

TABLE OF CONTENTS

REX EAST PROJECT EIS

	<u>Page</u>
TABLE OF CONTENTS	i
LIST OF APPENDICES	v
LIST OF ADDITIONAL DOCUMENTS ON ENCLOSED CD-ROM	vi
LIST OF TABLES	vii
LIST OF FIGURES	xi
LIST OF ACRONYMS AND ABBREVIATIONS	xii
EXECUTIVE SUMMARY	ES-1
1.0 INTRODUCTION.....	1-1
1.1 PROJECT PURPOSE AND NEED	1-1
1.2 PURPOSE AND SCOPE OF THE EIS.....	1-3
1.3 PUBLIC REVIEW AND COMMENT	1-5
1.3.1 Public Review Process	1-5
1.3.2 Summary of Scoping Comments and Responses	1-7
1.3.3 FERC Public Comment Meetings for the DEIS.....	1-8
1.4 NONJURISDICTIONAL FACILITIES	1-9
1.5 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS	1-11
2.0 DESCRIPTION OF PROPOSED ACTION	2-1
2.1 PROPOSED FACILITIES	2-1
2.1.1 Pipeline Facilities	2-1
2.1.2 Aboveground Facilities	2-1
2.2 LAND REQUIREMENTS	2-4
2.2.1 Areas Disturbed by Pipeline Construction	2-4
2.2.2 Aboveground Facilities	2-7
2.3 CONSTRUCTION PROCEDURES	2-9
2.3.1 General Construction Procedures	2-9
2.3.2 Special Construction Procedures.....	2-16
2.3.3 Aboveground Facility Construction	2-24
2.4 CONSTRUCTION SCHEDULE	2-25
2.5 ENVIRONMENTAL INSPECTION, COMPLIANCE MONITORING, AND POST-APPROVAL FOR ALTERNATIVE MEASURES	2-25
2.5.1 Environmental Inspection.....	2-25
2.5.2 Compliance Monitoring.....	2-26
2.5.3 Post-approval Process for Alternative Measures.....	2-27
2.6 OPERATION AND MAINTENANCE PROCEDURES.....	2-28
2.6.1 Right-of-Way Monitoring and Maintenance	2-28
2.6.2 Pipeline and Compressor Station Integrity.....	2-29
2.7 FUTURE PIPELINE AND FACILITY PLANS AND ABANDONMENT	2-29
3.0 ALTERNATIVES.....	3-1
3.1 NO ACTION OR POSTPONED ACTION ALTERNATIVES.....	3-1

