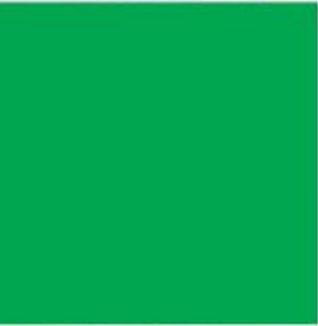
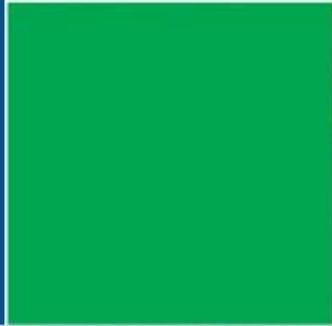


Volume 1
Sections 1-9

Keystone XL Project Environmental Report

November 2008



TransCanada Keystone Pipeline, LP

Document No.: 10623-006



TransCanada Keystone XL Project

Environmental Report

Submitted to the
Department of State
and
Bureau of Land Management

November 2008

Submitted by:
TransCanada Keystone Pipeline, LP

Document No.: 10623-006

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List of Abbreviations and Acronyms

°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
µS/cm	microSiemens per centimeter; a measure of conductivity
ACHP	Advisory Council on Historic Preservation
AEUB	Alberta Energy and Utilities Board
AIRFA	American Indian Religious Freedom Act of 1978
amsl	Above mean sea level
ANSI	American National Standards Institute
APC	Area of Probable Concern
APE	Area of Potential Effects
APHIS	Animal and Plant Health Inspection Service
API	American Petroleum Institute
AQCR	Air Quality Control Regions
ARG	American Resources Group, Ltd.
ARPA	Archeological Resources Protection Act
ASRD	Alberta Sustainable Resource Development
BA	Biological Assessment
Bbl	Barrel
bgs	below ground surface
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	Best Management Practice
bpd	barrels per day
C&SD	Conservation and Survey Division
CAA	Clean Air Act
CAPP	Canadian Association of Petroleum Producers
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMRP	Construction Mitigation and Reclamation Plan
CO	carbon monoxide
CO ₂	carbon dioxide
CRP	Conservation Reserve Act
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dBA	decibels on the A-weighted scale

DEQ	Department of Environmental Quality
DOS	Department of State
DOT	Department of Transportation
DNRC	Department of Natural Resources and Conservation
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EFH	Essential Fish Habitat
EO	Executive Order
ENSR	ENSR – Consultant
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
ESA	Endangered Species Act
ESRI	Environmental Systems Research Institute
FBE	fusion-bonded epoxy
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy Management Act
FR	Federal Register
FWS	Fish and Wildlife Service
GAP	National Gap Analysis Program
GHG	green house gas
GIS	Geographic Information System
GLO	General Land Office
GPA	Game Production Area
gpm	gallons per minute
H ₂	hydrogen gas
HAP	hazardous air pollutant
HDD	horizontal directional drill
HPRCC	Habitat Suitability Index
HSI	Habitat Suitability Index (HSI)
IFR	Internal floating roof
IMP	Integrity Management Program
IPL	Institute of Public Law
KDHE	Kansas Department of Health and Environment
KGS	Kansas Geological Survey
KSDA	Kansas Department of Agriculture

kV	kilovolt
Ldn	day-night sound level
LEPC	Local Emergency Planning Committee
LNG	Liquefied Natural Gas
LULC	Land Use and Land Cover
MLV	Main Line Valve
MACT	Maximum Achievable Control Technology
MOP	maximum operating pressure
MBTA	Migratory Bird Treaty Act
MDEQ	Montana Department of Environmental Quality
MEPA	Montana Environmental Policy Act
MFSA	Major Facility Siting Act
MFWP	Montana Fish & Wildlife Park
mg/l	milligrams per liter
MGWPCS	Montana Ground Water Pollution Control Act
MLA	Mineral Leasing Act
MNHP	Montana Natural Heritage Program
MP	Milepost
MPDES	Montana Pollutant Discharge Elimination System
MT	Montana
MUID	Map Unit Identification
MVA	million volt-amp
mya	million years ago
NAAQS	National Ambient Air Quality Standards
NAC	Nebraska Administrative Code
NAGPRA	Native America Graves Protection and Repatriation Act
NAUS	National Atlas of the United States
NDA	Nebraska Department of Agriculture
NE	Nebraska
NEAAQS	Nebraska Ambient Air Quality Standards
NEDEQ	Nebraska Department of Environmental Quality
NEDNR	Nebraska Department of Natural Resources
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NGPC	Nebraska Game and Parks Commission
NGPD	Nebraska Game and Parks Department

