blasting as a last resort to reach the design pipeline depth; however, if required, blasting will be conducted in a manner to minimize possible impacts on nearby water supply wells. Use of controlled blasting techniques should mitigate impacts of blasting and limit rock fracture to the immediate vicinity of detonation.

If blasting is required within 150 feet of a water well, Texas Gas will, with landowner permission, conduct pre- and post-construction well testing and perform necessary repair and restoration to ensure there is no loss of productivity and quality.

4.3.9 Rugged Terrain

In addition to additional construction right of way, steep slopes may also require the installation of special erosion control measures, including trench breakers, slope breakers, interception dikes, and erosion control mats, per Section 3.

4.4 Above-Ground Facilities Installation Procedures

Construction of the proposed aboveground facilities will follow industry-accepted practices and procedures, as further described below. In general, construction would begin with site grading, laying of building foundations and pipe support piers, installation of equipment and piping, and the erection of permanent buildings. After completion of service lines, pipe tie-ins and testing, final construction would consist of painting aboveground facilities, road surfacing, grading, and gravelling the station yard. Aboveground facilities will be painted per the Texas Gas Transmission, LLC painting specifications and standards.

Typical construction activities associated with compressor installation are summarized below. No special construction methods will be required for the proposed station modifications.

4.4.1 General

Construction activities and the temporary storage of construction materials and equipment would be confined to the areas within the site boundaries. Debris and wastes generated from the construction would be disposed of appropriately. All surface areas disturbed would be restored and stabilization measures installed in a timely manner. The facilities will be constructed in accordance with Texas Gas construction standards and specifications.

4.4.2 Foundations

Excavation will be performed as necessary to accommodate the new reinforced concrete foundation for the new compressors. Forms will be set, rebar installed, and the concrete poured and cured in accordance with applicable standards. Concrete pours will be randomly sampled to verify compliance with minimum strength requirements. Backfill will be compacted in place, and excess soil will be used elsewhere or distributed around the site.

4.5 Restoration

Following construction of the proposed pipeline and aboveground facilities, the areas disturbed by construction will, to the greatest extent practicable, be restored to their original condition and use. Seeding and mulching in cultivated areas will conform to the adjacent off-right-of-way area unless otherwise requested, in writing, by the landowner. Unless requested by a landowner, no areas will be left unseeded beyond the next available seeding season.

4.5.1 Pipeline Right-of-Way

Upon completion of the pipeline installation, the surface of the ROW disturbed by construction activities would be graded to match original contours and to be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage would be required to prevent erosion, scour, and possible exposure of the pipeline. Segregated topsoil would be replaced, and soils that have been compacted by construction equipment traffic would be disked. Permanent erosion control measures would be installed at this time. Temporary construction erosion control measures may be left

in place, or replaced with interim erosion control measures, where appropriate, until sufficient vegetative cover is re-established to prevent significant erosion and sedimentation.

4.5.2 Uplands

In most upland locations, an herbaceous native vegetative cover would be re-established by spreading a grass seed and mulch mixture over the disturbed surface. The type of seed would be selected to match adjacent cover, or as otherwise requested/required by the landowner or land management agency, or as recommended by the county extension agent. Depending upon the time of year, a seasonal variety may be spread until a more permanent cover can be established. Steep slopes may require erosion control mats, revetments, or sod. The revegetation success would be monitored by Texas Gas, and reseeding, fertilizing, and other measures would be employed until a cover equivalent to approximately 80 percent of similar, adjacent areas is achieved. Temporary and interim erosion control measures would be removed at that time. Active cropland may be left unseeded at the request of the landowner if preparation of the ground for planting is imminent following construction. Pasture would be reseeded with a similar species or mixture. Residential and commercial lawns would be reseeded or sodded, depending upon the original grass variety. Shrubs and small trees on residential properties would be temporarily transplanted and replaced where practicable, and where allowed relative to the permanent ROW. Forested areas would be allowed to recover, except that no trees would be allowed to grow within 5 feet of the pipeline to facilitate pipeline inspections during operations, and no trees greater than 15 feet in height would be allowed within 15 feet of the pipeline.

Owners or managers of forested lands will be offered the opportunity to install and maintain measures to control unauthorized vehicle access to the right-of-way, including use of signs, fences, vegetative or other barriers.

4.5.3 Wetlands

Original surface hydrology would be re-established in wetlands by backfilling the pipe trench and grading the surface with backhoes or draglines operating from the temporary board road, or with low-ground-pressure (LGP) tracked vehicles working in the spoil pile, depending upon the ambient water level, degree of soil saturation, and the bearing capacity of the soils. Segregated topsoil would be replaced in unsaturated wetlands. Roots and stumps would have been removed only in the areas of the pipe trench, allowing pre-existing vegetation to recover more rapidly in the remainder of the ROW once the board roads and spoil piles have been removed. Wetlands along the proposed pipeline may display a varying degree of saturation and water elevation, requiring a variety of plant species to be re-established. In unsaturated wetlands, most vegetation would be replaced by seeding. Saturated wetlands would typically be re-vegetated by the transplantation of mature herbaceous specimens at pre-established spacing. Transplant specimens would be obtained from adjacent wetlands, collected over a relatively large area to minimize negative impacts to the donor site, or from local commercial nurseries. Adjacent donor sites are preferred over nurseries because the plants would be acclimated to the specific conditions of the site. Some specimens may also be collected from the ROW prior to construction, stored in temporary nurseries, and replanted after pipeline construction is complete.

All disturbed areas within the construction right of way will be successfully regenerated with wetland herbaceous and/or woody plant species by natural succession. Topsoil segregation in unsaturated wetlands will preserve the native seed source, which will facilitate regrowth of wetlands once pipeline installation is complete. Monitoring of wetland revegetation will be conducted annually for the first three years after construction or until wetland vegetation is successful. Revegetation will be considered

successful if the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands.

Texas Gas would work with state and local agencies, and landowners to develop an acceptable site-specific revegetation plan prior to commencement of construction.

4.5.4 Above-Ground Facilities

All above ground facilities would be permanently converted to industrial use. Most areas in and around the meters and associated piping and equipment would be covered with crushed rock (or equivalent) for worker safety and to minimize the amount of maintenance required. Roads and parking areas may be crushed rock, concrete, or asphalt. Other ground surfaces would be seeded with a native grass that is compatible with the climate and easily maintained. Areas outside the fence would be restored as described above for the permanent pipeline ROW.

4.5.5 Access Roads

Previously existing roads that were used for access during construction would be returned to original or better condition, or as otherwise requested by the landowner, upon completion of the pipeline facilities installation. New access roads, if any, constructed specifically for installation of the Project would be removed, the surface graded to original contours, and the land restored to its original use, unless otherwise requested by the landowner, or unless the roads would be required for ongoing access to the ROW during pipeline operations. No new access roads are anticipated to be built for construction of the pipeline project. Temporary erosion control measures would be removed upon final stabilization and installation of permanent erosion control measures.

Currently, the only new permanent roads that will be constructed are those that will provide access to the new M&R stations. The locations and dimensions of these roads are currently being evaluated.

4.5.6 Pipe Storage and Contractor Yards

Upon completion of construction, all temporary facilities (i.e., trailers, sheds, latrines, pipe supports, fencing, gates, etc.) would be removed from the pipe storage and contractor yards. Unless otherwise requested by the landowners, the sites would be graded to original contours, and the land restored to their original use. The sites would be re-vegetated, if applicable, permanent erosion control measures would be installed, and temporary erosion control measures would be removed.

4.6 Operation and Maintenance of the Natural Gas Pipeline

Texas Gas will operate and maintain the proposed pipeline and aboveground facilities in compliance with USDOT regulations provided in 49 CFR 192, FERC's guidance at 18 CFR 380.15, and maintenance provisions of FERC's Plan and Procedures.

Operational activity on the pipeline will be limited primarily to maintenance of the right-of-way and inspection, repair, and cleaning of the pipeline itself. Periodic aerial and ground inspections by pipeline personnel will identify soil erosion which may expose the pipe; dead vegetation that may indicate a leak in the line; conditions of the vegetative cover and erosion control measures; unauthorized encroachment on the right-of-way, such as buildings and other substantial structures; and other conditions which could present a safety hazard or require preventative maintenance or repairs. The pipeline cathodic protection (CP) system will also be monitored and inspected periodically to ensure

proper and adequate corrosion protection. Appropriate responses to conditions observed during inspection will be taken as necessary.

Vegetation on the permanent right-of-way will be maintained by mowing, cutting, and trimming. The right-of-way will be allowed to revegetate; however, large brush and trees will be periodically removed. Trees or deep-rooted shrubs could damage the pipeline's protective coating, obscure periodic surveillance, or interfere with potential repairs and would not be allowed to grow within 15 feet in wetlands, and 25 feet in uplands, of the pipeline centerline. Vegetation maintenance will be conducted once every three years and will be performed in accordance with FERC's Plan and Procedures. Vegetation maintenance will not normally be required in agricultural or grazing areas.

The pipeline facilities will be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers will clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative can be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party. Texas Gas participates in all One-Call systems.

In accordance with 49 CFR 192, the pipeline system will have a CP system to protect it where minute defects occur in the pipe coating. Without a CP system, such defects are anodic and subject to corrosion. The CP system impresses a direct current on the pipe, which makes the pipe cathodic. The CP system provides a ground-bed anode, which will corrode instead of the pipe. The CP system does not in any way influence the pipeline excavation depth. The main components of the CP system are anode beds, rectifiers, and test stations.

Texas Gas proposes to utilize the existing CP sites on the Texas Gas system. A survey will then be performed to determine if adequate protection has been achieved. If adequate protection is not achieved with the existing CP system, additional CP sites will be proposed at the inadequately protected areas. All existing CP sites are within the existing right-of-way. Any additional sites, if required, will also be sited in the existing right-of-way.

5.0 SAFETY, ENVIRONMENTAL COMPLIANCE, TRAINING AND INSPECTION

To ensure that construction of the proposed facilities will comply with mitigation measures identified by Texas Gas, the analysis by FERC of this Project and the requirements of other Federal and state permitting agencies, implementation details will be included in construction drawings and specifications. Selected contractors will receive copies of specifications and a Construction Drawing Package containing, among other things, plant and equipment drawings designated as being approved for construction. To solicit accurate bids for construction, specifications and advance versions of the Construction Drawing Package will be provided to prospective contractors.

Concerning those mitigation measures that address pre-construction surveys and clearances, reference to pertinent correspondence and documentation will be incorporated into the Construction Drawing Package. For those mitigation measures that address permit conditions from Federal, state, and local agencies, copies of permits and related drawings will also be added to the Construction Drawing Package. For those mitigation measures that, in part, address post-construction requirements, instructions and documentation (Maintenance Plan) will be provided to operating personnel following the completion of construction. The Maintenance Plan will include copies of pertinent permits with particular reference to long-term permit conditions.

The selected contractors will install facilities according to company specifications, the Construction Drawing Package, and the terms of the negotiated contract. To specifically support the application of proper field construction methods, a Soil Erosion and Sediment Control Plan (Soil Plan) will be

prepared incorporating provisions of FERC's Plan and Procedures. Texas Gas conducts annual training for its environmental inspectors in proper field implementation of Soil Plans and other mitigation measures. The Project inspectors will be drawn from the company's inspector pool or, in some cases, from qualified third party contractors. Prior to and during construction, training for field construction personnel and contractor personnel will be conducted. While this training focuses on Soil Plan implementation, it will also include instruction on the implementation of other mitigation measures, as appropriate.

For purposes of quality assurance and compliance with mitigation measures, other applicable regulatory requirements, and company specifications, the Chief Inspector or Spread Superintendent will represent the company at each spread. The Spread Superintendent will be assisted by a Chief Inspector who will be assisted by one or more craft inspectors, and at least one environmental inspector, depending upon the size of the spread. The environmental inspector's duties are consistent with those contained in Paragraph III.B (Responsibilities of the Environmental Inspector) of FERC's Plan and shall be:

- Responsible for monitoring and documenting compliance with all mitigative measures required by FERC's Order and any other grants, permits, certificates, or other authorizing documents;
- Responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract or any other authorizing document;
- Empowered to order correction of acts that violate the environmental conditions of FERC's Order, or any other authorizing document (e.g., Clean Water Act Section 404 permit issued by the Corps);
- A full-time position separate from all other activity inspectors; and
- Responsible for maintaining status reports and training records.

An ample number of copies of the Construction Drawing Package will be distributed to inspectors and to contractors' supervisory personnel. If a contractor's performance is unsatisfactory, the terms of the contract will allow for work stoppage and will require the contractor to begin remedial work.

The Engineering and Construction Department is responsible for designing and constructing certificated facilities in compliance with regulatory and non-regulatory requirements and agreements. If technical or management assistance is required, the responsible Texas Gas Chief Inspector will request assistance from the appropriate company department or division. The operations department will be responsible for long-term Project maintenance and regulatory compliance.

5.1 Emergency Contacts

Names and contact information for emergency notification are provided in the following table.

Title	Name(s)	Phone Number/Email
Environmental Inspector (Owner)	TBD	TBD
Environmental Coordinator (Contractor)	TBD	TBD
Emergency ADEQ Contact	TBD	TBD
Emergency Owner Contact	Steven J. Law	207-688-6954
Non-Emergency Contact	Steven J. Law	207-688-6954
Monitoring Personnel	TBD	TBD

Title	Name(s)	Phone Number/Email
Arkansas Hazardous Materials Emergency Response Commission/ Department of Emergency Management	(501) 683-6700	
Chemical Transportation Emergency Center (CHEMTREC)	800-424-9300	
Natural Resource Center (NRC) Hotline	800-424-8802	
Conway County, AR Sheriff		Emergency 911 Non-Emergency 501-354-2411
Faulkner County, AR Sheriff		Emergency 911 Non-Emergency 501-450-4914
Cleburne County, AR Sheriff		Emergency 911 Non-Emergency 501-362-2911
White County, AR Sheriff		Emergency 911 Non-Emergency 501-279-6231
Woodruff County, AR Sheriff		Emergency 911 Non-Emergency 870-347-5152
St. Francis County, AR Sheriff		Emergency 911 Non-Emergency 870-777-6727
Lee County, AR Sheriff		Emergency 911 Non-Emergency 870-295-7775
Phillips County, AR Sheriff		Emergency 911 Non-Emergency 870-338-5555

6.0 SITE INSPECTIONS AND MONITORING

Monitoring includes visual inspection, monitoring for water quality parameters of concern, and documentation of the inspection and monitoring findings in a site log book. A site log book would be maintained for all on-site construction activities and would include:

- A record of the implementation of the ESCP and other permit requirements;
- Site inspections; and,
- Stormwater quality monitoring.

The inspection form and water quality monitoring forms included in this ESCP include the required information for the site log book. The forms would be included in a separate site log book which would be maintained on-site or within reasonable access to the site. Modifications to BMPs and records of BMP repair would also be maintained in the log book.

6.1 Site Inspection

Site inspection would occur in all areas disturbed by construction activities and at all stormwater discharge points. Stormwater would be examined for the presence of suspended sediment, turbidity, discoloration, and oily sheen. The Environmental Inspector would evaluate and document the

effectiveness of the installed BMPs and determine if it is necessary to repair or replace any of the BMPs to improve the quality of stormwater discharges. All maintenance and repairs would be documented in the site log book. All new BMPs or design changes would be documented in the ESCP as soon as possible.

6.1.1 Site Inspection Frequency

Site inspections would be conducted at least once a week and within 24 hours following any rainfall event which causes a discharge of stormwater from the site. For sites with temporary stabilization measures, the site inspection frequency can be reduced to once every month. Daily inspections of active sites are required during storm water runoff.

6.1.2 Site Inspection Documentation

The site inspector would record each site inspection using the site log inspection forms provided in Appendix C. The site inspection log forms may be separated from this ESCP document, but would be maintained on-site or within reasonable access to the site and be made available upon request by DEQ or the local jurisdiction.

6.2 Storm Water Quality Monitoring

6.2.1 Water Quality Monitoring

Sampling for turbidity will occur on all streams, particularly those streams on the ADEQ 303(d) list for turbidity and sedimentation as identified in Section 2.1. Sampling shall occur in two locations, one sample upstream of runoff from the Project, and downstream at the limit of a 750-foot mixing zone. Turbidity outside of the limits of a 750-foot mixing zone shall not exceed ambient turbidity by more than 50 Nephelometric Turbidity Units (NTU). In the event that turbidity is expected to exceed this limit, Texas Gas will apply for a Short-Term Activity Authorization from the Director of ADEQ. Turbidity measurements in streams receiving storm water runoff from the project and shall be taken after every storm with precipitation of half an inch or greater, or, sufficient precipitation to produce runoff. Ambient turbidity levels shall be measured at a location near but upstream of the crossing.

6.2.2 Visual Monitoring

All ESCP controls and practices must be inspected as follows:

- Daily during active period.
- Once, to ensure ESCP measures are in working order prior to site becoming inactive or inaccessible.
- Once every two weeks during inactive periods of greater than seven consecutive days.
- Daily, if practical, during inaccessible periods due to inclement weather.

7.0 RECORDKEEPING

7.1 Site Log Book

A site log book would be maintained for all on-site construction activities and would include:

- A record of the implementation of the ESCP and other permit requirements;
- Site inspections;

- Stormwater quality monitoring;
- Method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;
- Acreage treated;
- Dates of backfilling and seeding;
- Names of landowners requesting special seeding treatment; and,
- A description of the follow-up actions; and any problem areas and how they were addressed.

For convenience, the inspection form and water quality monitoring forms included in this ESCP include the required information for the site log book.

Quarterly reports will be filed to FERC documenting problems, landowner issues, and corrective actions taken for at least two years following construction.

Weekly, or biweekly, reports to FERC shall identify areas used by the project that are in excess of what has been identified herein. Approvals of landowners shall be obtained and documented in the files. Areas shall be identified by Station number and referenced to an alignment sheet, and survey information of the additional area incorporated into the project.

7.2 Records Retention

Records of all monitoring information (site log book, inspection reports/checklists, etc.), this ESCP, and any other documentation of compliance with water quality requirements would be retained during the life of the construction project and for a minimum of three years following completion of construction.

7.3 Access to Plans and Records

The ESCP and SWPPP, and Site Log Book, would be retained on site or within reasonable access to the site and would be made immediately available upon request to ADEQ or local municipality. A copy of the ESCP or access to the ESCP would be provided to the public when requested in writing.

7.4 Updating the ESCP

This ESCP and SWPPP would be modified if they are deemed to be ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site or there has been a change in design, construction, operation, or maintenance at the site that has a significant effect on the discharge, or potential for discharge, of pollutants to the waters of the State. This ESCP and SWPPP would be modified within ten days of determination based on inspection(s) that additional or modified BMPs are necessary to correct problems identified, and an updated timeline for BMP implementation would be prepared.

FIGURES

APPENDICES

Appendix A

Site Plan and Details

Details:

Upland Pipeline Construction Sequence
Typical Cross Section with 36" Pipe Adjacent to Foreign Pipeline
36" Typical Cross Section
Typical HDD Waterbody Crossing
Typical Foreign Pipeline Crossing Detail
Typical Waterbody Crossing
Typical Saturated Wetland Crossing
Permanent Right-of-Way Maintenance in Forested Wetland Areas
Typical Horizontal Directional Drill Layout
Typical Compressor Station Plot Plan
Typical Cross Section with 36" Pipe Adjacent to Powerline

Appendix B

Arkansas Construction Stormwater General Permit

Appendix C

Example Site Inspection Forms

The results of each inspection should be summarized in an inspection report or checklist that is entered into or attached to the site log book. This ESCP and SWPPP and the site inspection forms be kept onsite at all times during construction, and inspections shall be performed and documented as outlined below.

At a minimum, each inspection report or checklist should include:

a. Inspection date/times.

b. Weather information: general conditions during inspection, approximate amount of precipitation since the last inspection, and approximate amount of precipitation within the last 24 hours.

c. A summary or list of all BMPs that have been implemented, including observations of all erosion/sediment control structures or practices.

d. The following should be noted:

   i. locations of BMPs inspected,

   ii. locations of BMPs that need maintenance,

   iii. the reason maintenance is needed,

   iv. locations of BMPs that failed to operate as designed or intended, and

   v. locations where additional or different BMPs are needed, and the reason(s) why.

e. A description of stormwater discharged from the site. The presence of suspended sediment, turbid water, discoloration, and/or oil sheen should be noted, as applicable.

g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made as a result of the inspection.

h. A statement that, in the judgment of the person conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the ESCP and SWPPP. If the site inspection indicates that the site is out of compliance, the inspection report should include a summary of the remedial actions required to bring the site back into compliance, as well as a schedule of implementation.

   i. Name, title, and signature of person conducting the site inspection; and the following statement: "I certify under penalty of law that this report is true, accurate, and complete, to the best of my knowledge and belief."

When the site inspection indicates that the site is not in compliance with any terms and conditions of the ESCP and SWPPP, the Permittee should take immediate action(s) to: stop, contain, and clean up the unauthorized discharges, or otherwise stop the noncompliance; correct the problem(s); implement appropriate Best Management Practices (BMPs), and/or conduct maintenance of existing BMPs; and achieve compliance with all applicable standards and permit conditions.

Project-specific Site inspection forms to be developed by contractor and approved by Texas Gas. Example inspection forms are attached.

Example Erosion and Sediment Control Inspection Forms (Source: USEPA 1992)

HOMERVILLE APARTMENTS

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE

INSPECTOR _____ DATE: _____

INSPECTOR'S QUALIFICATIONS:

_____

_____

_____

_____

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL _____ INCHES

STABILIZATION MEASURES

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED? (YES/NO)	STABILIZED WITH	CONDITION
BLDG. A					
BLDG. B					
BLDG. C					
PRKNG. 1					
PRKNG. 2					
GRASS 1					
GRASS 2					

STABILIZATION REQUIRED:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ **ON OR BEFORE:** _____

USEPA. 1992. Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices – Summary Guidance. EPA 833-R-92-001.

Example Erosion and Sediment Control Inspection Forms (Source: USEPA 1992)

HOMERVILLE APARTMENTS

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

STRUCTURAL CONTROLS

DATE: _____

EARTH DIKE:

FROM	TO	IS DIKE STABILIZED?	IS THERE EVIDENCE OF WASHOUT OR OVER-TOPPING?
BUILDING B	STABILIZED CONSTRUCTION ENTRANCE		
STABILIZED CONSTRUCTION ENTRANCE	SEDIMENT BASIN		
BUILDING B	SEDIMENT BASIN		

MAINTENANCE REQUIRED FOR EARTH DIKE:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

Example Erosion and Sediment Control Inspection Forms (Source: USEPA 1992)

HOMERVILLE APARTMENTS

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

SEDIMENT BASIN:

DEPTH OF SEDIMENT IN BASIN	CONDITION OF BASIN SIDE SLOPES	ANY EVIDENCE OF OVERTOPPING OF THE EMBANKMENT?	CONDITION OF OUTFALL FROM SEDIMENT BASIN

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE:

DOES MUCH SEDIMENT GET TRACKED ON TO ROAD?	IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE?	IS THE CULVERT BENEATH THE ENTRANCE WORKING?

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

Example Erosion and Sediment Control Inspection Forms (Source: USEPA 1992)

HOMERVILLE APARTMENTS

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____

_____

_____

_____

REASONS FOR CHANGES:

_____

_____

_____

_____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:_____ DATE:_____

Appendix D

Wetland Crossing Table

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Arkansas County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]
Conway	wrm001	2.1	51	PEM	OCM	0.1	n/a
Conway	tdh ar w1	7.3	23	PFO/PEM	OCM	<0.1	n/a
Faulkner	WET 015	10.9	n/a	PEM/PSS	OCM	<0.1	n/a
Faulkner	WET 041	13.0	26	PEM	OCM	<0.1	n/a
Faulkner	WET 045	13.3	8	PEM	OCM	<0.1	n/a
Faulkner	WET 057	14.2	33	PEM	OCM	0.1	n/a
Faulkner	WET 060	14.8	42	PEM/PSS	OCM	<0.1	n/a
Faulkner	WET 062	14.8	n/a	PSS	OCM	<0.1	n/a
Faulkner	WET 063	14.8	41	PEM	OCM	<0.1	n/a
Faulkner	WET 064	15.0	n/a	PEM	OCM	0.1	n/a
Faulkner	WET 071	15.7	n/a	PEM	OCM	<0.1	n/a
Faulkner	WET 076	16.5	n/a	PEM	OCM	<0.1	n/a
Faulkner	Wet 081	16.8	374	PEM	OCM	0.7	n/a
Faulkner	WET 104	19.1	n/a	PEM	OCM	<0.1	n/a
Faulkner	WET 108	19.7	n/a	PEM	OCM	<0.1	n/a
Faulkner	WET 109	20.0	43	PEM	OCM	0.1	n/a
Faulkner	WET 112	20.1	282	PFO	OCM	0.5	n/a
Faulkner	WET 138	23.1	31	PFO	OCM	0.1	n/a
Faulkner	WET 141	23.2	532	PEM	OCM	0.8	n/a
Faulkner	WET 144	24.2	32	PSS	OCM	<0.1	n/a
Faulkner	WET 148	24.8	62	PSS	OCM	0.1	n/a
Faulkner	WET 151	25.2	104	PEM	OCM	0.2	n/a
Faulkner	WET 157	26.4	103	PEM	OCM	0.2	n/a
Faulkner	WET 158	26.6	41	PEM	OCM	0.1	n/a
Faulkner	WET 160	26.7	n/a	PEM	OCM	<0.1	n/a
Faulkner	WET 164	26.8	70	PEM	OCM	0.1	n/a
Faulkner	WET 170	27.7	19	PSS	OCM	<0.1	n/a
Faulkner	WET 176	28.8	24	PEM	OCM	<0.1	n/a

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Arkansas County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]
White	WET 188	31.6	22	PEM	OCM	<0.1	n/a
White	WET 192	32.0	33	PEM	OCM	0.1	n/a
White	WET 210	34.1	n/a	PEM/PFO	OCM	<0.1	n/a
White	WET 219	35.3	60	PEM/PFO	OCM	0.1	n/a
White	WET 222	35.5	20	PFO	OCM	<0.1	n/a
White	WET 231	37.1	n/a	PSS	OCM	<0.1	n/a
White	wrm012	47.8	839	PFO	OCM	1.5	n/a
White	wrm011	48.1	9	PFO/PSS	OCM	<0.1	n/a
White	wrm010	63.6	122	PSS	OCM	0.2	n/a
White	wrm007	65.4	229	PFO	OCM	0.4	n/a
White	wrm006	65.6	n/a	PFO	OCM	<0.1	n/a
White	wrm004	66.4	195	PFO	OCM	0.3	n/a
White	wrm003	66.5	107	PFO	OCM	0.2	n/a
White	th w11	67.0	77	PFO	OCM	0.1	n/a
White	wrm005	67.5	862	PSS	OCM	1.5	n/a
White	th w6	67.9	103	PFO	OCM	0.2	n/a
White	th w5	70.1	156	PFO	HDD	0.3	n/a
Woodruff	th w9	71.4	75	PFO	OCM	0.1	n/a
Woodruff	tdh ar w2	73.3	19	PFO	OCM	0.2	n/a
Woodruff	th w7	73.4	405	PFO	HDD	0.5	n/a
Woodruff	th w8	74.4	1100	PFO	OCM	1.9	n/a
Woodruff	JAV-W18	76.1	n/a	PEM/PSS	OCM	<0.1	n/a
Woodruff	JAV-W14	79.7	440	PEM	OCM	0.5	n/a
Woodruff	JAV-W17	79.8	52	PEM	OCM	0.4	n/a
Woodruff	JAV-W20	80.9	57	PEM	OCM	0.1	n/a
Woodruff	JAV-W21	81.6	8	PEM	OCM	<0.1	n/a
Woodruff	JAV-W23a	81.8	187	PEM/PSS	OCM	0.2	n/a
Woodruff	JAV-W23b	81.8	70	PEM	OCM	0.2	n/a
Woodruff	JAV-W24	81.9	36	PFO/PEM	OCM	0.1	n/a

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Arkansas County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]
Woodruff	th w10	82.0	176	PFO/PEM	OCM	0.4	n/a
Woodruff	th w3	82.0	711	PEM	OCM	1.2	n/a
Woodruff	th w2	82.2	599	PFO/PEM	OCM	1.1	n/a
Woodruff	th w2.1	82.4	2453	PFO	HDD	4.3	n/a
Woodruff	th w2.2	82.9	450	PFO	HDD	0.7	n/a
Woodruff	tdh w2.3	83.0	70	PFO/PEM	OCM	0.1	n/a
Woodruff	JAV-W32	83.2	154	PEM	OCM	0.3	n/a
Woodruff	JAV-W33	83.4	n/a	PEM	OCM	<0.1	n/a
Woodruff	JAV-W39	83.4	n/a	PEM	OCM	<0.1	n/a
Woodruff	JAV-W34	83.6	206	PEM	OCM	0.3	n/a
Woodruff	JAV-W35	83.7	116	PEM	OCM	0.1	n/a
Woodruff	JAV-W37	83.8	391	PEM/PSS	OCM	0.6	n/a
Woodruff	JAV-W38	83.9	232	PFO	OCM	0.3	n/a
Woodruff	JAV-W31	84.0	42	PFO	OCM	0.2	n/a
Woodruff	JAV-W29	85.4	594	PFO/PEM	OCM	1.0	n/a
Woodruff	JAV-W26	86.5	386	PEM	OCM	0.6	n/a
Woodruff	JAV-W25	88.1	n/a	PFO/PEM	OCM	<0.1	n/a
Woodruff	JAV-W8	93.7	240	PEM	OCM	0.4	n/a
Woodruff	tdh bdv w1	95.1	111	PFO/PEM	OCM	0.2	n/a
Woodruff	tdh bdv w2	95.5	1911	PFO	HDD	3.2	n/a
Woodruff	tdh bdv w3	95.9	83	PFO	HDD	0.3	n/a
Woodruff	tdh bdv w4	96.0	3019	PSS/PEM	OCM	4.5	n/a
Woodruff	JAV-W1	99.6	75	PEM	OCM	0.1	n/a
Woodruff	tdh ar w3	100.1	259	PFO	OCM	0.5	n/a
Saint Francis	DLS W2	111.5	1255	PFO/PEM	OCM	2.2	n/a
Saint Francis	jrw6	113.8	162	PEM	OCM	0.3	n/a
Saint Francis	jr-w4a	116.1	751	PFO	OCM	1.3	n/a
Lee	jr-w2c	116.7	n/a	PFO	OCM	<0.1	n/a
Lee	jr-w3	117.0	41	PFO	OCM	0.1	n/a

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Arkansas County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]
Lee	jr-w1	117.4	n/a	PFO	OCM	0.1	n/a
Lee	jo W02	120.0	427	PFO	OCM	0.7	n/a
Lee	DLS W1	120.4	658	PEM	OCM	1.2	n/a
Lee	tdhw1	124.3	28	PFO	OCM	<0.1	n/a
Lee	tdhw3	125.8	n/a	PFO/PEM	OCM	0.1	n/a
Lee	tdhw4	126.8	151	PFO	OCM	0.3	n/a
Lee	tdhw5	127.5	352	PFO	OCM	0.6	n/a
Lee	jo/tdh W05	135.6	342	PFO	OCM	0.6	n/a
Phillips	jo/tdh W08	140.8	7	PEM	OCM	<0.1	n/a
Phillips	jo/tdh W09	140.8	121	PFO/PEM	OCM	0.2	n/a
Phillips	jo/tdh W10	140.9	64	PEM	OCM	0.2	n/a
Phillips	jo/tdh W07	141.1	35	PFO	OCM	<0.1	n/a
Phillips	jo/tdh W12	142.0	105	PFO/PEM	OCM	0.3	n/a
Phillips	jo/tdh W15	142.2	550	PFO/PEM	OCM	0.9	n/a
Phillips	jo W07	143.4	30	PFO	OCM	0.1	n/a
Phillips	jo W06	143.5	121	PFO	OCM	0.2	n/a
Phillips	jo W08	151.4	415	PFO	OCM	0.7	n/a
Phillips	jo W09	152.9	204	PFO	OCM	<0.1	n/a
Phillips	jo W10	154.3	518	PFO	HDD	0.9	n/a
Phillips	jo W11	156.4	2529	PFO	OCM	4.3	n/a

[a] *Wetlands with a designation of "n/a" are located within the construction corridor, but are not crossed by the proposed pipeline centerline.*

[b] *Wetland Type: PEM – palustrine emergent, PSS – palustrine scrub shrub, PFO – palustrine forested*

[c] *OCM = open cut method, HDD = horizontal directional drill*

[d] *Construction impacts are based on a 75-foot-wide construction right-of-way over the pipeline.*

[e] *Permanent acreage reflects acreage lost due to permanently maintained facility.*

[f] *Totals may differ due to fractional acreages.*

Appendix E

Aboveground Facilities and Associated Wetlands

Table E-1 Aboveground Facilities/Extra Workspace and Associated Wetlands

Arkansas County	Feature or Facility Name	Wetland Field ID	Wetland Type	Nearest Approximate Milepost	Approximate Impact (Acres)
Aboveground Facilities					
n/a	None	n/a	n/a	n/a	n/a
				subtotal	**n/a**
Extra Workspaces					
Woodruff	Truck turn around and fabrication area	th w2	PFO/PEM	82.2	0.3
Woodruff	Pull string	tdh w2.3	PFO/PEM	83.1	1.0
Woodruff	P.I. & fabrication area	tdh w2.3	PFO/PEM	83.1	0.1
Woodruff	Truck turn around, P.I. fabrication area, and access	tdh bdv w4	PSS/PEM	96.0	0.3
Woodruff	Drag section	tdh bdv w4	PSS/PEM	96.5	0.1
Woodruff	P.I. & road crossing	tdh bdv w4	PSS/PEM	96.5	0.1
Phillips	Truck turn around	jo W11	PFO	156.7	0.5
Access Roads					
Woodruff	Access Road 64	tdh bdv w4	PSS/PEM	96.0	<0.1
Lee	Access Road 27	jo W03	PFO	119.1	<0.1
Phillips	Access Road 52A	jo W11	PFO	156.6	<0.1

