3.12 AIR QUALITY AND NOISE

3.12.1 Introduction

This section discusses air quality and noise resources in the proposed Project area and describes applicable federal and state air quality and noise regulations. The description of air quality and noise resources is based on information provided in the 2011 Final Environmental Impact Statement (Final EIS) as well as new circumstances or information relevant to environmental concerns that have become available since the publication of the Final EIS, including the proposed reroute in Nebraska. The information that is provided here builds on the information provided in the Final EIS and in many instances replicates that information with relatively minor changes and updates. Other information is entirely new or substantially altered from that presented in the Final EIS. Specifically, the following information, data, methods, and/or analyses have been substantially updated in this section from the 2011 document:

- Historic regional climate data were revised to reflect changes in the proposed Project route in Nebraska (i.e., historic climate data from weather stations in close proximity to the reroute in Nebraska were used);
- The ambient air quality standards (AAQS) have been updated to include Montana AAQS;
- The regional background air quality concentrations have been updated (previously 2008 data) to include more recent data (i.e., December 2011data);
- Greenhouse gas (GHG) regulatory requirements have been updated to supplement previous information and include recent state and federal regulatory programs that have been implemented to address increasing levels of GHG emissions in the United States; and
- Information on background noise levels using population density of each county crossed by the proposed pipeline is presented to supplement previous information and allow for more representative baseline noise levels.

The proposed Project would include installation of pipeline and construction and operation of 18 pump stations in Montana, South Dakota, and Nebraska. The proposed Project also would include the construction and operation of two pump stations in Kansas, making a total of 20 pump stations. The proposed Project would include the construction and operation of approximately 55 mainline valve (MLV) stations along the proposed pipeline route and approximately eight construction camps: four in Montana, three in South Dakota, and one in Nebraska. All construction camps, pump stations, and MLV stations along the proposed pipeline route would be operated with electricity provided by local utilities. Each camp, pump station, and MLV station would contain one back-up emergency diesel generator, which would only be operated during times of power interruption.[1]

[1] In the event a pump station experiences a utility power outage, the back-up emergency generator is automatically started. When a utility power outage occurs at a pump station, the mainline pump motors are shut down and are not restarted until utility power is restored. The pipeline is designed to continue operating safely at a reduced throughput when any one pump station is out of service.

The back-up emergency diesel generators at the pump stations and MLV stations would have integrated[2] fuel tanks with capacities of approximately 693 and 132 gallons, respectively (exp Energy Services Inc. 2012). The diesel fuel tank at each construction camp would have a capacity of approximately 10,000 gallons, which would be used for operating the camp back-up emergency generator and fueling the camp contractor's vehicles. Depending on daily fuel requirements at construction sites, approximately three 10,000 gallon skid mounted tanks (diesel) and one 9,500 gallon fuel trailer/tank (gasoline) would be established at approved contractor yards and pipe yards in Montana, North Dakota, South Dakota, and Nebraska.

The composition of the commodities (synthetic crude oil [SCO]), diluted bitumen [dilbit], and Bakken shale oil) transported by the proposed Project are discussed in Section 3.13, Potential Releases. In general, heavy crude/bitumen is usually composed of a low proportion of volatile hydrocarbon molecules with high boiling points (over 662 degree Fahrenheit (˚F) and over 70 carbon atoms in the molecule[3]. On the other hand, diluents (e.g., natural gas liquids, fuel gas) which would be mixed with the bitumen/heavy crude to reduce its viscosity and make it transportable via pipelines, are typically composed of higher proportion of volatile hydrocarbon molecules with very low boiling point (-256 to 68 ˚F) and four carbon atoms or less (e.g., butanes, propane, ethane, and methane). The lower the number of carbon atoms and boiling point of a hydrocarbon molecule, the higher its volatility. This means the diluents have a higher potential to emit fugitive volatile organic compounds (VOCs) and methane than the heavy crudes/bitumen.

The proposed Project would be located in regions of the United States designated as attainment for all criteria pollutant. For further discussion about attainment status, see Section 3.12.2.1, Environmental Setting. As currently configured, the construction and operation of the proposed Project components, including pump stations, construction camps, back-up emergency diesel generators, and the pipe stockpile yards/contractor yards, are either exempt from or below the emission thresholds of applicable federal and state air quality regulations, including those specific to GHG emissions. A detailed discussion of regulatory applicability is presented in Section 3.12.2.2, Regulatory Requirements.

For the majority of its proposed route, the proposed Project would be constructed in rural agricultural areas, away from residences and businesses that could be disrupted by the noise generated during construction and operation activities. A few residences are located within 25 to 500 feet of the pipeline right-of-way (ROW) and within 0.5 to 1 mile of the pump stations in Montana, South Dakota, Nebraska, and Kansas[4]. None of the states to be traversed by the proposed Project have regulatory noise limits, although some local ordinances governing noise from construction or industrial activities may apply.

The proposed Project would cross five national historic trails and would be located approximately 12 miles from the Niobrara National Scenic River in Nebraska. The National Park Service has certain noise-related limitations on the use of construction equipment. There are no noise sensitive areas, such as state and national parks or national wilderness areas, present within 1 mile of the proposed Project pump stations.

[2] The tanks are embedded within the back-up emergency generators. There are no stand-alone fuel tanks built specifically for these generators.
[3] http://www.docbrown.info/page04/OilProducts02.htm
[4] A larger distance is used for the pump stations relative to the pipeline (0.5 to 1.0 mile versus 25 to 500 feet) because the noise impacts at the pump stations would occur over a long term period (at least 50 years).

3.12.2 Air Quality

3.12.2.1 Environmental Setting

Regional Climate

The proposed Project would be constructed within a zone characterized by a humid continental climate that occurs where polar and tropical air masses collide. The humid continental climate zone is noted for its variable weather patterns and large temperature ranges, with summer high temperatures averaging over 89 ˚F, and winter low temperatures averaging between 12 to 20˚F. Representative climate data for Circle, Montana; Bowman Court House, North Dakota; Philip, South Dakota; Lincoln, Nebraska; and Marion Lake, Kansas, are presented in Table 3.12-1. These stations were chosen because they were the closest monitoring stations to the proposed pipeline route.

Ambient Air Quality

Federal, state, and local agencies regulate ambient air quality standards. The U.S. Environmental Protection Agency (USEPA) has established national ambient air quality standards (NAAQS) for six criteria pollutants: sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), ozone (O_3), lead (Pb), and particulate matter (PM). PM includes particles with aerodynamic diameter of 10 microns and less (PM_{10}) and particles with an aerodynamic diameter of 2.5 microns and less ($PM_{2.5}$). The NAAQS were developed to protect human health (primary standards) and human welfare (secondary standards). State air quality standards cannot be less stringent than the NAAQS. North Dakota[5], South Dakota, Nebraska[6], and Kansas have adopted ambient air quality standards equivalent to the NAAQS for all six criteria pollutants. Montana has its own AAQS for criteria pollutants as described above and non-criteria pollutants such as fluoride in forage, hydrogen sulfide, settleable particulate, and visibility. Table 3.12-2 lists the federal (NAAQS) and Montana AAQS.

USEPA defines the relative air quality within specified zones in the United States as either in attainment, nonattainment, maintenance, or unclassifiable. Areas meeting the NAAQS are termed attainment areas (i.e., areas with good air quality); areas not meeting the NAAQS are termed nonattainment areas (i.e., areas with poor air quality). Maintenance areas are areas previously designated as nonattainment areas that have recently demonstrated compliance with the NAAQS. These former nonattainment areas are treated as attainment areas for the purposes of permitting stationary sources (individual states may have specific provisions to ensure that the area would continue to comply with the NAAQS). Areas that have insufficient data to make a determination of attainment or nonattainment are unclassified or are not designated, but are treated as being in attainment for permitting purposes. The proposed Project is located in an area designated as attainment for all criteria pollutants. The attainment status of the proposed Project is also discussed in Section 3.12.2.2, Regulatory Requirements.

[5] In addition to the NAAQS, the State of North Dakota has ambient air quality standards for hydrogen sulfide (10 parts per million [ppm] maximum instantaneous concentration, 0.2 ppm 1-hour average concentration, 0.1 ppm maximum 24-hour concentration, and 0.02 maximum arithmetic mean concentration). Unlike the NAAQS, North Dakota has no ambient air quality standards for $PM_{2.5}$ (annual and 24-hour standards).

[6] In addition to the NAAQS, the State of Nebraska has ambient air quality standards for Total Reduced Sulfur (10 ppm for maximum 1-hour concentration and 0.10 ppm for maximum 30 minute rolling average).

