Resource Report 1
General Project Description

Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

February 2015

TENNESSEE GAS PIPELINE COMPANY, L.L.C.
ABANDONMENT AND CAPACITY RESTORATION PROJECT

RESOURCE REPORT 1 – GENERAL PROJECT INFORMATION

Summary of Filing Information

Filing Requirement	Location within this Document
Minimum Requirements to Avoid Rejection	
18 CFR § 380.12 (c)(1) Provide a detailed description and location map of the project facilities. • Include all pipeline and aboveground facilities. • Include support areas for construction or operation. • Identify facilities to be abandoned.	Sections 1.1.2 and 1.1.3; Appendices1A through 1G
18 CFR § 380.12 (c)(2) Describe any non-jurisdictional facilities that would be built in association with the project. • Include auxiliary facilities (See § 2.55(a)). • Describe the relationship to the jurisdictional facilities. • Include ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of Federal, state, and local permits/approvals. • Include the length and diameter of any interconnecting pipeline. • Apply the four-factor test to each facility (see § 380.12(c)(2)(ii)).	Section 1.8; Appendix 1M
18 CFR § 380.12 (c)(3) Provide current original US Geological Survey 7.5-minute-series topographic maps with mileposts showing the project facilities. • Maps of equivalent detail are acceptable if legible (check with staff). • Show locations of all linear project elements, and label them. • Show locations of all significant aboveground facilities, and label them.	Appendices 1D, 1G
18 CFR § 380.12 (c)(3) Provide aerial images or photographs or alignment sheets based on these sources with mileposts showing the project facilities. • No more than 1-year old. • Scale no smaller than 1:6,000.	Appendices 1F, 1G
18 CFR § 380.12 (c)(3,4) Provide plot/site plans of compressor stations showing the location of the nearest noise sensitive areas. • Scale no smaller than 1:3,600. • Show reference to topographic maps and aerial alignments provided above.	Figures 1-3 through 1-8; Appendix 1L (Volume III)
18 CFR § 380.12 (c)(6) Describe construction and restoration methods. • Include this information by milepost. • Make sure this is provided for offshore construction as well. For the offshore this information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing.	Section 1.3; Appendices 1H through 1K-

RESOURCE REPORT 1 – GENERAL PROJECT INFORMATION Summary of Filing Information	
Filing Requirement	**Location within this Document**
Minimum Requirements to Avoid Rejection	
18 CFR § 380.12 (c)(-9) Identify the permits required for construction across surface waters. • Include the status of all permits. • For construction in the Federal offshore area be sure to include consultation with the MMS File with the MMS for rights-of-way grants at the same time or before you file with the FERC.	Section 1.6 and Table 1-6
18 CFR § 380.12 (c)(10) Provide the names and address of all affected landowners and certify that all affected landowners will be notified as required in § 157.6(d). • Affected landowners are defined in § 157.6(d). • Provide an electronic copy directly to the environmental staff.	Appendix 1N (Volume IV)
Additional Information Often Missing and Resulting in Data Requests	
Describe all authorizations required to complete the proposed action and the status of applications for such authorizations.	Table 1-6
Provide Plot/site plans of all other aboveground facilities that are not completely within the right-of-way.	Appendix 1L
Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way, and temporary construction right-of-way. See Resource Report 8.	Appendices 1H through 1I
Summarize the total acreage of land affected by construction and operation of the project.	Table 1.1
If Resource Report 5, Socioeconomics is not provided, provide the start and end dates of construction, the number of pipeline spreads that would be used, and the workforce per spread.	Resource Report 5
Send two additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects.	---

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List of Acronyms:

ACRP	Abandonment and Capacity Restoration Project
ATWS	Additional Temporary Workspace
bpd	barrels per day
CEII	Critical Energy Infrastructure Information
EI	Environmental Inspector
CFR	Code of Federal Regulations
CIAA	Cumulative Impacts Assessment Area
Commission	Federal Energy Regulatory Commission
DEQ	Department of Environmental Quality
DEP	Department of Environmental Protection
EPA	Environmental Protection Agency
ER	Environmental Report
FERC	Federal Energy Regulatory Commission
FTE	Full Time Employee
HDD	Horizontal directional drill
hp	horsepower
Kinder Morgan	Kinder Morgan, Inc.
MAOP	Maximum Allowable Operating Pressure
MCC	Motor control centers
MLV	mainline valves
NGA	Natural Gas Act of 1938, 15 U.S.C. § 717 et seq.
NGL	Natural Gas Liquids
NHPA	National Historic Preservation Act of 1966, 16 U.S.C. § 470 et seq.
NPDES	National Pollutant Discharge Elimination System
NSA	noise sensitive area
Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
PSA	Purchase and Sale Agreement
RFFA	Reasonably Foreseeable Future Action
ROW	right-of-way
SCADA	supervisory control and data acquisition
SPCC	Spill Prevention, Control, and Countermeasures
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
Tennessee	Tennessee Gas Pipeline Company, L.L.C.

Project	Abandonment and Capacity Restoration Project
TWS	Temporary Workspace
UMTP	Utica Marcellus Texas Pipeline LLC
UMTP Project	Utica Marcellus Texas Pipeline Project
UPS	Uninterruptable power supply
US	United States
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 RESOURCE REPORT 1 – GENERAL PROJECT DESCRIPTION

1.1 PROPOSED FACILITIES

Tennessee Gas Pipeline Company, L.L.C. ("Tennessee") is filing an application with the Federal Energy Regulatory Commission ("FERC" or "Commission") for Tennessee's Abandonment and Capacity Restoration Project ("ACRP" or "Project"), seeking authorization from the Commission: (1) pursuant to Section 7(b) of the Natural Gas Act of 1938, 15 U.S.C. § 717 et seq. ("NGA") for the abandonment in place of certain natural gas pipeline facilities and the subsequent sale of such facilities to an affiliate, Utica Marcellus Texas Pipeline LLC ("UMTP"), which will then convert such abandoned facilities to a pipeline for the transportation of natural gas liquids ("NGL"); and (2) pursuant to Section 7(c) of the NGA to modify certain existing and/or pipeline and compression facilities on the Tennessee system and to construct new pipeline and compression facilities that will be needed to continue natural gas transportation service to existing natural gas firm transportation customers following the proposed abandonment.

Tennessee's existing pipeline infrastructure consists of approximately 14,000 miles of pipeline designated as the 100, 200, 300, 400, 500, and 800 lines, based on the region they serve. The proposed Project will occur on Tennessee's existing 100 and 200 Lines. The portion of the 100 Line impacted by the Project consists of multiple looped pipelines varying from 24 inches to 36 inches in diameter beginning at Compressor Station 40 in Natchitoches Parish, Louisiana, and ending at Compressor Station 200 in Greenup County, Kentucky. The portion of the 200 Line impacted by the Project consists of multiple looped pipelines varying from 24 inches to 36 inches in diameter beginning at Compressor Station 200 in Greenup County, Kentucky, and extending north/northeast to a point at or near Tennessee's Mainline Valve ("MLV") 216 in Columbiana County, Ohio.

The Project, generally, includes the following major components:

- The abandonment of approximately 964 miles of Tennessee's existing 100 and 200 Lines (referred to herein as the "Abandoned Line") as follows:
    - 677 miles of Tennessee's 24-inch diameter 100-1 Line from Tennessee's Compressor Station 40 in Natchitoches Parish, Louisiana, to Tennessee's Station 106 in Powell County, Kentucky;
    - 77 miles of Tennessee's 26-inch diameter 100-3 Line from Tennessee's Compressor Station 106 in Powell County, Kentucky, to Tennessee's Compressor Station 200 in Greenup County, Kentucky; and
    - 210 miles of Tennessee's 26-inch diameter 200-3 Line from Tennessee's Compressor Station 200 in Greenup County, Kentucky, to Tennessee's MLV 216 in Columbiana County, Ohio, including:
        - Disconnection of the 200-3 Line from an aerial crossing at either side of the Ohio River at headers.

- Tennessee proposes to construct and install the following facilities (referred to herein as the "Replacement Facilities") in order to restore capacity currently carried by the Abandoned Line:

    - The addition of one Solar Taurus 70 compressor unit at Compressor Station 875, proposed (in a separate, contemporaneous Commission proceeding) to be constructed by Tennessee as part of the Broad Run Expansion Project (FERC Docket CP15-77-000) in Madison County, Kentucky, adding 10,771 horsepower ("hp") to proposed Compressor Station 875;

    - The addition of two Solar Mars 100 compressor units at Tennessee's existing Compressor Station 110 in Rowan County, Kentucky, adding 32,000 hp;

    - The construction of four new mid-point Compressor Stations, each with one Solar Titan 130 compressor, 202.5, 206.5, 211.5, and 216.5 in Ohio on Tennessee lines 200-1, 200-2, and 200-4, adding a total of 82,000 hp in Jackson, Morgan, Tuscarawas, and Mahoning counties, Ohio;

    - The continuation of Tennessee's 100-7 line with the construction of the Kentucky 7.6-mile new build pipeline in Carter and Lewis Counties, Kentucky; and

    - The removal of certain crossovers, taps, valves and miscellaneous pipe and the relocation and/or installation of new taps to complete the physical separation of the Abandoned Line from Tennessee's retained pipelines.

Construction of the Replacement Facilities will enable Tennessee to abandon the Abandoned Line by sale to UMTP, which plans to convert the Abandoned Line to non-jurisdictional NGL transport as a component of UMTP's Utica Marcellus Texas Pipeline Project ("UMTP Project"). After construction of the Replacement Facilities and abandonment of the Abandoned Line, Tennessee will continue to be able to meet anticipated contract demand for firm transportation service on the portions of Tennessee's 100 and 200 Lines impacted by the proposed Project.

1.1.1 PURPOSE AND NEED

As discussed in the Public Convenience and Necessity section of the certificate application, Tennessee's proposed Project will abandon segments of pipeline that will be removed from interstate natural gas service and repurposed for non-jurisdictional NGL service. Tennessee also will provide the infrastructure needed to restore natural gas capacity to meet Tennessee's firm transportation contract commitments. The abandonment and repurposing of the Abandoned Line for NGL transportation represents an efficient use of existing pipeline infrastructure.

1.1.2 LOCATION AND DESCRIPTION OF FACILITIES

The general overview of the Project location is illustrated in Figure 1-1. Overview maps for the proposed abandonment in each state along the proposed route are included in Appendix 1A, and state overview maps showing the locations of proposed new and modified jurisdictional facilities are included in Appendix 1B.

The jurisdictional facilities are described in more detail in the following sections, and all activities and proposed facilities associated with the Project are listed in Appendix 1C, Table 1-C.

As part of the Project, Tennessee will abandon in place the Abandoned Line, which consists of approximately 964 miles of existing 24- and 26-inch diameter pipeline, together with certain associated facilities, from Compressor Station 40 in Natchitoches Parish, Louisiana, to MLV 216 in Columbiana County, Ohio. To ensure uninterrupted natural gas transportation service to its existing firm customers, Tennessee is also proposing modifications to the remaining segments of the looped pipelines, as well as construction of the Replacement Facilities. See Figure 1-2.

1.1.2.1 ABANDONMENT ACTIVITIES/FACILITIES (UNDER NGA SECTION 7(B))

The Abandoned Line is part of Tennessee's existing pipeline system that currently delivers approximately nine billion cubic feet per day of natural gas. Appendix 1C, Table 1-CC identifies the locations of the Abandoned Line.

The proposed abandonment will require activities (discussed in detail below) at approximately 216 sites along the pipeline route. Activities associated with the abandonment of the pipeline and the necessary modifications to existing aboveground facilities to facilitate the abandonment include:

- Abandonment in place and then transfer by sale of the following pipeline facilities:
    - Abandonment of 677 miles of Tennessee's 24-inch diameter 100-1 Line from Tennessee's Compressor Station 106 in Powell County, Kentucky, to Tennessee's Compressor Station 40 in Natchitoches Parish, Louisiana.
    - Abandonment of 77 miles of Tennessee's 26-inch diameter 100-3 Line from Tennessee's Compressor Station 200 in Greenup County, Kentucky, to Tennessee's Compressor Station 106 in Powell County, Kentucky.
    - Abandonment of 210 miles of Tennessee's 26-inch diameter 200-3 Line from Tennessee's MLV 216 in Columbiana County, Ohio, to Tennessee's Compressor Station 200 in Greenup County, Kentucky.
- Disconnection of the Abandoned Line and directly associated equipment at 14 existing compressor stations (Tennessee Compressor Stations 214, 209, 204, 200, 110, 106, 96, 87, 79, 71, 63, 54, 47, and 40);
- Abandonment of 82 MLVs;
- Disconnection, abandonment, and relocation of taps at 41 locations; and
- Disconnection and removal (or abandonment in place, in certain instances) of crossover/connector lines which connect the Abandoned Line to one or more of the adjacent and parallel gas lines at 79 locations.

The Abandoned Line is described using mile posting. The mile posting is based on mainline valve locations and is numbered from south to north in between these compressor stations. Activities for abandonment are described in Appendix 1C, Table 1-C using the closest mile post to Abandonment Line.

1.1.2.2 NATURAL GAS SYSTEM ACTIVITIES/MODIFIED AND NEW FACILITIES (UNDER NGA SECTION 7(C))

To restore the necessary natural gas transportation capacity on Tennessee's system following the loss of capacity as a result of the proposed abandonment, Tennessee proposes to construct four

new compressor stations on Tennessee Lines 200-1, 200-2, and 200-4, increase horsepower at one existing compressor station, increase horsepower at a compressor station proposed to be constructed in a separate, contemporaneous FERC proceeding, and construct the Kentucky 7.6-mile new build pipeline.

The proposed Replacement Facilities that are part of the Project include:

- Construction of approximately 7.6 miles of new build, 36-inch diameter natural gas pipeline in Carter and Lewis counties, Kentucky, extending the existing 100-7 line to the north;
- Construction of four new 20,500 hp mid-point Compressor Stations 216.5, 211.5, 206.5, and 202.5, each with one Solar Titan 130 compressor, and associated new access roads on Tennessee's 200-1, 200-2 and 200-4 lines in Mahoning, Tuscarawas, Morgan, and Jackson counties, Ohio, respectively;
- Addition of two 16,000 hp Solar Mars 100 compressor units at existing Compressor Station 110 in Rowan County, Kentucky;
- Addition of one new 10,771 hp Solar Taurus 70 compressor units at Compressor Station 875, proposed to be constructed by Tennessee in a separate, contemporaneous FERC proceeding, to be located in Madison County, Kentucky;
- Relocation of one pig launcher/receiver along the pipeline from near MLV 111 to the north end of the new 36-inch diameter natural gas pipeline in Kentucky;
- Relocation of 41 customer taps to lines remaining in-service, and construction of short pipeline segments to replace the existing customer taps on the Abandoned Line; and
- Modification of existing compressor station piping and pig launchers/receivers at 14 sites to disconnect them from the Abandoned Line and reconnect them to the remaining pipelines.

1.1.2.3 OTHER PROJECT-RELATED ACTIVITIES (UNDER 2.55(B) AND/OR BLANKET CERTIFICATE AUTHORIZATION)

Upon receipt of the requested certificate and abandonment authority but prior to the transfer of the Abandoned Line to UMTP, Section 5 of the Purchase and Sale Agreement ("PSA") between Tennessee and UMTP will require Tennessee to perform certain work, as requested by UMTP, to ready the Abandoned Line for UMTP's subsequent use to the extent Tennessee can perform such work without degrading service to Tennessee's existing customers. Included among such work, Tennessee will endeavor to remediate a number of short sections of pipeline along the Abandoned Line that contain "wrinkle bends." Although no longer used today, wrinkle bending was a common technique of bending pipe used in pipeline construction during the 1950s, when portions of the Abandoned Line were installed, that involved heating the pipe and then mechanically bending it to conform to the contour of the land and route prior to laying the pipe in the ground. When UMTP ultimately acquires the Abandoned Line under the terms of the PSA, UMTP will reimburse Tennessee for all of the costs associated with these wrinkle bend remediation activities. Tennessee believes that replacement of these wrinkle bends on portions of the Abandoned Line qualify under Section 2.55(b) of the Commission's regulations, unless Tennessee is required to perform work outside of previously disturbed areas. In those instances, the replacement work will qualify under Tennessee's blanket certificate authority.

Although complete information will not be available until Tennessee undertakes a full survey, including field verification, of the potential wrinkle bends, Tennessee estimates that it may have to undertake a significant number of wrinkle bend replacements. While the actual footprint of each wrinkle bend remediation will depend upon the specific location, based upon Tennessee's experience remediating wrinkle bends across its system, Tennessee believes that the scope and impact of these remediation activities will be limited. Tennessee estimates that a typical replacement activity will impact an area approximately 75 feet in width and 250 feet in length and will require the replacement of approximately 40 feet of pipe. To demonstrate its typical approach to wrinkle bend remediation, two typical drawings showing these sites: 1) a typical worksite within original disturbed area; and 2) a typical worksite that extends beyond the original disturbed area are included in Appendix 1H.

It is not possible at this time to determine the precise location or number of replacements that will be undertaken. Tennessee will determine the precise location and scope of each replacement, once certificate and abandonment authority is granted. However, based on the available information, Tennessee anticipates that the total acreage impact related to wrinkle bend remediation related to the Project could range between 1,200 to 1,900 acres.

In addition, as part of the Project, Tennessee will construct and operate the following appurtenances and auxiliary facilities at the designated locations:

Compressor Stations 47, 54 and 87

- Miscellaneous pipe, valves, and fittings for gas handling efficiency in the fenced yard of the station
- Cathodic protection system
- SCADA equipment and communications

Back Pressure Regulator near 96-1+8.4 (in lieu of Calvary Booster)

- Miscellaneous pipe and valves associated with regulator installation

MAOP Restoration near MLV 53 and MLV 874

- Pipe replacement for class change purposes

Compressor Station 202.5

- Miscellaneous pipe, valves, and fittings for gas handling in the fenced yard of the Miscellaneous pipe, valves, and fittings for gas handling in the fenced yard of the station
- Compressor building
- Auxiliary building
- Pre-fabricated control building
- Garage building
- Condensate tank
- Blow down silencer
- Stand-by generator

- Hot water heater
- Motor Control Centers ("MCCs")
- Fiber communications
- Gas coolers
- Gas filters
- Cathodic protection system
- Fuel gas system
- Air compressor
- Supervisory Control and Data Acquisition ("SCADA") equipment and communications
- Uninterruptible power supply ("UPS") system

Compressor Station 206.5

- Miscellaneous pipe, valves, and fittings for gas handling in the fenced yard of the station
- Compressor building
- Auxiliary building
- Pre-fabricated control building
- Garage building
- Condensate tank
- Blow down silencer
- Stand-by generator
- Hot water heater
- MCCs
- Fiber communications
- Gas coolers
- Gas filters
- Cathodic protection system
- Fuel gas system
- Air compressor
- SCADA equipment and communications
- UPS system

Compressor Station 211.5

- Miscellaneous pipe, valves, and fittings for gas handling in the fenced yard of the station
- Compressor building
- Auxiliary building
- Pre-fabricated control building

- Garage building
- Condensate tank
- Blow down silencer
- Stand-by generator
- Hot water heater
- MCCs
- Fiber communications
- Gas coolers
- Gas filters
- Cathodic protection system
- Fuel gas system
- Air compressor
- SCADA equipment and communications
- UPS system

Compressor Station 216.5

- Miscellaneous pipe, valves, and fittings for gas handling in the fenced yard of the station
- Compressor building
- Auxiliary building
- Pre-fabricated control building
- Garage building
- Condensate tank
- Blow down silencer
- Stand-by generator
- Hot water heater
- MCCs
- Fiber communications
- Gas coolers
- Gas filters
- Cathodic protection system
- Fuel gas system
- Air compressor
- SCADA equipment and communications
- UPS system

Compressor Station 875

- Miscellaneous pipe, valves, and fittings for gas handling in the fenced yard of the station
- Compressor building
- MCCs
- Gas cooler
- Gas filter
- Fiber communications
- Cathodic protection system
- SCADA equipment and communications

Compressor Station 110

- Miscellaneous pipe, valves, and fittings for gas handling in the fenced yard of the station
- Compressor building
- Auxiliary building
- Pre-fabricated control building
- Condensate tank
- Blow down silencer
- Stand-by generator
- Hot water heater
- MCCs
- Fiber communications
- Gas coolers
- Gas filters
- Cathodic protection system
- Domestic fuel gas system
- Air compressor
- SCADA equipment and communications
- UPS system
- Re-wheeling of four existing units

7.6 Mile 36" Loop at MLV 111

- Removal of existing pig receiver and relocation to end of loop
- Connection to Tennessee pipeline 100-4 line

All appurtenances and auxiliary facilities will be installed within Tennessee's temporary workspace for the Project and/or Tennessee's existing permanent operational areas. This work is covered by environmental surveys and permitting that have been or will be conducted for the Project and/or categorical environmental clearances received from the applicable states.

1.1.3 LOCATION MAPS, DETAILED ROUTE MAPS, AND PLOT/SITE PLANS

The locations of all proposed Project facilities are presented in Appendices 1A, 1B, and 1C. Maps on aerial background for the areas where the abandonment in place will occur are provided in Appendix 1D, and 1:24,000-scale United States Geological Survey ("USGS") 7.5-minute topographic maps depicting the facilities to be abandoned, including temporary workspaces ("TWS") proposed for use as part of the Project, are provided as Appendix 1E. Maps on aerial photographs showing the locations where Tennessee proposes to add compression facilities and locations where abandonment activities will occur are included as Appendix 1F, and maps of locations of the Kentucky 7.6-mile new build pipeline on aerial photographs, on 1:24,000-scale USGS 7.5-minute topographic maps and on alignment sheets are provided in Appendix 1G. Typical right-of-way ("ROW") requirements for the proposed Replacement Facilities are presented in Appendix 1H.

Figures 1-3 through 1-8 show locations for the new compressor stations and for the additional compression units to be installed at Compressor Stations 110 and 875.

1.2 LAND REQUIREMENTS

Ground disturbance will be required for certain activities associated with the abandonment and disconnection of the Abandoned Line and associated facilities, as well as with the construction of Replacement Facilities. At many of these locations, the activities associated with the abandonment and disconnection activities and the construction of new and modified facilities will occur within the same disturbance area, and generally will occur as part of the following types of disturbance:

- Linear disturbance (including construction of new pipeline; construction of new access roads or modifications to existing access roads);
- Construction of four new compressor stations;
- Modifications to existing Compressor Station 110 and Compressor Station 875, which is proposed as a portion of the Broad Run Expansion Project;
- Minor site work within existing ROW or yards (e.g., disconnection and reconnection of crossovers, taps, and compressor piping);
- Temporary Additional Workspace for linear construction; and
- Contractor and Pipe Yards.

Typical construction site sketches and cross-sections, and typical workspace configurations are provided in Appendices H and I, respectively. Table 1-1 provides a summary of the land requirements for the Project. A detailed breakdown of land requirements and land use by state is provided in Resource Report 8 of this Environmental Report ("ER") and Appendix 1C, Table 1-C.

Table 1-1 Project Summary of Land Requirements[1]

Activity/work location	Land Affected During Construction miles (acres)[2]	Land Affected During Operation miles (acres)
Abandonment Activities and Facilities; New and Modified Pipeline and Compression Facilities		
Linear Facilities		
Kentucky 7.6-mile New Build Pipeline	7.6 (135.7)	7.6 (46.3)
New/Modified Access Roads[3]	18.6 (9.1)	8.7 (9.1)
Typical Workspace Configuration[4]		
FERC-001	0.0 (2.3)	0.0 (0.3)
FERC-002	0.0 (9.0)	0.0 (7.9)
FERC-003	0.0 (33.5)	0.0 (24.3)
FERC-004	5.0 (63.4)	0.0 (41.0)
FERC-005-I	0.0 (23.6)	0.0 (21.0)
FERC-005-II	0.0 (1.3)	0.0 (1.3)
FERC-005-III	0.0 (15.3)	0.0 (11.7)
FERC-005-IV	0.0 (2.1)	0.0 (0.7)
FERC-005-V	0.0 (19.6)	0.0 (16.8)
FERC-005-VI	0.0 (7.8)	0.0 (7.4)
FERC-006-I	0.0 (6.6)	0.0 (6.1)
FERC-006-II	0.0 (9.6)	0.0 (8.6)
New Compressor Stations	1.2 (105.3)	1.2 (60.3)
Modifications to Compressor Station 110 and Compressor Station 875[4]	(27.7)	(2.7)
Temporary Workspace		
Additional Temporary Workspace[3]	(3.2)	(0.0)
Pipeyards and Contractor Yards[3]	0.8 (6.9)	0.0 (0.0)
Total	30.9 (462.8)	25.1 (256.4)

[1]A breakdown of the acreages by State and individual site is provided in Appendix 1C, Table 1-C.
[2]Includes additional temporary work areas (e.g., area required for truck turn-arounds, expanded workspace due to terrain) and areas for aboveground facilities such as valves to be located within the permanent ROW.
[3]These are a subset of other activities (e.g. pipeyards are include in the total acreage of the 7.6-mile New Build) in the table and are not added into the total.
[4]Includes areas that are within existing ROWs.

Disturbance associated with abandonment activities will be limited to disconnection of the Abandoned Line from compressor stations and taps. No ground disturbance will be necessary for the portions of the Abandoned Line in place under the authorization requested from FERC. Activities associated with the abandonment will occur within Tennessee's existing pipeline ROW,

which varies in width from 30 to 75 feet. In many areas there are additional contiguous Tennessee ROWs. No natural gas facilities associated with the abandonment activities will remain operational for natural gas transmission service following the abandonment; therefore, there will be no permanent or operational impacts associated with abandoning the pipeline in place.

Ground disturbance associated with construction of the Replacement Facilities includes new pipeline construction activities, tap and crossover reconnection activities, tap relocations and connecting pipeline, construction of new compressor stations, modification of existing and proposed compressor stations, construction of new access roads and modifications to existing access roads, and use of pipeyards and contractor yards. Disturbance during operation will be associated with operation and maintenance activities for the new pipeline and ROW, aboveground facilities, and access roads.

1.3 CONSTRUCTION PROCEDURES

To minimize impacts associated with Project disturbance, Tennessee generally will adopt the May 2013 versions of the Commission's Upland Erosion Control, Revegetation, and Maintenance Plan ("Plan") and the Commission's Wetland and Waterbody Construction and Mitigation Procedures ("Procedures").

Tennessee is requesting a variance from the FERC Procedures, Section VI D.1. regarding routine vegetation mowing or clearing in wetlands. Tennessee has been maintaining the full permanent right-of-way width of their system for many decades. Having discontinuous maintenance procedures for various parts of a contiguous permanent right-of-way would pose significant operational challenges. Tennessee is requesting FERC approval to continue full right-of-way width maintenance in wetlands over the pipelines that will be newly constructed under this application so that the maintenance procedures are continuous along the length of the permanent right-of-way.

Tennessee will incorporate the Plan and Procedures, with one variance, into its Standard Construction Specifications and Procedures, and will comply with additional specific requirements that may be imposed by federal, state, and local agencies or landowners for the Project.

The Replacement Facilities will be designed, constructed, tested, operated, and maintained to conform with applicable federal, state, and local requirements, including US Department of Transportation ("USDOT") regulations at 49 Code of Federal Regulations ("CFR") Part 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" and Commission regulations at 18 CFR Section 380.15, "Siting and Maintenance Requirements".

An estimate of the construction work force is provided in Section 1.3.4 and described in more detail in Resource Report 5. Tennessee will conduct environmental and safety training sessions for field construction management and contractor personnel prior to and during the proposed Project abandonment and natural gas system construction activities. Tennessee will engage environmental inspectors ("EIs"), to help ensure that each worksite is reviewed daily to ensure construction complies with the Commission's Plan and Procedures and also will incorporate

other environmental requirements associated with the Project. EI's are discussed further in Section 1.3.6.

1.3.1 ABANDONMENT ACTIVITIES/FACILITIES AND ASSOCIATED ACTIVITIES

Abandonment of the Abandoned Line generally will be in-place, and will require no disturbance. As described in Section 1.2 of this Resource Report, ground disturbance necessary to complete the proposed abandonment of the Abandoned Line are described in the typical site sketches Appendix 1I. Locations by milepost for these activities are included in Appendix 1C, Table 1-C. Where ground disturbance will occur, Tennessee will implement the FERC Plan and Procedures, with one variance, to minimize impacts. Generally, disturbance will be limited to just excavation areas within the proposed workspace; the entire workspace was conservatively assumed to be disturbed during construction activities for the purposes of evaluation.

Work at each site generally will require up to nine workers and one foreman, and will occur over a three- to ten-day period, depending on the extent of the work. At each site, vegetation will be cleared, and topsoil will be stripped from the excavation area and piled separately from subsoil. Excavation will be conducted using heavy machinery that will not be placed over existing buried facilities without matting for support. After modifications have been made, suitable excavated soil will be returned to the excavation. If padding is required, excavated soil may be mechanically screened for padding or padding may be obtained from an offsite source. Topsoil will not be used as padding. The topsoil will be distributed across the graded excavation area where applicable. Where the site is not maintained as an industrial area, cleanup and restoration will be performed in accordance with the Commission's Plan and Procedures, with one variance, and other federal, state, and local agency requirements, as applicable.

Activities specific to each workspace within the existing facility and/or adjacent pipeline right-of-way are grouped as workspace configurations (permanent easement and/or temporary work space) and are grouped into the following categories.

1.3.1.1 FERC-001 GAS DISCONNECT

Work will occur at 14 compressor station headers and three pipeline header locations. Compressor station header disconnects typically have an upstream and downstream location within each facility. Nominal excavation will be required to locate and expose underground tee and riser. Upon system isolation a section of the main line will be cut out, thereby removing the entire tee assembly and replacing with an elbow. Some riser locations may be capped. Once modifications are installed and coating is completed, area will be backfilled and returned to previous maintained condition. Fittings and pipe that are removed will be disposed. The compressor station disconnects are all within the existing fence line for the respective compressor station, and the pipeline header disconnects are all within existing ROW.

1.3.1.2 FERC-002 TAP REMOVAL

Work will occur at 16 locations. Most of the tap valves are buried. Nominal excavation will be required to locate and expose underground tee/valve connection. Upon system isolation a

section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tap assembly. Once modifications are installed and coating is completed, area will be backfilled and returned to previous condition. Existing fittings and pipe will be removed or abandoned in place. All of these tap removals should occur within existing ROW.

1.3.1.3 FERC-003 TAP REMOVAL/RECONNECT

Work will occur at 28 locations. Most of the tap valves are buried. Nominal excavation will be required to locate and expose underground tee/valve connection. Upon system isolation a section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tap valve assembly. New hot tap valve assembly will be installed on adjacent pipeline. Nominal excavation will be required to expose sufficient pipe to establish hot tap valve installation location. Most of these should be on existing ROW, where line ROWs are contiguous. New permanent right-of-way maybe required for new interconnecting piping (shorter distance lateral). Once installation and coating is completed, area will be backfilled and returned to previous condition. Existing fittings and pipe will be removed or abandoned in place.

1.3.1.4 FERC-004 OFF RIGHT OF WAY TAP RECONNECT

Work will occur at 13 locations. Most of the tap valves are buried. Nominal excavation will be required to locate and expose underground tee/valve connection. Upon system isolation a section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tap valve assembly. New hot tap valve assembly will be installed on adjacent pipeline. Nominal excavation will be required to expose sufficient pipe to establish hot tap valve installation location. New permanent right-of-way is required for new interconnecting piping (longer distance lateral). Additional Temporary Work Space may be required accommodating road and/or stream crossings. Once installation and coating is completed, area will be backfilled and returned to previous condition. Existing fittings and pipe will be removed or abandoned in place.

1.3.1.5 FERC-005-I CROSSOVER REMOVAL

Work will occur at 14 locations. Most of the crossovers are below ground installations. Excavation maybe required on existing pipeline and/or adjacent pipeline right-of-way to expose underground tee/valve connection. Upon system isolation a section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tee assembly. Once installation and coating is completed, area will be backfilled and returned to previous condition. Existing fittings and pipe will be removed or abandoned in place. Most of this work is on existing ROW as Tennessee plans to abandon the underground portion of the line in place, unless there is a compelling reason to remove it.

1.3.1.6 FERC-005-II CROSSOVER REMOVAL

Work will occur at three locations. Most of the crossovers contain a combination of above and below ground installation. Excavation maybe required on existing pipeline and/or adjacent pipeline right-of-way to expose underground tee/valve connection. Upon system isolation a section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tee assembly. Existing fittings and pipe will be removed or abandoned in place. Most of

this work is on existing ROW as Tennessee plans to abandon the underground portion of the line in place, unless there is a compelling reason to remove it.

1.3.1.7 FERC-005-III CROSSOVER REMOVAL

Work will occur at 16 locations. Most of the crossovers contain a combination of above and below ground installation. Excavation maybe required on existing pipeline and/or adjacent pipeline right-of-way to expose underground tee/valve connection as well as riser location. Upon system isolation a section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tee assembly. Existing fittings and pipe will be removed or abandoned in place. Most of this work is on existing ROW as Tennessee plans to abandon the underground portion of the line in place, unless there is a compelling reason to remove it.

1.3.1.8 FERC-005-IV CROSSOVER REMOVAL

Work will occur at two locations. Most of the crossovers are below ground installations. Excavation will be required on existing pipeline right-of-way to expose underground tee/valve connection. Upon system isolation a sections of the main line will be cut out and replaced with straight pipe, thereby removing the entire tee assembly. Existing fittings and pipe will be removed or abandoned in place. Most of this work is on existing ROW as Tennessee plans to abandon the underground portion of the line in place, unless there is a compelling reason to remove it.

1.3.1.9 FERC-005-V CROSSOVER REMOVAL

Work will occur at 21 locations. Most of the crossovers contain a combination of above and below ground installation. Nominal excavation maybe required to expose riser connection. Upon system isolation a section of the bypass will be cut out and replaced with straight pipe, thereby removing the entire tee assembly. Existing fittings and pipe will be removed or abandoned in place. Most of this work is on existing ROW as Tennessee plans to abandon the underground portion of the line in place, unless there is a compelling reason to remove it.

1.3.1.10 FERC-005-VI CROSSOVER REMOVAL

Work will occur at nine locations. Most of the crossovers contain a combination of above and below ground installation. Excavation will be required on existing pipeline right-of-way to expose underground tee connection and riser. Upon system isolation a section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tee assembly. Riser modification is typically installation of a weld cap. Existing fittings and pipe will be removed or abandoned in place. Most of this work is on existing ROW as Tennessee plans to abandon the underground portion of the line in place, unless there is a compelling reason to remove it.

1.3.1.11 FERC-006-I CROSSOVER REMOVAL/RECONNECT

Work will occur at five locations. Most of the crossovers are below ground installations. Excavation maybe required on existing pipeline and/or adjacent pipeline right-of-way to expose underground tee/valve connections. Upon system isolation a section of the main line will be cut out and replaced with straight pipe, thereby removing the entire tee assembly. New crossover reconnect piping will be installed from adjacent pipelines. Elbows will be installed at intersection

of existing crossover piping and proposed crossover piping to reconnect adjacent pipelines. Nominal excavation will be required to expose sufficient pipe to establish elbow installation location. Once installation and coating is completed, area will be backfilled and returned to previous condition. Existing fittings and pipe will be removed or abandoned in place. Most of this work is on existing ROW, as Tennessee is disconnecting the abandoned line and reconnecting existing crossover lines joining two other lines.

1.3.1.12 FERC-006-II CROSSOVER REMOVAL/RECONNECT

Work will occur at nine locations. Most of the crossovers contain a combination of above and below ground installation. Excavation will be required on existing pipeline right-of-way to expose crossover piping and riser. New crossover reconnect piping will be installed from adjacent pipelines. Elbows will be installed at intersection of existing crossover piping and proposed crossover piping to reconnect adjacent pipelines. Nominal excavation will be required to expose sufficient pipe to establish elbow installation location. Once installation and coating is completed, area will be backfilled and returned to previous condition. Existing fittings and pipe will be removed or abandoned in place. Most of this work is on existing ROW, as we are disconnecting the abandoned line and reconnecting existing crossover lines joining two other lines.

Appendix 1C, Table 1-C lists all sites where Project activities will take place. Activities associated with abandonment of facilities are summarized in Table 1-2.

Table 1-2 Summary of Abandonment Activities/Facilities[1]

Facility	Number of Sites or Miles of Activity[3]
Louisiana	
Abandoned Line[2]	127.8 miles
FERC-001	2 sites
FERC-002	10 sites
FERC-003	2 sites
FERC-004	0 sites
FERC-005-I	2 sites
FERC-005-II	0 sites
FERC-005-III	1 site
FERC-005-IV	0 sites
FERC-005-V	8 sites
FERC-005-VI	1 site
FERC-006-I	0 sites
FERC-006-II	1 site
Access roads	0.0 mile
Arkansas	

Table 1-2 Summary of Abandonment Activities/Facilities[1]	
Facility	**Number of Sites or Miles of Activity[3]**
Abandoned Line[2]	31.5 miles
FERC-001	0 sites
FERC-002	0 sites
FERC-003	0 sites
FERC-004	0 sites
FERC-005-I	0 sites
FERC-005-II	0 sites
FERC-005-III	0 sites
FERC-005-IV	0 sites
FERC-005-V	2 sites
FERC-005-VI	1 sites
FERC-006-I	0 sites
FERC-006-II	0 sites
Access roads	0.0 miles
Mississippi	
Abandoned Line[2]	172.1 miles
FERC-001	3 sites
FERC-002	1 site
FERC-003	6 sites
FERC-004	5 sites
FERC-005-I	1 site
FERC-005-II	0 sites
FERC-005-III	7 sites
FERC-005-IV	0 sites
FERC-005-V	2 sites
FERC-005-VI	3 sites
FERC-006-I	0 sites
FERC-006-II	4 sites
Access roads	0.0 miles
Tennessee	
Abandoned Line[2]	175.3 miles
FERC-001	3 sites
FERC-002	1 site
FERC-003	11 sites
FERC-004	4 sites
FERC-005-I	1 site

Table 1-2 Summary of Abandonment Activities/Facilities[1]	
Facility	**Number of Sites or Miles of Activity[3]**
FERC-005-II	0 sites
FERC-005-III	6 sites
FERC-005-IV	0 sites
FERC-005-V	3 sites
FERC-005-VI	2 sites
FERC-006-I	0 sites
FERC-006-II	1 site
Access roads	0.0 miles
Kentucky	
Abandoned Line[2]	255.8 miles
FERC-001 (including disconnect at Ohio River crossing)	5 sites
FERC-002	1 sites
FERC-003	7 sites
FERC-004	2 sites
FERC-005-I	3 sites
FERC-005-II	3 sites
FERC-005-III	1 site
FERC-005-IV	2 sites
FERC-005-V	6 sites
FERC-005-VI	1 site
FERC-006-I	3 sites
FERC-006-II	3 sites
Access roads	0.0 miles
Ohio	
Abandoned Line[2]	201.7 miles
FERC-001 (including disconnect at Ohio River crossing)	4 sites
FERC-002	3 sites
FERC-003	1 site
FERC-004	2 sites
FERC-005-I	7 sites
FERC-005-II	0 sites
FERC-005-III	1 site
FERC-005-IV	0 sites
FERC-005-V	0 sites
FERC-005-VI	0 sites
FERC-006-I	2 sites

Table 1-2 Summary of Abandonment Activities/Facilities[1]

Facility	Number of Sites or Miles of Activity[3]
FERC-006-II	0 sites
Access roads	1.2 miles

[1]A breakdown of the acreages by State and individual site is provided in Appendix 1C, Table 1-C. Compressor stations currently in use for the Abandoned Line will be modified for continued use by Tennessee. The majority of the work will occur within the existing ROW.
[2]No disturbance is anticipated for pipeline and appurtenances to be abandoned in place.
[3]Disturbance for abandonment activities may occur within areas also disturbed for modification activities, and are captured within that disturbance in Table 1-3. Please see Table 1-3 and Appendix 1C Table 1-C for total anticipated Tennessee Project disturbance.