NHP	Natural Heritage Program
NHPA	National Historic Preservation Act of 1986
NLCD	National Land Cover Database
NMFS	National Marine Fisheries Service
NNSR	Nonattainment New Source Review
NOAA	National Oceanic and Atmospheric Association
NO ₂	nitrogen dioxide
NOX	nitrogen oxide
NNHP	Navajo Natural Heritage Program
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRC	National Response Center
NRCS	Natural Resources Conservation Service
NRD	Natural Resources District
NRHP	National Register of Historic Places
NRI	National Rivers Inventory
NSA	noise sensitive areas
NSPS	New Source Performance Standards
NSR	New Source Review
NVCS	National Vegetation Classification System
NWI	National Wetland Inventory
NWP	Nationwide permits
NWR	National Wildlife Refuge
NWSRS	Nebraska Wild & Scenic River System
O ₂	Oxygen gas
O ₃	Ozone
OAFF	Oklahoma Agriculture Food and Forestry
OCC	Operation Control Center
OD	outside diameter
ODWC	Oklahoma Department of Wildlife Conservation
OK	Oklahoma
OPS	Office of Pipeline Safety
OSHA	Occupational Safety and Health Administration
PADD III	Petroleum Area for Defense District III
Pb	Lead
PCB	polychlorinated biphenyls
PFO	Palustrine Forested Wetlands

PFYC	Potential Fossil Yield Classification
PHSMA	Pipeline Hazardous Material Safety Administration
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
PEM	Palustrine Emergent Wetlands
POD	Plan of Development
ppb	parts per billion
ppm	parts per million
ppmw	parts per million by weight
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	Keystone XL Project
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PSL	Permissible Sound Level
PSS	Palustrine Scrub Shrub Wetland
PWS	Public Water Supplies
RAP	Restricted Activity Period
RCW	red-cockaded woodpecker
RSA	Regional Study Area
RWBC	Rainwater Basin Complex
ROW	right-of-way
VOL	volatile organic liquid
SARC	State Archaeological Research Center
SCADA	Supervisory Control and Data Acquisition
SD	South Dakota
SDCL	South Dakota Common Law
SDDENR	South Dakota Department of Environment and Natural Resources
SDGFD	South Dakota Game and Fish Department
SDNHD	South Dakota Natural Heritage Database
SDSGS	South Dakota State Geological Survey
SGSK	State Geological Survey of Kansas
SHPO	State Historic Preservation Office
SIP	State Implementation Plans
SMYS	Specified minimum yield strength
SO ₂	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure

SSURGO	Soil Survey Geographic database
SWCA	SWCA Environmental Consultants
SWPPP	Stormwater Pollution Prevention Plan
TBD	To Be Determined
TCEQ	Texas Commission on Environmental Quality
TCP	Traditional cultural properties
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
TPWD	Texas Parks and Wildlife Department
tpy	Tons per year
TOPS	Texas Offshore Port System
TSS	Total suspended solids
TWAs	Temporary Work Areas
TX	Texas
US	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USDA	U.S. Department of Agriculture
USDA SCS /	U.S. Department of Agriculture-Soil Conservation Service or
USDA NRCS	Natural Resources Conservation Service
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VEC	Valued Ecosystem Component
VOC	Volatile organic compounds
VRM	Visual Resource Management
WCSB	Western Canadian Sedimentary Basin
WHMA	Wildlife Habitat Management Area
WMA	Wildlife Management Area
WRCC	Western Regional Climate Center
WRP	Wetland Reserve Program
WSA	Wilderness Study Area