Table 3.12-1 Representative Climate Data in the Vicinity of the Proposed Pipeline

Location/Measurement (Average)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual
Circle, Montana[a]													
Maximum temperature (ºF)	26.2	32.7	43.6	57.8	68.5	78.0	86.9	85.8	73.6	59.7	42.3	29.7	57.1
Minimum temperature (ºF)	4.1	10.3	19.6	31.0	41.2	50.1	55.8	53.9	42.9	31.9	19.1	7.9	30.7
Total precipitation (inches)	0.45	0.32	0.56	1.27	2.15	2.55	1.97	1.34	1.26	0.85	0.36	0.49	13.56
Total snowfall (inches)	5.4	3.2	3.3	2.0	0.3	0.0	0.0	0.0	0.1	0.9	2.4	5.0	22.8
Bowman Court House, North Dakota[b]													
Maximum temperature (ºF)	25.5	30.2	39.8	54.5	66.0	75.2	84.2	83.2	71.8	58.5	41.2	30.0	55.0
Minimum temperature (ºF)	4.1	8.5	17.5	29.7	40.7	50.1	56.1	53.7	43.0	31.9	19.0	8.9	30.3
Total precipitation (inches)	0.47	0.40	0.67	1.37	2.39	3.44	2.08	1.45	1.26	1.07	0.47	0.36	15.43
Total snowfall (inches)	6.8	5.6	7.0	4.0	1.0	0.1	0.0	0.0	0.3	2.4	5.4	5.1	37.5
Philip, South Dakota[c]													
Maximum temperature (ºF)	31.5	37.2	45.3	60.3	70.5	80.1	89.7	89.2	77.9	65.0	47.5	36.3	60.9
Minimum temperature (ºF)	6.4	11.7	20.1	32.3	43.3	53.2	59.1	57.5	46.0	34.1	21.0	11.2	33.0
Total precipitation (inches)	0.30	0.40	0.89	1.63	2.96	3.41	2.00	1.63	1.17	1.04	0.43	0.33	16.19
Total snowfall (inches)	4.4	6.2	6.5	3.2	0.4	0.0	0.0	0.0	0.0	0.4	3.1	4.3	28.7
Lincoln, Nebraska[d]													
Maximum temperature (ºF)	33.8	39.7	51.3	63.9	73.9	84.5	89.2	86.8	78.5	66.4	50.0	37.2	62.9
Minimum temperature (ºF)	12.2	17.6	27.8	38.9	50.2	60.8	66.1	63.7	53.0	40.4	27.5	16.2	39.5
Total precipitation (inches)	0.70	0.87	1.96	2.91	4.25	3.93	3.32	3.46	2.92	1.99	1.47	0.88	28.67
Total snowfall (inches)	6.5	5.6	4.6	1.3	0.0	0.0	0.0	0.0	0.0	0.5	2.3	5.8	26.6
Marion Lake, Kansas[e]													
Maximum temperature (ºF)	38.1	43.8	55.3	66.2	75.1	85.1	91.5	90.1	81.0	69.1	54.0	41.5	65.9
Minimum temperature (ºF)	17.1	21.3	31.9	42.6	52.8	62.8	67.8	65.7	56.0	43.8	31.9	21.5	42.9
Total precipitation (inches)	0.69	0.99	2.31	3.14	4.66	4.97	3.82	3.72	3.42	2.77	1.67	1.17	33.33
Total snowfall (inches)	1.3	1.1	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.4	4.8

[a] Source: Western Regional Climate Center (WRCC 2012), Circle, Montana, Station 241758, average data from September 1, 1963, to August 26, 2012.
[b] Source: High Plains Regional Climate Center (HPRCC 2012a), Bowman Court House, North Dakota, Station 320995, average data from January 2, 1915, to April 30, 2012.
[c] Source: High Plains Regional Climate Center (HPRCC 2012b), Philip, South Dakota, Station 396552, average data from November 1, 1907, to April 30, 2012.
[d] Source: High Plains Regional Climate Center (HPRCC 2012c), Lincoln WSO Airport, Nebraska, Station 254795, average data from June 1, 1948, to April 30, 2012.
[e] Source: High Plains Regional Climate Center (HPRCC 2012d), Marion Lake, Kansas, Station 145039, average data from January 1, 1966, to April 30, 2012.

Table 3.12-2 Federal and Montana Ambient Air Quality Standards

Pollutant	Time Frame	Federal (NAAQS)		Montana (AAQS)
		Primary	Secondary	
Particulate matter less than 10 microns in diameter	Annual[a]	Revoked[a]	Revoked[a]	50 μg/m^3
	24-hour[b]	150 μg/m^{3q}	150 μg/m^3	150 μg/m^3
Particulate matter less than 2.5 microns in diameter	Annual[c]	15 μg/m^3	15 μg/m^3	NA
	24-hour[d]	35 μg/m^3	NA	NA
Sulfur dioxide	Annual[e]	Revoked[e]	Revoked[e]	0.02 ppm
	24-hour[e]	Revoked[e]	Revoked[e]	0.10 ppm
	3-hour[b]	NA[r]	0.5 ppm	NA
	1-hour[f]	0.075 ppm[s]	NA	0.50 ppm
Carbon monoxide	8-hour[g]	9 ppm	NA	9 ppm
	1-hour[g]	35 ppm	NA	23 ppm
Nitrogen dioxide	Annual[h]	0.053 ppm	0.053 ppm	0.05 ppm
	1-hour[i]	0.100 ppm	NA	0.30 ppm
Ozone	8-hour[j]	0.075 ppm	0.075 ppm	NA
	1-hour[k]	Revoked[k]	Revoked[k]	0.10 ppm
Lead	3-month rolling[l]	0.15 μg/m^3	0.15 μg/m^3	NA
	Quarterly[m]	1.5 μg/m^3	1.5 μg/m^3	1.5 μg/m^3
Fluoride in Forage	Monthly[n]	NA	NA	50 μg/g[t]
	Grazing season[n]	NA	NA	35 μg/g
Hydrogen Sulfide	1-hour[o]	NA	NA	0.05 ppm
Settleable Particulate	30-day[n]	NA	NA	10 g/m$^{2\,u}$
Visibility	Annual[p]	NA	NA	3 x 10^{-5}/m[v]

Source: USEPA 2012a (http://www.epa.gov/air/criteria.html/) and Administrative Rules of the State of Montana, Rule Chapter 17.8.210 to 17.8.230 - Air Quality Standards.

[a] Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the USEPA revoked the annual PM_{10} standard of 50 μg/m^3 in 2006 (effective December 17, 2006). For the Montana AAQS, the 3-year average of the arithmetic means over a calendar year, averaged over 3-years must not be exceeded.

[b] Federal and state standards not to be exceeded more than once per year.

[c] To attain this federal standard, the 3-year average of the weighted annual mean particulate matter less than 2.5 microns in diameter concentrations from single- or multiple community-oriented monitors must not exceed 15.0 μg/m^3.

[d] To attain this federal standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 μg/m^3 (effective December 17, 2006).

[e] As of June 2, 2010, USEPA revoked the 1971 annual and 24-hour SO_2 standards in all areas. For the Montana AAQS, the arithmetic average for annual SO_2 over any four consecutive quarters must not exceed the standard. The 24-hour SO_2 concentrations in Montana must not be exceeded more than once over any 12 consecutive months.

[f] To attain this federal standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.075 ppm (effective June 2, 2010). For the Montana AAQS, the 1-hour SO_2 standard must not be exceeded more than eighteen times in any 12 consecutive months.

[g] Federal standard not to be exceeded more than once per year. For Montana AAQS, the 1-hour and 8-hour CO concentrations must not be exceeded more than once over any 12 consecutive months.

[h] Federal standard must not exceed the annual arithmetic mean concentration for a calendar year. For Montana AAQS, the arithmetic average over any four consecutive quarters must not be exceeded.

[i] To attain this federal standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.1 ppm (effective January 22, 2010). For Montana AAQS, the 1-hour NO_2 concentrations must not be exceeded more than once over any 12 consecutive months.

[j] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations, measured at each monitor within an area over each year, must not exceed 0.075 ppm (effective May 27, 2008).

[k] As of June 15, 2005, USEPA revoked the 1-hour ozone federal standard in all areas, except the fourteen 8-hour ozone nonattainment Early Action Compact Areas. For Montana AAQS, the 1-hour ozone concentrations must not be exceeded more than once over any 12 consecutive months.

[l] Federal standard not to be exceeded for the averaging time period. Final rule signed October 15, 2008.

[m] Federal or Montana AAQS not to be exceeded for the averaging time period.

[n] Montana AAQS not to be exceeded for the averaging time period.

[o] Montana AAQS not to be exceeded more than once every 12 consecutive months.
[p] For Montana AAQS, the arithmetic average over any four consecutive quarters must not be exceeded.
[q] microgram(s) per cubic meter ($\mu g/m^3$).
[r] not applicable (NA).
[s] part(s) per million (ppm).
[t] microgram(s) per grams ($\mu g/g$).
[u] gram(s) per square meter (g/m^2).
[v] per meter (/m).

The USEPA and state and local agencies have established a network of ambient air quality monitoring stations to measure and track the background concentrations of criteria pollutants across the United States. The major sources of criteria pollutant emissions within the proposed Project area include motor vehicles, industrial facilities, agricultural activities, electric utilities, and fuel storage facilities. A summary of the available regional background air quality concentrations within the proposed Project vicinity for 2011 is presented in Table 3.12-3. These stations were chosen because they represented the closest monitoring stations to the proposed pipeline route. Annual NO_2 and 3-hour SO_2 data were not available at any of the affected states.