1.3.2 CONSTRUCTION OF NEW AND MODIFIED FACILITIES

The following types of activities will be necessary to restore capacity to maintain existing levels of service for current Tennessee customers. Activities specific to each location are listed in Appendix 1C, Table 1-C; a summary of disturbance associated with modification activities is provided in Table 1-3. Typical workspace configurations are provided in Appendix 1I.

Table 1-3 Summary of Replacement Facilities Construction and Operation Activities[1]

Facility	Number Of Sites or Miles of Activity	Disturbance (Acres)[4]	
		Construction[2]	Operation[3]
Ohio			
New Compressor Stations	4	105.3	60.3
Kentucky			
Construction of New Pipeline	7.6 miles	135.7	46.3
Modified Compressor Stations	2	27.7	2.7
Total[4]		268.7	109.3

[1]A breakdown of the acreages by State and individual site is provided in Appendix 1C, Table 1-C. Compressor stations currently in use for the Abandoned Line will be modified for continued use by Tennessee. The majority of the work will occur within the existing ROW.
[2]Includes all areas disturbed for construction of each Project facility.
[3]Includes area within the permanent easement associated with each Project facility.
[4]Disturbance for abandonment activities may occur within areas also disturbed for modification activities, and are captured within disturbance in this table. Please see Appendix 1C Table 1-C for total anticipated Tennessee Project disturbance.

1.3.2.1 NEW PIPELINE

The Replacement Facilities include the 36-inch diameter Kentucky 7.6-mile new build pipeline looping, to be constructed in Carter and Lewis counties, Kentucky. Figures showing typical pipeline construction are included in Appendix 1H. It also includes new, small diameter, off ROW tap lines that are replacements for taps relocated from the Abandoned Line. All proposed Project facilities and activities will occur within the existing permanent ROW, lands Tennessee currently plans to do all work with in the permanent ROW, and the work will be consistent with the existing land use agreements.

1.3.2.1.1 GENERAL CONSTRUCTION SEQUENCE

A figure showing typical pipeline construction is included in Appendix 1H.

Number of Spreads: There will be one construction spread for the Kentucky 7.6-mile new build pipeline and construction will proceed in the following general sequence. Operation time required for construction equipment is discussed in Resource Report 9.

ROW Survey: Before the start of construction on a parcel, land surveys will be finalized, land and easement acquisition will be completed, and the pipeline centerline and construction workspace will be marked. The construction work areas (e.g., typical construction ROW, TWS, and Additional Temporary Workspace ("ATWS") areas) will first be surveyed and staked. Existing utility lines and other sensitive features and resources identified in easement agreements or by federal and state agencies will be located and marked to prevent unintended damage during pipeline construction. Landowners will generally be notified at least five days before the start of construction, unless earlier notice is requested and set forth in the easement agreements.

Tree Felling and Clearing Operations: Initial tree felling operations will include the removal of vegetation within the pipeline ROW, and the TWS and ATWS either by mechanical or hand cutting. The limits of clearing will be identified and flagged in the field prior to felling operations. Activities within wetlands will comply with the Commission's Plan and Procedures, , with one variance as described in at the start of Section 1.3, and are further discussed under Special Construction Procedures, below in Section 1.3.2.1.2. In general, trees and brush will either be cut with rubber-tired and/or tracked equipment, or hand-cut. Unless grading is required for safety reasons, wetland vegetation will be cut off at ground level, leaving existing root systems intact, and the aboveground vegetation removed from the wetlands for chipping or disposal. Stream banks and riparian limits will be cut flush to grade and only stumps in the trench line or those affecting bridging installation will be removed. Stumps will be disposed in accordance with the landowners' agreements. Disposal methods include burying alongside of ROW, windrowing alongside of ROW, placing in piles alongside ROW for wildlife denning habitat, or removing from the ROW to approved disposal locations. Timber will be removed from the ROW to approved locations for the landowner's use or sold for lumber or pulp. Brush and tree limbs will be windrowed along the ROW or chipped. Wood chips will be sold as fuel or other marketable products, spread in approved locations, or hauled offsite for disposal.

ROW and Temporary Construction Workspace Grading: Except as described above, the entire width of the construction ROW, including the TWS and ATWS, will be rough graded as necessary to allow for safe passage of equipment and to prepare a work surface for pipeline installation

activities. Typically, the grading of the ROW will be completed with bulldozers. Backhoes will be used in conjunction with bulldozers in areas where boulders and tree stumps require removal. A travel lane will be maintained to allow for the passage of daily traffic in the event of an emergency.

In agricultural areas, topsoil will be stripped and stockpiled along the ROW. Within wetland areas, the mixing of topsoil with subsoil will be minimized by using topsoil segregation construction methods (except when standing water or saturated soils are present). Excess rock excavated from the trench will be removed from all actively cultivated or rotated agricultural land. The size, density, and distribution of rock left in TWS and ATWS areas will be similar to adjacent areas not disturbed by construction, unless otherwise approved in writing by the landowner.

The cleared width within the ROW, TWS, and ATWS will be kept to the minimum that will allow for spoil storage, equipment operation, staging, assembly of materials, and all other activities required to safely construct the pipeline. Closely following clearing and before grading activities, appropriate erosion and sediment controls will be installed.

Trench Excavation: A trench will be excavated to the proper depth to allow for the burial of the pipe. In general, the trench will be deep enough to provide for approximately three feet of cover over the pipelines. Deeper burial may be required in site-specific areas. Pipe in cultivated agricultural areas will be buried to a depth of 48 inches. The excavated material will be placed next to the trench. Should it become necessary to remove water from the trench, it will be pumped to a stable, vegetated upland area (where practical) and/or filtered through a filter bag or siltation barrier. The trench will be dug by a backhoe or ditching machine.

Stringing: Once the trench is excavated, the pipe is laid out along the trench. Stringing involves initially hauling the pipe by stringing trucks from the pipe storage yards or mills onto the ROW. The pipe will then be offloaded and placed next to the trench using sideboom tractors. The pipe joints will then be lined up end to end to allow for welding into continuous lengths.

Bending: If construction conditions allow, the pipe may be cold bent to fit the contours of the trench, including sags and overbends to cross ditches, streams, rolling topography, and side bends to accommodate a change in direction/point of intersection. If construction conditions do not allow for cold bending, the pipe will be bent prior to delivery to the ROW.

Welding: The pipe joints will be welded together. In some areas where construction space is limited, short sections of pipe will be pre-welded in multiple joint sections and then carried to the limited space area for installation. Each weld will be visually inspected and non-destructively tested by radiography.

Coating Inspection and Repair: The pipeline will be coated to prevent corrosion. The pipe lengths will be coated at a coating mill prior to being delivered to the Project. The ends of each piece will be left uncoated to allow for welding. Once welds have been inspected and accepted, the weld area will be field coated by the coating crew. Because pipeline coatings are electrically insulating, the coating will be inspected using equipment that emits an electric

charge to ensure there are no locations on the pipeline where there is a defect in the coating. Coating repairs will be made as needed.

Lowering-In: After a pipe string has been coated and inspected, the trench will be prepared for the installation of the pipeline. The trench will be cleared of loose rock and debris. If water exists in the trench, the water will be pumped out into a well-vegetated upland area and/or into approved filter bags or trench de-watering devices. In sandy soils, the trench will be shaped to support the pipe. In areas where the trench may contain bedrock, a sand bedding will be placed on the bottom of the trench, and/or padding made of sandbags will be placed at regular intervals along the trench bottom to support the pipe. The lowering-in crew will then place the pipeline in the trench. Lowering-in is typically done using multiple sideboom tractors working in tandem.

Tie-Ins: Once the sections of pipe are lowered-in, the tie-in crew will make the final welds in the trench. Additional excavations as needed, lowering in, lining up, welding, weld nondestructive inspection and coating the final welds will be accomplished by this crew.

Backfilling: Suitable soil material excavated during trenching will be used to backfill the trench. In areas where excavated material is unsuitable for backfilling, additional select fill may be required. If the soil is rocky, the pipe will be padded with relatively rock-free material placed immediately around the pipe. This material may be obtained from commercial borrow areas in the region. Where suitable, the subsoil may be mechanically screened to produce suitable padding material. Padding of the pipe is usually performed with backhoes or specialized padding machines. If padding is obtained from an offsite source, it is normally placed in the trench by front-end loaders. In no case will topsoil be used as padding material. Once the pipe is padded, the trench will then be backfilled with suitable excavated subsoil material. The top of the trench may be slightly crowned to compensate for settling except for paved areas, where standard compaction methods will be employed. The topsoil will then be spread across the graded construction ROW where applicable. The soil will be inspected for compaction, and scarified, as necessary.

Hydrostatic Testing: The pipeline will be pressure tested in accordance with hydrostatic construction standard C1130, which is incompliance with USDOT part 192 requirements, to ensure its integrity for the intended service and operating pressures. The pipeline will be hydrostatically tested with water. The water propels a pig through the pipeline in a manner that fills the pipeline with water. Test pressure will be obtained by adding water to the test section with a high-pressure pump. The water will be sourced and discharged according to applicable permits or authorizations. At the completion of the hydrostatic test, the pressure will be removed from the section and the water will be released from the test section by propelling the pig with air, which forces the water from the pipeline. If necessary, additional "drying" pig runs will be made to remove residual water from the pipeline.

Hydrostatic testing of the Kentucky 7.6-mile new build pipeline will require approximately two million gallons of water. Water sources, volumes, and discharge locations for the water needed for hydrostatic testing of the new pipeline are discussed in Resource Report 2.

1.3.2.1.2 SPECIAL CONSTRUCTION PROCEDURES

Dependent upon site conditions, Tennessee may implement the following special pipeline construction methods in residential, agricultural, and environmentally sensitive areas. Typical construction drawings for each of these specialized construction procedures are included in Appendices I and J, as applicable.

Rugged & Sloped Topography: Areas of rugged or sloped (>30 percent) topography are minimal along the Kentucky 7.6-mile new build pipeline (Table 1-4). Permanent trench breakers, consisting of sandbags, gravel, cement, or cement-filled sacks, will be installed when the trench is backfilled in ditches over and around the pipe in areas of slope with erosion potential. Temporary trench plugs, usually composed of compacted earth or other suitable low-permeable material, will be used to isolate waterbodies and wet areas to minimize channeling of groundwater along the ditch line during construction and operation. If side slopes requiring special construction are encountered, the following techniques will be used. During grading, the upslope side of the pipeline ROW will be cut. The material removed from the cut will be used to fill the downslope edge of the ROW in order to provide a safe and level surface from which to operate the heavy equipment (two-tone construction). Side hills may require ATWS downslope in order to accommodate the fill material. During grade restoration, the spoil will be placed back in the cut and compacted.

Table 1-4 Steep Slopes Crossed by the Kentucky 7.6-mile New Build Pipeline

Facility	Begin Milepost	End Milepost	Distance (miles)
Kentucky			
Lewis County	0.069	0.088	<0.1
Lewis County	0.77	0.78	<0.1
Lewis County	1.05	1.06<0.1	<0.1
Lewis County	1.08	1.10	<0.1
Carter County	N/A	N/A	N/A
Total			0.1

ATWS will be required for construction in these areas, and is shown on maps in Appendix 1G.

In areas of rugged topography, ROW restoration will begin within ten days of final pipeline installation, to minimize potential erosion and sedimentation control problems. Tennessee will attempt to restore workspace locations within rugged terrain to preconstruction grades and contours. Excavated locations will be backfilled with the original substrate material and, if necessary, permanent erosion control devices will be installed following site grading. To facilitate revegetation of the ROW, restored workspace locations will be seeded, fertilized and mulched in accordance with the Commission's Plan and Procedures (Appendix 1J).

Residential and Commercial Areas: Tennessee will make every effort to ensure that construction activities minimize impacts to residences, residential areas, and commercial properties, and that

cleanup is quick and thorough. Detailed information relative to construction within residential areas, including residences within 50 feet of the construction ROW, techniques and mitigation measures to be implemented are discussed within Resource Report 8. Tennessee will use specialized methods, such as stovepipe and/or drag section construction, in order to minimize the impacts of construction in residential and commercial areas. The duration of an open trench will be restricted to the contractor's working hours and to a distance of 100 feet on either side of a nearby residence or commercial property, or as otherwise negotiated with the landowner and set forth in easement agreements.

Temporary construction impacts on residential areas could include inconvenience caused by noise and dust generated by construction equipment, personnel, and trenching of roads or driveways; ground disturbance of lawns; removal of trees, landscaped shrubs, or other vegetative screening between residences; potential damage to existing septic systems or wells; and removal of aboveground structures such as fences, sheds, or trailers from the ROW.

Construction through or near residential areas will be done in a manner to ensure that all construction activities minimize adverse impacts on residences and that cleanup is prompt and thorough. Affected landowners will be notified at least five days before construction commences, unless more advance notice is required pursuant to an easement agreement with a landowner. Access to homes will be maintained, except for the brief periods essential for laying the new pipeline. Currently, no construction is planned at locations where residences and other structures are located within 50 feet of the construction ROW and extra workspaces. Should this be required, Tennessee will implement general measures to minimize construction-related impacts, including:

- Attempt to maintain, where feasible, a minimum distance of 25 feet between any residence and the edge of the construction work area;
- Install a safety fence at the edge of the construction ROW for a distance of 100 feet on either side of the residence;
- Fence the boundary of the construction work area to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area;
- Attempt to leave mature trees and landscaping intact within the construction work area, unless the trees and landscaping interfere with the installation techniques or present unsafe working conditions;
- Ensure piping is welded and installed as quickly as reasonably possible, to minimize the amount of time a neighborhood is affected by construction; and
- Backfill the trench within ten days after the pipe is laid or temporarily place steel plates over the trench; and complete final cleanup, grading, and installation of permanent erosion control devices within ten days after backfilling the trench, weather permitting.

To ensure that the trench is backfilled within ten days after pipeline installation, Tennessee will use a typical pipeline construction sequence in which the pipeline installation crew is followed by a separate backfill crew. Tennessee will require its contractor, by contractual agreement, to backfill trenches in residential areas as soon as practical after the installation of the pipeline. Pipeline construction crews will be in close proximity to each other and will be able to efficiently communicate during the entire construction phase of the Project.

Topsoil in landscaped lawns will be segregated and replaced, or topsoil will be imported. Immediately after backfilling, residential areas will be restored and all construction debris will be removed. Compaction testing will be performed and soil compaction mitigation will be performed in severely compacted areas. Lawns will be raked, topsoil added as necessary, and restored per landowner agreements. Ornamental shrubs will be replaced, when possible.

Private property such as mailboxes, fences, gates, and other structures that have been removed will be restored. Sidewalks, driveways, and roads disturbed by pipeline construction will be restored to original or better condition upon completion of construction activities. Additionally, with landowner approval, Tennessee will test water wells within 200 feet of the construction workspace, both before and after construction. After restoration is complete, a Tennessee representative will contact landowners to ensure that conditions of all agreements have been met and that the landowner has been compensated for damage incurred during construction. In the unlikely event that any private landowner wells are damaged by the construction of the Project, Tennessee would work with the landowner to repair, replace, or remediate the well. Tennessee would provide a temporary water supply to affected homeowners while their well is repaired or replaced in the event that no other potable water source is readily available. If an impact occurs to a livestock well or an irrigation well during the growing season, Tennessee would compensate affected farmer(s) for revenue lost due to reduced livestock/crop yields. Tennessee would not provide a temporary water source for crops. Tennessee may choose to provide a temporary water source to sustain livestock while a new permanent water supply well is constructed.

If the construction ROW crosses a road or driveway, Tennessee will maintain existing access, or provide alternative access so residents have ingress/egress to their homes. If the road is open cut, one lane will remain open during construction, or traffic will be detoured around the work area through the use of adjacent roadways. Traffic safety personnel will be present during construction periods, and signage and safety measures will be developed in compliance with applicable state and local roadway crossing permits. To the maximum extent practicable, Tennessee will schedule work within roadways to avoid commuter traffic and impacts on school bus schedules.

In general, Tennessee will implement practices described in the following sections during construction within residential areas, where necessary, to minimize impact.

Stove-Pipe Construction Method

The stove-pipe construction method is typically used when the pipeline is to be installed in very close proximity to an existing structure and an open trench will have an adverse impact. The technique involves installing one joint of pipe at a time in which the welding, weld inspection,

and coating activities are all performed in the open trench, thereby reducing the width of the construction ROW. At the end of each day, the trench is backfilled and/or covered with steel plates or timber mats, or protected by fencing, as necessary to ensure safety. The length of excavation performed each day will typically not exceed the amount of pipe installed.

Drag-Section Method

The drag-section construction method is another method that reduces the width of the construction ROW and is normally preferred over the stove-pipe method. This technique involves the trenching, installation, and backfill of a prefabricated length of pipe containing several segments all in one day. As in the stove-pipe method, the trench is backfilled and/or covered with steel plates or timber mats or protected by fencing at the end of each day after the pipe is lowered in, as necessary to ensure safety.

Active Croplands

To preserve soil productivity in agricultural lands, up to 12 inches of topsoil will be segregated and stored separately from subsoil during construction. Tennessee will utilize full ROW topsoil segregation as required by landowner agreement, as required by the Natural Resources Conservation Service District, or as appropriate based upon site-specific conditions. Rock shall be removed from the top 12 inches (topsoil layer) or to the existing subsoil horizon during initial clean-up to a level such that the construction ROW is similar to surrounding areas. During the backfilling and restoration phases, topsoil will be replaced, and stones greater than approximately four inches in diameter uncovered during construction will be removed or handled in accordance with individual landowner agreements. Drain tiles damaged during construction will be repaired or replaced, and a crop-monitoring program will be implemented to ensure that crop productivity is restored to pre-construction conditions. Please refer to Resource Report 8 for additional information regarding agricultural land crossed by the Project.

Utility, Road, and Railroad Crossings

Prior to construction, Tennessee will locate all existing underground utilities and make provisions for traffic management in work areas as necessary. Existing utilities will be crossed by installing the new pipe beneath the existing utility with at least one foot of clearance between the new pipe and the existing utility. Road crossings will be completed using standard open cut or conventional boring methods. Most roads along the proposed pipeline are expected to be crossed via conventional bore. Conventional boring entails drilling a hole beneath travel arteries, through which the pipe will pass. Additionally, railroad alignments without rails will be open cut. Resource Report 8 provides additional information regarding the crossing of utilities, roadways, and railroads associated with the Project.

Trenchless Construction Methods: Conventional Bore

Conventional boring consists of creating a shaft/tunnel for a pipe or conduit to be installed, to minimize surface disturbance. This is accomplished by first excavating a bore pit and a receiving pit. The bore pit is excavated to a depth slightly deeper than the depth of the associated trench and is graded such that the bore will follow the proposed angle of the pipe. A boring

machine is then lowered to the bottom of the bore pit to tunnel, using a cutting head mounted on an auger. The auger rotates through a bore tube, both of which are pushed forward as the hole is cut. The pipeline is then installed through the bored hole and welded to the adjacent pipeline. The typical workspace requirements for boring operations consist of staging areas (50 feet by 100 feet) for boring machine setup, cuttings/return settlement and storage pits, pipe storage, entrance and exit pit spoil storage, and construction equipment necessary to support the operation.

Major factors limiting the success of a boring operation include the crossing distance, subsurface soil and geologic conditions, and existing topography. Boring operations typically occur over a crossing distance of 50 to 60 feet. The maximum length a bore could achieve in ideal soil conditions typically does not exceed 400 feet. Subsurface soil and geologic conditions must be conducive to establishing and maintaining a safe bore pit excavation, as well as provide the capabilities for the boring equipment to conduct a successful bore. Loose packed sediment, free of rock material is preferred when conducting boring operations. The topographic conditions at a site may also limit the use of this method, as preferred locations are generally consistent with level or moderately convex terrain, such that the depth of the bore pit does not present concerns relative to constructability or safety constraints.

Rock Removal

Rock encountered during trenching will be removed using one of the techniques detailed below. The technique selected is dependent on relative hardness, fracture susceptibility, expected volume, and location. Techniques include:

- Conventional excavation with a backhoe;
- Ripping with a bulldozer followed by backhoe excavation;
- Hammering with a pointed backhoe attachment or a pneumatic rock hammer, followed by backhoe excavation;
- Blasting followed by backhoe excavation; or
- Blasting surface rock prior to excavation.

No blasting is currently anticipated, based on preliminary analysis of the route. Should blasting be required, all blasting activity will be performed according to strict guidelines designed to control energy release. Proper safeguards will be taken to protect personnel and property in the area. Please refer to Resource Report 6 for details relative to blasting. Mats made of heavy steel mesh or other materials will be used as necessary, to prevent scattering of rock and debris. Tennessee will strictly adhere to all local, state, and federal regulations applicable to controlled-blasting and blast vibration limits with regard to structures and underground utilities while performing these activities. Special care will be taken to monitor and assess blasting within 150 feet of dwellings and private or public water supply wells.

If blasting is required, Tennessee will develop a project-specific Blasting Plan for the Project that establishes procedures and safety measures that Tennessee's contractor will be required to adhere to while implementing blasting activities along the pipeline ROW during the Project. Tennessee's contractor will be required to submit a detailed Blasting Specification Plan to Tennessee that is consistent with the provisions of the Blasting Plan and Kinder Morgan's Standard Construction Specifications and Procedures. The contractor's plan, when approved by Tennessee, will be incorporated into the contractor's scope of work. Tennessee's Blasting Plan is included in Appendix 1K. While some of this rock may be rippable by conventional excavation equipment, some of it may require blasting.

Excess rock is defined as all rock that cannot be returned to the existing rock profile in the trench or graded cuts or is not needed to restore the ROW surface to a condition comparable to that found adjacent to the ROW. Excess rock will be hauled off the ROW and disposed of at an approved landfill or recycling facility unless approved for use as slope stabilization, windrowing, or for some other use on the construction work areas as approved by the landowner or land managing agency.

Wetlands

Wetland delineations were performed in 2013 and 2014 for accessible properties. Construction methods will minimize the extent and time that construction equipment operates in wetland areas. When wetland soils are inundated or saturated to the surface, the pipeline trench will be excavated across the wetland by equipment supported on wooden swamp mats to minimize the disturbance to wetland soils. In wetlands that have firm substrates, and are unsaturated, the top 12 inches of wetland soil over the trenchline will be segregated. ATWS may be needed adjacent to specific wetlands to facilitate the pipeline crossing. The staging areas are in addition to the typical construction ROW and may be used for the assembly and fabrication of the pipeline section that will cross the wetland area. These work areas will be located at least 50 feet away from the wetland edge (except in actively cultivated or rotated agricultural lands and other disturbed areas), topographic and other site specific conditions permitting. If topographic conditions do not permit a 50-foot setback, these areas will be located at least ten feet away from the wetland.

The size of ATWS required at wetland crossings is based on the wetland size, water content of wetland soils (or presence of standing water), and other construction constraints. Under no circumstances will vegetation be cleared between the work areas and the wetland. The work area will be limited to the minimum size necessary to safely construct the wetland crossing. Restricting the work area in this manner will minimize wetland impacts associated with pipeline construction.

Waterbodies

Stream delineations were performed in 2013 and 2014 for accessible properties. Preferably, streams will be crossed using a dry crossing method. The dry crossing method will involve the installation of a flume pipe(s) and/or dam and pump prior to trenching, to divert the stream flow over/around the construction area and allow trenching of the stream crossing in drier conditions isolated from the stream flow. Stream channels that are dry at the time of crossing will be open

cut. Spoil removed during the trenching will be stored away from the water's edge and protected by sediment containment structures. Where these methods are employed, ATWS areas will be required for assembly of the pipe strings and spoil storage areas

To facilitate pipeline construction across waterbodies, ATWS may be needed adjacent to the waterbody to assemble and fabricate the length of pipe necessary to complete the crossing. This work area is in addition to the standard construction ROW and will be located at least 50 feet away from the stream banks in cleared areas (except in actively cultivated or rotated agricultural lands and other disturbed areas). The work area will be limited in size to the minimum area necessary to safely construct the waterbody crossing and accommodate stockpile of excavated material from the trench and the prefabricated pipeline crossing section. The size of ATWS areas can vary based on site-specific conditions.

Clean-up and Restoration

Cleanup and restoration will be performed in accordance with the Commission's Plan and Procedures and other federal, state, and local agency requirements, as applicable. Final cleanup will include offsite waste material management and equipment removal. A revegetation plan will be implemented to the reasonable satisfaction of the individual landowners or in accordance with applicable federal, state, and local regulations. Non-cultivated lands will be reseeded as soon as possible to minimize erosion. If seasonable or weather conditions are not favorable, revegetation will be delayed until favorable conditions exist.

To the extent possible, streambeds will be returned to their preconstruction contours, and stream and riverbanks will be restored to their preconstruction condition and re-vegetated. Periodic aerial and ground inspections will be conducted, and further restoration measures will be implemented if necessary.

1.3.2.2 ABOVEGROUND FACILITIES

1.3.2.2.1 COMPRESSOR STATIONS

Tennessee will install compression at one existing compressor station (Compressor Station 110), and one compressor station proposed as part of the Broad Run Expansion Project (Compressor Station 875) in Kentucky, and four new mid-point compressor stations in Ohio at the locations shown in Figures 1-3 through 1-8. All facilities will be constructed in accordance with industry standards and will comply with applicable USDOT requirements. Construction of the new compressor stations will be in accordance with industry standards and will comply with applicable USDOT requirements.

The compression equipment will typically be shipped to the site by truck after construction commences. The compressors will be offloaded and, when ready for installation, positioned on the foundation, leveled, grouted, and secured. Compressor station utilities supporting the operation of the gas compressor and cooling equipment will be housed in modularized, skid-mounted buildings. These buildings will be supported on piles and are expected to include:

- Mechanical skids for building heating, air compressors, and dryers;
- Master Control Center/Switchgear skid for main power distribution;

- Control skid for compressor station and unit control panels, uninterruptible power supply, telecommunications (possibly including radio communication tower), and a SCADA system;
- Power generator skid for primary and standby generators;
- Storage building for spare parts and equipment; and
- Cathodic protection system.

The new turbine/compressor buildings will include:

- Building protection system, with fire and gas detection;
- Cut-outs for turbine air intake and exhaust;
- Cutouts for suction and discharge piping; and
- Cutouts for lube oil.

Other skid-mounted supporting equipment will include:

- Lube oil cooler;
- Gas cooler;
- Jacket water cooler;
- Exhaust stack;
- Blowdown silencer; and
- Filter separator.

The compressor/turbine units will be designed for remote operation and will be accessible by vehicles using permanent access roads. Before being placed into service, all controls and safety equipment and systems, including emergency shutdown, relief valves, gas and fire detection, engine over speed, and vibration will be checked and tested.

1.3.2.2.1.1 GENERAL CONSTRUCTION

The following activities will occur during construction of compressor stations:

Tree Felling and Clearing Operations: Initial tree felling operations will include the removal of vegetation at each new compressor station ATWS either by mechanical or hand cutting. In general, trees and brush will either be cut with rubber-tired and/or tracked equipment, or hand-cut. The site graded as necessary to create level surfaces for the movement of construction vehicles and to prepare the area for the building foundations. Before commencing tree felling and vegetation removal, the limits of the construction work area will be established in the field by flagging or staking, per the site plan. Topsoil stripping will occur at the compressor station and pump station facilities within the fenced in area. The topsoil will be used onsite for landscaping or other restoration activities. Tree felling and clearing will only be performed on those areas necessary for installation of structures, piping and the access driveway, including sufficient workspaces and perimeter security fencing. Installation of various erosion and sedimentation controls will begin during the initial clearing of each site.

Foundations; Excavation will be performed as necessary to accommodate the reinforced concrete foundation that is required for the new compressor units and buildings. Forms will be set, rebar installed, and the concrete poured 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.

Equipment and Building Installations; Once the concrete foundations have been completed and determined to meet the design requirements, installation of the buildings and machinery for each compressor station will begin. Typically, the steel frames will be erected, followed by the installation of the roofs, interior skin, insulation, and exterior skin. Cutouts for protrusions through the siding (e.g., inlet and exhaust vents) will be flashed to ensure that the buildings will be weather-tight. Various piping and electrical conduit systems will be connected once the machinery is set. Electrical wiring will be installed for power and instrumentation.

Piping Connects; The pipe connections associated with the new compressors, pumps, or meters that are not flanged or screwed will be welded. All welders and welding procedures will be qualified in accordance with 49 CFR Part 192, as administered by the USDOT. All welds in the piping systems will be verified by a non-destructive testing method to ensure compliance with code requirements.

Pressure Testing; Hydrostatic pressure testing will follow USDOT regulations as specified in 49 CFR 192, ASME B31.3, and applicable state and local regulations to ensure Tennessee's ability to operate the new compressor stations at the Maximum Allowable Operating Pressure ("MAOP"). The hydrostatic pressure tests may require temporary pig traps and pipe caps to pressurize pipe segments and test for leaks.

The construction contractor will obtain hydrostatic test water uptake and/or discharge permits as required by state and local agencies. The use of hydrostatic test water will comply with state regulations and existing water rights. Pipe segments are not operational until a successful hydrostatic test is completed without leaks. Only clean unused pipe with no chemicals added during testing qualifies for the hydrostatic pressure test. Once a pipe segment test is complete and the pipe is dry, that segment will be connected to the remainder of the tested pipe. Before pipe and equipment is placed in service, all controls and safety equipment and systems, including emergency shutdown, relief valves, gas and fire detection, engine over speed, and vibration will be checked and tested.

If the hydrostatic test water is not used for other pipe segment tests, the discharge of the water will comply with the National Pollutant Discharge Elimination System ("NPDES") requirements, as applicable. Energy dissipating devices (e.g., hay bale filters, sediment bags) will be used, where necessary, to control erosion and sedimentation.

Cleanup, Restoration and Stabilization; Cleanup and restoration will comply with the Commission's Plan and Procedures and other federal, state, and local agency requirements, as applicable. Final cleanup will include offsite waste material management and equipment removal.

1.3.2.2.1.2 NEW COMPRESSOR STATIONS

Each new compressor station will include one Solar Titan 130 natural gas-fired turbine / centrifugal compressor, site rated at 20,500 hp. Appurtenant facilities at each new compressor station will include a parking area, a compressor station control/auxiliary building, intake and exhaust silencers, turbine lube oil cooler, discharge gas cooler, compressor station blowdown silencers, filter-separators with a liquids tank, and electrical power generation.

A permanent driveway will be constructed to access each new compressor station. Safe and accessible conditions will be maintained at the driveway access point during construction and operation. The access driveway gradient will follow the local topography to the extent practical.

1.3.2.2.1.3 MODIFICATIONS TO COMPRESSOR STATIONS

As part of the Project, Tennessee will add two Solar Mars 100, natural gas fired turbine/centrifugal compressor units, each rated at 16,000 hp each, to existing Compressor Station 110 in Rowan County Kentucky. Tennessee also will add one Solar Taurus 70 natural gas fired turbine/centrifugal compressors, rated at 10,771 hp, to Compressor Station 875, proposed by Tennessee to be constructed as part of the Broad Run Expansion Project in Madison County, Kentucky in a separate, contemporaneous FERC application. The location of the new gas-fired turbine / centrifugal compressors and appurtenant facilities will be constructed within the existing boundary at Compressor Station 110 and within an existing structure to be constructed by Tennessee as part of the Broad Run Expansion Project at Compressor Station 875.

The construction contractors will store equipment within the existing compressor station fence, and will prepare a Spill Prevention and Response Plan prior to construction. The SPRP will identify appropriate spill containment materials and will be onsite at all times when construction equipment is present. Contractor field offices will consist of one or two temporary trailers, restroom facilities (typically Porto-lets) and parking for the workers. State-specific Spill Prevention, Control, and Countermeasures ("SPCC") Plans will be developed prior to construction.

Appurtenant facilities to be installed at the compressor stations include an auxiliary building, intake and exhaust silencers, turbine lube oil cooler, discharge gas cooler, Emergency Shut Down blowdown silencer, filter-separator with a liquids tank and electrical power generation.

1.3.2.2.2 SPECIAL CONSTRUCTION PROCEDURES

1.3.2.2.2.1 FOREIGN PIPELINES

Foreign pipelines may be located in the proximity of some aboveground facilities. Tennessee will design work areas to avoid impacting these pipelines.

1.3.2.2.2.2 ROADS AND HIGHWAYS

Construction of aboveground facilities in the proximity of paved roads and unpaved roads will require construction methods to avoid or minimize traffic interruptions. As necessary for safety, traffic control personnel will be used at the entry/exit points from the work area on to public roads. Construction traffic on existing roads will remain within pre-existing road widths. In some cases, access to aboveground facilities may require the installation of permanent culverts from

the road to the site. The site will be re-vegetated and temporary erosion control features will be replaced with necessary permanent erosion control features.

1.3.2.2.2.3 WETLANDS AND WATERBODIES

Tennessee adopts the Commission's Procedures for construction without deviation, and will follow mitigation requirements with regard to all waterbody and wetland crossings. Specifically, during clearing, sediment barriers such as silt fence or staked straw bales will be installed and maintained adjacent to all wetlands to minimize the potential for sediment runoff.

1.3.2.2.2.4 DUST CONTROL

Tennessee will implement appropriate dust control techniques during construction.

1.3.2.2.2.5 RESIDENTIAL AREAS

Where construction activities are necessary near residential areas, Tennessee will use specialized construction techniques to minimize the impact to the residential area. This will include notifying residents prior to construction, and arranging work hours appropriate to minimize disturbing residents. Dust minimization techniques and construction litter control will be implemented at the site. Mature trees and landscaping will be preserved to the extent possible. During construction, the edge of the work area will be fenced and warning signs posted to prevent unauthorized entry into the work area.

1.3.2.2.2.6 ACTIVE CROPLANDS

Tennessee will consult with landowners concerning active crop lands that may be impacted by aboveground facilities construction. Typically, it is not expected that abutting landowners' cropland will be impacted.

1.3.2.2.2.7 CONTINGENCY FOR UNFORESEEN CONDITIONS

Tennessee recognizes that unforeseen conditions could arise during construction that have not been addressed in the mitigation. Resolution of unforeseen conditions would be achieved by consultation among designated representatives of Tennessee, the construction contractor, environmental contractor, and appropriate regulatory agencies. To facilitate the response to an unforeseen condition, a contact list will be developed listing names, contact numbers, and emails of appropriate individuals.

1.3.2.3 PIPEYARDS AND CONTRACTOR YARDS, TEMPORARY WORK AREAS, AND ACCESS ROADS

Temporary pipeyards, contractor yards, and equipment storage areas will generally be located adjacent to the work site. Equipment will be brought to the Project site via truck and will be off-loaded at temporary equipment storage yards. Additionally, staging and extra temporary use areas will be required for construction workspace at the locations of road crossings, stream crossings, and pipeline tie-ins.

The temporary pipeyards and contractor yards may require clearing, grading, and leveling. Where facilities are adjacent to existing roads, access to the Project site may require culverts

between existing roads and the Project area. The site will be revegetated and temporary erosion control features will be replaced with necessary permanent erosion control features.

The contractor will be required to prepare a SPCC Plan prior to beginning construction. The SPCC Plan will identify appropriate spill containment materials and procedures, which will be required to be maintained onsite at all times when construction equipment is present.

Contractor field offices will be located at the above-ground facilities sites. The field offices will consist of temporary trailers as needed, restroom facilities (typically port-o-lets), and parking for the workers. Parking will be regulated to prevent excessive vehicles at the site, through carpooling or transport vans/buses, if necessary.

1.3.3 ABANDONMENT AND MODIFICATION SCHEDULE

Construction activities for Project facilities are expected to commence in 2016 and last approximately two years, ending approximately June 2017. A detailed schedule has not yet been developed, but anticipated construction timeframes and durations are shown in Table 1-5 below.

Table 1-5 Anticipated Abandonment and Construction of New and Modified Facilities Schedule

Activity	Construction Start	Construction Duration
Abandonment of pipeline[1]	1st quarter 2017	1 to 1-1/2 years
Construction of the Kentucky 7.6-mile new build pipeline	January 2017	6-8 months
Off-ROW Taps and Connecting Pipeline	2nd quarter 2016	1 to 1-1/2 years
Construction of Four New Mid-Point Compressor Stations	4th quarter 2016	7-9 months (each in parallel)
Addition of Compression at Compressor Station 110	4th quarter 2016	7-9 months
Addition of Compression at Compressor Station 875	4th quarter 2016	7-9 months

[1]Includes abandonment/modifications at workspaces. Abandonment may occur in sections, as natural gas capacity is transferred from portions of the Abandoned Line to the remaining Tennessee system.

