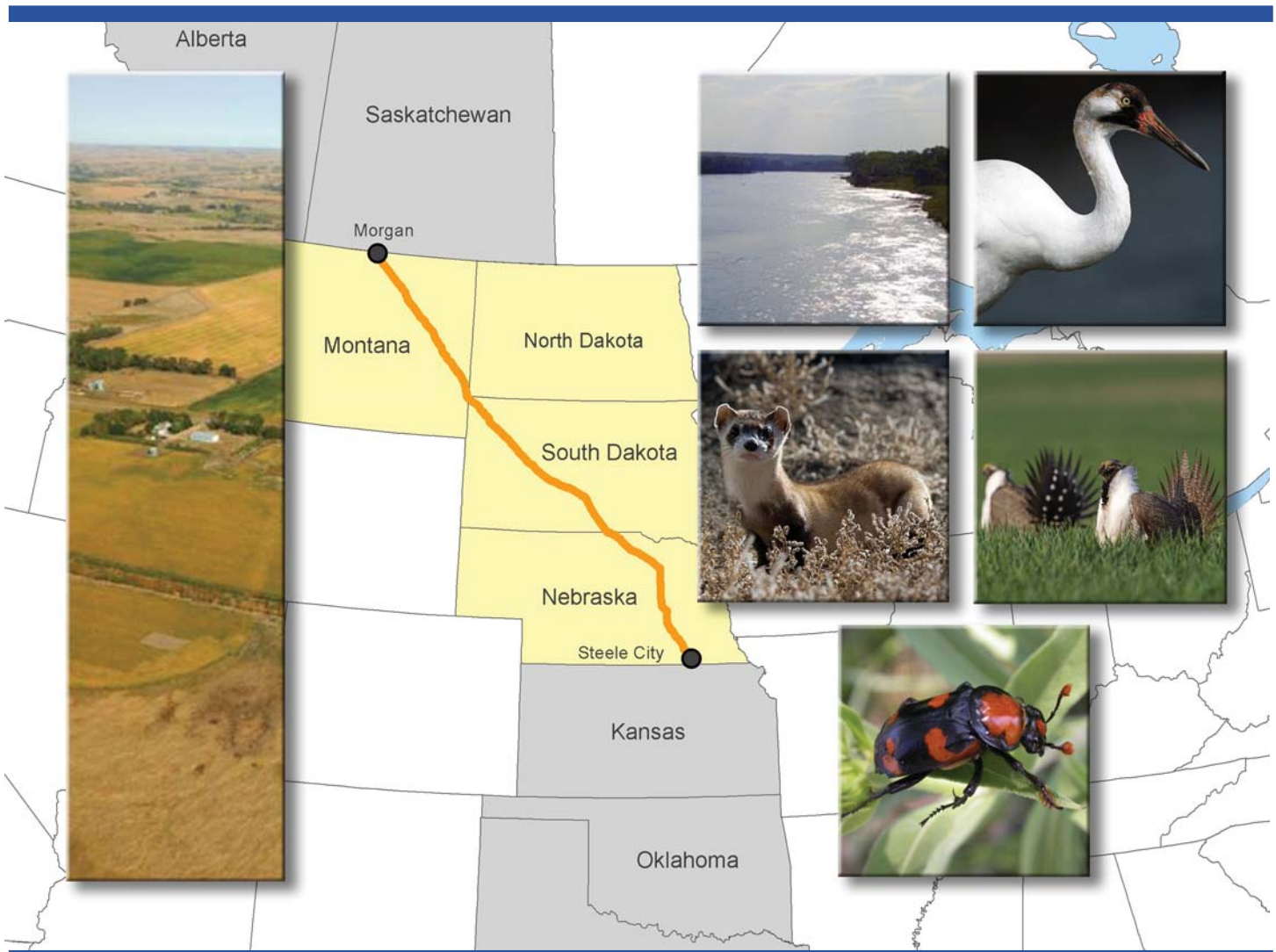




United States Department of State
Bureau of Oceans and International
Environmental and Scientific Affairs

Final Supplemental Environmental Impact Statement for the **Keystone XL Project** Volume I - Chapters 1 and 2 January 2014

Applicant for Presidential Permit: TransCanada Keystone Pipeline, LP



Front cover photo sources in order of appearance top to bottom:

Whooping crane

Hagerty, Ryan. 2012. *Endangered Whooping Crane (Grus Americana)*. Photograph. U.S. Fish and Wildlife Service. 23 February 2012. Website: <http://www.flickr.com/photos/usfwshq/6777481034/>.