3.2	ENERGY ALTERNATIVES	3-2
3.3	SYSTEM ALTERNATIVES	3-3
3.4	MAJOR ROUTE ALTERNATIVES	3-3
3.4.1	Mississippi River Crossing Alternatives	3-4
3.4.2	Macon County Beltway Alternative.....	3-13
3.4.3	Wabash River Alternative	3-15
3.4.4	Indianapolis North Alternatives	3-17
3.4.5	Johnson County North Alternative.....	3-21
3.4.6	Little Miami River Alternative.....	3-23
3.4.7	Mowrey Alternative	3-25
3.4.8	Deer Creek Lake State Park Alternative.....	3-28
3.4.9	Big Darby Creek Alternative.....	3-30
3.4.10	Barnesville Reservoir Alternative	3-31
3.5	ROUTE VARIATIONS	3-35
3.5.1	McCarroll Route Variation (MP 290.5 to MP 291.3).....	3-41
3.5.2	Rogers Route Variation (MP 300.5 to MP 301.0).....	3-43
3.5.3	Gladden Route Variation (MP 302.5 to MP 305.2).....	3-43
3.5.4	Parker Route Variations (MP 317.8 to MP 318.5)	3-44
3.5.5	Alverson Route Variation (MP 370.0 to MP 370.6).....	3-45
3.5.6	Brattain Route Variation (MP 376.3 to MP 376.8)	3-46
3.5.7	Yane Route Variation (MP 380.4 to MP 380.6).....	3-46
3.5.8	Reynolds Route Variation (MP 381.5 to MP 382.7)	3-47
3.5.9	Morgan Route Variation (MP 383.1 to MP 384.0).....	3-47
3.5.10	Bane and Lecher Variation (MP 385.5 to MP 387.2).....	3-48
3.5.11	White Route Variation (MP 395.1 to MP 395.8)	3-49
3.5.12	Schulte, Oetzel, and Stirn Route Variation (MP 401.5 to MP 402.4)	3-49
3.5.13	Minges and Schoenharl Route Variation (MP 405.1 to MP 405.9).....	3-50
3.5.14	Maus Route Variation (MP 406.2 to MP 406.5)	3-51
3.5.15	Walther Route Variation (MP 413.7 to MP 414.8)	3-51
3.5.16	Storck-Stump and Hasford Route Variation (MP 417.8 to MP 418.4)	3-52
3.5.17	Chase Route Variation (MP 426.1 to MP 426.3)	3-53
3.5.18	Forman Route Variation (MP 441.3 to MP 442.5)	3-53
3.5.19	Frye Route Variation (MP 452.7 to MP 453.8)	3-54
3.5.20	Jones and Mowrey Route Variation (MP 458.1 to MP 458.9)	3-55
3.5.21	Rowe Variation (MP 459.8 to MP 460.0)	3-56
3.5.22	Kile Variation (MP 477.1 to MP 477.5)	3-57
3.5.23	Scothorn and Petty Route Variation (MP 521.9 to MP 523.3).....	3-57
3.5.24	Noll Route Variation (MP 555.4 to MP 557.3)	3-58
3.5.25	Shaffer (Steele) Route Variations (MP 623.3 to MP 624.4)	3-59
3.5.26	Residences at MP 384.3 and 384.4.....	3-61
3.5.27	McCarty Route Variations or House at MP 446.8 (MP 446.5 to MP 447.4)	3-61
3.6	ABOVEGROUND FACILITY SITE ALTERNATIVES	3-62
3.6.1	Hamilton Compressor Station Site Alternatives.....	3-63
3.6.2	Bainbridge Compressor Station Site Alternatives	3-65
3.7	CONCLUSIONS	3-67
4.0	ENVIRONMENTAL ANALYSIS	4-1
4.1	GEOLOGY	4-1
4.1.1	Geologic Setting	4-1
4.1.2	Mineral Resources	4-3

4.1.3	Geologic Hazards	4-6
4.1.4	Paleontological Resources.....	4-12
4.2	SOILS.....	4-14
4.2.1	Soil Limitations	4-14
4.2.2	Spill/Contamination Prevention	4-20
4.2.3	Topsoil Segregation.....	4-20
4.3	WATER RESOURCES.....	4-22
4.3.1	Groundwater Resources.....	4-22
4.3.2	Surface Water Resources.....	4-29
4.3.3	Impacts on Surface Water Resources	4-32
4.3.4	Waterbody Construction and Mitigation Procedures	4-34
4.3.5	Sensitive or Unique Waterbodies	4-35
4.3.6	Hydrostatic Testing	4-41
4.3.7	Wetlands.....	4-43
4.4	VEGETATION.....	4-52
4.4.1	General Vegetation Resources	4-52
4.4.2	Vegetation Communities of Special Concern	4-60
4.4.3	Conservation Reserve Program	4-63
4.4.4	Noxious Weeds and Invasive Species	4-63
4.5	WILDLIFE	4-66
4.5.1	General Wildlife Resources.....	4-66
4.5.2	General Wildlife Impacts	4-68
4.5.3	Raptors and Other Migratory Birds.....	4-70
4.5.4	Managed and Sensitive Wildlife Areas	4-75
4.6	FISHERIES	4-81
4.6.1	Fisheries Resources	4-81
4.6.2	Fisheries of Special Concern	4-84
4.7	THREATENED AND ENDANGERED SPECIES	4-89
4.7.1	Federally Listed Species.....	4-90
4.7.2	State-listed Species.....	4-119
4.8	LAND USE AND VISUAL RESOURCES	4-126
4.8.1	General Land Use	4-126
4.8.2	Agricultural Land	4-130
4.8.3	Residential Land.....	4-138
4.8.4	Planned Residential Developments	4-143
4.8.5	Recreation and Special Land Use Areas.....	4-148
4.8.6	Visual Resources	4-167
4.9	SOCIOECONOMICS.....	4-171
4.9.1	Existing Socioeconomic Conditions in the Project Area.....	4-171
4.9.2	Employment	4-174
4.9.3	Housing	4-175
4.9.4	Public Services	4-177
4.9.5	Transportation	4-179
4.9.6	Economy and Tax Revenues	4-180
4.9.7	Property Values	4-182
4.10	CULTURAL RESOURCES.....	4-184
4.10.1	Cultural Resource Surveys	4-184
4.10.2	Native American Consultations	4-194
4.10.3	Comments from Other Interested Parties	4-196
4.10.4	Unanticipated Discovery Plans.....	4-198