1.3.4 ABANDONMENT AND CONSTRUCTION WORKFORCE

The construction workforce is anticipated to consist of the various trade contractors (civil, mechanical/piping, and electrical/instrumentation). It is anticipated that approximately nine construction contractors and one foreman will be working at a construction workspace at any one time. Approximately 120 to 130 construction contractors will be working on the Kentucky 7.6-mile new build pipeline, which will be constructed as one spread.

1.3.5 MODIFICATIONS TO THE COMMISSION'S PLAN AND PROCEDURES

Tennessee is requesting a variance from the FERC Procedures, Section VI D.1. regarding routine vegetation mowing or clearing in wetlands. Tennessee has been maintaining the full permanent right-of-way width of their system for many decades. Having discontinuous maintenance

procedures for various parts of a contiguous permanent right-of-way would pose significant operational challenges. Tennessee is requesting FERC approval to continue full right-of-way width maintenance in wetlands over the pipelines that will be newly constructed under this application so that the maintenance procedures are continuous along the length of the permanent right-of-way. With the exception of the requested variance, Tennessee is fully committed to following the Commission's Plan and Procedures.

1.3.6 ENVIRONMENTAL COMPLIANCE, TRAINING, AND INSPECTION

Prior to construction, Tennessee will develop site-specific construction and restoration plans for implementation during construction and restoration. These plans will ensure compliance with the FERC Plan, with the requested variance, as well as all applicable federal, regional, state, and local environmental permits, other mitigation agreements, and landowner agreements.

There will be a Lead EI for the Project. The EIs will monitor construction activities to help ensure compliance with the Commission's Plan and Procedures and site specific construction and restoration plans. It is anticipated there will be an EI on the Kentucky 7.6-mile new build, at each of the compressor station sites, and a sufficient number of EIs engaged to ensure each abandonment work site will be monitored daily.

Before commencement of construction, Tennessee will require the construction contractor personnel to attend an environmental training session to review environmental conditions and requirements pertinent to their role on the Project. Before commencement of construction, Tennessee will require the construction contractor personnel to attend a safety training session to review safety requirements pertinent to their role on the Project.

1.4 OPERATION AND MAINTENANCE

1.4.1 ABANDONMENT ACTIVITIES

Once Tennessee has received abandonment authorization from the Commission for the Abandoned Line and associated aboveground structures, as identified above, and the facilities have been abandoned in place, further activities associated with the Abandoned Line will not be subject to the Commission's NGA jurisdiction.

1.4.2 NEW AND MODIFIED NATURAL GAS FACILITIES

All proposed Replacement Facilities discussed in the Project certificate application and the ER will be operated and maintained in compliance with all applicable federal and state requirements, including the minimum federal safety standards required by USDOT, 49 CFR Part 192. With the exception of one variance, Tennessee will adhere to the operations and maintenance procedures described in the Commission's Plan and Procedures. Tennessee will continue to periodically inspect its pipelines from the air and on the ground to identify and address potential concerns (such as encroachment on the ROWs or erosion) that may affect the safety and operation of its pipeline and compression facilities. Vegetation along the uplands ROW of Tennessee's pipeline system will be cleared to maintain accessibility and to accommodate regular pipeline integrity surveys. Tennessee anticipates hiring five new full time equivalent ("FTE") operations and maintenance positions to perform regular operation and maintenance activities on equipment at the aboveground facility sites along its system. These

activities will include calibration, inspection, and scheduled and routine maintenance. Operational testing will be performed on safety equipment to ensure proper functioning, and in a manner consistent with industry standards. Procedures will include periodic inspection and maintenance of pipelines and appurtenances.

1.4.2.1 PIPELINE FACILITIES

Operational activity of Tennessee's system will be in accordance with USDOT requirements, and will primarily include maintenance of the ROW and inspection, repair, and cleaning of the pipeline. Periodic aerial and ground inspections by pipeline personnel will identify:

- Soil erosion that may expose the pipe;
- Dead vegetation that may indicate a leak in the line;
- Conditions of the vegetation cover and erosion control measures;
- Unauthorized encroachment on the ROW, such as buildings and other substantial structures; and
- Other conditions that could present a safety hazard or require preventive maintenance or repairs.

The pipeline cathodic protection system will be monitored and inspected periodically to ensure proper and adequate corrosion protection. The pipeline will be designed to allow the use of internal inspection technology, and pipe inspection will be accomplished by smart pigging, based on Tennessee's approved pipeline integrity management program. Appropriate responses to conditions observed during internal inspections will be taken as necessary.

Tennessee will maintain vegetation on the permanent ROW in upland areas by mowing, cutting, and trimming, except in areas of actively cultivated cropland. The entire construction ROW will be allowed to revegetate; however, large brush and trees will be periodically removed near the pipeline. In uplands, Tennessee will comply with the Commission's Plan and Procedures that establish the frequency of routine vegetation maintenance. Vegetation maintenance will not normally be required in agricultural or grazing areas. Other than preventing wetland tree growth and clearing a 10-foot inspection corridor vegetation maintenance also normally will not be required in wetlands.

In accordance with USDOT regulations, the pipeline facilities will be clearly marked at line-of-sight intervals and at crossings of roads, railroads, water bodies, 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 excavation in the area of the pipeline by a third party. As part of its effort to prevent third party damage to the pipeline, Tennessee participates in the national "811" call system, as well as in the in the One Call (or "Dig-Safe") systems in all states where it has pipeline and compressor facilities, including the Project facilities.

1.4.2.2 ABOVEGROUND FACILITIES

1.4.2.2.1 COMPRESSOR STATIONS

Tennessee will operate and maintain the proposed new compressor stations and existing compressor stations in accordance with USDOT requirements and standard procedures designed to ensure the integrity and safe operation of the facilities and to maintain firm natural gas transportation service. In addition to onsite operation and maintenance activities, the compressor stations will be linked to a central control system through a SCADA system, which will monitor the pipeline system on a 24-hour basis. In accordance with USDOT requirements, Tennessee will follow routine maintenance and operations procedures to ensure that the new and existing compressor stations operate safely. Standard Tennessee operations at compressor stations include such activities as the calibration, maintenance, and inspection of equipment, as well as the monitoring of pressure, temperature, and vibration data, and traditional landscape maintenance such as mowing and the application of fertilizer. Standard Tennessee operations also include the periodic checking of safety and emergency equipment and cathodic protection systems.

1.5 FUTURE PLANS AND ABANDONMENT

Except as noted in sections 1.5.1 and 1.5.2, Tennessee has no plans for future expansion or abandonment of natural gas facilities remaining in service as part of this Project. The ACRP is designed to efficiently meet the needs of current customers. However, Tennessee is continually evaluating the integrity and compliance of its pipeline system facilities with applicable federal and state regulations, in addition to options to increase its transportation capacity within the United States. If future market demands warrant an expansion of the Tennessee natural gas system or additional abandonment of pipeline, Tennessee would seek the appropriate approvals from the Commission as well as appropriate authorizations and permits from applicable federal and state agencies.

These activities are described generally in Sections 1.8 and 1.9 of this resource report. Where resources are cumulatively impacted by these non-jurisdictional activities, they also are discussed in individual resource reports. This Project is a stand-alone project. Tennessee will proceed with this Project even if no other expansion projects are proposed.

1.5.1 BROAD RUN EXPANSION PROJECT

Tennessee has filed an application (FERC Docket CP15-77-000) seeking the issuance of a certificate of public convenience and necessity from the FERC for the construction and operation of the Broad Run Expansion Project in the states of Kentucky, Tennessee, and West Virginia. The proposed Project involves:

- The construction of two new compressor stations in Kanawha County, West Virginia, to be known as the Tyler Mountain Compressor Station 118A and the Rocky Fork Compressor Station 119A.
- The construction of a new compressor station in Madison County, Kentucky, to be known as the Richmond Compressor Station 875.
- The construction of a new compressor station in Davidson County, Tennessee, to be known as the Pinnacle Compressor Station 563.

- Modifications, including abandonment and replacement of certain compression units, system components, and associated facilities, at two existing compressor stations: (a) the existing Clay City Compressor Station 106 in Powell County, Kentucky, and (b) the Catlettsburg Compressor Station 114 in Boyd County, Kentucky.

Tennessee proposes to begin construction of the Broad Run Expansion Project facilities in March 2016 and to place the facilities in service by November 1, 2017.

1.5.2 BROAD RUN FLEXIBILITY PROJECT

The open season for the Broad Run Flexibility Project offered 590,000 dekatherms per day of firm transportation capacity to be made available through (i) the use of existing capacity reserved pursuant to Tennessee's Tariff and, (ii) the installation of certain appurtenant facilities and modifications to allow for bidirectional flow of gas on Tennessee's system. The construction and installation of appurtenant facilities for the Broad Run Flex Project commenced in July 2014, and the estimated in-service date of Phase I is November 2015 and November 2016 for Phase II. Tennessee will include the auxiliary and/or appurtenant facilities installed pursuant to CFR §§ 2.55(a) and (b) or under blanket certificate authority as part of the Broad Run Flex Project in its Annual Reports for Section 2.55 replacement activity and blanket certificate projects for calendar years 2014, 2015, and 2016, as applicable.

1.5.3 UMTP PROJECT

To support a full disclosure of the environmental impacts related to the ACRP by the Commission, Tennessee is providing currently available information about the post-abandonment, non-jurisdictional activities that Tennessee understands UMTP will perform after the transfer by sale of the Abandoned Line.

1.6 PERMITS AND APPROVALS

Table 1-6 identifies the federal and state environmental permits and approvals required for the abandonment activities and new natural gas facilities.

Table 1-6 Project Required Permits and Approvals

Administrating Agency	Permit/Approval	Submittal Date[1]	Anticipated Receipt Date	Status
Federal				
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under Section 7(b) & 7(c) of the Natural Gas Act	2/13/2015	February 2016	Submitted
	National Environmental Policy Act	2/13/2015	February, 2016	Process initiated with Certificate of Public Convenience and Necessity application submittal
US Army Corps of Engineers ("USACE") Districts: Huntington, WV Pittsburg, PA Louisville, KY Nashville, TN Memphis, TN Vicksburg, MS	Section 10 of the Rivers and Harbors Act[2]	2/13/2015	November 2015	Pre-application meetings held; application submitted
	Section 404 of the Clean Water Act-Individual or Nationwide Permit[2]	2/13/2015	November 2015	Pre-application meetings held; application submitted
	Levee Crossing (the number of levees crossed is not known at this time)	TBD	TBD	Developed prior to construction

Table 1-6 Project Required Permits and Approvals

Administrating Agency	Permit/Approval	Submittal Date[1]	Anticipated Receipt Date	Status
United States Fish and Wildlife Service ("USFWS") Field Offices: Lafayette, LA Jackson, MS Conway, AR Frankfort, KY Cookeville, TN Elkins, WV Columbus, OH State College, PA	Section 7, Endangered Species Act	2/13/2015	November 2015	Pre-application meeting held; Project Coordination Report submitted
Advisory Council on Historic Preservation	National Historic Preservation Act of 1966, 16 USC. § 470 et seq. ("NHPA")[2]	Late February 2015	November 2015	Process initiated with the FERC submittal
Tennessee Valley Authority	Section 26(a) waterbody crossing permit	2/13/2015	October 2015	Review concurrent with TN Aquatic Resource Alteration Permit
Louisiana				
Louisiana Department of Environmental Quality ("DEQ")	Section 401 Water Quality Certification	2/13/2015	November 2015	Concurrent with 404 permitting
	Hydrostatic test water discharge permits	January 2016	March 2016	Developed prior to construction
Louisiana Office of Cultural Development Division of Historic Preservation and Division of Archeology	NHPA Section 106[2]	Late February 2015	November 2015	Pre-application meeting held, process initiated with the FERC submittal
Levee District Crossing Permits (the number of districts crossed and number of levees crossed is not known at this time)	Levee crossing permit(s)	TBD	TBD	Developed prior to construction

Table 1-6 Project Required Permits and Approvals

Administrating Agency	Permit/Approval	Submittal Date[1]	Anticipated Receipt Date	Status
Louisiana County Permits				
No County level environmental permits anticipated at this time				
Arkansas				
Arkansas DEQ	Section 401 Water Quality Certification	2/13/2015	November 2015	Pre-application meeting held; concurrent with 404 permitting
	Hydrostatic Test Water Discharge Permit (ARG6700000)	January 2016	February 2016	Developed prior to construction
	Short Term Activity Authorization	January 2016	February 2016	Developed prior to construction
Arkansas Natural Resource Commission	Water Withdrawal Registration	TBD	TBD	Submit after withdrawal takes place
Arkansas State Historic Preservation Office ("SHPO")	NHPA Section 106[2]	Late February, 2015	November 2015	Process initiated with the FERC submittal
Levee District Crossing Permits (the number of districts crossed and number of levees crossed is not known at this time)	Levee crossing permit(s)	TBD	TBD	Developed prior to construction
Arkansas County Permits				
No County level environmental permits anticipated at this time				
Mississippi				
Mississippi DEQ	Section 401 Water Quality Certification	2/13/2015	November 2015	Concurrent with 404 permitting
	Hydrostatic Test Water Discharge Notice of Intent	January 2016	February 2016	Developed prior to construction
	Hydrostatic Test Water Withdrawal Notice of Intent	January 2016	February 2016	Developed prior to construction

Table 1-6 Project Required Permits and Approvals

Administrating Agency	Permit/Approval	Submittal Date[1]	Anticipated Receipt Date	Status
Mississippi Department of Archives and History	NHPA Section 106[2]	Late February 2015	November 2015	Pre-application meeting held; process initiated with the FERC submittal
Mississippi County Permits				
No County level environmental permits anticipated at this time				
Tennessee				
Tennessee Department of Environment and Conservation	Section 401 Water Quality Certification (Reviewed concurrently with Aquatic Resource Alteration Permit)	2/13/2015	October 2015	Pre-application meeting held; application submitted
	General NPDES Permit for Discharges of Hydrostatic Test Water (TNG670000)	January 2016	March 2016	Developed prior to construction
	Water Withdrawal Registration	TBD	TBD	Submit after withdrawal takes place
Tennessee Wildlife Resources Agency	State Protected Species Consultations	September 2015	November 2015	Pre-application meeting held; application submitted
Tennessee SHPO	NHPA Section 106[2]	Late February 2015	November 2015	Pre-application meeting held; process initiated with the FERC submittal
Tennessee County Permits				
Dickson County	Floodplain	August 2015	December 2015	Developed prior to construction
Cheatham County	Local land disturbing permit, floodplain	August 2015	November 2015	Developed prior to construction
Sumner	Utility land disturbance permit Storm Water Pollution Prevention Plan ("SWPPP")	August 2015	November 2015	Developed prior to construction
Kentucky				
Kentucky DEP	Hydrostatic Test Water Discharge Permit	January 2016	June 2016	Developed prior to construction

Table 1-6 Project Required Permits and Approvals

Administrating Agency	Permit/Approval	Submittal Date[1]	Anticipated Receipt Date	Status
	Authorization for Temporary Water Withdrawal (Kentucky Division of Water)	March 2016	June 2016	Developed prior to construction
	Floodplain Construction Permit/Permit to Construct Across or Along a Stream	June 2015	November 2015	Developed prior to construction
	Section 401 Water Quality Certification (Kentucky Division of Water)	June 2015	November 2015	Concurrent with 404 permitting. Pre-application meeting held; application requires 100 percent survey.
	Division of Air Quality Air permit for Compressor Station 110	February 13 2015	January 2016	Application submitted.
	Air permit for Compressor Station 875	January 30 2015	December 2015	Application submitted.
Kentucky SHPO	NHPA Section 106[2]	Late February 2015	November 2015	Pre-application meeting held; process initiated with the FERC submittal
Kentucky County Permits				
No County level environmental permits anticipated at this time				
Ohio				
Ohio Environmental Protection Agency ("EPA")	Section 401 Water Quality Certification and Isolated Wetlands Permit	June 2015	December 2015	Pre-application meeting held; application requires 100 percent survey.
	Hydrostatic Test Water Discharge General Permit (OHH000001)	January 2016	May 2016	Developed prior to construction
	Minor New Source Review Air Permits Application for Permit to Install/Operate Compressor Stations 202.5, 206.5, 211.5, 216.5 (Air Quality Permits)	February 2015	January, 2016	Application submitted.
Ohio Department of Natural Resources	Letter of Permission for Blasting in Waters of the State (if required)	TBD	TBD	Developed prior to construction, if necessary
	Water Withdrawal Facility Registration (>100,000 gallons per day)	January 2016	April 2016	Developed prior to construction

Table 1-6 Project Required Permits and Approvals

Administrating Agency	Permit/Approval	Submittal Date[1]	Anticipated Receipt Date	Status
	State Protected Species Consultations	September 2015	December 2015	Pre-application meeting held; application is under development
Ohio SHPO	NHPA Section 106[2]	Late February 2015	November 2015	Pre-application meeting held; process initiated with the FERC submittal
Ohio County Permits				
Scioto County	Floodplain Permit	June 2015	October 2015	Developed prior to construction
Athens County	Floodplain Permit	June 2015	October 2015	Developed prior to construction
Tuscarawas County	Floodplain Permit	June 2015	October 2015	Developed prior to construction

TBD = to be determined.
[1]Anticipated filing date with respective agencies.
[2]Application to be provided to FERC in a supplemental filing, anticipated in late February or early March 2015.

1.7 LANDOWNER/AGENCY CONSULTATION

For the ACRP, Tennessee has proposed facilities that seek to balance landowner and community concerns, environmental resource issues, and Project requirements. In accordance with the guidelines adopted by the Commission, Tennessee encourages landowners; federal, state, county, and municipal government officials; environmental groups; and other stakeholders to discuss their concerns with Tennessee as well as the Commission and to provide input on the most appropriate locations for the facilities associated with the Project. Tennessee will continue to consider public concerns and input during Project development.

1.7.1 LANDOWNER NOTIFICATIONS AND PUBLIC CONSULTATION

As specified in 18 CFR § 157.6(d), Tennessee has provided a list of the names and addresses of affected and adjacent landowners (Appendix 1N). Landowners that likely will be affected by Project construction disturbances were contacted September 2013 through November 2014 to request access for civil and environmental surveys (wetland/waterbody delineation, habitat evaluations, and cultural resources). These contacts included landowners affected by abandonment and modification workspaces, the new pipeline route, compressor station sites, access roads, pipeyards and contractor yards, and aboveground facility sites. Surveys have been completed for properties along the Project area where access permission has been granted.

The property where the proposed or abandoned facilities are located will continue to be owned by the current landowners. Landowners will not be given the opportunity to request that the facilities abandoned on their property be removed because the abandoned facilities will be sold and transferred to UMTP and thereafter used for another purpose permitted by the ROW instruments.

In accordance with Section 157.6(d) of the Commission's regulations, 18 CFR § 157.6(d) (2014), Tennessee will provide notification of the Project to affected and abutting landowners; towns; communities; and local, state, and federal government agencies within three business days following the date that the Commission issues a notice of the certificate application for the Project. Tennessee also will notify landowners along the Abandoned Line, where no construction is anticipated. Appendix 1N includes a list of these individuals. In addition, within three business days of the date that the Commission assigns a docket number to the certificate application, an electronic copy of the certificate application will be placed in public libraries or other public locations across the Project area. Tennessee also will have a public notice of the filing of the certificate application published twice in a daily or weekly newspaper of general circulation across the Project area no later than 14 days after the Commission assigns a docket number to the certificate application. Locations that Tennessee has identified are listed in Table 1-7.

Table 1-7 Newspapers and Libraries where Notice of Filing will be Published

State	County	Libraries/Public Disposition	Newspapers
Louisiana	Jackson	Jackson Parish Clerk of Court	Jackson Independent

Table 1-7 Newspapers and Libraries where Notice of Filing will be Published

State	County	Libraries/Public Disposition	Newspapers
Louisiana	Morehouse	Morehouse Clerk of Court	Bastrop Daily Enterprise
Louisiana	Natchitoches	Natchitoches Parish Clerk of Court	The Natchitoches Times
Louisiana	Ouachita	Ouachita Parish Clerk of Court	The Ouachita Citizen
Louisiana	Winn	Winn Parish Clerk of Court	Winn Parish Enterprise
Arkansas	Ashley	Ashley County Circuit Clerk	Ashley County Ledger
Arkansas	Chicot	Chicot County Clerk	Chicot Spectator
Mississippi	Benton	Benton County Clerk Office	Southern Advocate
Mississippi	Bolivar	Bolivar County Courthouse	The Bolivar Commercial and The Cleveland Current
Mississippi	LaFayette	LaFayette County Courthouse	Oxford Eagle
Mississippi	Marshall	Holly Springs City Library and Courthouse	The South Reporter
Mississippi	Panola	Batesville City Library and Courthouse	The Panolian
Mississippi	Quitman	Courthouse	Quitman County Democrat
Mississippi	Sunflower	Indianola City Library	Enterprise-Tocsin
Mississippi	Tallahatchie	Tallahatchie County Library and Chancery Clerk	Sun Sentinel
Mississippi	Tate	Senatobia City Library and Courthouse	The Democrat
Mississippi	Tippah	Ripley City Library and Courthouse	Southern Sentinel
Mississippi	Washington	Greenville City Library and Courthouse	Delta Democrat Times
Tennessee	ALL COUNTIES	Tennessee County Services Association	State Newspaper and Tennessee Press Association
Tennessee	Cheatham	Public Notice Information Number 615-792-4316	Ashland City Times
Tennessee	Chester	Chester County Clerk	Chester County Independent
Tennessee	Davidson	Public Notice Information Number 615-862-6030	The Tennessee Tribune
Tennessee	Decatur	Public Notice Information Number 731-852-2131	The Parson News Leader
Tennessee	Dickson	Public Notice Information Number 615-789-7000	The Dickson Herald
Tennessee	Hardeman	Bolivar City Library	County Journal and Bolivar Bulletin
Tennessee	Hardin	Public Notice Information Number 731-925-8181	The Courier
Tennessee	Henderson	Public Notice Information Number 731-968-0123	The Lexington Progress
Tennessee	Hickman	Public Notice Information Number 931-729-2492	Hickman County Times

Table 1-7 Newspapers and Libraries where Notice of Filing will be Published

State	County	Libraries/Public Disposition	Newspapers
Tennessee	McNairy	Public Notice Information Number 731-645-3472	Independent Appeal
Tennessee	Perry	Public Notice Information Number 913-589-2453	Buffalo River Review
Tennessee	Summer	Public Notice Information Number 615-442-1160	The Gallatin News
Kentucky	Allen	Allen County Clerk Office	Citizen Times
Kentucky	Barren	Barren County Clerk	The Glasglow Daily Times
Kentucky	Bath	Bath County Clerk Office	Bath County Outlook
Kentucky	Boyle	Boyle County Clerk Office	The Advocate Messenger
Kentucky	Carter	Carter County Treasurer	The Grayson Journal
Kentucky	Clark	Clark County Clerk	The Winchester
Kentucky	Green	Green County Courthouse	Greensburg Record Herald
Kentucky	Greenup	Greenup County Courthouse	The Greenup News
Kentucky	Hart	Hart County Clerk	Hart County Herald
Kentucky	Lebanon	Lebanon County Clerk	The Lebanon Enterprise
Kentucky	Lewis	Lewis County Judge Executive Office	Lewis County Herald
Kentucky	Madison	Madison County Judge's Office	Richmond Register
Kentucky	Marion	Marion County Clerk	The Lebanon Enterprise
Kentucky	Montgomery	Montgomery County Clerk and Montgomery County Treasury	Mt. Sterling Advocate
Kentucky	Powell	County Clerk Office	Clay City Times
Kentucky	Rowan	Rowan County Clerk of Courts	The Morehead News
Kentucky	Simpson	Simpson County Justice Center Attn: Circuit Clerk	Franklin Favorite
Kentucky	Taylor	County Clerk Office	Central Kentucky News Journal
Ohio	Athens	Alden Library	Athens Messenger
Ohio	Carroll	Carroll County District Library	Free Press Standard
Ohio	Columbiana	Columbian County Courthouse	The Morning Journal
Ohio	Guernsey	Guernsey County Courthouse Clerk of Courts	The Daily Jeffersonian
Ohio	Harrison	Harrison County Courthouse	Harrison News Herald
Ohio	Jackson	Jackson County Commissioner's Office	The Jackson County Times Journal and The Telegram
Ohio	Mahoning	Courthouse	The Vindicator
Ohio	Meigs	County Clerk Office	Daily Sentinel
Ohio	Morgan	Morgan County Library	Morgan County Herald
Ohio	Muskingum	Muskingum County Library System	Zanesville Times Recorder
Ohio	Scioto	County Clerk Office	Portsmouth Times
Ohio	Tuscarawas	Court House	Times Reporter

Table 1-7 Newspapers and Libraries where Notice of Filing will be Published			
State	**County**	**Libraries/Public Disposition**	**Newspapers**
Ohio	Vinton	Herbert Wescoat Memorial Library	Vinton County Courier

In addition to the formal notification, landowners on whose land there is anticipated land disturbance are being contacted via telephone and/or in person. For disturbance outside the current ROW, Tennessee also has contacted affected landowners to obtain their permission for cultural and environmental surveys of their properties, as applicable. Additionally, Tennessee has established a toll-free phone number for landowners and other stakeholders to call to obtain information about the Project. Ongoing landowner contacts will include communication through discussions with those whose interests may be affected by the Project.

Tennessee believes that public involvement provides the opportunity for valuable input throughout the Project development. To that end, Tennessee is committed to communicating with landowners and other stakeholders and will continue to refine Project plans in response to input received from the general public, agencies (including the Commission), and other stakeholders.

1.7.2 AGENCY CONSULTATION

In 2013, Tennessee began conducting extensive planning and consultations with federal, state and local regulatory agencies, resource agencies, and other agencies with a stake in the Project in addition to public outreach efforts with landowners and the affected communities. A summary of outreach efforts is provided in Table 1-8. Consultations have been initiated with federal and state agencies that include: US Fish and Wildlife Service, four National Forests, USACE, SHPO for each of the six Project states, and other state and/or federal wildlife management and environmental agencies. Tennessee will also engage with stakeholders that include federal, state, and local elected officials, local planning organizations, the community at large, and other interested stakeholders in a later phase of the Project. A summary of current agency outreach efforts is provided in Table 1-8.

The consultation process is intended to solicit input and guidance from applicable agencies and other applicable entities to maintain Project compliance with regulatory policies. Correspondence includes briefings, meetings, letter requests for resource information, telephone discussions and emails. Copies of initial and subsequent correspondence with each agency, including agency contact outcomes regarding threatened or endangered species and sensitive habitats; conservation easements; planned residential and other developments; and cultural resources are provided in Appendix 1O. A table summarizing contact information for correspondence is also included in Appendix 1O. Consultations with agencies and public officials will continue throughout the Project review and permitting period. Updated copies of agency correspondence will be included in a subsequent filing of Resource Report 1.

Table 1-8 Public and Agency Outreach

Meeting Location/Agency/Public Outreach	Meeting Date	Applicable Project Components
Federal		
USACE Huntington	October 31, 2013	**Kentucky**: Crossover tap at KY0050, crossover tap and MLV 111-3A, crossover tap at KY0010; **Ohio**: All facilities
USACE Louisville	October 29, 2013	**Kentucky:** MLV 104-1, Compressor Station 875, MLV 103-1, Tap 103 1XA4A, MLV 102-1A, MLV 102-1, Tap 101H 101.1, MLV 101-1, Tap 100B 101.1A, Tap 100B 101.1, MLV 100-1, Tap 99B 101.1, Tap 99A 101.1, MLV 98-1, Tap 97A 101.1, MLV 97-1, Tap 96A 101.1, Compressor Station 96 Disconnect 1, Compressor Station 96 Disconnect 2, Tap 95A 101.1, MLV 95-1 DH/SH, MLV 94-1, MLV 93-1, Tap 92A 101.1, MLV 92-1, MLV 90-1, Tap 89A 101.1, MLV 89-1, MLV 88-1
USACE Memphis	January 9, 2014	**Mississipp**i: MLV 70-1, Tap 69B 101.1, Tap 69D 101.1, MLV 69-1, Snow Lake
USACE Nashville	January 8, 2014	**Tennessee:** all facilities
USACE Vicksburg	November 19, 2013	**Louisiana**: all facilities **Arkansas**: all facilities **Mississippi**: MLV 64-1, Tap 63F-101.1, Compressor Station 63 Disconnect 1, Compressor Station 63 Disconnect 2, MLV 62-1, Tap 61B 101.1, Tap 61A 101.1, MLV 61-1, MLV 60-1, Tap 59A 101.1, MLV 59-1, Tap 58A 101.1, MLV 58-1, Tap 57A 101.1, MLV 57-1, Tap 56A 101.1, MLV 56-1, MLV 55-1, Tap 54C-101.1, Compressor Station 54 Disconnect 1, Compressor Station 54 Disconnect 2, River Header Tap
United States Forest Service ("USFS") - Kisatchie National Forest	November 19, 2013	**Louisiana:** Tap 42B-101.1, Tap 42A-101.1, MLV 42-1
USFS - Wayne National Forest	October 30, 2013	**Ohio**: Tap 201B 101.3, MLV 201-3
USFWS - Holly Springs National Forest	January 13, 2014	**Mississippi**: MLV 70-1, MLV 69-1, Snow Lake, MLV 68-1
USFWS Arkansas (Conway)	January 9, 2014	**Arkansas**: all facilities
USFWS Kentucky	October 29, 2013	**Kentucky**: all facilities
USFWS Louisiana	January 15, 2014	**Louisiana**: all facilities
USFWS Mississippi (Starkville)	November20, 2013	Governor's office, USFWS, OF&G **Mississippi**: all facilities
USFWS Ohio Columbus	October 30, 2013	**Ohio**: all facilities
USFWS Tennessee	January 7, 2014	**Tennessee**: all facilities
State		
Louisiana		

Table 1-8 Public and Agency Outreach		
Meeting Location/Agency/Public Outreach	**Meeting Date**	**Applicable Project Components**
Louisiana Dept of Wildlife and Fisheries	January 15, 2014	**Louisiana**: all facilities
Arkansas		
none	na	na
Mississippi		
Mississippi Dept of Wildlife, Fisheries and Parks	January 14, 2014	**Mississippi**: all facilities
Tennessee		
Tennessee Dept of Environment & Conservation	April 8, 2014	**Tennessee**: all facilities
Tennessee Wildlife Resources Agency	April 8, 2014	**Tennessee**: all facilities
Tennessee Dept of Environment & Conservation Division of Natural Areas	May 13, 2014	**Tennessee**: all facilities
Mississippi		
Mississippi Dept of Wildlife, Fisheries and Parks	January 14, 2014	**Mississippi**: all facilities
Kentucky		
Kentucky Department of Fish and Wildlife	April 9, 2014	**Kentucky**: all facilities
January 7, 2014		**Kentucky**: all facilities
KY Department of Environmental Protection	November 19, 2014	**Kentucky**: all facilities
KY Department of Environmental Protection	September 30, 2015	**Kentucky**: compressor stations 110 and 875
Ohio		
Ohio Dept of Natural Resources	April 10, 2014	**Ohio**: all facilities
Ohio EPA	April 10, 2014	**Ohio**: all facilities
Ohio EPA, Division of Air Pollution Control	November 13, 2014	**Ohio**: compressor stations 202.5,
Ohio SHPO	May 28, 2014	**Ohio**: all facilities

1.8 NON-JURISDICTIONAL FACILITIES

If the Commission approves of the Project, Tennessee plans to complete the necessary work to disconnect and then sell and transfer the Abandoned Line and associated facilities to UMTP. It is Tennessee's understanding that UMTP intends to operate the Abandoned Line as a part of the Utica Marcellus Texas Pipeline Project ("UMTP Project"), which will involve (1) converting the 964

miles of abandoned 24- and 26-inch diameter gas pipeline to NGL service, (2) constructing approximately 210 miles of new 20- to 24-inch diameter pipeline and facilities, and (3) constructing approximately 160 miles of feeder lines and laterals to collect and carry NGLs from Columbiana County, Ohio, to Mont Belvieu, Texas. The UMTP Project will have an initial design capacity of 150,000 barrels per day ("bpd") of NGL and could be expanded to 450,000 bpd with the addition of pump stations. Because the UMTP Project will not perform natural gas transportation service, it will not be subject to the Commission's NGA jurisdiction. However, to support a full disclosure of the environmental impacts related to the Project and to allow for fully informed decision-making by the Commission, Tennessee is providing currently available information about the post-abandonment, non-jurisdictional activities that Tennessee understands UMTP will perform after the transfer by sale. Details of the UMTP Project and anticipated environmental impacts are included in Appendix 1M of this document; additional information including maps and permit tables, is included as Attachments to Appendix 1M.

1.8.1 FOUR FACTOR TEST

Non-jurisdictional facilities are not subject to the Commission's environmental review procedures unless they meet certain criteria. When making this determination, the Commission requires an applicant to address the four factors set out in 18 CFR § 380.12(c)(2)(ii) to determine if an environmental review of Project–related, non-jurisdictional facilities is necessary. These four factors are:

1. Whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project).

   The regulated activities for the ACRP (i.e. the abandonment of certain pipeline facilities and the replacement activities) are solely related to the need to maintain service to existing customers.

2. Whether there are aspects of the non-jurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity.

   The non-jurisdictional facilities planned by UMTP have no effect on the location of the ACRP activities. ACRP is proposing to abandon existing natural gas facilities in place. The locations of replacement facilities have been determined by the requirements of Tennessee's existing natural gas system and its customers.

3. The extent to which the entire project would be within the Commission's jurisdiction.

   Very little of the combined activities of Tennessee and UMTP will be within the Commission's jurisdiction. The bulk of the project is composed of non-jurisdictional facilities and/or activities. For example, by acreage, activities associated with the ACRP are anticipated to disturb 462 acres and activities associated the UMTP project are anticipated to disturb 4,733 acres.

4. The extent of cumulative Federal control and responsibility.

   Federal control and responsibility for the ACRP is shared by both the FERC and the USACE. However, the scope of responsibility for each agency is relatively limited. FERC is responsible for authorizing the abandonment and a limited amount of new construction, and the USACE is only responsible for activities that affect waters and wetlands of the US. While the UMTP crosses USACE responsibility where the UMTP Project affects waters and wetlands the UMTP Project also crosses federal jurisdictions as outlined in Appendix 1M, and federal control and responsibility for the UMTP Project is not yet determined.

Based on the above discussion, environmental review of the non-jurisdictional facilities by the Commission is not required under the Commission's NGA authority. However, Tennessee anticipates that the Commission will want to provide the public, governmental officials, and other agencies with enough information on the UMTP Project as a whole to make a fully informed decision regarding potential environmental effects resulting from the non-jurisdictional activities. Therefore, Tennessee is including a discussion of UMTP's activities and the anticipated environmental impacts as Appendix 1M.

1.8.2 PERMITS AND APPROVALS

The federal and state environmental permits and approvals required for the non-jurisdictional UMTP Project will be similar to the permits required for the ACRP. No Commission certificate or approval is required for the conversion to NGL use of the Abandoned Line or for other NGL activities following the Commission's approval of the abandonment and the disconnection and other work that is part of the ACRP for which authority is requested by Tennessee. The type and status of environmental permits and approvals required for the UMTP Project are included as Attachment M-2 to Appendix 1M for reference.

1.9 CUMULATIVE EFFECTS

To support a fully informed decision by the Commission, Tennessee assessed potential cumulative impacts of the Project. Federal regulations (40 CFR 1500-1508) define cumulative impacts as:

> *…the impact on the environment which results from the incremental impact of the action when added to other past and present actions and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time*.

40 C.F.R. § 1508.7 defines reasonably foreseeable future actions ("RFFAs") as those projects within the geographic scope and timeframe of the Project that are not considered speculative. Projects were not considered speculative if there were existing proposals, a commitment of resources or funding, or those for which the permitting process had begun. The geographic scope of the RFFAs that may generate cumulative impacts varies depending on the resource under consideration and is defined by the Cumulative Impact Assessment Area ("CIAA") described under each resource. Potential cumulative impacts of the Project and other past, present, and RFFAs are assessed at the resource level.

The following factors identified by the D.C. Circuit in Grand Canyon Trust v. Federal Aviation Administration, 290 F.3d 339, 345 (D.C. Circuit 2002), were applied to this analysis:

1. The area in which the effects of the proposed project will be felt;

2. The impacts that are expected in that area from the proposed project;

3. Other actions – past, present, and RFFAs – that have had or are expected to have impacts in the same area;

4. The impacts or expected impacts from these other actions; and

5. The overall impact that can be expected if the individual impacts are allowed to accumulate.

The assessment of cumulative impacts in this ER assumes the successful implementation of the environmental protection and mitigation measures described in Appendix 1J (FERC Plan and Procedures) to this Resource Report 1, as well as compliance with applicable standard practices and applicable federal, state, and local regulations and permit requirements. The analysis includes both potential negative and positive impacts.

The assessment area for cumulative impacts includes the area directly impacted by the NGA Section 7(c) and 7(b) Project actions and the anticipated area of effect those actions may have for each resource. Therefore, the study area varies for each resource, based on the potential for impacts to extend beyond the area of disturbance. For example, impacts to air quality would have the potential to extend beyond the Project boundaries, but impacts to soil resources would likely not extend beyond the construction boundaries. The majority of the environmental impacts associated with the abandonment activities will be limited to Tennessee's existing maintained ROW or existing facility sites. Additionally, the majority of the impacts to land and environmental resources would be temporary in nature. The new pipeline segment and new and modified compressor stations would have environmental impacts affecting a larger geographic extent. The cumulative impacts discussion in each resource report identifies the study area and the projects included as part of each cumulative analysis.

Cumulative impacts associated with the Project would result from the combined effect of construction and operation of the Project facilities with impacts from other planned developments occurring in the CIAA for each resource in the same timeframe of the Project. To evaluate potential cumulative impacts, Tennessee assessed past, present, and RFFAs near the Project facilities within the resource-specific CIAAs.

For an action to be included in the cumulative impact analysis, it must:

- Impact a resource potentially affected by the Project;

- Cause this impact within all, or part of, the proposed Project impact area; and

- Cause this impact within all, or part of, the time span for the potential impact from the proposed Project.

The definition of each CIAA is different for each resource and is defined in Table 1-9.