Appendix F

Waterbody Crossing Table

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
Conway	0.2	SRM001	Tributary to Cypress Creek (Intermittent)	Minor-7 ft	OCM	SC, DIA, SF
Conway	0.3	SRM002	Tributary to Cypress Creek (Intermittent)	Minor-7 ft	OCM	SC, DIA, SF
Conway	1.3	SRM003	Tributary to Cypress Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Conway	1.8	SRM004	Tributary to Cypress Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Conway	2.1	srm005	Tributary to Cypress Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Conway	2.1	srm006	Tributary to Cypress Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Conway	2.1	srm006	Tributary to Cypress Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Conway	2.1	srm006	Tributary to Cypress Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Conway	2.1	srm007	Tributary to Cypress Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Conway	2.5	srm008	Cypress Creek (Intermittent)	Minor- 7 ft	OCM	SC, DIA, SF
Conway	3.6	srm009	Tributary to Cypress Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Conway	5.0	srm012	Tributary to Cedar Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Conway	5.0	srm012	Tributary to Cedar Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Conway	5.5	srm015	Tributary to Hog Branch (Intermittent)	Minor- 7 ft	OCM	SC, DIA, SF
Conway	5.7	srm016	Hog Branch (Intermittent)	Intermediate- 13 ft	OCM	SC, DIA, SF
Conway	5.8	srm017	Tributary to Hog Branch (Intermittent)	Intermediate- 23 ft	OCM	SC, DIA, SF
Faulkner	7.9	srm014	Cove Creek (Perennial)	Intermediate- 49 ft	OCM	SC, DIA, PF
Faulkner	9.3	SCL 002	Tributary to Cove Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	9.6	SCL 005	Tributary to Cove Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	9.9	SCL 007	Tributary to Cove Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	10.0	SCL 009	Tributary to Cove Creek (Intermittent)	Minor- 8 ft	OCM	SC, DIA, SF
Faulkner	10.9	SCL 013	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 013	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 013	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 014	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 013	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 013	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 011	Tributary to Batesville Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 011	Tributary to Batesville Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	11.0	SCL 011	Tributary to Batesville Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	11.2	SCL 016	Tributary to Batesville Creek (Intermittent)	Minor- 7 ft	OCM	SC, DIA, SF
Faulkner	11.4	SCL 020	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	11.9	SCL 029	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
Faulkner	12.3	SCL 032	Tributary to Batesville Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	12.6	SCL 037	Tributary to Batesville Creek (Perennial)	Minor- 8 ft	OCM	SC, DIA, SF
Faulkner	12.8	SCL 038	Batesville Creek (Perennial)	Minor- 8 ft	OCM	SC, DIA, SF
Faulkner	12.9	DLS S1	Tributary to Batesville Creek (Perennial)	Minor- 6 ft	OCM	SC, DIA, SF
Faulkner	13.1	SCL 042	Tributary to Batesville Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	13.8	SCL 052	Tributary to Cadron Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	13.8	SCL 052	Tributary to Cadron Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	13.8	SCL 052	Tributary to Cadron Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	14.0	SCL 053	Cadron Creek (Perennial)	Major- 105 ft	OCM	PC, SC, DIA, PF
Faulkner	14.4	SCL 058	Tributary to Wolf Branch (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	14.6	SCL 059	Tributary to Wolf Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	14.8	SCL 061	Wolf Branch of Cadron Creek (Intermittent)	Intermediate- 10 ft	OCM	SC, DIA, SF
Faulkner	15.3	SCL 066	Tributary to Wolf Branch (Intermittent)	Minor- 6 ft	OCM	SC, DIA, SF
Faulkner	15.6	SCL 068	Tributary to Wolf Branch (Intermittent)	Minor 4 ft	OCM	SC, DIA, SF
Faulkner	15.8	SCL 070	Tributary to Wolf Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	16.0	SCL 072	Tributary to Wolf Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	16.5	SCL 077	Tributary to Cadron Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	17.6	SCL 086	Tributary to Stillhouse Branch (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	17.6	SCL 087	Tributary to Stillhouse Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	17.7	SCL 091	Tributary to Stillhouse Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	17.8	SCL 092	Tributary to Stillhouse Branch (Intermittent)	Minor- 4 ft	OCM	SC, DIA, SF
Faulkner	17.9	SCL 093	Stillhouse Branch (Perennial)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	17.9	SCL 094	Tributary to Stillhouse Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	18.0	SCL 094	Tributary to Stillhouse Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	18.0	SCL 094	Tributary to Stillhouse Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	18.5	SCL 099	Tributary to Stillhouse Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	18.7	SCL 100	Tributary to Stillhouse Branch (Intermittent)	Minor- 4 ft	OCM	SC, DIA, SF
Faulkner	19.1	SCL 103	Tributary to Stillhouse Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	19.6	SCL 106	Tributary to King Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	20.2	SCL 111	King Branch (Perennial)	Minor- 4 ft	OCM	SC, DIA, PF
Faulkner	20.6	SCL 119	Tributary to King Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	20.7	SCL 118	Tributary to King Branch (Intermittent)	Minor-1 ft	OCM	SC, DIA, SF
Faulkner	20.9	SCL 120	Tributary to King Branch (Intermittent)	Minor- 4 ft	OCM	SC, DIA, SF
Faulkner	21.3	DLS ditch	Tributary to King Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
Faulkner	21.3	DLS ditch 2	Tributary to King Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Faulkner	22.1	tdh ditch	Tributary to Nichols Creek (Intermittent)	Minor- 1ft	OCM	SC, DIA, SF
Faulkner	22.1	tdh ditch	Tributary to Nichols Creek (Intermittent)	Minor- 1ft	OCM	SC, DIA, SF
Faulkner	23.1	SCL 132	Tributary to Mortar Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Faulkner	23.2	SCL 139	Tributary to Mortar Creek (Intermittent)	Intermediate- 12 ft	OCM	SC, DIA, SF
Faulkner	23.3	SCL 140	Mortar Creek (Perennial)	Intermediate- 30 ft	OCM	SC, DIA, PF
Faulkner	24.3	SCL 145	Tributary to Buck Branch (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	24.6	SCL 147	Tributary to Buck Branch (Intermittent)	Minor- 4 ft	OCM	SC, DIA, SF
Faulkner	24.9	SCL 149	Tributary to Buck Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	26.3	SCL 153	Tributary to Clear Creek (Intermittent)	Minor-3 ft	OCM	SC, DIA, SF
Faulkner	26.3	SCL 155	Tributary to Clear Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	26.9	SCL 161	Tributary to Clear Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	27.2	SCL 165	Tributary to Clear Creek (Intermittent)	Intermediate- 10 ft	OCM	SC, DIA, SF
Faulkner	27.6	SCL 167	Tributary to Brier Branch (Intermittent)	Minor- 6 ft	OCM	SC, DIA, SF
Faulkner	27.8	SCL 169	Tributary to Brier Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	27.8	SCL 171	Tributary to Brier Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Faulkner	28.2	SCL 173	Tributary to Strain Branch (Intermittent)	Minor- 3 ft	OCM	SC, DIA, PF
Faulkner	28.2	SCL 173east	Tributary to Strain Branch (Intermittent)	Minor- 3ft	OCM	SC, DIA, PF
Faulkner	28.5	SCL 174	Tributary to East Fork of Cadron Creek (Perennial)	Minor- 3 ft	OCM	SC, DIA, SF
Faulkner	28.9	SCL 175	Tributary to East Fork of Cadron Creek (Intermit)	Minor- 3 ft	OCM	SC, DIA, SF
White	29.6	SCL 179	Tributary to Piney Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	29.7	SCL 180	Piney Creek (Perennial)	Intermediate- 15 ft	OCM	SC, DIA, PF
White	30.2	SCL 181	Blakey Branch (Intermittent)	Minor- 4 ft	OCM	SC, DIA, PF
White	30.5	SCL 183	Tributary to East Fork of Cadron Creek (Intermit)	Minor- 1 ft	OCM	SC, DIA, SF
White	30.7	SCL 185	Tributary to East Fork of Cadron Creek (Intermit)	Minor- 1 ft	OCM	SC, DIA, SF
White	31.3	SCL 186	Tributary to Jones Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
White	32.0	SCL 191	Jones Creek (Perennial)	Intermediate- 20 ft	OCM	SC, DIA, SF
White	32.0	SCL 191	Jones Creek (Perennial)	Intermediate- 20 ft	OCM	SC, DIA, SF
White	32.4	SCL 194	Tributary to Graham Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
White	32.8	SCL 196	Tributary to Graham Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	32.9	SCL 199	Graham Branch (Perennial)	Minor- 9 ft	OCM	SC, DIA, PF
White	33.0	TDH S2	Tributary to Graham Branch (Perennial)	Minor- 9 ft	OCM	SC, DIA, PF
White	34.3	SCL 212	Tributary to Graham Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
White	34.5	SCL 214	Tributary to Graham Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	34.6	SCL 215	Tributary to Graham Branch (Intermittent)	Minor- 6 ft	OCM	SC, DIA, SF
White	35.1	SCL 216	Tributary to Brush Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	35.4	SCL 217	Tributary to Brush Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	35.4	SCL 218	Tributary to Brush Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	35.5	SCL 220	Tributary to Brush Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	36.1	SCL 225	Big Hollow Tributary (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	36.4	SCL 227	Big Hollow Creek (Intermittent)	Intermediate- 15 ft	OCM	SC, DIA, PF
White	37.2	SCL 230	Hyde Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, PF
White	37.2	SCL 230	Hyde Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, PF
White	37.2	SCL 230	Hyde Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, PF
White	37.6	SCL 232	Chaney Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, PF
White	38.1	SCL 234	Tributary to Chaney Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	39.2	SCL 243	Mill Branch (Intermittent)	Minor- 4 ft	OCM	SC, DIA, PF
White	39.3	SCL 244	Tributary to Mill Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	39.3	SCL 244	Tributary to Mill Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	39.8	SCL 246	Tributary to Mill Branch (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Cleburne	42.8	SCL 267	Tributary to Little Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Cleburne	42.8	SCL 258	Tributary to Little Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Cleburne	43.0	SCL 260	Tributary to Little Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Cleburne	43.5	SCL 263	Tributary to Big Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Cleburne	43.5	SCL 264	Tributary to Big Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	45.1	SCL 276	Tributary to Big Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
White	45.3	acer int st	Tributary to Big Creek (Intermittent)	Minor- 1ft	OCM	SC, DIA, SF
White	46.1	TDH S7	Big Creek (Perennial)	Major- 140 ft	HDD	PC, SC, DIA, PF
White	47.2	srm041	Tributary to Big Creek (Intermittent)	Minor- 6 ft	OCM	SC, DIA, PF
White	48.1	srm039	Brier Creek (Perennial)	Intermediate- 16 ft	OCM	SC, DIA, PF
White	48.5	srm037	Owl Creek (Intermittent)	Intermediate- 16 ft	OCM	SC, DIA, PF
White	48.8	tdh ar s3	Tributary to Owl Creek (Perennial)	Minor- 1 ft	OCM	SC, DIA, PF
White	50.0	srm036	Tributary to Big Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, PF
White	52.3	srm040	Little Red River (Perennial)	Major- 200 ft	HDD	PC, SC, DIA, PF, FT
White	54.5	srm035	Tributary to Owl Creek (Perennial)	Minor- 3 ft	OCM	SC, DIA, SF
White	55.1	srm035a	Tributary to Owl Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
White	56.6	srm034	Onion Creek (Perennial)	Intermediate- 15 ft	OCM	SC, DIA, PF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
White	58.9	srm031	Chinquapin Creek (Perennial)	Intermediate- 12 ft	OCM	SC, DIA, PF
White	59.4	srm030	Tributary to Lake Bald Knob (Intermittent)	Minor- 8 ft	OCM	SC, DIA, SF
White	59.8	srm029	Tributary to Overflow Creek (Intermittent)	Intermediate- 10 ft	OCM	SC, DIA, SF
White	60.3	srm028	Tributary to Overflow Creek (Intermittent)	Intermediate- 35 ft	OCM	SC, DIA, SF
White	60.5	srm027	Tributary to Overflow Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
White	61.0	srm026	Tributary to Overflow Creek (Perennial)	Minor- 5 ft	OCM	SC, DIA, SF
White	61.8	srm033	Overflow Creek (Perennial)	Intermediate- 13 ft	OCM	PC, SC, DIA, PF
White	62.4	srm032	Big Mingo Creek (Perennial)	Intermediate- 10 ft	OCM	SC, DIA, PF
White	63.2	tdh int st	Tributary to Big Mingo Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
White	63.7	srm021	Gladey Creek (Intermittent)	Minor-3 ft	OCM	SC, DIA, PF
White	64.3	srm020	Tributary to Gladey Creek (Intermittent)	Intermediate- 13 ft	OCM	SC, DIA, SF
White	65.2	srm019w	Tributary to Little Mingo Creek (Intermittent)	Minor- 7 ft	OCM	SC, DIA, SF
White	65.5	srm018w	Tributary to Little Mingo Creek (Intermittent)	Minor- 7 ft	OCM	SC, DIA, SF
White	65.7	srm017w	Tributary to Little Mingo Creek (Intermittent)	Minor- 7 ft	OCM	SC, DIA, SF
White	66.5	srm016w	Glaise Creek (Perennial)	Intermediate- 30 ft	OCM	PC, SC, DIA, PF
White	67.2	tdh int st	Tributary to Glaise Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
White	67.4	tdh int st	Tributary to Glaise Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
White	67.9	TDH S3	Departee Creek (Perennial)	Intermediate- 50 ft	OCM	ESW, SC, DIA, PF
White	69.5	tdh int st	Tributary to White River (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	70.3	White R.	White River (Perennial)	Major- 700 ft	HDD	PC, SC, DIA, PF
Woodruff	71.3	ag ditch	Tributary to Bear Slough (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	71.5	TDH S5	Bear Slough (Perennial)	Intermediate- 50 ft	OCM	PC, SC, DIA, PF
Woodruff	71.9	ag ditch	Tributary to Bear Slough (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	72.4	C. to Tayl	Canal to Taylor Bay (Intermittent)	Intermediate- 40 ft	OCM	SC, DIA, SF
Woodruff	72.8	ag ditch	Tributary to Taylor Bay (Intermittent)	Minor- 3ft	OCM	SC, DIA, SF
Woodruff	72.9	ag ditch	Tributary to Taylor Bay (Intermittent)	Minor- 3ft	OCM	SC, DIA, SF
Woodruff	73.4	TDH S4	Taylor Bay (Perennial)	Major-215 ft	HDD	PC, SC, DIA, PF
Woodruff	75.9	JAV-S28	Tributary to Cypress Brake (Intermittent)	Minor- 6 ft	OCM	SC, DIA, SF
Woodruff	77.1	JAV-S27	Tributary to Maple Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	77.5	JAV-S26	Tributary to Maple Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	78.6	JAV-S25	Tributary to Maple Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	79.9	TDH S1	Canal to Maple Creek (Intermittent)	Minor- 8 ft	OCM	SC, DIA, SF
Woodruff	80.0	JAV-S23	Tributary to Maple Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	81.9	JAV-S29	Tributary to Cache River (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
Woodruff	82.4	Cache Rive	Cache River (Perennial)	Major-140 ft	HDD	ERW, CDES, PC, SC, DIA, PF
Woodruff	83.1	JAV-S35	Tributary to Cache River (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	83.5	JAV-S36	Tributary to Cache River (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Woodruff	85.9	JAV-S32	Tributary to Cache River (Intermittent)	Minor- 9 ft	OCM	SC, DIA, SF
Woodruff	85.9	JAV-S33	Tributary to Cache River (Intermittent)	Minor- 9 ft	OCM	SC, DIA, SF
Woodruff	86.1	JAV-S34	Tributary to Cache River (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Woodruff	87.6	JAV-S31	Tributary to Mill Ditch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	88.3	JAV-S30	Mill Ditch (Intermittent)	Intermediate- 15 ft	OCM	SC, DIA, PF
Woodruff	90.4	tdh int st	Tributary to Miller Branch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	91.7	ag ditch	Tributary to Buffalo Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	91.7	ditch	Tributary to Buffalo Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	92.1	JAV-S20	Tributary to Buffalo Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	92.4	JAV-S19	Tributary to Buffalo Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	92.4	JAV-S18	Tributary to Buffalo Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	93.0	JAV-S17	Tributary to Buffalo Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	93.0	JAV-S16	Tributary to Buffalo Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Woodruff	93.3	JAV-S11	Tributary to Buffalo Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Woodruff	93.4	JAV-S12	Tributary to Buffalo Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	93.5	JAV-S13	Tributary to Buffalo Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	93.7	JAV-S14	Tributary to Buffalo Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	94.0	JAV-S15	Tributary to Buffalo Creek (Intermittent)	Minor- 9 ft	OCM	SC, DIA, SF
Woodruff	95.2	ag ditch	Tributary to Bayou de View (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	96.0	Bayou de V	Bayou de View (Perennial)	Major- 250 ft	HDD	CDES, PC, SC, DIA, PF
Woodruff	96.0	ag ditch	Tributary to Bayou de View (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	96.7	JAV-S6	Tributary to Bayou de View (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	97.0	JAV-S7	Tributary to Bayou de View (Intermittent)	Minor- 9 ft	OCM	SC, DIA, SF
Woodruff	97.3	JAV-S8	Tributary to Bayou de View (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	98.4	JAV-S1	Tributary to Upper Seibert Lake (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	98.4	ag ditch	Tributary to Bayou de View (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	99.7	JAV-S3	Tributary to Caney Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	99.8	JAV-S4	Tributary to Caney Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Woodruff	100.1	JAV-S5	Caney Creek (Intermittent)	Intermediate- 30 ft	OCM	SC, DIA, SF
Woodruff	101.7	ag ditch	Tributary to East Flat Fork Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
Woodruff	102.2	tdhs1	Tributary to East Flat Fork Creek (Intermittent)	Intermediate - 16 ft	OCM	SC, DIA, SF
Woodruff	103.5	ag ditch	Tributary to East Flat Fork Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	104.3	tdhs2	Tributary to East Flat Fork Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	104.6	ag ditch	Tributary to East Flat Fork Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Woodruff	107.7	jr-s2	East Flat Fork Creek (Perennial)	Intermediate- 20 ft	OCM	SC, DIA, SF
St. Francis	109.7	ag ditch	Tributary to Big Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
St. Francis	109.9	ag ditch	Tributary to Big Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
St. Francis	109.9	ag ditch	Tributary to Big Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
St. Francis	110.7	ag ditch	Tributary to Big Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
St. Francis	111.2	ag ditch	Tributary to Big Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
St. Francis	111.6	Big C 2	Big Creek (Perennial)	Major- 115 ft	OCM	PC, SC, DIA, PF
St. Francis	112.2	DLS agditch	Tributary to Big Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
St. Francis	113.9	jr-s1	Hog Tusk Creek (Perennial)	Intermediate- 15 ft	OCM	SC, DIA, PF
Lee	118.2	jo intSTRM	Tributary to Larkin Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Lee	119.1	No Name #2	Tributary to Larkin Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Lee	120.4	jo agditch	Tributary to Larkin Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Lee	120.5	jo agditch	Tributary to Larkin Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Lee	121.3	ag ditch	Tributary to Larkin Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Lee	123.6	jr-s3	Tributary to Larkin Creek (Intermittent)	Intermediate- 15 ft	OCM	SC, DIA, SF
Lee	125.2	ag ditch	Tributary to Larkin Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Lee	129.0	jo agditch	Tributary to Big Cypress Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Lee	130.1	jo agditch	Tributary to Big Cypress Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Lee	130.3	jo S01	Tributary to Big Cypress Creek (Intermittent)	Intermediate- 13 ft	OCM	SC, DIA, SF
Lee	130.4	jo wwc	Tributary to Big Cypress Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Lee	130.8	tdh S02	Big Cypress Creek (Perennial)	Minor- 8 ft	OCM	SC, DIA, PF
Lee	131.1	tdh agditc	Tributary to Big Cypress Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Lee	133.0	tdh agditc	Tributary to Big Cypress Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Lee	134.1	tds ditch	Tributary to Big Cypress Creek (Intermittent)	Minor- 1 ft	OCM	SC, DIA, SF
Lee	136.7	jo/tds wwc	Tributary to Caney Creek (Intermittent)	Minor -2 ft	OCM	SC, DIA, SF
Lee	137.3	jo/tdh wwc	Tributary to Big Cypress (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Lee	137.3	jo/tdh wwc	Tributary to Big Cypress (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	139.7	tdh S03	Lick Creek (Perennial)	Intermediate- 50 ft	OCM	SC, DIA, SF
Phillips	140.2	tdh rrditc	Tributary to Lick Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	140.8	tdh int st	Tributary to Lick Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
Phillips	140.8	tdh int st	Tributary to Lick Creek (Intermittent)	Minor- 3 ft	OCM	SC, DIA, SF
Phillips	141.2	tdh wwc	Tributary to Lick Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	143.7	jo agditch	Tributary to Lick Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	144.7	jo S03	Crooked Creek (Intermittent)	Intermediate- 50 ft	OCM	SC, DIA, PF
Phillips	144.7	jo wwc	Tributary to Crooked Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	144.7	jo wwc	Tributary to Crooked Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	144.7	jo wwc	Tributary to Crooked Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	146.0	jo wwc	Tributary to Lick Creek (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	146.4	jo INT st	Tributary to Lick Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Phillips	147.8	jo agditch	Tributary to Hurricane Ditch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	147.8	jo agditch	Tributary to Hurricane Ditch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	147.8	jo agditch	Tributary to Hurricane Ditch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	147.8	jo agditch	Tributary to Hurricane Ditch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	148.0	jo agditch	Tributary to Hurricane Ditch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	148.2	jo agditch	Tributary to Hurricane Ditch (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	149.1	jo agditch	Tributary to Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	149.5	jo S04	Tributary to Beaver Bayou (Intermittent)	Intermediate- 10 ft	OCM	SC, DIA, PF
Phillips	149.6	jo agditch	Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	150.0	jo agditch	Tributary to Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	150.0	jo agditch	Tributary to Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	150.6	jo agditch	Tributary to Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	150.7	jo agditch	Tributary to Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	150.7	jo wwc	Tributary to Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	151.2	jo wwc	Tributary to Beaver Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	151.3	jo INT st	Tributary to Chaney Creek (Intermittent)	Minor- 5 ft	OCM	SC, DIA, SF
Phillips	151.5	jo S05	Tributary to Long Lake Bayou (Intermittent)	Minor- 8 ft	OCM	SC, DIA, SF
Phillips	151.6	jo agditch	Tributary to Long Lake Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	153.0	Long L.	Long Lake Bayou (Perennial)	Major- 210 ft	OCM	PC, SC, DIA, SF
Phillips	153.7	jo agditch	Tributary to Long Lake Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	153.9	jo wwc	Tributary to Long Lake Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	154.0	jo agditch	Tributary to Long Lake Bayou (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	154.4	int st	Tributary to Long Lake (Perennial)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	154.6	jo agditch	Tributary to Long Lake Bayou (Intermittent)	Major 500 ft	OCM	SC, DIA, SF
Phillips	154.9	jo wwc	Tributary to Mississippi River (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Arkansas County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f] and/or Environmental Sensitivity[g]
Phillips	155.2	DLS ditch	Tributary to Mississippi River (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	155.2	DLS ditch	Tributary to Mississippi River (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	155.4	DLS ditch	Tributary to Mississippi River (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	155.5	DLS ditch	Tributary to Mississippi River (Intermittent)	Minor- 2 ft	OCM	SC, DIA, SF
Phillips	157.3	Miss River	Mississippi River (Perennial)	Major- 4000 ft	HDD	PC, SC, DIA / FW

[a]Milepost based on desktop analysis of proposed pipeline route.

[b]Intermittent and Perennial designations determined by site reconnaissance and USGS name.

[c]Perennial waterbodies in St. Francis, Lee, and Phillips counties may contain potential habitat for the fat pocketbook; perennial waterbodies in St. Francis, Lee, and Phillips counties, Arkansas may contain potential habitat for the scaleshell; perennial waterbodies in Cleburne County, Arkansas may contain potential habitat for speckled pocketbook; perennial waterbodies in Woodruff County, Arkansas may contain potential habitat for the pink mucket; large waterbodies in St. Francis County, Arkansas may contain potential habitat for the pallid sturgeon.

[d]Minor stream is less than 10 feet wide, Intermediate streams are between 10 and 99 feet, and Major are over 100 feet.

[e]HDD = horizontal directional drill, OCM = open cut method (includes both conventional [i.e., without work area isolation] and non-coventional [with work area isolation] methods).

[f]Arkansas State Water Quality Classifications (found within project area) –Extraordinary Resource Waters (ERW), Ecologically Sensitive Waterbodies (ESW), Channel-altered Delta Eco-region Streams (CDES), Primary Contact Recreation (PC), Secondary Contact Recreation (SC), Domestic, Industrial, and Agricultural Water Supplies (DIA), Trout Fisheries (FT), Seasonal Fishery (SF), Perennial Fishery (PF)

[g]Environmental Sensitivity = Extraordinary Resource Water (ERW), Nationwide Rivers Inventory (NRI), Trout Fisheries Stream (TFS)

APPENDIX D-3

EROSION AND SEDIMENT CONTROL PLAN
AND STORM WATER POLLUTION PREVENTION PLAN
FOR MISSISSIPPI

FAYETTEVILLE/GREENVILLE LATERAL EXPANSION PROJECT

EROSION AND SEDIMENT CONTROL PLAN AND STORM WATER POLLUTION PREVENTION PLAN FOR MISSISSIPPI

SUBMITTED BY TEXAS GAS TRANSMISSION, LLC

JULY 2007

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1.0 INTRODUCTION

1.1 Proposed Project Name, Description, and Erosion and Sediment Control Regulatory Requirements

Texas Gas Transmission, LLC (Texas Gas), a Boardwalk Pipeline Partners, LP company, is seeking authorization from the Commission pursuant to Section 7(c) of the Natural Gas Act (NGA) to construct and operate the proposed Project. The Project includes:

- Two pipeline laterals totaling approximately 262.6 miles (the Fayetteville Lateral, located primarily in Arkansas, crossing the Mississippi River and into western Mississippi, and the 96.4 mile Greenville Lateral, located entirely in Mississippi);
- One (1) compressor station on the Greenville Lateral, totaling 10,650 horsepower (hp);
- The 0.8 mile Kosciusko 36" Pipeline and 0.4 mile Kosciusko/Southern Natural 20" Pipeline tie-ins, located at the terminus of the Greenville Lateral in Mississippi;
- Certain piping modifications at the existing Greenville Compressor Station located on the Texas Gas Main Line Pipeline System at Greenville, Mississippi; and
- Ancillary facilities such as interconnects, metering and regulating (M&R) stations, block valves, etc.

The Project is proposed to develop an interstate pipeline transportation system to deliver approximately 841 thousand decatherms per day (mdthd) of natural gas from Southwestern Energy Company's (Southwestern Energy) Fayetteville Shale natural gas production field in Arkansas through the Texas Gas system to several interconnects at Kosciusko, Mississippi.

The Fayetteville Lateral will consist of approximately 166.2 miles of 36-inch-diameter pipeline with a capacity of 841 mdthd. The proposed route of the Fayetteville Lateral would begin in Conway County, Arkansas; extend through Faulkner, Cleburne, White, Woodruff, St. Francis, Lee, and Phillips counties in Arkansas; cross the Mississippi river near Helena, Arkansas; and interconnect with the existing Texas Gas mainline in Coahoma County, Mississippi.

To the extent that gas from the Fayetteville Lateral is nominated for delivery to the Greenville Lateral, that movement will be accomplished by a backhaul down the existing Texas Gas mainline between its interconnects with the two proposed laterals. Backhauling this gas will provide for continued transport to northern markets while delivering Fayetteville Shale natural gas production field volumes to Kosciusko, Mississippi.

The Greenville Lateral will consist of approximately 96.4 miles of 36-inch-diameter pipeline with a capacity of 768 mdthd. The proposed route of the Greenville Lateral will originate at the existing Texas Gas compression station in Greenville, Mississippi, and extend through Washington, Sunflower, Humphreys, and Holmes counties to an interconnect with Texas Eastern Transmission, LP (Texas Eastern) and other pipelines near Kosciusko in Attala County, Mississippi. The existing yard and piping at the existing Texas Gas compressor station will be modified so that gas can be delivered east along the new Greenville Lateral to interconnect with existing pipelines at Kosciusko, Mississippi. There is no planned increase in hp at the Greenville Compressor Station.

In order to meet the Project design to deliver the capacity of natural gas, Texas Gas will construct a new compressor station for the Greenville Lateral, with 10,650 hp. This compressor station will be located near Kosciusko, Mississippi in Attala County.

The 0.8 mile Kosciusko 36" Pipeline will begin at the Kosciusko Compressor Station, trend west to Niles Road, and then follow Niles Road trending generally south to a tie-in with Gulf South at MP 0.8. The 0.4 mile Kosciusko/Southern Natural 20" Pipeline will begin at the tie-in with Gulf South, and trend generally south-southeast to a tie-in with Southern Natural.

This Erosion Control Plan and Storm Water Pollution Prevention Plan for Mississippi is designed to conform to the related requirements of the Federal Energy Regulatory Commission (FERC), and to support state certification of both the FERC project approval and Clean Water Act Section 404 (i.e., wetlands) permits granted by the U.S. Army Corps of Engineers (Corps), Memphis and Vicksburg Districts. Such certification, under Clean Water Act Section 401, requires that the project meet state water quality requirements. To meet these requirements, this plan conforms to the guidelines of the State of Mississippi contained in Chapter 2 of the *Planning and Design Manual for the Control of Erosion, Sediment, and Stormwater* prepared in 1994 by the Mississippi Department of Environmental Quality (MDEQ), Mississippi Soil and Water Conservation Commission, and USDA Soil Conservation Service, and to the May 2005 MDEQ *Mississippi Storm Water Pollution Prevention Plan (SWPPP) Guidance Manual for Construction Activities*. As described on the General Permits Branch website of MDEQ,

> "MDEQ will follow the federal storm water regulations as they apply to oil and gas-related construction activities. Construction activities associated with oil and gas exploration, production, processing and treatment, and transmission facilities that are defined in the following North American Industrial Classification System (NAICS) codes and titles: 211-Oil and Gas Extraction, 213111-Drilling Oil and Gas Wells, 213112-Support Activities for Oil and Gas Operations, 48611-Pipeline Transportation of Crude Oil and 48621-Pipeline Transportation of Natural Gas, are generally exempt from State NPDES construction requirements. MDEQ strongly encourages voluntary application of construction best management practices in order to minimize the discharge of pollutants in storm water runoff."[1]

The contractor will implement specific BMPs to meet or exceed the performance requirements outlined in this plan. BMP details developed by the contractor may require information (i.e., dimensions) in addition to those shown in Appendix A to fulfill the requirements of the MDEQ Hydrostatic Test Water General Permit.

1.2 Applicant

Prepared for: Steven J. Law

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1.3 Preparer Information

[1] http://www.deq.state.ms.us/MDEQ.nsf/page/epd_epdgeneral?OpenDocument

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1.4 Preparer's Credentials

Ela Whelan is registered as a Professional Engineer in the State of Oregon. Anne MacDonald is a Certified Engineering Geologist in the State of Oregon.

1.5 Purpose/Objectives of the Erosion Control Sediment Plan (ESCP) and Storm Water Pollution Prevention Plan (SWPPP)

The purpose of this plan is to describe the proposed construction activities and all temporary and permanent erosion and sediment control (ESC) measures, pollution prevention measures, inspection/monitoring/maintenance activities, and recordkeeping that would be implemented during the proposed construction project. The objectives of the ESCP and SWPPP are to:

1. Implement Best Management Practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent storm water contamination and water pollution from construction activity.
2. Prevent violations of surface water quality, ground water quality, or sediment management guidelines in Mississippi.
3. Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water by controlling peak flow rates and volumes of storm water runoff.

1.6 Organization of the ESCP and SWPPP

This report is divided into seven main sections with several appendices that include storm water related reference materials. The topics presented in the each of the main sections are:

- Section 1 – INTRODUCTION. This section provides a summary description of the project, and the organization of this document.
- Section 2 – SITE DESCRIPTION. This section provides a detailed description of the existing site conditions, proposed construction activities.
- Section 3 – CONSTRUCTION STORMWATER BMPs. This section provides a detailed description of the BMPs to be implemented based on requirements of FERC and MDEQ.
- Section 4 – CONSTRUCTION PHASING AND BMP IMPLEMENTATION. This section provides a description of construction activities and the timing of the BMP implementation in relation to the project schedule.

- Section 5 – STATE ENVIRONMENTAL COMPLIANCE, TRAINING, AND INSPECTION. This section identifies the appropriate contact names (emergency and non-emergency), monitoring personnel, and the onsite temporary erosion and sedimentation control inspector
- Section 6 – SITE INSPECTIONS AND MONITORING. This section provides a description of the inspection and monitoring requirements.
- Section 7 – RECORDKEEPING. This section describes the requirements for documentation of the BMP implementation, site inspections, monitoring results, and changes to the implementation of certain BMPs due to site factors experienced during construction.

2.0 SITE DESCRIPTION

2.1 Pipeline Route

The proposed approximately 262.6-mile long Fayetteville/Greenville Lateral Expansion Pipeline Project (Project) is located in the States of Mississippi and Arkansas, as shown in Figure 1. Figure 2 depicts the pipeline route for the Fayetteville Lateral located in Arkansas with the eastern portion in Mississippi, and Figure 3 includes the Greenville Lateral located in Mississippi. Areas impacted by construction include agricultural, forested, residential, commercial and industrial land uses. Runoff from the pipeline construction would enter the following Mississippi streams listed as water quality impaired under the requirements of the federal Clean Water Act, section 303(d):

Humphreys, Yazoo River – Listed for nutrients and organic enrichment/low dissolved oxygen (DO).

Holmes, Tchula Lake – Listed for nutrients, organic enrichment/low DO, sediment/siltation.

Holmes, Box Creek – Listed for sediment/siltation.

Holmes-Attala, Big Black River – Listed for sediment/siltation.

2.2 Proposed Construction Site Description

Texas Gas is proposing the construction of two laterals, as described in Table 1:

- The Fayetteville Lateral is approximately 166.2 miles of 36-inch-diameter pipeline beginning in north central Arkansas, traversing east-southeast across Arkansas to and across the Mississippi River near Helena, Arkansas, and into west central Mississippi for 8.4 miles where it would tie into Texas Gas' existing mainline system near Lula, Mississippi. See Table 1 and Figure 2.
- The Greenville Lateral is approximately 96.4 miles of 36-inch-diameter pipeline from it's existing Greenville, Mississippi Compressor Station in Washington County, Mississippi to near Kosciusko in Attala County, Mississippi. See Figure 3.

The pipeline route would traverse steep terrain, uplands, floodplains, forested land, agricultural land, wetlands, rivers, and creeks.

The 0.8 mile Kosciusko 36" Pipeline will begin at the Kosciusko Compressor Station, trend west to Niles Road, and then follow Niles Road trending generally south to a tie-in with Gulf South at MP 0.8. The 0.4 mile Kosciusko/Southern Natural 20" Pipeline will begin at the tie-in with Gulf South, and trend generally south-southeast to a tie-in with Southern Natural.

Table 1 Description of Pipeline Facilities in Mississippi

Pipeline Type	Diameter (inches)	Milepost From	Milepost To	Length (miles)	County
Fayetteville Lateral					
Steel Natural Gas Pipeline	36	157.7	166.2	8.5	Coahoma County
Greenville Lateral					
Steel Natural Gas Pipeline	36	0.0	17.3	17.3	Washington County
	36	17.3	20.1	2.7	Sunflower County
	36	20.1	20.3	0.3	Washington County
	36	20.3	46.1	25.4	Humphreys County
	36	46.1	77.7	31.5	Holmes County
	36	77.7	96.4	18.7	Attala County
Kosciusko 36" Pipeline					
Steel Natural Gas Pipeline	36	0.0	0.8	0.8	Attala County
Kosciusko/Southern Natural 20" Pipeline					
Steel Natural Gas Pipeline	20	0.0	0.4	0.4	Attala County
Total Length in Mississippi				**106.1**	

2.3 Aboveground Facilities

The aboveground facilities would consist of a new compressor station, 29 Metering and Regulating (M&R) stations, 30 interconnects (tie-ins), 21 Mainline Valves (MLVs), and 3 launcher and receiver assemblies. The Mississippi portion of the Fayetteville Lateral will include 1 M&R station, 1 MLV, and a receiver assembly. Greenville Lateral will include 10 of the M&Rs and 10 of the MLVs. One launcher and one receiver assembly will be located on the Greenville Lateral along with a distillate storage tank.

The new compressor station will be located at milepost (MP) 96.4 in Attala County, near Kosciusko, Mississippi. The Kosciusko Compressor Station will contain two Caterpillar 3612 Engines Driving Arial Compressors (3,550 hp each) and two Caterpillar 3606 Engines Driving Arial Compressors (1,775 hp each) to supply the needed compression. At the existing Texas Gas Greenville Compressor Station near Greenville, Mississippi, modifications will be made to the yard and station piping, valves, fittings, cooling, controls, and metering facilities.

Proposed aboveground facilities, with the exception of compressor stations, will be built and installed within the permanent pipeline right-of-way and will not require additional space. A summary of aboveground facility land requirements is provided in Table 2.

Table 2 Land Requirements for Aboveground Facilities in Mississippi

County	Project Component	Milepost	Temporary Land Use (acres)	Permanent Land Use (acres)
Fayetteville Lateral				
Coahoma	Texas Gas Transmission M&R Station	166.2	1.8	1.8
Coahoma	Receiver	166.2	0.1	0.1
Coahoma	MLV No. 11	166.2	0.1	0.1
Coahoma		**Subtotal:**	**2.0**	**2.0**
Greenville Lateral				
Washington	Texas Gas Pipeline M&R Station	0.0	0.9	0.9
Washington	MLV No. 1	0.0	0.1	0.1
Washington	Launcher	0.0	0.1	0.1
Washington	Tennessee Gas Pipeline M&R Station	0.5	2.4	2.4
Washington	American Natural Resources M&R Station	1.8	2.6	2.6
Washington	Trunkline M&R Station	6.4	2.0	2.0
Washington	MLV No. 2	6.4	0.1	0.1
Washington		**Subtotal:**	**8.2**	**8.2**
Sunflower	MLV No. 3	19.4	0.1	0.1
Sunflower		**Subtotal:**	**0.1**	**0.1**
Humphreys	Columbia Gulf Transmission M&R Station	28.7	2.0	2.0
Humphreys	Tennessee Gas Pipeline M&R Station	29.8	0.9	0.9
Humphreys	MLV No. 4	29.8	0.1	0.1
Humphreys	MLV No. 5	42.0	0.1	0.1
Humphreys		**Subtotal:**	**3.1**	**3.1**
Holmes	MLV No. 6	54.0	0.1	0.1
Holmes	MLV No. 7	66.1	0.1	0.1
Holmes	MLV No. 8	73.0	0.1	0.1
Holmes		**Subtotal:**	**0.3**	**0.3**
Attala	MLV No. 9	81.8	0.1	0.1
Attala	MLV No. 10	96.4	0.1	0.1
Attala	Gulf South M&R Station	96.4	2.4	2.4
Attala	Texas Eastern Transmission M&R Station	96.4	1.9	1.9
Attala	Southern Natural M&R Station	96.4	1.4	1.4
Attala	Texas Eastern Transmission M&R Station	96.4	0.8	0.8

County	Project Component	Milepost	Temporary Land Use (acres)	Permanent Land Use (acres)
Attala	Receiver	96.4	0.1	0.1
Attala	Kosciusko Compressor Station	96.4	65.0	65.0
Attala		**Subtotal:**	**71.8**	**71.8**
		Total:	**85.5**	**85.5**

Note: The acreage numbers in this table have been rounded for presentation purposes. As a result, the values may not reflect the exact sum of the addends in all cases.

2.4 Location Maps, Detailed Route Maps, and Plot/Site Plans

Location of the proposed pipeline is shown on Figure 1 with more information on the Greenville Lateral in Figure 3.

2.5 Disturbance Area Summary

To the greatest extent possible, while providing safe distance between pipelines, rights-of-way will parallel and overlap the existing Texas Gas mainline right-of-way or follow other existing utility corridors where construction constraints require installation outside the mainline right-of-way. In areas where the Project is co-located with existing utility right-of-ways, Texas Gas proposes to utilize 10 feet of the existing right-of-way during construction for trench spoil placement.

Table 3 summarizes the land requirements associated with the project including access roads.

Table 3 Land Requirements for Pipeline Segments In Mississippi

Pipeline Type	County	Length (miles)	Construction Right of Way (acres)	New Operational Right of Way (acres)
Fayetteville Lateral				
Steel Natural Gas Pipeline	Coahoma	8.4	132.9	51.1
Greenville Lateral				
Steel Natural Gas Pipeline	Washington	17.5	232.0	106.0
	Sunflower	2.8	43.0	17.0
	Humphreys	25.8	355.0	157.0
	Holmes	31.6	434.0	192.0
	Attala	19.9	262.0	120.0
Total		**97.6**	**1,458.9**	**643.5**

Note: The acreages for the construction right-of-way include additional temporary workspaces. The values in this table have been rounded for presentation purposes. As a result, the totals may not reflect the exact sum of the addends in all cases.

The construction right-of-way (ROW) would be 100 ft. wide in upland areas. The construction ROW would be reduced to 75 ft. in wetlands crossings. The 100 ft. wide crossing in uplands is proposed to be supplemented by a request for an additional 20 feet of construction corridor width where full-width topsoil segregation will be required in areas of rice production. Although no additional temporary workspace is requested for topsoil segregation at this time, it is likely that Texas Gas will request temporary workspace for topsoil segregation for several locations along the pipeline by the time of construction.

The typical overland pipeline construction will require a 65-foot working side and 35-foot trench spoil side. Where the Project will be co-located adjacent to an existing pipeline, the construction corridor will be no closer than 15 feet from the existing pipeline to keep construction equipment off the operation right-of-way.

2.6 Temporary Extra Work Space

Additional temporary workspace areas will be required for construction activities requiring additional area outside the construction corridor. These construction activities include but are not limited to:

- Road and railroad crossings;
- Wetland and waterbody crossings;
- Foreign pipeline crossings and interconnects;
- Foreign utility crossings;
- Areas requiring topsoil segregation;
- Areas with steep side slopes or other difficult terrain;
- Pipeline access and truck turnarounds;
- Fabrication and staging areas;
- Hydrostatic test water withdrawal and discharge locations;
- Horizontal directional drill (HDD) sites; and
- Rock disposal sites.