4.10.5	Impact and Mitigation	4-198
4.10.6	Compliance with the NHPA	4-198
4.11	AIR QUALITY AND NOISE	4-200
4.11.1	Air Quality.....	4-200
4.11.2	Noise.....	4-218
4.12	RELIABILITY AND SAFETY	4-226
4.12.1	Safety Standards	4-226
4.12.2	Pipeline Accident Data	4-231
4.12.3	Impact on Public Safety.....	4-233
4.12.4	Terrorism	4-234
4.13	CUMULATIVE IMPACTS	4-236
4.13.1	Introduction	4-236
4.13.2	Other Actions	4-237
4.13.3	Cumulative Impacts Analysis.....	4-243
5.0	CONCLUSIONS AND RECOMMENDATIONS.....	5-1
5.1	CONCLUSIONS OF THE ENVIRONMENTAL ANALYSIS	5-1
5.1.1	Alternatives	5-2
5.1.2	Geology	5-3
5.1.3	Soils	5-4
5.1.4	Water Resources.....	5-5
5.1.5	Vegetation	5-7
5.1.6	Wildlife.....	5-9
5.1.7	Fisheries.....	5-9
5.1.8	Special Status Species	5-10
5.1.9	Land Use and Visual Resources	5-12
5.1.10	Socioeconomics.....	5-14
5.1.11	Cultural Resources	5-14
5.1.12	Air Quality and Noise.....	5-15
5.1.13	Reliability and Safety	5-16
5.1.14	Cumulative Impacts	5-16
5.2	FERC STAFF'S RECOMMENDED MITIGATION	5-16

LIST OF APPENDICES

	<u>Page</u>
Appendix A	Distribution List
Appendix B	Maps
Appendix C	Typical Right-of-Way Cross-Sections
Appendix D	Site-Specific Construction Plans For Residential Structures within 50 Feet of the REX-East Project
Appendix E	Summary of REX East Project Route Changes
Appendix F	Mississippi River and Sny Levee HDD Crossing Construction Plan
Appendix G	Waterbody and Wetland Tables
Appendix H	Wild and Scenic Rivers Environmental Assessment
Appendix I	Draft Agricultural Impact Mitigation Plan
Appendix J	FERC Route Variation Maps
Appendix K	Comment Response Document
Appendix L	DOT PHMSA Waiver
Appendix M	References
Appendix N	List of Preparers
Appendix O	Index

LIST OF ADDITIONAL DOCUMENTS ON ENCLOSED CD-ROM

CD Document A	REX East Project Upland Construction Plan
CD Document B	REX East Project Wetland and Waterbody Construction and Mitigation Procedures
CD Document C	REX East Project Blasting Plan
CD Document D	REX East Project HDD Contingency and Frac Out Plan
CD Document E	REX East Project Spill Prevention, Containment, and Countermeasure Plan
CD Document F	REX East Project Weed Management Plan
CD Document G	REX East Project Plans for Unanticipated Discovery of Historic Properties or Human Remains during Construction
CD Document H	REX East Project Dredge Plan
CD Document I	REX East Project Road and Railroad Crossings and Locations of Access Roads
CD Document J	REX East Project Additional Temporary Workspace
CD Document K	Soil Types Crossed by the REX East Project
CD Document L	Guidelines for Achieving Compliance With the Migratory Bird Treaty Act and Executive Order No. 13186 Through Voluntary Conservation Measures (Conservation Guidelines)
CD Document M	REX East Project Biological Assessment