Table 3.12-3 2011 Regional Background Air Quality Concentrations for the Proposed Project[a]

	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)		SO_2 (ppm)		CO (ppm)		NO_2 (ppm)		O_3 (ppm)	
Location	**24-Hr[b]**	**Annual**	**24-Hr[c]**	**1-Hr[d]**	**3-Hrb**	**8-Hr[b]**	**1-Hr[b]**	**Annual**	**1-Hr[e]**	**8-Hr[f]**	**1-Hr[b]**
Montana											
Flathead County	34	7.2	19	ND	ND	ND	NA	ND	ND	0.055	0.06
Rosebud County	ND[g]	ND	ND	0.012	ND	ND	NA	ND	0.065	0.052	0.061
Yellowstone County	ND	ND	ND	0.074	ND	1.3	2.5	ND	ND	ND	ND
North Dakota											
Billings County	ND	4.1	10	0.005	ND	ND	ND	ND	NA	0.057	0.063
Dunn County	ND	ND	ND	0.010	ND	ND	ND	ND	0.008	0.054	0.06
Mercer County	ND	5.1	11	0.038	ND	ND	ND	ND	0.022	0.059	0.064
South Dakota											
Jackson County	ND	ND	ND	0.006	ND	ND	ND	ND	0.004	0.052	0.061
Meade County	41	ND	ND	ND	ND	ND	ND	ND	NA	0.057	0.068
Pennington County	58	5.4	12	0.008	ND	ND	ND	ND	0.047	NA	NA
Nebraska											
Douglas County	58	10.6	21	0.066	ND	1.6	2.4	ND	ND	0.066	0.081
Hall County	ND	7	18	ND	ND	ND	ND	ND	ND	ND	ND
Lancaster County	ND	8.5	22	ND	ND	1.5	2.9	ND	ND	0.053	0.089
Kansas											
Sedgwick County	56	9.6	28	ND	ND	3.4	3.6	ND	0.069	0.08	0.098
Shawnee County	35	9.9	21	ND	ND	ND	ND	ND	ND	0.076	0.094
Sumner County	ND	9.1	26	0.008	ND	ND	ND	ND	0.029	0.078	0.091

Source: USEPA 2012b (http://www.epa.gov/airdata/).

[a] The values shown are the highest reported during the year by all monitoring sites in a county.
[b] Data represent the second-highest daily maximum concentrations.
[c] Data represent the 98th percentile of 24-hour average $PM_{2.5}$ concentrations.
[d] Data represent the 99th percentile of 1-hour daily SO_2 concentrations, averaged over 3 years.
[e] Data represent the 98th percentile of 1-hour average NO_2 concentrations averaged over 3 years.
[f] Data represent the fourth-highest daily maximum 8-hour average ozone concentrations.
[g] No data (ND).

3.12.2.2 Regulatory Requirements

The Clean Air Act (CAA) and its implementing regulations (42 United States Code 7401 et seq., as amended in 1977 and 1990) are the basic federal statutes and regulations governing air pollution in the United States. Additionally, the following requirements have been reviewed for applicability to the proposed Project:

- New Source Review (NSR)/Prevention of Significant Deterioration (PSD);
- Air Quality Control Regions (AQCRs);
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAPs)/Maximum Achievable Control Technology (MACT);
- Chemical Accident Prevention Provisions;
- Title V Operating Permits/State Operating Permits;
- Other Applicable State Permits;
- General Conformity Rule; and
- Greenhouse gases standards.

New Source Review/Prevention of Significant Deterioration

The NSR permitting program was established as part of the 1977 Clean Air Act Amendments (CAAA). NSR is a preconstruction permitting program that is designed to ensure that air quality is not significantly degraded from the addition of new or modified major emissions sources.[7] In poor air quality areas, NSR requires that new emissions do not inhibit progress toward cleaner air. In addition, the NSR program requires that any large new or modified industrial source would be as clean as possible, and that the best available pollution control is utilized. The NSR permit establishes allowable construction procedures, emission source operations, and applicable emission limits relevant to the permitted action. If construction or modification of a major stationary source would result in emissions greater than the established significance threshold for a pollutant within an attainment area, the proposed Project must be reviewed in accordance with PSD regulations under Title 40 of the Code of Federal Regulations (CFR) 51.166 (Prevention of Significant Deterioration of Air Quality). Construction or modification of a major or, in some jurisdictions, non-major stationary source in a designated nonattainment or designated maintenance area (Section 175A) requires that the proposed Project be reviewed in accordance with nonattainment NSR regulations. During construction, local utilities would provide commercial electrical power at the construction camps; however, back-up emergency diesel-fired generator engines would be used at the camps during upset conditions when commercial electrical power is interrupted (Table 4.12-4). These camps would be located within designated attainment areas as follows: four in Montana (one in McCone County, two in Valley County, and one in Fallon County), three in South Dakota (one in Tripp County, two in Harding County, and one in Meade County), and one in Nebraska (Holt County). The back-up emergency diesel-fired

[7] A major stationary pollutant source in a nonattainment area has the potential to emit more than 100 tons per year (tpy) of any criteria pollutant. In PSD areas, the threshold level may be either 100 or 250 tpy, depending on whether the source is classified as one of the 28 named source categories listed in Section 168 of the CAAA.

generator engines would be considered non-road engines under 40 CFR 89.2 (Control of Emissions from New and In-use Non-road Compression Ignition Engines - Definitions) if they meet the definitions of portable or transportable and are on location for less than 12 consecutive months. The determination of "potential to emit" would exclude non-road engine emissions for applicability purposes in accordance with the CAA. Current plans are for each construction camp to be used for less than 12 months, so that the back-up emergency diesel generators would be onsite for less than 12 months. Therefore, the camp generator engines would qualify as non-road engines per 40 CFR 89.2 and determination of "potential to emit" would not apply. Consequently, emissions would be less than the 250 tons per year (tpy) significance threshold level, and PSD and NSR review would not be triggered (Tables 3.12-4).

Table 3.12-4 Estimated Criteria Pollutant Emissions Per Back-up Emergency Generator at Construction Camps

Pollutant	Maximum Output per Camp (hp[h])[a]	Annual Hours of Operation per Camp (hr/yr[i])[b]	Maximum Heat Input per Camp, HHV[j] (MMBtu/hr[k])	Emission Factors[c, d, e] (lb/MMBtu[l])	Emission Factors[c, d, e] (g/hp-hr[m])	Emissions Rates per Camp (tpy)	Emission Rates for all Seven Camps (tpy)
Nitrogen Oxides	536.4	500	3.75	0.864	2.74	0.81	5.68
Carbon monoxide	536.4	500	3.75	0.822	2.61	0.77	5.40
Nonmethane hydrocarbon	536.4	500	3.75	0.075	0.24	0.071	0.49
Particulate Matter	536.4	500	3.75	0.047	0.15	0.044	0.31
Sulfur Oxides	536.4	500	3.75	0.0016	0.0049	0.0015	0.010
Lead	536.4	500	3.75	0.0000090	NA[n]	0.0000084	0.000059

[a] Maximum output was based on one 400-kW back-up emergency generator engine operating at each construction camp during upset conditions when commercial power is interrupted (assumed Tier 3 engines).
[b] The back-up emergency generators at each camp were assumed to operate for 500 hours per year.
[c] Maximum heat input was estimated based on the maximum hp at each construction camp and a brake-specific fuel consumption of 7,000 Btu/hp-hr.
[d] Emission factors (g/hp-hr) for all criteria pollutants except sulfur oxides and lead were based on NSPS Subpart IIII emission standards (40 CFR 89); converted from g/kwh to g/hp-hr. NOx emission factor (g/hp-hr) assumed equal to 92% of Subpart IIII NMHC + NO_x emission standard. Emission factor (g/hp-hr) for NMHC or VOCs assumed equal to 8% of Subpart III NMHC + NOx emission standard. The percent values were based on the ratio of NOx to VOC rates obtained from the USEPA AP-42, Section 3.3, Gasoline and Diesel Industrial Engines, October 1996 (USEPA 1996b).
[e] Sulfur oxides (SO_x) emission factors were calculated based on a sulfur content of 0.0015% (ultra-low-sulfur diesel), heat content of 19,300 Btu/lb and maximum heat input in MMBtu/hr, and a brake-specific fuel consumption of 7,000 Btu/hp-hr (assume $SO_x = SO_2$).
[f] Lead (Pb) emission factors (lb/MMBtu) taken from USEPA AP-42, Section 1.3, Fuel Oil Combustion, October 1996 (USEPA 1996a). Pb emission factors for diesel industrial engines were not available.
[g] Based on four construction camps in Montana, three in South Dakota, and one in Nebraska
[h] Horsepower (hp)
[i] Hours per year (hr/yr)
[j] High Heating Value (HHV)
[k] Million British Thermal Units per hour (MMBtu/Hr)
[l] pounds per million British Thermal Units (lb/MMBtu)
[m] grams per horsepower-hour (g/hp-hr)
[n] not applicable (NA)

During operation, the proposed Project would use skid-mounted back-up emergency diesel generators with integrated fuel tanks at pump stations and MLV stations during upset conditions when commercial power supply is interrupted weather. Specifically, each pump station would have one 113 kilowatt (kW) back-up emergency diesel generator with an integrated 693-gallon tank and each MLV station would have one 38-kW back-up emergency diesel generator with an integrated 132-gallon tank. Emissions would be negligible since the units would only operate for approximately half-hour per week, or about 30 hours per year. Consequently, emissions would be less than the 250 tpy significance threshold level, and PSD and NSR review would not be triggered.

The determination of *potential to emit* only applies to stationary sources (40 CFR 51.166), so mobile source emissions from construction activities would not trigger PSD or NSR review.

Air Quality Control Region

AQCRs are categorized as Class I, II, or III. Class I areas (commonly called *pristine areas*) include the following:

- International parks;
- National wilderness areas that exceed 5,000 acres in size;
- National memorial parks that exceed 5,000 acres in size; and
- National parks that exceed 6,000 acres and were in existence on August 7, 1977 (the effective date of the 1977 Amendments).

If a new source (or a major modification to an existing source) is subject to the PSD program requirements and is within 62 miles (100 kilometers) of a Class I area, the proposed facility must notify the appropriate federal officials and assess the impacts of the proposed Project on the Class I area. The following Class I areas are within 62 miles (100 kilometers) of the proposed Project ROW: Fort Peck Indian Reservation in Montana; Theodore Roosevelt National Park in North Dakota; and Badlands/Sage Creek Wilderness and Badlands National Park in South Dakota. There are no federal Class I areas in Nebraska. The proposed Project does not include construction or operation of significant stationary sources of air pollutants subject to the PSD program requirements. Therefore, the proposed Project would not trigger a federal Class I area impact assessment.