Extra work space may also be required where special construction techniques would be used. The size and configuration of each extra workspace is unique and dependent upon the existing conditions (e.g., available or accessible space, the presence of buildings and other structures, crossing angle, crossing depth, length of crossing, terrain, the presence of trees or sensitive habitat, etc.) at each work location. The requirements for extra work spaces would be determined during the design of the pipeline ROW. Extra work spaces are included in the total acreage of area to be affected by construction, identified in Table 3.

2.7 Operational Right-of-Way

Texas Gas proposes an operational right-of-way totaling 50 feet to maintain the mainline system. Texas Gas will typically maintain a right-of-way of 25 feet on either side of the pipeline in areas not co-located with another pipeline. MLVs will be contained within the operational right-of-way.

2.8 Access Roads

To the extent possible, Texas Gas will use existing access roads. Field investigation indicates that the availability of previously used roads and other existing roads is sufficient to preclude the need to construct any new roads. Maintenance may be required on some of the existing roads prior to hauling construction equipment and materials.

2.9 Pipe Storage and Contractor Yards

Texas Gas will use pipe storage yards to stockpile pipe, fabricate and concrete-coat joints, as necessary. Texas Gas will use contractor yards during construction to stage construction operations, store materials, park equipment, and setup temporary construction offices.

2.10 Soils

Pipeline construction, above ground facilities, and temporary workspaces would come into contact with a number of soil series. Soils information was provided by the National Resource Conservation Service (NRCS). Soil interpretations at the broadest scale in the United States are based on Major Land Resource Areas (MLRAs). MLRAs are geographically associated land resource units, usually encompassing several thousand acres, characterized by a particular pattern of soils, geology, climate, water resources, and land use.

Fayetteville Lateral

The Fayetteville Lateral will cross three MLRAs recognized by the NRCS: the Arkansas Valley and Ridges (MLRA 118); the Southern Mississippi Valley Alluvium (MLRA 131); and the Southern Mississippi Valley Silty Uplands (MLRA 134). Of these MLRA, the Fayetteville Lateral will cross only MLRA 131.

Southern Mississippi Valley Alluvium (MLRA 131)

Most of this area is in agricultural production. About 55 percent is cropland, 35 percent woodland, 7 percent pastureland, and about 3 percent is used for miscellaneous purposes. Cropland makes up about three-fourths of the acreage in the north and less than one-fourth in the south. The proportion of forest land varies inversely with that of planted crops; the proportion of pasture is a little higher in the south. Controlling surface water and artificially draining the wet soils are major concerns for cropland management.

Soil resource issues identified along the length of the Fayetteville Lateral route include:

a) Prime Farmland

Approximately 49 percent of soil along the proposed Fayetteville Lateral is classified as Prime Farmland. Another 19 percent is classified as Prime Farmland, when adequately drained. An additional 8 percent is classified as Farmland of Statewide Importance. A total of 76 percent of soil along the proposed route is considered agriculturally important (i.e., Prime Farmland or Farmland of Statewide Importance).

b) Hydric Soils

Approximately 32 percent of the soil along the Fayetteville Lateral is considered predominantly hydric. Hydric soils are more common in the eastern counties of the Fayetteville Lateral compared to the western counties.

c) Erosion Potential

Soils with a high percentage of silt and fine sand, as well as those that occur at steeper slopes along the Fayetteville Lateral are more susceptible to erosion that those with a high clay content and in relatively flat areas. Approximately 53 percent of the soils along the Fayetteville Lateral are classified as highly erodible or potentially highly erodible. The erosion potential of soil mapping units crossed by the Fayetteville Lateral in Mississippi is identified in Table 5.

d) Shrink-Swell Potential

Soils with a high shrink-swell potential underlie about 8 percent of the Fayetteville Lateral, while an additional 16 percent has a moderate shrink-swell potential.

Greenville Lateral

The Greenville Lateral will cross two MLRAs: the Southern Mississippi Valley Alluvium (MLRA 131) and the Southern Mississippi Valley Silty Uplands (MLRA 134). MLRA 131 is described above.

Southern Mississippi Valley Silty Uplands (MLRA 134)

Most of this area is in farms; a small acreage is federally owned. About 35 percent of the area is cropland, but the proportion varies greatly from county to county, depending on the soils and the topography. About 16 percent of the area is in pasture or hay. About 46 percent is in a forest of mixed pine and hardwoods. About 3 percent of the area is used for urban development or other purposes. There is an increase in urban development near the metropolitan areas. (USDA NRCS, 1981).

Soil resource issues identified on the Greenville Lateral route include:

e) Prime Farmland

Approximately 83 percent of soil along the Greenville Lateral is classified as Prime Farmland or Prime Farmland, when adequately drained. No Farmland of Statewide Importance was identified.

f) Hydric Soils

Approximately 83 percent of the soil along the Greenville Lateral is considered predominantly hydric, or containing significant hydric inclusions.

g) Erosion Potential

Soils with a high percentage of silt and fine sand, as well as those that occur at steeper slopes along the Greenville Lateral, are more susceptible to erosion that those with a high clay content and in relatively flat areas. Approximately 26 percent of the soil along the Greenville Lateral is classified as highly erodible or potentially highly erodible, with the occurrence increasing in the Southern Mississippi

Valley Silty Uplands MLRA. The erosion potential of soil units crossed by the Greenville Lateral is identified in Table 4.

h) Shrink-Swell Potential

Soils with a high shrink-swell potential underlie about 54 percent of the Greenville Lateral, while an additional 13 percent has a moderate shrink-swell potential. The shrink-swell potential of soil units crossed by the Greenville Lateral is identified in Table 4.

Table 4 Greenville Lateral Soil Map Units and Description

County	Soil Series	Map Unit Description	Drainage	Hydric Soil	Erodibility	Shrink-Swell Potential
Humphreys, Sunflower, Washington	Alligator	Alligator clay, level phase	Poorly drained	All hydric	Not highly erodible land	Very high
		Alligator clay, nearly level phase	Poorly drained	All hydric	Not highly erodible land	
		Alligator clay, gently sloping phase	Poorly drained	All hydric	Potentially highly erodible land	
		Alligator clay, nearly level overflow phase	Poorly drained	All hydric	Not highly erodible land	
		Alligator silty clay, nearly level phase	Poorly drained	All hydric	Not highly erodible land	
		Alligator silty clay loam, nearly level overflow phase	Poorly drained	All hydric	Not highly erodible land	
		Alligator silty clay, gently sloping phase	Poorly drained	All hydric	Potentially highly erodible land	
		Alligator-Dowling clays, overflow phase	Poorly drained	All hydric	Potentially highly erodible land	
		Alligator, Dowling, and Forestdale soils, overflow phase	Poorly drained	All hydric	Potentially highly erodible land	
Washington	Bosket	Bosket very fine sandy loam, nearly level phase (askew)	Moderately well drained	Partially hydric	Not highly erodible land	Low
Attala, Holmes	Calhoun	Calhoun silt loam		Hydric Soil		Low
Humphreys, Sunflower, Washington	Dowling	Dowling clay (sharkey)	Very poorly drained	Partially hydric	Not highly erodible land	Very high
		Dowling clay, overflow phase	Very poorly drained	Partially hydric	Not highly erodible land	
		Dowling soils (sharkey)	Very poorly drained	Partially hydric	Not highly erodible land	
		Dowling soils, overflow phase	Very poorly drained	Partially hydric	Not highly erodible land	
Holmes, Humphreys	Dubbs	Dubbs very fine sandy loam		Partially hydric	Not highly erodible land	
Holmes, Humphreys, Sunflower, Washington	Dundee	Dundee silty clay loam, nearly level phase	Somewhat poorly drained	Partially hydric	Not highly erodible land	High
		Dundee silty clay loam, nearly level shallow	Somewhat poorly drained	Partially hydric	Not highly erodible land	

County	Soil Series	Map Unit Description	Drainage	Hydric Soil	Erodibility	Shrink-Swell Potential
		phase				
		Dundee silty clay loam, gently sloping phase	Somewhat poorly drained	Partially hydric	Not highly erodible land	
		Dundee silt loam, gently sloping phase	Somewhat poorly drained	Partially hydric	Not highly erodible land	
		Dundee very fine sandy loam, nearly level phase	Somewhat poorly drained	Partially hydric	Not highly erodible land	High
Holmes, Humphreys, Sunflower, Washington	Forestdale	Forestdale silty clay, nearly level phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silty clay, gently sloping phase	Poorly drained	Partially hydric	Potentially highly erodible land	
		Forestdale silty clay loam, level phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silty clay loam, nearly level phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silty clay loam, nearly level overflow phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silty clay loam, nearly level shallow phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silty clay loam, gently sloping phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silty clay loam, gently sloping overflow phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silt loam, nearly level phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silt loam, nearly level overflow phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silt loam, nearly level moderately shallow phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale silt loam, gently sloping phase	Poorly drained	Partially hydric	Not highly erodible land	
		Forestdale very fine sandy loam, nearly level phase	Poorly drained	Partially hydric	Not highly erodible land	
Attala ,Holmes	Gillsburg	Gillsburg silt loam, occasionally flooded		Hydric Soil		Moderate
Humphreys	Iberia	Iberia clay	Poorly drained	Hydric Soil	Not highly erodible land	High
Attala	Kinston	Kinston loam, occasionally flooded		Hydric Soil		Moderate
Attala	Kirksville	Kirksville loam, occasionally flooded		Hydric Soil		Moderate
Attala	Mantachie	Mantachie loam, occasionally flooded		Hydric Soil		Moderate
		Mantachie loam, frequently flooded		Hydric Soil		
Attala, Holmes	Oaklimiter	Oaklimiter silt loam, occasionally flooded		Hydric Soil		Low
Attala, Holmes	Providenc e	Providence silt loam, 2 to 5 percent slopes, eroded		Not hydric	Highly erodible land	Low

County	Soil Series	Map Unit Description	Drainage	Hydric Soil	Erodibility	Shrink-Swell Potential
		Providence silt loam, 8 to 12 percent slopes, eroded		Partially hydric	Highly erodible land	
		Providence silt loam, 5 to 8 percent slopes, eroded		Partially hydric	Highly erodible land	
Washington	Sharkey	Sharkey clay, level phase	Poorly drained	All hydric	Not highly erodible land	Very high
		Sharkey clay, nearly level phase	Poorly drained	All hydric	Not highly erodible land	
		Sharkey clay, gently sloping phase	Poorly drained	All hydric	Potentially highly erodible land	
		Sharkey silty clay loam, nearly level phase	Poorly drained	All hydric	Not highly erodible land	
Attala, Holmes	Smithdale	Smithdale fine sandy loam, 8 to 15 percent slopes		Partially hydric	Highly erodible land	Low
		Smithdale fine sandy loam, 15 to 40 percent slopes		Partially hydric	Highly erodible land	
Attala, Holmes	Sweatman	Sweatman loam, 8 to 12 percent slopes, eroded		Partially hydric	Highly erodible land	Moderate
Attala	Tippah	Tippah silt loam, 2 to 5 percent slopes, eroded		Not hydric	Highly erodible land	Low
		Tippah silt loam, 8 to 12 percent slopes, eroded		Partially hydric	Highly erodible land	
Washington	Tunica	Tunica clay, nearly level phase	Poorly drained	Not hydric	Not highly erodible land	Very High
Attala	Chenneby	Chenneby-Rosebloom complex, Yockanookany River bottoms		Hydric Soil		Very high

Above Ground Facilities

The Greenville Lateral will require the addition of a new 10,650 hp compressor facility to be located at MP 96.4 in Attala County (Kosciusko Compressor Station). This permanent facility is expected to cover 35 acres, with up to 70 acres disturbed during construction. Soils on the preferred location are mapped as the Smithdale-Sweatman-Providence association. The Sweatman and Providence components are listed as Prime Farmland soils. All three soil series are described as moderately well to well drained silt loams. The Sweatman loam, which is mapped in the northwest corner of the site, appears to be limited due to a seasonally high water table of approximately 30 inches (Hart, NRCS personal communication, March 15, 2007).

Each of the other permanent aboveground facilities is expected to utilize about 0.92 acre and all occur within the mapped pipeline corridor. Soils at each of the aboveground facilities will be considered permanently unavailable for other uses. This includes the above 35 acres in use as a compressor station, and about 50 acres in use for other aboveground facilities.

Ancillary Facilities

Additional temporary workspace (ATWS) will be required at road and railroad crossings, waterbody crossings, and in areas with steep side slopes or other difficult terrain. ATWS will also be required for topsoil segregation, truck turnarounds, hydrotest water withdrawal and discharge locations, crossovers,

tie-ins, staging and fabrication areas, and at foreign utility crossings. Additionally, ATWS will be needed wherever special construction techniques are required.

Impacts to soil at ancillary facilities are considered temporary, and conditions will be restored upon completion of construction.

Upon completion of the Project, the land within the pipe storage and contractor yards will be returned to preconstruction conditions, so no permanent impacts on Prime Farmland or other soil would result from use of the site.

3.0 CONSTRUCTION STORMWATER BMPS

3.1 General Description of Construction Activities

Proposed construction activities include:

- Clearing and grading activities necessary to build the pipeline. Orange construction fencing, or approved equivalent, would be used to define the limits of disturbance.
- Horizontal directional drilling (HDD) underneath streams and the Mississippi River.
- Trenching through topsoil in pastures.
- Trenching through wetlands.
- Improvements to existing access roads.

3.2 ESCP and SWPPP Elements

Implementation of the BMPs identified herein meet erosion control and construction requirements for MDEQ (ESCP) and the Mississippi Storm Water Pollution Prevention Plan (SWPPP). Construction approaches and BMP details expected to be employed during construction are provided in Appendix A. Alternate BMPs would be implemented in the event the BMP(s) listed herein are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the Large Construction Storm Water General Permit issued by MDEQ (Appendix B).

3.2.1 Mark Clearing Limits

To protect adjacent properties and to reduce the area of soil exposed to construction, the limits of construction would be clearly marked before land-disturbing activities begin. Trees that are to be preserved, as well as all sensitive areas and their buffers, should be clearly delineated in the field. In general, natural vegetation and native topsoil should be retained in an undisturbed state to the maximum extent possible. The BMPs relevant to marking the clearing limits that would be applied for this project include:

- Preservation of Existing Vegetation/Bufferstrips (ESCP and SWPPP)

  Clearing would be limited to within the construction easement and only where necessary. Natural vegetation would be protected to the extent possible, particularly on steep slopes.

- Silt Fence (ESCP and SWPPP)

  Silt fencing would be used downslope of construction activities along the length of the pipeline, unless there is dense vegetation that prevents sediment from leaving the site, or other protection is in place. Silt fences made of filter fabric would be buried at the bottom, stretched, and supported by posts.

3.2.2 Establish Construction Access

Construction access or activities occurring on unpaved areas should be minimized. Where access points are necessary, they should be stabilized to minimize the tracking of sediment onto public roads. Street sweeping should be employed to prevent sediment from entering state waters. All wash wastewater should be controlled on site. The specific BMPs related to establishing construction access that would be used on this project include:

- Stabilized Construction Entrance/Exit (ESCP and SWPPP)

  Graveled construction entrances would be used to reduce the amount of sediment tracked onto paved roads by vehicles or equipment. These areas would be shown on the final plans.

3.2.3 Control Flow Rates

In order to protect the properties and waterways downstream of the project site, stormwater discharges from the site would be controlled using the following BMPs as applicable.

- Diversion (ESCP and SWPPP)

  Gradient terraces would be used on steep slopes to limit the quantity of concentrated runoff and minimize erosion. Water collected from the terraces would be treated, as necessary, and piped to a stable part of the site for discharge into the drainage way.

- Slope Breakers

  Texas Gas will construct slope breakers across the pipeline construction right-of-way to slow the velocity of runoff and move water off the right-of-way. Temporary slope breakers (e.g., hay bales, silt fence, and earthen berms) will be used during construction, and permanent slope breakers will be installed during final grading. Permanent slope breakers will not be installed on active agricultural lands unless requested by landowners.

- Permanent Trench Breaker

  Trench breakers consisting of sacks of soil or sand, polyurethane foam, or bentonite clay bags will be installed around the pipe in the trench to prevent subsurface channeling of water along the trench. In agricultural lands, trench breakers will be installed to a depth that does not encroach into the typical plow zone. Topsoil will not be used for trench breakers. Permanent trench breakers will be installed on slopes just before backfilling. Trench breakers will also be installed on slopes greater than 5 percent that are adjacent to waterbodies and wetlands.

- Level Spreader (ESCP and SWPPP)

  Level spreaders provide a nonerosive outlet for concentrated runoff by dispersing flow uniformly across a stable slope. Level spreaders should be used prior to concentrated flows entering a buffer zone or vegetative filter area.

Sediment controls, identified in the next section, would be used to control both sediment and runoff from the construction site.

3.2.4 Install Sediment Controls

All stormwater runoff from disturbed areas should pass through an appropriate sediment removal BMP before leaving the construction site or prior to being discharged to an infiltration facility. The specific BMPs to be used as applicable for controlling sediment on this project include:

- Level Spreader (ESCP and SWPPP)

  See Section 3.2.3.

- Straw Bale Barrier (ESCP and SWPPP)

  Straw bales would be used in two ways: to create a barrier to pond water for treatment prior to discharging from the site; and, as cover to prevent erosion, the bales would be taken apart and spread onto the bare ground to be used as mulch. Straw should be weed-free.

- Temporary Sediment Barrier

  Sediment barriers (e.g., silt fences, and staked hay or straw bales) protect surface waters and roadways by controlling the flow of sediment on the construction right-of-way and by preventing the flow of sediment off the construction right-of-way. Texas Gas will install and maintain these devices at the base of slopes adjacent to road crossings, waterbody crossings, and wetlands, as appropriate, and in other areas as necessary, until permanent revegetation measures have been judged successful and the potential for siltation has been minimized.

- Revegetation

  Texas Gas will make every effort to ensure the rapid, successful establishment of vegetation on areas requiring revegetation. Following final grading and cleanup, Texas Gas will condition the construction right-of-way for planting including the preparation of a seedbed and application and incorporation of soil amendments at rates agreed to by the landowner or land management agency, or specified in writing by an appropriate soil conservation authority. Texas Gas will seed areas to be revegetated in accordance with written recommendations for seed mixes, rates, and dates obtained from the appropriate soil conservation authorities or land management agencies where appropriate, from the landowners where agricultural or other commodities require revegetation, or as described in the Seeding Chart for the State of Mississippi (contained in the 2005 SWPPP Guidance).

- Silt Fence (ESCP and SWPPP)

  See Section 3.2.1.

- Detention Pond (ESCP)

  Ponded storm water shall be settled or filtered for sediment removal prior to discharge.

- Materials on Hand

  Quantities of erosion prevention and sediment control materials would be kept on site at all times to be used for emergency situations such as unexpected heavy rains. Materials to be kept on hand include, but are not limited to, clear plastic, weed-free straw bales for mulching, and coconut blankets for lining channels and swales.

3.2.5 Stabilize Soils

Exposed and unworked soils should be stabilized with the application of effective BMPs to prevent erosion throughout the life of the project. The specific BMPs for soil stabilization that should be used as applicable on this project include:

- Temporary Seeding and Planting and Permanent Seeding (ESCP and SWPPP)

  Seeding reduces erosion by stabilizing exposed soils and would be used on all areas following final grading and testing of pipe. Temporary seeding would be used on areas that would remain unworked for over 30 days. Seeding should be with weed-free seed mix as described in Section 3.2.4 . See Sections 4.4.5 and 4.4.6 for additional details.

- Topsoiling (ESCP)

  Topsoiling is the practice of stripping and stockpiling existing topsoil and then spreading it in graded areas to encourage future vegetation growth.

- Diversion (ESCP and SWPPP)

  See Section 3.2.3 above.

- Wind Erosion/Dust Control (ESCP)

  Water trucks would be kept accessible to provide dust control as necessary. Covering of materials and dust palliatives would be used as necessary.

All soils should be stabilized at the end of the shift before a holiday or weekend if needed based on weather forecasts.

In general, cut and fill slopes would be stabilized as soon as possible and soil stockpiles would be temporarily covered with plastic sheeting. All stockpiled soils should be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels. (ESCP)

3.2.6 Protect Slopes

All cut and fill slopes would be designed, constructed, and protected in a manner that minimizes erosion. The following specific BMPs would be used as applicable to protect slopes for this project:

- Slope Breakers

  See Section 3.2. 3.

- Permanent Trench Breaker

  See Section 3.2.3.

- Temporary Seeding and Planting and Permanent Seeding (ESCP and SWPPP)

  See Section 3.2.5.

- Diversion (ESCP and SWPPP)

  See Section 3.2.3.

- Grassed Waterway (ESCP)

  Vegetated lining of ditches or channels would be used to remove sediment from stormwater runoff prior to drainage leaving the construction easement.

- Rock Outlet Protection/Riprap outlet protection (ESCP and SWPPP)

  Installation of riprap type energy dissipators, as necessary.

- Mulching (ESCP and SWPPP)

  Mulching in the form of placing hay, grass, wood chips, straw or synthetic material on the soil would be used as necessary to control runoff on steep slopes.

3.2.7 Protect Drain Inlets

Drain inlets will be protected as applicable with the following:

- Storm Drain Inlet Protection (ESCP and SWPPP)

  Prevent course sediment from entering drainage systems prior to permanent stabilization of the disturbed area. Protect storm drain inlets with hay bales, silt fence, biobags, or other protective measures, as needed.

3.2.8 Stabilize Channels and Outlets

Where site runoff is to be conveyed in channels, or discharged to a stream or some other natural drainage point, efforts would be taken to prevent downstream erosion. The specific BMPs for channel and outlet stabilization that would be used as applicable on this project include:

- Grassed Waterway (ESCP)

  See Section 3.26.

- Rock Outlet Protection/Riprap outlet protection (ESCP and SWPPP)

  See Section 3.26.

- Mulching (ESCP and SWPPP)

  See Section 3.26.

3.2.9 Control Pollutants

All pollutants, including waste materials and demolition debris, oils, grease, gasoline, solvents, litter, and sanitary waste, that occur onsite should be handled and disposed of in a manner that does not cause contamination of stormwater or soils. Good housekeeping and preventative measures would be taken as applicable to ensure that the site would be kept clean, well organized, and free of debris.

- Good Housekeeping Practices (SWPPP)

  Equipment maintenance and repair and area for equipment wash off would be limited to contractor yards or temporary storage yards.

  Waste receptacles would be provided at convenient locations with regularly scheduled collection of the waste.

  Protected storage areas would be provided for chemicals, paints, solvents, fertilizers, and other potentially toxic materials.

  Sanitary facilities would be provided and adequately maintained.

- Develop a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan)

Texas Gas will develop a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) that specifies cleanup procedures in the event of soil contamination from spills or leaks of fuel, lubricants, coolants, or solvents. Texas Gas and its contractors will use the SPCC Plan to prevent and contain, if necessary, accidental spills of any material that may contaminate soils, and to ensure that inadvertent spills of fuels, lubricants, or solvents are contained, cleaned up, and disposed of in an appropriate manner.

An individual SPCC Plan will be implemented at each aboveground facility that stores oil in excess of the volumes identified in 40 CFR 112 to protect groundwater resources during operation.

- Contaminated Soils Response

  If contaminated or suspect soils (e.g., oil-stained soils) are identified during trenching operations, Texas Gas will be notified and work in the area of the suspected contamination will be halted until the type and extent of the contamination is determined. The response action will be identified based on the type and extent of contamination; the responsible party; and local, state, and federal regulations.

- Groundwater Protection

  Construction, operation, and maintenance of the proposed facilities are not expected to have significant or long-term impacts on groundwater resources. Impacts will be minimized or avoided by implementation of the construction practices outlined in FERC's Plan and Procedures. Texas Gas will develop a Project-specific SPCC Plan for implementation during construction. The SPCC Plan will describe preventive measures such as personnel training, equipment inspection, and refueling procedures to reduce the likelihood of hydrocarbon spills. It will also include mitigation measures, such as containment and cleanup, to minimize potential impacts should a spill occur.

  If contaminated soil and/or groundwater are encountered during construction, Texas Gas will notify the affected landowner and will coordinate with the appropriate Federal and state agencies in accordance with applicable notification requirements.

  Texas Gas environmental inspectors have been trained to detect direct and indirect evidence of soil and/or groundwater contamination. Should a contaminated site be identified during construction, Texas Gas would notify the affected landowner and will coordinate with the appropriate Federal and state agencies in accordance with applicable notification requirements.

3.2.10 Maintain BMPs

All temporary and permanent erosion and sediment control BMPs should be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair should be conducted in accordance with each particular BMP's specifications. Visual monitoring of the BMPs would be conducted at least once every calendar week and within 24 hours of any rainfall event that causes a discharge from the site. If the site becomes inactive, and is temporarily stabilized, the inspection frequency would be reduced to once every month. Repairs to BMPs must take place within 24 hours of identifying a deficiency. Additional guidance for site inspection is described in Section 6.0.

All temporary erosion and sediment control BMPs should be removed within 30 days after the final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment should

be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation should be permanently stabilized.

3.2.11 Manage the Project

Erosion and sediment control BMPs for this project have been designed based on the following principles:

- Design the project to fit the existing topography, soils, and drainage patterns.
- Minimize the extent and duration of the area exposed.
- Emphasize erosion control rather than sediment control.
- Keep runoff velocities low.
- Retain sediment on site.
- Thoroughly monitor site and maintain all ESC measures.

The project would be managed according to the following key project components:

Phasing of Construction

- The construction project is being phased to the extent practicable in order to prevent soil erosion, and, to the maximum extent possible, the transport of sediment from the site during construction.
- Revegetation of exposed areas and maintenance of that vegetation should be an integral part of the clearing activities during each phase of construction.

Seasonal Work Limitations

- Texas Gas is requesting a variance of FERC's typical construction window (June 1 through through November 30 for warmwater fisheries) Texas Gas will coordinate with the appropriate state agencies in seeking approval to perform in-stream work outside of the time window specified in FERC's Procedures. Should they be identified in the future, alternative method variances will be sought from FERC.
- From October 1 through May 31, clearing, grading, and other soil disturbing activities would be minimized and BMPs would be in place to show that silt-laden runoff would be prevented from leaving the site through a combination of the following:
    a. Site conditions including existing vegetative coverage, slope, soil type, and proximity to receiving waters;
    b. Limitations on activities and the extent of disturbed areas; and
    c. Proposed erosion and sediment control measures.
- The following activities are exempt from the seasonal clearing and grading limitations:
    a. Routine maintenance and necessary repair of erosion and sediment control BMPs;
    b. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil; and

c. Activities where there is 100 percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

Inspection, Maintenance, and Monitoring

Training would be provided for the Environmental Inspectors in proper field implementation of this ESCP, SWPPP, hazardous materials management, and other environmental impact mitigation measures, see Section 5.0. Training sessions would also be provided for Company field construction management personnel and the contractor's personnel prior to and during the proposed pipeline installation. While this training would focus on ESCP implementation, it would also include instructions on the implementation of other mitigation measures, as appropriate.

- All BMPs should be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections should be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control. This person has the necessary skills to:
    a. Assess the site conditions and construction activities that could impact the quality of stormwater, and
    b. Assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.
- The Contractor's Environmental Coordinator should be on-site or on-call at all times.
- Whenever inspection and/or monitoring reveals that the BMPs identified in this ESCP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes should be implemented as soon as possible.

Visual and quantitative monitoring for water quality parameters would be required for this project to meet construction permit requirements; see Section 6.0.

An adequate number of copies of the Construction Drawing Package would be distributed to the Environmental Inspectors and to the contractor's supervisory personnel. If, in spite of the Chief Inspector's oversight, the contractors' performance is unsatisfactory, the terms of the contracts would allow use of a stop work order and cause a contractor to begin remedial work. Additional information on Inspection and Monitoring is presented in Section 6.0.

Maintaining an Updated Construction ESCP and SWPPP

- This ESCP and SWPPP should be retained on-site or within reasonable access to the site.
- The document should be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.
- The ESCP and SWPPP should be modified if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the ESCP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The ESCP should be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the ESCP should be completed within seven (7) days following the inspection.

4.0 CONSTRUCTION PHASING AND BMP IMPLEMENTATION

This section provides a detailed description of the construction that would occur and the erosion control measures that would be implemented during construction. The final ESCP would be developed prior to construction, after a construction contractor has been selected.

4.1 General Approach

Those portions of the proposed pipeline facilities located primarily in upland terrain would employ conventional overland construction techniques for large-diameter pipelines. In the typical pipeline construction scenario, the construction spread (crew) would proceed along the pipeline ROW in one continuous operation. As the spread moves along, construction at any single point along the pipeline, from initial surveying and clearing to backfilling, finish grading, and site restoration, would typically last approximately 6 to 10 weeks. The entire process would be coordinated in such a manner as to minimize the total time an individual tract of land is disturbed and, therefore, exposed to erosion and temporarily precluded from its normal use. To minimize the duration of soil disturbance, Texas Gas will attempt to complete final cleanup and installation of permanent erosion control measures in an area within 20 days after backfilling the trench in that area, weather and soil conditions permitting. In no case will restoration of an area be delayed beyond the next available seeding season. An Environmental Inspector would be provided by the Owner, as described in Section 5.0. The Contractor would provide an Environmental Coordinator to implement conditions of this permit.

4.1.1 Preconstruction Activities

A preconstruction meeting with project construction personnel, including the Contractor's Environmental Coordinator and the Owners Environmental Inspector, would be held to discuss erosion and sediment control measures and construction limits. Prior to construction activities, the project monitoring notebooks and submittal protocol would be prepared that would be in use throughout the duration of the project.

4.1.2 Surveying

The initial step in preparing the ROW for construction would be the civil survey. A civil survey crew would stake the outside limits of the ROW, the centerline location of the pipeline, drainage centerlines and elevations, highway and railroad crossings, and any temporary extra workspace, such as laydown areas (for pipe materials) or at stream crossings. Underground utilities (i.e., cables, conduits, and pipelines) will be located and flagged. Affected landowners will be notified prior to surveying and staking of the proposed route, following applicable state/Federal guidelines.

4.1.3 Marking Clearing Limits

Following surveying, clearing limits would be marked, per Section 3.2.1, prior to clearing of the ROW. Prior to initiating construction and related soil-disturbing activities, appropriate erosion prevention and control measures would be implemented and inspected by the Contractor's Environmental Coordinator and/or the Owner's Environmental Inspector. The Environmental Coordinator, who may have other duties, is responsible for ensuring appropriate erosion prevention measures are in place at all times throughout the pipeline construction. The Environmental Inspector may have other duties in addition to environmental compliance but is responsible for inspections and field documentation, including but not limited to, photographs and field notes, that would occur prior to, during, and following installation of erosion prevention and control measures.

Construction work would not occur without installation of appropriate and approved erosion and sediment control devices and/or facilities.

4.1.4 Clearing and Grading

Large obstacles such as trees, rocks, brush, and logs would be removed from the ROW. Trees would only be removed when absolutely necessary for construction purposes. Trees and other vegetative debris cleared from the ROW may be chipped for use as erosion-control mulch, burned, or otherwise disposed in accordance with applicable state and local regulations and landowner agreements. Burning would be conducted in such a manner as to minimize the fire hazard and prevent heat damage to surrounding vegetation. Fences would be cut and braced along the ROW, and temporary gates would be installed to control livestock and limit public access. The ROW would then be graded where necessary to create a reasonably level working surface to allow safe passage of construction equipment and materials. Conserved topsoil would be stockpiled, separate from excavated subsoil, along one side of the right-of-way, allowing the other side to be used for access, material transport, and pipe assembly. Temporary erosion control measures would be installed at this time, per Section 3.0.

4.1.5 Trenching

To bury the pipeline underground, it would be necessary to excavate a trench. The trench would be excavated with a rotary trenching machine, a rock trencher, a track-mounted backhoe, or similar equipment. Explosives will only be used when necessary in areas where rock substrates are found at depths that interfere with conventional excavation of rock-trenching methods. In active agricultural ground and in residential areas, subsoil would be stockpiled separately from topsoil (or the upper 12 inches of topsoil, if the topsoil is deeper). Generally, the trench will be excavated at least 12 inches wider than the diameter of the pipe. Generally, in upland areas, the trench will be excavated to a sufficient depth to allow a minimum of 3 feet of soil cover between the top of the pipe and the final land surface after backfilling. Excavated soils will be stockpiled along the right-of-way on the side of the trench away from the construction traffic and pipe assembly area.

If bedrock is encountered, Texas Gas will take precautions to minimize the mixing of excavated bedrock with backfill and will replace rock in the trench to a level that is not higher than the original bedrock profile. Where necessary, excess rock will be hauled off site from the right-of-way or, subject to landowner approval and applicable permit conditions, disposed of on the right-of-way.

4.1.6 Stringing

Steel pipe for the pipeline would be procured in 40-foot and 80-foot lengths or joints, protected with an epoxy coating and shipped to strategically located materials storage areas or pipe yards. The individual joints would be transported to the ROW by truck and placed along the excavated trench in a single, continuous line, easily accessible to the construction personnel on the working side of the trench, opposite the spoil side. At river crossings, railroads, and roads, the amount of pipe required to span the crossing would be stockpiled in temporary extra workspaces on one or both sides of the crossing.

4.1.7 Pipe Lowering

The completed section of pipe will be lifted off the temporary supports and lowered into the trench by side-boom tractors. Prior to lowering the pipe, the trench will be inspected to ensure that it is free of rocks and other debris that could damage the pipe or the coating. Before lowering the pipe into the trench, the pipe and trench will be inspected to ensure that the pipe and trench configurations are compatible. In rocky areas, if the bottom is not smooth, a layer of soil may be placed on the bottom of the trench to protect the pipe.

4.1.8 Padding and Backfilling

After the pipe is lowered into the trench, the trench would be backfilled. Previously excavated materials would be pushed back into the trench using bladed equipment or backhoes. Where the previously excavated material contains large rocks or other materials that could damage the pipe or coating, a padding machine would be used to separate the rock from the backfill. In some instances, clean fill or a protective rock shield coating would be placed around the pipe prior to backfilling. Segregated topsoil, where applicable, would be placed after backfilling the trench with subsoil. Following backfilling, a small crown of material would be left to account for any future soil settling that might occur. Excess soil would be distributed evenly on the ROW in upland areas only, while maintaining approximate existing contours.

4.1.9 Hydrostatic Test and Final Tie In

Following backfilling of the trench, the pipeline would be hydrostatically tested to ensure it is capable of safely operating at the design pressures. The completed pipeline would be tested in multiple segments, including separate tests for each HDD pull section before and after being pulled into the borehole. All test water withdrawals and discharges would be in accordance with applicable permits to be obtained prior to construction, and they would be conducted in a manner to minimize impacts to the source and receiving streams. A Hydrostatic Test Water General Permit application for NPDES discharge will be filed with MDEQ, with this ESCP/SWPPP appended to that application.

Test water will be drawn from various sources and, after testing, will generally be discharged to upland areas or, in the case of surface water sources, back to the source from which it was obtained. Water will be discharged over land and will be directed through a splash plate and containment structures such as hay bale structures and filter bags located more than 50 feet away from adjacent wetlands and waterbodies, as required by the Mississippi General NPDES stormwater permit for hydrostatic test water discharges. The discharge rate will be regulated using valves and energy dissipation devices to prevent erosion, and the discharge will be monitored for residual materials being flushed from the tested pipe. Tie-in locations will be cleaned and restored after hydrostatic testing. No chemicals will be added to the test water during hydrostatic testing or pipeline dewatering. Pipeline dewatering will follow similar procedures.

4.1.10 Cleanup and Restoration

After a segment of pipeline has been installed, backfilled, and successfully tested, the construction ROW, temporary extra work spaces, and other disturbed areas would be finish graded, and the construction debris would be disposed of properly. Original land contours would be restored to conform to adjacent areas. In agricultural areas, subsoil compacted by construction activities would be disked, and the segregated topsoil would be returned to its original horizon. Permanent erosion and sediment control measures, including silt fencing, diversion terraces, and revegetation, per Section 3.0, would be installed at this time. Private and public property, such as fences, gates, driveways, and roads, disturbed by the pipeline construction will be restored to original or better condition.

Soils imported to agricultural and residential areas will be certified as free of noxious weeds and soil pests, and only weed-free straw or hay will be used to construct sediment control devices or used as mulch applications. Texas Gas will evaluate the presence of noxious weeds in the Project area; consult with appropriate federal, state, and local agencies responsible for the containment of noxious plant material: and incorporate recommended seed mixtures into revegetation plans. Specific procedures will be developed, as necessary, to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and restoration activities.

4.2 Wetlands Pipeline Construction Techniques

The Pipeline route was selected to minimize impacts to wetlands. Where wetlands cannot be avoided, potential impacts are minimized through the use of special wetland construction procedures. Crossing of delineated wetlands would be in accordance with the FERC procedures[1] and any variances requested herein by Texas Gas, if approved by FERC. Wetlands to be crossed during construction, along with proposed crossing techniques, are listed in Appendices D and E.

The construction right-of-way width will be 75 feet in wetlands. Operation of construction equipment in wetlands will be limited to that needed to clear the right-of-way, dig the trench, fabricate the pipe, install the pipe, backfill the trench, and restore the right-of-way. Texas Gas will segregate the topsoil in the trench line up to 1 foot in depth in wetlands where hydrologic conditions permit this practice.

Texas Gas will minimize rutting of hydric soils by limiting access during wet periods, and if necessary, requiring special equipment in wetland areas. Special construction methods such as concrete coating of pipe and other weighting methods will be used, as necessary, to overcome buoyancy hazards during operation of the pipeline.

Segregated topsoil will be placed in the trench following subsoil backfilling. Restoration and monitoring of wetland crossings will be conducted in accordance with FERC's Procedures to help ensure successful wetland revegetation. In accordance with FERC procedures, fuel will not be stored within wetlands.

Construction in saturated wetland areas may involve the "push technique," "pull technique," or "drag section technique." These techniques minimize disturbance by restricting access in sensitive wetlands to equipment, vehicles, and workers needed for actual pipeline installation, and by limiting the number of crossing events.

Passage of the pipeline through forested wetlands has been minimized to the maximum extent practicable through project design and use of HDDs where appropriate and practical. The use of HDDs for a number of waterbody crossings has been included in the project design; they will substantially reduce the total amount of temporary and permanent wetland impacts associated with the Project.