Black-footed ferret

U.S. Fish & Wildlife Service. 2012. *Black-footed ferret*. Photograph. USFWS Headquarters. 3 July 2012. Website: <http://www.flickr.com/photos/usfwshq/7013874797/in/photolist-9Z7MXd-bFMWBP-bsoAvk-9DoXKC-bZh2uu/>.

Sage grouse

Rush, Kenneth. No Date. *Male Greater Sage Grouse Strutting at Hat Six Lek near Casper, Wyoming*. Photograph. Shutterstock, Image ID: 52631191. Website: <http://www.shutterstock.com/pic-52631191/stock-photo-male-greater-sage-grouse-strutting-at-hat-six-lek-near-casper-wyoming.html>.

American burying beetle

Backlund, Doug. No date. *Untitled [American Burying Beetle]*. Photograph. U.S Fish & Wildlife Service – South Dakota Field Office. Website: <http://www.fws.gov/southdakotafieldoffice/BEETLE.HTM>.

United States Department of State Final Supplemental Environmental Impact Statement

For the
KEYSTONE XL PROJECT

Applicant for Presidential Permit:
TransCanada Keystone Pipeline, LP

Volume I



Genevieve Walker
Project Manager
United States Department of State
Bureau of Oceans and International Environmental
and Scientific Affairs
2201 C Street NW, Room 2726
Washington, DC 20520

Cooperating Agencies

U.S. Army Corps of Engineers (USACE)
U.S. Department of Agriculture—Farm Service Agency (FSA)
U.S. Department of Agriculture—Natural Resource Conservation Service (NRCS)
U.S. Department of Agriculture—Rural Utilities Service (RUS)
U.S. Department of Energy (DOE)
U.S. Department of Interior—Bureau of Land Management (BLM)
U.S. Department of Interior—National Park Service (NPS)
U.S. Department of Interior—U.S. Fish and Wildlife Service (USFWS)
U.S. Department of Transportation—Pipeline and Hazardous Materials Safety Administration,
Office of Pipeline Safety (PHMSA)
U.S. Environmental Protection Agency (USEPA)

Assisting Agencies

U.S. Department of the Interior, Bureau of Reclamation (BOR)
Nebraska Department of Environmental Quality (NDEQ)
Various State and Local Agencies in Montana, South Dakota, Nebraska, and Kansas

January 2014

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- 1.0 Introduction
- 2.0 Description of the Proposed Project and Alternatives

Volume II

- 3.0 Affected Environment

Volume III

- 4.0 Environmental Consequences

Volume IV

- 5.0 Alternatives
- 6.0 List of Preparers
- 7.0 Distribution List—Final Supplemental EIS or Executive Summary
- 8.0 Index

Volume V

Comments and Responses (Part 1)

Volume VI

Comments and Responses (Part 2)

Volume VII

- Appendix A Governor Approval of the Keystone XL Project in Nebraska
- Appendix B Potential Releases and Pipeline Safety
- Appendix C Supplemental Information to Market Analysis
- Appendix D Waterbody Crossing Tables and Required Crossing Criteria for Reclamation Facilities
- Appendix E Amended Programmatic Agreement and Record of Consultation
- Appendix F Scoping Summary Report
- Appendix G Construction, Mitigation, and Reclamation Plan

Volume VIII

- Appendix H 2012 Biological Assessment, 2013 USFWS Biological Opinion, and Associated Documents

Volume IX

- Appendix I Spill Prevention, Control, and Countermeasure Plan; and Emergency Response Plan
- Appendix J Basin Electric Big Bend to Witten 230-kV Transmission Project Routing Report
- Appendix K Historical Pipeline Incident Analysis
- Appendix L Oil and Gas Wells within 1,320 ft of Proposed Right-of-Way
- Appendix M Soil Summary for Montana, South Dakota, and Nebraska