Class II areas include all attainment and not classifiable areas not designated as Class I areas (unless subsequently redesignated). The Niobrara National Scenic River located approximately 11 miles west of the proposed pipeline route in Nebraska is designated as a Class II area.[8] Since the scenic river is not designated as a Class I area, the proposed Project would not trigger any special impact assessment such as the federal Class I area impact assessment.

[8] The proposed pipeline crosses the Niobrara River in Nebraska; however, the portion of the river that is scenic (Niobrara National Scenic River) ends at U.S. Route 137, which is approximately 12 miles west of the proposed pipeline route and 19 miles south of the closest pump station (Pump Station 21) (http://www.nps.gov/common/commonspot/customcf/apps/maps/showmap.cfm?alphacode=niob&parkname=Niobrara).

Class III areas are not defined in the statute, which includes areas that a state decides not to protect with either the pristine or Class II areas designation. Class III designations are intended for heavily industrialized zones, must meet all requirements outlined in 40 CFR 51.166, and can be made only on request.

New Source Performance Standards

NSPS, codified at 40 CFR Part 60, establishes requirements for new, modified, or reconstructed units in specific source categories. NSPS requirements include emission limits, monitoring, reporting, and record keeping.

The regulation at 40 CFR 60 Subpart Kb applies to each storage vessel (not aggregate) containing volatile organic liquids with a capacity greater than or equal to 75 cubic meters (m^3) (approximately 19,800 gallons). The proposed Project would not require any permanent fuel storage vessels/tank farm or surge relief tanks. During construction, temporary fuel storage systems would be located at contractor yards and pipe yards. Each system would consist of temporary, aboveground on-road and off-road, diesel, skid-mounted tanks (approximately three 10,000 gallon tanks) and/or 9,500-gallon gasoline fuel trailers. Normally, a 2- to 3-day supply of fuel would be maintained in storage, resulting in approximately 30,000 gallons in storage volume at each fuel storage location. Fuel tanks smaller than 75 m^3 that were constructed after July 23, 1984 would be exempt from the requirements of 40 CFR 60 Subpart Kb. Since each temporary storage vessel at the pipe yards and contractor yards would be smaller than 75 m^3, the requirements of 40 CFR 60 Subpart Kb would not apply to these units. The regulatory applicability of 40 CFR 60 Subpart XX (Standards of Performance for Bulk Gasoline Terminals) depends on the gasoline throughput of transfer facilities. Transfer facilities whose gasoline throughputs are less than 75,700 liters per day (i.e., 19,998 gallons per day) are exempt from Subpart XX. The proposed Project gasoline transfer facilities at the pipeline yards and contractor yards are expected to be less than 75,700 liters per day and as such, would be exempt from Subpart XX. Construction camp generator engines that are on-site less than 12 months and that qualify as non-road engines per 40 CFR 89.2 would not be considered stationary units and would not be subject to 40 CFR 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). During construction, current plans are for each camp to be used for less than 12 months, so that the back-up emergency diesel generators would be onsite for less than 12 months. Therefore, the camp generator engines would qualify as non-road engines per 40 CFR 89.2 and would not be subject to 40 CFR 60 Subpart IIII.

During operation, back-up emergency generators at pump stations and MLV stations would be located on-site for longer than 12 months and as such, would qualify as stationary units subject to 40 CFR 60 Subpart IIII. The regulations at 40 CFR 60 Subpart IIII apply to stationary compression ignition internal combustion engines (i.e., diesel internal combustion engines) manufactured after April 1, 2006, or modified or reconstructed after July 11, 2005. Subpart IIII requires that these engines be certified to meet the emission standards in 40 CFR 60.4201 for NOx, PM, CO, and non-methane hydrocarbons. In addition, owners and operators of the engines must use ultra-low-sulfur diesel fuel. The regulation has specific provisions for back-up emergency engines which would apply to the proposed Project's back-up emergency engines (40 CFR 60.4202).

No other subparts would apply because the proposed Project does not include construction or operation of any other specific source category of air pollutants.

National Emission Standards for Hazardous Air Pollutants/Maximum Achievable Control Technology

NESHAPS/MACT, codified in 40 CFR Parts 61 and 63, regulate hazardous air pollutant (HAP) emissions. Part 61 was promulgated prior to the 1990 CAAA and regulates only eight types of hazardous substances (asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride). The proposed Project would not include facilities that fall under one of the source categories regulated by Part 61; therefore, the requirements of Part 61 are not applicable.

The 1990 CAAA established a list of 189 additional HAPs, resulting in the promulgation of Part 63. Also known as the MACT standards, Part 63 regulates HAP emissions from major sources, area sources, and specific source categories. Part 63 considers any source with the potential to emit 10 tpy of any single HAP or 25 tpy of HAPs in aggregate as a major source of HAPs. Area sources are defined by USEPA as sources that emit less than 10 tons of a single HAP or less than 25 tons of a combination of HAPs annually. During operations, the proposed pump stations and MLV stations along the pipeline corridor would be electrically driven and, therefore, would not emit any HAPs. However, the proposed Project would require the use of back-up emergency generators at the pump stations and MLV stations during upset conditions when commercial power supply is interrupted. HAP emissions would be negligible since the units would be expected to only operate on average for approximately half-hour per week, or about 30 hours per year. Consequently, none of the proposed Project facilities would have the potential to emit HAP emissions greater than 10 tpy for a single HAP, nor would they have the potential to emit multiple HAPs at a quantity equal to or greater than 25 tpy. The proposed Project facilities therefore would not be considered a major source of HAP emissions.

During construction, all construction camps along the pipeline route would be operated with electricity provided by local utilities. Each camp would contain one back-up emergency diesel generator, which would only be operated during times of power interruption. Those back-up emergency diesel engines would be subject to area source provisions in 40 CFR 63 Subpart ZZZZ for stationary reciprocating internal combustion engines.[9] Back-up emergency generator engines that are located onsite for less than 12 months are considered non-road engines per 40 CFR 89.2. Such engines are not considered stationary units and are not subject to 40 CFR 63 Subpart ZZZZ. Current plans are for each camp to be used for less than 12 months, so that the back-up emergency diesel generators would be onsite for less than 12 months. Therefore, these camp back-up emergency generator engines would not be subject to 40 CFR 63 Subpart ZZZZ. As indicated before, these back-up emergency generator engines would only operate during times of commercial power interruption and as such, would have emissions less than 10 tpy for any single HAP or 25 tpy total for all HAPs (see Table 3.12-5).

[9] Stationary reciprocating internal combustion engines are stationary relatives of motor vehicle engines and include spark ignition, compression ignition, rich-burn, and lean-burn engine types. In a reciprocating engine, combustion of a compressed fuel-air mixture is used to drive pistons in one or more cylinders, with the linear piston motion converted to rotary motion with a crankshaft. In general industry, these engines provide shaft power to drive process equipment, compressors, pumps, standby generator sets, and other machinery.

Table 3.12-5 Estimated HAP Emissions per Back-up Emergency Diesel Generator at Construction Camps

Hazardous Air Pollutants	Maximum Output per Camp (hp)[a]	Annual Hours of Operation per Camp (hr/yr)[b]	Maximum Heat Input per Camp, HHV (MMBtu/hr[c]	Emission Factors[d] (lb/MMBtu)	Emissions Rates per Camp (tpy)	Emission Rates for all Seven Camps[e] (tpy)
Benzene	536.4	500	3.75	0.00093	0.00088	0.0061
Toluene	536.4	500	3.75	0.00041	0.00038	0.0027
Xylenes	536.4	500	3.75	0.00029	0.00027	0.0019
Acrolein	536.4	500	3.75	0.000093	0.000087	0.00061
PAHs*	536.4	500	3.75	0.00017	0.00016	0.0011
1,3-Butadiene	536.4	500	3.75	0.000039	0.000037	0.00026
Formaldehyde	536.4	500	3.75	0.0012	0.0011	0.0078
Acetaldehyde	536.4	500	3.75	0.00077	0.00072	0.0050
Total HAPs					**0.0036**	**0.025**
Maximum Individual HAP—Formaldehyde					**0.0011**	**0.0078**

[a] Maximum output was based on one 400 kW operating at each construction camp during upset conditions when commercial power is interrupted (assumed Tier 3 engines).
[b] The back-up emergency generators at each camp were assumed to operate for 500 hours per year.
[c] Maximum heat input was estimated based on the maximum hp per construction camp and a brake-specific fuel consumption of 7,000 Btu/hp-hr.
[d] HAP emission factors (lb/MMBtu) were taken from EPA AP-42, Section 3.3, Table 3.3-2 (USEPA 1996b).
[e] Based on four construction camps in Montana, three in South Dakota, and one in northern Nebraska.
[f] polycyclic aromatic hydrocarbons (PAHs).

Chemical Accident Prevention Provisions

The chemical accident prevention provisions, codified in 40 CFR 68, are federal regulations designed to prevent the release of hazardous materials in the event of an accident and to minimize potential impacts if a release did occur. The regulations contain a list of substances and threshold quantities for determining applicability to stationary sources (40 CFR 68.130, List of Regulated Toxic Substances and Threshold Quantities for Accidental Release Prevention). If a stationary source stores, handles, or processes one or more substances on this list in a quantity equal to or greater than specified in the regulation, the facility must prepare and submit a Risk Management Plan. If a facility does not have a listed substance on site, or if the quantity of a listed substance is below the applicability threshold, the facility does not need to prepare a Risk Management Plan.