Clearing within forested wetlands will be limited in right-of-way width and the right of way will be maintained such that only the minimum width needed for pipeline protection and surveillance is maintained, in an effort to reduce permanent impacts to forested wetlands.

In an effort to reduce permanent impacts to forested wetlands, clearing within forested wetlands will be limited in right-of-way width and the right of way will be maintained such that only the minimum width needed to facilitate periodic pipeline surveillance will be centered on the pipeline and up to 10 feet of width may be maintained in an herbaceous state.

Conditions along the construction corridor in areas proposed for conventional open ditch construction will likely dictate the use of either conventional open ditch lay or open ditch push/float lay. Selection of the most appropriate method will depend on site-specific weather conditions, inundation, soil saturation, and soil stability at the time of construction. The conventional open ditch lay method will be the most frequently used technique for installation of the pipeline in wetlands. The push/float lay method will be used in inundated or saturated wetland areas that support this technique. Selection of the push/float method will be decided during construction by the construction supervisor and the environmental inspector depending on the conditions at the time of construction.

[1] FERC Wetland and Waterbody Construction and Mitigation Procedures, Section V., WATERBODY CROSSINGS

Conventional Lay Method

Soils that support construction equipment will generally be crossed using conventional open ditch construction methods. Conventional open ditch construction is similar to upland construction. In some areas, site-specific conditions may not support construction equipment proposed for conventional open ditch construction; in these cases, construction mats will be used to minimize disturbances to wetland hydrology and maintain soil structure.

Push/Float Method

The push/float method of construction will be used in inundated lowland or saturated wetland areas where the soils and hydrology cannot support conventional pipe laying equipment and where there are sufficient quantities of water to allow for pipe to be floated through the open ditch. In using this method, the pipe trench will be excavated using low-ground-weight equipment, thus limiting the need for grubbing and grading activities over the trench line or, for safety reasons, on the working side of the right-of-way. The coated and weighted pipe will be welded together at a staging area where floats are attached to the pipe. The welded pipe will then be pushed along the water-filled trench until the pipe string is in place. As necessary, "pulling" of the pipe may be required to move the pipeline along the ditch. The floats will then be cut loose, allowing the pipe to sink to the bottom of the trench. The trench will then be backfilled. The push/float construction method minimizes the number of equipment passes, reducing wetland impacts and soil compaction in the lowland areas. The staging areas will be constructed, to the extent necessary, within the construction corridor. If Texas Gas requires additional temporary workspace in wetlands, approval will be requested from FERC prior to use.

Site-Specific Variances

Texas Gas is committed to constructing the Project in accordance with FERC's Plan and Procedures to the maximum extent practical. Texas Gas will request site-specific variances, if necessary, to Section VI.B.1 (location of extra workspaces in wetlands) of the FERC procedures providing a location-specific justification for each requested variance.

4.3 Special Pipeline Construction Techniques

4.3.1 Horizontal Directional Drills

HDD is a process that allows for trenchless construction across an area by pre-drilling a hole well below the depth of a conventional pipeline lay and then pulling the pipeline through the pre-drilled borehole. HDD will be used by Texas Gas at certain locations to avoid direct impacts to sensitive areas, such as waterbodies, and/or to avoid areas with difficult constructability issues.

For most HDD crossings, electric-grid guide wires will be hand-laid across the land surface along the pipeline right-of-way to help guide the drill bit along the predetermined HDD route. In thickly vegetated areas, a swath approximately 2 to 3 feet wide may be cut across the land surface using hand tools to lay these electric-grid guide wires, resulting in minimal ground and vegetation disturbance. No large-diameter trees will be cut to accomplish guide wire installation. Following guide wire installation, a directional drilling rig will be set up and a small-diameter pilot hole will be drilled along a prescribed profile.

Electromagnetic sensors located on the tip of the drill bit will follow an electromagnetic field created by the guide wires to follow the prescribed path. In other instances, bit tip positioning sensors will guide the drill bit. Once the pilot hole is completed, it will be enlarged, using reaming tools to the diameter of

the pipe. The reaming tools will be attached to the drill string at the exit point of the pilot hole and then rotated and drawn back to the drilling rig, thus progressively enlarging the pilot hole with each pass. During this process, drilling fluid consisting of bentonite clay and water will be continuously pumped into the hole to remove cuttings and maintain the integrity of the hole. Once the hole has been sufficiently enlarged, a prefabricated segment of pipe will be attached behind the reaming tool on the exit side of the crossing and pulled back through the drill hole toward the drill rig, completing the crossing.

The primary disadvantage of directional drilling is its significantly higher cost. Drilling is sometimes used for some very special environmental reasons or in unusual cases where there is a unique construction need. HDD locations are initially determined without benefit of geotechnical investigations, which generally follow in the design phase. Geotechnical investigations generally confirm the absence of unusual conditions, which are detrimental to drilling (boulders, large cobbles, fractured materials, or karst conditions), and provide guidance to the driller on mud thickness, drill speed, and other operational factors.

Geotechnical investigations for proposed HDD will begin in early June and should be completed by the end of July. Once the geotechnical data is reviewed and analyzed, the results will be used to guide the design of the HDD profiles or determine if the drill is not feasible.

4.3.2 Waterbody Crossings

Numerous water bodies will be crossed during the pipeline construction; many of these are waters of significant resource value (Table 5) or waters that have already impaired water quality and require additional care (Table 6). Construction across waterbodies will be performed to minimize the time that ditches for pipeline crossings of flowing streams and rivers will be left open. The trenching operation will skip the water body crossing, stopping on each side near the high bank. The waterbody section of the pipeline will be bent and fabricated as the work progresses along the right-of-way so that the excavation of the waterbody crossing is only completed immediately prior to pipe installation by the lowering-in crew.

Implementation of FERC's Plan and Procedures, specifically with respect to erosion and sedimentation control, bank stabilization, and bank revegetation, will minimize impacts related to sediment transport into adjacent waterbodies. Additional measures will include:

- All extra work areas shall be located 50 feet away from the water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land.
- Texas Gas will limit the amount of vegetation cleared between the waterbody and the extra work area and minimize the amount of extra work space to the greatest extent possible.
- Texas Gas will continue to consult with state agencies during the permitting process to identify appropriate site-specific mitigation measures.
- Crossings will be aligned as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions allow.
- If the pipeline parallels a waterbody, Texas Gas will attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way.

Construction methods at waterbody crossings will vary with the characteristics of the waterbody encountered and will be performed consistent with permit requirements outlined in right-of-way and permit stipulations.

Normal backfill cover requirements will be met. Compaction of backfill, trench breakers, sandbags, or dry soil may also be used to keep backfill from sloughing in toward the center of the waterbody. All waterbody banks will be restored to the original grade and all foreign objects will be removed from the waterbody. Excavated material not required for backfill will be removed and disposed of at an upland site.

Texas Gas will follow FERC procedures to limit water quality impacts to waterbodies during and following construction. Construction activities will be scheduled so that the pipeline trench is excavated immediately prior to pipe laying activities. In accordance with FERC procedures, the duration of construction will be limited to 24 hours across minor waterbodies (10 feet wide or less) and 48 hours across intermediate waterbodies (between 10 and 100 feet wide).

Table 5 Major and Sensitive Waterbodies [a]

State/County	Waterbody Name	Approximate Beginning Milepost	Approximate Width at Crossing (feet)	Crossing Method [b]	Sensitive Feature
Fayetteville Lateral					
ARKANSAS/ MISSISSIPPI					
Phillips-Coahoma	Mississippi River	157.3	4,000	HDD	MC
MISSISSIPPI					
Coahoma	Phillips Bayou	160.7	110	OCM	MC
Greenville Lateral					
Washington	Deer Creek	9.3	60	HDD	MSNHP
	Bogue Phalia	11.2	200	HDD	MC
Washington-Humphreys	Big Sunflower River	20.3	250	HDD	MC
Humphreys	Yazoo River	40.5	395	HDD	MC
Holmes	Tchula Lake	46.7	160	HDD	MC
	Fannegusha Creek	54.3	100	HDD	MC
Holmes-Attala	Big Black River	77.7	270	HDD	NRI, MC

[a] Sensitive Features include those that are listed as Major Crossings (MC) (greater than 100 feet wide at crossing); are on the Nationwide Rivers Inventory (NRI) (NPS, 2004); are important aquatic habitats for rare species (MSNHP, 2006); and/or do not currently support designated uses (see Table 6 below).

[b] HDD = horizontal directional drill, OCM = open cut method (includes both conventional [i.e., without work area isolation] and variations [with work area isolation] on conventional methods)

Table 6 Impaired Waterbodies Crossed by the Proposed Pipeline Route

County	Approximate Milepost	Waterbody Name	Crossing Type [a]	Cause [b]
Humphreys [c]	40.5	Yazoo River	HDD	Nutrients, Organic Enrichment/Low DO
Holmes [c]	46.7	Tchula Lake	HDD	Nutrients, Organic Enrichment/Low DO, Sediment/Siltation

Table 6 Impaired Waterbodies Crossed by the Proposed Pipeline Route

County	Approximate Milepost	Waterbody Name	Crossing Type [a]	Cause [b]
Holmes	72.5	Box Creek	OCM	Sediment/Siltation
Holmes-Attala [c]	77.7	Big Black River	HDD	Sediment/Siltation

[a] HDD = horizontal directional drill, OCM = open cut method (includes both conventional [i.e., without work area isolation] and variations [with work area isolation] on conventional methods)

[b] Mississippi Department of Environmental Quality. 2006. Mississippi 2006 Section 303(D) List of Impaired Water Bodies. http://www.deq.state.ms.us/mdeq.nsf/pdf/TWB_2006_303d_List_draft_April_1_06.

[c] Found under Section B, of the Mississippi 2006 Section 303(D) List of Impaired Water Bodies. For these water bodies, no current monitoring data indicates impairments exist. MDEQ will monitor these water bodies to determine their water quality condition before removing them from Section B.

Specific waterbody crossing construction methods are described below. Texas Gas will follow FERC's Plan and Procedures when constructing across waterbodies and restoring the ecological functions and values of the water resources and adjacent floodplain habitats to the extent practicable. HDD techniques will be used to avoid disturbance to streambed and banks where suitable. Where HDD techniques are not employed, the streambed and banks will be restored to pre-construction contours or to a stable angle of repose. To support restoration of ecological functions and values of the waterbody, streambank stabilization and streambed recontouring will be designed to match pre-construction conditions of channel conveyance over a range of flows from baseflow to bankfull flow. Because of the expected generally erodible streambanks within the project alignment, native riparian woody vegetation will be used to provide streambank stability, unless not consistent with adjacent streambank vegetation. Bioengineering techniques (e.g., live staking, wattles) may be employed to provide suitable short- and intermediate-term stability to disturbed streambanks. If necessary, rip-rap will be used to supplement this vegetation (particularly below low-water elevations). A summary description of the HDD method and four variants of the open cut method are provided below.

Horizontal Directional Drill Method

The HDD method has become a more common crossing technique for large streams and those with particularly sensitive resources associated with the stream. A primary advantage to using HDD is that it avoids disturbance of the streambed, stream banks, and upland in the immediate vicinity of the crossing. Hence, the need for re-contouring approaches and stream banks is avoided, as are the challenges of re-establishing vegetation adjacent to these features. A disadvantage of the HDD method in certain waterbody crossing conditions is the possibility of "frac-outs," when the drilling mud under pressure in the "tunnel" being created under a waterbody finds a fracture or weak area and the drilling fluids rise and escape into the waterbody. Texas Gas presently proposes to install the pipeline using the HDD method at 10 locations on the Greenville Lateral, including all major water crossings. Drilling equipment and materials will be deployed only in approved workspace. Drilling mud containment and disposal will be in accordance with applicable permit requirements.

Conventional Open-Cut Method

Conventional open cut crossings involve trench excavation within the stream channel with no containment or redirection of water flow, should water be present. A backhoe, clam dredge, dragline,

or similar equipment will be used for trench excavation. The following stipulations will apply to conventional open cut waterbody crossings:

- Material excavated from the trench will be stockpiled above the stream banks;
- Excavated trench material will generally be used as backfill unless Federal or state permits specify otherwise;
- Any excess material will be removed from the waterbody; and
- The streambed will be returned to its pre-construction contours to the extent practicable.

Where feasible, pipe segments may be welded together and temporarily strung above and across the waterbody feature until the pipeline is installed. The pipeline will not obstruct the highest expected flow of the waterbody. If required, the pipe used for waterbody crossings and in floodplains will be weighted to prevent flotation. The pipe will be welded together in the staging areas and then carried or floated along the right-of-way. After the pipe is lowered into the trench, previously excavated material will be used as backfill, unless precluded by permit requirements.

The pipeline will be installed to provide a minimum of 5 feet of cover from the waterbody bottom to the top of pipe or placed at sufficient depth under the streambed (below the anticipated scour depth) to maintain the standard 5-foot minimum cover requirement. The pipeline trench will be excavated to a bottom width of at least 12 inches greater than the proposed outside diameter or to a greater width to allow proper backfill beneath and along the side of the pipeline. Trench spoil will be placed on the bank above the high water mark for use as backfill.

Flow, if present at the time of construction, will be maintained at all waterbody crossings and no alteration of the stream's capacity is anticipated as a result of pipeline construction. Crossings will be perpendicular to water flow, to the extent practicable.

The construction procedures described above will ensure that potential impacts at waterbody crossings are minimized or avoided. To limit the time required for in-stream activities, the construction right of way will be prepared on either side of the waterbody prior to in-stream construction. Where banks are wooded, trees will be preserved where possible. In accordance with FERC's Plan and Procedures, construction activities (except for blasting and other rock-breaking measures) will generally be completed within 24 hours at minor waterbodies (i.e., 10 feet wide or less) and within 48 hours at intermediate waterbodies (i.e., greater than 10 feet wide and less than or equal to 100 feet wide). Temporary erosion control measures will be used as appropriate if the construction of a waterway crossing is appreciably delayed. During construction across streams which have high velocity flows or possess erodible banks, rip-rap will be used as appropriate to provide stabilization to the substrate (stream bed and/or banks) following construction activities.

After the completion of construction, streambeds will be restored to their former elevations and grades or to a stable angle of repose. Spoil, debris, piling, cofferdams, construction materials, and any other obstructions resulting from or used during construction of the pipeline will be removed to prevent interference with normal water flow and use. Any excavated material not used as backfill will be disposed of in a manner and at locations satisfactory to the applicable jurisdictional agencies. Following grading and in accordance with permit requirements, stream banks will be restored to prevent subsequent erosion.

Variations on Conventional Open Cut Methods

On sensitive and impaired water bodies, intermediate-sized crossings, and elsewhere—as long as suitable hydraulic and construction conditions allow—variations on conventional open-cut methods that

incorporate work area isolation techniques may be used to further protect instream water quality. These substantially reduce the amount of sediment released to the water column during trenching, placement, and backfilling. Any dewatering water resulting from these methods would be land applied or otherwise sent through a detention pond or similar sediment control BMP described above before being returned to the downstream side of the work area. Pipeline crossing methods are indicated for waterbodies (Appendix F). Note that at this time, Texas Gas is prepared only to differentiate between HDD and open cut methods (OCM), without specifying which waterbody crossings would include the work area isolation measures associated with the variations described below.

Dry-Ditch Method: In intermittent streams without flow at the time of crossing, traditional upland methods may be employed. A trench will be excavated using upland equipment and techniques. Pipeline trench plugs will be installed in the approach trenches to control erosion. Stream banks will be restored to original contour and revegetated following FERC's Plan and Procedures.

Dry Flume Method: A flumed or dry crossing of a waterway involves redirecting stream flow through a flume pipe or pipes near the crossing. This allows for trenching, pipe installation, and restoration in relatively dry conditions, while maintaining continuous downstream flow. Soil characteristics must be very stable and stream flow should be low to moderate for this method to be used successfully and safely. The flume pipes must be long enough to accommodate a potential increase in trench width due to sloughing during excavation. Ideally, the flume pipes will extend from the inlet side of the equipment crossing to the opposite side of the construction right-of-way. An effective seal will be created around the flume pipes so that water will not penetrate and possibly wash out channelized dams on both the inlet and outlet ends. The flume will not be removed until the pipeline has been installed and the stream and banks have been restored.

Dam and Pump Method: The dam and pump method is an "isolated" crossing technique that maintains waterbody flows during in-stream activities. Initially, a dam will be created upstream of the crossing and the water will then be re-rerouted over upland surfaces using a pump and hose to the downstream side of the crossing. In the event a sudden increase in stream flow occurs during the crossing, the flume method will be used as an alternate method to maintain flow and keep the crossing dry. Once the waterbody crossing site is dry, the trench will be excavated, including any upland plugs; the pipe bent and welded; and then lowered into the trench. The crossing pipe will be tied into the upland construction and water flow will be restored. The construction is considered "isolated" as the actual water body crossing and the upland construction occur at different times. If the upland construction occurs first, the upland pipe will be installed in the trench with temporary end caps in place and a hard earth plug is left between the work completed and the work to be done, usually starting at the top of bank.

Mississippi River Crossing

The large size of the Mississippi River presents an involved crossing situation. It will require HDD methods to be used under the levees on both the west and east sides of the river and under the river. The planned pipeline routing at the Mississippi River includes the installation of the pipeline in a parallel and adjacent alignment to the existing Texas Gas Helena 12-inch pipeline river crossing. This crossing was designed by projecting the river crossing alignment perpendicular to the river and back across the levee. This approach was used to minimize right-of-way expansion and to minimize the potential extent of tree clearing and removal that would have been required if this space saving approach had not been used. If Texas Gas follows the existing pipeline to the fullest extent possible at this location, it will result in the pipeline being located on the inside of the levee over a longer distance. Therefore, a route

straight across the river is planned for this major crossing to minimize the size of the right of way needed for the crossing, and avoid excess tree clearing and removal at the crossing.

In Arkansas, under the Mississippi West Levee, Texas Gas plans to use the HDD method of crossing. The application of this method is contingent on the receipt of approval from the Corps. In addition to the use of the HDD method, Texas Gas is evaluating the possibility of crossing this levee using conventional crossing methods. The presence of the existing Helena Port Authority Railroad at the toe of the levee represents an engineering constraint on this method. In order to apply the conventional method in this location, Texas Gas would have to dig at the toe of the levee in the same location where the railroad track is situated. The pipeline will be installed under the railroad. Detailed design and engineering consultations are planned with the local Corps district to evaluate the methods for crossing and consider the constraints on the applicable crossing method to be used.

Following the completion of the HDD under the Mississippi River, the pipeline will be located on the inside of the Mississippi West Levee, parallel and adjacent to the existing Texas Gas 12-inch pipeline river crossing. Texas Gas is currently planning on HDD methods for crossing the east Mississippi River Levee in Mississippi. Conventional methods are also being evaluated. This would require the pipeline to be placed on top of the levee. This method of construction would result in greater tree clearing.

The primary land uses at the Mississippi River crossing, in addition to the levees, are riparian woodland, wetland, and cropland on the west side, and bottomland hardwoods and cropland on the east side. No clear-cutting is proposed with the HDD method, and impacts to the sites of HDD installation are assumed to be minimal. This crossing is currently being evaluated and further details of potential impacts will be provided with the formal application. The Little Rock, Vicksburg and Memphis Corps districts have been provided with the preliminary pipeline route, background descriptive information pertaining to the Project and related to the Commission pre-filing process. The districts have indicated their individual jurisdictions and the general permit process that will be followed for the Project. At present, Texas Gas is intending to conduct detailed consultations with the individual Corps districts and Levee districts in regard to the crossings of flood control levees and site specific permitting requirements.

4.3.3 Road and Railroad Crossings

Road and railroad crossings will be maintained continuously using provisions such as steel plates or alternate access to minimize inconvenience to the public. Construction of the pipeline across hard surface roads will typically be installed through the roadbed by boring, with an excavated hole on either side of the road or railroad to provide a working area for the equipment.

Crossing of non-paved roads shall be installed by open-cut method in coordination and approval by local authorities. Immediately following installation, the pipe will be backfilled by either the flowable fill method or the granular fill method, topped with dense graded aggregate limestone and a top layer matching the existing roadway.

4.3.4 Foreign Pipeline and Utility Crossings

Foreign pipelines are pipelines other than the proposed Texas Gas Pipeline. Foreign pipelines and other underground utilities are likely to be discovered during the pre-construction shallow hazards survey. Because of the relatively large diameter of the proposed Texas Gas Pipeline and the soil cover and separation requirements, the proposed pipeline would cross under most foreign pipelines and utilities. The larger spoil volumes from increased excavation depths at these crossings and the preference not to place spoil or construction equipment over existing pipelines may require extra work

space at each crossing. Precautions would be taken to ensure that the existing pipelines and utilities are not damaged during construction of the proposed pipeline.

4.3.5 Agricultural Areas

Texas Gas conserves topsoil in all actively cultivated and rotated cropland, improved pasture, non-saturated wetlands and residential areas. Up to 12 inches of topsoil will be segregated in these areas, and in other areas at the specific request of the landowner or land management agency. The topsoil and subsoil will be stockpiled separately on the construction right-of-way and will not be allowed to mix. Rock will not be used as backfill in rotated or permanent cropland.

To prevent mixing of the soil horizons or incorporation of additional rock into the topsoil, topsoil segregation will be performed in non-saturated wetlands, croplands, pastures, hayfields, and in areas requested by the landowner. The topsoil will be segregated, as appropriate, from all subsoil and will be replaced in the proper order during backfilling and final grading. Implementation of proper topsoil segregation will help ensure post-construction revegetation success, thereby minimizing loss of crop productivity and the potential for long-term erosion problems. The Mississippi Department of Natural Resources indicated no additional requirements for construction through Prime Farmland areas (Johnson, Mississippi Department of Natural Resources, personal communication April 29, 2007).

The introduction of subsoil rocks/stones into agricultural topsoil will be minimized by segregating topsoil from trench spoil and replacing topsoil in agricultural areas after cleanup. This practice will prevent subsoil rocks from being brought to the surface and incorporated with the topsoil layer. Texas Gas will make diligent efforts to remove excess rock/stone greater than 4 inches in size from the topsoil and exposed subsoil of all disturbed soils, to the extent practicable, in cultivated and rotated croplands, hayfields, pastures, residential areas, and at the landowner's request, in other areas. Texas Gas will also remove excess rock/stone from surface soils disturbed by construction such that the size, density, and distribution of rock on the construction right-of-way will be similar to adjacent non-right-of-way areas. Texas Gas will not remove rocks from backfilled areas if the rocks/stones in the backfill are consistent in size and density with conditions before construction.

Texas Gas will excavate a trench sufficient for a minimum of 4 feet of cover in all actively tilled, pasture, or previously tilled land. Texas Gas will excavate deeper than the minimum 4 feet of cover in areas where deeper tilling (for example, using parabolic plows) occurs, or excavate deeper in areas in order to maintain existing drainage systems. Upon completing construction, Texas Gas will cooperate with local farmers and agricultural agencies to allow continued agricultural use of property while minimizing impacts to pipeline operations, including development of a grazing deferment plan with willing landowners.

Texas Gas will question landowners and local agricultural agency personnel regarding the potential presence of drain tiles and irrigation systems in affected agricultural fields. In addition, observations will be made before and during construction for evidence of the presence of drain tiles and irrigation systems.

In fields with drain tiles and irrigation systems, pipeline construction will be conducted in accordance with FERC's Plan and Texas Gas' Construction Specifications. The pipe will be installed below agricultural drainage lines, except in the rare circumstance of a deep main drainage line. Agricultural drainage features will be repositioned in a manner consistent with drainage orientation.

Should drainage tiles or irrigation piping be damaged during construction, Texas Gas will repair/restore their function. Texas Gas will carefully mark the location of the damage in a prominent manner, such as a securely staked lath with survey tape attached. Drain tile used for replacement shall be of the same

size and quality as the original tile encountered on site. If original tile is not available, replacement tiles will be of appropriate size and materials to connect with the existing line without loss of function.

Operation of the pipeline following construction and repair of any damaged tile and irrigation line is not expected to affect operation of the drainage and irrigation systems.

4.3.6 Residential Areas

Where there are residences in close proximity to the construction right-of-way, Texas Gas will reduce pipeline offset or construction workspace areas, as practical, to minimize inconvenience to property owners. If construction requires the removal of private property features, such as gates or fences, the landowner or tenant will be notified prior to the action. Following completion of major construction, the property will be restored in accordance with Texas Gas' standards regarding right-of-way restoration and maintenance. Property restoration will be in accordance with any agreements between Texas Gas and the landowner.

4.3.7 Commercial and Industrial Areas

Texas Gas would maintain close coordination with business owners to maintain access, decrease construction duration, and generally minimize impacts.

4.3.8 Blasting

Soil survey and surficial geological information indicates that no bedrock is likely to be encountered along the Mississippi portions of the project.

Texas Gas considers blasting as a last resort to reach the design pipeline depth; however, if required, blasting will be conducted in a manner to minimize possible impacts on nearby water supply wells. Use of controlled blasting techniques should mitigate impacts of blasting and limit rock fracture to the immediate vicinity of detonation.

If blasting is required within 150 feet of a water well, Texas Gas will, with landowner permission, conduct pre- and post-construction well testing and perform necessary repair and restoration to ensure there is no loss of productivity and quality.

4.3.9 Rugged Terrain

In most areas with steep side slopes, Texas Gas will construct the pipeline by expanding the workspace. The dimensions of these additional temporary workspaces will vary, depending upon the degree and length of the slope. Additional temporary workspace for rugged terrain is not anticipated on the Greenville Lateral.

Steep slopes may also require the installation of special erosion control measures, including trench breakers, slope breakers, interception dikes, and erosion control mats, per Section 3.

4.4 Above-Ground Facilities Installation Procedures

Construction of the proposed aboveground facilities will follow industry-accepted practices and procedures, as further described below. In general, construction would begin with site grading, laying of building foundations and pipe support piers, installation of equipment and piping, and the erection of permanent buildings. After completion of service lines, pipe tie-ins and testing, final construction would consist of painting aboveground facilities, road surfacing, grading, and gravelling the station yard. Aboveground facilities will be painted per the Texas Gas Transmission, LLC painting specifications and standards.

Typical construction activities associated with compressor installation are summarized below. No special construction methods will be required for the proposed station modifications.

4.4.1 General

Construction activities and the temporary storage of construction materials and equipment would be confined to the areas within the site boundaries. Debris and wastes generated from the construction would be disposed of appropriately. All surface areas disturbed would be restored and stabilization measures installed in a timely manner. The facilities will be constructed in accordance with Texas Gas construction standards and specifications.

4.4.2 Foundations

Excavation will be performed as necessary to accommodate the new reinforced concrete foundation for the new compressors. Forms will be set, rebar installed, and the concrete poured and cured in accordance with applicable standards. Concrete pours will be randomly sampled to verify compliance with minimum strength requirements. Backfill will be compacted in place, and excess soil will be used elsewhere or distributed around the site.

4.5 Restoration

Following construction of the proposed pipeline and aboveground facilities, the areas disturbed by construction will, to the greatest extent practicable, be restored to their original condition and use. Seeding and mulching in cultivated areas will conform to the adjacent off-right-of-way area unless otherwise requested, in writing, by the landowner. Unless requested by a landowner, no areas will be left unseeded beyond the next available seeding season.

4.5.1 Pipeline Right-of-Way

Upon completion of the pipeline installation, the surface of the ROW disturbed by construction activities would be graded to match original contours and to be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage would be required to prevent erosion, scour, and possible exposure of the pipeline. Segregated topsoil would be replaced, and soils that have been compacted by construction equipment traffic would be disked. Permanent erosion control measures would be installed at this time. Temporary construction erosion control measures may be left in place, or replaced with interim erosion control measures, where appropriate, until sufficient vegetative cover is re-established to prevent significant erosion and sedimentation.

4.5.2 Uplands

In most upland locations, an herbaceous native vegetative cover would be re-established by spreading a grass seed and mulch mixture over the disturbed surface. The type of seed would be selected to match adjacent cover, or as otherwise requested/required by the landowner or land management agency, or as recommended by the county extension agent. Depending upon the time of year, a seasonal variety may be spread until a more permanent cover can be established. Steep slopes may require erosion control mats, revetments, or sod. The revegetation success would be monitored by Texas Gas, and reseeding, fertilizing, and other measures would be employed until a cover equivalent to approximately 80 percent of similar, adjacent areas is achieved. Temporary and interim erosion control measures would be removed at that time. Active cropland may be left unseeded at the request of the landowner if preparation of the ground for planting is imminent following construction. Pasture would be reseeded with a similar species or mixture. Residential and commercial lawns would be reseeded or sodded, depending upon the original grass variety. Shrubs and small trees on residential

properties would be temporarily transplanted and replaced where practicable, and where allowed relative to the permanent ROW. Forested areas would be allowed to recover, except that no trees would be allowed to grow within 5 feet of the pipeline to facilitate pipeline inspections during operations, and no trees greater than 15 feet in height would be allowed within 15 feet of the pipeline.

Owners or managers of forested lands will be offered the opportunity to install and maintain measures to control unauthorized vehicle access to the right-of-way, including use of signs, fences, vegetative or other barriers.

4.5.3 Wetlands

Original surface hydrology would be re-established in wetlands by backfilling the pipe trench and grading the surface with backhoes or draglines operating from the temporary board road, or with low-ground-pressure (LGP) tracked vehicles working in the spoil pile, depending upon the ambient water level, degree of soil saturation, and the bearing capacity of the soils. Segregated topsoil would be replaced in unsaturated wetlands. Roots and stumps would have been removed only in the areas of the pipe trench, allowing pre-existing vegetation to recover more rapidly in the remainder of the ROW once the board roads and spoil piles have been removed. Wetlands along the proposed pipeline may display a varying degree of saturation and water elevation, requiring a variety of plant species to be re-established. In unsaturated wetlands, most vegetation would be replaced by seeding. Saturated wetlands would typically be re-vegetated by the transplantation of mature herbaceous specimens at pre-established spacing. Transplant specimens would be obtained from adjacent wetlands, collected over a relatively large area to minimize negative impacts to the donor site, or from local commercial nurseries. Adjacent donor sites are preferred over nurseries because the plants would be acclimated to the specific conditions of the site. Some specimens may also be collected from the ROW prior to construction, stored in temporary nurseries, and replanted after pipeline construction is complete.

All disturbed areas within the construction right of way will be successfully regenerated with wetland herbaceous and/or woody plant species by natural succession. Topsoil segregation in unsaturated wetlands will preserve the native seed source, which will facilitate regrowth of wetlands once pipeline installation is complete. Monitoring of wetland revegetation will be conducted annually for the first three years after construction or until wetland vegetation is successful. Revegetation will be considered successful if the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands.

Texas Gas would work with state and local agencies, and landowners to develop an acceptable site-specific revegetation plan prior to commencement of construction.

4.5.4 Above-Ground Facilities

All above ground facilities would be permanently converted to industrial use. Most areas in and around the meters and associated piping and equipment would be covered with crushed rock (or equivalent) for worker safety and to minimize the amount of maintenance required. Roads and parking areas may be crushed rock, concrete, or asphalt. Other ground surfaces would be seeded with a native grass that is compatible with the climate and easily maintained. Areas outside the fence would be restored as described above for the permanent pipeline ROW.

4.5.5 Access Roads

Previously existing roads that were used for access during construction would be returned to original or better condition, or as otherwise requested by the landowner, upon completion of the pipeline facilities installation. New access roads, if any, constructed specifically for installation of the Project would be

removed, the surface graded to original contours, and the land restored to its original use, unless otherwise requested by the landowner, or unless the roads would be required for ongoing access to the ROW during pipeline operations. No new access roads are anticipated to be built for construction of the pipeline project. Temporary erosion control measures would be removed upon final stabilization and installation of permanent erosion control measures.

Currently, the only new permanent roads that will be constructed are those that will provide access to the new compressor station and M&R stations. The locations and dimensions of these roads are currently being evaluated.

4.5.6 Pipe Storage and Contractor Yards

Upon completion of construction, all temporary facilities (i.e., trailers, sheds, latrines, pipe supports, fencing, gates, etc.) would be removed from the pipe storage and contractor yards. Unless otherwise requested by the landowners, the sites would be graded to original contours, and the land restored to their original use. The sites would be re-vegetated, if applicable, permanent erosion control measures would be installed, and temporary erosion control measures would be removed.

4.6 Operation and Maintenance of the Natural Gas Pipeline

Texas Gas will operate and maintain the proposed pipeline and aboveground facilities in compliance with USDOT regulations provided in 49 CFR 192, FERC's guidance at 18 CFR 380.15, and maintenance provisions of FERC's Plan and Procedures.

Operational activity on the pipeline will be limited primarily to maintenance of the right-of-way and inspection, repair, and cleaning of the pipeline itself. Periodic aerial and ground inspections by pipeline personnel will identify soil erosion which may expose the pipe; dead vegetation that may indicate a leak in the line; conditions of the vegetative cover and erosion control measures; unauthorized encroachment on the right-of-way, such as buildings and other substantial structures; and other conditions which could present a safety hazard or require preventative maintenance or repairs. The pipeline cathodic protection (CP) system will also be monitored and inspected periodically to ensure proper and adequate corrosion protection. Appropriate responses to conditions observed during inspection will be taken as necessary.

Vegetation on the permanent right-of-way will be maintained by mowing, cutting, and trimming. The right-of-way will be allowed to revegetate; however, large brush and trees will be periodically removed. Trees or deep-rooted shrubs could damage the pipeline's protective coating, obscure periodic surveillance, or interfere with potential repairs and would not be allowed to grow within 15 feet in wetlands, and 25 feet in uplands, of the pipeline centerline. Vegetation maintenance will be conducted once every three years and will be performed in accordance with FERC's Plan and Procedures. Vegetation maintenance will not normally be required in agricultural or grazing areas.

The pipeline facilities will be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers will clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative can be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party. Texas Gas participates in all One-Call systems.

In accordance with 49 CFR 192, the pipeline system will have a CP system to protect it where minute defects occur in the pipe coating. Without a CP system, such defects are anodic and subject to corrosion. The CP system impresses a direct current on the pipe, which makes the pipe cathodic. The CP system provides a ground-bed anode, which will corrode instead of the pipe. The CP system does

not in any way influence the pipeline excavation depth. The main components of the CP system are anode beds, rectifiers, and test stations.

Texas Gas proposes to utilize the existing CP sites on the Texas Gas system. A survey will then be performed to determine if adequate protection has been achieved. If adequate protection is not achieved with the existing CP system, additional CP sites will be proposed at the inadequately protected areas. All existing CP sites are within the existing right-of-way. Any additional sites, if required, will also be sited in the existing right-of-way.

5.0 SAFETY, ENVIRONMENTAL COMPLIANCE, TRAINING AND INSPECTION

To ensure that construction of the proposed facilities will comply with mitigation measures identified by Texas Gas, the analysis by FERC of this Project and the requirements of other Federal and state permitting agencies, implementation details will be included in construction drawings and specifications. Selected contractors will receive copies of specifications and a Construction Drawing Package containing, among other things, plant and equipment drawings designated as being approved for construction. To solicit accurate bids for construction, specifications and advance versions of the Construction Drawing Package will be provided to prospective contractors.

Concerning those mitigation measures that address pre-construction surveys and clearances, reference to pertinent correspondence and documentation will be incorporated into the Construction Drawing Package. For those mitigation measures that address permit conditions from Federal, state, and local agencies, copies of permits and related drawings will also be added to the Construction Drawing Package. For those mitigation measures that, in part, address post-construction requirements, instructions and documentation (Maintenance Plan) will be provided to operating personnel following the completion of construction. The Maintenance Plan will include copies of pertinent permits with particular reference to long-term permit conditions.

The selected contractors will install facilities according to company specifications, the Construction Drawing Package, and the terms of the negotiated contract. To specifically support the application of proper field construction methods, a Soil Erosion and Sediment Control Plan (Soil Plan) will be prepared incorporating provisions of FERC's Plan and Procedures. Texas Gas conducts annual training for its environmental inspectors in proper field implementation of Soil Plans and other mitigation measures. The Project inspectors will be drawn from the company's inspector pool or, in some cases, from qualified third party contractors. Prior to and during construction, training for field construction personnel and contractor personnel will be conducted. While this training focuses on Soil Plan implementation, it will also include instruction on the implementation of other mitigation measures, as appropriate.

For purposes of quality assurance and compliance with mitigation measures, other applicable regulatory requirements, and company specifications, the Chief Inspector or Spread Superintendent will represent the company at each spread. The Spread Superintendent will be assisted by a Chief Inspector who will be assisted by one or more craft inspectors, and at least one environmental inspector, depending upon the size of the spread. The environmental inspector's duties are consistent with those contained in Paragraph III.B (Responsibilities of the Environmental Inspector) of FERC's Plan and shall be:

- Responsible for monitoring and documenting compliance with all mitigative measures required by FERC's Order and any other grants, permits, certificates, or other authorizing documents;
- Responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract or any other authorizing document;

- Empowered to order correction of acts that violate the environmental conditions of FERC's Order, or any other authorizing document (e.g., Corps Section 404 permit);
- A full-time position separate from all other activity inspectors; and
- Responsible for maintaining status reports and training records.

An ample number of copies of the Construction Drawing Package will be distributed to inspectors and to contractors' supervisory personnel. If a contractor's performance is unsatisfactory, the terms of the contract will allow for work stoppage and will require the contractor to begin remedial work.

The Engineering and Construction Department is responsible for designing and constructing certificated facilities in compliance with regulatory and non-regulatory requirements and agreements. If technical or management assistance is required, the responsible Texas Gas Chief Inspector will request assistance from the appropriate company department or division. The operations department will be responsible for long-term Project maintenance and regulatory compliance.

5.1 Emergency Contacts

Names and contact information for emergency notification are provided in the following table.