Volume X

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- Appendix O Socioeconomics
- Appendix P Risk Assessment

Volume XI

- Appendix Q Crude Oil Material Safety Data Sheets
- Appendix R Construction/Reclamation Plans and Documentation
- Appendix S Pipeline Temperature Effects Study
- Appendix T Screening Level Oil Spill Modeling
- Appendix U Lifecycle Greenhouse Gas Emissions of Petroleum Products from WCSB Oil Sands Crudes Compared with Reference Crudes
- Appendix V Literature Review
- Appendix W Past, Present, and Reasonably Foreseeable Future Project Descriptions
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ACRONYMS AND ABBREVIATIONS

| | | | |
|-------------------|--|--------|---|
| °C | degrees Celsius | ARPA | Archeological Resources Protection Act of 1979 |
| °F | degrees Fahrenheit | ASME | American Society of Mechanical Engineers |
| %HA | percent highly annoyed | ASRWSS | Assiniboine and Sioux Rural Water Supply System |
| µg/m ³ | microgram(s) per cubic meter | ATWS | additional temporary work space |
| /m | per meter | AUB | Alberta Utilities Commission |
| AA | alluvial aquifer | AWBP | Aransas-Wood Buffalo National Park |
| AAQS | Ambient Air Quality Standards | BA | Biological Assessment |
| AAR | American Association of Railroads | bbl | barrel |
| ABMI | Alberta Biodiversity Monitoring Institute | bcf | billion cubic feet |
| AC | alternating current | bcf/d | billion cubic feet/day |
| ACHP | Advisory Council on Historic Preservation | BEA | U.S. Bureau of Economic Analysis |
| ACS | American Community Survey | BEPC | Basin Electric Power Cooperative |
| ACVG | alternating current voltage gradient | BG | block group |
| AEO | Annual Energy Outlook | BGEPA | Bald and Golden Eagle Protection Act |
| AERI | Alberta Energy Research Institute | bgs | below ground surface |
| AEUB | Alberta Energy and Utilities Board | BIA | Bureau of Indian Affairs |
| AG | agriculture | BLM | Bureau of Land Management |
| AIRFA | American Indian Religious Freedom Act of 1978 | BMP | best management practice |
| AITF | Alberta Innovates Technology Futures | BNSF | BNSF Railway Company |
| Al-Pac FMA | Alberta-Pacific Forest Industries Forest Management Area | boe | barrel(s) of oil equivalent |
| amsl | above mean sea level | BOR | U.S. Bureau of Reclamation |
| ANSI | American National Standards Institute | bpd | barrels per day |
| AOC | abnormal operating conditions | bpsd | barrels per stream day |
| AOPL | Association of Oil Pipelines | BS&W | basic sediment and water |
| APE | area of potential effects | BTEX | benzene, toluene, ethylbenzene, and xylene |
| API | American Petroleum Institute | BTL | biomass-to-liquids |
| APLIC | Avian Power Line Interaction Committee | Btu | British thermal unit |
| AQCR | Air Quality Control Regions | C2ES | Center for Climate and Energy Solutions |
| AqL | aquatic life | CAA | Clean Air Act |
| ARM | Administrative Rules Montana | CAAA | Clean Air Act Amendments |
| | | CAFE | Corporate Average Fuel Economy |