No known hazardous materials subject to 40 CFR 68 would be stored at the proposed Project aboveground facilities. The materials that would be stored at the contractor yards include gasoline, diesel fuel, lubricating oil, greases, hydraulic fluid, engine oil, and other substances common to maintaining construction equipment. The thresholds in 40 CFR 68.130 are 1,000 pounds or gallons and above (exempting gasoline and diesel fuel). None of the contractors would have containers or quantities approaching these volumes.

Title V Operating Permits/State Operating Permits

Title V of the federal CAA requires individual states to establish an air operating permit program. The requirements of Title V are outlined in 40 CFR 70 (State Operating Permit Programs) and 40 CFR 71 (Federal Operating Permit Program), and the permits required by these regulations are often referred to as Part 70 or 71 permits. The federal and state Title V operating permits for air emissions include air pollution requirements that apply to an emissions source, including emissions limits and monitoring, record keeping, and reporting requirements. It also requires that the emissions source report its permit compliance status to the permitting authority. The Title V operating permits are required for all major stationary sources. What constitutes a major source varies according to what pollutant(s) are being emitted and the attainment designation of the area where the source is located. In general, a source is considered to be a major source under Title V if it emits or has the potential to emit:

- One hundred tpy or more of any criteria air pollutant in an attainment area[10];
- Ten tpy or more of a single HAP; or
- Twenty-five tpy of cumulative HAPs.

During construction, temporary diesel-fired generator engines could be used at any of seven temporary construction camps if commercial electrical power is unavailable. If commercial electrical power is acquired from local utilities, these locations might still use back-up emergency, temporary, diesel-fired generator engines. In Montana, the State of Montana Department of Environmental Quality (MDEQ) has authority to implement the Title V program, but does not have the authority to implement operating permit programs for minor sources not subject to Title V. Regulations are contained in the Administrative Rules of Montana, Title 17, Chapter 8, Subchapter 12. The back-up emergency generators at each camp in Montana would not have emissions that exceed the Title V threshold of 100 tpy (Tables 3.12-4). Consequently, proposed temporary construction camps in Montana (four camps) would not trigger Title V permitting in that state. During operations, the back-up emergency generators used at the pump stations and MLV stations due to commercial power loss in Montana would also not exceed the Title V permitting thresholds because of the minimal annual hours of operation (approximately 30 hours per year).

In South Dakota, the State of South Dakota Department of Environment and Natural Resources (SD DENR) has authority to implement the Title V program and the operating permit program for minor sources not subject to Title V. Regulations are contained in the Administrative Rules of South Dakota, Chapters74:36:04-05. The SD DENR exempts sources from the requirements for a minor operating permit as described in Chapter 74:36:04:03, including facilities that have the potential to emit 25 tpy or less of any criteria pollutant. Potential emissions from the back-up emergency generators at each camp in South Dakota would not exceed the Title V threshold of 100 tpy (Tables 3.12-4). Similarly, the generator engines at the camps, pump stations, and MLV stations would have potential emissions less than the minor operating permit threshold. Consequently, proposed Project camp generators in South Dakota would not trigger Title V or minor source permitting. During operations, the back-up emergency generators used at the pump

[10] Lower thresholds apply in nonattainment areas (but only for the pollutant that is in nonattainment). All the counties within the proposed pipeline corridor in Montana, South Dakota, and Nebraska are in attainment areas for all criteria pollutants.

stations and MLV stations due to commercial power loss in South Dakota would also not exceed the Title V and minor source permitting thresholds because of the minimal annual hours of operation (approximately 30 hours per year).

In Nebraska, the State of Nebraska Department of Environment Quality (NDEQ) has authority to implement the Title V program and the operating permit program for minor sources not subject to Title V. Regulations are contained in the Nebraska Administrative Code (NAC) Title 129, Chapters 5 (Operating Permits). The NDEQ exempts sources from the requirements for a minor operating permit as described in NAC 129.5.001.03B under a condition known as the *Low Emitter Rule*, including facilities that have the potential to emit 50 tpy or less of any criteria pollutant except lead, 2.5 tpy or less for lead, 5 tpy or less of any individual HAP, or 12.5 tpy or less for total HAPs. Potential emissions from the back-up emergency generators at the camp in northern Nebraska would not exceed the Title V threshold of 100 tpy (Tables 3.12-4 and 3.12-5). The proposed Project camp in Nebraska would not trigger Title V or minor source permitting. During operations, the back-up emergency generators used at the pump stations and MLV stations due to commercial power loss in Nebraska would also not exceed the Title V and minor source permitting thresholds because of the minimal annual hours of operation (approximately 30 hours per year). In addition, under NAC 129.5.002.02D, none of the back-up emergency generators at the camp, pump stations, and MLV stations would be required to obtain Nebraska air quality permits due to their intended purpose as emergency equipment used only under instances of power loss (exp Energy Services Inc. 2012). The back-up emergency generator engines that would be used at the pump stations and MLV stations when commercial power is interrupted would be subject to 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ.

In Kansas, the State of Kansas Department of Health and Environment has authority to implement the Title V program, but does not have the authority to implement operating permit programs for minor sources not subject to Title V. Regulations are contained in the Kansas Administrative Regulations 28-19-500 (Operating Permits). During operations, the back-up emergency generators used at the two pump stations in Kansas under instances of commercial power loss would not exceed the Title V permitting thresholds because of the minimal annual hours of operation (approximately 30 hours per year). Consequently, the two proposed pump stations in Kansas would not trigger Title V permitting in that state.

The single pipe yard and contractor yard site in North Dakota (pre-existing industrial site) may have temporary fuel storage tanks (approximately three 10,000-gallon tanks for diesel and one 9,500-gallon tank for gasoline) but fugitive VOCs from such tanks are not expected to be significant[11]. Consequently, the storage tanks at the single pipeline yard in North Dakota would not trigger Title V operating permits.

State Preconstruction Permits

In Montana, MDEQ requires preconstruction air quality permits under the Administrative Rules of Montana, Title 17, Chapter 8, Subchapter 7. Permitting is required for sources that have

[11] Fugitive VOCs were not estimated for the fuel storage tanks at the pipe yards and contractor yards. However, one of the Connected Actions, the Bakken Marketlink Project in Baker, Montana, would have the potential to emit 21.9 tpy VOC emissions from crude oil tanks with storage capacities of 250,000 barrels (throughput of 65,000 barrels per day) (see Keystone's Response to Data Request 2.0, October 1, 2012 [Keystone 2012]). The fuel storage tanks at the pipe yards and contractor yards are much smaller than the Bakken Marketlink tanks; therefore, the fugitive VOCs would likely be much smaller too.

potential emissions that exceed 25 tpy and are not excluded under the Administrative Rules of Montana 17.8.744 (i.e., back-up emergency generators). The back-up emergency generator engines at each construction camp, pump station and MLV station in Montana would be exempt under the Administrative Rules of Montana 17.8.744. Consequently, proposed construction camps, pump stations, and MLV stations in Montana would not trigger requirements for preconstruction permitting. In South Dakota, SD DENR does not require preconstruction air quality permits.

In Nebraska, NDEQ requires preconstruction air quality permits under the NAC, Title 129, Chapter 17, Subchapter 001. Permitting is required for sources that have potential emissions that exceed 50 tpy of CO; 40 tpy of SO_2, NO_2, or VOCs; 15 tpy of PM_{10}; 10 tpy of $PM_{2.5}$; 0.6 tpy of lead; and 0.6 tpy of any individual HAP; or 10 tpy of total HAPs. The back-up emergency generator engines at the camp in Nebraska would have potential emissions that are less than the preconstruction permit thresholds described above (Tables 3.12-4 and 3.12-5). Consequently, proposed construction camps, pump stations and MLV stations in Nebraska would not trigger requirements for preconstruction permitting.

In Kansas, the Kansas Department of Health and Environment requires preconstruction air quality permit under the Kansas Administrative Regulation 28-19-300(a). Permitting is required for new or modified existing sources (including incinerators) that have potential emissions that exceed 25 tpy of PM; 15 tpy of PM_{10}; 40 tpy of SOx, VOC, or NOx; 100 tpy of CO; 0.6 tpy of lead; 10 tpy of any individual HAP; or 10 tpy of total HAPs. The back-up emergency generator engines at both pump stations in Kansas would have potential emissions that are less than the preconstruction permit thresholds described above (Tables 3.12-4 and 3.12-5). The back-up emergency generators used at the two pump stations in Kansas under instances of commercial power loss would not exceed the preconstruction permitting thresholds because of the minimal annual hours of operation (approximately 30 hours per year). Consequently, proposed construction camps, pump stations, and MLV stations in Kansas would not trigger requirements for preconstruction permitting.

In North Dakota, the State of North Dakota Department of Health (Division of Air Quality) requires preconstruction air quality permit under the North Dakota Century Code 33-15-14-02. Permitting is required for new stationary sources that would cause or contribute to a violation of any applicable ambient air quality standard. A new stationary source will be considered to cause or contribute to a violation of an ambient air quality standard when such source would, at a minimum, exceed the following significance levels: 1.0 $\mu g/m^3$ of annual SO_2, annual PM_{10}, annual NO_2, and annual CO; 5 $\mu g/m^3$ of 24-hour SO_2 and 24-hour PM_{10}; 500 $\mu g/m^3$ of 8-hour CO; 25 $\mu g/m^3$ of 3-hour SO_2; 25 $\mu g/m^3$ of 1-hour SO_2 and 1-hour NO_2; and 2000 $\mu g/m^3$ of 1-hour CO.