Title	Name(s)	Phone Number/Email
Environmental Inspector (Owner)	TBD	TBD
Environmental Coordinator (Contractor)	TBD	TBD
Emergency MDEQ Contact	TBD	TBD
Emergency Owner Contact	Steven J. Law	207-688-6954
Non-Emergency Contact	Steven J. Law	207-688-6954
Monitoring Personnel	TBD	TBD
Mississippi Emergency Response Commission	601-352-9100	
Chemical Transportation Emergency Center (CHEMTREC)	800-424-9300	
Natural Resource Center (NRC) Hotline	800-424-8802	
Coahoma County, MS Sheriff		Emergency 911 Non-Emergency 662-624-3085
Washington County, MS Sheriff		Emergency 911 Non-Emergency 662-334-2653
Humphreys County, MS Sheriff		Emergency 911 Non-Emergency 662-247-2551
Sunflower County, MS Sheriff		Emergency 911 Non-Emergency 662-887-2121
Holmes County, MS Sheriff		Emergency 911 Non-Emergency 668-834-2902
Attala County, MS Sheriff		Emergency 911 Non-Emergency 662-289-5556

6.0 SITE INSPECTIONS AND MONITORING

Monitoring includes visual inspection, monitoring for water quality parameters of concern, and documentation of the inspection and monitoring findings in a site log book. A site log book would be maintained for all on-site construction activities and would include:

- A record of the implementation of the ESCP and other permit requirements;
- Site inspections; and
- Stormwater quality monitoring.

The inspection form and water quality monitoring forms included in this ESCP include the required information for the site log book. The forms would be included in a separate site log book which would be maintained on-site or within reasonable access to the site. Modifications to BMPs and records of BMP repair would also be maintained in the log book.

6.1 Site Inspection

Site inspection would occur in all areas disturbed by construction activities and at all stormwater discharge points. Stormwater would be examined for the presence of suspended sediment, turbidity, discoloration, and oily sheen. The Environmental Inspector would evaluate and document the effectiveness of the installed BMPs and determine if it is necessary to repair or replace any of the BMPs to improve the quality of stormwater discharges. All maintenance and repairs would be documented in the site log book. All new BMPs or design changes would be documented in the ESCP as soon as possible.

6.1.1 Site Inspection Frequency

Site inspections would be conducted at least once a week and within 24 hours following any rainfall event which causes a discharge of stormwater from the site. For sites with temporary stabilization measures, the site inspection frequency can be reduced to once every month. Daily inspections of active sites are required during storm water runoff.

6.1.2 Site Inspection Documentation

The site inspector would record each site inspection using the site log inspection forms provided in Appendix C. The site inspection log forms may be separated from this ESCP document, but would be maintained on-site or within reasonable access to the site and be made available upon request by DEQ or the local jurisdiction.

6.2 Storm Water Quality Monitoring

6.2.1 Water Quality Monitoring

Sampling for Total Suspended Solids will occur on all streams, particularly those streams on the MDEQ 303(d) list for turbidity and sedimentation as identified in Section 2.1. Sampling shall occur in two locations, one sample upstream of runoff from the Project, and downstream at the limit of a 750-foot mixing zone. Per MDEQ letter to the Corps Vicksburg District Regulatory Branch dated March 15, 2002, turbidity outside of the limits of a 750-foot mixing zone shall not exceed ambient turbidity by more than 50 Nephelometric Turbidity Units (NTU). Turbidity measurements in streams receiving storm water runoff from the project and shall be taken after every storm with precipitation of half an inch or greater or precipitation sufficient to produce runoff.

Additional monitoring is required by MDEQ as a condition of the Hydrostatic Test General Permit, as described below. Testing for chlorine is included, as it is not required if the water source is not chlorinated.

Subject Item: Limitations and Monitoring Requirements for New Pipelines, Storage Tanks, and Flowlines
RPNT0000000001: Table 1 (Fresh Water)

Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Discharge Limitations							Monitoring Requirements		
	Quantity / Loading Average	Quantity / Loading Maximum	Quantity / Loading Units	Conc. / Quality Minimum	Conc. / Quality Average	Conc. / Quality Maximum	Conc. / Quality Units	Frequency	Sample Type	Which Months
Chlorine, total residual Effluent	.....	.....	.....	.....	.....	0.019 Semi Maximum	mg/L	once per discharge event	grab sampling	Jan-Dec
Flow Effluent	.....	Report Semi Maximum	million gallons per day	.....	.....	.....	.....	once per discharge event	estimate	Jan-Dec
Oil and grease Effluent	.....	.....	.....	.....	.....	15 Semi Maximum	mg/L	once per discharge event	grab sampling	Jan-Dec
pH Effluent	.....	.....	.....	6.0 Minimum	.....	9.0 Maximum	SU	once per discharge event	grab sampling	Jan-Dec
Solids (Total Suspended) Effluent	.....	.....	.....	.....	.....	50 Semi Maximum	mg/L	once per discharge event	grab sampling	Jan-Dec

6.2.2 Visual Monitoring

All ESCP controls and practices must be inspected as follows:

- Daily during active period.
- Once, to ensure ESCP measures are in working order prior to site becoming inactive or inaccessible.
- Once every two weeks during inactive periods of greater than seven consecutive days.
- Daily, if practical, during inaccessible periods due to inclement weather.

7.0 RECORDKEEPING

7.1 Site Log Book

A site log book would be maintained for all on-site construction activities and would include:

- A record of the implementation of the ESCP and other permit requirements;
- Site inspections;
- Stormwater quality monitoring;
- Method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;
- Acreage treated;
- Dates of backfilling and seeding;
- Names of landowners requesting special seeding treatment; and

- A description of the follow-up actions, any problem areas, and how they were addressed.

For convenience, the inspection form and water quality monitoring forms included in this ESCP include the required information for the site log book.

Quarterly reports will be filed to FERC documenting problems, landowner issues, and corrective actions taken for at least two years following construction.

Weekly, or biweekly, reports to FERC shall identify areas used by the project that are in excess of what has been identified herein. Approvals of landowners shall be obtained and documented in the files. Areas shall be identified by Station number and referenced to an alignment sheet, and survey information of the additional area incorporated into the project.

7.2 Records Retention

Records of all monitoring information (site log book, inspection reports/checklists, etc.), this ESCP, and any other documentation of compliance with water quality requirements would be retained during the life of the construction project and for a minimum of three years following completion of construction.

7.3 Access to Plans and Records

The ESCP and SWPPP, and Site Log Book, would be retained on site or within reasonable access to the site and would be made immediately available upon request to MDEQ or local municipality. A copy of the ESCP or access to the ESCP would be provided to the public when requested in writing.

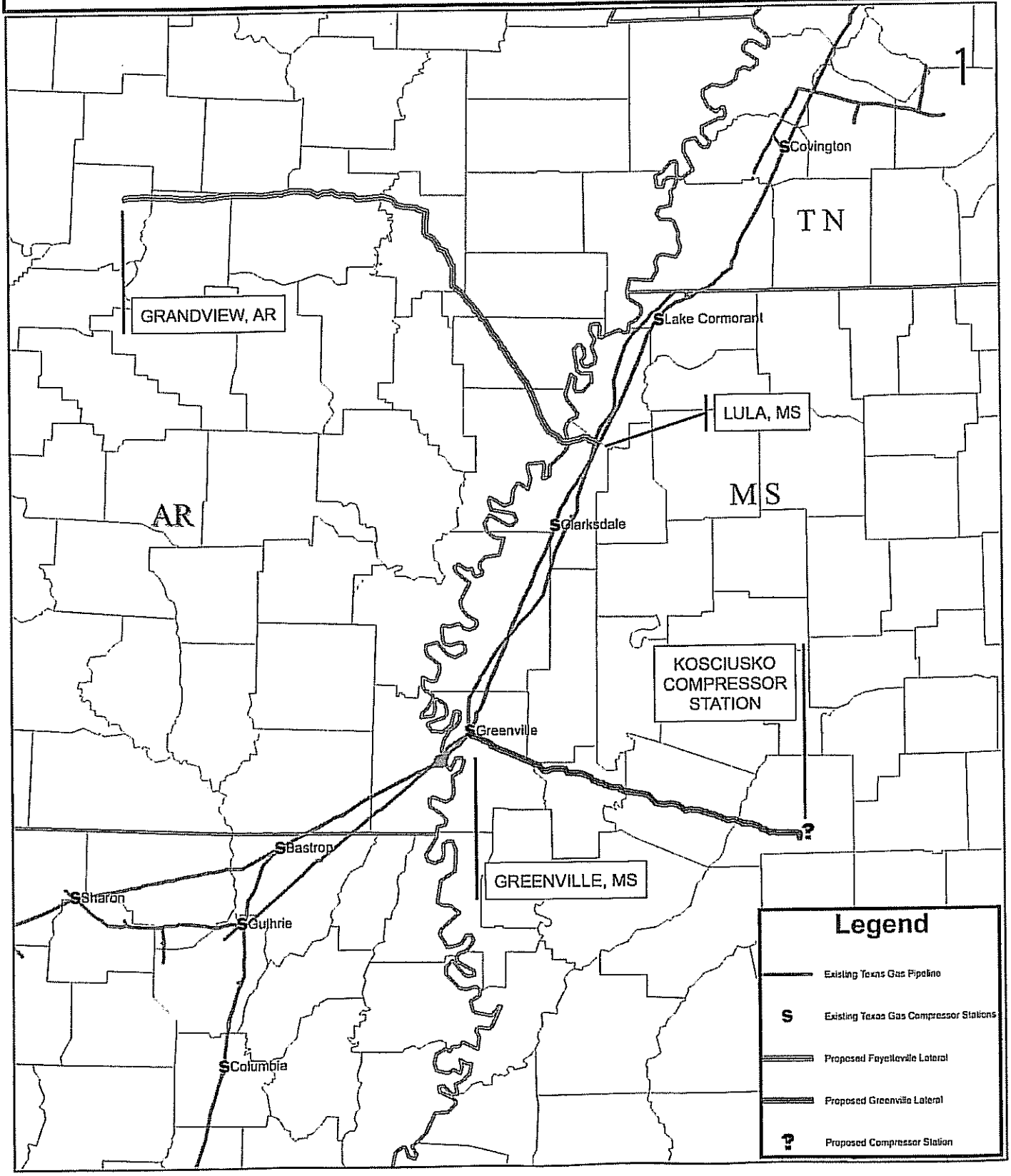
7.4 Updating the ESCP

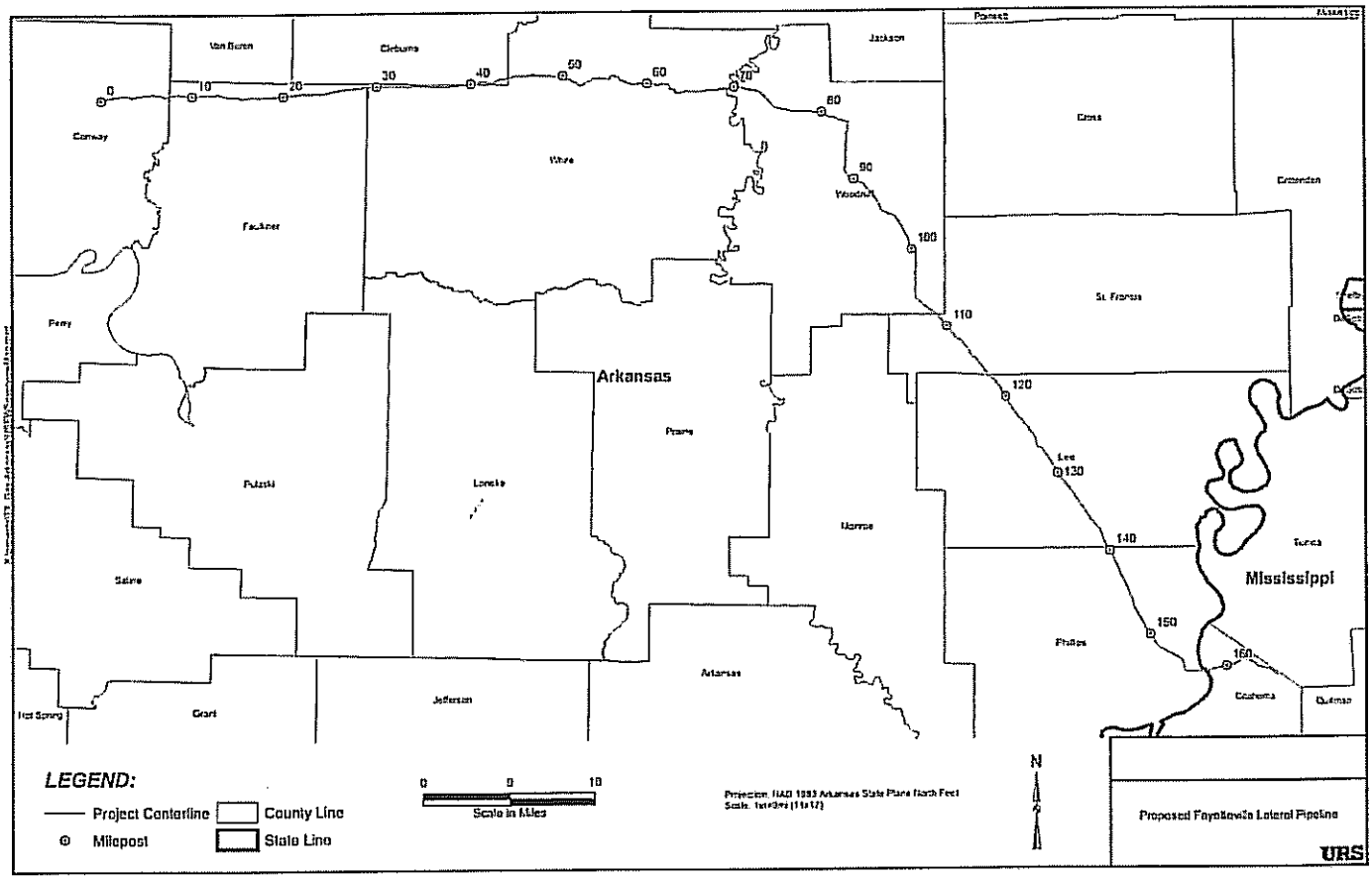
This ESCP and SWPPP would be modified if they are deemed to be ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site or there has been a change in design, construction, operation, or maintenance at the site that has a significant effect on the discharge, or potential for discharge, of pollutants to the waters of the State. This ESCP and SWPPP would be modified within ten days of determination based on inspection(s) that additional or modified BMPs are necessary to correct problems identified, and an updated timeline for BMP implementation would be prepared.

FIGURES

TEXAS GAS TRANSMISSION, LLC

FAYETTEVILLE/GREENVILLE EXPANSION PROJECT
FIGURE 1
PRELIMINARY ROUTE MAP

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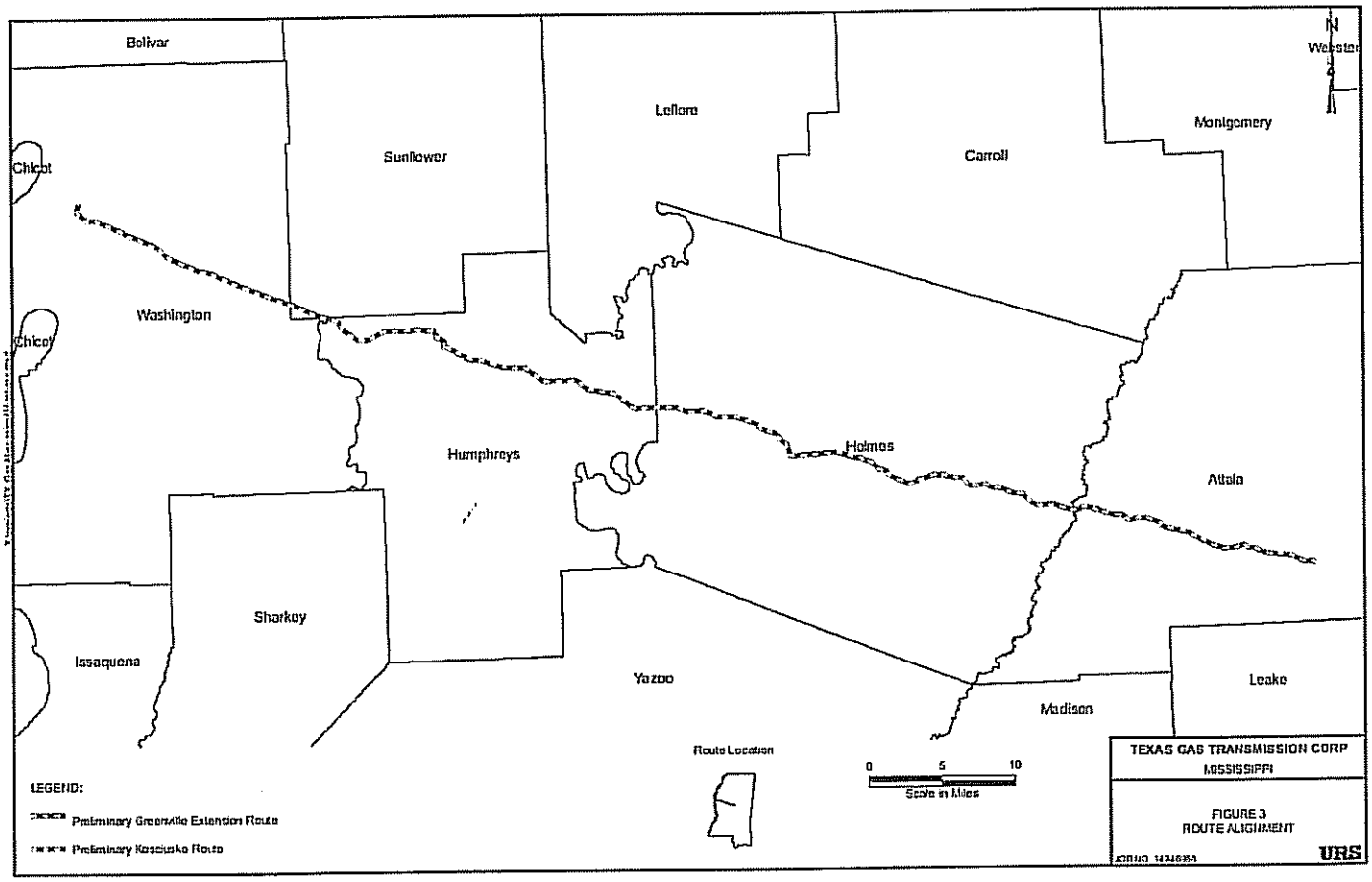
Cleburne
Jackson
Poinsett
Cross
Crittenden
Conway
Faulkner
White
Woodruff
St. Francis
Perry
Arkansas
Prairie
Lee
Pulaski
Lonoke
Monroe
Saline
Phillips
Mississippi
Arkansas
Jefferson
Grant
Hot Spring
Desha
Chicot
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
LEGEND:
Project Centerline
Milepost
County Line
State Line
0
5
10
Scale in Miles
N
Proposed Fayetteville Lateral Pipeline
URS


Bolivar
Sunflower
Leflore
Carroll
Montgomery
Webster
Chicot
Washington
Humphreys
Holmes
Attala
Sharkey
Issaquena
Yazoo
Madison
Leake
N
Route Location
0 5 10
Scale in Miles
LEGEND:
Preliminary Greenville Extension Route
Preliminary Kosciusko Route
TEXAS GAS TRANSMISSION CORP
MISSISSIPPI
FIGURE 3
ROUTE ALIGNMENT
URS

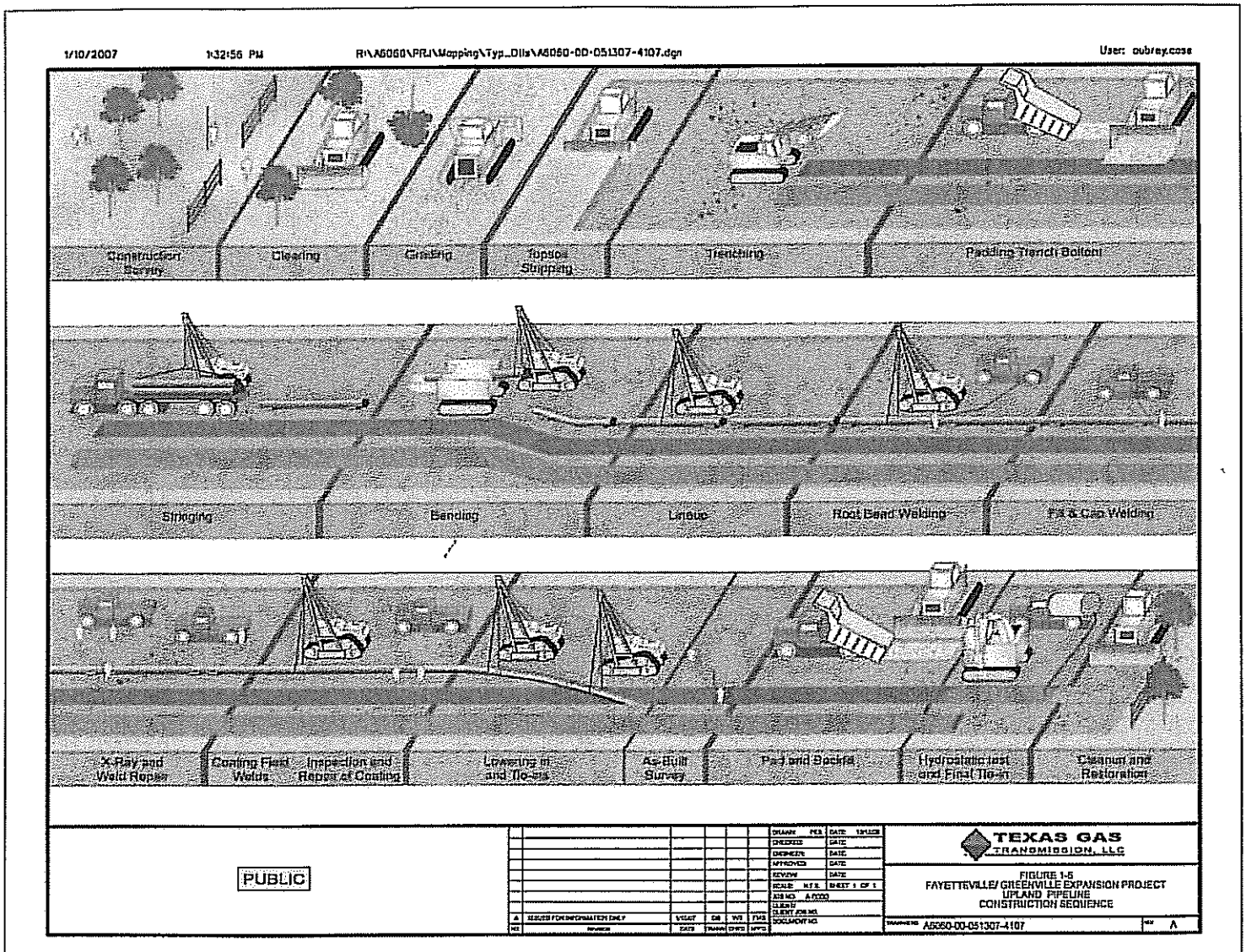
APPENDICES

Appendix A

Site Plan and Details, and BMP Details

Details:

Upland Pipeline Construction Sequence
Typical Cross Section with 36" Pipe Adjacent to Foreign Pipeline
36" Typical Cross Section
Typical HDD Waterbody Crossing
Typical Foreign Pipeline Crossing Detail
Typical Waterbody Crossing
Typical Saturated Wetland Crossing
Permanent Right-of-Way Maintenance in Forested Wetland Areas
Typical Horizontal Directional Drill Layout
Typical Compressor Station Plot Plan
Typical Cross Section with 36" Pipe Adjacent to Powerline
MDEQ Gravel Construction Entrance
MDEQ Diversion
MDEQ Proper Placement Of A Filter Barrier In A Drainage Way
MDEQ Construction Of A Silt Fence
MDEQ Straw Bale Drop Inlet Sediment Filter
MDEQ Burlap Drop Inlet Sediment Filter
MDEQ Proper Placement Of Straw Bale Barrier In Drainage Way/
MDEQ Cross-Section Of A Properly Installed Straw Bale
MDEQ Level Spreader Outlet For Diversion
MDEQ Typical Section Of A Waterway With Stone Center Drain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Construction Survey
Clearing
Grading
Topsoil Stripping
Trenching
Padding Trench Bottom
Stringing
Bending
Lineup
Root Bead Welding
Fill & Cap Welding
X-Ray and Weld Repair
Coating Field Welds
Inspection and Repair of Coating
Lowering in and Tie-ins
As-Built Survey
Pad and Backfill
Hydrostatic test and Final Tie-in
Cleanup and Restoration
PUBLIC
TEXAS GAS TRANSMISSION, LLC
FIGURE 1-5
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
UPLAND PIPELINE
CONSTRUCTION SEQUENCE
A5060-00-051307-4107

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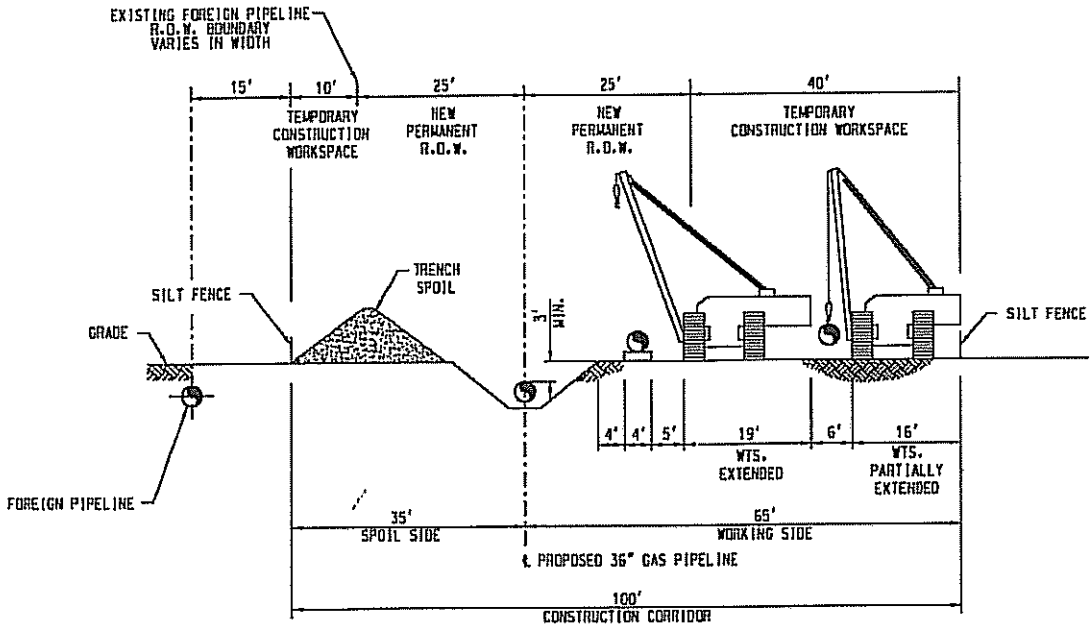

PROFILE

PUBLIC

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-8
FAYETTEVILLE/GREENVILLE EXPANSION PROJECT
TYPICAL CROSS SECTION WITH 36" PIPE
ADJACENT TO FOREIGN PIPELINE

A6060-00-051307-4109 REV 0

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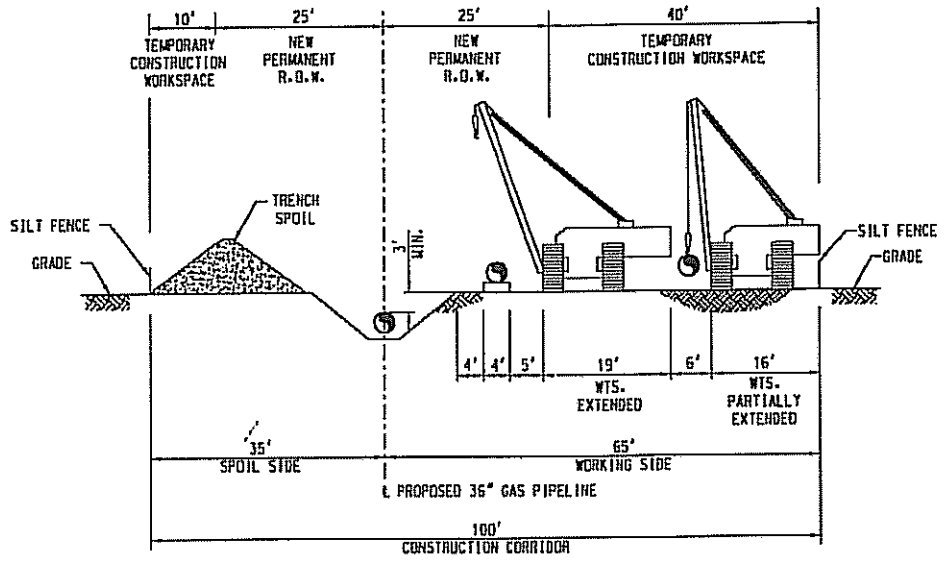

PROFILE

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TEXAS GAS TRANSMISSION, LLC

FIGURE 1-8
FAYETTEVILLE/GREENVILLE EXPANSION PROJECT
36" TYPICAL CROSS SECTION

A6060-00-051307-4110 REV B

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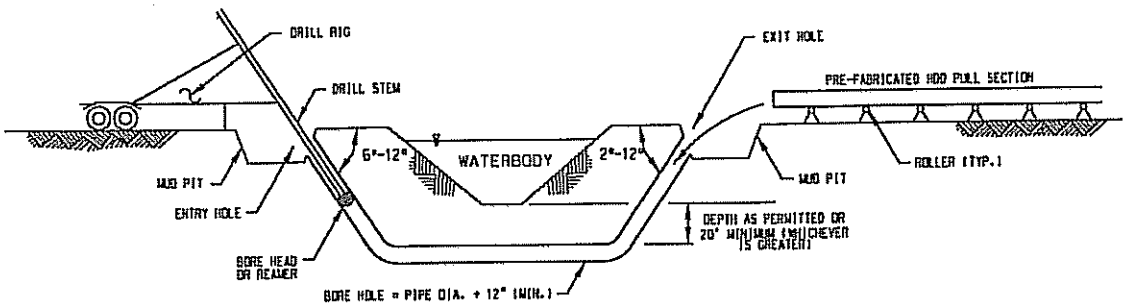
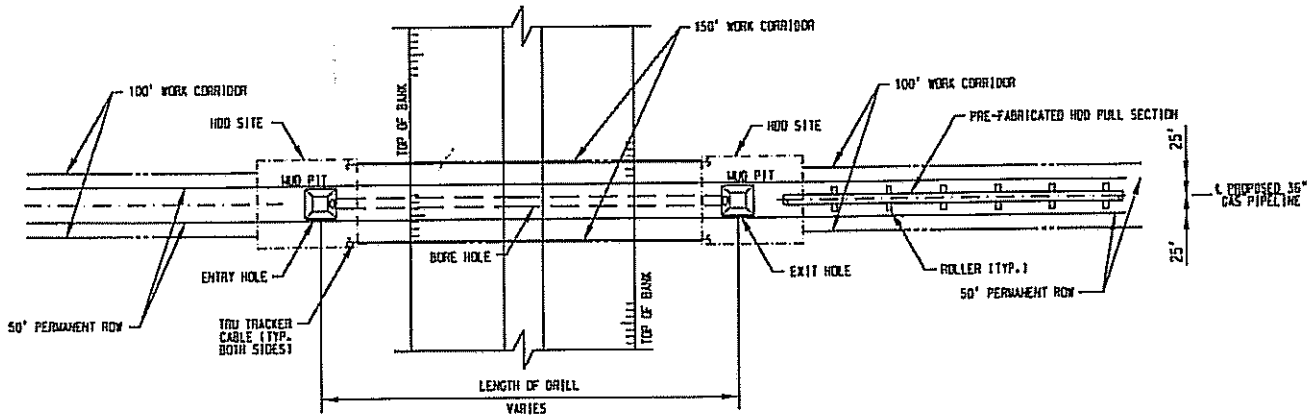


SECTION
N.T.S.

(VERTICAL TO HORIZONTAL RATIO EXAGGERATED)



PLAN
N.T.S.

PUBLIC

A	ISSUED FOR INFORMATION ONLY	WSSD	DB	TVB	TMB	
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DRAWN	TCV	DATE
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ENGINEER		DATE
APPROVED		DATE
REVIEW		DATE
SCALE	N.T.S.	SHEET 1 OF 1
JOB NO.	A-XXXX	
CLIENT JOB NO.		
DOCUMENT NO.		

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-10
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
TYPICAL HDD WATERBODY CROSSING
PROPOSED 36" GAS PIPELINE

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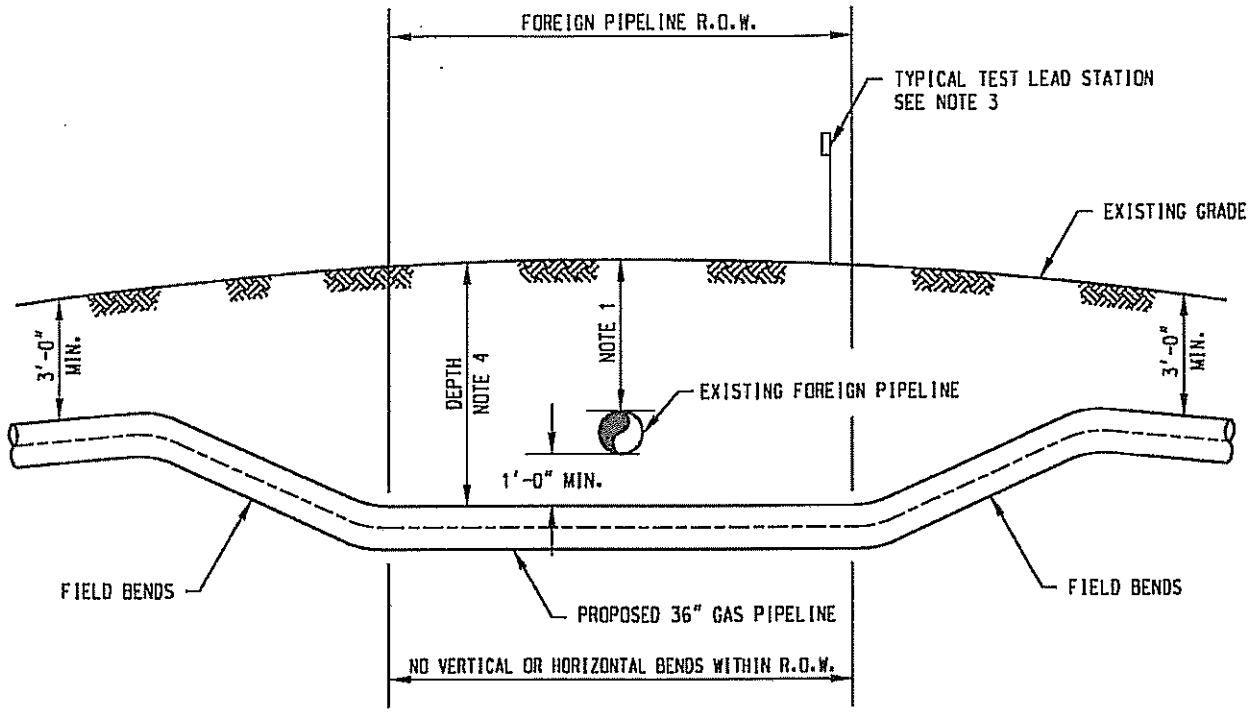

TYPICAL FOREIGN PIPELINE CROSSING DETAIL

NOTES:

1. FOREIGN PIPELINE LOCATIONS & DEPTHS TO BE DETERMINED BY ELECTRONIC MEANS IN ADVANCE OF PIPELINE CONSTRUCTION AND CONFIRMED BY CAREFULLY EXPOSING BY HAND DIGGING.
2. OWNER OF FOREIGN PIPELINE(S) SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF EXCAVATION OF CROSSING.
3. TEST LEAD STATION TO BE INSTALLED WHERE PRACTICAL AT THE NEAREST FENCE, HEDGE ROW OR FIELD EDGE, AND WHERE READILY ACCESSIBLE.
4. DEPTH OF PIPELINE INCLUDING 1'-0" MIN. CLEARANCE SHALL BE MAINTAINED FOR ALL FULL ANGULAR WIDTH OF FOREIGN PIPELINE R.O.W.
5. PROPOSED PIPELINE MAY ONLY CROSS ABOVE THE FOREIGN PIPELINE(S) WHERE REQUESTED BY OR APPROVED BY FOREIGN OWNER IN WRITING.