| | | | |
|-----------------|---|-------------------|--|
| CAFO | concentrated animal feeding operation | CIF | cost, insurance, and freight |
| CALI | California National Historic Trail | CIS | close-interval survey |
| CAPEX | capital expenditure | CL | centerline |
| CAPP | Canadian Association of Petroleum Producers | CL ROW | centerline of the right-of-way |
| CARB | OPGEE California Air Resource Board Oil Production Greenhouse Gas Emissions Estimator | cm | centimeter(s) |
| CBOB | conventional blendstock for gasoline blending | CMIP | Coupled Model Intercomparison Project |
| CCAC | Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants | CMRP | Construction, Mitigation, and Reclamation Plan |
| CCPS | Center for Chemical Process Safety | CMZ | channel migration zone |
| CCS | carbon capture and storage | CN | Canadian National |
| CCSP | U.S. Climate Change Science Program | CNG | compressed natural gas |
| CDC | Centers for Disease Control and Prevention | CNRL | Canadian Natural Resources Limited |
| CDU | crude distillation units | CNW | Commercially Navigable Waterway |
| CE | carbon equivalents | CO | carbon monoxide |
| CEA | cumulative effects assessment | CO ₂ | carbon dioxide |
| CEAA | Canadian Environmental Assessment Act | CO ₂ e | carbon dioxide equivalent |
| CEC | Commission for Environmental Cooperation | co-ops | cooperatives |
| CEMA | Cumulative Environmental Management Association | cP | centipoises |
| CEQ | Council on Environmental Quality | CP | cathodic protection |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | CPI | Consumer Price Index |
| CERI | Canadian Energy Research Institute | CPRS | Canadian Pacific Railway System |
| cfm | cubic feet per minute | CPS | contributory pipeline segment |
| CFR | Code of Federal Regulations | CRM | Control Room Management Rule |
| CH ₄ | methane | CRP | Conservation Reserve Program |
| CHAAP | Cornhusker Army Ammunition Plant | CRW | letter code for Condensate Blend |
| CI | carbon intensity | CSA | Canadian Standards Association |
| CIA | Central Intelligence Agency | CSOR | cumulative steam-oil ratio |
| CIBC | Canadian Imperial Bank of Commerce | CSS | cyclic steam stimulation |
| | | CT | census tract |
| | | CLT | carbon to liquids |
| | | CVA | Central Valley Agriculture |
| | | CWA | Clean Water Act |
| | | CY | contractor yard |
| | | dBA | decibels on the A-weighted scale |
| | | DC | direct current |
| | | DCVG | direct current voltage gradient |
| | | Department | U.S. Department of State |
| | | dilbit | diluted bitumen |

| | | | |
|---------|---|-------------------|---|
| DME | Dakota, Minnesota, & Eastern Railroad | Final EIS | Final Environmental Impact Statement |
| DNAPL | dense non-aqueous phase liquid | FIRM | flood insurance rate map |
| DNRC | Department of Natural Resources and Conservation | FOB | free-on-board |
| DO | dissolved oxygen | FOIA | Freedom of Information Act |
| DOI | U.S. Department of the Interior | FPR | failure pressure ration |
| DOH | Department of Health | FR | Federal Register |
| DPHHS | Department of Public Health and Human Services | FRP | Facility Response Plan |
| DRU | diluent recovery units | FSA | Farm Service Agency |
| Dth/day | decatherm(s) per day | ft | feet |
| DW | drinking water | ft/d | feet per day |
| DWT | deadweight tonnage | FWCA | Fish and Wildlife Coordination Act |
| e-GRID | Emissions & Generation Resource Integrated Database | FWP | Farmable Wetlands Program |
| EC | Economic Corridor | g | gram(s) |
| EES | electrical equipment shelter | g/cm ³ | gram(s) per cubic centimeter |
| EI | environmental inspector | g/hp-hr | gram(s) per horsepower-hour |
| EIA | U.S. Energy Information Administration | g/m ² | gram(s) per square meter |
| EIS | Environmental Impact Statement | g/ml | gram(s) per milliliter |
| EO | Executive Order | G+D | gasoline and diesel |
| EPP | Environmental Protection Plan | GAP | National Gap Analysis Program |
| EPRINC | Energy Policy Research Foundation Inc. | GDP | gross domestic product |
| ERCB | Energy Resources Conservation Board, Alberta | GHG | greenhouse gas |
| ERP | Emergency Response Plan | GHGRP | Greenhouse Gas Reporting Program |
| ESA | Endangered Species Act | GIS | Geographic Information System |
| ESR | Environmental Screening Report | GOR | Gas-oil ratio |
| ESRI | Environmental Systems Research Institute | GPA | Great Plains Aquifer |
| EUB | Energy and Utilities Board (Alberta, Canada) | gpm | gallons per minute |
| EUR | estimated ultimate recovery | GREET | Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model |
| FBE | fusion-bonded epoxy | GSP | gross state product |
| FEMA | Federal Emergency Management Agency | GTL | gas-to-liquids |
| FERC | Federal Energy Regulatory Commission | GWP | global-warming potential |
| FHWA | Federal Highway Administration | H-C | hydrogen to carbon ratio |
| | | ha | hectare(s) |
| | | H ₂ S | hydrogen sulfide |
| | | HAP | hazardous air pollutant |
| | | HC | hydrocarbons |
| | | HCA | High Consequence Area |
| | | HDD | horizontal directional drill |