The single pipe yard and contractor yard site in North Dakota would have temporary fuel storage tanks. While fugitive VOCs from the tanks are expected to be negligible, VOCs are not among the listed pollutants that trigger preconstruction air quality permitting in North Dakota. Further, North Dakota Century Code 33-15-14-02-13(i)(5) exempts containers used exclusively for storage of petroleum liquids except those containers, reservoirs, or tanks subject to the requirements of Chapter 33-15-12, Standards of Performance for New Stationary Sources. The requirements of Chapter 33-15-12 that are applicable to the temporary fuel (diesel and gasoline) storage tanks are the same as the NSPS standards described above in 40 CFR 60 subpart Kb and Subpart XX. As discussed in the NSPS regulations above, each temporary storage vessel at the

pipe yards and contractor yards would be smaller than 75 m^3, so the requirements of 40 CFR 60 Subpart Kb would not apply to these units. Similarly, the proposed Project gasoline transfer facilities at the pipeline yards and contractor yards are expected to be less than 75,700 liters per day and as such, would be exempt from Subpart XX. Consequently, the proposed Project temporary storage tanks at the single pipeline yard and contractor yard in North Dakota would not trigger requirements for preconstruction permitting.

General Conformity Rule

The General Conformity Rule was designed to compel federal agencies to require that federal actions conform to the applicable State Implementation Plan (SIP). General Conformity regulations apply for pollutant emissions within federal action areas designated as nonattainment for pollutant emissions (or, for O_3, its precursors NOx and VOCs) that are not subject to NSR and where pollutant emissions are greater than the General Conformity significance thresholds or exceed 10 percent of the total emissions budget for the entire nonattainment area. Federal agencies are able to make a positive conformity determination when one of the following occurs:

- Emissions from the federal action are specifically identified and accounted for in the SIP attainment or maintenance demonstration; or
- Emissions from the action are fully offset within the same area through a revision to the SIP, or a similarly enforceable measure that creates emissions reductions so that there is no net increase in emissions of that pollutant.

For the proposed Project, none of the counties within the proposed Project area are designated as nonattainment areas for any criteria pollutant (i.e., all the counties are in attainment areas). Therefore, the General Conformity Rule does not apply to this proposed Project.

Greenhouse Gas Regulatory Requirements and Standards

Beginning in 2007 with the U.S. Supreme Court's Endangerment Finding, GHGs were deemed air pollutants under the CAA. Since that time, several state and federal regulatory programs have been implemented to address increasing levels of GHG emissions in the United States. The USEPA has promulgated regulations for GHG reporting and permitting for stationary sources. States across the United States, including those where the proposed Project would be located, have joined regional climate initiatives and adopted standards to mandate an increase in the use of renewable energy sources. These programs are described in the subsections below.

Federal Programs

Endangerment Finding

On April 2, 2007, in Massachusetts v. U.S. EPA, 549 U.S. 497, the Supreme Court found that GHGs are air pollutants covered by the CAA. The Court held that the USEPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the Administrator is required to follow the language of Section 202(a) of the CAA. The Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations. As a result of this decision, on

April 24, 2009, the USEPA proposed the Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA to find that the current and projected concentrations of the mix of six key GHGs (CO_2, methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the endangerment finding. The Administrator is further proposing to find that the combined emissions of CO_2, CH_4, N_2O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key GHGs and hence to the threat of climate change. This is referred to as the cause or contribute finding. The Endangerment Finding under Section 202(a) of the CAA was signed on December 7, 2009 (i.e., finalized).

GHG Mandatory Reporting Rule

On October 30, 2009, the USEPA promulgated the first comprehensive national system for reporting emissions of CO_2 and other GHGs produced by major sources in the United States. Through this new reporting, USEPA will have comprehensive and accurate data about the production of GHGs in order to confront climate change. Approximately 13,000 facilities, accounting for about 85 to 90 percent of industrial GHG emitted in the United States, are covered under the rule. The reporting requirements apply to suppliers of fossil fuels and industrial chemicals, manufacturers of certain motor vehicles and engines (not including light- and medium-duty on-road vehicles), as well as large, direct emitters of GHGs with emissions equal to or greater than a threshold of 25,000 metric tons per year. This threshold is equivalent to the annual GHG emissions from just over 4,500 passenger vehicles. The direct emission sources covered under the reporting requirement include energy intensive sectors, such as cement production, iron and steel production, electricity generation, and oil refineries, among others. The gases covered by the rule are CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and other fluorinated gases, including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFEs), reported as carbon dioxide equivalents (CO_2e). Annual emissions reporting to USEPA for the majority of facilities covered by the initial rule began in 2011 for the 2010 calendar year.

According to the preamble of the rule, the U.S. petroleum and natural gas industry encompasses hundreds of thousands of wells, hundreds of processing facilities, and over a million miles of transmission and distribution pipelines. Crude oil is commonly transported by barge, tanker, rail, truck, and pipeline from production operations and import terminals to petroleum refineries or export terminals. Typical equipment associated with these operations includes storage tanks and pumping stations. The major sources of CH_4 and CO_2 fugitive emissions include releases from tanks and marine vessel loading operations.

In November 2010, the USEPA published a final rule extending the mandatory reporting rule to several new sectors, including petroleum and natural gas systems (Subpart W), requiring the reporting of calendar year 2011 GHG emissions in September 2012 (USEPA 2010). The industry segments that fall under Subpart W include onshore and offshore petroleum and natural gas production; natural gas processing, compression, and distribution; underground natural gas storage; and liquefied natural gas storage and import and export equipment with annual emissions of at least 25,000 metric tons CO_2e. The USEPA did not propose to include the crude oil transportation segment of the petroleum and natural gas industry in this rulemaking due to its small contribution to total petroleum and natural gas fugitive emissions (accounting for much less than 1 percent) and the difficulty in defining a facility. Under Subpart W, the reporting

responsibility lies with petroleum refineries and importers and exporters of petroleum products. Consequently, the proposed Project would not trigger GHG reporting requirements.

GHG Tailoring Rule

On June 2, 2010, the USEPA issued a final rule that establishes an approach to addressing GHG emissions from stationary sources under the CAA permitting programs. These stationary sources would be required to obtain permits that would demonstrate they are using the best practices and technologies to minimize GHG emissions. The rule sets thresholds for GHG emissions that define when the CAA permits under the NSR/PSD and the Title V Operating Permits programs are required for new or existing industrial facilities. The rule tailors the requirements to limit which facilities will be required to obtain NSR/PSD and Title V permits and cover nearly 70 percent of the national GHG emissions that come from stationary sources, including those from the nation's largest emitters (e.g., power plants, refineries, and cement production facilities).

For sources constructed from July 1, 2011, to June 30, 2013, the rule requires PSD permitting for first-time new construction projects that emit GHG emissions of at least 100,000 tpy, even if they do not exceed the permitting thresholds for any other pollutant. In addition, sources that emit or have the potential to emit at least 100,000 tpy CO_2e and that undertake a modification that increases net emissions of GHG by at least 75,000 tpy CO_2e are also subject to PSD requirements. Therefore, operating permit requirements for the first time apply to sources based on their GHG emissions, even if they would not apply based on emissions of any other pollutant. Facilities that emit at least 100,000 tpy CO_2e are subject to Title V permitting requirements. The proposed Project is not subject to PSD (see Section 3.12.2.2, Regulatory Requirements) and would have emissions of CO_2e less than the applicable thresholds for any of the stationary sources (i.e., construction camps and pump stations). Note that emissions from mobile sources (on-road and non-road) are not included in the emission estimates for permit applicability of a stationary source. Consequently, the proposed Project would not be subject to the federal GHG permitting rule.

On December 2, 2010, the USEPA released its guidance for limiting GHG emissions based on the CAA requirement for new and modified emission sources to employ Best Available Control Technology to limit regulated air pollutants. As a result, the guidance focuses on the process that state agencies will use as they are developing permits for individual sources to determine whether there are technologies available and feasible for controlling GHG emissions from those sources. The guidance is not a formal rulemaking and does not establish regulations, but it provides permitting authorities more detail on USEPA expectations for the implementation of its new GHG permitting requirements.

National Fuel Economy Standard

On April 1, 2010, the USEPA and U.S. Department of Transportation (USDOT) finalized a new joint regulation for GHG emissions and an equivalent 35.5 miles per gallon (mpg) fuel economy standard for cars and light duty vehicles from model years 2012 through 2016. The USEPA regulates GHG emissions from passenger vehicles up to 8,500 pounds gross vehicle weight rating (plus medium-duty sport-utility vehicles and passenger vans up to 10,000 pounds). The program sets standards for CO_2 emissions on the U.S. federal test procedure. Equivalent Corporate Average Fuel Economy regulations, measured in miles per gallon of fuel consumed,

were simultaneously established by the USDOT National Highway Traffic and Safety Administration.

Since the publication of the Final EIS, the USDOT and USEPA finalized new standards that will raise the fuel economy for cars and light-duty trucks to the equivalent of 54.5 mpg by Model Year 2025. According to the Final Rules published by the National Highway Traffic Safety Administration (NHTSA) in August 2012, the new standards were designed to build upon previous standards and achieve an overall doubling of current vehicle fuel efficiency (NHTSA 2012). This is projected to result in a decrease in foreign oil imports by a total of 12 billion barrels of oil from 2017 through 2025 and a reduction in oil consumption by more than 2 million barrels a day by 2025 and 6 billion metric tons fewer GHG emissions over the life of the program (2017 to 2025).