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NO.	REVISION	DATE	DRAWN	CHECK	APPD
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ENGINEER: DATE:
APPROVED: DATE:
REVIEW: DATE:
SCALE: N.T.S. SHEET 1 OF 1
JOB NO.: A-6060
CLIENT/ CLIENT JOB NO.:
DOCUMENT NO.:

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-11
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
TYPICAL FOREIGN PIPELINE
CROSSING DETAIL

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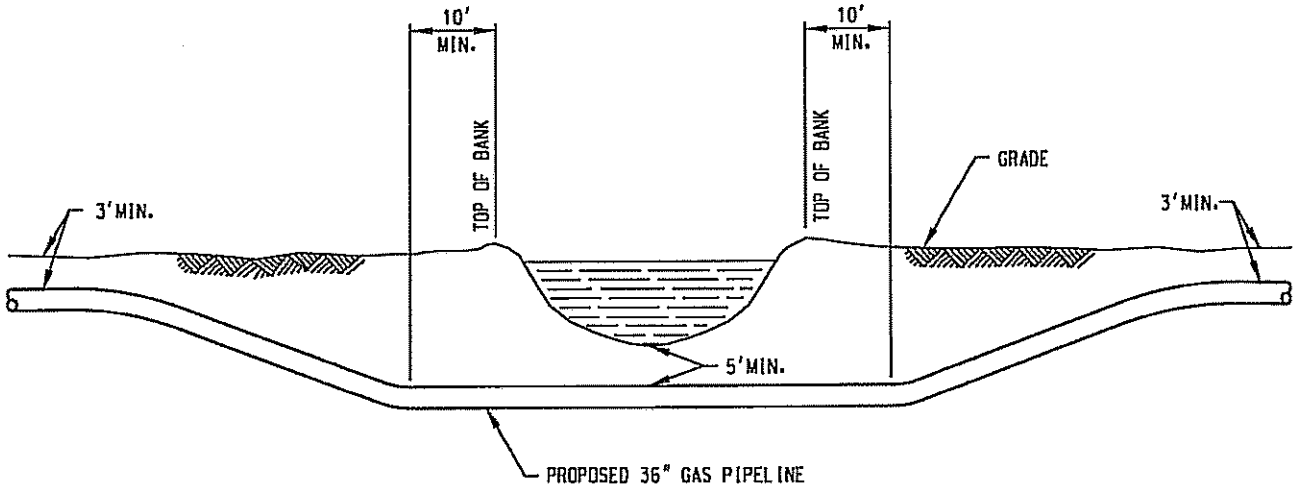

TYPICAL WATERBODY CROSSING

PUBLIC

NO	REVISION	DATE	DRAWN	CHKD	APVD
A	ISSUED FOR INFORMATION ONLY	1/10/07	DB	WS	TMS

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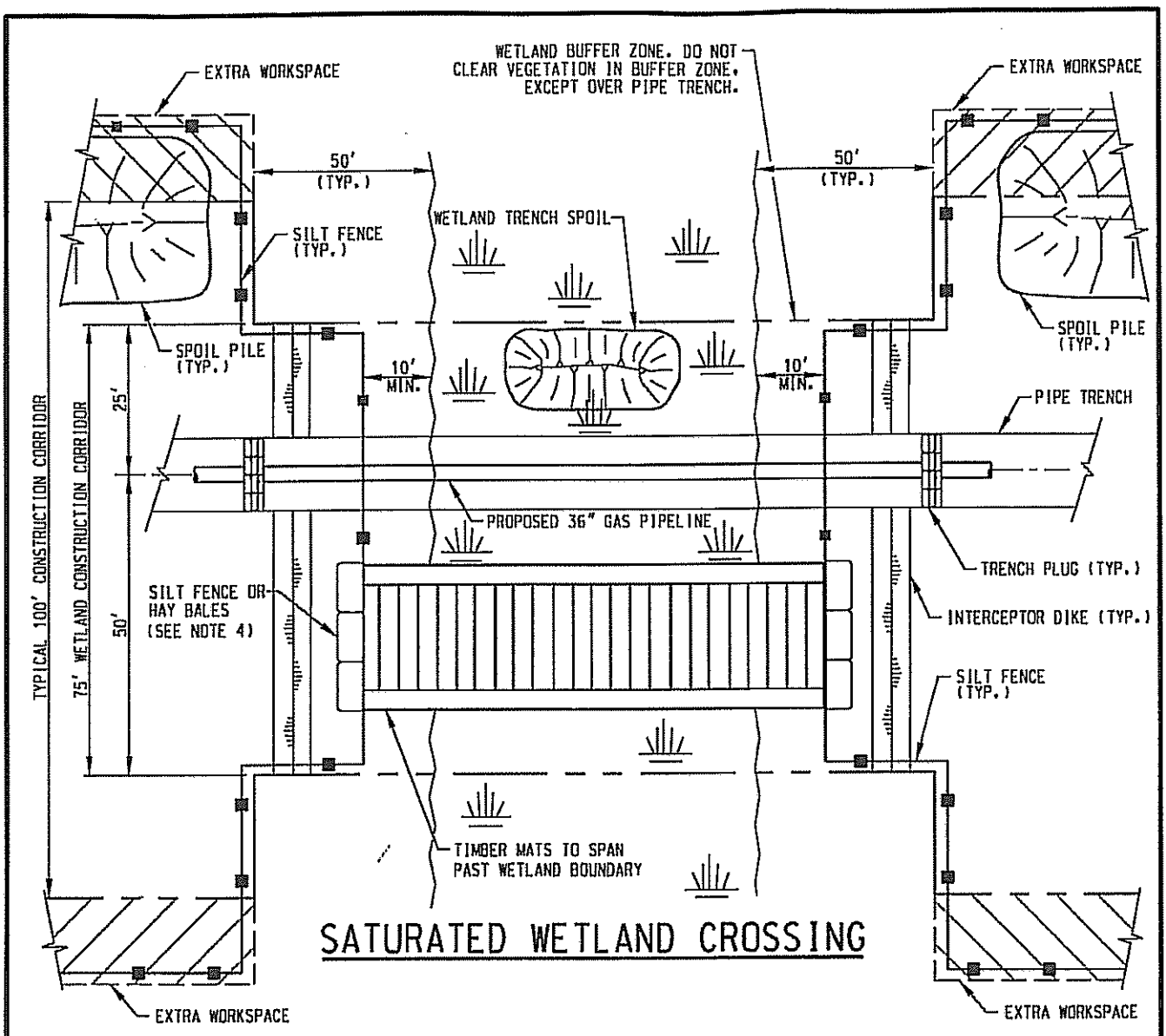
REVIEW: DATE:
SCALE: N.T.S. SHEET 1 OF 1
JOB NO: A-6060
CLIENT/ CLIENT JOB NO.
DOCUMENT NO

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-12
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
TYPICAL WATERBODY CROSSING

DRAWING NO. A6060-00-051307-4116 REV A



NOTES:

1. INSTALL PERMANENT INTERCEPTOR DIKES AT THE BASE OF ALL SLOPES ADJACENT TO THE WETLAND.
2. CONTRACTOR SHALL POSTPONE GRADING OF RIGHT-OF-WAY ADJACENT TO WETLAND UNTIL STAGING AREA IS PREPARED AND WORK IN THE WETLAND IS READY TO COMMENCE.
3. SILT FENCE OR HAY BALES SHALL BE PLACED IN THE GAP AT THE TIMBER MATS BY THE END OF EACH DAY OR PRIOR TO APPROACHING RAIN TO PREVENT SEDIMENT FLOW INTO WETLAND.
4. USE ADDITIONAL TIMBER MAT LAYERS TO RAISE CROSSING ABOVE GRADE WHERE POOR SOIL CONDITIONS EXIST.
5. SILT FENCE AND INTERCEPTOR DIKE TO BE REMOVED ACROSS PIPE TRENCH AND DURING CONSTRUCTION OF PIPELINE. SILT FENCE AND INTERCEPTOR DIKE TO BE REPLACED AFTER BACKFILL OF TRENCH.

PUBLIC

NO.	REVISION	DATE	DRAWN	CHECK	APP'D
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A	ISSUED FOR PRELIM DRAFT	03/20/07	DSB	WS	FMS

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REVIEW: DATE:
SCALE: N.T.S. SHEET 1 OF 2
JOB NO.: A-6060
CLIENT
CLIENT JOB NO.
DOCUMENT NO.

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-25
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
TYPICAL SATURATED WETLAND CROSSING

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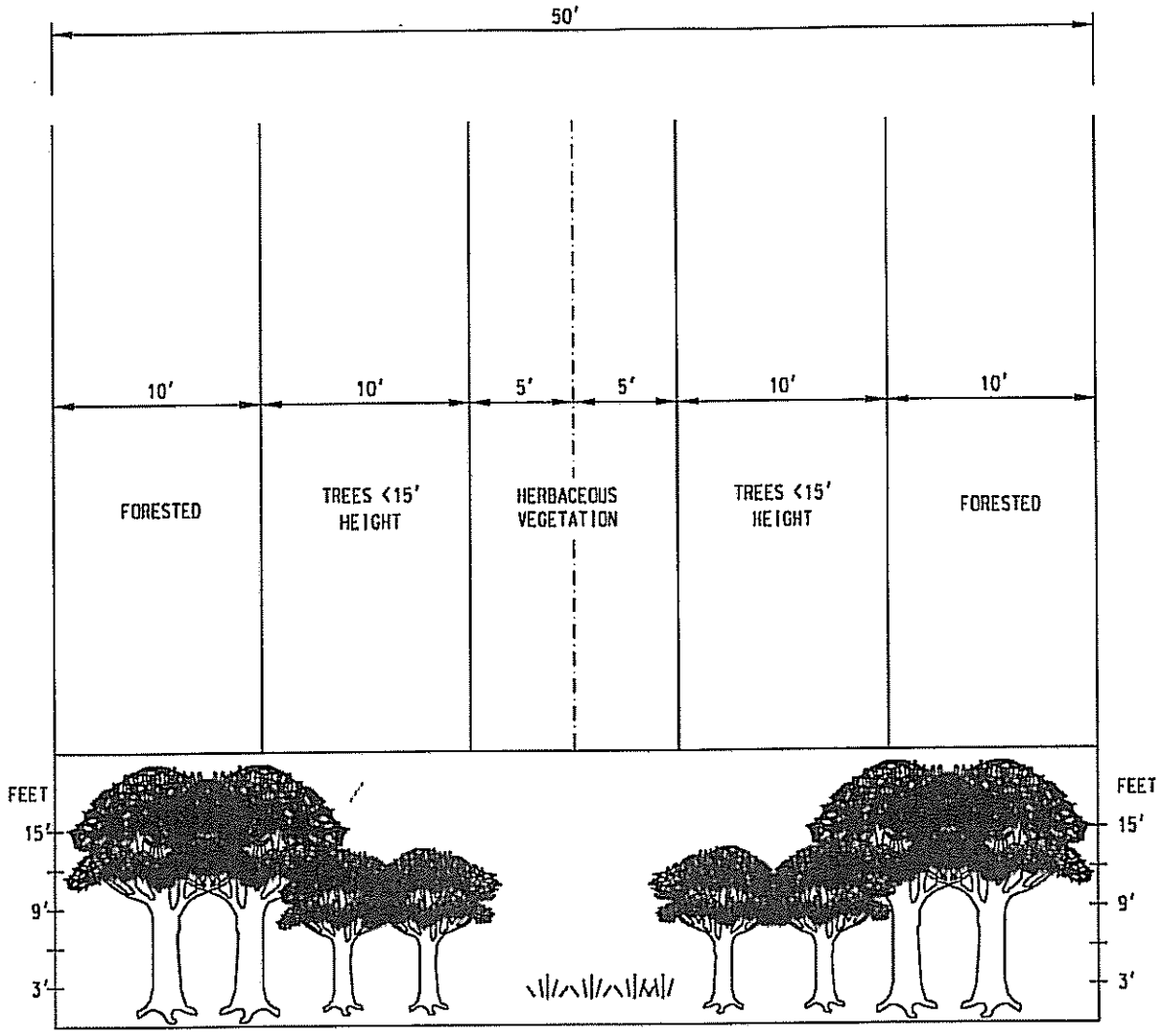

ELEVATION PROFILE

PERMANENT RIGHT-OF-WAY MAINTENANCE IN FORESTED WETLAND AREAS

PUBLIC

NO.	REVISION	DATE	DRAWN	CHECK	APPD
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REVIEW DATE
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CLIENT/ CLIENT JOB NO.
DOCUMENT NO.

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-29
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
PERMANENT RIGHT-OF-WAY MAINTENANCE
IN FORESTED WETLAND AREAS

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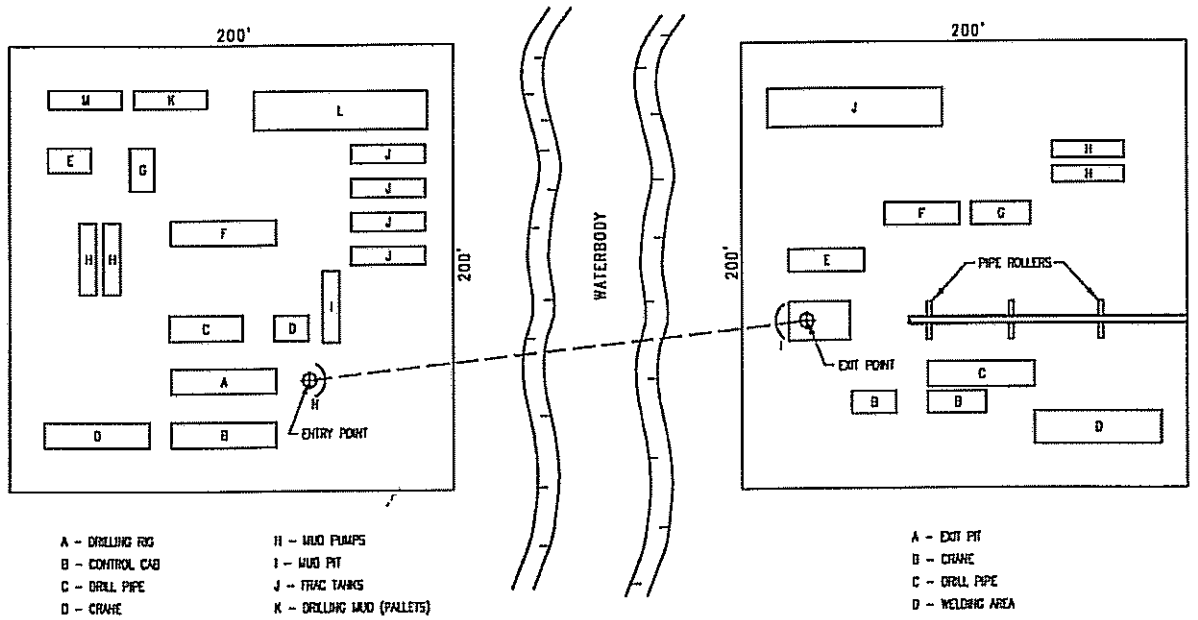

PLAN

A – DRILLING RIG
B – CONTROL CAB
C – DRILL PIPE
D – CRANE
E – PARTS STORAGE
F – MUD CLEAN UNIT
G – MUD MIXING TANK
H – MUD PUMPS
I – MUD PIT
J – FRAC TANKS
K – DRILLING MUD (PALLETS)
L – PARKING
M – OFFICE TRAILER
N – CONTAINMENT BERM
O – POWER UNIT

A – EXIT PIT
B – CRANE
C – DRILL PIPE
D – WELDING AREA
E – MUD PIT
F – MUD CLEANING
G – GENERATOR
H – FRAC TANKS
I – CONTAINMENT BERM
J – PARKING

PUBLIC

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APPROVED DATE
REVIEWED DATE
SCALE N.T.S. SHEET 1 OF 1
JOB NO. A6060
CLIENT
CLIENT JOB NO.
DOCUMENT NO.

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-30
TYPICAL HORIZONTAL DIRECTIONAL DRILL LAYOUT
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
PROPOSED 36" GAS PIPELINE

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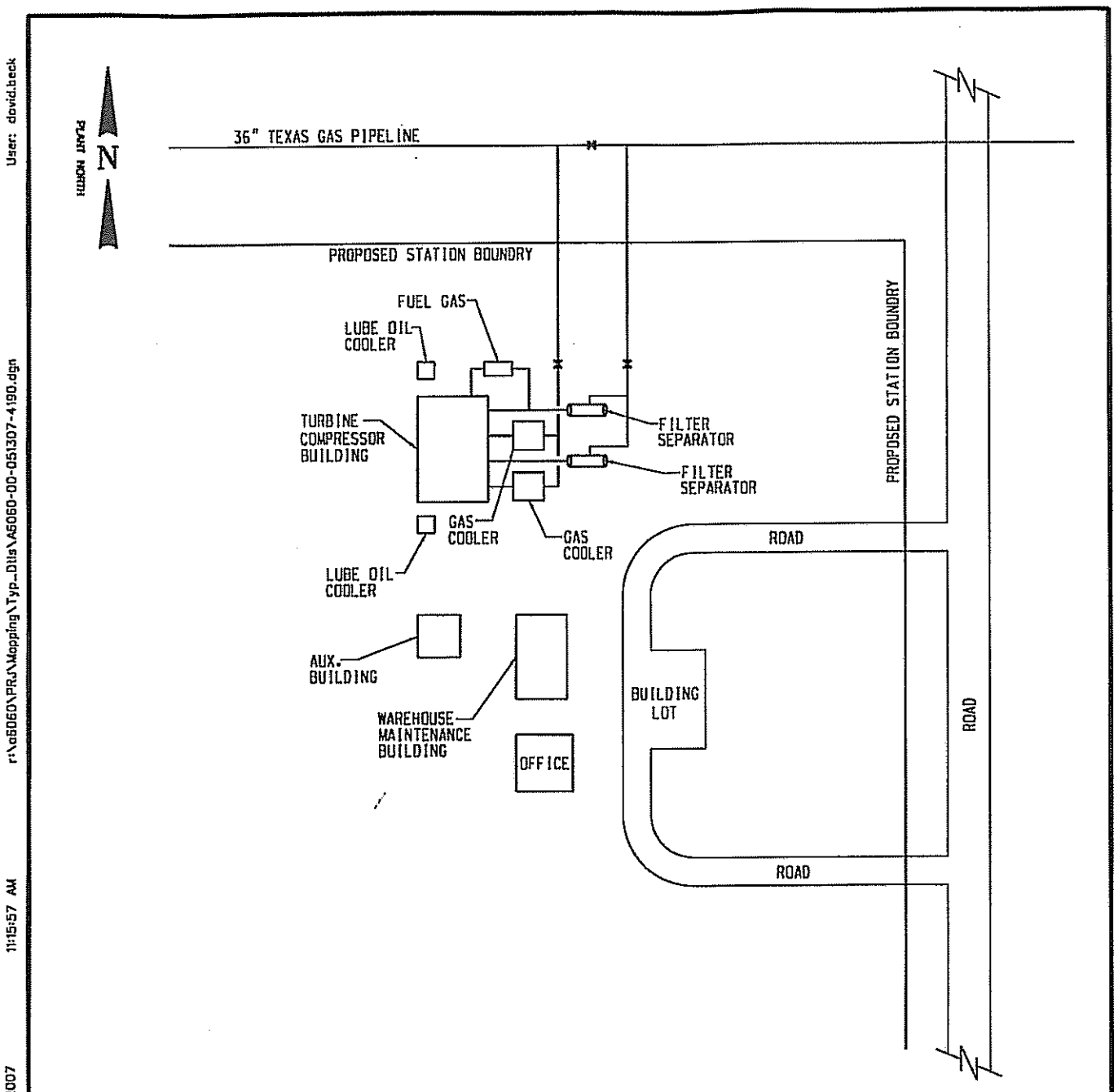

TYPICAL COMPRESSOR STATION PLOT PLAN

PUBLIC

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A	ISSUED FOR PRELIM DRAFT	03/30/07	DB	WS	FMS

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CHECKED: WS DATE: 03/22/07
ENGINEER: FMS DATE: 03/22/07
APPROVED: DATE:
REVIEW: DATE:
SCALE: N.T.S. SHEET 1 OF 1
JOB NO: A-6060
CLIENT/ CLIENT JOB NO.
DOCUMENT NO.

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-31
FAYETTEVILLE/ GREENVILLE EXPANSION PROJECT
TYPICAL COMPRESSOR STATION PLOT PLAN
PROPOSED 36" GAS PIPELINE

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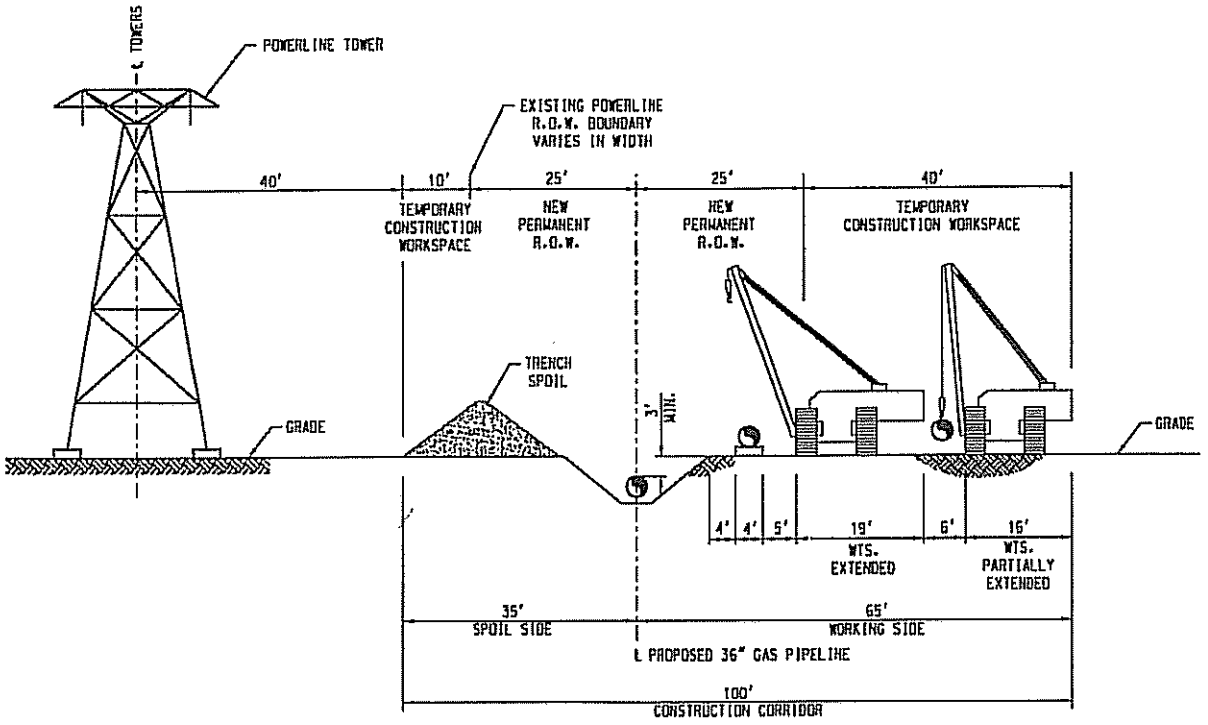

PROFILE

PUBLIC

TEXAS GAS TRANSMISSION, LLC

FIGURE 1-35
FAYETTEVILLE/GREENVILLE EXPANSION PROJECT
TYPICAL CROSS SECTION WITH 36" PIPE
ADJACENT TO POWERLINE

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Plans and Specifications

Plans for constructing and installing the construction entrance shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve the intended purpose.

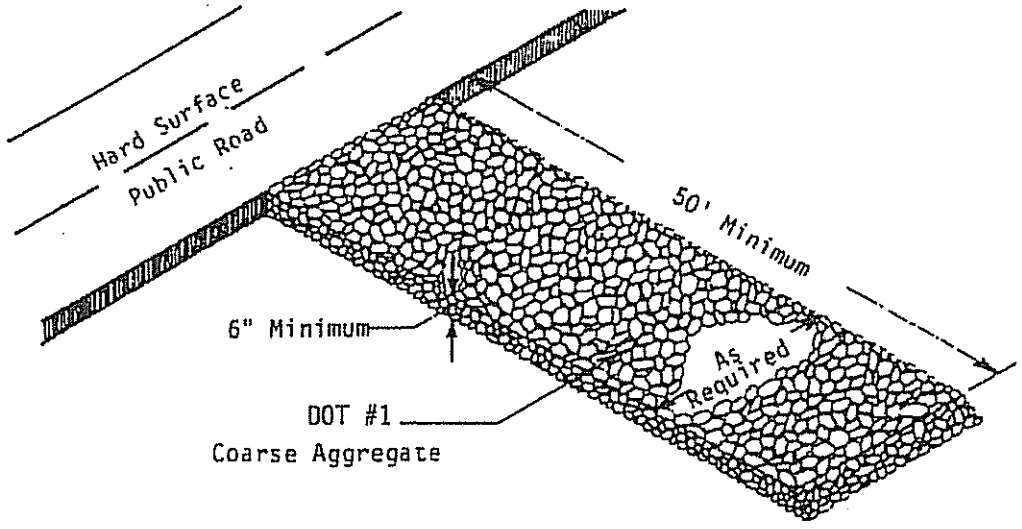
Specifications for installing the construction entrance shall use or be in conformance with the following. Any variation from these specifications shall be approved by an engineer.

1. Placement

   The area of the entrance should be cleared of all vegetation, roots, and other objectionable material. The gravel shall be placed to the specified dimensions. Any drainage facilities required because of washing should be constructed according to specifications. If wash racks are used, they should be installed according to manufacturer's specifications.

2. Maintenance

   The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 2-inch stone, as conditions demand, and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately.



GRAVEL CONSTRUCTION ENTRANCE

DIVERSION
(Temporary Practice)

Definition

A temporary ridge or excavated channel or combination ridge and channel constructed across sloping land on a predetermined grade.

Purpose

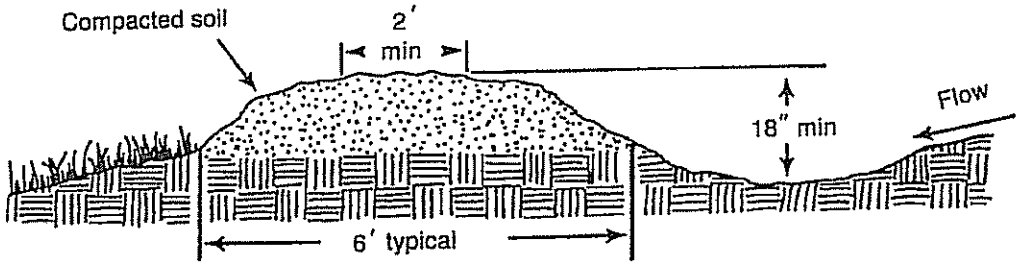
To protect work areas from upslope runoff and to divert sediment-laden water to appropriate traps or stable outlets.

Conditions Where Practice Applies

Wherever stormwater runoff must be temporarily diverted to protect disturbed slopes or retain sediments on site during construction. These structures generally have a life expectancy of 18 months or less.

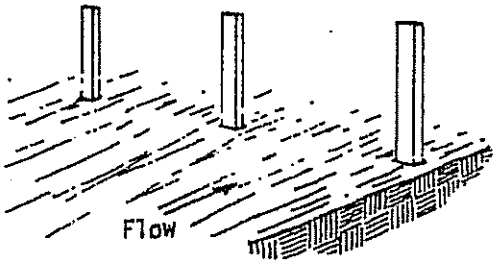
Planning Considerations

A temporary diversion dike is intended to divert overland sheet flow to a stabilized outlet or a sediment trapping facility during establishment of permanent stabilization on sloping, disturbed areas. When used at the top of a slope, the structure protects exposed slopes by keeping upland runoff away. When used at the base of a slope, the structure protects adjacent and downstream areas by diverting sediment-laden runoff to a sediment trapping facility.

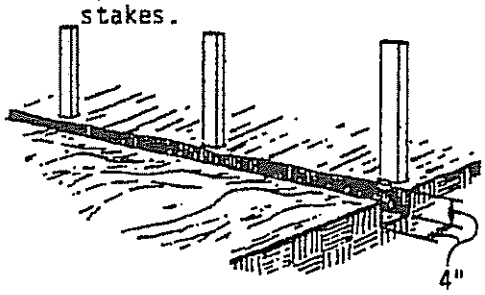


If the dike is going to remain in place for longer than 30 days, it is very important that it be established with temporary or permanent vegetation. The slope behind the dike is also an important consideration. The dike must have a positive grade to assure drainage, but if the slope is too great, precautions must be taken to prevent erosion due to high velocity flow behind the dike.

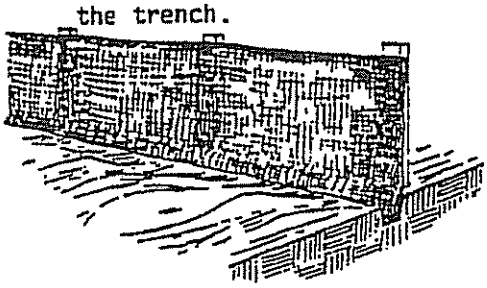
1. Set the stakes.



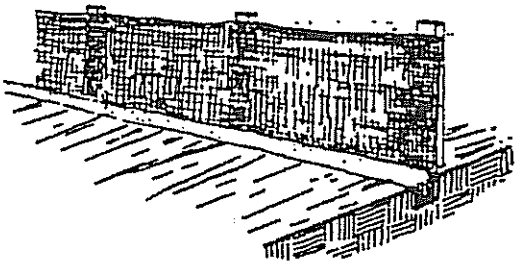
2. Excavate a 4"x4" trench upslope along the line of stakes.



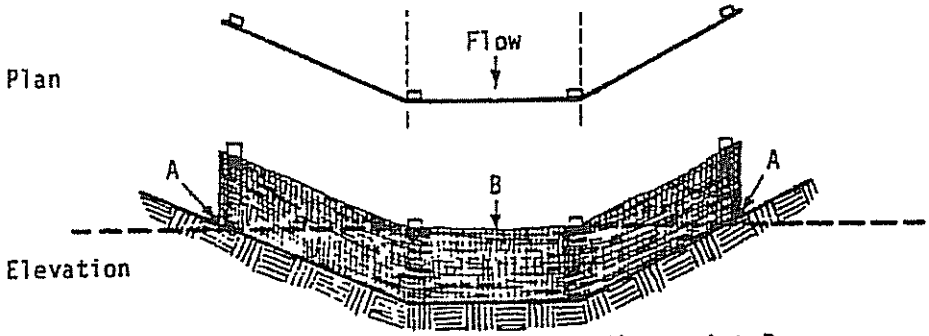
3. Staple filter material to stakes and extend it into the trench.



4. Backfill and compact the excavated soil.



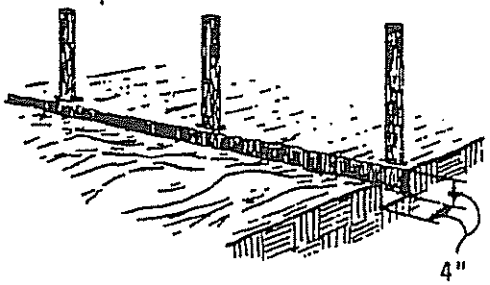
CONSTRUCTION OF A FILTER BARRIER



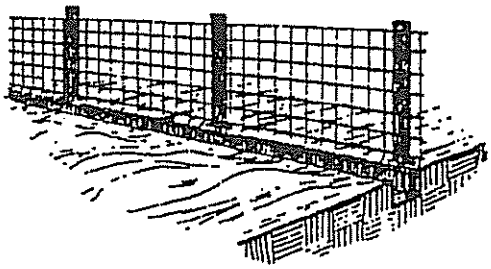
Points A should be higher than point B

PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

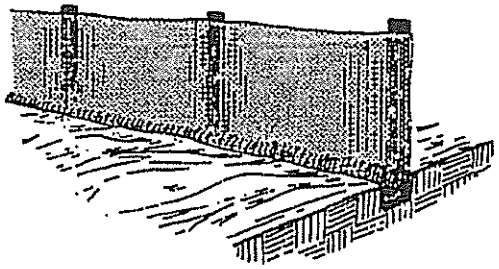
1. Set posts and excavate a 4"x4" trench upslope along the line of posts.



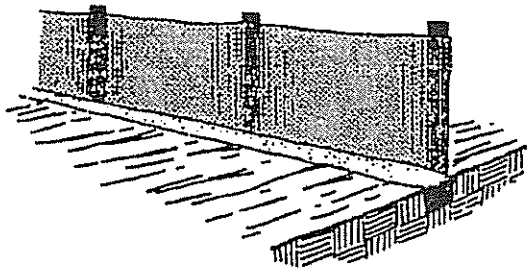
2. Staple wire fencing to the posts.



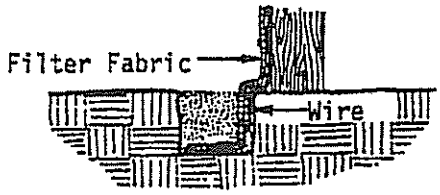
3. Attach the filter fabric to the wire fence and extend it into the trench.



4. Backfill and compact the excavated soil.



Extension of fabric and wire into the trench.



CONSTRUCTION OF A SILT FENCE

1. STRAW BALE DROP INLET STRUCTURE

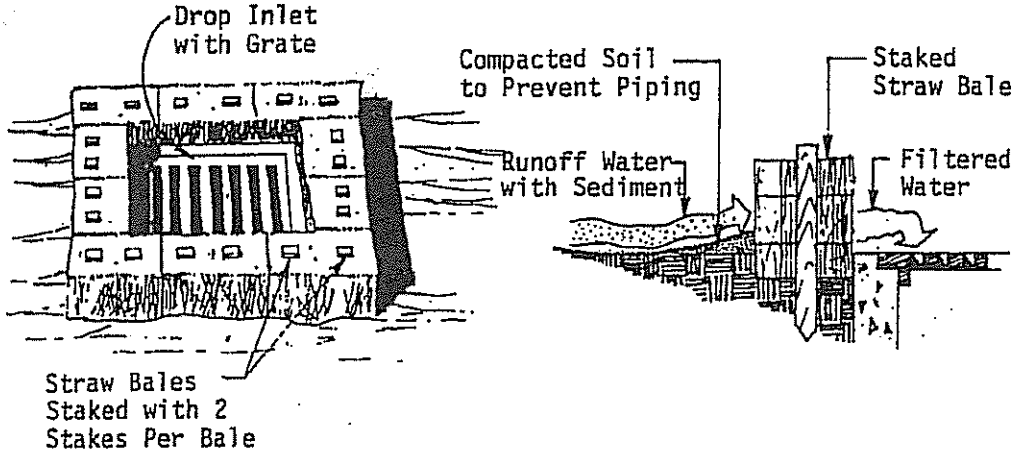
   a. Bales shall be either wire-bound or string-tied with the bindings oriented around the sides rather than over and under the bales.

   b. Bales shall be placed lengthwise in a single row surrounding the inlet with the ends of adjacent bales pressed together.

   c. The filter barrier shall be entrenched and backfilled. A trench shall be excavated around the inlet the width of a bale to a minimum depth of 4 inches. After the bales are staked, the excavated soil shall be backfilled and compacted against the filter barrier.

   d. Each bale shall be securely anchored and held in place by at least two stakes or rebars driven through the bale.

   e. Loose straw should be wedged between bales to prevent water from entering between bales.



Specific Application

This method of inlet protection is applicable where the inlet drains a relatively flat area (slopes no greater than 5 percent) where sheet or overland flows (not exceeding 0.5 cfs) are typical. The method shall not apply to inlets receiving concentrated flows, such as in street or highway medians.

STRAW BALE DROP INLET SEDIMENT FILTER

2. SILT FENCE DROP INLET SEDIMENT FILTER

   a. Fence shall be 10 ounce per square yard and shall be cut from a continuous roll to avoid joints.

   b. Stakes shall be 1" x 2" wood (preferred) or equivalent metal with a minimum length of 3 feet.

   c. Staples shall be of heavy duty wire at least 1/2-inch long.

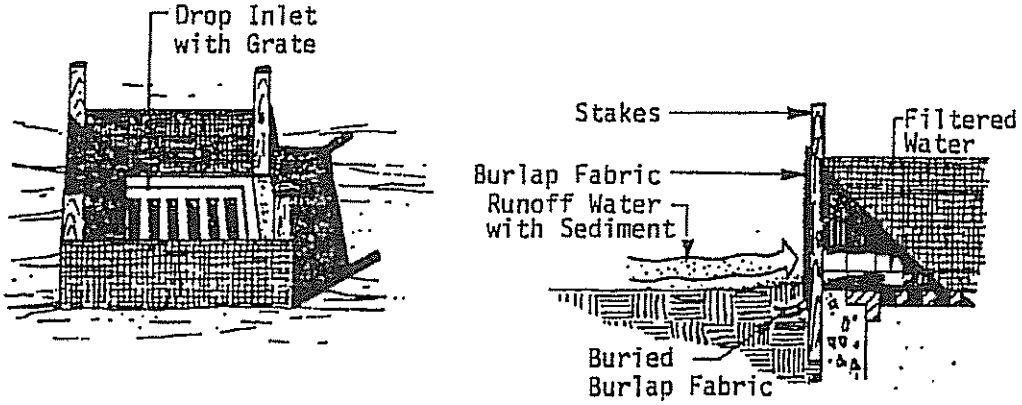
   d. Stakes shall be spaced around the perimeter of the inlet a maximum of 3 feet apart and securely driven into the ground (minimum of 8 inches).

   e. A trench shall be excavated approximately 4 inches wide and 4 inches deep around the outside perimeter of the stakes.

   f. The fabric shall be stapled to the wooden stakes, and 8 inches of the fabric shall be extended into the trench. The height of the filter barrier shall be a minimum of 15 inches and shall not exceed 18 inches.

   g. The trench shall be backfilled and the soil compacted over the fabric.

   h. Silt fence fabric may be used in lieu of burlap fabric if installed in accordance to the specifications listed in this manual for "Silt Fence."



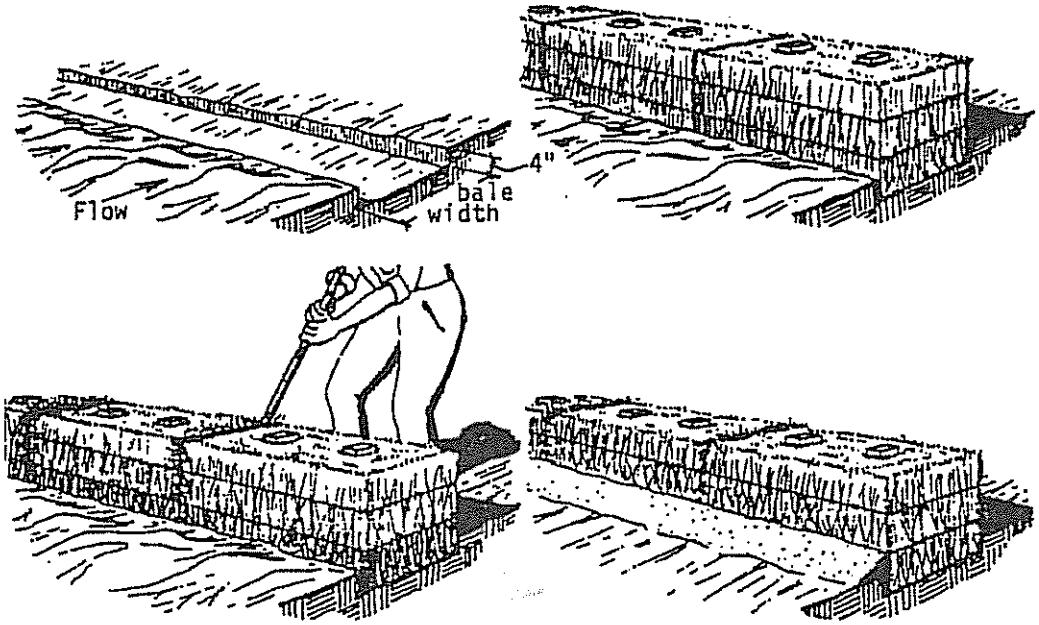
Specific Application

This method of inlet protection is applicable where the inlet drains a relatively flat area (slopes no greater than 5 percent) where sheet or overland flows (not exceeding 0.5 cfs) are typical. The method shall not apply to inlets receiving concentrated flows, such as in street or highway medians.