| | | | |
|-------------|--|---------------------|---|
| HFC | hydrofluorocarbon | kg/m ³ | kilogram(s) per cubic meter |
| HFE | hydrofluorinated ether | kgCO ₂ e | kilogram(s) carbon dioxide equivalent |
| HHV | high heating value | km | kilometer(s) |
| hp | horsepower | km ² | square kilometer(s) |
| HPA | High Population Area | KMIGT | Kinder-Morgan Interstate Gas Transmission |
| HPRCC | High Plains Regional Climate Center | KOP | Keystone's Operating Procedures |
| HPSA | Health Professional Shortage Area | kPa | kilopascal |
| hr | hour(s) | KSDA | Kansas Department of Agriculture |
| hr/yr | hour(s) per year | kV | kilovolt(s) |
| HRSA | Health Resources and Services Administration | kW | kilowatt(s) |
| HSSM | Hydrocarbon Spill Screening Model | kWh | kilowatt-hour(s) |
| HVDC | high voltage direct current | LB | Legislative Bill |
| IBA | important bird area | lb/MMBtu | pounds per million British thermal units |
| IC | Incident Commander | LCA | lifecycle analysis |
| ICCT | International Council on Clean Transportation | LCFS | low carbon fuel standard |
| ICF | ICF International LLC | LCNHT | Lewis and Clark National Historic Trail |
| ICS | Incident Command System | Ldn | day-night sound level |
| IEA | International Energy Agency | LDS | leak detection system |
| IEO | International Energy Outlook | LDV | light-duty vehicle |
| IHS CERA | IHS Cambridge Energy Research Associates, Inc. | LECL | Lewis and Clark National Historic Trail |
| IIW | International Institute of Welding | LEPC | Local Emergency Planning Committee |
| ILI | inline inspection | Leq | equivalent continuous sound level |
| IMLV | intermediate mainline valve | Leq(24) | 24-hour equivalent sound level |
| in | inch(es) | LFMM | Liquid Fuels Market Module |
| IPCC | Intergovernmental Panel on Climate Change | LHV | Lower heating value |
| IRR | internal rates of return | LLC | limited liability company |
| ISO | International Organization for Standardization | LLS | Light Louisiana Sweet |
| iSOR | instantaneous steam-oil ratio | Lmax | maximum sound pressure level |
| ITOPF | International Tanker Owners Pollution Federation Limited | LNAPL | light non-aqueous phase liquid |
| KDWPT | Kansas Department of Wildlife, Parks, and Tourism | LNG | liquefied natural gas |
| Keystone LP | TransCanada Keystone Pipeline, LP | LOOP | Louisiana Offshore Oil Port |
| kg | kilogram(s) | LPG | liquefied petroleum gas |
| | | LRVC | long run variable cost |
| | | LSHR | landscape hazard ranking system |
| | | LTO | light tight oil |