LIST OF TABLES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1.3.1-1	List of Rockies Express' Public Open Houses	1-6
1.3.1-2	List of the FERC Public Scoping Meetings	1-6
1.3.2-1	Issues Identified and Comments Received During the Public Scoping Process	1-7
1.4-1	Major Permits, Licenses, and Authorizations Likely Required To Be Obtained by the Nonjurisdictional Power Company for the Electric Transmission Line Required for the Hamilton Compressor Station	1-11
1.5-1	Major Permits, Licenses, Authorizations, and Clearances Required	1-12
2.1-1	REX East Pipeline Facilities	2-2
2.1-2	REX East Proposed Aboveground Facilities	2-3
2.2-1	REX East Land Requirements	2-5
2.2-2	REX East Pipe Storage/Contractor Yards	2-7
2.2-3	REX East Land Requirements for Aboveground Facilities	2-8
2.3-1	Differences between the REX East Project's Plan and the FERC's Plan	2-10
2.3-2	Differences between the REX East Project's Project Procedures and the FERC's Procedures	2-11
2.3.2-1	HDD Drill Spoil and Drill Fluid Volumes	2-20
3.4.1-1	Comparison of the Proposed Route and Blackburn Island Alternative (MP 42.9 to MP 44.2)	3-8
3.4.1-2	Comparison of the Mississippi River Crossing Alternatives—Project Route, Clarksville Island Route Alternative, and Gosline Island Route Alternative (MP 17.7 to MP 59.5)	3-12
3.4.2-1	Comparison of the Macon County Beltway Alternative to the Corresponding Segment of the Project Route (MP 164.6 to MP 169.0)	3-15
3.4.4-1	Comparison of the Indy North 1 and Indy North 2 Route Alternatives to the Corresponding Segment of the Project Route (MP 274.5 to MP 444.0)	3-19
3.4.5-1	Comparison of the Project Route to the Corresponding Segment of the Johnson County North Alternative (MP 307.4 to MP 348.9)	3-23
3.4.6-1	Comparison of the Little Miami River Route Alternative to the Corresponding Segment of the Project Route (MP 432.9 to MP 467.2)	3-25
3.4.7-1	Comparison of the Mowrey Route Alternative to the Corresponding Segment of the Project Route (MP 446.0 to MP 466.2)	3-28
3.4.8-1	Comparison of the Deer Creek Lake State Park Route Alternative to the Corresponding Segment of the Project Route (MP 496.9 to MP 502.6)	3-30
3.4.9-1	Comparison of the Big Darby Creek Route Alternative to the Corresponding Segment of the Project Route (MP 494.1 to MP 533.9)	3-33
3.4.10-1	Comparison of the Project Route to the Corresponding Segment of the Barnesville Reservoir Alternative (MP 619.8 to MP 625.4)	3-35
3.5-1	Summary of the FERC Review of Landowner Comments for Which No Feasible or Environmentally Preferable Route Variation Was Identified	3-36
3.5.1-1	Comparison of McCarroll Variations, MP 290.5 to MP 291.3	3-42
3.5.4-1	Comparison of the Parker Alternatives, MP 317.8 to MP 318.5	3-45
3.5.17-1	Comparison of Forman Route Variations, MP 441.3 to MP 442.5	3-54
3.5.20-1	Comparison of the Jones and Mowrey Route Variations, MP 458.1 to MP 458.9	3-56
3.5.24-1	Comparison of the Noll Route Variations, MP 555.4 to MP 557.3	3-59
3.5.25-1	Comparison of Shaffer Route Variations, MPs 623.3 to 624.4	3-60
3.5.27-1	Comparison of McCarty Variations, MPs 446.5 to 447.4	3-62