BURLAP DROP INLET SEDIMENT FILTER

1. Excavate the trench.

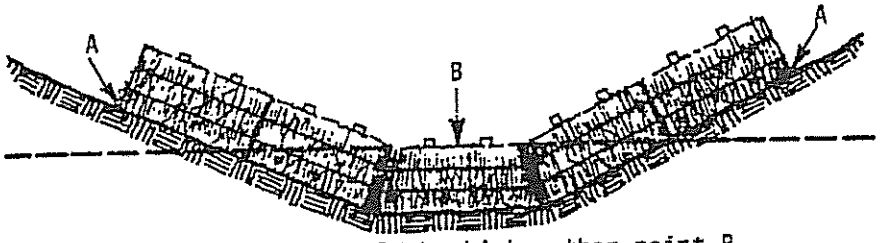
2. Place and stake straw bales.



3. Wedge loose straw between bales.

4. Backfill and compact the excavated soil.

CONSTRUCTION OF A STRAW BALE BARRIER



Points A should be higher than point B

PROPER PLACEMENT OF STRAW BALE BARRIER IN DRAINAGE WAY

are higher in elevation than the top of the lowest middle bale to assure that sediment-laden runoff will flow either through or over the barrier but not around it.

3. Maintenance

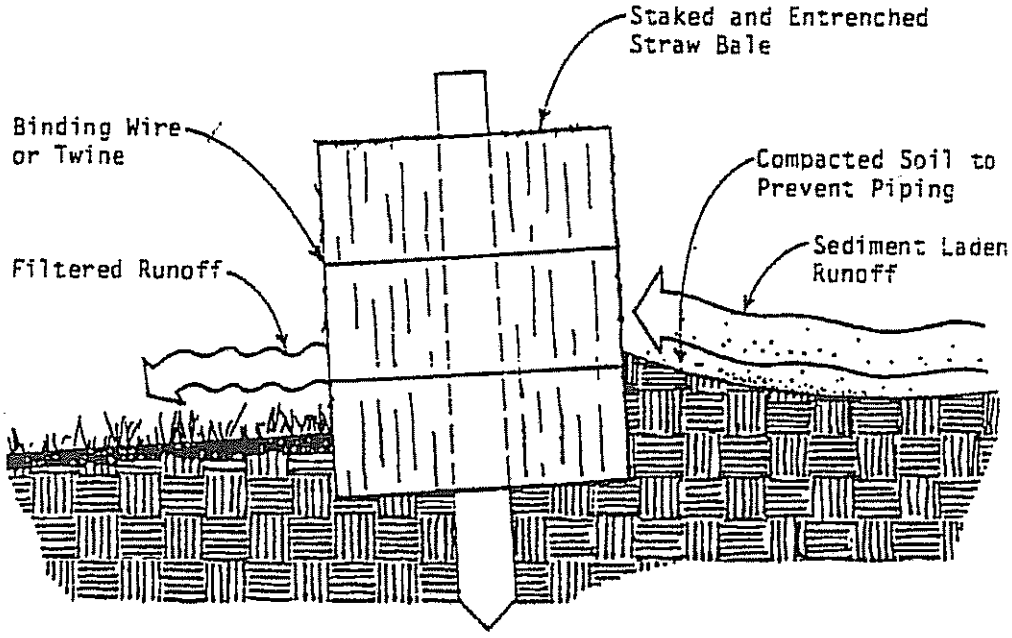
Straw bale barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.

Close attention shall be paid to the repair of damaged bales, end runs and undercutting beneath bales.

Necessary repairs to barriers or replacement of bales shall be accomplished promptly.

Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.

Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.



CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

LEVEL SPREADER
(Permanent Practice)

Definition

An outlet for dikes, diversions, or other concentrated runoff which is slightly depressional allowing water to collect and then disperse uniformly over the surrounding vegetated area.

Purpose

To convert concentrated runoff to sheet flow and release it onto area stabilized by existing vegetation.

Conditions Where Practice Applies

Where sediment-free storm runoff is intercepted and diverted away from graded areas onto undisturbed stabilized areas. This practice applies only in those situations where the spreader can be constructed on undisturbed soil and the area below the level lip is stabilized by natural or pre-established vegetation. The water should not be allowed to reconcentrate after release (Figure 4-113).

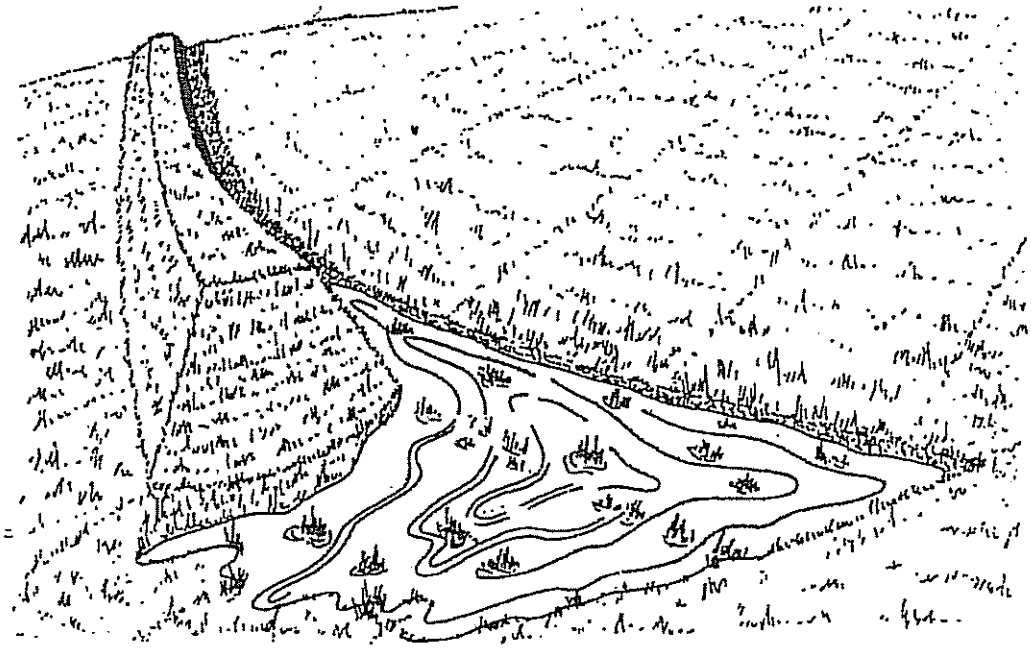


Figure 4-113 Level spreader outlet for diversion.

Table 4-104 Manning's "n" for rock riprap.

Stone Size d_{50} (inches)	Channel Flow Depth 0-0.5 ft	0.5-1.0 ft	1.0-2.0 ft	>2.0 ft
6	0.106	0.054	0.044	0.041
9	0.215	0.068	0.062	0.047
12	0.797	0.084	0.060	0.053
15	--	0.104	0.068	0.059
18	--	0.127	0.076	0.064
21	--	0.158	0.085	0.070
24	--	0.199	0.095	0.076

Erosion control blankets are considered as temporary cover and, therefore, may not be substituted for needed permanent linings.

Waterways or outlets with velocities exceeding critical shall discharge into an energy dissipator to reduce velocity to less than critical.

3. Cross section. The cross section may be triangular, parabolic, or trapezoidal (Figure 4-114). Cross section made of monolithic concrete and gabions may be rectangular.

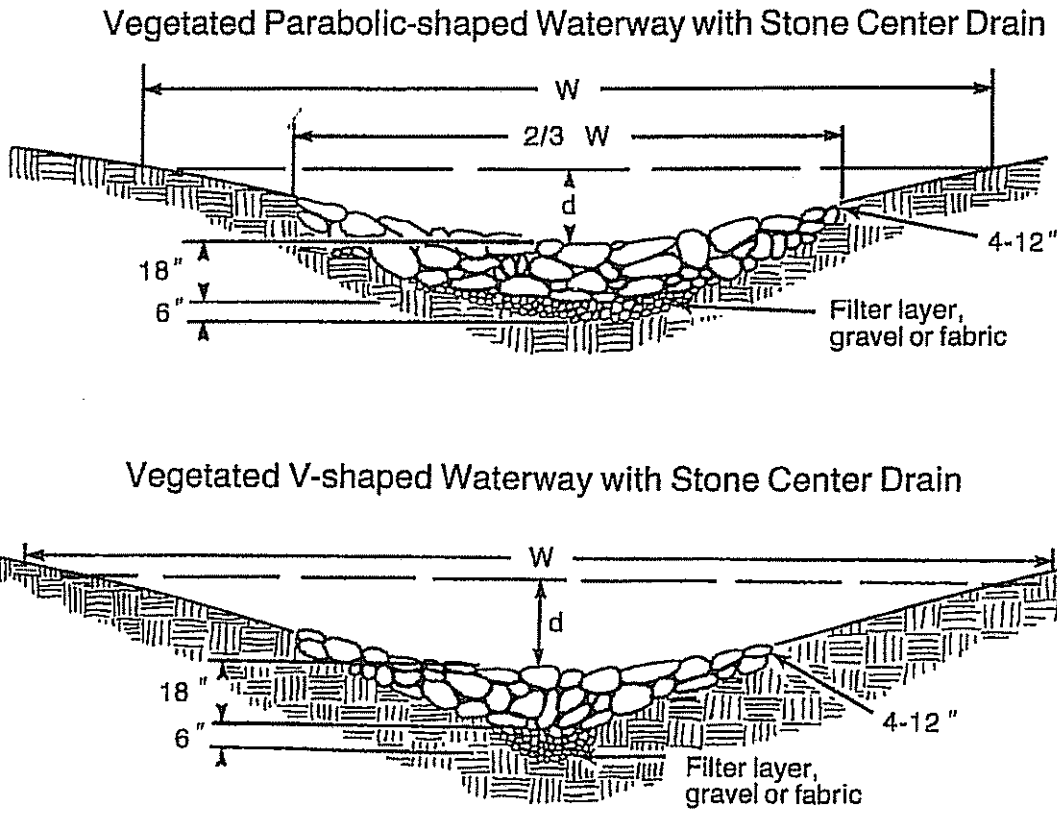


Figure 4-114 Typical section of waterway with stone center drain.

Appendix B

Mississippi General Construction Storm Water Permit

State of Mississippi
Mississippi Department of Environmental Quality (MDEQ)
Office of Pollution Control (OPC)

LARGE CONSTRUCTION STORM WATER GENERAL PERMIT
FOR LAND DISTURBING ACTIVITIES OF 5 OR MORE ACRES

TO DISCHARGE STORM WATER IN ACCORDANCE WITH THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

THIS CERTIFIES THAT

Projects issued a Certificate of Permit Coverage under this general permit are granted permission to discharge storm water associated with construction activities into State waters

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Water Pollution Control Law (Mississippi Code Ann. Sections 49-17-1 et seq.), and the regulations and standards adopted and promulgated thereunder, and under authority granted pursuant to Section 402(b) of the Federal Water Pollution Control Act.

Mississippi Environmental Quality Permit Board

Authorized Signature

Mississippi Department of Environmental Quality

Issued: June 10, 2005

Permit No. MSR10

Expires: May 31, 2010

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Table of Contents

Large Construction General Permit (Revised Format)
Subject Item Inventory

Activity ID No.: GNP20050001

Subject Item Inventory:

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ACT2	LCGP	Permit Applicability and Coverage
ACT3	LCGP	Obtaining Coverage
ACT5	LCGP	Large Construction Notice of Intent
ACT6	LCGP	Storm Water Pollution Prevention Plan (SWPPP) General Information
ACT7	LCGP	Implementation, Inspection, and Reporting Requirements
ACT8	LCGP	Limitation Requirements
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ACT10	LCGP	Termination of Permit Coverage
ACT11	LCGP	Standard Requirements Applicable To All Water Permits
ACT12	LCGP	Definitions
AI19192		

KEY
ACT = Activity
AREA = Area
AI = Agency Interest

ACT1 (LCGP) Introduction:

Narrative Requirements:

Condition No.	Condition
T-1	Introduction: The Large Construction General Permit (LCGP) authorizes storm water discharges from construction activities 5 acres or greater or less than 5 acres if part of a "larger common plan of development or sale" (see Definitions). Storm water discharges that enter state waters or storm water conveyance systems leading to state waters are subject to regulation and compliance with the conditions set forth in this permit. This permit also authorizes storm water discharges from any other construction activity designated by the Executive Director based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to state waters. This permit replaces the previous Construction General Permit that expired on March 27, 2005. [WPC-1]

ACT2 (LCGP) Permit Applicability and Coverage:

Narrative Requirements:

Condition No.	Condition
T-1	Permit Area: The Large Construction General Permit covers all areas of the State of Mississippi. [WPC-1]
T-2	Eligibility: (1) Discharges composed entirely of storm water and allowable non-storm water discharges identified in T-3, page 3 from construction activity, including clearing, grading, excavating and other land disturbing activities of 5 or more acres or less than 5 acres if part of a "larger common plan of development or sale" (see Definitions). The discharges must not cause nor contribute to violations of State Water Quality Standards. (2) A facility is eligible for coverage under this general permit for discharges of pollutants of concern to water bodies for which there is a total maximum daily load (TMDL) established or approved by EPA if measures and controls are incorporated that are consistent with the assumptions and requirements of such TMDL. To be eligible for coverage under this general permit, the facility must incorporate any conditions applicable to any discharge(s) necessary for consistency with the assumptions and requirements of such TMDL. If, after coverage issuance, a specific wasteload allocation is established that would apply to the facility's discharge, the facility must implement steps necessary to meet that allocation. (3) Coverage under this permit is available only if the regulated entity's storm water discharges, allowable non-storm water discharges, and discharge-related activities are not likely to jeopardize the continued existence of any species that is listed as endangered or threatened ("listed") under the Environmental Species Act (ESA) or result in the adverse modification or destruction of habitat that is designated as critical under the ESA ("critical habitat"). [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-3	Eligibility (continued): (4) Allowable Non-Storm Water Discharges: Discharges from fire-fighting activities Fire hydrant flushing Water used to control dust Potable water including uncontaminated water line flushing Routine external building wash down that does not use detergents Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used Uncontaminated air conditioning or compressor condensate Uncontaminated ground water or spring water Foundation or footing drains where flows are not contaminated with process materials such as solvents Uncontaminated excavation dewatering Landscape irrigation. [WPC-1]

ACT3 (LCGP) Obtaining Coverage:

Submittal/Action Requirements:

Condition No.	Condition
S-1	How To Obtain Authorization: (1) Owners and/or operators (see Definitions) must submit a Large Construction Notice of Intent (LCNOI) in accordance with the requirements of this permit. For construction activities, the operator is typically the Prime Contractor. The owner may submit the LCNOI and later, prior to actual construction, the operator may submit the Prime Contractor Certification accepting responsibility for applicable permit conditions. The owner(s) of the property and the operator(s) associated with the regulated construction activity on the property have joint and severable responsibility for compliance with the permit. Not withstanding any permit condition to the contrary, the coverage recipient and any person who causes pollution of waters of the state or places waste in a location where they are likely to cause pollution, shall remain responsible under applicable federal and state laws and regulations, and applicable permits. (2) Upon review of the LCNOI, the MDEQ staff may recommend that coverage not be granted and/or that an alternate permit would be more appropriate. The MDEQ staff recommendations may be brought before the Mississippi Environmental Quality Permit Board (Permit Board) for review and consideration at a regularly scheduled meeting. (3) Owners or operators are authorized to discharge storm water associated with construction activity under the terms and conditions of this permit only upon receipt of written notification of approval of coverage by the Permit Board staff. Discharge of storm water without written notification of coverage or issuance of an individual National Pollutant Discharge Elimination System (NPDES) Storm Water Permit is a violation of the Mississippi Air and Water Pollution Control Law 49-17-29(2)(b). [WPC-1]

Submittal/Action Requirements:

Condition No.	Condition
S-2	Requiring An Individual Permit Or Alternative General Permit: (1) The Permit Board may require any coverage recipient to apply for and obtain either an individual or an alternative general NPDES permit. Any interested person may petition the Permit Board to take action under this paragraph. The Permit Board may require any coverage recipient to apply for an individual NPDES permit only if the owner or operator has been notified in writing. This notice shall include reasons for this decision, an application form and a filing deadline. The Permit Board may grant additional time upon request. If a coverage recipient fails to submit a requested application in a timely manner, coverage under this permit is automatically terminated at the end of the day specified for application submittal. (2) Any coverage recipient may request to be excluded from permit coverage by applying for an individual permit or coverage under another general permit. The applicant shall submit an individual application (Form 1 and the narrative requirements of 40 CFR 122.26(c)(1)(ii)) or the appropriate Notice of Intent. [WPC-1]
S-3	How to Obtain Recoverage Under the Reissued Permit: Once the Construction General Permit is reissued, active coverage recipients will receive a recoverage form with a letter of instruction. If a coverage recipient wishes to be covered by the current Construction General Permit, the recoverage form must be completed and returned to the MDEQ. Resubmittal of the Storm Water Pollution Prevention Plan (SWPPP) is not required if the SWPPP is on-site or locally available, current and adequately addresses the sources of pollution at the facility. [WPC-1]
S-4	Commercial Development - Individual Lots or Parcels: Individual lots or parcels that are part of the "larger common plan of development or sale" (see Definitions) are regulated regardless of size or owner. If the owner or developer obtains construction permit coverage for a development then sells lots or parcels within that development, permit coverage must continue on those areas under new ownership. The original coverage recipient is responsible for all construction activities until individual lots or parcels within the development are sold to others and the new owner submits a LCNOI and obtains coverage under Mississippi's Large Construction General Permit or applies for an individual permit. [WPC-1]

Submittal/Action Requirements:

Condition No.	Condition
S-5	Residential Subdivision - Individual Lots: Individual lots within a residential subdivison are part of the "larger common plan of development or sale" (see Definitions) and are regulated regardless of size or ownership. If the owner or developer obtains construction permit coverage for a residential development, then sells individual lots within that development, permit coverage shall continue on those lots under new ownership. The original coverage recipient may retain responsibility for permit compliance, or the new owner (purchaser) or operator shall satisfy authorization requirements by: (1) Completing and submitting the MDEQ Registration Form (see Large Construction Forms Package) and developing and implementing a sediment and erosion control plan for the specific lot(s), or (2) Completing and submitting for approval from the MDEQ, a LCNOI and required documents, or (3) Applying for an individual storm water permit. The owner or developer (seller) is responsible for providing the new owner or operator (purchaser) with a copy of the MDEQ Registration Form and a copy of the Large Construction General Permit. These documents as well as the individual application may be found on our website at www.deq.state.ms.us or by calling 601-961-5171. [WPC-1]
S-6	Residential Subdivision - New Phases and New Owner: If an individual, other than the original developer (coverage recipient), proposes construction of a new phase of an existing subdivision and the proposed phase was not included in the initial submittal of the LCNOI, the new owner or operator must apply for separate permit coverage. [WPC-1]
S-7	Residential Subdivision - Expansions: For subsequent phases, expansions and major modifications of subdivision development that are proposed but were not included in the original SWPPP, the coverage recipient shall submit to the MDEQ the Major Modification Form (see Large Construction Forms Package). [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-1	Applicability of Requirements For Individual Lots and Parcels in a Larger Common Plan of Development or Sale:
	(1) The original coverage recipient remains responsible for compliance with this general permit until a new owner or operator satisfies the requirements of S-4 on page 5 or S-5 on page 6.
	(2) Lots and parcels sold on or after the issuance date of this permit shall follow the requirements of S-4, page 5 and S-5, page 6.
	(3) Lots and parcels sold prior to the issuance date of this permit shall follow the requirements of S-4, page 5 and S-5, page 6 or the developer may continue to require the lot owners to take measures to prevent or mitigate sediment from leaving the lots through covenants and/or lot purchase contracts. [WPC-1]

ACT5 (LCGP) Large Construction Notice of Intent:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Deadlines For Notification: Persons desiring coverage for a storm water discharge associated with construction activity under this general permit shall submit a LCNOI form at least 30 days prior to the commencement of construction, or 15 days if the SWPPP has previously been approved. A recoverage form must be completed within 30 days of the date of the letter of instruction. [WPC-1]
S-2	Required Submittals With The LCNOI: Submittals required with a completed LCNOI include a SWPPP (see Definitions) associated with the construction activities, a United States Geological Survey (USGS) quad map, or photocopy, extending at least 1/2 mile beyond the facility property boundaries with the site location outlined or highlighted. [WPC-1]
S-3	Additional Submittals May Include The Following: (1) appropriate Section 404 documentation from U.S. Army Corps of Engineers (2) appropriate documentation concerning future disposal of sanitary sewage and sewage collection system construction (3) appropriate documentation from the MDEQ Office of Land & Water concerning dam construction and low flow requirements. [WPC-1]
S-4	Additional Notification: The covered owner or operator must notify the Permit Board at least 30 days before any planned changes of ownership or whenever there are any changes in information previously submitted in the LCNOI form. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-1	Construction Sites Not Currently Covered By Storm Water Construction General Permit: LCNOI forms may be obtained from the MDEQ at the address shown below or by calling 601-961-5171. LCNOI forms, as well as the general permit and guidance manual, may be found on the MDEQ web site at www.deq.state.ms.us. Coverage under this permit will not be granted until all other required MDEQ permits, certifications and approvals are satisfactorily addressed. [WPC-1]
T-2	Where To Submit The LCNOI: Complete and appropriately signed LCNOI Forms must be submitted to: Chief, Environmental Permits Division Mississippi Department of Environmental Quality Office of Pollution Control P.O. Box 10385 Jackson, Mississippi 39289-0385. [WPC-1]
T-3	Failure To Notify: Persons who discharge storm water associated with Large Construction activity to waters of the State without an NPDES permit are in violation of the Mississippi Air and Water Pollution Control Law 49-17-29(2)(b). [WPC-1]

ACT6 (LCGP) Storm Water Pollution Prevention Plan (SWPPP) General Information:

Narrative Requirements:

Condition No.	Condition
T-1	SWPPP Development: A SWPPP shall be developed and implemented by each owner or operator subject to this permit. A SWPPP shall be prepared in accordance with sound engineering practices and shall identify potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges associated with construction activity. The SWPPP shall describe and ensure the implementation of best management practices, which will reduce pollutants in storm water discharges and assure compliance with the terms and conditions of this permit. [WPC-1]
T-2	Erosion and Sediment Controls. The owner or operator shall list and describe controls appropriate for the construction activities as well as the procedures for implementing such controls. The controls should to the extent practicable: (1) divert up-slope water around disturbed areas of the site; (2) limit the exposure of disturbed areas to the shortest amount of time as possible; (3) minimize the amount of surface area that must be disturbed; (4) implement best management practices to mitigate adverse impacts from storm water runoff; (5) remove sediment that would contribute to or cause adverse impacts to state waters from storm water before it leaves the site. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-3	As a minimum, the controls must be in accordance with the standards set forth in the most current edition of the " Planning and Design Manual for the Control of Erosion, Sediment & Stormwater" or other recognized manual of design. The SWPPP shall address the following minimum components. (1) Vegetative practices shall be designed to preserve existing vegetation where possible and re-vegetate disturbed areas as soon as practicable after grading or construction. Such practices may include, but are not limited to, surface roughening, temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, and protection of trees. When a disturbed area will be left undisturbed for 30 days or more, the appropriate temporary or permanent vegetative practices shall be implemented within 7 calendar days. (2) Structural practices shall divert flows from exposed soils, store flows or otherwise limit runoff from exposed areas. Such practices may include, but are not limited to, construction entrance/exit, straw bale dikes, silt fences, earth dikes, brush barriers, drainage swales, check dams, subsurface drains, pipe slope drains, level spreaders, drain inlet protection, outlet protection, detention/retention basins, sediment traps, temporary sediment basins or equivalent sediment controls. [WPC-1]
T-4	(3) For drainage locations (a drainage point at boundary of land disturbing activity) that serves an area with 10 or more disturbed acres at one time, a temporary (or permanent) sediment basin providing at least 3600 cubic feet (133 cubic yards) of storage per acre drained shall be provided until final stabilization of the site. Sediment basins must be installed before major site grading. (4) A description of any post-construction control measures. Post-construction control measures should be installed to control pollutants in storm water after construction is complete. These controls include, but are not limited to, one or more of the following: on-site infiltration of runoff, flow attenuation using open vegetated swales, exfiltration trenches and natural depressions, constructed wetlands and retention/detention structures. Where needed, velocity dissipation devices shall be placed at detention or retention pond outfalls and along the outfall channel to provide for a non-erosive flow. (5) Proposed responsible parties (original coverage recipient or new owner or operator) for individual lots or out-parcels that are part of a larger common plan of development or sale. If permit responsibility is retained by the original coverage recipient, a narrative description of sediment and erosion controls for subdivision lots is acceptable. Out-parcels in commercial developments must be included in the site map (see T-7, page 12). [WPC-1]
T-5	Non-Storm Water Discharge Management: The SWPPP must identify all allowable sources of non-storm water discharges, except for flows from fire fighting activities, which are combined with storm water discharges associated with construction activity at the site. Non-storm water discharges should be eliminated or reduced to the extent feasible. The SWPPP must identify and ensure the implementation of appropriate best management practices for the non-storm water component of the discharge. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-6	Housekeeping Practices: The owner or operator shall describe and list practices appropriate to prevent pollutants from entering storm water from construction sites because of poor housekeeping. The owner or operator shall designate areas for equipment maintenance and repair; concrete chute wash off; provide waste receptacles at convenient locations and provide regular collection of waste; provide protected storage areas for chemicals, paints, solvents, fertilizers, and other potentially toxic materials; and provide adequately maintained sanitary facilities. [WPC-1]
T-7	Prepare Scaled Site Map(s): The owner or operator shall prepare a scaled site map showing original and proposed contours (if practicable), drainage patterns, adjacent receiving water bodies, north arrow, all erosion & sediment controls (vegetative and structural), any post-construction control measures, and location of housekeeping practices. If the construction project is a linear construction project (e.g., pipeline, highway, etc.), a scaled site map is not required, however standard diagrams (e.g., cross sections showing dimensions and labeled components) of erosion and sediment controls to be used must be submitted. [WPC-1]
T-8	Implementation Sequence: The owner or operator shall prepare an orderly listing which coordinates the timing of all major land-disturbing activities together with the necessary erosion and sedimentation control measures planned for the project. [WPC-1]
T-9	Implementation of Controls: The SWPPP shall require the owner or operator, in disturbing an area, to implement controls as needed to prevent erosion and adverse impacts to state waters. [WPC-1]
T-10	Maintenance and Weekly Inspections: The SWPPP shall describe procedures to maintain vegetation, erosion and sediment controls and other protective measures. Procedures shall provide that all erosion controls are inspected weekly for a minimum of four inspections per month (see S-4, page 14). [WPC-1]
T-11	Example Storm Water Pollution Prevention Plans (SWPPPs): Example SWPPPs are included in the MDEQ Registration Form for Individual Residential Lots (see Large Construction Forms Package) as well as in the Mississippi Storm Water Pollution Prevention Plan Guidance Manual for Construction Activities. [WPC-1]

ACT7 (LCGP) Implementation, Inspection, and Reporting Requirements:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Implementation Requirements: The coverage recipient shall: (1) implement the SWPPP and retain a copy of the SWPPP at the permitted site or locally available. Failure to implement the SWPPP is a violation of permit requirements. A copy of the SWPPP must be made available to the MDEQ inspectors for review at the time of an on-site inspection. (2) ensure that appropriate Best Management Practices (BMPs) are in place upon commencement of construction. (3) if notified at any time by the Executive Director of the MDEQ that the SWPPP does not meet the minimum requirements, amend the SWPPP and certify in writing to the Executive Director that the requested changes have been made. Unless otherwise provided, the requested changes shall be made within 15 days. (4) amend the SWPPP whenever there is a change in design, construction, operation, or maintenance which may potentially affect the discharge of pollutants to state waters; or the SWPPP proves to be ineffective in controlling storm water pollutants. The amended SWPPP shall be submitted within 30 days of amendment. Coverage recepients shall submit to the MDEQ the Major Modification Form (see Large Construction Forms Package) for subsequent phases, expansions and modifications of subdivision development that are proposed but were not included in the original SWPPP. (5) install needed erosion controls even if they may be located in the way of subsequent activities, such as utility installation, grading or construction. It shall not be an acceptable defense that controls were not installed because subsequent activities would require their replacement or cause their destruction. (6) install additional and/or alternative erosion and sediment controls when existing controls prove to be ineffective in preventing sediment from leaving the site. (7) minimize off-site vehicle tracking of sediments. [WPC-1]

Submittal/Action Requirements:

Condition No.	Condition
S-2	Implementation Requirements (continued):
	(8) comply with applicable State or local waste disposal, sanitary sewer or septic system regulations.
	(9) maintain all erosion controls. Except for sediment basins, all accumulated sediment shall be removed from structural controls when sediment deposits reach 1/3 to 1/2 the height of the control. For sediment basins, accumulated sediment shall be removed when the capacity has been reduced by 50%. All removed sediment deposits shall be properly disposed. Non-functioning controls shall be repaired, replaced or supplemented with functional controls within 24 hours of discovery or as soon as field conditions allow.
	(10) if, after coverge issuance, a specific wasteload allocation is established that would apply to the facility's discharge, the facility must implement steps necessary to meet that allocation. [WPC-1]
S-3	Compliance With Local Storm Water Ordinances:
	(1) The SWPPP shall be in compliance with all local storm water ordinances.
	(2) When storm water discharges into an MS4 (municipal separate storm sewer system), the owner or operator shall make the SWPPP available to the local authority upon request. [WPC-1]
S-4	Inspection Requirements:
	Inspection of all erosion controls and other SWPPP requirements shall be performed during permit coverage using a copy of the form provided in the Large Construction Forms Package, and inspections shall be performed:
	(1) at least weekly for a minimum of four inspections per month; and
	(2) as often as is necessary to ensure that appropriate erosion and sediment controls have been properly constructed and maintained and determine if additional or alternative control measures are required. The MDEQ strongly recommends that coverage recipients perform a "walk through" inspection of the construction site before anticipated storm events. [WPC-1]

ACT8 (LCGP) Limitation Requirements:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1		Limitation Requirements: Storm water discharges shall be free from: (1) debris, oil, scum, and other floating materials other than in trace amounts, (2) eroded soils and other materials that will settle to form objectionable deposits in receiving waters, (3) suspended solids, turbidity and color at levels inconsistent with the receiving waters, (4) chemicals in concentrations that would cause violation of State Water Quality Criteria in the receiving waters. [WPC-1]

ACT9 (LCGP) Record Keeping:

Record-Keeping Requirements:

Condition No.	Condition
R-1	Retention of Records: All records, reports, forms and information resulting from activities required by this permit shall be retained for a period of at least 3 years from the date that the document(s) was generated. The inspections described in S-4, page 14 must be documented on copies of the Monthly Inspection Report and Certification Form provided in the Large Construction Forms Package and be kept with the SWPPP. Submittals of the MDEQ Registration Form for residential lots is required. It is the responsibility of both the owner or developer (seller) and the new owner or operator (purchaser) to maintain a copy of the MDEQ Registration Form. The new owner or operator must maintain a copy of the MDEQ Registration Form at the site or locally available. [WPC-1]
R-2	Suspension of Weekly Inspections and Monthly Record Keeping: Coverage recipients under this general permit may suspend weekly inspection and monthly reporting requirements, if the coverage recipient certifies that: (1) land disturbing activities have temporarily ceased (2) no further land disturbing activities are planned for a period of at least 6 months (3) the site is stable with no active erosion (4) vegetative cover has been established Color photographs representative of the site must be submitted with the Inspection Suspension Form provided in the Large Construction Forms Package. The coverage recipient shall notify the MDEQ once construction activities are resumed and the weekly inspections shall commence immediately and as required in S-4 on page 14. The coverage recipient is still responsible for all permit conditions during the suspension period and nothing in this condition shall limit the rights of the MDEQ to take enforcement or other actions against the coverage recipient. [WPC-1]

ACT10 (LCGP) Termination of Permit Coverage:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Within 30 days of final stabilization (see Definition of Final Stabilization (1)) for a covered project, a completed Notice of Termination (NOT) of Coverage form (provided in the Large Construction Forms Package) shall be submitted to the Permit Board. Upon receiving the completed NOT the MDEQ staff will inspect the site. If no sediment and erosion control problems are identified and adequate permanent controls are established the owner or operator will receive a termination letter. Coverage is not terminated until done so in writing. Failing to submit a NOT is a violation of permit conditions. [WPC-1]
S-2	The coverage recipient of a "larger common plan of development or sale" must submit a NOT within 30 days after the following conditions are met: (1) Final stabilization (see Definition of Final Stabilization (2)) has been achieved on all portions of the site for which the coverage recipient is responsible, and (2) Other owner(s) or operator(s) have assumed control (by completing a CNOI or MDEQ Registration Form) over all areas of the site that have not achieved final stabilization. [WPC-1]
S-3	The coverage recipient of a residential "larger common plan of development or sale" must submit a copy of the MDEQ Registration Form for each lot sold with the NOT. [WPC-1]
S-4	Residential lot owners or operators that have completed the MDEQ Registration forms are not required to submit a NOT, unless specifically requested by the MDEQ staff. The lot permit coverage is considered terminated upon "successful completion of all permanent erosion and sediment controls" (see Definitions). [WPC-1]

ACT11 (LCGP) Standard Requirements Applicable To All Water Permits:

Narrative Requirements:

Condition No.	Condition
T-1	Duty to Comply:
	The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation and is grounds for enforcement action; for coverage termination, revocation and reissuance, or modifications; or denial of a renewal application. [WPC-1]
T-2	Duty to Mitigate:
	The owner or operator shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which is likely to adversely affect human health or the environment. [WPC-1]
T-3	Duty to Provide Information:
	The owner or operator shall furnish to the Permit Board, within a reasonable time, any information that the Permit Board may request to determine compliance with this permit. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-4	Signatory Requirements: All LCNOIs, SWPPPs, reports, certifications or information shall be signed as follows or by the duly authorized representative (see T-5 below). (1) For a corporation by a responsible corporate officer. For this permit, a responsible corporate officer means: a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or b) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures; (2) For a partnership or sole proprietorship by a general partner or the proprietor, respectively; or (3) For a municipal, State, Federal, or other public agency by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: a) the chief executive officer of the agency, or b) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. [WPC-1]
T-5	Duly Authorized Representative: All reports required by this permit, and other information requested by the Permit Board shall be signed by a person described in T-4 above, or by a duly authorized representative of that person. A person is a duly authorized representative when: (1) The authorization is made in writing and submitted to the Permit Board by a person described in T-4 above. (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated activity, such as: manager, operator of a well or well field, superintendent, person of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may be either a specified individual or position). [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-6	Changes to Authorization: If an authorization is no longer accurate because a different individual or position has permit responsibility, a new authorization satisfying the requirements of T-4 and T-5 on page 19, must be submitted to the Permit Board prior to or together with any reports, information or applications signed by the representative. [WPC-1]
T-7	Certification: Any person signing documents under this section shall make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." [WPC-1]
T-8	Oil and Hazardous Substance Liability: Nothing in this permit shall relieve the owner or operator from responsibilities, liabilities, or penalties under Section 311 of the CWA. [WPC-1]
T-9	Property Rights: The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. [WPC-1]
T-10	Severability: The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby. [WPC-1]
T-11	Transfers: Coverage under this permit is not transferable to any person except after notice to and approval by the Permit Board. The Permit Board may require the permittee to obtain another NPDES permit as stated in S-2, page 5. Transfer of coverage requests shall be submitted to the Permit Board using the form provided in the Large Construction Forms Package. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-12	Proper Operation and Maintenance: The owner or operator shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the owner or operator to achieve compliance with the conditions of this permit including the storm water pollution prevention plan. Proper operation and maintenance includes adequate laboratory controls with appropriate quality assurance procedures and requires the operation of backup or auxiliary facilities when necessary to achieve compliance with permit conditions. [WPC-1]
T-13	Bypass Prohibition: Bypass (see 40 CFR 122.41(m)) is prohibited and enforcement action may be taken against an owner or operator for a bypass, unless: a) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the owner or operator should, in the exercise of reasonable engineering judgement, have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and c) The owner or operator submitted notices per T-17 and/or T-18, page 22. [WPC-1]
T-14	Upset Conditions: An upset (see 40 CFR 122.41(n)) constitutes an affirmative defense to an action brought for noncompliance with technology-based permit limitations if a permittee shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence, that: 1) An upset occurred and the permittee can identify the specific cause(s) of the upset, 2) The permitted facility was at the time being properly operated, 3) The permittee submitted notices per T-17 and/or T-18, page 22, and 4) The permittee took remedial measures as required under T-2, page 18. In any enforcement proceeding, the permittee has the burden of proof that an upset occurred. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-15	Inspection and Entry: The owner or operator shall allow the Permit Board staff or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to; - enter upon the owner or operator's premises where a regulated activity is located or conducted or where records must be kept under the conditions of this permit; - have access to and copy at reasonable times any records that must be kept under the conditions of this permit; and - inspect at reasonable times any facilities or equipment. [WPC-1]
T-16	Permit Actions: This permit may be modified, revoked and reissued, or terminated for cause. A request by the owner or operator for permit or coverage modification, revocation and reissuance, or termination, or a certification of planned changes or anticipated noncompliance does not stay any permit condition. [WPC-1]
T-17	Anticipated Noncompliance: The owner or operator shall give at least 10 days advance notice, if possible, before any planned noncompliance with permit requirements. [WPC-1]
T-18	Unanticipated Noncompliance: The owner or operator shall notify the MDEQ orally within 24 hours from the time he or she becomes aware of unanticipated noncompliance. A written report shall be provided to the MDEQ within 5 working days of the time he or she becomes aware of the circumstances. The report shall describe the cause, the exact dates and times, steps taken or planned to reduce, eliminate, or prevent reoccurrence and, if the noncompliance has not ceased, the anticipated time for correction. [WPC-1]
T-19	Reopener Clause: If there is evidence indicating potential or realized impacts on water quality due to storm water discharge covered by this permit, the owner or operator may be required to obtain individual permit or an alternative general permit in accordance with S-2, page 5 or the permit may be modified to include different limitations and/or requirements. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-20	Permit Modification: Permit modification or revocation will be conducted according to 40 CFR 122.62, 122.63, 122.64 and 124.5. [WPC-1]
T-21	Falsifying Reports: Any permittee who falsifies any written report required by or in response to a permit condition shall be deemed to have violated a permit condition and shall be subject to the penalties provided for a violation of a permit condition pursuant to Section 49-17-43 of the Mississippi Water Pollution Control Law (Mississippi Code Ann. Sections 49-17-1 et seq.). [WPC-1]
T-22	Civil and Criminal Liability: (1) Any person who violates a term, condition or schedule of compliance contained within this permit or the Mississippi Air and Water Pollution Control Law is subject to the actions defined by the Mississippi Air and Water Pollution Control Law. (2) Except as provided in permit conditions on "Bypassing" and "Upsets", nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. (3) It shall not be the defense of the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [WPC-1]

ACT12 (LCGP) Definitions:

Narrative Requirements:

Condition No.	Condition
T-1	Definitions: Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. [WPC-1]
T-2	Construction Activity as used in this permit, includes construction activity as defined in 40 CFR part 122.26(b)(14)(x). This includes a disturbance to the land that results in the change in topogmphy, existing soil cover (both vegetative and non-vegetative), or the existing topography that may result in accelerated storm water runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling and excavating. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site. [WPC-1]
T-3	Control Measure as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the United States. [WPC-1]
T-4	Commencement of Construction Activities means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities. [WPC-1]
T-5	Commission means the Mississippi Commission on Environmental Quality. [WPC-1]
T-6	Clean Water Act (CWA) refers to the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq. [WPC-1]
T-7	Executive Director means the Executive Director of the Department of Environmental Quality. [WPC-1]
T-8	Facility or Activity means any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-9	Definitions (continued): Final stabilization means that either: (1) All soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of at least 70% for the area has been established or equivalent measures have been employed; or (2) For individual lots part of a larger common plan of development or sale in residential or commercial developments, that either: a) the coverage recipient has completed final stabilization as specified in (1) above, or b) the coverage recipient has established temporary stabilization before another property owner assumes operational control for the property AND the coverage recipient for the larger common plan of development has provided the appropriate Notice of Intent or Registration form, the appropriate Construction General Permit, and guidance documents to the new property owner and the new owner assumes control by completing the appropriate NOI or Registration Form. [WPC-1]
T-10	Large Construction Activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than 5 acres of land or will disturb less than 5 acres of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than 5 acres. [WPC-1]
T-11	Larger Common Plan of Development or Sale means a contiguous area where multiple separate and distinct construction activities are occurring under one plan. The plan in a common plan of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that construction activities may occur on a specific plot. [WPC-1]
T-12	Owner or Operator for the purpose of this permit and in the context of storm water associated with construction activity, means any party associated with a construction project that meets either of the following two criteria: (1) The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) The party has day to day operational control of those activities at a project which are necessary to ensure compliance with a storm water pollution prevention plan for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions). This definition is provided to inform permittees of MDEQ's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of storm water associated with construction activity. [WPC-1]

Narrative Requirements:

Condition No.	Condition
T-13	Definitions (continued): NPDES the National Pollutant Discharge Elimination System which is a division of the Clean Water Act which prohibits discharge of pollutants into waters of the United States unless a special permit is issued. [WPC-1]
T-14	Permit Board means the Mississippi Environmental Quality Permit Board established pursuant to Miss. Code Ann. 49-17-28. [WPC-1]
T-15	Pollutant is defined at 40 CFR 122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, sediment, silt, cellar dirt, and industrial or municipal waste. [WPC-1]
T-16	State Waters means all waters within the jurisdiction of this State, including all streams, lakes, ponds, wetlands, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, situated wholly or partly within or bordering upon the State, and such coastal waters as are within the jurisdiction of the State, except lakes, ponds, or other surface waters which are wholly landlocked and privately owned, and which are not regulated under the Federal Clean Water Act (33 U.S.C.1251 et seq.). [WPC-1]
T-17	Storm Water means rainfall runoff, snowmelt runoff, and surface runoff. [WPC-1]
T-18	Storm Water Pollution Prevention Plan (SWPPP) means a plan that includes site map(s), an identification of construction/contractor activities that could cause pollutants in the storm water, and a description of measures or practices to control these pollutants. [WPC-1]
T-19	Successful completion of all permanent erosion and sediment controls means when land disturbing construction activities have been completed and disturbed areas have been stabilized with no significant erosion occurring. [WPC-1]
T-20	Turbidity is the presence of suspended material such as clay, silt, finely divided organic material, plankton, and other inorganic material in water. [WPC-1]
T-21	WPC-1 means the State of Mississippi's Wastewater Regulations for National Pollutant Discharge Elimination System (NPDES) Permits, Underground Injection Control (UIC) Permits, State Permits, Water Quality Based Effluent Limitations and Water Quality Certification. [WPC-1]

GENERAL INFORMATION

Large Construction General Permit (Revised Format)

Alternate/Historic Identifiers
Emissions Inventory ID: 245517

Appendix C

MDEQ Site Inspection Form

The results of each inspection should be summarized in an inspection report or checklist that is entered into or attached to the site log book. This ESCP and SWPPP and the site inspection forms be kept onsite at all times during construction, and inspections shall be performed and documented as outlined below.