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|-----------------|--|----------------------|---|
| LVH | lower heating value | MMbbl/d | million barrels per day |
| Lw | sound power level | mmbpd | million barrels per day |
| LW | local/county noxious week | MMBtu | million British thermal units |
| m | meter(s) | MMcf/d | million cubic feet per day |
| m/d | meter(s) per day | MMDK | million decatherms |
| m ³ | cubic meter(s) | mmhos/cm | millimho(s) per centimeter |
| MACT | Maximum Achievable Control Technology | MMTCO ₂ e | million metric tons of CO ₂ equivalents |
| MALAA | may affect, likely to adversely affect | MNHP | Montana Natural Heritage Program |
| MBCA | Migratory Bird Convention Act | MOP | maximum operating pressure |
| MBCB | Montana Building Code Bureau | MOPI | Mormon Pioneer National Historic Trail |
| MBOGC | Montana Board of Oil and Gas Conservation | MP | milepost |
| MBTA | Migratory Bird Treaty Act | MPDES | Montana Pollutant Discharge Elimination System |
| MCA | Montana Code Annotated | mpg | mile(s) per gallon |
| MCL | maximum contaminant level | mph | mile(s) per hour |
| MCR | micro carbon residue | MROW | Midwest Reliability Organization West |
| MDA | Montana Department of Agriculture | MSA | metropolitan statistical area |
| MDEQ | Montana Department of Environmental Quality | MSDS | Material Data Safety Sheet |
| MDNRC | Montana Department of Natural Resources and Conservation | MT | Montana |
| MDT | Montana Department of Transportation | MTCO ₂ e | metric ton(s) of CO ₂ equivalents |
| MDU | Montana-Dakota Utilities | MUA/P | Medically Underserved Areas/Populations |
| MEPA | Montana Environmental Policy Act | MVA | megavolt ampere(s) |
| MFSA | Major Facilities Siting Act | MW | megawatt(s) |
| MFWP | Montana Fish, Wildlife, and Parks | MWh/yr | megawatt-hour(s) per year |
| mg | milligram(s) | MWRWSS | Mni Wiconi Rural Water Supply System |
| mg/L | milligram(s) per liter | N ₂ O | nitrous oxide |
| mg KOH/g | milligram(s) of potassium hydroxide per gram | NO ₂ | nitrogen dioxide |
| MGWPCS | Montana Ground Water Pollution Control System | NO _x | nitrogen oxides |
| mi ² | square mile(s) | NA | not applicable |
| MJ | megajoule(s) | na | not available |
| MLA | Mineral Leasing Act | NAAQS | National Ambient Air Quality Standards |
| MLV | mainline valve | NAC | Nebraska Administrative Code |
| MMA | Montreal, Maine and Atlantic Railway Corporation | NACE | National Association of Corrosion Engineers |
| | | NAGPRA | Native America Graves Protection and Repatriation Act |

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|-----------------|---|-----------------|---|
| NAIP | National Aerial Imagery Program | NHPAQ | Northern High Plains Aquifer |
| NAS | National Academy of Sciences | NHT | National Historic Trail |
| NCRC | Nebraska Central Railroad Company | NHTSA | National Highway Traffic Safety Administration |
| ND | no data | NID | National Interest Determination |
| n.d. | no date | NLAA | may affect, not likely to adversely affect |
| NDA | Nebraska Department of Agriculture | NLCD | National Land Cover Database |
| NDE | nondestructive examination | NMFS | National Marine Fisheries Service |
| NDEQ | Nebraska Department of Environmental Quality | NMHC | non-methane hydrocarbon |
| NDGFD | North Dakota Game and Fish Department | NNLP | Nebraska Natural Legacy Project |
| NDHHS | Nebraska Department of Health and Human Services | NNRC | Nebraska Northeastern Railway Company |
| NDOR | Nebraska Department of Roads | NO ₂ | nitrogen dioxide |
| NDPA | North Dakota Pipeline Authority | NO _x | nitrogen oxides |
| NE SFM | Nebraska State Fire Marshal | NOA | Notice of Availability |
| NEAAQS | Nebraska Ambient Air Quality Standards | NOAA | National Oceanic and Atmospheric Administration |
| NEB | National Energy Board (Canada) | NOI | Notice of Intent |
| NEMS | National Energy Modeling System | NO _x | nitrogen oxide |
| NEPA | National Environmental Policy Act | NPDES | National Pollutant Discharge Elimination System |
| NESHAP | National Emissions Standards for Hazardous Air Pollutants | NPPD | Nebraska Public Power District |
| NETL | National Energy Technology Laboratory | NPR | National Public Radio |
| NF ₃ | nitrogen trifluoride | NPS | National Park Service |
| NFO | Non-significant Fossil Occurrence | NPV | net present value |
| NGFC | Nebraska Game and Fish Commission | NRC | National Response Center |
| NGL | natural gas liquids | NRCS | Natural Resources Conservation Service |
| NGO | non-governmental organization | NRD | Natural Resources District |
| NGPAS | Northern Great Plains Aquifer System | NRDC | Natural Resources Defense Council |
| NGPC | Nebraska Game and Parks Commission | NRHP | National Register of Historic Places |
| NGPD | Nebraska Game and Parks Department | NRR | National Recreational River |
| NHD | National Hydrography Dataset | NSA | noise sensitive areas |
| NHP | Natural Heritage Program | NSPS | New Source Performance Standards |
| NHPA | National Historic Preservation Act of 1986 | NSR | New Source Review |
| | | NTSB | National Transportation Safety Board |
| | | NW | noxious weed |
| | | NWI | National Wetland Inventory |
| | | NWP | Nationwide Permit |