3.6.1-1	REX-East Project Comparison of the Hamilton Compressor Station Alternatives	3-65
3.7-1	Summary of Route Variations Recommended for Incorporation into the Project	
	Route	3-68
4.1.1-1	Summary of Geologic Conditions Along Proposed Route	4-2
4.1.1-2	Shallow Bedrock Areas that Require Blasting Along Proposed Pipeline Route.....	4-2
4.1.2-1	Summary of Known Mineral Resource Production Areas Within 1,500 Feet of Proposed Project	4-3
4.1.2-2	Abandoned Underground Mines Crossed by the Proposed Pipeline Route	4-5
4.1.3-1	Areas Crossed by the Proposed Pipeline Route with Moderate or High Susceptibility to Landslides	4-8
4.1.3-2	Location and Length of Potential Karst Terrain Crossed by the Proposed Pipeline Route	4-9
4.1.3-3	Waterbodies Crossed with Potential for Severe Scour.....	4-11
4.1.4-1	Potential Fossiliferous Formations Crossed by the Project Route in Illinois.....	4-13
4.2.1-1	Summary of Soil Limitations at Pipeline Facilities (by miles crossed)	4-15
4.2.1-2	Summary of Soil Limitations at Aboveground Facilities.....	4-16
4.3.1-1	Springs Located Within 150 Feet of the REX East Proposed Pipeline Route	4-24
4.3.1-2	Wellhead Protection Areas Crossed by the Construction Work Area.....	4-25
4.3.2-1	Major River Basins and Watersheds Crossed by the REX East Project	4-30
4.3.5-1	Impaired Waterbodies Crossed by the REX East Project	4-36
4.3.6-1	Project Water Requirements for Hydrostatic Testing	4-42
4.3.7-1	Descriptions of Wetland Types Crossed by the Project.....	4-44
4.3.7-2	Wetlands Affected by the REX East Project.....	4-45
4.3.7-3	Sensitive and Significant Wetlands Affected by the REX East Project.....	4-47
4.4-1	EPA Ecoregions Crossed by the Project	4-53
4.4.1-1	Vegetative Communities Occurring along the Project Route	4-55
4.4.1-2	Summary of Vegetation Affected by Construction and Operation of the Project by State (in acres).....	4-56
4.4.2-1	Classified Forest Areas Crossed by REX East Project Pipeline in Indiana	4-62
4.5.1-1	Representative Wildlife Species with Significant Recreational and Commercial Value that Potentially Occur in the REX East Project Area	4-66
4.5.3-1	Important Migratory Bird Species That Potentially Occur in the Project Area	4-71
4.5.4-1	Significant or Sensitive Wildlife Habitats Crossed by the Proposed Project.....	4-76
4.6.2-1	Fisheries of Special Concern Crossed by the Project.....	4-84
4.7-1	Federally Listed Endangered, Threatened, and Candidate Species Potentially Occurring in the Project area.....	4-91
4.7.1-1	Indiana Bat Survey Results	4-93
4.7.1-2	Forested Area and Expected Impacts Around Mist Net Sites Where Reproductively Active Female Indiana Bats Were Captured and Associated Roost Trees Along the REX East Project	4-96
4.7.1-3	Indiana Bat Habitat Units Where Nursery Roost Trees Were Identified in 2007	4-98
4.7.1-4	Indiana Bat Habitat Units Where Indiana Bats Were Captured and No Nursery Roost Trees Were Identified in 2007	4-98
4.7.1-5	Forested Area and Expected Impacts Where Mist Net Surveys and Indiana Bat Habitat Evaluation Are Pending.....	4-100
4.7.1-6	Federally Listed Species That Potentially Occur in the Counties Crossed by the Rockies Express East Pipeline Project and the FERC Impact Determination	4-119
4.7.2-1	State-Listed Endangered or Threatened Species Potentially Occurring in the REX East Project area.....	4-120