At a minimum, each inspection report or checklist should include:

a. Inspection date/times.

b. Weather information: general conditions during inspection, approximate amount of precipitation since the last inspection, and approximate amount of precipitation within the last 24 hours.

c. A summary or list of all BMPs that have been implemented, including observations of all erosion/sediment control structures or practices.

d. The following should be noted:

   i. locations of BMPs inspected,

   ii. locations of BMPs that need maintenance,

   iii. the reason maintenance is needed,

   iv. locations of BMPs that failed to operate as designed or intended, and

   v. locations where additional or different BMPs are needed, and the reason(s) why.

e. A description of stormwater discharged from the site. The presence of suspended sediment, turbid water, discoloration, and/or oil sheen should be noted, as applicable.

g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made as a result of the inspection.

h. A statement that, in the judgment of the person conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the ESCP and SWPPP. If the site inspection indicates that the site is out of compliance, the inspection report should include a summary of the remedial actions required to bring the site back into compliance, as well as a schedule of implementation.

   i. Name, title, and signature of person conducting the site inspection; and the following statement: "I certify under penalty of law that this report is true, accurate, and complete, to the best of my knowledge and belief."

When the site inspection indicates that the site is not in compliance with any terms and conditions of the ESCP and SWPPP, the Permittee should take immediate action(s) to: stop, contain, and clean up the unauthorized discharges, or otherwise stop the noncompliance; correct the problem(s); implement appropriate Best Management Practices (BMPs), and/or conduct maintenance of existing BMPs; and achieve compliance with all applicable standards and permit conditions.

A copy of the site inspection form required by MDEQ is attached.

Keep a Copy Available at the Construction Site or Locally Available
Submit the Inspection Reports Only if Requested by the Mississippi Department of Environmental Quality (MDEQ)

INSPECTION AND CERTIFICATION FORM
FOR EROSION AND SEDIMENT CONTROLS

All coverage recipients and individual lot owners who have completed the "Registration Form for Residential Lot Coverage" shall use this form to record site inspections. Individual lot owners are not required to fill in the General NPDES Permit Coverage Number requested below. Inspections must be performed weekly and certified monthly.

Construction Storm Water General NPDES Permit Coverage No. MSR10 _____ County: _____
(Fill in your Certificate of Coverage Number & County where Project is Located)
(Please Print)

Owner and/or Prime Contractor: _____

Project Name: _____

Street Address: _____

City: _____

Inspection Log

Date and Time	Rain Gauge Measurement (inches) (Optional)	Any Deficiencies Observed? Yes or No	Inspector(s)

Deficiencies Noted During any Inspection (give date(s); attach additional sheets if necessary):

_____

_____

Corrective Action Taken or Planned (give date(s); attach additional sheets if necessary):

_____

_____

Based upon this inspection which I or personnel under my direct supervision conducted, I certify that all erosion and sediment controls have been implemented and maintained, except for those deficiencies noted above, in accordance with the Storm Water Pollution Prevention Plan filed with the Office of Pollution Control and sound engineering practices as required by the above referenced permit.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

_____ _____ _____
Authorized Name (Print) **Signature** **Date**

Appendix D

Wetland Crossing Table

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Mississippi County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]
Fayetteville Lateral							
Coahoma	jo w12	157.5	1891	PFO	OCM	3.2	n/a
Coahoma	jo w13	158.0	3629	PFO	OCM	7.2	n/a
Greenville Lateral							
Washington	ML-W1A	5.2	127	PEM/PSS	OCM	0.3	n/a
Washington	ML-W1B	5.4	105	PEM/PSS	OCM	0.2	n/a
Washington	ML-W5	14.6	65	PEM	OCM	0.1	n/a
Sunflower	ML-W6A	17.7	23	PEM	OCM	<0.1	n/a
Sunflower	ML-W6B	17.7	14	PEM	OCM	<0.1	n/a
Washington	ML-W7	20.3	26	PEM	HDD	0.1	n/a
Humphreys	ML-W7east	20.3	26	PEM	HDD	<0.1	n/a
Humphreys	ML-W9	24.3	446	PEM	OCM	1.0	n/a
Humphreys	ML-W11	27.3	56	PEM/PSS	OCM	0.2	n/a
Humphreys	ML-W12A	27.3	n/a	PEM	OCM	0.2	n/a
Humphreys	ML-W12B	27.3	226	PEM	OCM	0.2	n/a
Humphreys	ML-W13B	27.4	52	PFO	OCM	0.2	n/a
Humphreys	ML-W14	28.8	n/a	PFO	OCM	<0.1	n/a
Humphreys	ML-W15	29.3	n/a	PFO	OCM	<0.1	n/a
Humphreys	JAV-W2	31.2	34	PEM/PSS	OCM	0.1	n/a
Holmes	JAV-W4	35.5	44	PEM/PSS	OCM	0.1	n/a
Humphreys	JAV-W5	37.0	870	PFO	OCM	2.0	n/a
Humphreys	JAV-W6	39.6	427	PFO	HDD	1.0	n/a
Humphreys	JAV-W8c	40.4	360	PFO/PEM	HDD	0.8	n/a
Humphreys	JAV-W9c	40.5	19	PEM/PFO	HDD	<0.1	n/a
Humphreys	JAV-W9d	40.5	59	PEM/PSS	HDD	0.1	n/a
Humphreys	kp w-3	40.9	552	PFO	HDD	1.3	n/a
Humphreys	tdh ms w3	44.3	8783	PFO	OCM	21.4	n/a
Holmes	jr w9 west	47.4	210	PFO	OCM	<0.1	n/a

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Mississippi County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]
Holmes	jr w9 east	47.5	n/a	PFO	OCM	0.5	n/a
Holmes	kp w-4	54.2	427	PFO	HDD	0.8	n/a
Holmes	kp w-5	54.4	287	PFO	HDD	0.8	n/a
Holmes	tdh ms w6	55.3	168	PFO	OCM	0.4	n/a
Holmes	JW1	57.3	192	PFO	OCM	0.4	n/a
Humphreys	JAV-W23	58.4	28	PEM	OCM	0.1	n/a
Holmes	JW13	59.0	2223	PEM/PSS	OCM	5.9	n/a
Holmes	kp w-8	59.1	412	PFO	OCM	0.4	n/a
Holmes	kp w-7	59.1	356	PSS	OCM	0.4	n/a
Holmes	JW14	59.6	1986	PEM/PSS	OCM	4.5	n/a
Holmes	JAV-W18	60.2	1263	PEM/PSS	OCM	2.9	n/a
Holmes	JW2	60.6	665	PEM/PSS	OCM	1.2	n/a
Holmes	JW2east	60.6	49	PEM/PSS	OCM	0.4	n/a
Holmes	JW5	62.2	157	PFO	OCM	0.4	n/a
Holmes	JW4	62.9	24	PFO	OCM	0.1	n/a
Holmes	JW3	63.2	n/a	PEM	OCM	<0.1	n/a
Holmes	tdh ms w7	64.6	n/a	PEM/PFO	OCM	<0.1	n/a
Holmes	tdh ms w8	64.6	22	PFO	OCM	<0.1	n/a
Holmes	JW8	67.7	286	PFO	OCM	0.6	n/a
Holmes	JW7	68.1	43	PFO	OCM	0.1	n/a
Holmes	JW6	68.2	63	PSS	OCM	0.1	n/a
Holmes	jr w1	70.5	224	PFO	OCM	0.6	n/a
Holmes	TDHW-5	72.4	160	PFO/PSS	OCM	0.4	n/a
Holmes	TDH-W4	72.5	393	PFO/PSS	OCM	0.8	n/a
Holmes	tdh ms w4	75.7	n/a	PFO/PSS	OCM	<0.1	n/a
Holmes	tdh ms w10	76.5	n/a	PFO/PEM	OCM	4.4	n/a
Holmes	tdh ms w9	77.6	5930	PFO/PEM	OCM	8.6	n/a
Holmes	tdh ms w1 5/23	77.7	87	PFO	OCM	0.2	n/a
Attala	tdh ms w2 5/23	78.0	69	PEM/PFO	OCM	0.2	n/a

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Mississippi County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]
Attala	tdh ms w3 5/23	78.1	145	PFO	OCM	0.2	n/a
Attala	JW15west	82.2	17	PFO	OCM	<0.1	n/a
Attala	JW15east	82.3	184	PFO	OCM	0.5	n/a
Attala	KW23	82.5	1616	PSS/PFO	OCM	3.7	n/a
Attala	KW22	83.4	n/a	PSS	OCM	<0.1	n/a
Attala	KW20	84.4	n/a	PEM/PSS/PFO	OCM	0.2	n/a
Attala	KW20east	84.4	n/a	PEM/PSS/PFO	OCM	0.2	n/a
Attala	KW19	84.5	1876	PFO/PSS	OCM	4.1	n/a
Attala	KW18	84.9	145	PFO/PSS	OCM	0.2	n/a
Attala	KW17	85.3	n/a	PSS	OCM	0.1	n/a
Attala	KW16	85.4	1260	PFO	OCM	2.3	n/a
Attala	KW14	85.6	712	PEM/PFO/PSS	OCM	0.7	n/a
Attala	KW15	85.7	n/a	PSS/PFO	OCM	0.7	n/a
Attala	KW13	85.8	n/a	PEM/PSS	OCM	0.8	n/a
Attala	KW11	86.3	586	PEM/PSS	OCM	1.3	n/a
Attala	KW10	86.5	94	PEM/PSS	OCM	0.2	n/a
Attala	jr w10	88.7	731	PFO	OCM	1.6	n/a
Attala	jr w4	89.1	653	PFO	OCM	1.5	n/a
Attala	jr w5	90.0	87	PFO	OCM	0.3	n/a
Attala	jr w6	90.9	463	PFO	OCM	1.1	n/a
Attala	jr w7	91.2	37	PEM	OCM	0.1	n/a
Attala	jr w8	91.3	718	PFO	OCM	1.6	n/a
Attala	jr w11	91.5	n/a	PFO	HDD	<0.1	n/a
Attala	tdh ms w11	92.9	1242	PFO	HDD	2.8	n/a
Attala	tdh ms w11.2	93.1	1229	PFO	HDD	3.3	n/a
Attala	tdh ms w11.3	93.4	944	PFO	HDD	1.2	n/a
Attala	tdh ms w12	93.5	n/a	PFO	OCM	0.6	n/a
Attala	kp w-1	96.1	53	PFO	OCM	0.1	0.2

[a] Wetlands with a designation of "n/a" are located within the construction corridor, but are not crossed by the proposed pipeline centerline.

Table D-1 Wetlands Identified Within the Construction Corridor or the Proposed Pipeline Route

Mississippi County	GPS-Field ID	Approximate Start Milepost	Approximate Centerline length crossed (feet)[a]	Wetland Type[b]	Crossing Type[c]	Approximate Construction Impacts[d]	Approximate Permanent Impacts[e]

[b] Wetland Type: PEM – palustrine emergent, PSS – palustrine scrub shrub, PFO – palustrine forested

[c] OCM = open cut method, HDD = horizontal directional drill

[d] Construction impacts are based on a 75-foot-wide construction right-of-way over the pipeline.

[e] Permanent acreage reflects acreage lost due to permanently maintained facility.

[f] Totals may differ due to fractional acreages.

Appendix E

Aboveground Facilities and Associated Wetlands

Table E-1 Aboveground Facilities/ Extra Workspace and Associated Wetlands

Mississippi County	Feature or Facility Name	Wetland Field ID	Wetland Type	Nearest Approximate Milepost	Approximate Impact (Acres)
FAYETTEVILLE LATERAL					
Aboveground Facilities					
n/a	None	n/a	n/a	n/a	n/a
Extra Workspaces					
Coahoma	HYDRO TEST AREA	jo W11	PFO	156.8	0.5
Coahoma	HYDRO TEST AREA	jo W12	PFO	157.6	0.6
Coahoma	TRUCK TURNAROUND	jo W12	PFO	157.7	0.5
Coahoma	P.I. & FABRICATION AREA	jo W13	PFO	158.1	0.5
Coahoma	PULL STRING	jo W13	PFO	158.2	<0.1
Coahoma	P.I. & ACCESS	jo W13	PFO	158.2	0.3
Coahoma	PULL STRING	DLS W3	PFO	158.2	2.1
Coahoma	P.I. & ACCESS	DLS W3	PFO	158.2	<0.1
Coahoma	PULL STRING	DLS W4	PFO	158.2	0.7
Coahoma	P.I. & FABRICATION AREA	jo W13	PFO	158.4	0.3
Coahoma	TRUCK TURNAROUND & ACCESS	jo W13	PFO	158.5	1.0
Access Roads					
Coahoma	Access Road 41	jo W13	PFO	158.4	0.1
Coahoma	Access Road 41B	jo W13	PFO	158.4	0.5
Coahoma	Access Road 41A	jo W13	PFO	158.6	<0.1
GREENVILLE LATERAL					
Aboveground Facilities					
Attala	Kosciusko Compressor Station	kp w-1		96.2	0.2
Additional Temporary Workspaces					
Humphreys	Temporary work space and access road	JAV-W9d	PEM/PSS	40.6	<0.1
Humphreys	Pull string	tdh ms w3	PFO	44.3	0.2
Humphreys	Fabrication area	tdh ms w3	PFO	44.9	0.1
Humphreys	Access road and fabrication area	tdh ms w3	PFO	45.5	0.1
Humphreys	Waterbody crossing and fabrication area	tdh ms w3	PFO	46.1	0.2
Holmes	Road crossing and fabrication area	tdh ms w5	PFO	55.1	<0.1
Holmes	Road crossing and fabrication area	kp w-8	PFO	59.1	<0.1

Table E-1 Aboveground Facilities/ Extra Workspace and Associated Wetlands

Mississippi County	Feature or Facility Name	Wetland Field ID	Wetland Type	Nearest Approximate Milepost	Approximate Impact (Acres)
Holmes	Waterbody crossing and fabrication area	JW13	PEM/PSS	59.6	0.1
Holmes	Access road and fabrication area	JW14	PEM/PSS	59.9	0.1
Holmes	Access road and fabrication area	JAV-W18	PEM/PSS	60.4	<0.1
Holmes	Pipeline crossing and fabrication area	JW2	PEM/PSS	60.6	0.1
Holmes	Pipeline crossing and fabrication area	JW2	PEM/PSS	60.6	0.2
Holmes	Access road and fabrication area	tdh ms w9	PFO/PEM	77.2	0.1
Holmes	Pull string	tdh ms w10	PFO/PEM	77.2	<0.1
Holmes	Truck turnaround and access	tdh ms w9	PFO/PEM	77.5	0.4
Attala	Access road and fabrication area	tdh ms w3 5/23	PFO	78.1	<0.1
Access Roads					
Humphreys	Access Road AR-15	JAV-W7	PFO	40.1	<0.1
Humphreys	Access Road AR-18	tdh ms w3	PFO	44.3	<0.1
Humphreys	Access Road AR-19	tdh ms w3	PFO	45.5	0.1
Holmes	Access Road AR-38	JW13	PEM/PSS	59.6	<0.1
Holmes	Access Road AR-40	JAV-W18	PEM/PSS	60.5	<0.1
Holmes	Access Road AR-60	tdh ms w9	PFO/PSS	77.2	0.1
Attala	Access Road AR-61	tdh ms w3 5/23	PFO	78.1	<0.1
KOSCIUSKO 36" PIPELINE					
Aboveground Facilities					
n/a	none	n/a	n/a	n/a	n/a
Additional Temporary Workspaces					
n/a	none	n/a	n/a	n/a	n/a
Access Roads					
n/a	none	n/a	n/a	n/a	n/a
KOSCIUSKO/SOUTHERN NATURAL 20" PIPELINE					
Aboveground Facilities					
n/a	none	n/a	n/a	n/a	n/a
Additional Temporary Workspaces					
n/a	none	n/a	n/a	n/a	n/a

Table E-1 Aboveground Facilities/ Extra Workspace and Associated Wetlands

Mississippi County	Feature or Facility Name	Wetland Field ID	Wetland Type	Nearest Approximate Milepost	Approximate Impact (Acres)
Access Roads					
n/a	none	n/a	n/a	n/a	n/a

Appendix F

Waterbody Crossing Table

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Mileposta at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
Fayetteville Lateral						
Phillips	157.3	Miss River	Mississippi River (Perennial)	Major- 4000 ft	HDD	FW
Coahoma	160.0	tdh int st	Rowen Bayou (Intermittent)	Minor- 2 ft	OCM	FW
Coahoma	160.5	tdh agdlc	Tributary to Moon Lake (Intermittent)	Minor- 2 ft	OCM	FW
Coahoma	160.7	tdh Stm	Phillips Bayou (Perennial)	Major- 110 ft	OCM	FW
Coahoma	161.9	tdh agdlc	Tributary to Muddy Bayou (Intermittent)	Minor- 2 ft	OCM	FW
Greenville Lateral						
Washington	0.8	ML-D1	Tributary to Main Canal (Intermittent)	Minor- 3 ft	OCM	FW
Washington	2.1	ML-D2	Canal to Swiftwater Bayou (Intermittent)	Minor- 3 ft	OCM	FW
Washington	3.3	ML-D3	Canal to Swiftwater Bayou (Intermittent)	Minor- 3 ft	OCM	FW
Washington	3.4	ML-D4	Canal to Jackson Bayou (Intermittent)	Minor- 3 ft	OCM	FW
Washington	3.7	ML-D5	Canal to Widow Bayou (Intermittent)	Minor-3 ft	OCM	FW
Washington	3.9	ag ditch	Tributary to Black Bayou (Intermittent)	Minor- 3 ft	OCM	FW
Washington	4.7	ML-D6	Canal to Widow Bayou (Intermittent)	Minor- 3 ft	OCM	FW
Washington	4.9	ML-D7	Canal to Black Bayou (Intermittent)	Intermediate- 26 ft	OCM	FW
Washington	5.2	B. Bayou	Black Bayou (Perennial)	Intermediate- 60 ft	OCM	FW
Washington	5.3	B. Bayou	Black Bayou (Perennial)	Intermediate 35 ft	OCM	FW
Washington	5.5	B. Bayou	Black Bayou (Perennial)	Intermediate 90 ft	OCM	FW
Washington	6.0	ML-D9B	Canal to Black Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Washington	6.2	ML-D11	Canal to Black Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Washington	6.4	ag ditch	Tributary to Black Bayou (Intermittent)	Minor- 3 ft	OCM	FW
Washington	6.7	ag ditch	Tributary to Black Bayou (Intermittent)	Minor- 3 ft	OCM	FW
Washington	7.1	ML-D12	Canal to Black Bayou (Perennial)	Minor- 9 ft	OCM	FW
Washington	9.3	ML-D13	Deer Creek (Perennial)	Intermediate – 60 ft	HDD	FW
Washington	11.2	ML-D15	Bogue Phalia (Perennial)	Major- 125 ft	HDD	FW
Washington	11.9	ML-D17	Tributary to Bogue Phalia (Intermittent)	Minor- 9 ft	OCM	FW
Washington	14.7	Canal to B. Phalia	Canal to Bogue Phalia (Intermittent)	Minor- 9 ft	OCM	FW
Washington	16.9	Trib. of Sixmile	Tributary to Sixmile Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Sunflower	17.6	ML-D18	East Sixmile Bayou (Intermittent)	Intermediate- 33 ft	OCM	FW
Sunflower	18.3	ML-D19	Canal to Bogue Phalia (Intermittent)	Minor- 9 ft	OCM	FW
Sunflower	18.6	ML-D20	Cypress Slough (Intermittent)	Minor- 9 ft	OCM	FW

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
Washington	19.4	tdh ditch 2	Tributary to Mellon Lake (Intermittent)	Minor- 3 ft	OCM	FW
Washington	19.4	tdh ditch 3	Tributary to Mellon Lake (Intermittent)	Minor- 3 ft	OCM	FW
Washington-Humphreys	20.3	ML-D21	Big Sunflower River (Perennial)	Major- 250 ft	HDD	FW
Humphreys	20.9	ML-D22	Tributary to Big Sunflower River (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	21.1	ML-D23	Canal to Big Sunflower River (Perennial)	Minor- 9 ft	OCM	FW
Humphreys	23.6	ML-S8	Beasley Bayou (Perennial)	Intermediate- 98 ft	OCM	FW
Humphreys	25.3	ML-D24	Canal to Big Sunflower River (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	26.1	ML-S10	Beasley Bayou (Perennial)	Intermediate 50 ft	OCM	FW
Humphreys	26.7	ML-D25A	Tributary to Jackson Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	26.9	ML-D25B	Tributary to Jackson Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	27.3	Jackson B	Jackson Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	27.6	ML-D26	Tributary to Jackson Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	27.9	ML-D27	Tributary to Jackson Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	29.4	ML-D28	Canal to Jackson Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	29.5	ML-D29	Canal to Jackson Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	31.3	jr int12	Little Jackson Bayou (Intermittent)	Intermediate- 25 ft	OCM	FW
Humphreys	31.5	J-D1	Canal to Cold Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	31.8	J-D2	Canal to Cold Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	33.1	J-D3	Canal to Wasp Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	34.0	J-D5	Tributary to Wasp Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	34.3	J-D6	Canal to Wasp Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	34.8	J-D7	Tributary to Wasp Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	34.9	J-D8	Canal to Wasp Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	35.2	J-D9	Canal to Wasp Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	35.4	J-D9	Canal to Wasp Lake (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	35.6	jr int13	Fish Bayou (Intermittent)	Minor- 9 ft	OCM	FW
Humphreys	36.2	J-D10	Canal to Fish Bayou (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	36.4	J-D11	Canal to Fish Bayou (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	36.5	J-D12	Canal to Fish Bayou (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	36.7	J-D13	Canal to Fish Bayou (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	37.0	J-D15	Canal to Fish Bayou (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	37.2	J-D17	Canal to Fish Bayou (Intermittent)	Minor- 5 ft	OCM	FW

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
Humphreys	39.6	J-D19	Canal to Yazoo River (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	40.5	Yazoo	Yazoo River (Perennial)	Major- 395 ft	HDD	FW
Humphreys	41.1	ag ditch	Tributary to Toney Brake (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	41.4	J-D21	Tributary to Toney Brake (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	41.7	J-D22	Tributary to Toney Brake (Intermittent)	Minor- 5 ft	OCM	FW
Humphreys	42.6	J-D23	Canal to Mathena Brake (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	46.7	Tchula	Tchula Lake	Major- 160 ft	HDD	FW
Holmes	49.5	J-D29	Canal to Tchula Lake (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	49.8	J-D30	Canal to Tchula Lake (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	50.2	J-D31	Canal to Tchula Lake (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	50.5	J-D32	Canal to Tchula Lake (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	51.3	tdh ms ditch	Tributary to Old Fannegusha Creek (Intermittent)	Minor- 3 ft	OCM	FW
Holmes	51.5	tdh ms ag ditch	Tributary to Old Fannegusha Creek (Intermittent)	Minor- 3 ft	OCM	FW
Holmes	51.8	tdh ms ag ditch	Tributary to Old Fannegusha Creek (Intermittent)	Minor- 3 ft	OCM	FW
Holmes	54.3	Fannegusha	Fannegusha Creek (Perennial)	Major-100 ft	HDD	FW
Holmes	54.5	tdh ms ag ditch	Tributary to Fannegusha Creek (Intermittent)	Minor- 3ft	OCM	FW
Holmes	54.8	tdh ms int stream	Tributary to Blissdale Swamp (Intermittent)	Minor- 3ft	OCM	FW
Holmes	55.8	J-D43	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	56.3	int st	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	57.1	kp int5	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	57.6	JS1	Tributary of Black Creek (Perennial)	Minor- 9 ft	OCM	FW
Holmes	57.9	wwc2	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	58.0	wwc1	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	58.3	J-D44	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	58.5	J-D45	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	58.5	J-D46	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	58.6	J-D47	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	58.9	J-D48	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	58.9	J-D50	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	59.6	J-D51	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	60.1	J-D53	Tributary to Black Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	60.5	JS2	Tributary of Black Creek (Perennial)	Intermediate- 13 ft	OCM	FW

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
Holmes	60.6	JWWC-4	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	60.9	JS3	Tributary of Black Creek (Perennial)	Intermediate- 10 ft	OCM	FW
Holmes	61.1	JS11	Tributary to Black Creek (Intermittent)	Intermediate- 10 ft	OCM	FW
Holmes	61.2	JS6	Black Creek (Perennial)	Intermediate- 58 ft	OCM	FW
Holmes	61.7	JWWC-11	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	61.8	JWWC-10	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	61.9	WWC-9	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	62.0	JS5	Tributary of Black Creek (Intermittent)	Intermediate- 23 ft	OCM	FW
Holmes	62.3	JS4	Tributary to Black Creek (Intermittent)	Intermediate- 13 ft	OCM	FW
Holmes	62.8	WWC5	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	62.9	WWC4	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	63.4	JWWC-12	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	63.7	int st	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	63.8	jr s1	Tributary to Black Creek (Intermittent)	Minor- 6ft	OCM	FW
Holmes	64.5	ditch-1	Tributary to Black Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	65.2	JS7	Gourdvine Creek (Perennial)	Intermediate- 50 ft	OCM	FW
Holmes	66.0	WWC15	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	66.3	JWWC-27	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	66.4	JWWC-26	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	66.4	WWC25	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	66.5	JS9	Tributary to Tarrey Creek (Intermittent)	Minor- 7 ft	OCM	FW
Holmes	66.6	JWWC-24	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	66.7	JWWC-23	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	66.8	JWWC-21	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	66.8	JWWC-22	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	67.0	JS8	Tributary to Tarrey Creek (Intermittent)	Intermediate- 16 ft	OCM	FW
Holmes	67.1	JS8	Tributary to Tarrey Creek (Intermittent)	Intermediate- 16 ft	OCM	FW
Holmes	67.4	tdh ms int stream	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	67.5	tdh ms int stream	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	67.6	JWWC-35	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	67.6	JWWC-36	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Mileposta at Crossing	Field ID	Waterbody Name and Type[b,c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
Holmes	67.7	tdh ms int stream	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	68.0	WWC34	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	68.3	JS10	Tributary to Tarrey Creek (Intermittent)	Intermediate- 16 ft	OCM	FW
Holmes	68.6	JWWC32	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	68.7	JWWC31	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	68.9	jr s2	Tributary to Tarrey Creek (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	69.3	jr s3	Tarrey Creek (Perennial)	Minor- 9 ft	OCM	FW
Holmes	70.8	jr int4	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	70.9	Trib. to Tarrey	Tributary to Tarrey Creek (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	71.1	strm9b	Tributary to Tarrey Creek (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	71.2	strm9a	Tributary to Tarrey Creek (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	71.4	tdh-wwc13	Tributary to Tarrey Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	71.7	tdh stream 3	Tributary to Box Creek (Intermittent)	Intermediate- 15 ft	OCM	FW
Holmes	71.8	tdhditch2	Tributary to Box Creek (Intermittent)	Minor- 1 ft	OCM	FW
Holmes	71.9	tdh wwc 12	Tributary to Box Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	72.0	tdhwwc11	Tributary to Box Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	72.5	tdh wwc 10	Box Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	72.9	tdh wwc9	Tributary to Box Creek (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	73.2	tdh wwc8	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	73.3	tdh-wwc8	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	73.4	strm7	Tributary to Big Black River (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	73.6	tdh stream 2	Tributary to Big Black River (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	73.9	tdh-stream 1	Tributary to Big Black River (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	73.9	tdhwwc 7	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	74.0	tdh int 5	Tributary to Big Black River (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	74.3	tdh wwc6	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	74.7	tdh stream 1	Tributary to Big Black River (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	75.0	tdh int stream 4	Tributary to Big Black River (Intermittent)	Minor- 5 ft	OCM	FW
Holmes	75.5	jr int6	Tributary to Big Black River (Intermittent)	Minor- 9 ft	OCM	FW
Holmes	76.1	tdh int st	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Holmes	76.2	Trib. 2 Big	Tributary to Big Black River (Intermittent)	Minor- 9 ft	OCM	FW

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
		Black				
Holmes	77.7	Big Black	Big Black River (Perennial)	Major- 270 ft	HDD	FW
Holmes	77.9	tdh ms s1	Tributary to Big Black River (Perennial)	Minor- 9ft	OCM	FW
Attala	78.4	tdh wwc 15	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Attala	78.5	tdh wwc 14	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Attala	78.9	tdh wwc 4	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Attala	79.1	tdh int stream 3	Tributary to Big Black River (Intermittent)	Minor- 6 ft	OCM	FW
Attala	79.2	tdh int stream 2	Tributary to Big Black River (Intermittent)	Minor- 5 ft	OCM	FW
Attala	79.3	tdh int stream 2	Tributary to Big Black River (Intermittent)	Minor- 5 ft	OCM	FW
Attala	79.5	tdh wwc3	Tributary to Big Black River (Intermittent)	Minor- 2 ft	OCM	FW
Attala	80.1	tdh wwc2	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	80.3	tdh ditch 1	Tributary to Long Creek (Intermittent)	Minor- 1 ft	OCM	FW
Attala	80.7	tdh int stream 1'	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	80.8	tdh wwc1	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	82.4	KWWC-41	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	82.4	KWWC-42	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	82.5	KWWC-40	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	82.6	KWWC-38	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	82.6	KWWC-39	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	82.8	KWWC-37	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	83.0	KWWC-36	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	83.6	KWWC-35	Tributary to Long Creek (Intermittent)	Minor-2 ft	OCM	FW
Attala	83.7	KS7	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	83.8	KS7	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	83.9	KS7	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	84.0	KWWC-31	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	84.0	KWWC-32	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	84.0	KWWC-33	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	84.6	Kditch10	Tributary to Long Creek (Intermittent)	Minor- 1 ft	OCM	FW

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Milepost at Crossing	Field ID	Waterbody Name and Type[b,c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
Attala	84.8	Kditch9	Tributary to Long Creek (Intermittent)	Minor- 1 ft	OCM	FW
Attala	84.9	KS6 Station 1	Long Creek (Perennial)	Intermediate- 30 ft	OCM	FW
Attala	85.2	KWWC-29	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	85.7	KS6 Station 2	Long Creek (Perennial)	Intermediate- 50 ft	OCM	FW
Attala	85.9	Kditch8	Tributary to Long Creek (Intermittent)	Minor- 1 ft	OCM	FW
Attala	86.3	KS5	Long Creek (Perennial)	Intermediate- 43 ft	OCM	FW
Attala	86.9	KWWC-30	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	87.3	KS4	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	87.6	jr int7	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	87.8	jr s4	Long Creek (Perennial)	Minor- 9 ft	OCM	FW
Attala	87.9	jr s5	Tributary to Long Creek (Perennial)	Intermediate- 12 ft	OCM	FW
Attala	88.3	jr int9	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	88.7	jr int10	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	89.1	jr s6	Tributary to Long Creek (Perennial)	Minor- 9 ft	OCM	FW
Attala	90.1	jrint1	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	90.1	Trib. 4 Long C	Tributary to Long Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	90.6	ditch	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	91.3	jrint2	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	91.8	jrint3	Tributary to Long Creek (Intermittent)	Minor- 2 ft	OCM	FW
Attala	92.7	jrint4	Tributary to Yockanookany River (Intermittent)	Minor- 5 ft	OCM	FW
Attala	93.1	jrs7	Yockanookany River (Perennial)	Intermediate- 50 ft	HDD	FW
Attala	93.7	tdh ms int s1	Tributary to Yockanookany River (Intermittent)	Minor- 5 ft	OCM	FW
Attala	95.0	int st	Tributary to Conehoma Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	95.1	Conehoma	Conehoma Creek (Perennial)	Intermediate- 20 ft	OCM	FW
Attala	96.0	kp int1	Tributary to Conehoma Creek (Intermittent)	Minor- 5 ft	OCM	FW
Kosciusko 36" Pipeline						
Attala	0.3	kp int1	Tributary to Conehoma Creek (Intermittent)	Minor- 5 ft	OCM	FW
Attala	0.7	Little Cone. Creek	Little Conehoma Creek (Perennial)	Intermediate- 20 ft	OCM	FW

Table F-1 Waterbodies Within the Construction Corridor of the Proposed Pipeline Route

Mississippi County	Approximate Milepost[a] at Crossing	Field ID	Waterbody Name and Type[b, c]	Size[d] and Estimated Width of Stream Crossing	Crossing Method[e]	State Water Classification[f]
Kosciusko/Southern Natural 20" Pipeline						
n/a	n/a	n/a	n/a	n/a	n/a	n/a

[a] Milepost based on desktop analysis of proposed pipeline route.

[b] Intermittent and Perennial designations determined by site reconnaissance and USGS name.

[c] Perennial waterbodies in Coahoma County, Mississippi may contain potential habitat for the fat pocketbook.

[d] Minor stream is less than 10 feet wide, Intermediate streams are between 10 and 99 feet, and Major are over 100 feet.

[e] HDD = horizontal directional drill, OCM = open cut method (includes both conventional [i.e., without work area isolation] and non-coventional [with work area isolation] methods).

[f] Mississippi State Water Quality Classifications – Fish and Wildlife (FW), Shellfish Harvesting (SH), Recreation (R), Ephemeral Stream (ES), Public Water Supply (PWS)