State Programs

Programs for GHG emissions are being adopted by some states along the proposed Project corridor. Montana collaborates with the Western Climate Initiative (WCI) and other U.S. states on a range of other climate and clean energy strategies through the North America 2050 Initiative (WCI 2012). The WCI is a collaborative effort of seven U.S. states and four Canadian provinces to identify, evaluate, and implement measures to reduce GHG emissions in participating jurisdictions. The WCI was formed in February 2007 by the Governors of Arizona, California, New Mexico, Oregon, and Washington. The Premiers of British Columbia, Manitoba, Ontario, and Quebec, and the Governors of Montana and Utah joined the original five states during the next year in their commitment to tackle climate change at a regional level. All 11 jurisdictions collaborated in the development of the Design for the WCI Regional Program, which was released in July 2010. British Columbia, California, Ontario, Quebec, and Manitoba are continuing to work together through the WCI to develop and coordinate their emissions trading programs. This initiative began in 2009 and is committed to developing policies that move toward a low-carbon economy while simultaneously creating jobs, enhancing energy independence, and protecting human health and the environment.

The WCI has a regional GHG target of 15 percent below 2005 levels by 2020 to be met through a regional market-based multi-sector mechanism, as well as other policies. The recommended cap-and-trade program has a broad scope that includes six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) and will cover 90 percent of GHG emissions from the region when fully implemented. The first phase of the cap-and-trade program begins on January 1, 2013, covering emissions from electricity, electricity imports, industrial combustion at large sources, and industrial process emissions. The second phase will begin in 2015 and expands to transportation fuels and other commercial, residential, and industrial fuels not included in the initial phase.

The Governors of Nebraska, South Dakota, and Kansas, along with nine other Midwestern Governors and one Canadian province Premier, are members of the Energy Security and Climate Stewardship Platform for the Midwest. The Platform lists goals for energy efficiency improvements, low-carbon transportation fuel availability, renewable electricity production, and carbon capture and storage development. In addition to goals related to energy efficiency, renewable energy sources, and biofuel production, the Platform lays out objectives with respect to carbon capture and storage. Members agreed to have in place a regional regulatory framework for carbon capture and storage by 2010, and by 2012 to have sited and permitted a multi-jurisdiction CO_2 transport pipeline and have in operation at least one commercial-scale coal-

powered integrated gasification combined cycle power plant with carbon capture and storage, with additional plants to follow in succeeding years. By 2020, all new coal plants in the region are meant to capture and store CO_2 emissions. Numerous policy options are described for states to consider as they work towards these goals. The Platform also lays out six cooperative regional agreements. These resolutions establish a Carbon Management Infrastructure Partnership, a Midwestern Biobased Product Procurement System, coordination across the region for biofuels development, and a working group to pursue a collaborative, multi-jurisdictional transmission initiative. States adopting all or part of the Platform from the proposed Project area include South Dakota, Kansas, Nebraska, and North Dakota, as well as the Canadian Province of Manitoba.

Kansas, on November 15, 2007, joined five other states and one Canadian province to establish the Midwest Greenhouse Gas Reduction Accord. South Dakota, three other states, and one Canadian province are observers to the process. Under the Accord, members agree to establish regional GHG reduction targets, including a long-term target of 60 to 80 percent below current emissions levels, and to develop a multi-sector cap-and-trade system to help meet the targets. Participants also establish a GHG emissions reductions tracking system and implement other policies, such as low-carbon fuel standards, to aid in reducing emissions. While the Midwest Greenhouse Gas Reduction Accord has not been formally suspended, the participating jurisdictions are no longer actively pursuing it (C2ES 2012a).

In South Dakota, House Bill 1272, which established a voluntary Renewable Portfolio objective of 10 percent by 2015 was signed into law on February 21, 2008. Montana has enacted a Renewable Portfolio Standard with a goal of 15 percent renewable energy sources by 2015.

Low Carbon Fuel Standard

Low Carbon Fuel Standard (LCFS) policies have been adopted in California, British Columbia, the United Kingdom, and the European Union, and are in development in Oregon, Washington, and 11 states in the Northeast and Mid-Atlantic, according to Center for Climate and Energy Solutions (C2ES 2012b). These standards generally require that overall carbon values life-cycle GHG emissions for transportation fuels decrease by 10 percent over the next decade, although the definition of fuels and the percent reduction over time differ across jurisdictions. More carbon-intensive fuels include those derived from crude oil sources in the Western Canadian Sedimentary Basin, Venezuela, Nigeria, the Middle East, and California (IHS CERA 2010). The impact of LCFS on U.S. market demand for oil sands crude oil is speculative at this time since few jurisdictions have implemented these standards.

One concern regarding the adoption of LCFS in certain jurisdictions is that GHG-intensive crudes will simply be routed to other markets through "emissions leakage" or "shuffling," which could result in no net reduction in GHG emissions (Yeh and Sperling 2010), or even a slight increase (Barr 2010). Adoption of LCFS policies more widely in United States and international markets would help mitigate the effect of crude shuffling and emissions leakage.[12] Additional

[12] According to Sperling and Yeh (2009), "a major challenge for the LCFS is avoidance of 'shuffling' or 'leakage.' Companies will seek the easiest way of responding to the new LCFS requirements. That might involve shuffling production and sales in ways that meet the requirements of the LCFS but do not actually result in any net change. For instance, a producer of low-GHG cellulosic biofuels in Iowa could divert its fuel to California markets and send its high carbon corn ethanol elsewhere. The same could happen with gasoline made from tar sands and conventional oil. Environmental regulators will need to account for this shuffling in their rule making. This problem is mitigated and eventually disappears as more states and nations adopt the same regulatory standards and requirements."

analysis about the potential relationship between the proposed Project and separate regulatory or market measures aimed at improving fuel efficiency or promoting alternative energy sources for crude oil is included in Section 5, Alternatives.

Federal Initiatives

Council on Environmental Quality's National Environmental Policy Act Guidance Document on Climate Change

On February 18, 2010, the Council on Environmental Quality (CEQ) published a new document titled, Draft National Environmental Policy Act (NEPA) Guidance on consideration of climate change and GHG emissions, for public review and comment. At this time this guidance has not been finalized. These guidelines describe ways in which federal agencies can improve their consideration of GHG emissions and climate change effects during the evaluation of proposals for federal actions subject to NEPA review. The draft guidance suggests an annual direct emission threshold level of 25,000 metric tons or more of CO_2e for a proposed action as an indicator for agencies to consider that a qualitative assessment of the associated impacts may be meaningful to decision makers and the public. For long-term projects with lower annual emissions, CEQ's guidance encourages consideration of whether cumulative impacts warrant an evaluation. The suggested threshold emissions level is not intended as an indicator of significant effects.

The CEQ guidance does not recommend a comprehensive review of climate change impacts for all projects, but encourages agencies to consider the likely scale of impacts and to analyze impacts that can be readily quantified. The guidance also suggests that NEPA reviews address climate mitigation and adaptation measures when evaluating project alternatives; emissions from all stages in a project's lifecycle, including emissions from indirect sources, vehicles, and material supply where feasible; and impacts from climate change on a project's environment where relevant.

The proposed Project would result in GHG emissions that exceed the guidance document threshold (see Section 4.12.3.2, Greenhouse Gases); therefore, this Supplemental Environmental Impact Statement incorporates an analysis of GHG emissions for the proposed Project and alternatives, a comparison of these emissions to global and national GHG emission levels, as well as a discussion of global and regional climate change impacts, climate risk, and adaptation. See Sections 4.14, Climate Change Impacts on the Proposed Project, and 4.15.3.12, Air Quality and Noise, for further details.

Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants

On February 16, 2012, the U.S. Department of State (Department) announced the formation of the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants, a new global initiative focusing on the reduction of black carbon, HFCs, and CH_4 (Department 2012). The founding coalition partners are Bangladesh, Canada, Ghana, Mexico, Sweden, and the United States, together with the United Nations Environment Programme. The pollutants that are the focus of this initiative have relatively short durations once emitted, on the order of a few days to a few years, but are responsible for up to one third of the global warming effects the Earth has experienced. Due to their shorter lifetime, actions to reduce emissions will quickly lower atmospheric concentrations of these pollutants, thereby yielding a relatively rapid climate

response. This initiative is meant to incentivize new actions as well as highlight and build upon existing efforts, such as the Global Alliance for Clean Cookstoves, the Arctic Council, the Montreal Protocol, and the Global Methane Initiative. It is also meant to complement global actions to reduce CO_2 emissions. The Department's announcement of the Coalition specifically named sources of black carbon that pertain to the proposed Project, including diesel trucks and agricultural burning (Department 2012).

3.12.3 Noise

3.12.3.1 Environmental Setting

The ambient sound level of a region is defined by the total noise generated within that specific environment and is usually comprised of sound emanating from natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week. This variation is caused in part by changing weather conditions and the effects of seasonal vegetative cover.

Two measurements used by federal agencies to relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level [Leq(24)] and the day-night sound level (Ldn). The Leq(24) is the equivalent steady sound level of a noise energy averaged over a 24-hour period. The Ldn is the Leq(24) with 10 decibels on the A-weighted decibel scale (dBA) added to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for people's greater sensitivity to sound during nighttime hours.

The proposed Project would be constructed in primarily rural agricultural areas. An area's existing noise level is generally based on its proximity to nearby major roadways or railroads or on population density (USDOT 2006). The majority of the proposed Pipeline corridor is not close to major roadways or railways. Therefore, ambient noise levels were estimated based on the population density of each affected county using the methodology described in USDOT's Transit Noise and Vibration Impact Assessment (USDOT 2006). Existing noise levels for the proposed Project are presented in Table 3.12-6.

Table 3.12-6 shows that the existing ambient Leq levels in the proposed Project area are approximately 35 and 25 dBA during daytime and nighttime periods, respectively. Existing Ldn levels in the proposed Project area are approximately 35 dBA. Ambient (background) noise levels occur from infrequent roadway traffic, farm machinery on a seasonal basis, pets, and various other household noises.