Table 1-9 Resource-Specific Cumulative Impact Assessment Areas

Resource Report	Cumulative Impact Assessment Area
RR2 – Water Use and Quality	Hydrologic Unit Code (12) boundaries that are crossed by Project ROW and activities.
RR3 – Wildlife, and Vegetation	Project construction ROW and activities plus a five-mile buffer.
RR3 – Fish	Hydrologic Unit Code (12) boundaries that are crossed by Project ROW and activities.
RR4 – Cultural Resources	APEs plus a one mile buffer.
RR5 – Socioeconomics	All counties and parishes crossed by the Project ROW and activities.
RR6 – Geological Resources	Project construction ROW and activities plus a 0.25 mile buffer.
RR7 – Soils	Project construction ROW and activities plus a 0.5 mile buffer.
RR8 – Land use, Recreation, and Aesthetics	1 mile buffer area surrounding Project ROW and activities (causing change to land use or recreation resources) plus the extent of any USFS, State Park, local park, trail, etc. crossed by the ROW.
RR9 – Air Quality	50 km surrounding Project components causing air emissions.
RR9 - Noise	Noise buffer area surrounding Project components that generate longer duration noise impacts (e.g. more than 15 days). Buffer based on a specific decibel increase which would generally cause impacts to sensitive receptors (where potential for cumulative impacts is anticipated based on screening process).
RR11 – Reliability and Safety	Project construction ROW and activities plus a 0.5 mile buffer.
RR12 – PCB Contamination	Project construction ROW.

For a preliminary determination of potential projects to include in the assessment, the maximum extent of the resource-specific CIAAs was defined as the combined CIAA. Past, present, and RFFA projects within the combined CIAA were identified through correspondence with federal, state, and local agencies; state and local officials; and review of publically available information. The review included projects such as existing and planned developments, state and federal transportation improvement projects, and mining or energy transportation and development projects. The review considered potential projects in relation to the project within the combined CIAA.

As described above in Section 1.8, the environmental review of the UMTP Project facilities by the Commission is not required under the Commission's NGA authority. However, for the purposes of the cumulative impact assessment, it is considered a reasonably foreseeable future action. The UMTP Project and its anticipated environmental impacts are fully discussed in Appendix 1M of this document.

Maintenance activities on the Tennessee system will continue to occur throughout the life of the facilities. These activities will be scheduled as needed to ensure safe and efficient operation of the pipeline and appurtenant facilities, and Tennessee will continue to provide notifications of such work in accordance with FERC requirements. Activities are likely to include any or all of the

following: investigation and potential remediation of pipeline anomalies; repairs or upgrades to compressor stations and appurtenances; ROW maintenance; and reestablishing depth of cover. Generally, these maintenance activities will occur within existing site boundaries or within the permanent pipeline ROW; however, disturbance on adjacent lands could be necessary in cases where buried facilities need to be exposed. FERC will have continued jurisdiction over these maintenance activities, and therefore, disturbance and reclamation will comply with FERC Plan and Procedures, with one requested variance. In addition, all local and state permitting requirements will continue to be met. Specific locations where ground-disturbing activities that could contribute cumulatively to environmental impacts are not determined since they could occur anywhere along the operating Tennessee system. These activities are discussed qualitatively for the purposes of cumulative analysis within this document.

A brief description of each past, present, and RFFA considered in the assessment of cumulative impacts is presented in Table 1-10, along with information on their location and distance relative to the Project. All these projects are assumed occur in a similar timeframe as the construction or operation of the ACRP. Discussion of cumulative impacts relative to each resource type is discussed in the following Resource Reports.

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
1	Union Pacific Railroad - Chopin Siding Construction	Union Pacific Railroad	Construction	Natchitoches	LA	Section 26, T6N-R5W, latitude 31.492996, longitude -92.849061	http://www.mvk.usace.army.mil/Portals/58/docs/regulatory/publicnotices/TVG-MVK-2014-714.pdf	The proposed project would involve the construction of an approximately 2.14-mile long siding track, adjacent to the existing mainline track, and associated ancillary features. The proposed project would include: (1) replacement of track culverts at five locations and extension of track culverts at two locations, (2) installation of one non-track culvert, (3) construction of two access roads, (4) replacement of one private road crossing, (5) relocation of fence to accommodate proposed right-of-way (ROW) acquisition, and (6) ancillary features such as signal pads and signal houses. Approximately 9.32 acres of additional ROW and 1.36 acres of temporary construction easements would be acquired to complete the proposed project. All work would be performed within the UPRR ROW and temporary construction easements.	26.0
2	Standard Enterprises Residential Development	Standard Enterprises	residential development	Ouachita	LA	Section 9, T17N-R4E, latitude 32.4751 N, longitude -92.0706W	http://www.mvk.usace.army.mil/Portals/58/docs/regulatory/publicnotices/CPM-MVK-2014-92.pdf	The proposed Pleasant Trinity Estates (PT) would be constructed on a 16-acre parcel of land. The development would be comprised of approximately 50 single-family residential house lots, associated roads/streets, and utilities as a planned residential development. All 50 homes, infrastructure, and drainage will be built at the same time. The road would consist of curb and gutter with asphalt driving surface and underground drainage. The utilities, primarily electric, would be aerial service to each home. The development would have green space and park areas for use by the residents. The project would consist of a minimum lot size of 13,600 square feet (0.08 acre).	8.5
3	Cypress Groves Homes of Lake Village	CGH of Lake Village AR 2011, LP	Housing Development	Chicot	AR	Southeast corner of US Hwy 65 and Connerly	http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/npdes_constructionstormwater_permit_tracking.aspx	Permit ARR153986 Expires 10/31/16. SWPPP submitted and complete	8.4
4	Lake Chicot Pumping Plant	USACE, Vicksburg District	Pumping plant for flood prevention	Chicot	AR	Tumey Road, Northwest of USACE pumping plant, Lake Village, AR	http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/npdes_constructionstormwater_permit_tracking.aspx	Permit ARR154259 Expires 10/31/2016.	5.1
5	Job # 020509, Hwy 165 Str & Apprs (Montrose) (S)	AHTD Construction Division	Road Construction	Ashley	AR	west side of the Hwy 82 bridge over Hwy 165 and UPRR tracks in Montrose	http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/npdes_constructionstormwater_permit_tracking.aspx	Permit ARR154168 Expires 10/31/2016. SWPPP Submitted and Complete	13.3
6	West Ashley County Water Association	Water Line White Station Extension	water line	Ashley	AR	Linear project beginning at intersection of Ashley Rd 5W and Ashley 3 Crossett	http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/npdes_constructionstormwater_permit_tracking.aspx	Permit ARR154297 Expires 10/31/2016. SWPPP Submitted and Complete	18.4
7	Crossett I Industrial Park	Peck Construction	Industrial Park	Ashley	AR		http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/npdes_constructionstormwater_permit_tracking.aspx	Permit ARR154611 and ARR154587. No additional information. No NOI submitted.	21.8

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
8	Natural Gas Grain-Dryer Construction	Gavilon Grain LLC	Grain Dryer	Bolivar	MS	445 Port Terminal Road	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Construct/operate a 46.138 MMBTU/hr Natural Gas Grain Dryer.	23.9
9	Callicut Farms - Mixed-Use Development	Callicut Farms	Mixed Use Development	Lafayette	MS	2420 South Lamar Boulevard Oxford, MS 38655 (Lat 34/20/24.3, long -89/31/13.6)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Construction of mixed use development for residential, retail and office use.	17.0
10	FNC, Inc. Office Construction	FNC, Inc.	Office Construction	Lafayette	MS	Belk Drive and MS Highway 7, Oxford, MS 38655 (Lat 34/20/21, Long -89/30/50)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Clearing, grubbing, and other dirt work and the construction of a new 3-story office building with associated road, 370 space parking, and sidewalk and a wet detention pond.	17.2
11	Lafayette County Board of Supervisors, LC-14(1) County Road 406 Extension	Lafayette County Board of Supervisors	Road improvements	Lafayette	MS	County Road 406 Oxford, MS 38655 (Lat 34/20/58, Long -89/29/43)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Extension of CR 406 to a 3-lane Curb & Gutter. Open-Ditch roadway.	17.5
12	North Mississippi Recycling Solutions - Rubbish Site	North Mississippi Recycling Solutions	Rubbish Site	Lafayette	MS	County Road 3067 Oxford, MS 38655 (Lat 34/19/08, Long -89/32/14)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Construction of facilities and disposal for Class 1 rubbish landfill.	17.8
13	Welch Farms - Earth Work Activity	Welch Farms	Construction	Lafayette	MS	Lafayette County Road 251 Oxford, MS 38655 (Lat 34/18/27.5, Long -89/15/49.7)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Construction - Earthwork.	27.7
14	City of Byhalia CDBG Project - Road Improvements	City of Byhalia	Road improvements	Marshall	MS	East Stonewall Road, Byhalia, MS (Lat 34/51/36, Long -89/40/16)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Extend East Stonewall Rd to a 2-lane open ditch roadway to intersect with the intersection of MS Hwy 178.	18.0
15	City of Holly Springs Woodward Avenue Road Improvements	City of Holly Springs	Construction	Marshall	MS	Sunset Acres Road and Woodward Avenue Holly Springs, MS 38635 (Lat 34/47/52, Long -89/29/16)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Road widening, and overlay, including new storm drainage pipes and inlets, and curb and gutter.	7.2
16	Porter Industrial Park	Joel Porter Companies	Industrial Park	Marshall	MS	Highway 302 Mount Pleasant, MS 38649 (Lat 34/58/4.57, Long -89/36/0.25)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Construct/develop an industrial park.	20.9
17	Bridge Replacement - MDOT, Panola	MDOT	Bridge Replacement	Marshall	MS	State Route 315 Pleasant Grove, MS 38666 (Lat 34/27/09, Long -90/08/48)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Replace bridge.	11.6
18	USACE Lake Jackson Palmetto Levee Enlargement	USACE, Vicksburg District	Levee Enlargement	Washington	MS	Levee Road Palmetto, MS 38801 (Lat 33/03/57, Long -91/07/15)	http://opc.deq.state.ms.us/report_epd_tasks.aspx	Clearing and grubbing, semicompacted levee embankment, ramp levee surfacing, compacted berm embankment, existing turf maintenance, new turf establishment, silt fencing, etc.	13.5
19	Coldwater Creek Mitigation Bank Construction	Envirohunt, LLC	Creek bank restoration	Marshall	MS	The proposed site is located in sections 8, 16, and 17, Township 2 South and Range 4 West, Marshall County, Mississippi	http://www.mvk.usace.army.mil/Portals/58/docs/regulatory/publicnotices/RVH-MVK-2013-746.pdf	This wetland and stream mitigation bank is being proposed by the bank Sponsor as a means to meet the requirements for compensatory mitigation for future and as yet unknown wetland losses. The bank sponsor proposes to develop a 274-acre wetland and stream mitigation bank by restoring 21 acres of bottomland hardwood forest, enhancing 94 acres of bottomland hardwood wetlands, preserving 113 acres of existing bottomland hardwood wetlands, enhancing 29 acres of stream buffer, and preserving 14 acres of stream buffer.	17.9
20	Speedway LLC Gasoline Dispensing Facility	Speedway LLC, d.b.a. Speedway #7110	Gasoline dispensing facility	Robertson	TN	505 Highway 76, White House, TN 37188	http://www.tennessee.gov/environment/permits/index.shtml	Air contaminant permit for construction of a Gasoline Dispensing Facility located at 505 Highway 76, White House, TN 37188. This proposed operation would consist of four (4) gasoline storage tanks and associated gasoline dispensing equipment. Stage I gasoline vapor recovery would be used for gasoline emission control. There would be physical construction. Regulated air contaminants would be emitted by this source.	4.8

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
21	Surface Coating Operation - Madison Mill, Inc.	Madison Mill, Inc.	Construction	Cheatham	TN	15 Blue Grass Drive, Ashland City, TN 37015	http://www.tennessee.gov/environment/permits/index.shtml	This proposed operation would consist of five (5) surface coating machines and associated equipment used to apply paint on wooden dowels. Because of the amount and type of emissions, the use of pollution control equipment is not proposed. There would be physical construction. Regulated air contaminants would be emitted by this source. This new operation includes rip saws, moulaers, and dowel machines with support equipment to mill kitchen cabinets and building material components. A dust collection system will be used for controls.	5.6
22	Gasoline Dispensing Facility - MAPCO Express LLC	MAPCO Express, Inc. dba MAPCO Express #7525	Construction	Sumner	TN	404 South Broadway, Portland, TN 37148	http://www.tennessee.gov/environment/permits/index.shtml	This proposed operation would consist of three gasoline storage tanks, one ethanol tank, and thirty-two (32) gasoline dispensing nozzles. A Stage I vapor recovery would be used for gasoline emission control. There would be physical construction. Regulated air contaminants would be emitted by this source.	3.7
23	Gasoline Dispensing Facility - KB Fuels, Inc.	KB Fuels Inc. dba Panther Mart	Construction	Sumner	TN	1104 South Broadway, Portland, TN 37148	http://www.tennessee.gov/environment/permits/index.shtml	Construction of a Gasoline Dispensing Facility located at the same address. This proposed operation would consist of two gasoline storage tanks and twelve (12) gasoline dispensing nozzles. A Stage I vapor recovery would be used for gasoline emission control. There would be physical construction.	5.5
24	National Health Care	National HealthCare Corporation	Construction	Sumner	TN	Unnamed tributary to Station Camp Creek, Hendersonville	http://www.tennessee.gov/environment/permits/index.shtml	Place approximately four hundred fifteen feet of the unnamed tributary into a culvert and relocate approximately nine hundred forty feet around the perimeter of the proposed development.	11.2
25	Green Trails, LLC Subdivision	Green Trails, LLC	Subdivision	Sumner	TN	North of the intersection of Long Hollow Pike andBig Station CampBoulevard, Gallatin, TN	http://www.tennessee.gov/environment/permits/index.shtml	Construct three minor road crossings. These unnamed tributaries have been impacted by partially completed alterations authorized under a previous individual permit and the total length of impacts for these three minor road crossings cumulatively equal 200 LF. Impact 1: MR1: Latitude: 36.38765 Longitude: -86.54383 Impact 2: MR2: Latitude: 36.38762 Longitude: -86.54870 Impact 3: MR3: Latitude: 36.38778 Longitude: -86.54889 Impact 4: UL1: Latitude: 36.38550 Longitude: -86.54930	12.8
26	Gabbard Fork Compressor Station	Delta Natural Gas Company, Inc.	Increased operation	Clay	KY	Gabbard Branch Road, Manchester	http://air.ky.gov/Pages/PublicNoticesandHearings.aspx	F-12-060. Delta Natural Gas, Inc. has applied for a permit to operate a Natural Gas Compressor Station. This revision includes the removal of limitation on hours of operations applicable to compressor engines (EP01 and EP02).	44.9
27	Plant ID 21-015-0028	Johnson Controls Battery Group, Inc.	Construction	Boone	KY	8040 Bluegrass Drive, Florence	http://air.ky.gov/Pages/PublicNoticesandHearings.aspx	Construct and operate a facility for the manufacturing of grid components of lead acid batteries. The plant is classified as a Conditional Major source due to potential emissions of non-hazardous regulated air pollutants greater than a major source threshold.	80.4
28	Flexographic Printing Facility	RKW Danafilms, Inc.	Construction	Simpson	KY	270 Reasonover Drive Franklin, KY 42134	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	The construction/operation of a new flexographic printing operation in Franklin, Kentucky. The source is located in Simpson County, which is an Attainment Area. The printing process consists of one flexographic press, which utilizes a Permanent Total Enclosure and Regenerative Thermal Oxidizer to control volatile organic compound emissions.	8.7
29	Don Kinslow Dairy Farm	Hascel Don Kinslow	Construction	Barren	KY	10591 Old Bowling Green Rd Smiths Grove, KY 42171	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	The construction permit authorizes construction/installation of your animal waste handling system.	7.8
30	Aggregate Resources, LLC - Surface mining	Aggregate Resources LLC	Operation	Hart	KY	1.0 mile east of 1140/728 intersection, south of 728 Princeville, KY 42765	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	The applicant is to be engaged in the surface mining of limestone to be hauled for commercial sale.	18.0

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Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
31	Park City/Edmonson County Sewer Project	Caveland Environmental Authority	Construction	Hart	KY	Along US-31W, KY-422 and KY-743 west of Park City, Kentucky Barren County, Kentucky	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	Caveland Environmental Authority is involved with installing approximately nine miles of sanitary sewer line along US-31W, KY-422 and KY-743 west of Park City, Kentucky (SIC Code 1623). The project will have a disturbance of approximately 5.45 acres. Permit issued for 12/20/2018.	9.3
32	Mark West Energy Appalachia, LLC – Siloam Fractionation Plant	Mark West Energy Appalachia, LLC	Operation	Greenup	KY	2 Mark West Drive South Shore, Greenup County, Kentucky	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	Siloam Fractionation Plant receives NGL through pipelines and from trucks. The NGL is separated into pure components such as propane, butane, iso-butane, high-purity butane and natural gasoline (SIC Code 1321). The facility operates a spray irrigation system for a portion of their wastewater. Wastewater is contained in a holding basin and sprayed over approximately 48 acres of land. First issuance for a minor source permit.	6.7
33	Portable Mining Plant	The Allen Company, Inc.	Construction	Madison	KY	Anywhere in the Commonwealth of Kentucky (Initial Location: 7430 Highway 21, West Paintlick Road, Berea, Kentucky 40403)	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	Construction/Operating permit for a portable limestone crushing plant rated at 400 tons/hour	10.8
34	Mountain Materials Inc - Portable Screen No 2	TCI Leasing, LLC	Construction	Carter	KY	Anywhere in the Commonwealth of Kentucky (Initial Location: US 60, Two Miles North of Olive Hill, Kentucky 41164)	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	Construction/Operating permit for a portable screening plant rated at 250 tons/hour	7.6
35	River Sand & Gravel, LLC	Red River Ranch, LLC	Construction	Carter	KY	Anywhere in the Commonwealth of Kentucky (Initial Location: 5048 West KY 8, Vanceburg, Kentucky 41179)	https://dep.gateway.ky.gov/eSearch/Search_Permit_Activity.aspx	Construction/Operating permit for a portable aggregate processing plant rated at 300 tons/hour	17.9
36	Kentucky Energy Hub Project	Orbit Gas Storage, Inc.	Construction	Hopkins	KY		http://www.trcsolutions.com/Lists/Projects/ViewProject.aspx?ID=148	Project involves converting the depleted White Plains Gas field to a new natural gas storage facility. Installation of 10 new horizontal injection/withdrawal wells and a field header system sufficient to support the injection and withdrawal of gas supplies at the new storage facility. The proposed 8.6-mile long, 16-inch-diameter field header system would connect the storage facility to a new compressor station. From the compressor station, a new 13.4-mile long, 24-inch-diameter natural gas pipeline would be connected to an existing ANR Pipeline Company pipeline system.	74.6
37	Kentucky River Lock & Dam No 11 Hydroelectric Project	Free Flow Power Project 92, LLC	Construction	Madison /Estill	KY		http://www.ferc.gov/media/news-releases/2014/2014-3/P-14276.pdf	4.9-MW Kentucky River Lock and Dam No. 11 project (P-14276) to add power at the Kentucky River Authority's existing Lock and Dam 11 on the Kentucky River in Estill and Madison counties of Kentucky	5.4
38	Fort Campbell Solar Project	Pennyrile Rural Electric Cooperative	Construction	Montgomery	KY	Fort Campbell, KY	http://www.ect.coop/power-supply/renewable-energy/kentucky-fort-campbell-solar-energy-project/75167	Solar power installation, Pennyrile plans to have 1.9 MW completed by May 2015 and the rest will be installed and operational by December 2015. More than 16,000 solar modules will spread across 20 acres at Fort Campbell.	37.00
40	Sewer Improvements - Scioto County	Scioto County Regional Water District No 1	SewerImprovements	Scioto	OH	193 Bennet School House Rd, Minford, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Permit to install holding tank and sanitary sewer extension for Scioto County Regional Water District No. 1. This project would consist of designing and constructing storm sewer to separate storm water and creek water sources from the combined sewer.	15.6

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
41	Vocational School Waterline Replacement	Scioto County Regional Water District No 2	Construction	Scioto	OH	326 Robert-Lucas Rd, Lucasville, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Final approval of plans and specifications. Detail plans for PWSID:OH7300212 PLAN NO:989609 regarding Vocational School Waterline Replacement.	7.8
42	Osco Industries, Inc. Cooling Drum Installation	Osco Industries, Inc.	CoolingDrum Installation -	Scioto	OH	202 Vine Street, New Boston, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial installation permit for South Cooling Drum: continuous rotary cooling drum controlled with the Wheelabrator Cartridge Collector and the East Foundry Dust Collector baghouses (replacing the existing south cooling drum formerly permitted as emissions unit P908).	3.1
43	Melvin Stone Aggregate	Melvin Stone	Aggregate Processing	Jackson	OH	501 Roscoe Road, Oak Hill, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial installation of sources covered by the following GPs: 10.1 (aggregate processing plant), 5.1 (unpaved roadways and parking areas), 6.1 (paved roadways and parking areas), and 7.1 (storage piles).	4.0
44	Blackstone Asphalt, Inc. - Asphalt Plant	Blackstone Asphalt, Inc.	Asphalt Plant	Jackson	OH	0 Hollinshead Rd, Wellston, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Permit-to-install and operate 180 total petroleum hydrocarbon Barber Greene batch hot mix asphalt plant with an annual production limit of 288,000 tonnes per year permitted to burn propane, #2 fuel oil, #4 fuel oil, #6 fuel oil and used on-spec oil.	18.6
45	Imperial Electric Company - Emission Control Work	Imperial Electric Company	Construction	Meigs	OH	345 Sycamore Street, Middleport, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial installation permit to install and operate for emission units including a paint booth, varnish line, welding operation, comfort heaters, rotor heat treat oven, and die casting.	6.4
46	Southern Ohio Coal Company Diffuser Unit	Southern Ohio Coal Company	Construction	Meigs	OH	Beginning near 30014 SR 14, Rutland Twp, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	New construction for Ohio River Flow Diversion Pipeline and Diffuser for Meigs Mine No. 31 New construction for Ohio River Flow Diversion Pipeline and Diffuser for Meigs Mine No. 31	9.5
47	Robbins Road Sanitary Sewer Extension	City of Nelsonville	Construction	Athens	OH	Robbins Road to Hocking Pkwy, Nelsonville, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Permit to install Robbins Road Sanitary Sewer Extension.	1.0
48	Athens DOT Maintenance Facility	Ohio DOT - District 10	Maintenance Facility	Athens	OH	700 W. Union Street	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Replacement Pump Station, Gravity Sewers and Force Mains for the Athens ODOT Full Service Maintenance Facility	14.0
49	PDC Energy, Inc - Palmer Pad	PDC Energy, Inc.	oil and gas well site	Morgan	OH	1244 Center Bend Road, Center Twp, OH	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a small Flare (GP 12.1) located in Morgan County, Ohio for the PDC Energy - Palmer Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	5.6
50	Leesville Cryogenic Gas Processing Plant	Utica East Ohio (UEO) Midstream	Construction	Carrol	OH	8349 Azalea Rd, Leesville, OH 44621	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial installation of a 450 mmscf/day natural gas cryogenic processing plant.	5.9
51	Utica Gas Services, LLC-Carrollton Compressor Facility	Utica Gas Services, LLC	Compressor Facility	Carrol	OH	2098 Panda Road SE Carrollton, OH 44615	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial installation of previously unpermitted unpaved roadways (F001), back-up generators (P016 and P017), condensate tanks (T001-T003) and produced water tanks (T004-T006) due to increased emissions. Also, new installation of methanol loading (J002) and an open flare (P018). Emission units are located at a compressor station that is switching from FEPTIO to Title V.	6.8
52	Chesapeake Exploration Oil and gas well site	Chesapeake Exploration, LLC	oil and gaswell site	Carrol	OH	Pledge Road, Harlem Springs, OH 43903	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	General permits for a new installation of an oil and gas well site production operation (GP 12.2) and unpaved roadways and parking areas (GP 5.1).	23.1
53	Chesapeake Exploration Oil and gas well site	Chesapeake Exploration, LLC	oil and gas well site	Carrol	OH	Melody Road, Augusta Twp, Oh 44651	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	General permits for a new installation of an oil and gas well site production operation (GP 12.1) and unpaved roadways and parking areas (GP 5.1).	3.1

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Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
54	Chesapeake Oil and gas well site	Chesapeake Exploration, LLC	oil and gas well site	Carrol	OH	Canton Road SE, Carrollton, OH 44615	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	General permits for a new installation of an oil and gas well site production operation (GP 12.1) and unpaved roadways and parking areas (GP 5.1).	5.0
55	Rolling Hill Generating Station Cooling Towers	Rolling Hill Generating, LLC	Installation of Mechanical Draft Cooling Towers at generating station	Vinton	OH	43111 State Route 160, Wilkesville, OH 45695	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	Installation of two (2), Nine-Cell Mechanical Draft Cooling Towers. (This installation is part of point source determinaiton project with turbine modification in PTI P0110152).	7.1
56	Newpark Norwich Facility Diesel Generator	Newpark Norwich Facility	Diesel Generator	Muskingham	OH	Newpark Norwich Facility 9350 E Pike Norwich, OH 43767-9626	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	Initial installation permit to install and operate for a portable diesel engine generator for the mud pump.	14.3
57	PDC Energy, Inc - Dynamite Pad	PDC Energy, Inc.	Dynamite Pad	Guernsey	OH	NW corner of Dynamite and Salem Rd, Salesville, OH 43778	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	Permit to install and operate an Oil and Gas Well-Site Production Operations GP 12.1.	17.34
58	American Energy Oil and gas well site	American Energy - Utica, LLC	oil and gas well site	Guernsey	OH	25595 Oxford Rd, Quaker City, OH 43773	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a small Flare (GP 12.1) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Guernsey County, Ohio for the American Energy - Utica, LLC Coad Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	11.3
59	American Energy Oil and gas well site	American Energy - Utica, LLC	oil and gas well site	Guernsey	OH	71192 Caston Road, Londonderry Twp, OH 43973	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a small Flare (GP 12.1) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Guernsey County, Ohio for the American Energy - Utica, LLC Caston 31-11N-7W Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	11.3
60	Gulfport Energy Oil and gas well site	Gulfport Energy	oil and gas well site	Guernsey	OH	Jasper Road, Londonderry Twp, Oh 43973	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Large Flare (GP 12.2) located in Guernsey County, Ohio for Gulfport ¿ Miller Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	11.7
61	Gulfport Energy - Ripley Well Pad	Gulfport Energy	oil and gas well site	Guernsey	OH	Shipley Road, Londonderry Twp, Oh 43973	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Large Flare (GP 12.2) located in Guernsey County, Ohio for Gulfport ¿ Ripley Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	20.0
62	Oil and gas well site production	Rex Energy	oil and gas well site	Guernsey	OH	60667 Shannon Run Road, Quaker City, OH 43773	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	Initial installation permit to install and operate for an oil and gas well site, unpaved roads and parking areas using GP 5.1	16.1
63	Eclipse Resources Oil and gas production facility	Eclipse Resources 1 LP	oil and gas well site	Guernsey	OH	21260 Grape Hollow Road, Salesville, OH 43778	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	Oil and gas production facility with associated unpaved roadways and parking areas.	3.2
64	EQT Oil and gas well site production	EQT Production Company	oil and gas well site	Guernsey	OH	6862 Stephans Lane, Cumberland, OH 43732	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	Oil and Gas Production facility with associated unpaved roadways and parking areas.	3.0
65	EQT Oil and gas well site production	EQT Production Company	oil and gas well site	Guernsey	OH	6369 Cubbison Lane, Cumberland, OH 43732	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:3656287435202654::::	Oil and Gas Production facility with associated unpaved roadways and parking areas.	19.8

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
66	Schlumberger Technology Corporation - Cement Mix Plant	Schlumberger Technology Corporation	Cement Mix Plant	Tuscarawas	OH	211 Zeltsman Ave, Strasburg, OH 44680	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial installation permit for a cement mix plant (Mechanical Bulk Cement Blending Terminal Operation): five 4,800 ft3 raw cement material silos, two 4,500 ft3 split compartment raw cement material silos, one 2,000 ft3 split compartment silo for bulk bag, one additive hand add station consisting of four 47 ft3 removable tertiary additive hoppers, two 1,000 ft3 blended cement (Pre-Blend) silos and one 1,425 ft3 residues storage silo that collects and filters the exhaust from the blended cement silos.	17.6
67	Hess Oil and gas production facility	Hess	oil and gas well site	Harrison	OH	75055 Hite Road Cadiz, OH 43907	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Oil and gas production facility (GP 12.2) with associated unpaved roadways and parking areas (5.1)	18.0
68	American Energy Oil and gas well site production	American Energy - Utica, LLC	oil and gas well site	Harrison	OH	79875 Springtown Rd Cadiz, OH 43907	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a small Flare (GP 12.1) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Harrison County, Ohio for the American Energy - Utica, LLC BSA 16 Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	11.8
69	Gulfport Oil and gas well site production	Gulfport Energy	oil and gas well site	Harrison	OH	Possum Hollow Rd Freeport, OH 43977	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Large Flare (GP 12.2) in Harrison County, Ohio for Gulfport Davidson Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	12.4
70	American Energy - Utica, LLC Lawson 19-11N-7W oil & gas Facility	American Energy - Utica, LLC	oil and gas well site	Harrison	OH	23291 Millers Fork Rd Freeport, OH 43973	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Small Flare (GP 12.1) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Harrison County, Ohio for American Energy - Utica LLC Lawson 19- 11N-7W. No other permitted sources are currently located at this facility and the facility is not yet in operation.	17.5
71	Hopedale Fractionation Facility	Hopedale Fractionation Facility	Fractionation Facility	Harrison	OH	West of Hwy 151, North of Giacobbi Rd, Green Twp, OH 43986	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial installation PTIO for B003 (natural gas-fired process heater rated at a heat input capacity of 145 MMBtu/hr) and T002 (40,000-barrel natural gasoline storage tank equipped with a redundant mechanical VRU with a design control efficiency of 100%).	13.9
72	Gulfport Energy - County Line oil and gas facility - Puskarich	Gulfport Energy	oil and gas well site	Harrison	OH	76015 Moorefield Hill Rd Flushing, OH 43977	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations (GP 12.2) in Harrison County, Ohio for Gulfport Energy- County Line - Puskarich Pad site. No other permitted sources are currently located at this facility. Roadways are de minimis	8.2
73	Chesapeake Exploration LLC - Trushell 8-13-6 PAD	Chesapeake Exploration, LLC	oil and gas well site	Harrison	OH	OH-151E Scio Bowerston Rd Scio, OH 43988	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial permit to install and operate for oil and gas well production operations (MGP 12.1) and unpaved roadways and parking areas (MGP 5.1).	18.2
74	Blue Racer Midstream LLC - Harrison CO Field Station #2 oil and gas production	Blue Racer Midstream, LLC	Construction	Harrison	OH	off Toot Rd (OH-189) - North of Cadiz-Jewett Cadiz, OH 43907	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Small Flare (GP 12.1) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Harrison County, Ohio for Blue Racer Midstream LLC-Harrison Co Field Station #2. No other permitted sources are currently located at this facility and the facility is not yet in operation.	18.5
75	Chesapeake Oil and gas well site	Chesapeake Exploration, LLC	oil and gas well site	Harrison	OH	Murray Road Hopedale, OH 43976	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	Initial PTIO for oil and gas well production operations (MGP 12.1) and unpaved roadways and parking areas (MGP 5.1).	16.5

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
76	Hess Oil and gas well site production	Hess	oil and gas well site	Harrison	OH	83400 Toot Road Cadiz, OH 43907	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Large Flare (GP 12.2) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Harrison County, Ohio for the Archer A Production Facility. No other permitted sources are currently located at this facility and the facility is not yet in operation.	11.7
77	American Energy Oil and gas well site	American Energy - Utica, LLC	oil and gas well site	Harrison	OH	72449 Pennyroyal Rd Freeport, OH 43973	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Small Flare (GP 12.1) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Harrison County, Ohio for American Energy - Utica LLC - Lake 20-11N-7W Well. No other permitted sources are currently located at this facility and the facility is not yet in operation.	11.1
78	American Energy Oil and gas well site	American Energy - Utica, LLC	oil and gas well site	Harrison	OH	20520 Cadiz Rd Freeport, OH 43973	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is a general permit for the Oil and Gas Well-Site Production Operations with a Small Flare (GP 12.1) and a general permit for unpaved roadways and parking areas with a maximum of 120,000 vehicle miles traveled per year located (GP 5.1) in Harrison County, Ohio for American Energy - Utica LLC - Red Hill Farms 1-3N-1W Well. No other permitted sources are currently located at this facility and the facility is not yet in operation.	15.7
79	Chesapeake oil and gas well site	Chesapeake Exploration, LLC	oil and gas well site	Harrison	OH	Hall Road Jewett, OH 43986	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is an initial permit to install and operate for Oil and Gas Well-Site Production Operations w/ a small flare (MGP 12.1) and associated unpaved roadways (MGP 5.1).	14.1
80	Chesapeake oil and gas well site	Chesapeake Exploration, LLC	oil and gas well site	Harrison	OH	Hanover Ridge Rd Jewett, OH 43986	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is an initial permit to install and operate for Oil and Gas Well-Site Production Operations w/ a small flare (MGP 12.1) and associated unpaved roadways (MGP 5.1).	17.3
81	Chesapeake oil and gas well site production	Chesapeake Exploration, LLC	oil and gas well site	Harrison	OH	87735-88371 Miller Station Rd, Hopedale, OH 43976	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	This is an initial permit to install and operate for Oil and Gas Well-Site Production Operations w/ a small flare (MGP 12.1) and associated unpaved roadways (MGP 5.1).	6.7
82	Chesapeake oil and gas well site production	Chesapeake Exploration, LLC	oil and gas well site	Columbiana	OH	Winona Rd Butler Twp., OH 44460	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	General permits for new installation of an oil and gas well site production operation (GP 12.1) and unpaved roadways and parking areas (GP 5.1).	2.3
83	Chesapeake oil and gas well site	Chesapeake Exploration, LLC	oil and gas well site	Columbiana	OH	Lincoln Hwy - US-30W/OH-9S Hanoverton, OH 44423	http://extapex.epa.state.oh.us/epaxp/f?p=840:10:365628743520265 4:::::	General permits for new installation of an oil and gas well site production operation (GP 12.1) and unpaved roadways and parking areas (GP 5.1).	66.6
84	Charleston Sanitary Board: Porter's Hollow Sanitary Sewer Replacement and Rehab Project	Charleston Sanitary Board	Sewer Improvements	Kanawha	WV	Maccorkle Ave, SE, Charleston WV		Sewer work	66.6
85	Broad Run Expansion Project	Tennessee	Compressor Station	Davidson	TN		http://pipeline2.kindermorgan.com/Notices/NoticeDetail.aspx?code=TGP&notc_nbr=351699 Broad Run Expansion Project RR 1 at:	Compression facilities associated with Broad Run Expansion Project	3.8
			Compressor Station	Powell	KY				4.6
			Compressor Station	Boyd	KY				4.1

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
			Compressor Station	Madison	KY		http://elibrary.ferc.gov:1/IDMWS/file_list.asp?document_id=14297177		23.8
			2 Compressor Stations	Kanawha	WV				58.4
86 & 87	UMTP (horizontal directional drill ["HDD"] Ref no. 86) (Pump Stations Ref no. 87)		HDD	Garrard	KY			UMTP HDD	0.2
			HDD	Greenup	KY			UMTP HDD	0.9
			HDD	Natchitoches	LA			UMTP HDD	0.7
			HDD	Decatur	TN			UMTP HDD	7.8
			Pump Station	Muskingham	OH			UMTP Pump Station	9.4
			Pump Station	Athens	OH			UMTP Pump Station	0.2
			Pump Station	Greenup	KY			UMTP Pump Station	<0.1
			Pump Station	Rowan	KY			UMTP Pump Station	0.1
			Pump Station	Powell	KY			UMTP Pump Station	0.2
			Pump Station	Garrard	KY			UMTP Pump Station	4.7
			Pump Station	Marion	KY			UMTP Pump Station	1.0
			Pump Station	Barren	KY			UMTP Pump Station	2.3
			Pump Station	Allen	KY			UMTP Pump Station	4.8
			Pump Station	Robertson	TN			UMTP Pump Station	2.8
			Pump Station	Dickson	TN			UMTP Pump Station	0.3
			Pump Station	Perry	TN			UMTP Pump Station	0.1
			Pump Station	Chester	TN			UMTP Pump Station	0.1
			Pump Station	Hardeman	TN			UMTP Pump Station	0.1
			Pump Station	Marshall	MS			UMTP Pump Station	3.8
			Pump Station	Panola	MS			UMTP Pump Station	0.1