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|------------------|---|-------------------|--|
| O ₂ | oxygen gas | PM _{2.5} | particulate matter with aerodynamic diameter of 2.5 microns and less |
| O ₃ | ozone | PMMP | Paleontological Monitoring and Mitigation Plan |
| OCC | Operations Control Center | PMP | Pipeline Maintenance Program |
| OECD | Organization for Economic Cooperation and Development | POEX | Pony Express National Historic Trail |
| OGJ | Oil & Gas Journal | POTW | publically owned treatment works |
| OGP | International Association of Oil and Gas Producers | PPA | Protection Priority Areas |
| OPA | Other Populated Area | PPD | Public Power District |
| OPA 90 | Oil Pollution Act of 1990 | PPE | personal protective equipment |
| OPEC | Organization of the Petroleum Exporting Countries | ppm | part(s) per million |
| OPS | Office of Pipeline Safety | ppmw | part(s) per million by weight |
| OREG | Oregon National Historic Trail | PPR | Prairie Pothole Region |
| OSDG | Oil Sands Developers Group | Project | Keystone XL Project |
| OSLTF | Oil Spill Liability Trust Fund | PS | pump station |
| OSRIN | Sands Research and Information Network | PSD | Prevention of Significant Deterioration |
| OW | open water | psi | pound(s) per square inch |
| PA | Programmatic Agreement | psig | pound(s) per square inch gauge |
| PADD | Petroleum Administration for Defense District | PSRP | Pipeline Spill Response Plan |
| PAH | polycyclic aromatic hydrocarbon | PSS | palustrine scrub-shrub |
| Pb | lead | ptb | pounds per thousand barrels |
| PCIC | project cumulative impact corridor | PWS | public water supply |
| PDVSA | Petróleos de Venezuela, S.A. | py | pipeyard |
| PEM | palustrine emergent | QC | quality control |
| PFC | perfluorocarbon | R | riverine wetlands |
| PFO | palustrine forested | R-STRENG | remaining strength |
| PFYC | Potential Fossil Yield Classification | RAMP | Regional Aquatics Monitoring Program |
| PHMSA | Pipeline and Hazardous Material Safety Administration | RBOB | reformulated blendstock for oxygenate blending |
| PHRCC | Petroleum Human Resources Council of Canada | RCNM | Roadway Construction Noise Model |
| PI | point of inflection (angle) | Rec | recreation |
| PM | particulate matter | REX-W | Rockies Express-West |
| PM ₁₀ | particulate matter with aerodynamic diameter of 10 microns and less | RFI | radio frequency interference |
| | | RFS | USEPA Renewable Fuel Standard |
| | | RGGI | Regional Greenhouse Gas Initiative |
| | | RH | relative humidity |