4.8.1-1	REX East Project Summary of Land Uses Affected by Construction and Operation of the REX East Project by State (in acres)	4-127
4.8.3-1	Residences Within 50 Feet of Right-of-Way	4-138
4.8.4-1	Planned Developments Crossed by the REX East Pipeline Route.....	4-144
4.8.5-1	Recreation and Special Land Uses Crossed by the REX East Pipeline Route.....	4-145
4.8.6-1	Potential Visual Impacts Associated with Major REX East Aboveground Facilities	4-168
4.9.1-1	Demographic and Socioeconomic Conditions for States and Counties Crossed by the REX East Project.....	4-172
4.9.2-1	Estimated REX East Construction Workforce	4-174
4.9.3-1	Temporary Accommodations for Counties within the REX East Project Area	4-176
4.9.4-1	Educational, Medical, Police, and Fire Full-time Equivalents within the REX East Project Area.....	4-178
4.9.6-1	REX East Project Payroll and Sales Tax Revenues by State	4-181
4.9.6-2	REX East Estimated Annual Ad Valorem Taxes (2009—2028)	4-182
4.10.1-1	Cultural Resources Surveys Status as of February 12, 2008.....	4-184
4.10.2-1	Tribal Consultations	4-195
4.11.1-1	REX East Proposed Compressor Stations.....	4-200
4.11.1-2	Representative Annual Average Meteorological Conditions at REX East Compressor Station Sites	4-202
4.11.1-3	Federal and State Ambient Air Quality Standards	4-203
4.11.1-4	REX East Regional Background Air Quality Concentrations.....	4-205
4.11.1-5	REX East Source of Regional Background Air Quality Concentrations	4-206
4.11.1-6	Proposed Emissions for the Arlington Compressor Station.....	4-208
4.11.1-7	Proposed Emissions for the Bertrand Compressor Station	4-208
4.11.1-8	Proposed Emissions for the Mexico Compressor Station	4-209
4.11.1-9	Proposed Emissions for the Blue Mound Compressor Station	4-209
4.11.1-10	Proposed Emissions for the Bainbridge Compressor Station.....	4-210
4.11.1-11	Proposed Emissions for the Hamilton Compressor Station	4-210
4.11.1-12	Proposed Emissions for the Chandlersville Compressor Station	4-211
4.11.1-13	Total Emissions by Non-attainment Air Quality Control Regions during the Construction Phase of the REX East Project.....	4-214
4.11.1-14	Air Quality Modeling Impacts and Comparison to National Ambient Air Quality Standards for the Six Natural-Gas Fired Compressor Stations	4-217
4.11.2-1	REX East Project Locations with Predicted Horizontal Directional Drill Noise Impacts Greater than 55 DNL.....	4-221
4.11.2-2	REX East Project Estimated Noise Levels at Noise-Sensitive Areas Near the Proposed Compressor Stations.....	4-224
4.12.1-1	Pipe Class Location by County	4-228
4.12.2-1	Natural Gas Service Incidents by Cause	4-232
4.12.2-2	Outside Forces Incidents by Cause (1970–1984).....	4-232
4.12.2-3	External Corrosion by Level of Control (1970–1984).....	4-233
4.12.3-1	Annual Average Fatalities—Natural Gas Transmission and Gathering Systems	4-233
4.12.3-2	Nationwide Accidental Deaths a/	4-234
4.13.2-1	Other Projects and Activities Within the General Area of the Project.....	4-237
4.13.3-1	Cumulative Wetland Impacts from the REX East Project and the Time II Project in Pickaway and Monroe Counties in Ohio	4-248
4.13.3-2	Cumulative Wetland Impacts from the REX East Project and the Tuscola East Replacement Project in Douglas County, Illinois and Parke County, Indiana.....	4-249
4.13.3-3	Cumulative Wetland Impacts from the REX East Project and the Keystone Oil Pipeline Project in Missouri	4-249

4.13.3-4	Cumulative Wetland Impacts from the REX East Project and I-69 in Morgan County and Johnson County, Indiana	4-249
4.13.3-5	Cumulative Wetland Impacts from the REX East Project and the Hunter Lake Project in Sangamon, Illinois	4-250
4.13.3-6	Cumulative Forest Impacts from the REX East Project and the Time II Project in Pickaway and Monroe Counties in Ohio	4-251

LIST OF FIGURES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1.0-1	Pipeline Location Map	1-2
1.4-1	Hamilton Compressor Station, Warren County, Ohio, Transmission Lines	1-10
2.3.1-1	Typical Pipeline Construction Sequence in Uplands	2-12
3.4.1-1	REX East Project Mississippi River Crossing Location Alternatives Near Blackburn Island	3-5
3.4.1-2	Overview of Mississippi River Crossing Alternatives	3-7
3.4.1-3	Detail of Clarksville Island Crossing Location at the Mississippi River	3-9
3.4.1-4	Detail of Gosline Island Crossing Location at the Mississippi River	3-10
3.4.2-1	Macon County Beltway Alternative	3-14
3.4.3-1	Wabash River Alternative	3-16
3.4.4-1	Indianapolis North Route Alternatives	3-18
3.4.5-1	Johnson County North Alternative	3-22
3.4.6-1	Little Miami River Route Alternative	3-24
3.4.7-1	Mowrey Route Alternative	3-27
3.4.8-1	Deer Creek Lake State Park Route Alternative	3-29
3.4.9-1	Big Darby Creek Route Alternative	3-32
3.4.10-1	Barnesville Reservoir Alternative	3-34
3.6.1-1	Hamilton Compressor Station Alternatives	3-64
3.6.2-1	Bainbridge Compressor Station Alternatives	3-66

ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
AEP	American Electric Power
AI	Agricultural Inspector
AIMP	Agricultural Impact Mitigation Plan
API	American Petroleum Institute
AQCR	Air Quality Control Regions
AQMD	Air Quality Management Districts
ASME	American Society of Mechanical Engineers
BA	Biological Assessment
BCC	Birds of Conservation Concern
bcf	billion cubic feet
BGEPA	Bald and Golden Eagle Protection Act
CAA	Federal Clean Air Act of 1970
CAAA	Clean Air Act Amendments
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
Certificate	Certificate of Public Convenience and Necessity
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic foot per second
CO	carbon monoxide
COA	Conservation Opportunity Area
COE	U.S. Army Corps of Engineers
CRP	Conservation Reserve Program
CWA	Clean Water Act
dBA	decibels on the A-weighted scale
DMRM	Divisions of Mineral Resources Management
DNL	day-night equivalent sound level
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
Dth/d	dekatherms per day
ECMR Program	Environmental Compliance Monitoring and Reporting Program
EAB	emerald ash borer
EI	Environmental Inspector
EIA	Energy Information Administration
EIS	Environmental Impact Statement
Entrega	Entrega Gas Pipeline, Inc.
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESD	emergency shut down
ESO	Environmental Services Office
EWPP-FP	Emergency Watershed Protection – Floodplain Easement
FERC or Commission	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FR	Federal Register
FSA	Farm Service Agency
FTE	full time equivalents

FWS	U.S. Fish and Wildlife Service
gpd	gallons per day
gpm	gallons per minute
HAP	hazardous air pollutants
HCA	high consequence area
HDD	horizontal directional drill
hp	horsepower
I-69	Interstate 69
IBA	Important Bird Area
IDEM	Indiana Department of Environmental Management
IEPA	Illinois Environmental Protection Agency
ILDNR	Illinois Department of Natural Resources
ILDOA	Illinois Department of Agriculture
ILDOT	Illinois Department of Transportation
ILEPA	Illinois Environmental Protection Agency
INDNR	Indiana Department of Natural Resources
INDOA	Indiana Department of Agriculture
INDOT	Indiana's Department of Transportation
ISO	International Organization for Standardization
IURC	Indiana Utility Regulatory Commission
Kinder Morgan	Kinder Morgan Energy Partners, L.P.
kPa	kilopascal
kW	kilowatt
L _{eq(24)}	24-hour equivalent sound level
LNG	liquified natural gas
MACT	Maximum Achievable Control Technology
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act
MDC	Missouri Department of Conservation
Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities
MLV	mainline valve
MMBtu/hr	million British thermal units per hour
MOA	Memorandum of Agreement
MODNR	Missouri Department of Natural Resources
MP	milepost
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NBEM	National Bald Eagle Management
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NLCD	National Land Classification Data
NNSR	Non-attainment New Source Review
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

NRI	Nationwide Rivers Inventory
NSA	noise-sensitive areas
NSPS	New Source Performance Standards
NSR	New Source Review
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
O ₃	ozone
ODOT	Ohio Department of Transportation
OEP	Office of Energy Projects
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OPS	Office of Pipeline Safety
OPSB	Ohio Power Siting Board
ORV	Outstandingly Remarkable Values
Pb	lead
PCB	polychlorinated biphenyls
PCE	Phelps County Ethanol Inc.
PEPL	Panhandle Eastern Pipe Line Company
PHMSA	Pipeline and Hazardous Materials Safety Administration
our Plan	The FERC staff's Upland Erosion Control, Revegetation, and Maintenance Plan
PM10	particulate matter with a particle size of 10 microns or less
PM2.5	particulate matter with a particle size of 2.5 microns or less
ppm	parts per million
our Procedures	The FERC staff's Wetland and Waterbody Construction and Mitigation Procedures
Program	Platte River Recovery Implementation Program
Project	Rockies Express Eastern Phase Project
PSD	Prevention of Significant Deterioration
REX West Project	Rockies Express Western Phase Project
REX East Project	Rockies Express Eastern Phase Project
REX East Plan	REX East Upland Construction Plan
REX East Procedures	REX East Wetland and Waterbody Construction and Mitigation Procedures
Rockies Express	Rockies Express Pipeline, LLC
Rockies Express NOI	Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Rockies Express Pipeline Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings
RR	Re-route
Sempra	Sempra Pipelines and Storage
SHPO	State Historic Preservation Officers
SI	spark ignition
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
SR	State Road
STATSGO	State Soil Geographic Database
SWPPP	Stormwater Pollution Prevention Plan
tcf	trillion cubic feet
TETCO	Texas Eastern Transmission Company
TIME II	Texas Eastern Incremental Market Expansion II
TSS	total suspended solids

tpy	tons per year
TSS	total suspended solids
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
UMRSHNC	Upper Mississippi River Sub-basin Hypoxia Nutrient Committee
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VOC	volatile organic compounds
WPA	Wellhead Protection Area
WRP	Wetland Reserve Program
WSR	Wild and Scenic Rivers Act