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
			Pump Station	Sunflower	MS			UMTP Pump Station	<0.1
			Pump Station	Washington	MS			UMTP Pump Station	0.1
			Pump Station	Morehouse	LA			UMTP Pump Station	4.9
			Pump Station	Ouachita	LA			UMTP Pump Station	0.1
			Pump Station	Jackson	LA			UMTP Pump Station	0.2
			Pump Station	Natchitoches	LA			UMTP Pump Station	0.1
			Pump Station	Jasper	TX			UMTP Pump Station	80.6
90	Interconnect Pipeline Project	Clarksville Gas & Water Department	Construction	Montgomery	KY		http://www.cityofclarksville.com/index.aspx?page=643	New natural gas pipeline that will cross the Tennessee-Kentucky State line and connect their existing natural gas distribution system to the existing Texas Gas Transmission, LLC pipeline in Todd County, Kentucky. This new connection will provide CGW with a redundant natural gas feed to better serve its retail distribution system and approximately 28,000 retail customers.	26.0
91	Columbia Gulf Transmission's Leach Xpress Project	Columbia Gulf Transmission, LLC	Gas Pipeline Project	Multiple Counties	OH	https://www.columbiapipelinegroup.com/docs/default-source/nisource-documents/leach-xpress-map.pdf	http://elibrary.ferc.gov:0/IDMWS/file_list.asp?document_id=14254912	The Leach XPress project includes 126.9 miles of 36-inch-diameter greenfield pipeline, two 36-inch diameter looping pipelines totaling 29.6 miles, and one 30-inch diameter lateral that is approximately 0.5 miles in length. The project will increase the capacity of Columbia Transmission's system by 1.5 Bcf/D and move regional gas supplies to various markets, including its interconnect with Columbia Gulf in Leach, Kentucky. By connecting production areas to Columbia Transmission's mainline system, the project will allow producers access to high-demand energy markets and support delivery of affordable, domestic energy for consumers. Construction scheduled for November 2017. Counties overlapped with TGP: Muskingum, Jackson, Vinton, Columbiana and Carroll County, Ohio	8.2
92	NEXUS Gas Transmission Project - Gas Pipeline	Spectra Energy	Gas Pipeline Project	Multiple Counties	OH	http://chronicle.northcoastnow.com/2014/09/24/northeast-ohio-residents-turn-eyes-nexus-pipeline-proposal	http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/NEXUS-Gas-Transmission/ http://www.enbridge.com/NexusGasTransmissionProject.aspx http://chronicle.northcoastnow.com/2014/09/24/northeast-ohio-residents-turn-eyes-nexus-pipeline-proposal	Project Description: The NGT project will originate in northeastern Ohio, include approximately 250 miles of large diameter pipe, and be capable of transporting at least two billion cubic feet per day of natural gas. The proposed path for NGT will consist of a newly constructed, greenfield pipeline that will extend approximately 250 miles from receipt points in eastern Ohio to interconnect with the existing pipeline grid in southeastern Michigan. The path will utilize both existing and expansion capacity on the DTE Gas transportation system and the Vector Pipeline (Vector) System to access Michigan markets, Chicago and the Dawn Hub. The NGT system is targeted in-service as early as November 2016. Counties overlapped with TGP: Columbiana and Carroll County, Ohio	0.4

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
93	Ohio Pipeline Energy Network (Open) - Gas Pipeline	Spectra Energy	Gas Pipeline Project	Multiple Counties	OH	http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Ohio-Pipeline-Energy-Network-OPEN/	http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Ohio-Pipeline-Energy-Network-OPEN/	The Project will consist of approximately 76 miles of new 30-inch diameter mainline pipeline and associated pipeline support facilities in Ohio, including a new compressor station. Reverse flow modifications at existing compressor stations along Texas Eastern's existing mainline in Ohio, Kentucky, Mississippi and Louisiana. Approximately 35 miles (49%) of the proposed pipeline facilities will be either within or adjacent to existing transmission line or pipeline ROW. Capacity: 550,000 dekatherms per day. Construction is scheduled for 2015. Counties overlapped with TGP: Columbiana and Carroll County, Ohio	4.6
94	Rover Gas Pipeline Project	ET Rover LLC	Gas Pipeline Project	Multiple Counties	OH	http://www.energytransfer.com/documents/Rover_County_Traversed_10_10_2014.pdf	http://www.energytransfer.com/ops_etrover.aspx	The Rover Pipeline is being designed to transport 3.25 billion cubic feet of natural gas per day through approximately 820 miles of 24-inch, 30-inch, 36-inch and 42-inch pipeline. Rover will also need to build compression and metering stations along its route. Tentatively, the Rover Pipeline has plans for four mainline compressor stations and six lateral compressor stations. The construction of the Rover Pipeline will provide new natural gas pipeline infrastructure to move natural gas to local utilities, to other pipelines for Midwest markets, and to the Dawn Hub for northeast markets.	Multiple Locations
95	Broad Run System Flexibility Project	Tennessee	Gas Pipeline Compressor Station/Facility Work	Multiple Counties	Multiple	Multiple Counties	http://pipeline2.kindermorgan.com/Notices/NoticeDetail.aspx?code=TGP&notc_nbr=351699 Cumulative Section of Broad Run Expansion Project RR 1 at: http://elibrary.ferc.gov:1/IDMWS/file_list.asp?document_id=14297177	OH, WV, KY, TN, and MS Phase I – modifications of appurtenant facilities at six existing compressor stations as follows: add filter/separators at CS 200; reverse flow, modify pig launcher/receiver traps, and add cooling and gas filter/separators at CS 114; and reverse flow at CS 110, CS 106, CS 96, and CS 871. Phase I also includes miscellaneous pipe class changes. Phase II – modifications of appurtenant facilities at existing compressor stations as follows: modify pig launcher/receiver traps at CS 200; install new variable frequency drive and replace pulsation bottles at CS 114; add cooling and modify pig launcher/receiver traps at CS 110; add cooling, replace unit controls, and modify pig launcher/receiver traps at CS 106; add automation at Building C, add cooling, and modify pig launcher/receiver traps at CS 96; and add automation and modify pig launcher/receiver traps at CS 871. Phase II also includes hydrostatic testing and miscellaneous maintenance and reliability activities that do not involve ground disturbance.	Multiple Locations
96	Concord Road Widening	TNDOT	Road Construction	Williamson	TN	Nolensville Rd to Sunset Rd	http://www.tdot.state.tn.us/Chief_Engineer/docs/2012-2014_Program.pdf	Road Construction	26.7
97	Interstate 65 from Trinity Lane to Dickerson Pike	TNDOT	Road Construction	Davidson	TN	Interstate 65 from Trinity Lane to Kickerson Pike	http://www.tdot.state.tn.us/Chief_Engineer/docs/2012-2014_Program.pdf	Road Construction	11.1
98	UMTP Project	UMTP	NGL Pipeline Project	Multiple Counties	OH, KY, TN, MS, AR, LA, TX	Multiple States	http://www.kindermorgan.com/projects/ygrade	Natural Gas Liquids pipeline conversion and construction.	0
99	UTOPIA	Kinder Morgan Cochin LLC and ULC	NGL Pipeline Project	Multiple Counties	OH	From Harrison county to Fulton county Ohio; crosses ACRP in Carroll and Harrison counties, OH	http://www.kindermorgan.com/business/products_pipelines/utopia/	Kinder Morgan will develop, construct, own, and operate a 240-mile, 12-inch diameter pipeline from Harrison County, Ohio to Kinder Morgan's Cochin Pipeline in Fulton County, Ohio, where the company would then move product eastward to Windsor, Ontario, Canada. The Utopia East system would transport previously refined or fractionated natural gas liquids, including ethane and ethane-propane mixtures.	0

Table 1-10 Past, Present, and Reasonably Foreseeable Future Projects within the Resource-specific Study Areas

Reference Number	Project	Proponent/ Owner	Type	County/ Parish	State	Location (Address/Geographical)[1]	Reference	Description[1]	GIS Distance (Mi)
Not mapped	Maintenance activities on the Tennessee system	Tennessee	NGL Pipeline and Facility Work	Multiple Counties	OH, KY, TN, MS, AR, LA	Multiple States	Tennessee	Generally includes four types of work: 1. Investigation and potential remediation of pipeline anomalies; 2. Repairs or upgrades to compressor stations and appurtenances; 3. ROW maintenance; and 4. Reestablishing depth of cover. Tennessee currently anticipates maintenance activities at the following number of sites in each state affected by the ACRP, based on county • Louisiana - 20 • Arkansas - 2 • Mississippi - 26 • Tennessee - 27 • Kentucky - 25 • Ohio - 52	Multiple Locations

Sources: Federal, state, and local agency and municipality websites and direct communications; permit applications; paid and free-access database searches; and third-party communications. The information contained in this table has not been independently verified or substantiated.

[1] Based upon readily available public information, with the exception of planned maintenance activities on the Tennessee system.

Note: Impact information on the above projects is limited or not available. With respect to resources affected, it has been assumed the gas/fluid pipeline projects listed in this table have similar impacts to other gas/fluid pipeline projects in general and therefore could result in impacts to: geology, soils, sediments, water resources, wetlands, vegetation, wildlife, cultural resources, socioeconomics, land use and visual resources, air, and noise. Impacts from the other non-linear projects listed are assumed to be minor based on size of the project.

1

1.10 FIGURES

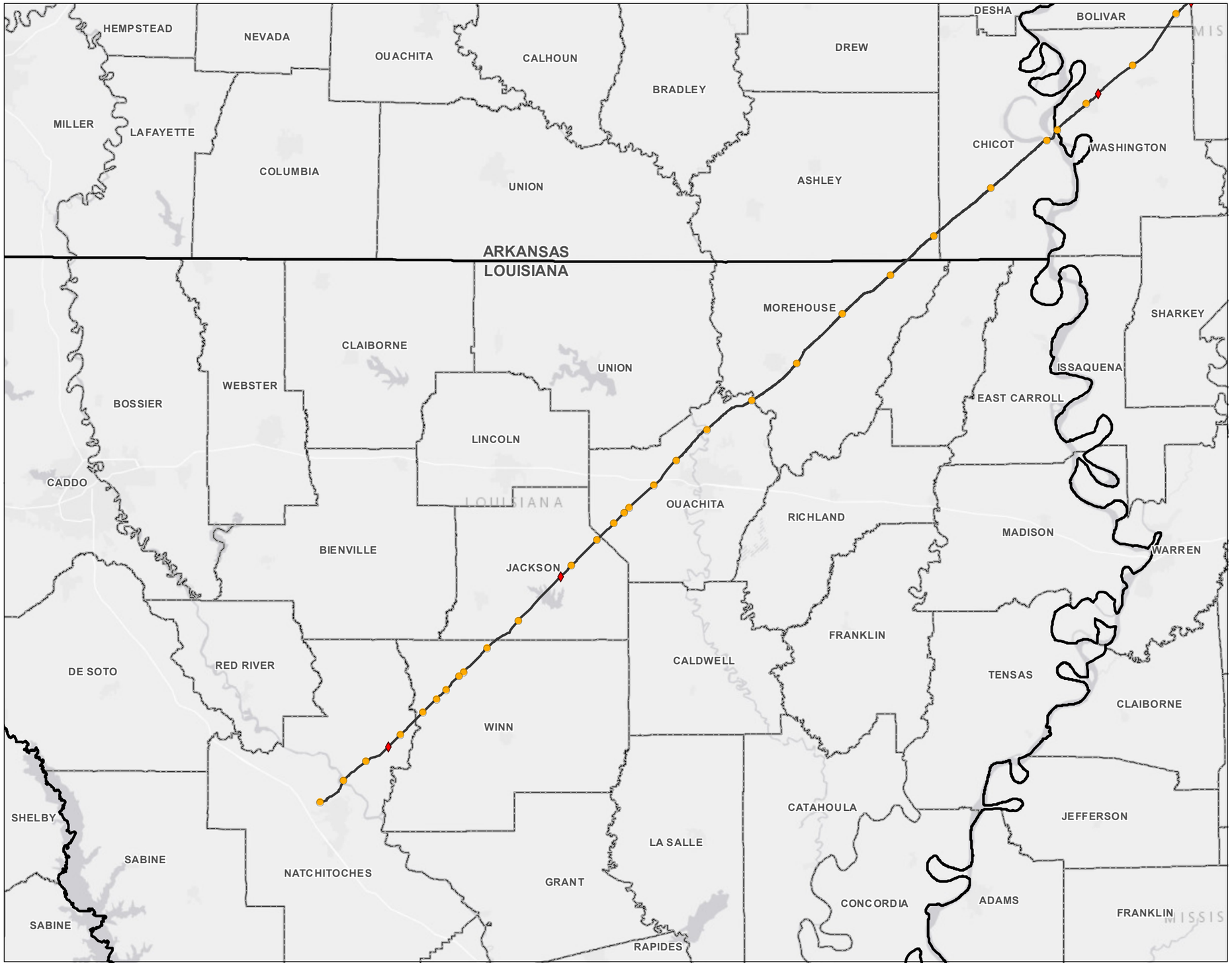

Figure No.
1-1

Title
General Project Overview

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by BT on 2014-12-11
Technical Review by CP on 2014-12-11
Independent Review by LW on 2015-01-30

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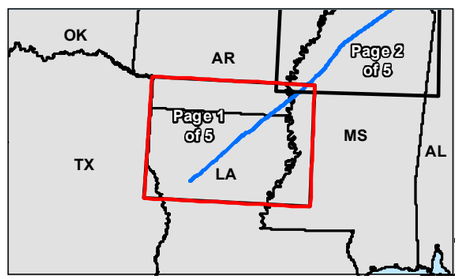
Legend
- Workspace Locations
- Tap Workspaces
- Compressor Stations
- KY 7.6-Mile New Build Pipeline
- Abandoned Line



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 15S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Figure No.
1-1

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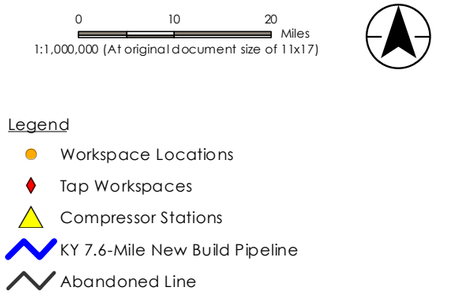

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- KY 7.6-Mile New Build Pipeline
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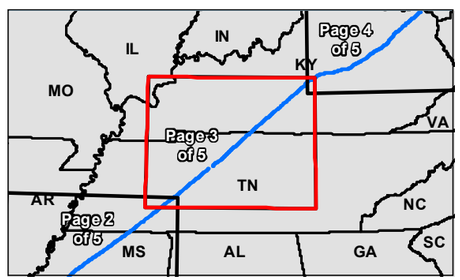


Notes
1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Figure No.
1-1

Title
General Project Overview

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

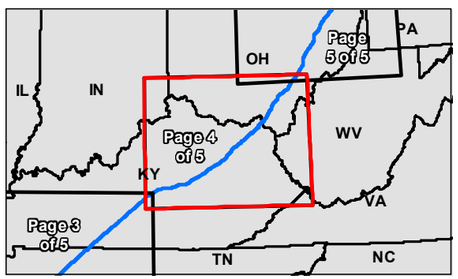
Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by BT on 2014-12-11
Technical Review by CP on 2014-12-11
Independent Review by LW on 2015-01-30

0 10 20 Miles
1:1,000,000 (At original document size of 11x17)

N

Legend
- Workspace Locations
- Tap Workspaces
- Compressor Stations
- KY 7.6-Mile New Build Pipeline
- Abandoned Line



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Figure No.
1-1

Title
General Project Overview

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

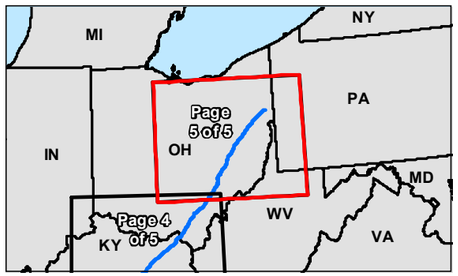
Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by BT on 2014-12-11
Technical Review by CP on 2014-12-11
Independent Review by LW on 2015-01-30

N

0 10 20 Miles
1:1,000,000 (At original document size of 11x17)

Legend
- Workspace Locations
- Tap Workspaces
- Compressor Stations
- KY 7.6-Mile New Build Pipeline
- Abandoned Line



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 17S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Figure No.
1-2

Title
Conceptual Project Location

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by BT on 2014-12-11
Technical Review by CP on 2014-12-11
Independent Review by KW on 2015-01-19

0 50 100 Miles

1:6,500,000 (At Original document size of 8.5x11)

N

Legend

- Project Termini
- Abandoned Line
- Tennessee Pipeline System

Notes
1. Coordinate System: USA Contiguous Albers Equal Area Conic
2. Data Sources Include: Kinder Morgan, HMM, Stantec
3. Background: ESRI

Figure No.
1-3

Title
CS 875 Modified Compressor Station and NSAs

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

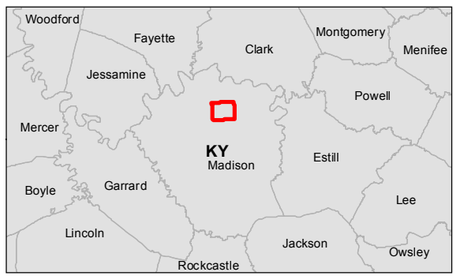
Prepared by PM on 2015-01-12
Technical Review by CP on 2015-01-12
Independent Review by LW on 2015-01-19

0 1,200 2,400 Feet

1:18,000 (At original document size of 11x17)

N

Legend
- NSA
- CS 875 ACRP Operational Area
- CS 875 Operational Footprint
- Approx. CS 875 Property Line
- CS 875 ACRP Operational Area 1-Mile Buffer



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Data Sources Include: Kinder Morgan, Stantec, ESRI
3. Background: ESRI

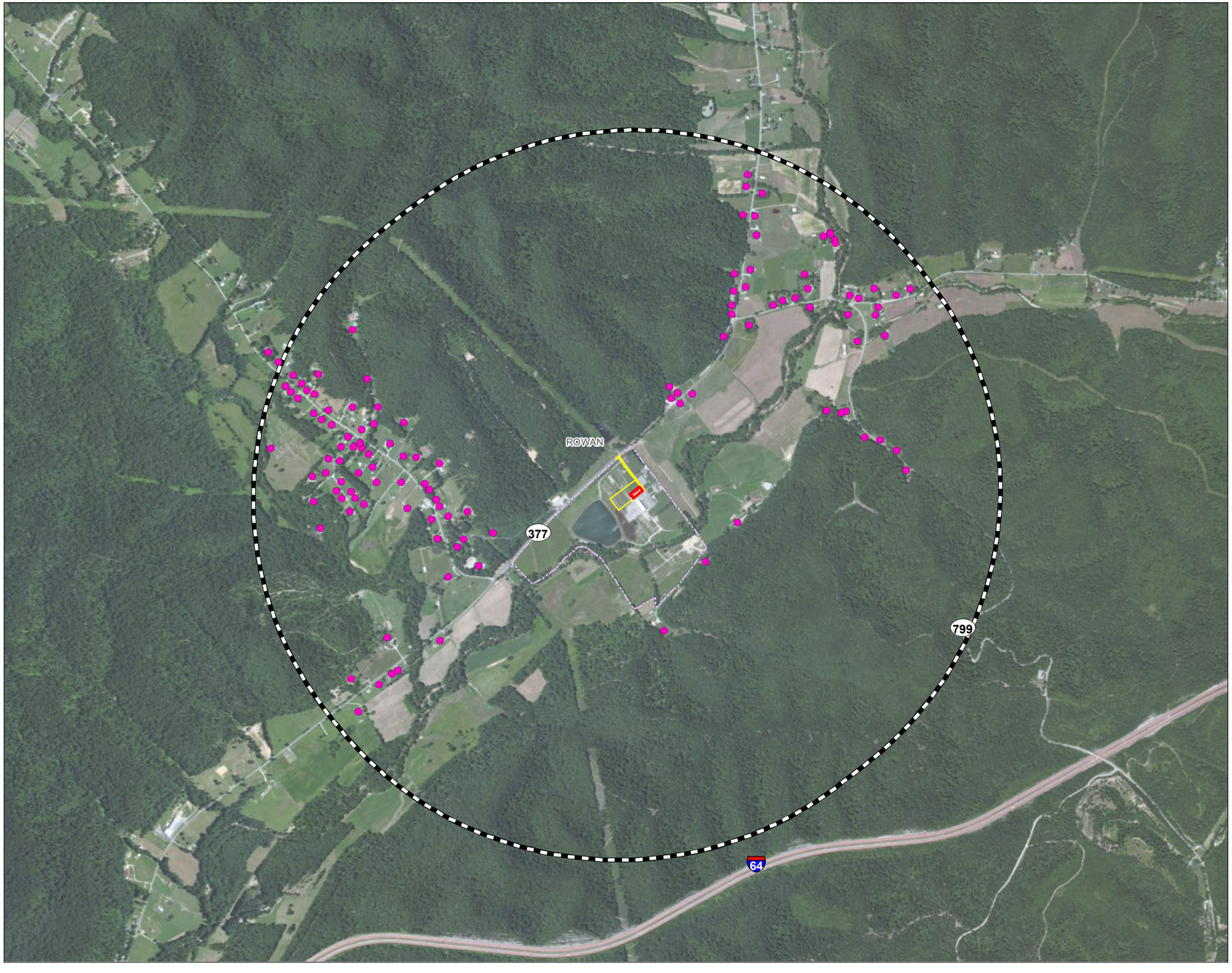


Figure No.
1-4

Title
CS 110 Modified Compressor Station and NSAs

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by PM on 2014-12-16
Technical Review by CP on 2014-12-16
Independent Review by LW on 2015-01-19

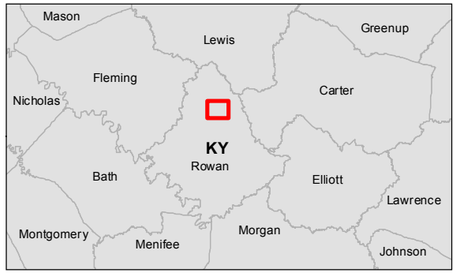
N

0 750 1,500 Feet

1:18,000 (At original document size of 11x17)

Legend

- NSA
- CS 110 ACRP Operational Area
- CS 110 ACRP Operational Footprint
- CS 110 ACRP Operational Area 1-Mile Buffer
- Approx. CS 110 Property Line



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, Stantec, ESRI
3. Background: ESRI

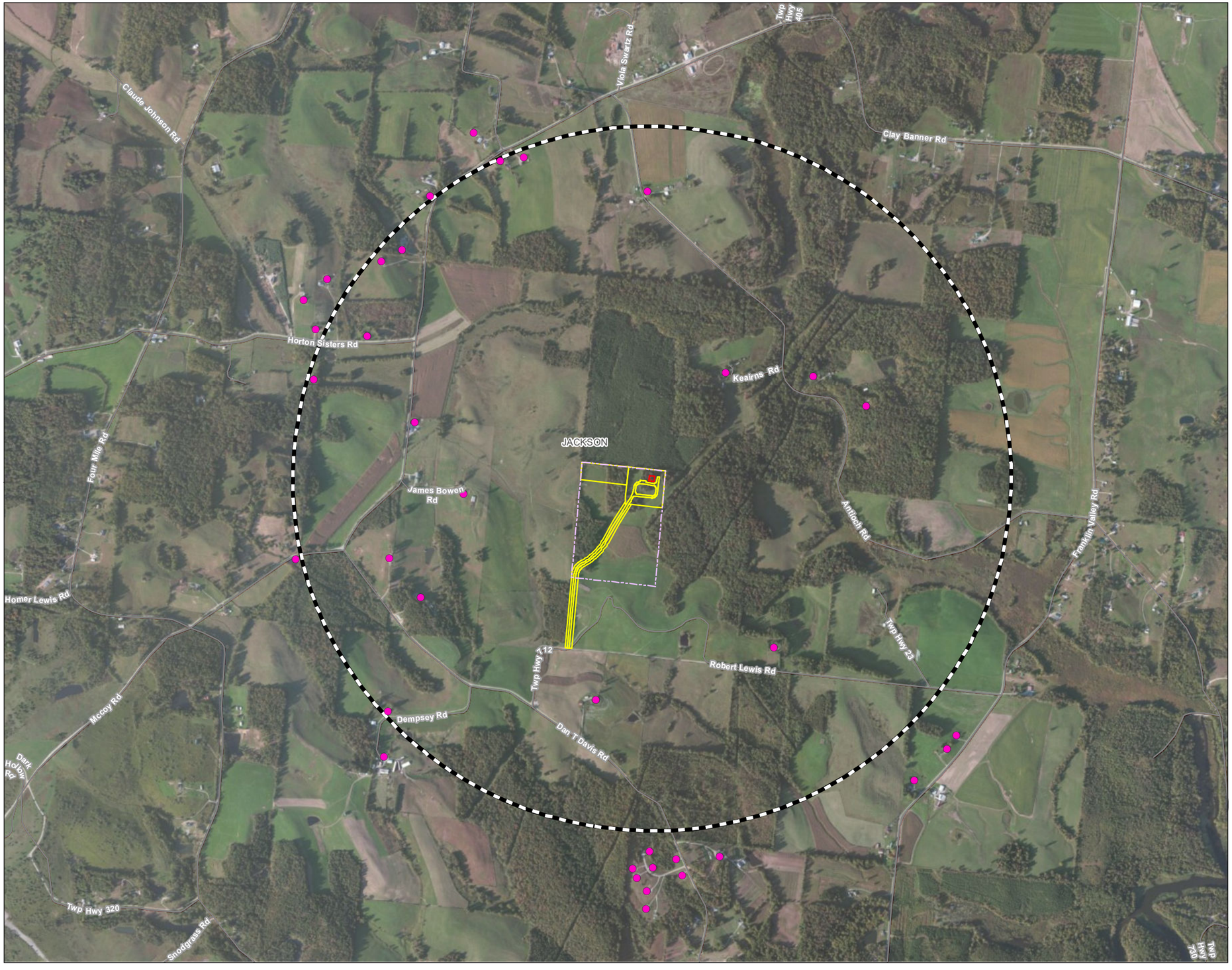


Figure No.
1-5

Title
CS 202.5 New Compressor Station and NSAs

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by PM on 2014-12-16
Technical Review by CP on 2014-12-16
Independent Review by LW on 2015-01-19

0 750 1,500 Feet

1:18,000 (At original document size of 11x17)

N

Legend
- NSA
- CS 202.5 Building
- CS 202.5 Operational Footprint
- Approx. CS 202.5 Property Line
- CS 202.5 Building 1-Mile Buffer

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Data Sources Include: Kinder Morgan, Stantec, ESRI
3. Background: ESRI

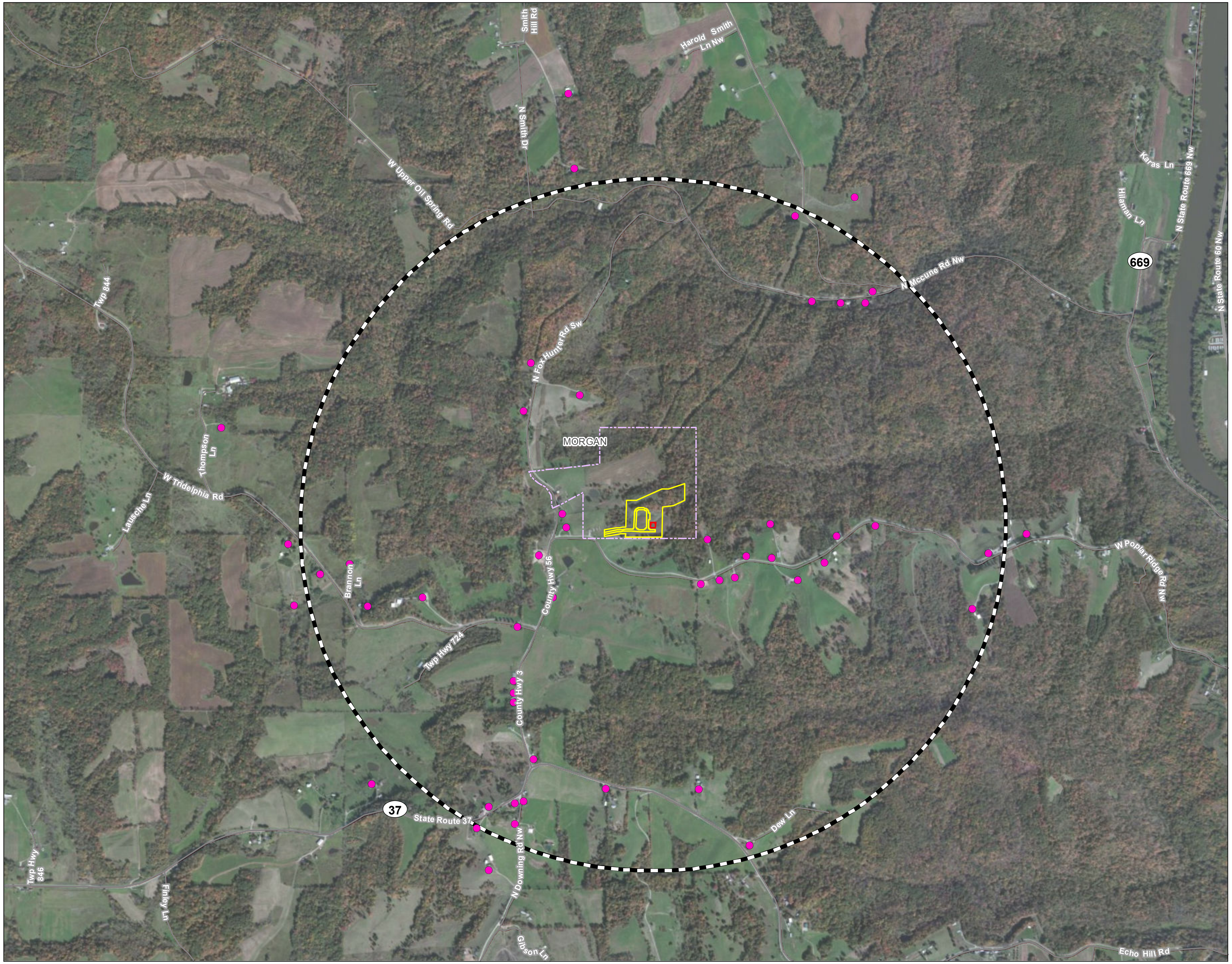


Figure No.

1-6

Title

CS 206.5 New Compressor Station and NSAs

Client/Project

Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by PM on 2014-12-16
Technical Review by CP on 2014-12-16
Independent Review by LW on 2015-01-19

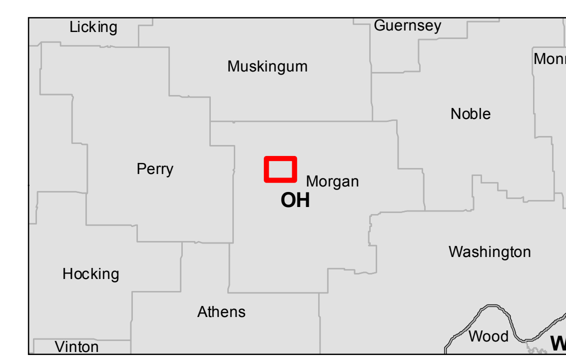
0 750 1,500 Feet

1:18,355 (At original document size of 11x17)

N

Legend

- NSA Locations
- CS 206.5 Building
- Approx. CS 206.5 Property Line
- CS 206.5 Operational Footprint
- CS 206.5 Building 1-Mile Buffer



Notes

1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, Stantec, ESRI
3. Background: ESRI

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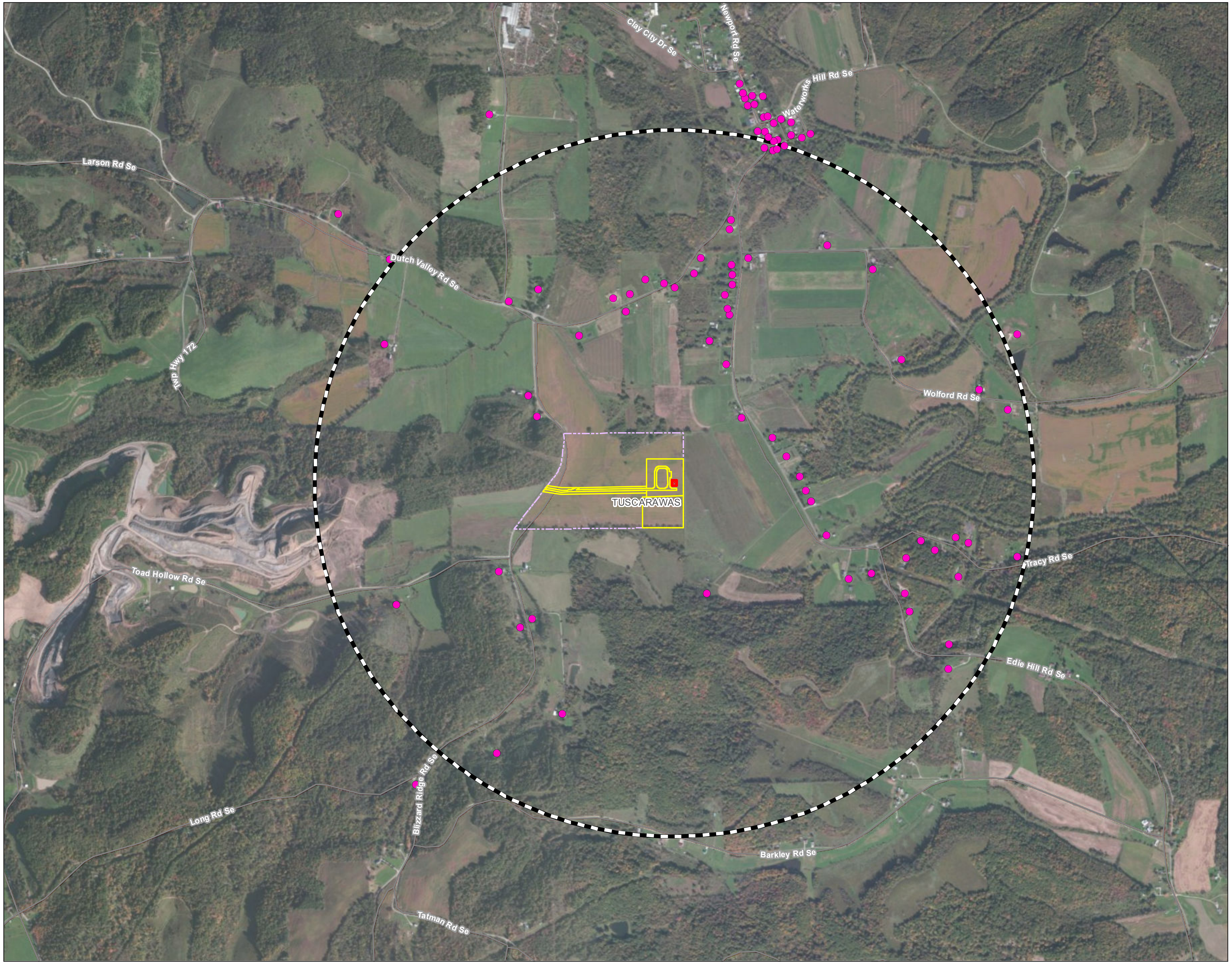


Figure No.