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|--------|--|-----------------|---|
| riv-OW | riverine-open water | SF ₆ | sulfur hexafluoride |
| RMWB | Regional Municipality of Wood Buffalo | SFL | Significant Fossil Localities |
| ROD | Record of Decision | SFM | Office of the State Fire Marshall |
| ROS | rest of state | SHPO | State Historic Preservation Office(er) |
| ROW | right-of-way | SIP | State Implementation Plan |
| RP | Recommended Practice | SLWC | Stillwater Central Railroad |
| RPMA | Recovery-Priority Management Area | SMP | Security Management Program |
| RPS | Renewable Portfolio Standard | SMS | Scenery Management System |
| RTT | refinery-to-tank | SMYS | specified minimum yield strength |
| RUS | Rural Utilities Service | SO ₂ | sulfur dioxide |
| RV | recreational vehicle | SOR | steam-oil ratio |
| SAGD | steam-assisted gravity drainage | SO _x | sulfur oxides |
| SAR | Second Assessment Report | SPCC | Spill Prevention, Control, and Countermeasure |
| SARA | Species at Risk Act | SPSO | Southwest Power Pool South |
| SC | species of concern | STB | Surface Transportation Board |
| SCADA | Supervisory Control and Data Acquisition | SWPA | Source Water Protection Area |
| SCC | stress corrosion cracking | TAN | total acid number |
| SCO | synthetic crude oil | TAPS | Trans-Alaska Pipeline System |
| SD | South Dakota | TBD | to be determined |
| SD DOT | South Dakota Department of Transportation | TCE | trichloroethylene |
| SDA | South Dakota Department of Agriculture | TCEQ | Texas Commission on Environmental Quality |
| SDCL | South Dakota Common Law | TCP | traditional cultural properties |
| SDDENR | South Dakota Department of Environment and Natural Resources | TCR | The Climate Registry |
| SDGFP | South Dakota Game, Fish, and Parks | TDS | total dissolved solids |
| SDIWWG | South Dakota Interagency Wetlands Working Group | TEFC | The Ecological Framework of Canada |
| SDPUC | South Dakota Public Utilities Commission | THPO | Tribal Historic Preservation Officer |
| SDS | Safety Data Sheet | TK | traditional knowledge |
| SDSMT | South Dakota School of Mines and Technology | TKN | total Kjehldahl nitrogen |
| SDWA | Safe Drinking Water Act | TKWG | Traditional Knowledge Working Group |
| SER | Supplemental Environmental Report | TPG | The Perryman Group |
| | | TPIC | third-party inspection company |
| | | tpy | ton(s) per year |
| | | TRB | Transportation Research Board |
| | | TRR | technically recoverable resources |
| | | TSA | Transportation Security Administration |

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|---------|---|-----------------|--|
| TSB | Transportation Safety Board | WHSRN | Western Hemisphere Shorebird Reserve Network |
| TTW | Tank-to-wheels | Williston Basin | A large sedimentary basin in eastern Montana, western North and South Dakota, and southern Saskatchewan known for its rich deposits of crude oil |
| TWA | temporary workspace area | WIPA | Western Interior Plains Aquifer |
| UNFCCC | United Nations Framework Convention on Climate Change | WMA | wildlife management area |
| UP | Union Pacific Railroad Company | WMD | Wetland Management District |
| U.S. | United States | WNS | white-nose syndrome |
| USACE | U.S. Army Corps of Engineers | WORLD | World Oil Refining Logistics & Demand |
| USC | United States Code | WRCC | Western Regional Climate Center |
| USDA | U.S. Department of Agriculture | WRP | Wetlands Reserve Program |
| USDOE | U.S. Department of Energy | WSR | Wild and Scenic River |
| USDOT | U.S. Department of Transportation | WSRA | Wild and Scenic Rivers Act |
| USEPA | U.S. Environmental Protection Agency | wt% | weight percent |
| USFS | U.S. Forest Service | WTI | West Texas Intermediate |
| USFWS | U.S. Fish and Wildlife Service | WTR | well-to-refinery |
| USGC | U.S. Coast Guard | WTT | well-to-tank |
| USGCRP | U.S. Global Change Research Program | WTW | well-to-wheels |
| USGS | U.S. Geological Survey | WW | warmwater |
| USNABCI | U.S. North American Bird Conservation Initiative | WYGF | Wyoming Game and Fish Department |
| UST | underground storage tank | yr | year |
| VES | variable frequency drive equipment shelter | | |
| VLCC | very large crude carrier | | |
| VMT | vehicle miles travelled | | |
| VOC | volatile organic compound | | |
| vol% | percent volume | | |
| VRM | visual resource management | | |
| WCD | worst-case discharge | | |
| WCI | Western Climate Initiative | | |
| WCS | Western Canadian Select | | |
| WCSB | Western Canadian Sedimentary Basin | | |
| WEG | Wind Erodibility Group | | |
| WEO | World Energy Outlook | | |
| Western | Western Area Power Administration | | |
| WHIP | Wildlife Habitat Incentive Program | | |
| WHPA | wellhead protection area | | |

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