1-7

Title

CS 211.5 New Compressor Station and NSAs

Client/Project

Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by PM on 2014-12-08
Technical Review by MP on 2014-12-09
Independent Review by LW on 2015-01-19

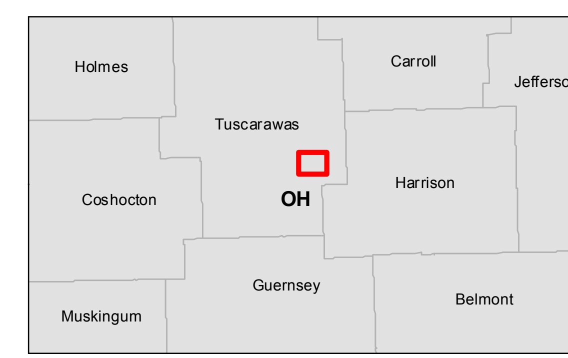
0 750 1,500 Feet

1:18,000 (At original document size of 11x17)

N

Legend

- NSA
- CS 211.5 Building
- CS 211.5 Operational Footprint
- Approx. CS 211.5 Property Line
- CS 211.5 Building 1-Mile Buffer



Notes

1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, Stantec, ESRI,
3. Background: ESRI

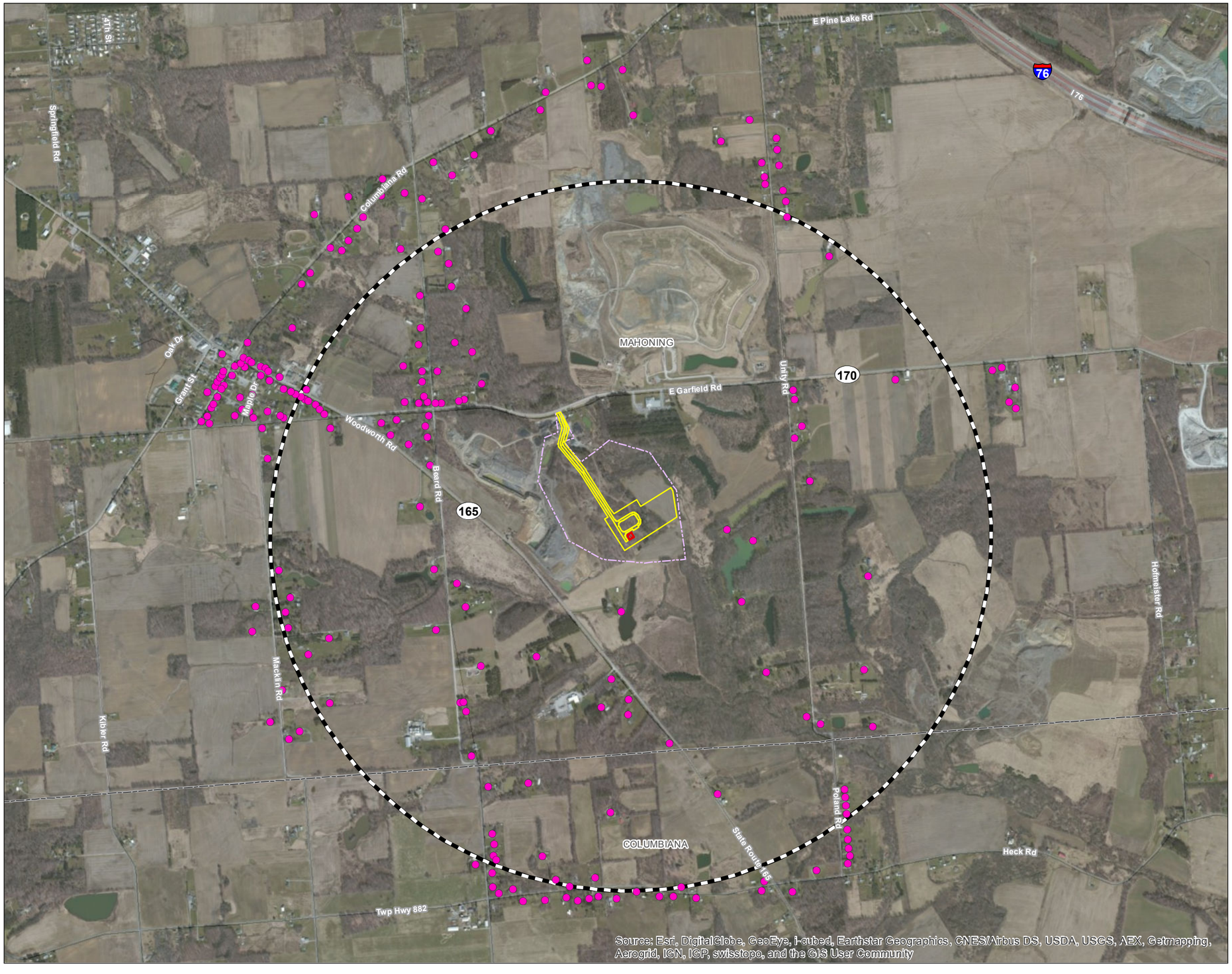


Figure No.
1-8

Title
CS 216.5 New Compressor Station and NSAs

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by PM on 2014-12-16
Technical Review by CP on 2014-12-16
Independent Review by LW on 2015-01-19

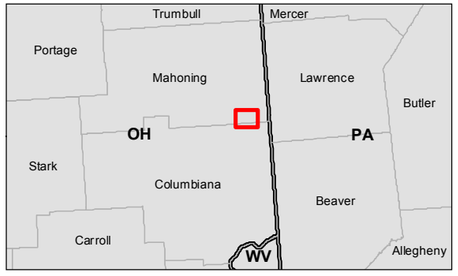
0 750 1,500 Feet

1:18,000 (At original document size of 11x17)

N

Legend

- NSA
- CS 216.5 Building
- CS 216.5 Operational Footprint
- Approx. CS 216.5 Property Line
- CS 216.5 Building 1-Mile Buffer



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, Stantec, ESRI
3. Background: ESRI

Project #	Project Name
1	Union Pacific Railroad - Chopin Siding Construction
2	Standard Enterprises Residential Development
3	Cypress Groves Homes of Lake Village
4	Lake Chicot Pumpling Plant
5	Job # 020509, Hwy 165 Str & Apprs (Montrose) (S)
6	West Ashley County Water Association
7	Crossett I Industrial Park
18	USACE Lake Jackson Palmetto Levee Enlargement
86	UMTP HDD
87	UMTP Pump Station
98	UMTP New Build (LA/TX)

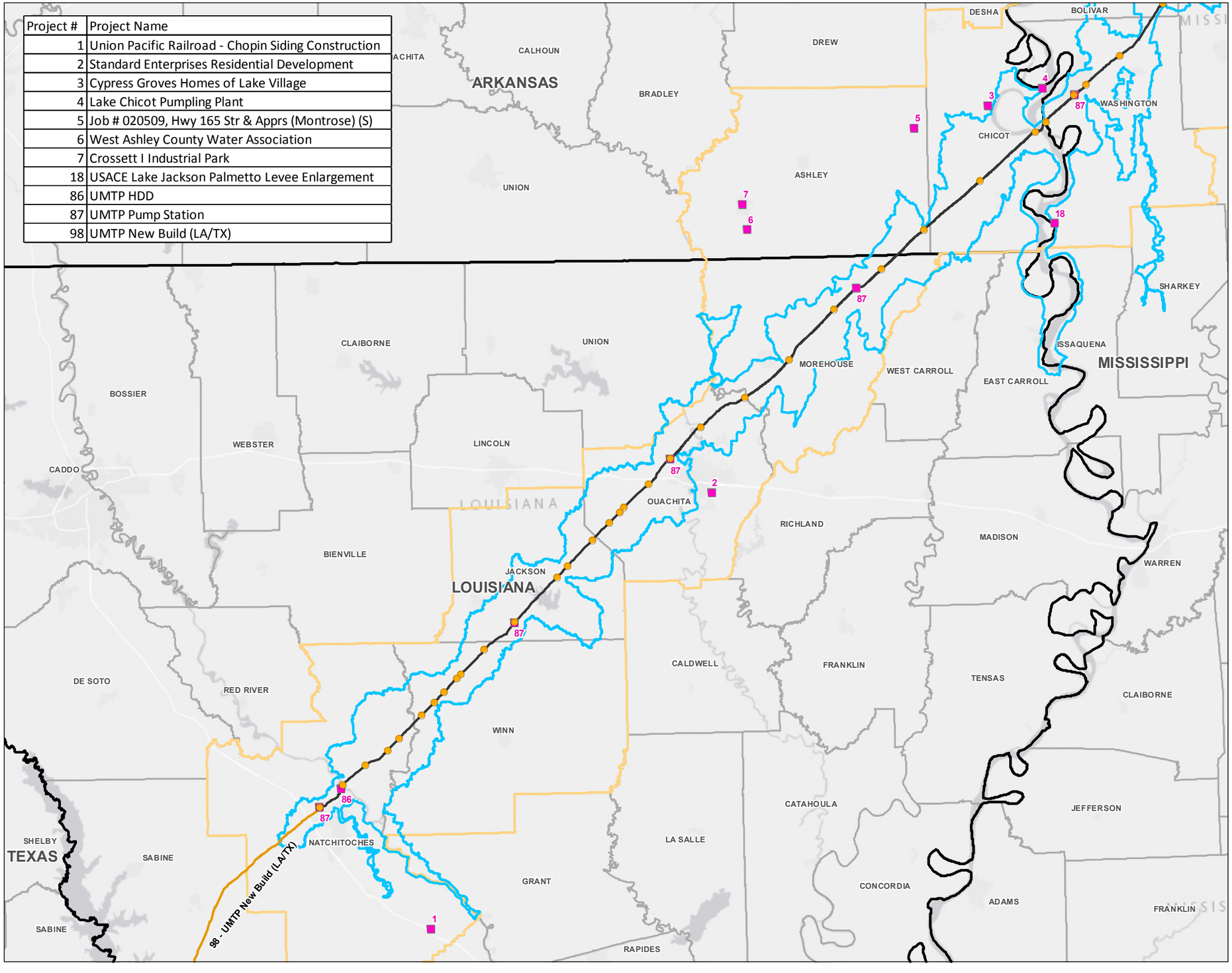


Figure No.
1-9

Title
Cumulative Overview of CIAA for Air, Water and Socioeconomics

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by BT on 2014-12-18
Technical Review by CP on 2014-12-18
Independent Review by JS on 2015-01-30

N

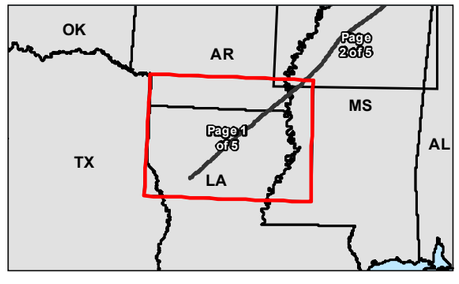
0 10 20 Miles
1:1,000,000 (At original document size of 11x17)

Legend

- Proposed Compressor Station Locations
- Proposed Workspace Locations
- KY 7.6-Mile New Build Pipeline
- ACRP Proposed Abandoned Line/ UMTP Proposed Liquids Line
- Other Project Location Points

Other Linear Projects

- Concord Road Widening
- Interconnect Pipeline Project
- Interstate 65 from Trinity Lane to Dickerson Pike
- Leach Express Project
- NEXUS Gas Transmission Project
- Ohio Pipeline Energy Network (OPEN)
- Rover Pipeline Project
- Utopia Pipeline Project
- UMTP Dickson New Pipeline
- UMTP Lateral Pipelines
- UMTP New Build (LA/TX)
- UMTP Snow Lake New Pipeline
- Water CIAA
- Socioeconomic CIAA
- Air CIAA



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 15S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Project #	Project Name
8	Natural Gas Grain-Dryer Construction
9	Callicut Farms - Mixed-Use Development
10	FNC, Inc. Office Construction
11	Lafayette County Board of Supervisors, LC-14(1) County Road 406 Extension
12	North Mississippi Recycling Solutions - Rubbish Site
13	Welch Farms - Earth Work Acitivity
14	City of Byhalia CDBG Project - Road Improvements
15	City of Holly Springs Woodward Avenue Road Improvements
16	Porter Industrial Park
17	Bridge Replacement - MDOT, Panola
19	Coldwater Creek Mitigation Bank Construction
87	UMTP Pump Station
98	UMTP Snow Lake New Pipeline

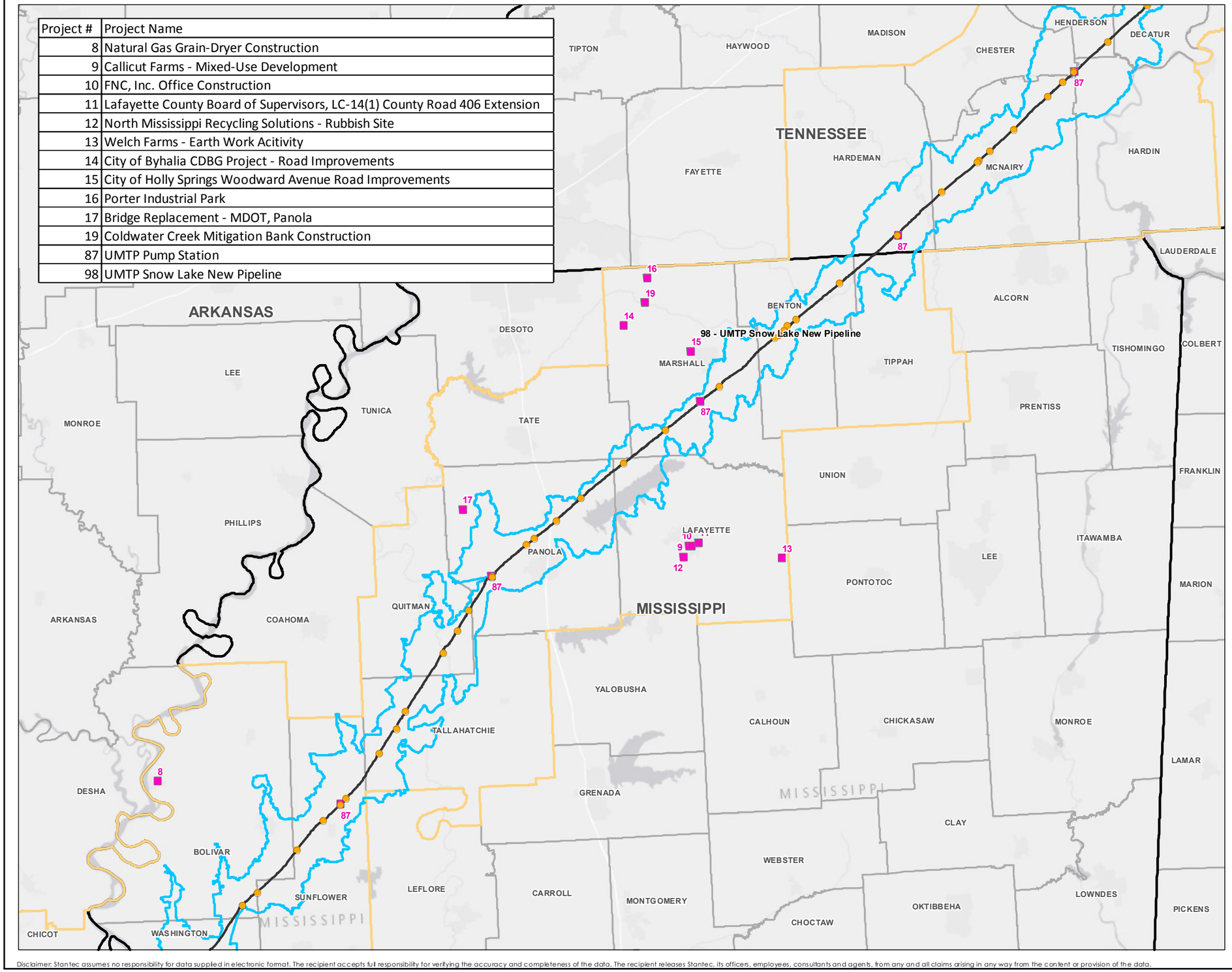


Figure No.
1-9

Title
Cumulative Overview of CIAA for Air, Water and Socioeconomics

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

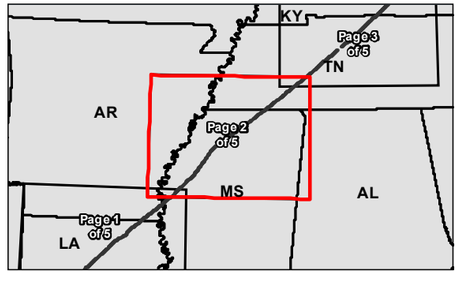
Prepared by BT on 2014-12-18
Technical Review by CP on 2014-12-18
Independent Review by JS on 2015-01-30

N

0 10 20 Miles
1:1,000,000 (At original document size of 11x17)

Legend
- Proposed Compressor Station Locations
- Proposed Workspace Locations
- KY 7.6-Mile New Build Pipeline
- ACRP Proposed Abandoned Line/ UMTP Proposed Liquids Line
- Other Project Location Points

Other Linear Projects
- Concord Road Widening
- Interconnect Pipeline Project
- Interstate 65 from Trinity Lane to Dickerson Pike
- Leach Express Project
- NEXUS Gas Transmission Project
- Ohio Pipeline Energy Network (OPEN)
- Rover Pipeline Project
- Utopia Pipeline Project
- UMTP Dickson New Pipeline
- UMTP Lateral Pipelines
- UMTP New Build (LA/TX)
- UMTP Snow Lake New Pipeline
- Water CIAA
- Socioeconomic CIAA
- Air CIAA



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 15S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Project #	Project Name
20	Speedway LLC Gasoline Dispensing Facility
21	Surface Coating Operation - Madison Mill, Inc.
22	Gasoline Dispensing Facility - MAPCO Express LLC
23	Gasoline Dispensing Facility - KB Fuels, Inc
24	National Health Care
25	Green Trails, LLC Subdivision
28	Flexographic Printing Facility
29	Don Kinslow Dairy Farm
30	Aggregate Resources, LLC - Surface mining
31	Park City/Edmonson County Sewer Project
36	Kentucky Energy Hub Project
38	Fort Campbell Solar Project
39	Interconnet Pipeline Project
85	Broad Run Project Compressor Station
86	UMTP HDD
87	UMTP Pump Station
90	Interconnect Pipeline Project
96	Concord Road Widening
97	Interstate 65 from Trinity Lane to Dickerson Pike
98	UMTP Dickson New Pipline

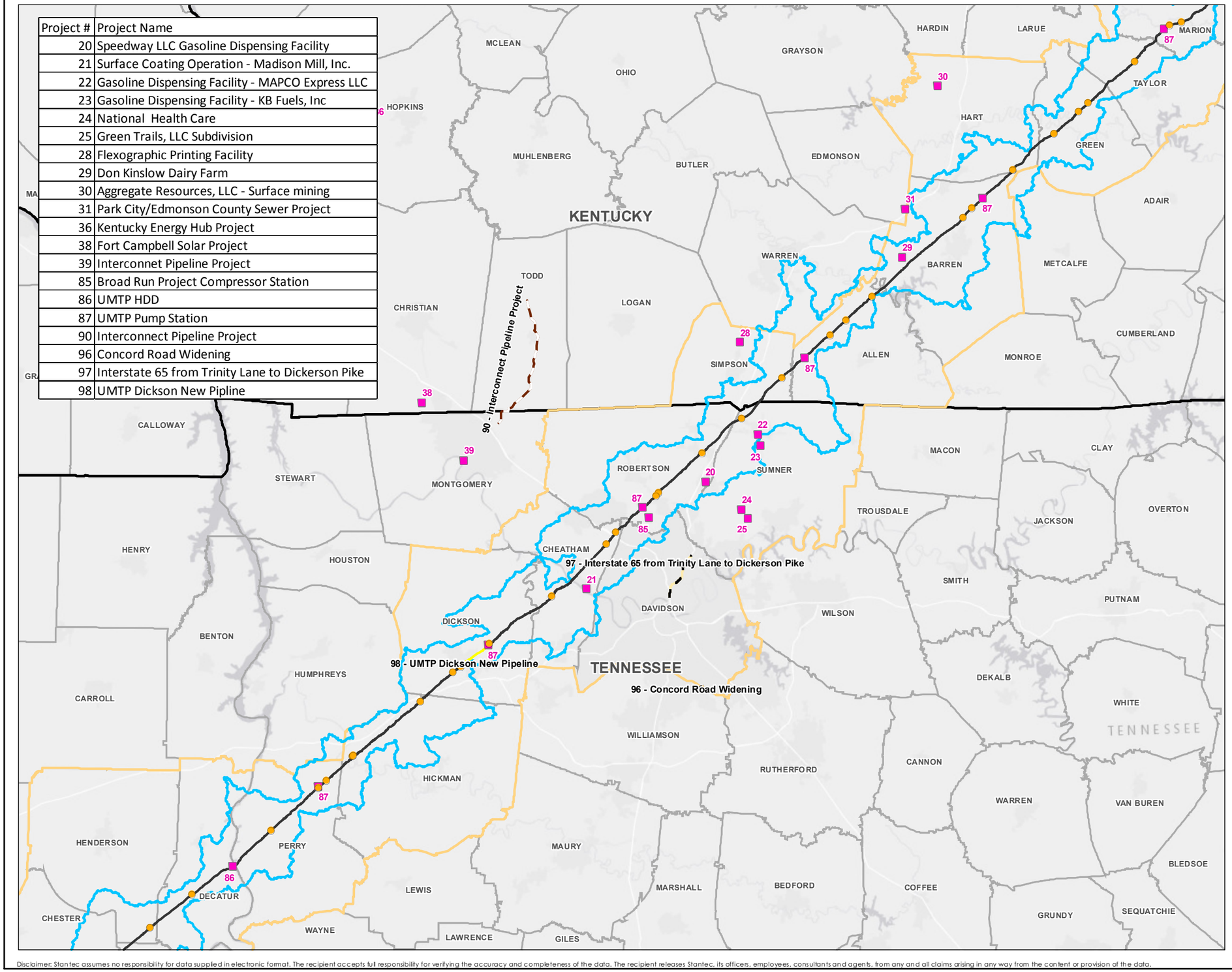


Figure No.
1-9

Title
Cumulative Overview of CIAA for Air, Water and Socioeconomics

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

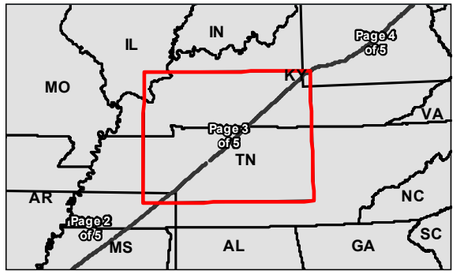
Prepared by BT on 2014-12-18
Technical Review by CP on 2014-12-18
Independent Review by JS on 2015-01-30

N

0 10 20 Miles
1:1,000,000 (At original document size of 11x17)

Legend
- Proposed Compressor Station Locations
- Proposed Workspace Locations
- KY 7.6-Mile New Build Pipeline
- ACRP Proposed Abandoned Line/ UMTP Proposed Liquids Line
- Other Project Location Points

Other Linear Projects
- Concord Road Widening
- Interconnect Pipeline Project
- Interstate 65 from Trinity Lane to Dickerson Pike
- Leach Express Project
- NEXUS Gas Transmission Project
- Ohio Pipeline Energy Network (OPEN)
- Rover Pipeline Project
- Utopia Pipeline Project
- UMTP Dickson New Pipeline
- UMTP Lateral Pipelines
- UMTP New Build (LA/TX)
- UMTP Snow Lake New Pipeline
- Water CIAA
- Socioeconomic CIAA
- Air CIAA



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Project #	Project Name
32	Mark West Energy Appalachia, LLC – Siloam Fractionation Plant
33	Portable Mining Plant
34	Mountain Materials Inc - Portable Screen No 2
35	River Sand & Gravel, LLC
37	Kentucky River Lock & Dam No 11 Hydroelectric Project
40	Sewer Improvements - Scioto County
41	Vocational School Waterline Replacement
42	Osco Industries, Inc. Cooling Drum Installation
43	Melvin Stone Aggregate
44	Blackstone Asphalt, Inc. - Asphalt Plant
45	Imperial Electric Company - Emission Control Work
46	Southern Ohio Coal Company Diffuser Unit
48	Athens DOT Maintenance Facility
55	Rolling Hill Generating Station Cooling Towers
85	Broad Run Project Compressor Station
86	UMTP HDD
87	UMTP Pump Station
91	Leach Express Project

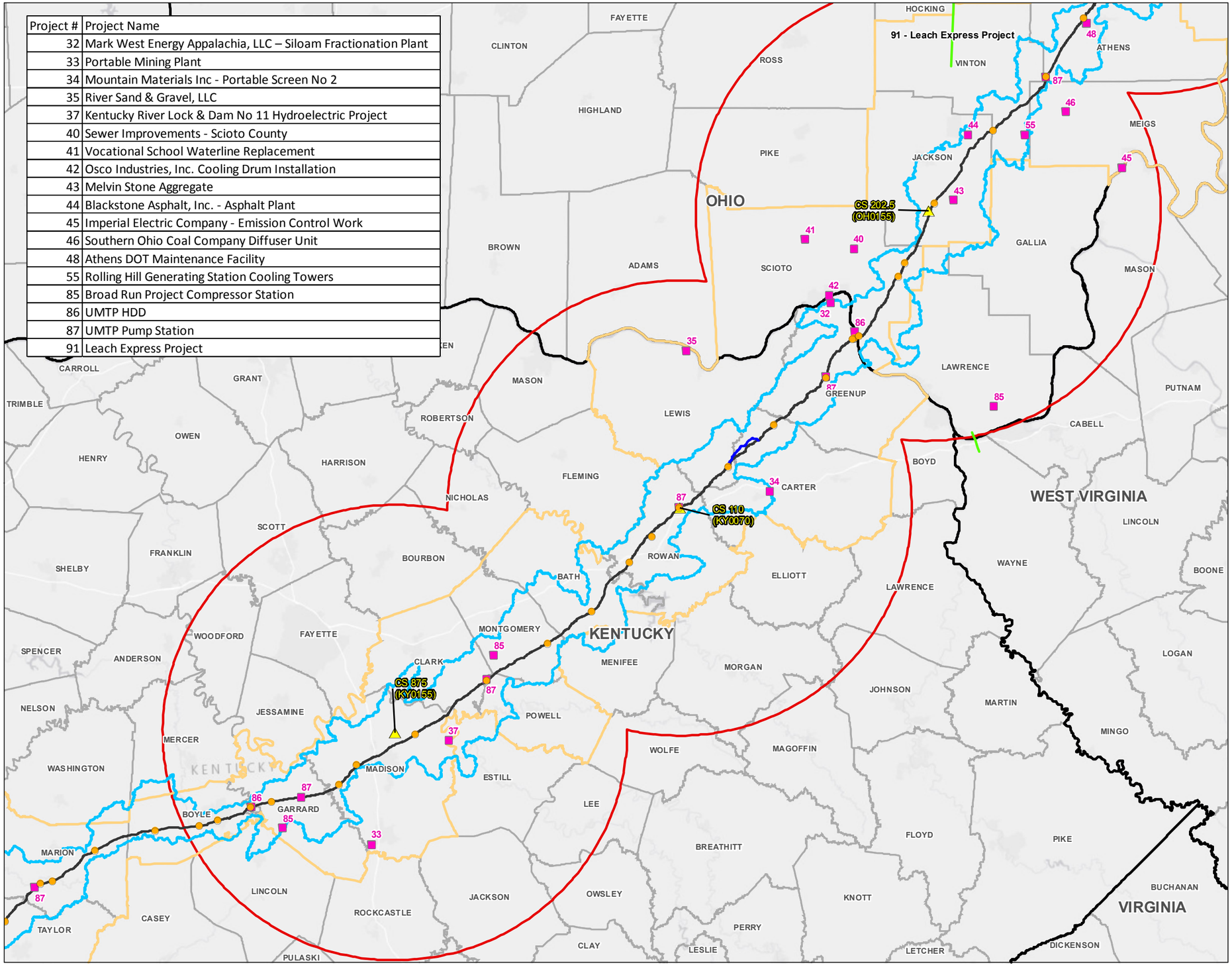


Figure No.
1-9

Title
Cumulative Overview of CIAA for Air, Water and Socioeconomics

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

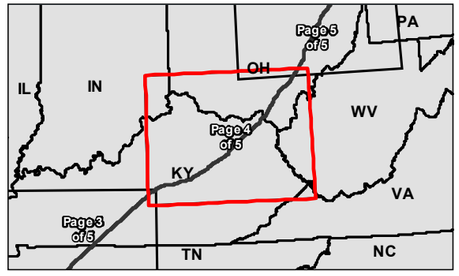
Prepared by BT on 2014-12-18
Technical Review by CP on 2014-12-18
Independent Review by JS on 2015-01-30

N

0 10 20 Miles
1:1,000,000 (At original document size of 11x17)

Legend
- Proposed Compressor Station Locations
- Proposed Workspace Locations
- KY 7.6-Mile New Build Pipeline
- ACRP Proposed Abandoned Line/ UMTP Proposed Liquids Line
- Other Project Location Points

Other Linear Projects
- Concord Road Widening
- Interconnect Pipeline Project
- Interstate 65 from Trinity Lane to Dickerson Pike
- Leach Express Project
- NEXUS Gas Transmission Project
- Ohio Pipeline Energy Network (OPEN)
- Rover Pipeline Project
- Utopia Pipeline Project
- UMTP Dickson New Pipeline
- UMTP Lateral Pipelines
- UMTP New Build (LA/TX)
- UMTP Snow Lake New Pipeline
- Water CIAA
- Socioeconomic CIAA
- Air CIAA



Notes
1. Coordinate System: GCS North American 1983 UTM Zone 16S (Calculated)
2. Data Sources Include: Kinder Morgan, HMM, Stantec, ESRI
3. Background: ESRI

Project #	Project Name
47	Robbins Road Sanitary Sewer Extension
48	Athens DOT Maintenance Facility
49	PDC Energy, Inc - Palmer Pad
50	Leesville Cyrogenic Gas Processing Plant
51	Utica Gas Services, LLC-Carrollton Compressor Facility
52	Chesapeake Exploration Oil and gas well site
53	Chesapeake Exploration Oil and gas well site
54	Chesapeake Oil and gas well site
56	Newpark Norwich Facility Diesel Generator
57	PDC Energy, Inc - Dynamite Pad
58	American Energy Oil and gas well site
59	American Energy Oil and gas well site
60	Gulfport Energy Oil and gas well site
61	Gulfport Energy - Ripley Well Pad
62	Oil and gas well site production
63	Eclipse Resources Oil and gas production facility
64	EQT Oil and gas well site production
65	EQT Oil and gas well site production
66	Schlumberger Technology Corporation - Cement Mix Plant
67	Hess Oil and gas production facility
68	American Energy Oil and gas well site production
69	Gulfport Oil and gas well site production
70	American Energy - Utica, LLCLawson 19-11N-7W oil & gas Facility
71	Hopedale Fractionation Facility
72	Gulfport Energy - County Line oil and gas facility - Puskarich
73	Chesapeake Exploration LLC - Trushell 8-13-6 PAD
74	Blue Racer Midstream LLC - Harrison CO Field Station #2 oil and gas production
75	Chesapeake Oil and gas well site
76	Hess Oil and gas well site production
77	American Energy Oil and gas well site
78	Ameican Energy Oil and gas well site
79	Chesapeake oil and gas well site
80	Chesapeake oil and gas well site
81	Chesapeake oil and gas well site production
82	Chesapeake oil and gas well site production
83	Chesapeake oil and gas well site
84	Charleston Sanitary Board: Porter's Hollow Sanitary Sewer Replacement and Rehab Project
87	UMTP Pump Station
91	Leach Express
92	Nexus Gas Transmission Project
93	Ohio Pipeline Energy Network (OPEN)
94	Rover Pipeline Project
98	UMTP Lateral Pipelines
99	Utopia Pipeline Project

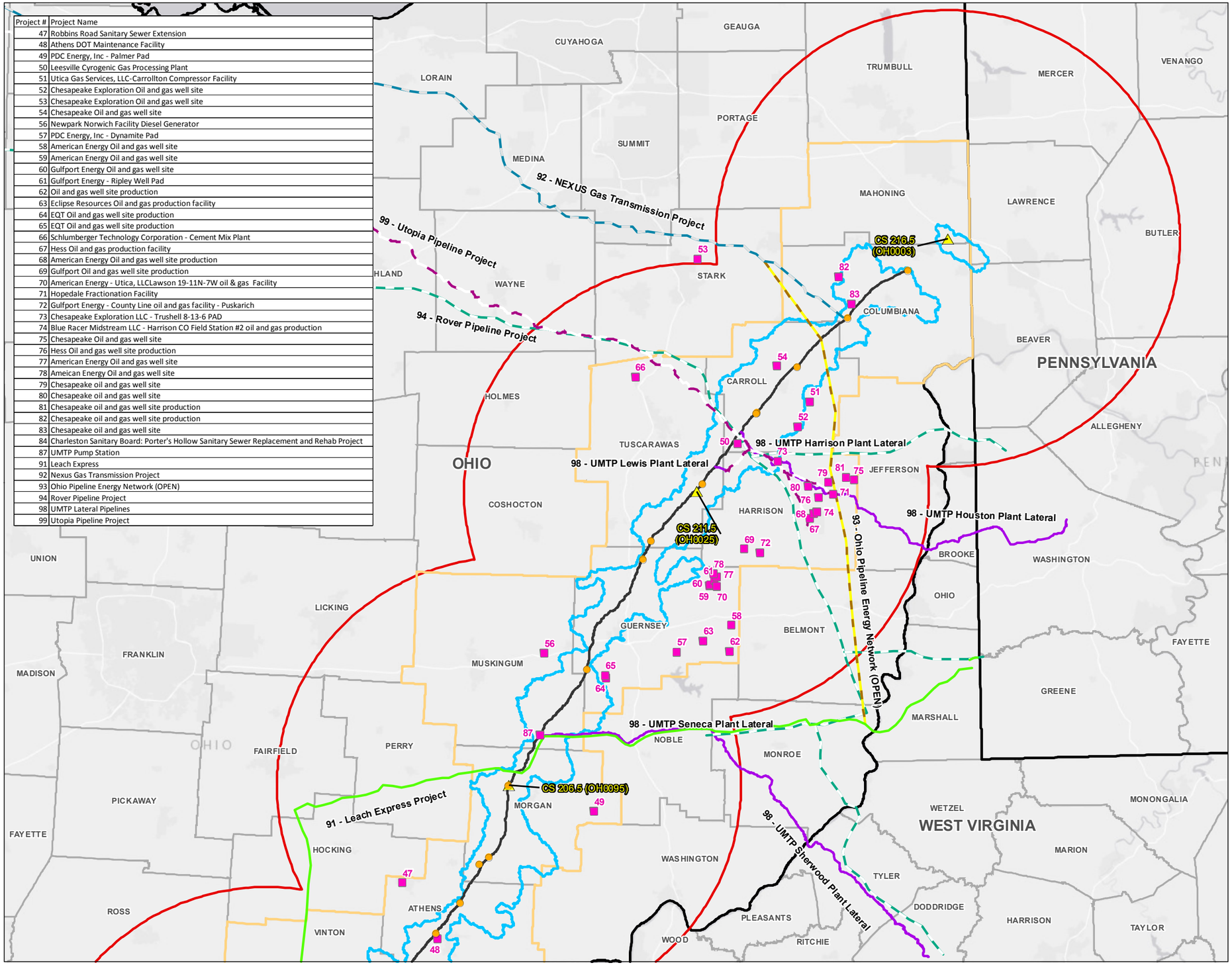


Figure No.
1-9

Title
Cumulative Overview of CIAA for Air, Water and Socioeconomics

Client/Project
Tennessee Gas Pipeline Company, L.L.C.
Abandonment and Capacity Restoration Project

Project Location
Ohio, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana

Prepared by BT on 2014-12-18
Technical Review by CP on 2014-12-18
Independent Review by JS on 2015-01-30

N

0 10 20 Miles
1:1,000,000 (At original document size of 11x17)

Legend
- Proposed Compressor Station Locations
- Proposed Workspace Locations
- KY 7.6-Mile New Build Pipeline
- ACRP Proposed Abandoned Line/ UMTP Proposed Liquids Line
- Other Project Location Points

Other Linear Projects
- Concord Road Widening
- Interconnect Pipeline Project
- Interstate 65 from Trinity Lane to Dickerson Pike
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- Socioeconomic CIAA
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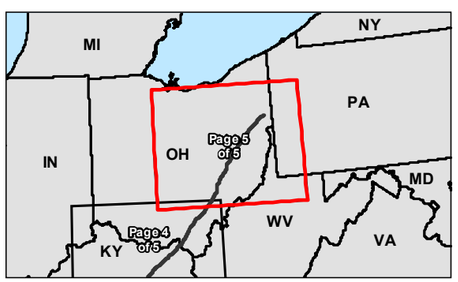

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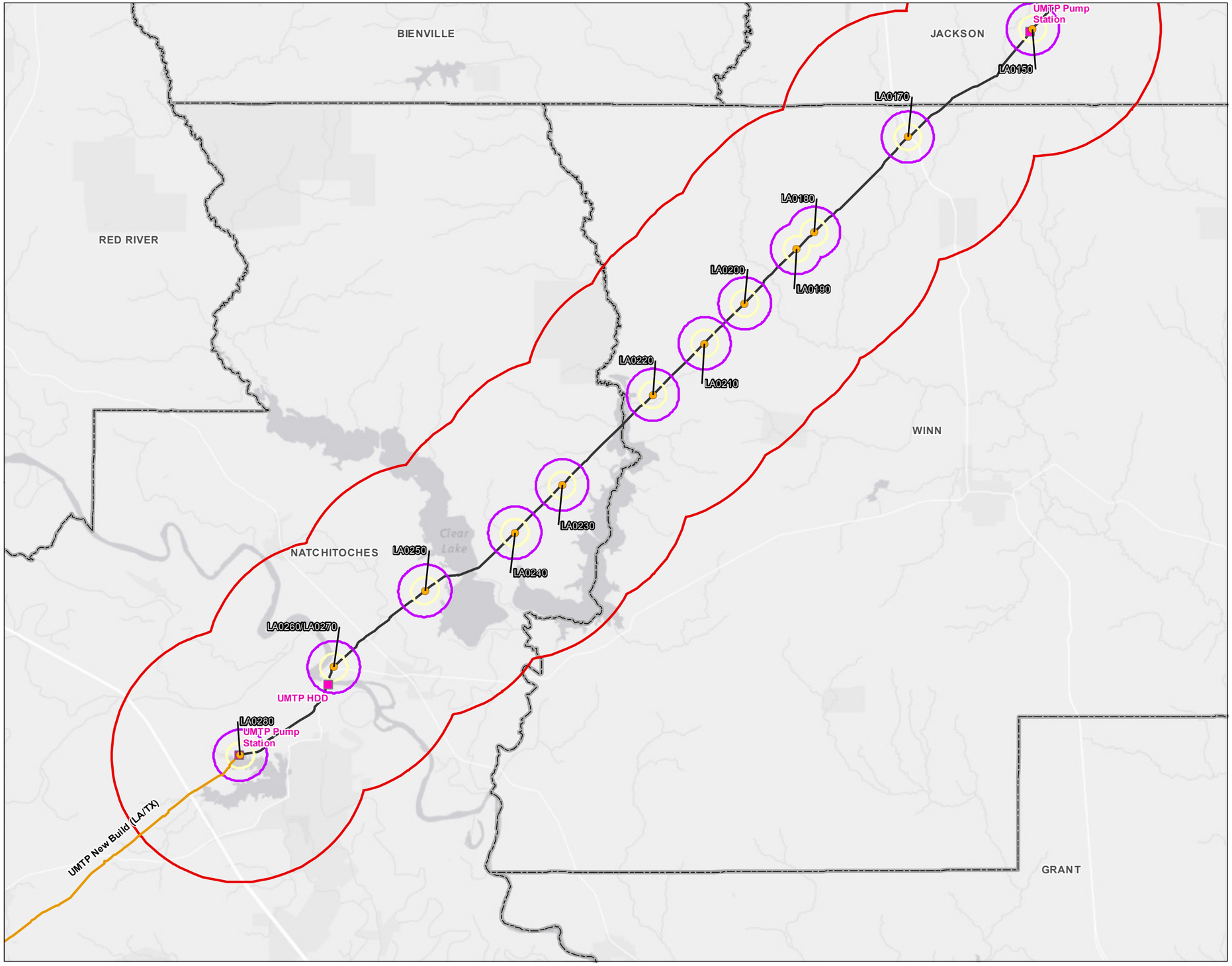

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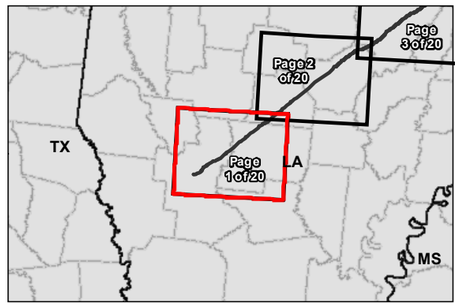

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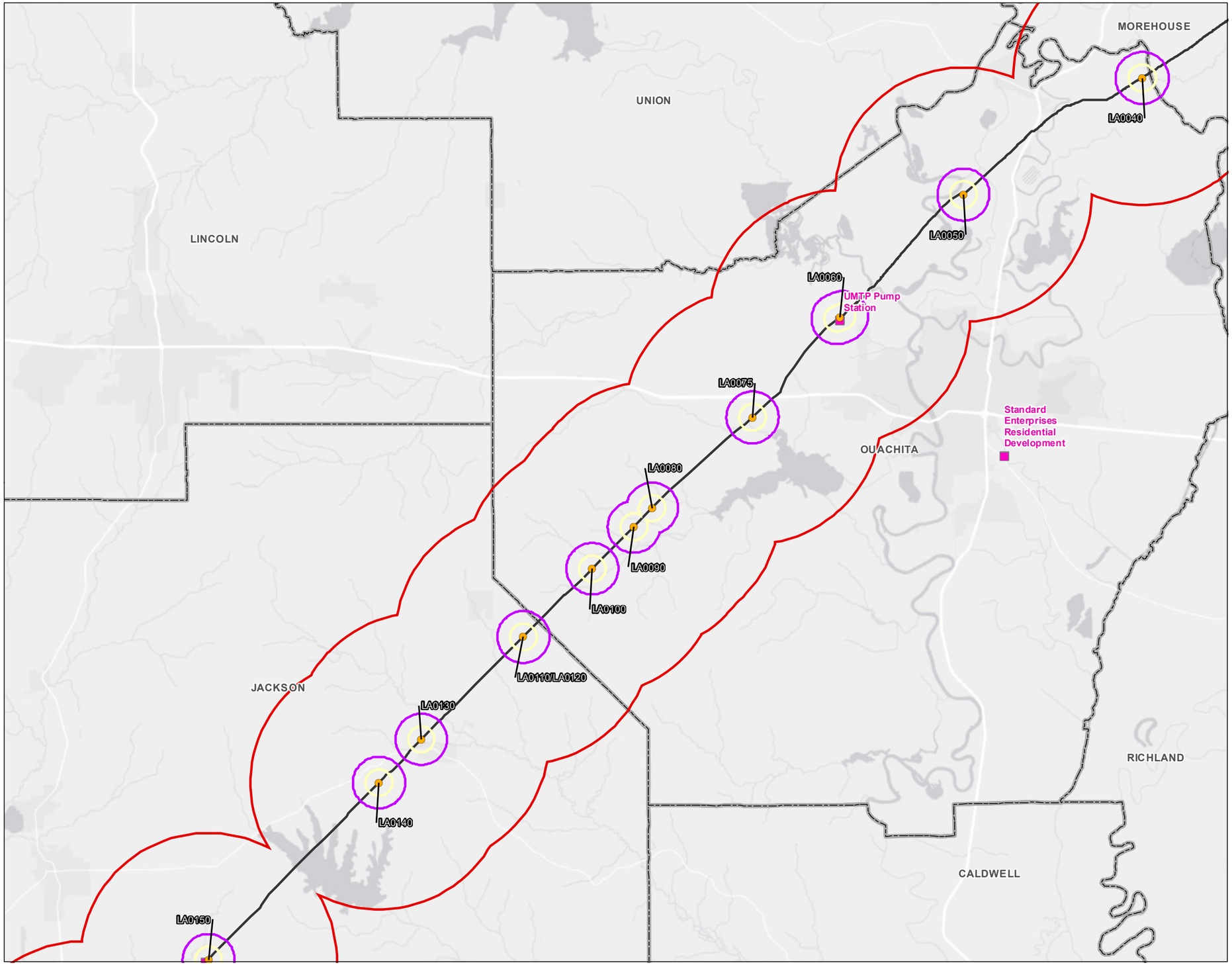

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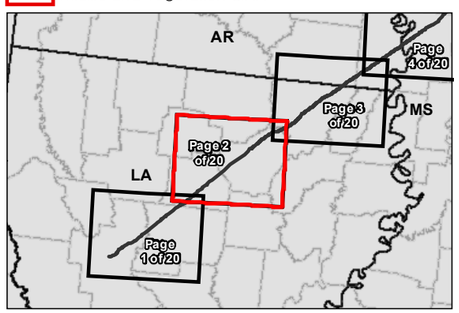

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Crossett I Industrial Park

West Ashley County Water Association

ASHLEY

CHICOT

AR0020

AR0030

ARKANSAS

LOUISIANA

ARKANSAS

LOUISIANA

LOUISIANA

LA0010

UMTP Pump Station

LA0020

Bussy Lake

MOREHOUSE

LA0030

WEST CARROLL

EAST CARROLL

LA0040

OUACHITA

RICHLAND

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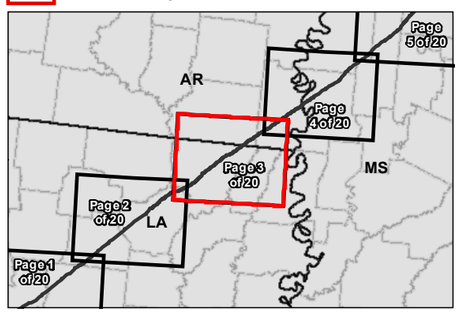

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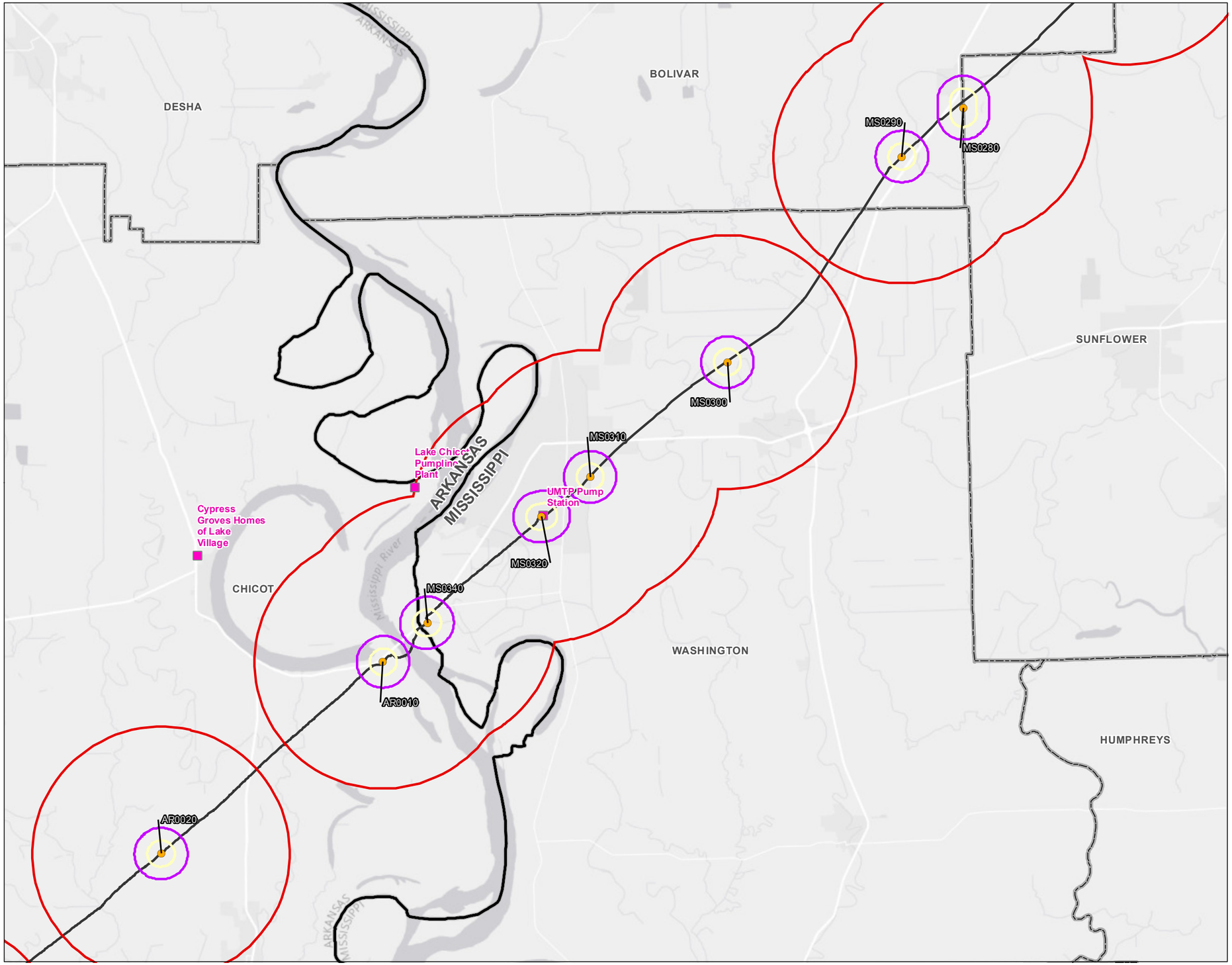

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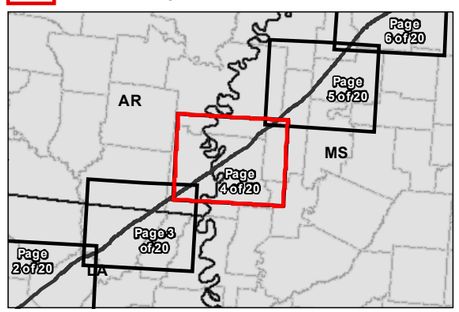

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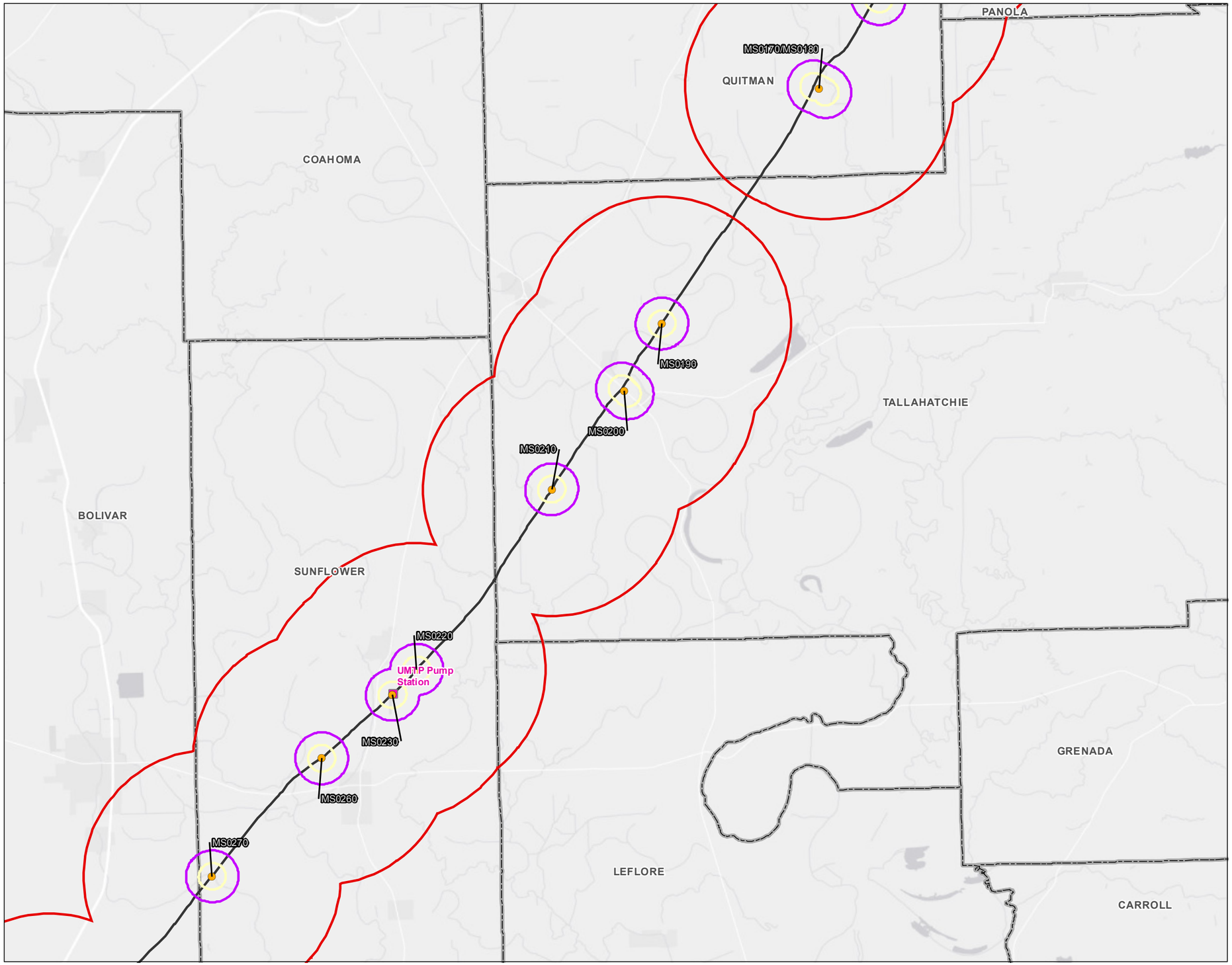

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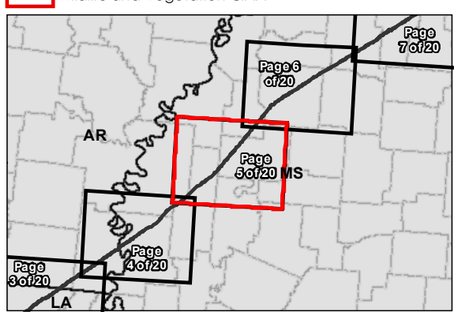

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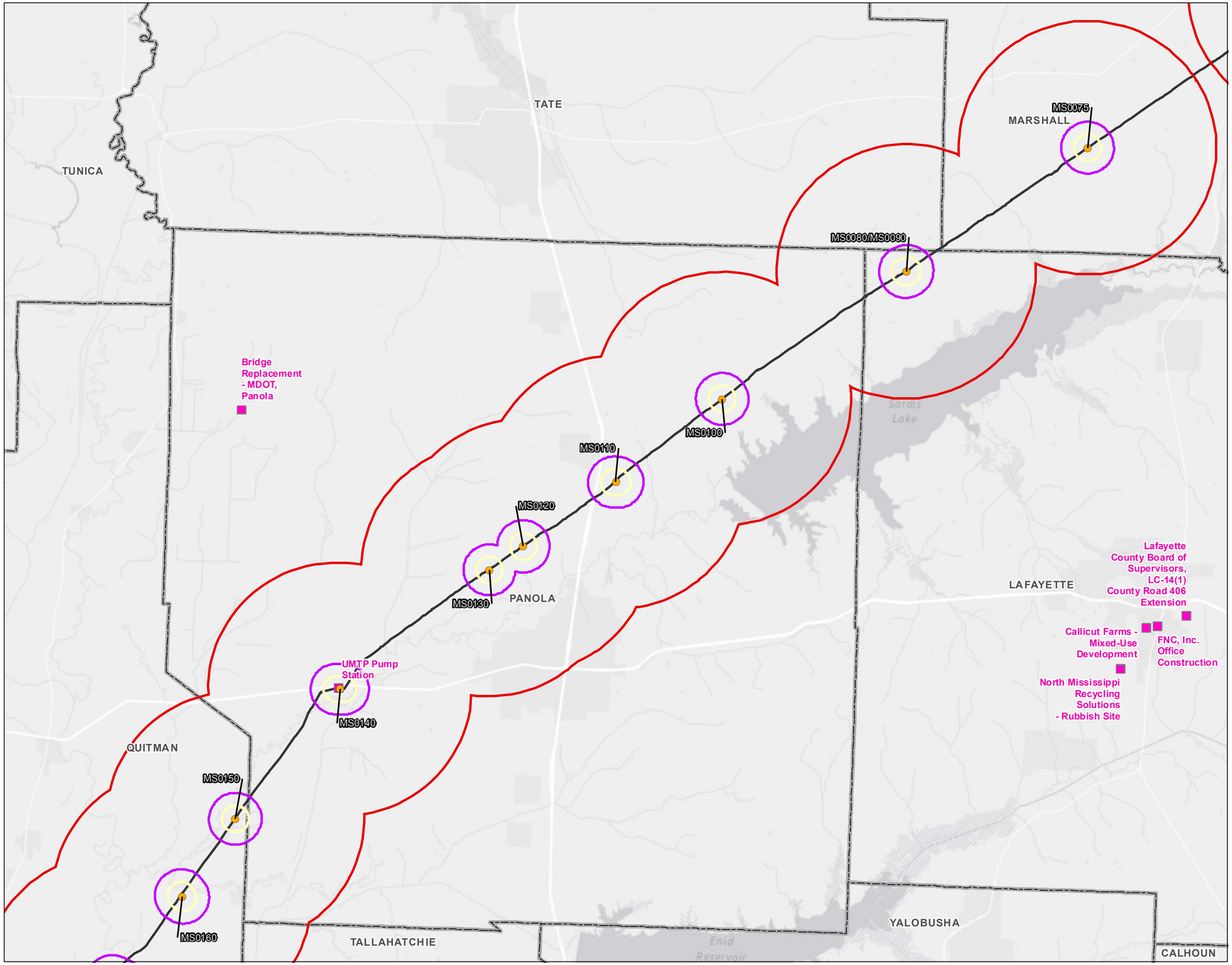

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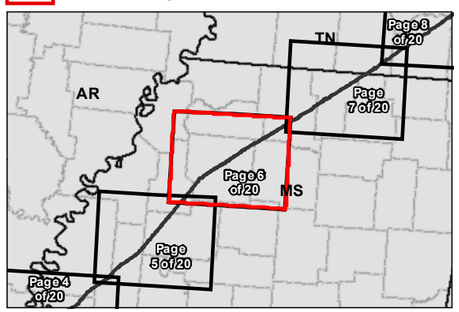

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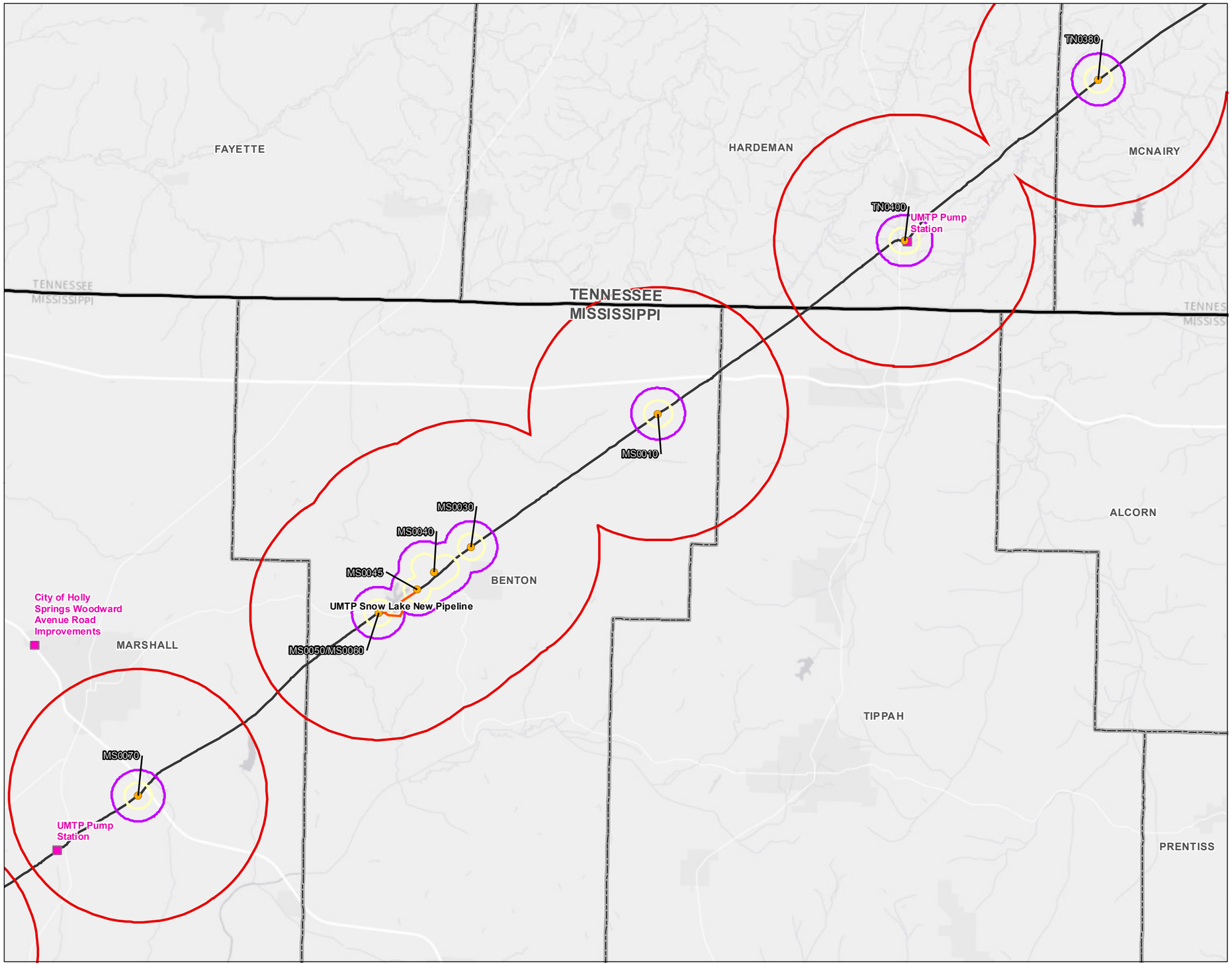

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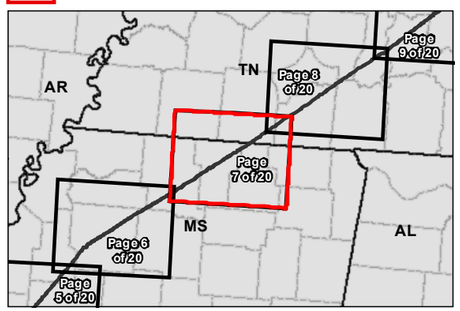

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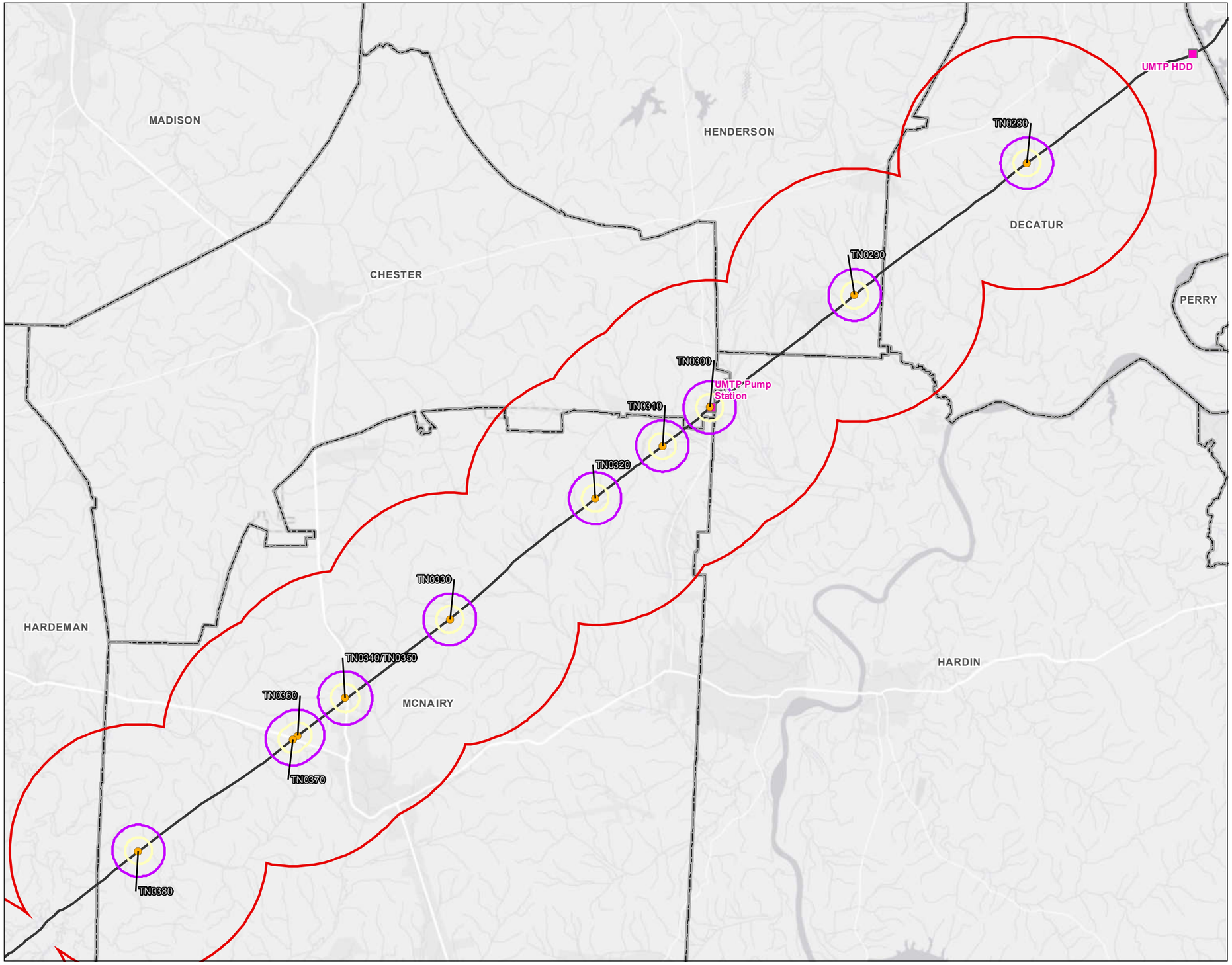

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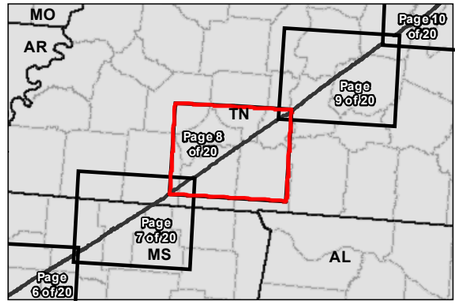

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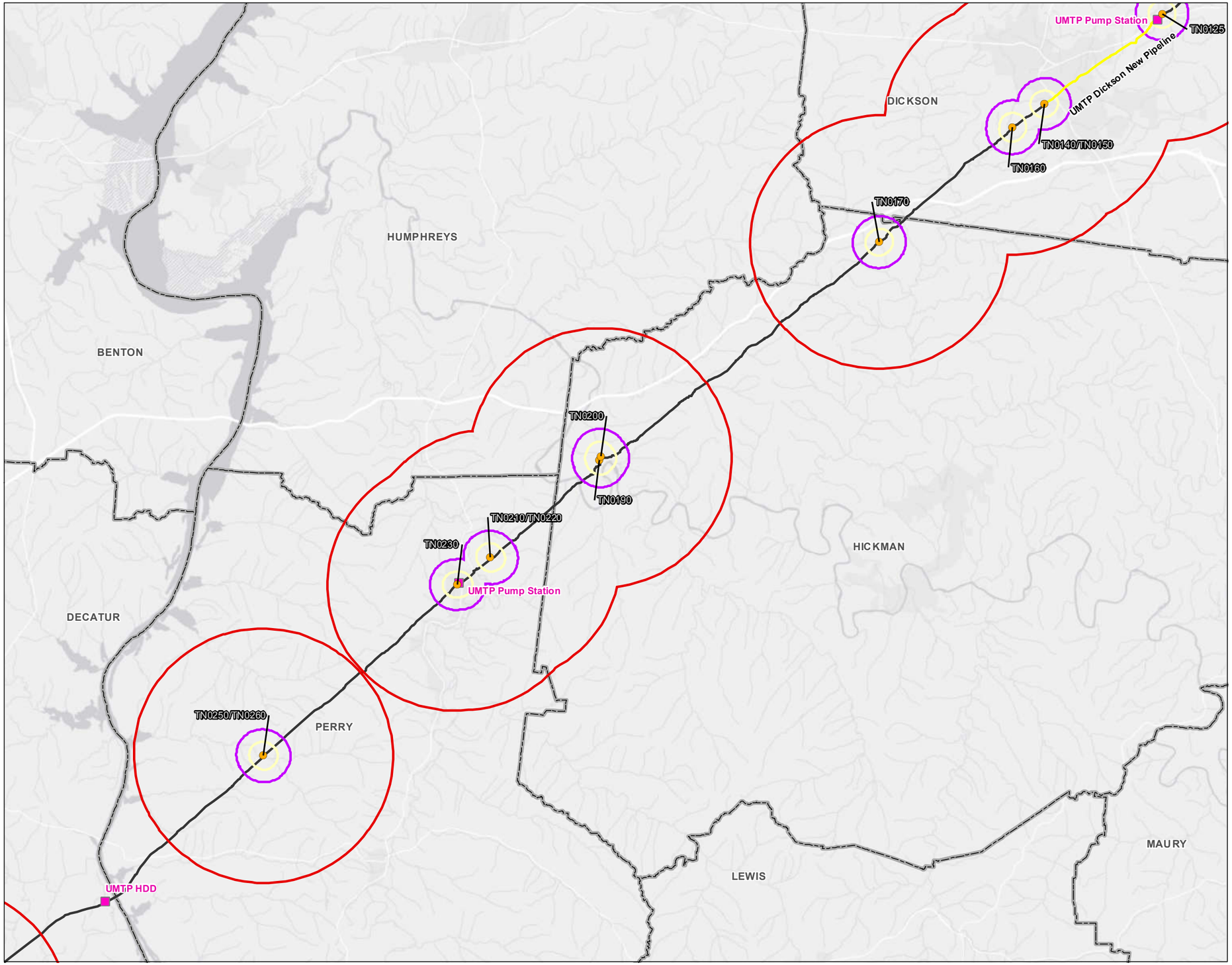

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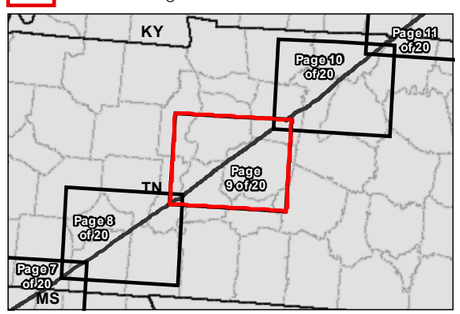

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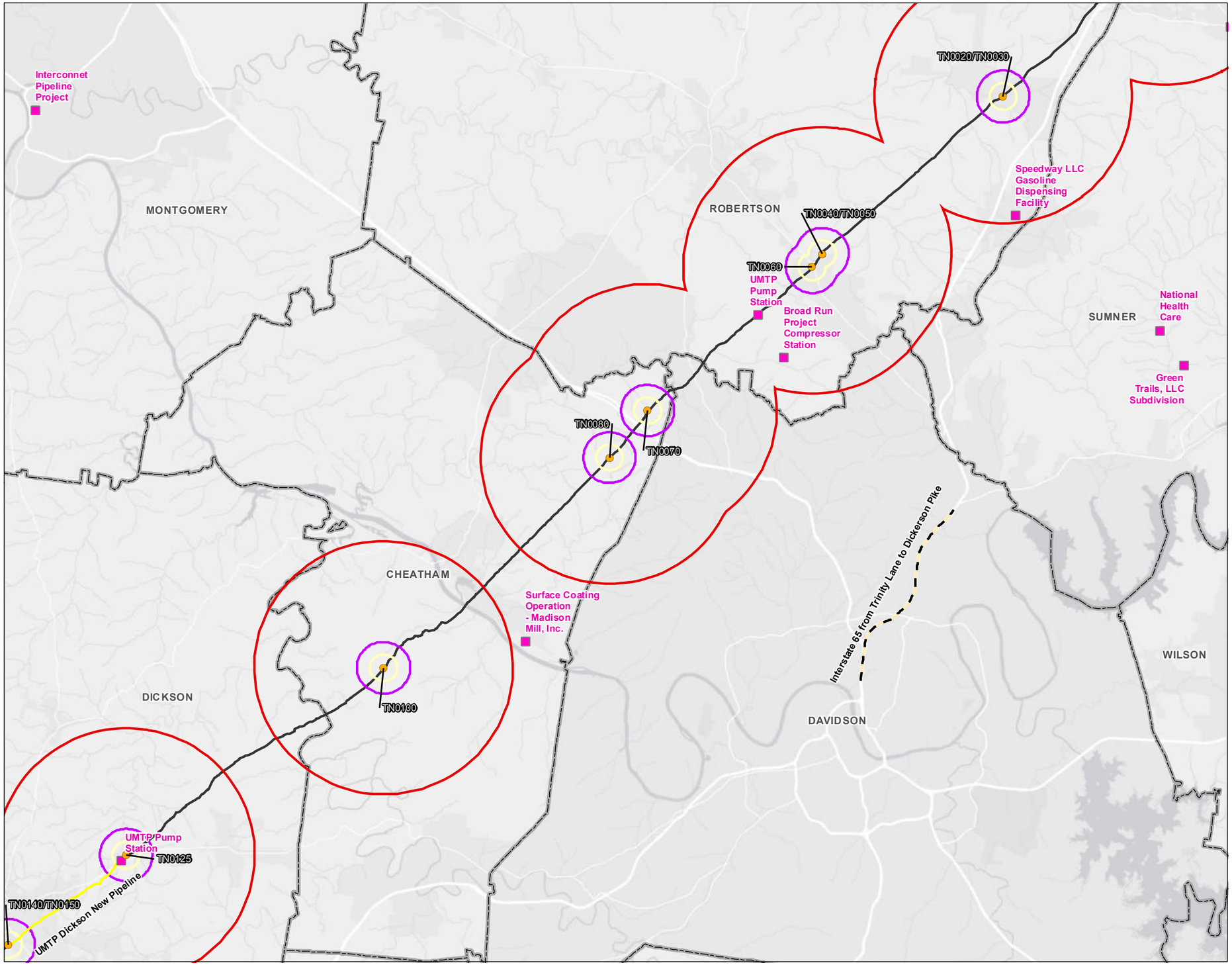

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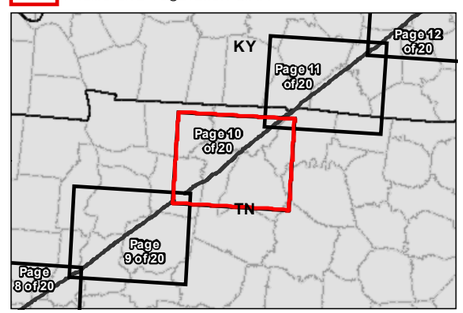

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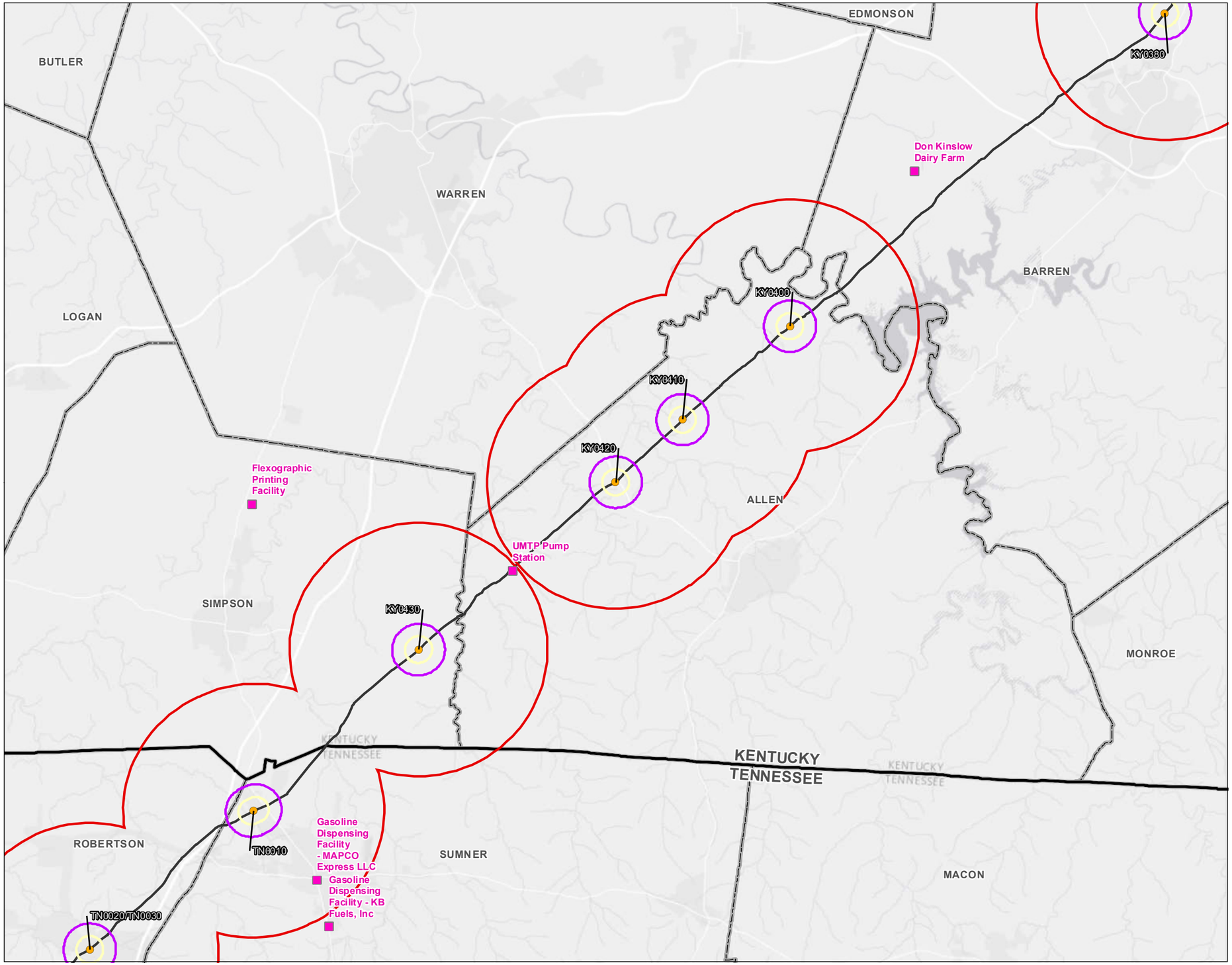

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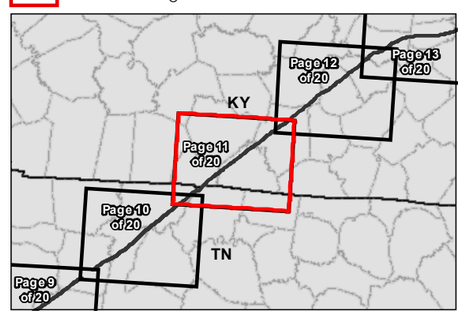

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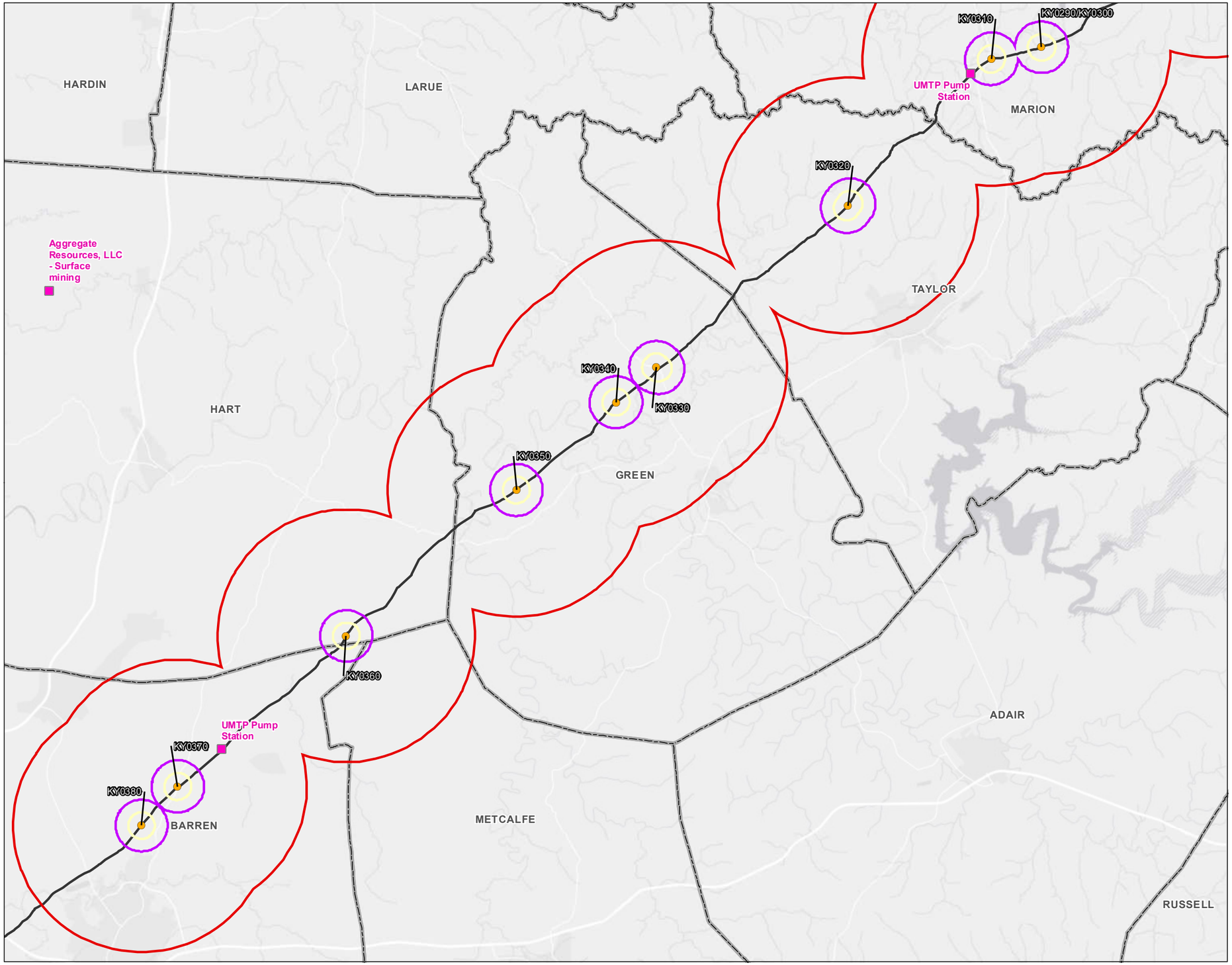

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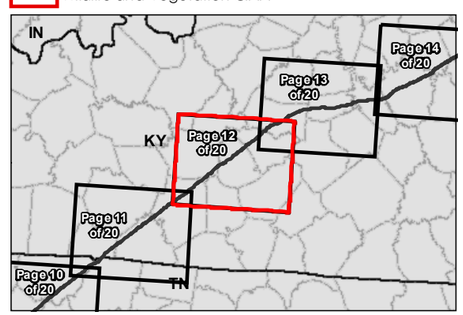

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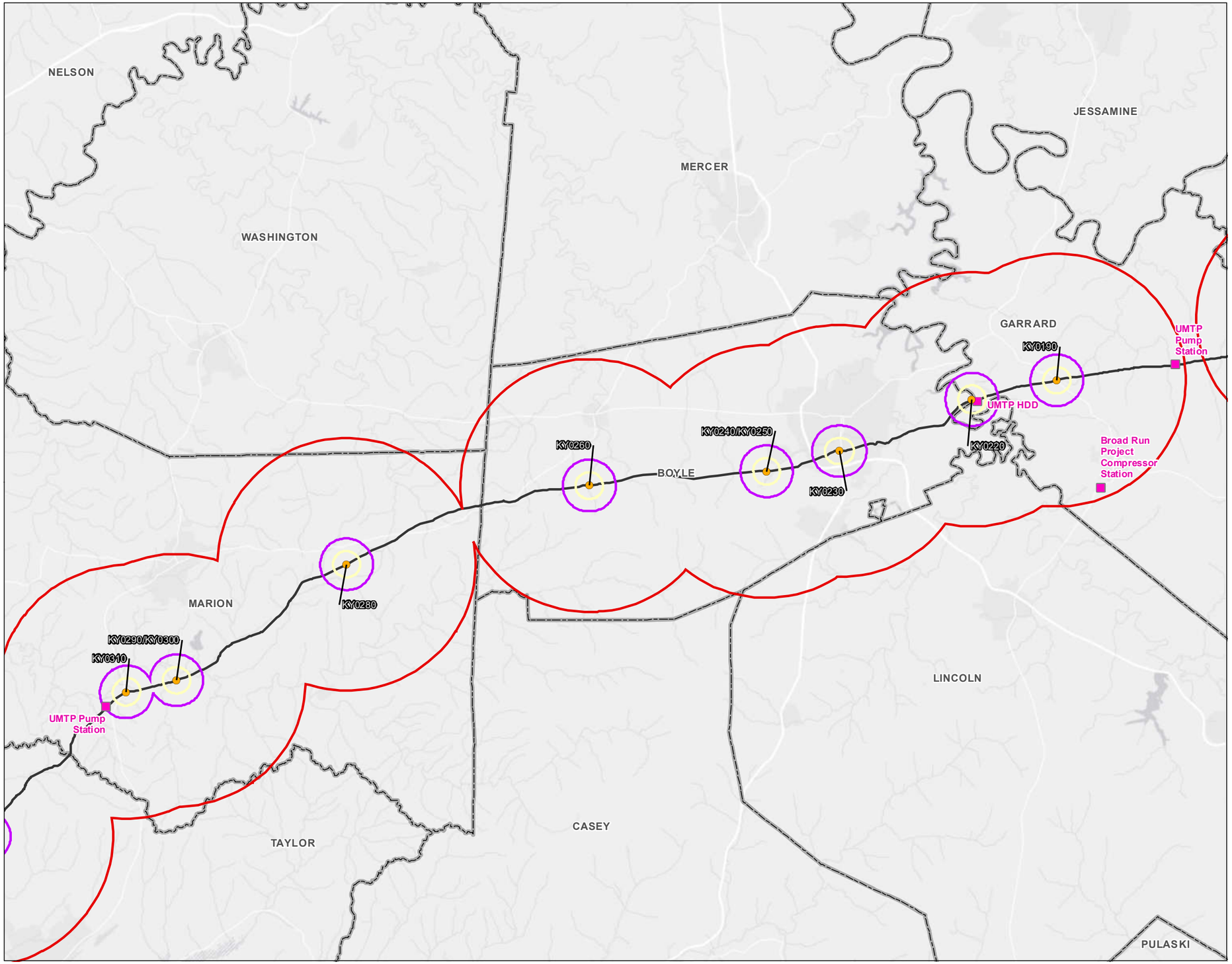

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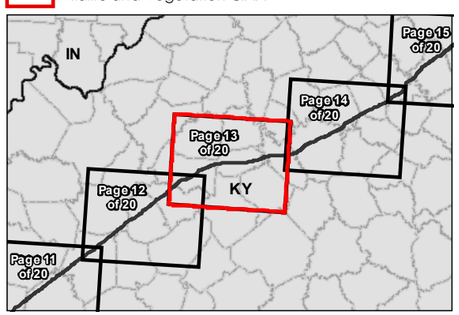

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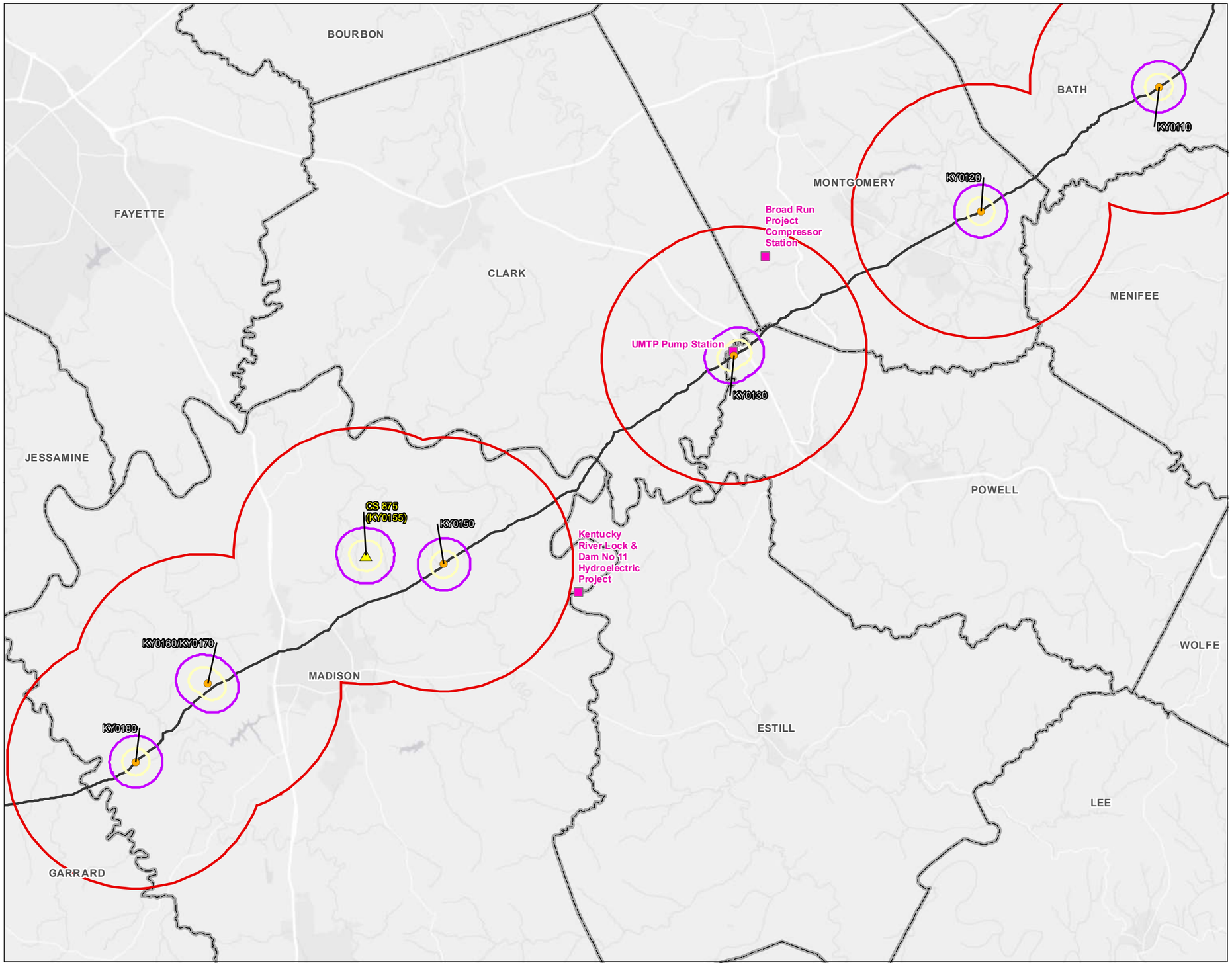

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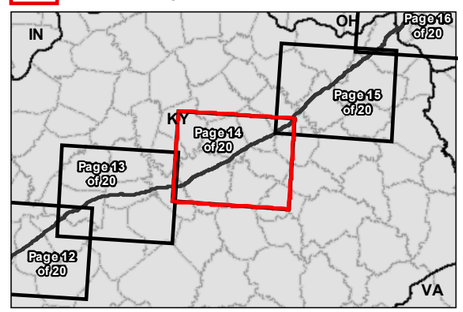

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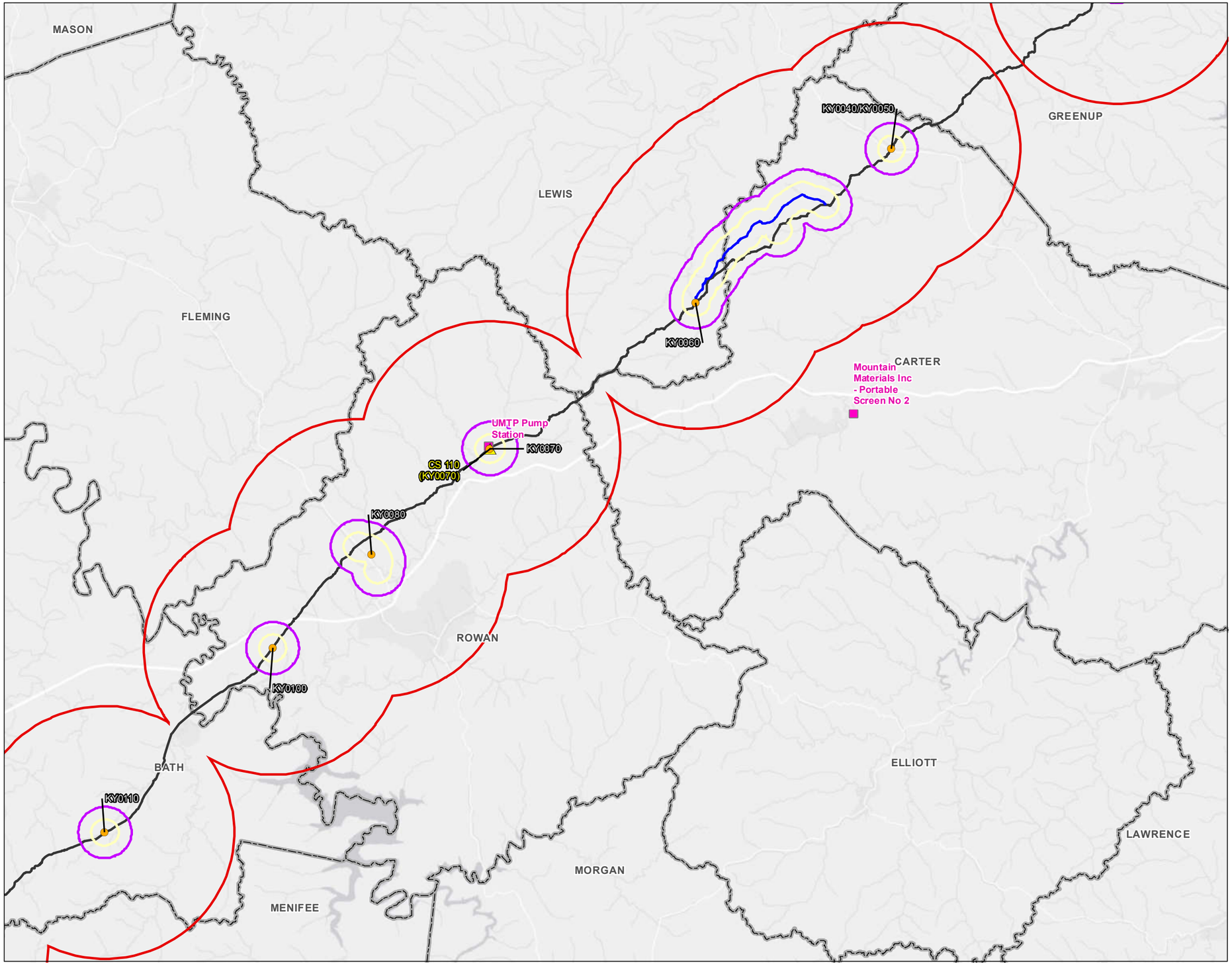

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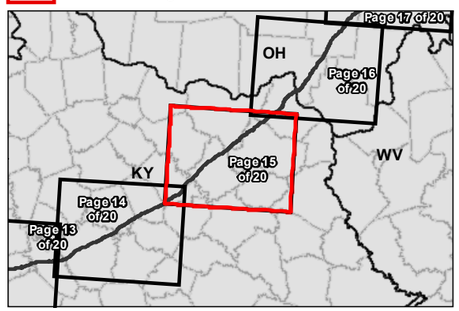

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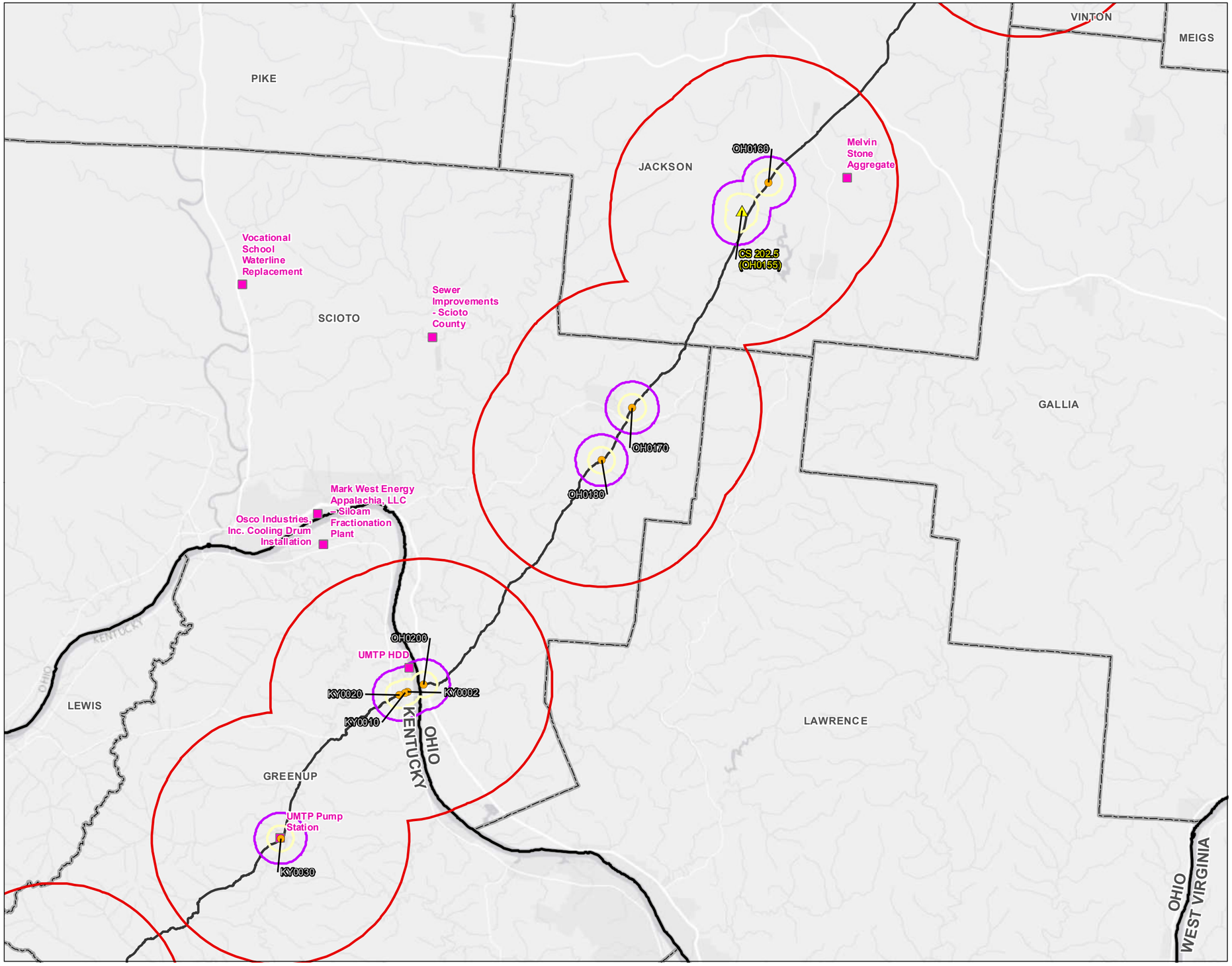

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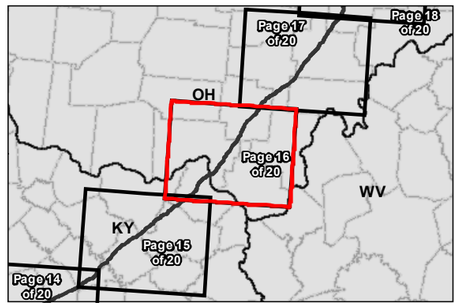

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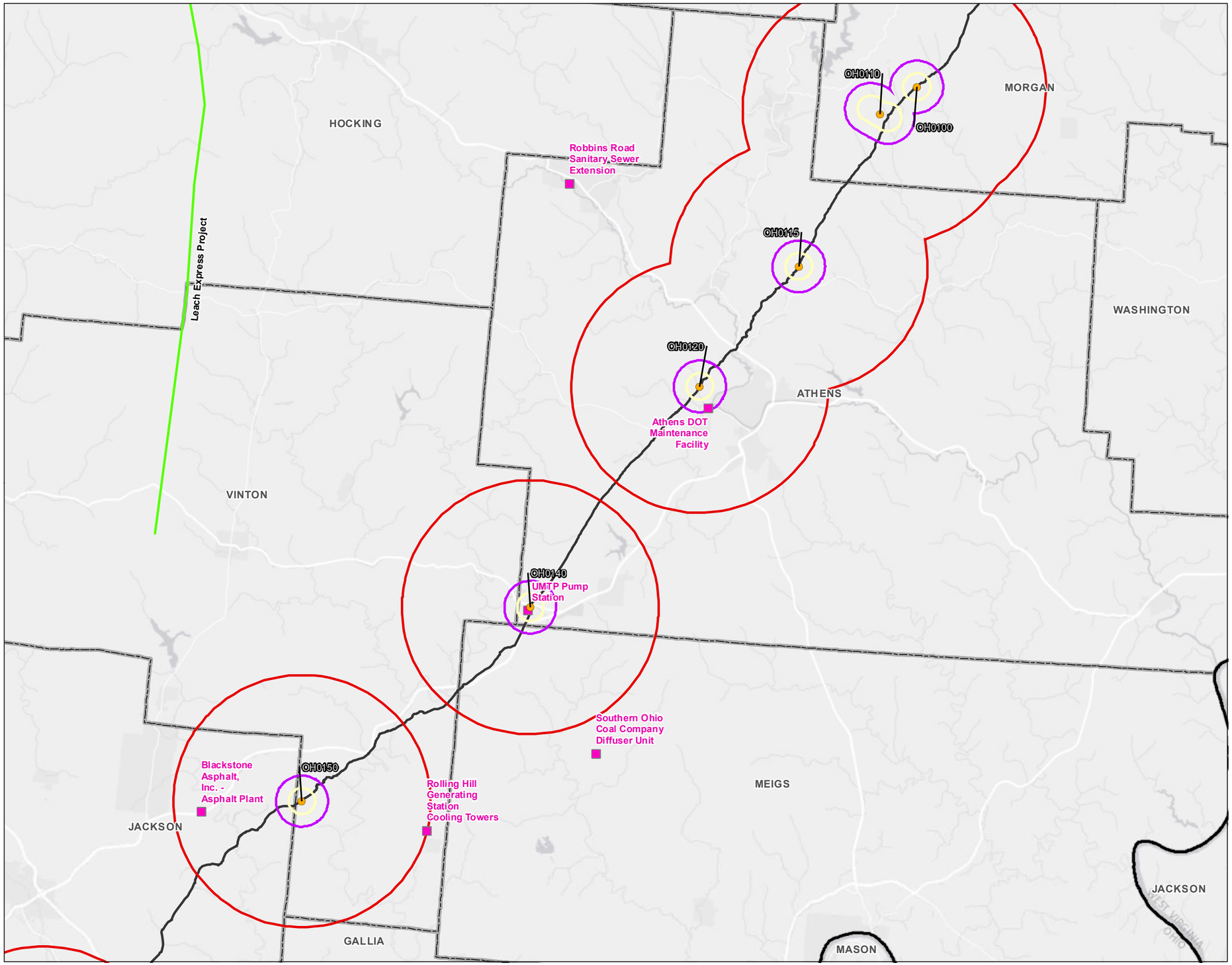

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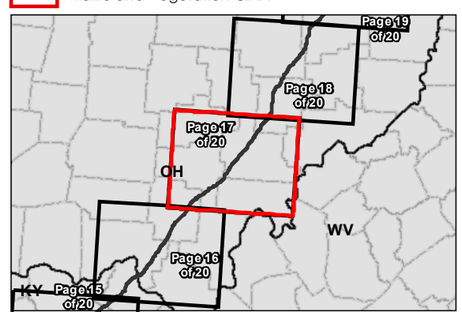

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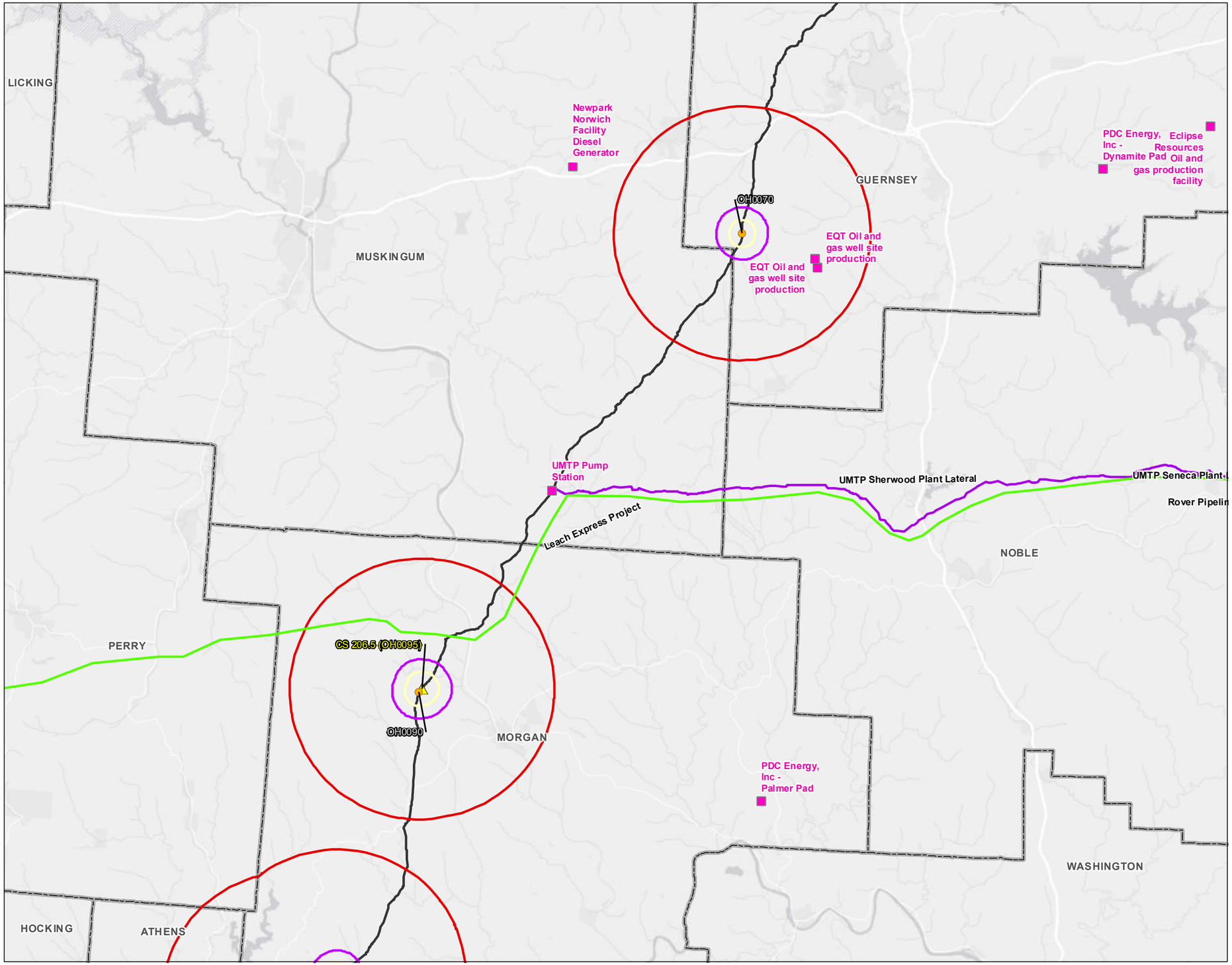

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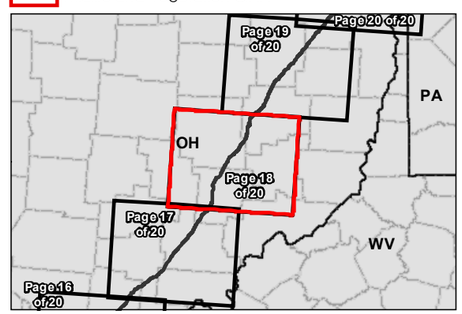

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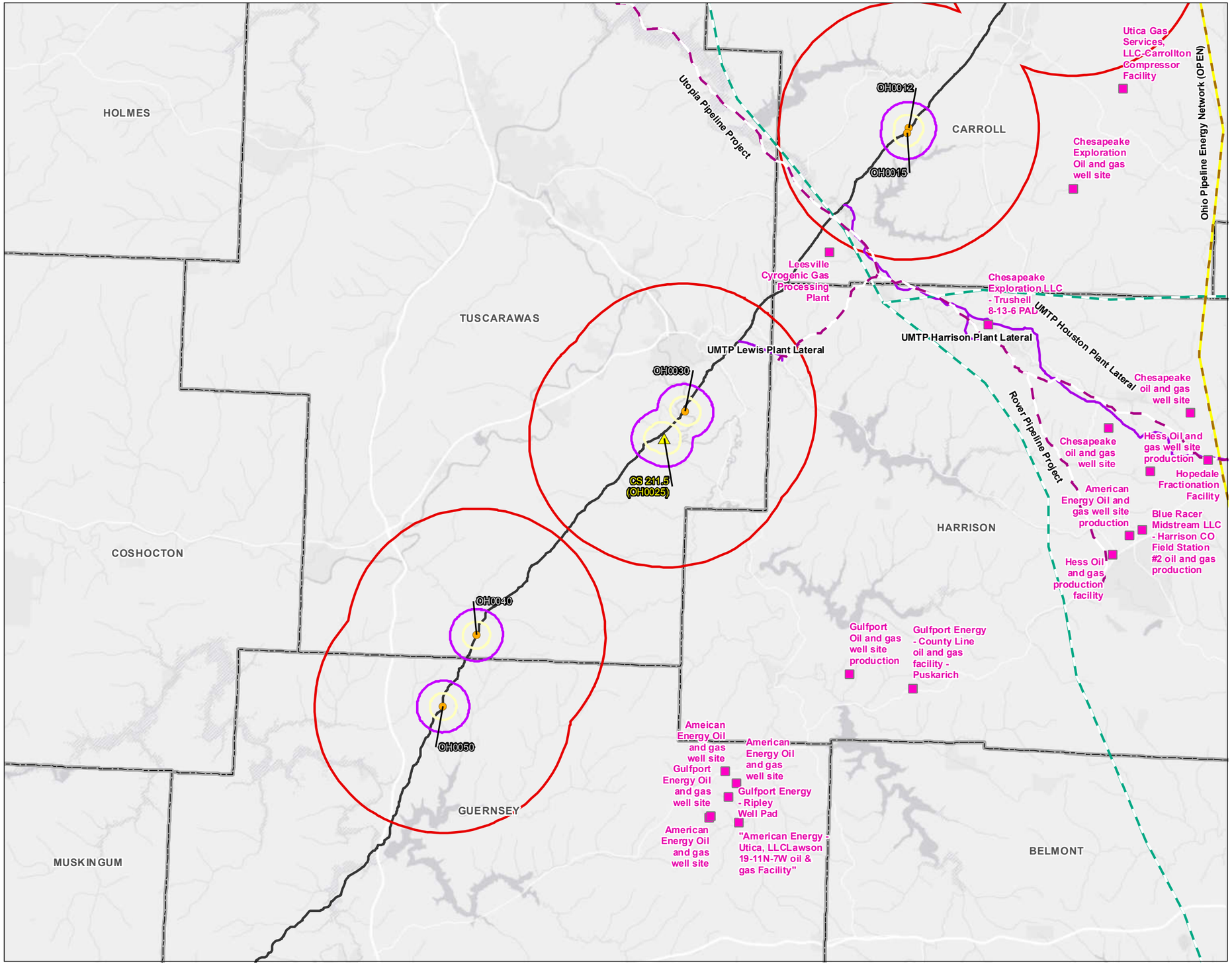

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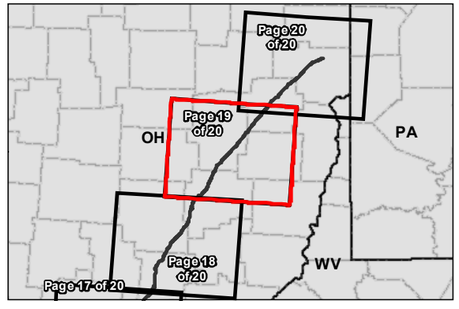

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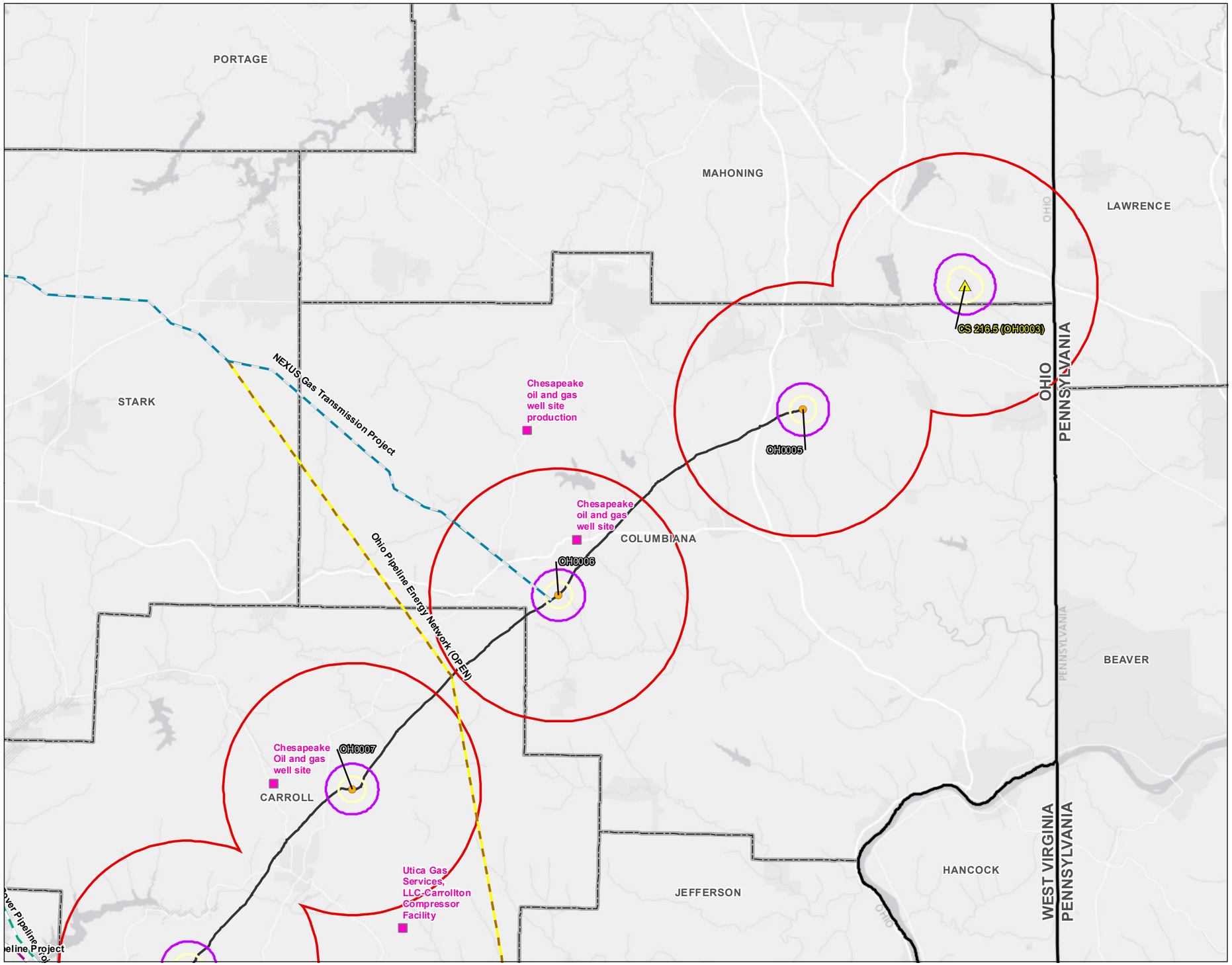

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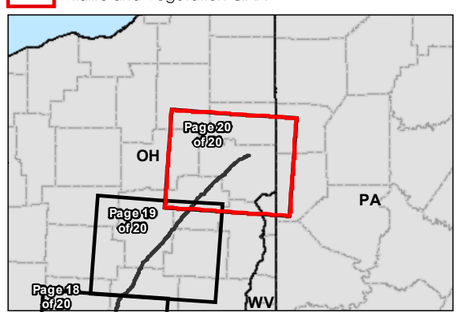

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Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1A State Overview of the Abandonment Route

(Bound Separately in Volume II)

Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1B State Overview of the Natural Gas System Modifications

(Bound Separately in Volume II)

Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1C Tables of Abandonment/ Construction Sites

(Bound Separately in Volume II)

Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1D Aerial Maps of the Abandoned Line

(Bound Separately in Volume II)

Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1E Topographic Maps of the Abandoned Line

(Bound Separately in Volume II)

Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1F Aerial Maps of the Natural Gas System Modification Locations

For compressor stations, the permanent easement shown on the figures indicates the operational area

(Bound Separately in Volume II)

Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1G Aerial and Topographic Maps and Alignment Sheets of the Kentucky 7.6-mile New Build Pipeline

For compressor stations, the permanent easement shown on the figures indicates the operational area

(Bound Separately in Volume II)

Tennessee Gas Pipeline Company, L.L.C.

Abandonment and Capacity Restoration Project

Appendix 1H Typical Site Sketches/Cross Sections

(Bound Separately in Volume II)