Table 3.12-6 Existing Noise Levels for the Proposed Project

State	Affected County	Population Density[a] (People/Mile[c])	Existing Noise Levels (dBA)[b] Daytime Levels Leq	Nighttime Levels, Leq	Day-Night Levels, Ldn
Montana					
	Phillips	0.8	35	25	35
	Valley	1.5	35	25	35
	McCone	0.7	35	25	35
	Dawson	3.8	35	25	35
	Prairie	0.7	35	25	35
	Fallon	1.8	35	25	35

State	Affected County	Population Density[a] (People/Mile[c])	Existing Noise Levels (dBA)[b] Daytime Levels Leq	Nighttime Levels, Leq	Day-Night Levels, Ldn
South Dakota					
	Harding	0.5	35	25	35
	Butte	4.5	35	25	35
	Perkins	1.0	35	25	35
	Meade	7.3	35	25	35
	Pennington	36.4	35	25	35
	Haakon	1.1	35	25	35
	Jones	1.0	35	25	35
	Lyman	2.3	35	25	35
	Tripp	3.5	35	25	35
Nebraska					
	Keya Paha	1.1	35	25	35
	Boyd	3.9	35	25	35
	Holt	4.3	35	25	35
	Antelope	7.8	35	25	35
	Boone	8.0	35	25	35
	Nance	8.5	35	25	35
	Merrick	16.2	35	25	35
	Polk	12.3	35	25	35
	York	23.9	35	25	35
	Fillmore	10.2	35	25	35
	Saline	24.7	35	25	35
	Jefferson	13.2	35	25	35

[a] U.S. Census Bureau, 2010 Census Data (http://www.census.gov/prod/cen2010/index.html) (U.S. Census Bureau 2012).
[b] Existing noise levels were estimated based on population density of each county crossed by the proposed Pipeline using methodology described in USDOT's Transit Noise and Vibration Impact Assessment (USDOT 2006).
[c] People per miles squared.

Noise Receptors Near the Proposed Pipeline ROW

Aerial photography and field survey data were used to identify potential noise receptors within 25 feet and within 25 to 500 feet of the proposed Pipeline centerline (Table 3.12-7). Potential noise effects on wildlife are discussed in Section 3.6, Wildlife. There are approximately 27 structures within 25 feet and 417 structures within 25 to 500 feet of the proposed ROW. Of those totals, there are no residences (i.e., homes, mobile homes, cabins) within 25 feet and 31 residences within 25 to 500 feet of the proposed ROW. The closest residences are located approximately 200 feet from the proposed ROW. The proposed Project would not affect any national parks or national forests; however, the Project would cross five national historic trails (one in Montana and four in Nebraska) (see Recreation and Special Interest Areas in Section 3.9.2.3). The proposed Project is also located approximately 12 miles from the Niobrara National Scenic River in Nebraska.

Table 3.12-7 Structures Near the Proposed Project Construction ROW

State	County	Number of Structures within 25 Feet of the Construction ROW		Number of Structures >25 feet and ≤ 500 Feet from the Construction ROW	
		Structures[a]	Residences[b]	Structures[a]	Residences[b]
Montana	Phillips	0	0	9	2
	Valley	2	0	38	3
	McCone	2	0	21	0
	Dawson	3	0	21	0
	Prairie	0	0	3	0
	Fallon	2	0	25	2
South Dakota	Harding	3	0	19	0
	Butte	0	0	0	0
	Perkins	1	0	3	0
	Meade	2	0	22	0
	Pennington	0	0	0	0
	Haakon	4	0	26	0
	Jones	0	0	3	0
	Lyman	1	0	9	0
	Tripp	4	0	14	0
Nebraska	Keya Paha	0	0	1	0
	Boyd	0	0	0	0
	Holt	0	0	23	1
	Antelope	3	0	53	7
	Boone	0	0	33	4
	Nance	0	0	15	2
	Merrick	0	0	8	2
	Polk	0	0	19	0
	York	0	0	20	3
	Fillmore	0	0	7	1
	Saline	0	0	14	1
	Jefferson	0	0	11	3
Total		**27**	**0**	**417**	**31**

[a] Structure totals include residences, homes, cabins, mobile homes, bridges, barns, silos, garages, churches, etc.
[b] Residence totals include residences, home, cabins, and mobile homes.

Noise Receptors Near Pump Stations

Aerial photography and field survey data were used to identify potential noise receptors within 0.5 mile and 1 mile of the proposed Project pump stations (Table 3.12-8). A larger distance is used for the pump stations relative to the pipeline (0.5 to 1.0 mile versus 25 to 500 feet) because the noise impacts would occur over a long term period (at least 50 years). There are approximately 67 structures within 0.5 mile and 258 structures within 1 mile of proposed Project pump stations (the structures within 0.5 mile are also included in the number of structures within 1 mile). Of those totals, there are approximately 14 residences (i.e., homes, mobile homes, cabins) within 0.5 mile and 46 residences within 1 mile of the proposed Project pump stations. Noise sensitive areas, such as state or national parks and National wilderness areas, are not present within 1 mile of the proposed Project pump stations. The distance and direction of the closest residences to the pump stations in the affected states are as follows:

- Montana—0.5 miles south-southeast of Pump Station 13;
- South Dakota—0.35 miles southwest of Pump Station 21;
- Nebraska—0.25 miles north-northwest of Pump Station 25; and
- Kansas—0.35 miles southwest of Pump Station 27.

The remaining 16 pump stations in these states are farther away from residences.

Table 3.12-8 Structures within 0.5 and 1 Mile of Proposed Project Pump Stations

Pump Station No.[a]	Milepost (0 at U.S. border)	Number of Structures within 0.5 Mile		Number of Structures within 1 Mile	
		Structures[b]	Residence[c]	Structures[b]	Residence[c]
Montana					
PS-09	1.3	5	0	15	1
PS-10	49.5	0	0	4	0
PS-11	98.4	6	0	11	0
PS-12	149.1	0	0	13	1
PS-13	199.6	0	1	10	2
PS-14	237.1	0	0	9	1
South Dakota					
PS-15	285.6	0	0	0	0
PS-16	333.6	0	0	1	0
PS-17	387.3	0	0	7	1
PS-18	440.1	1	0	5	0
PS-19	496	4	1	15	3
PS-20	546.7	14	1	26	2
PS-21	591.9	5	2	23	2
Nebraska					
PS-22	TBD[e]	6	1	11	2
PS-23	TBD	3	1	17	3
PS-24	TBD	13	2	39	7
PS-25	TBD	10	1	27	3
PS-26	851.6	0	0	25	4
Kansas					
PS-27	49.7	10	4	17	8
PS-29	144.6	0	0	9	7
Total		**77**	**14**	**284**	**46**

[a] Although the proposed Project will also be located in North Dakota, no pump stations will be located in that state.
[b] Structure totals include residences, homes, cabins, mobile homes, bridges, silos, barns, garages, churches, etc.
[c] Residence totals include residences, home, cabins, and mobile homes.
[d] Distances to pump stations in Nebraska were assumed based on temporary pump station locations assumed in Figure 1.1-1 in the Supplemental Environmental Report dated September 5, 2012 (exp Energy Services Inc. 2012).
[e] To be determined (TBD).

3.12.3.2 Regulatory Requirements

In 1974, USEPA published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" (USEPA 1974). This document provides information for state and local agencies to use in developing their ambient noise standards. USEPA identified outdoor and indoor noise levels to protect public health and welfare. An Leq(24) of 70 dBA was identified as the level of environmental noise that would

prevent any measurable hearing loss over a lifetime. An Ldn of 55 dBA outdoors and an Ldn of 45 dBA indoors were identified as noise thresholds that would prevent activity interference or annoyance. These levels are not *peak* levels but are 24-hour averages over several years. Occasional high levels of noise may occur. An Ldn of 55 dBA is equivalent to a continuous Leq noise level of 48.6 dBA. Typical noise levels in the average home are as follows:

- Quiet room: 28–33 dBA
- Computer: 37–45 dBA
- Refrigerator: 40–43 dBA
- Forced hot air heating system: 42–52 dBA
- Microwave: 55–59 dBA
- Clothes dryer: 56–58 dBA

With regard to increases in decibels measured on the A-weighted noise level scale, the following relationships occur:

- A change of 1 dBA cannot be perceived by humans, except in carefully controlled laboratory environments;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference by humans;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

None of the states that would be traversed by the proposed Project have regulatory noise limits, although some local governments have ordinances governing noise from construction or industrial activities.

As indicated in Section 3.12.3.1, Environmental Setting, the proposed Project would not affect any national parks or national forests; however, the proposed Project would cross five national historic trails (one in Montana and four in Nebraska). The proposed Project is also located approximately 11 miles from the Niobrara National Scenic River in Nebraska. The National Park Service prohibits the operation of motorized equipment or machinery such as an electric generating plant, motor vehicle, audio device in a manner that exceeds a noise level of 60 decibels at 50 feet; or if below that level, nevertheless makes noise that is unreasonable considering the nature and purpose of the actor's conduct, location, time of day or night, purpose for which the area was established, impact on park users, and other factors that would govern the conduct of a reasonably prudent person under the circumstances (NPS 2012).

3.12.4 Connected Actions

This section describes the baseline conditions for air quality and noise affected by actions connected to the proposed Project.

3.12.4.1 Bakken Marketlink Project

Construction and operation of the Bakken Marketlink Project would include metering systems, a five-mile pipeline segment (route not yet determined) and three new storage tanks near Baker, Montana (Fallon County), and two new storage tanks in an existing tank farm in Cushing, Oklahoma (Payne County). Similar to the proposed pipeline route, the Bakken Marketlink Project is located in an area (Fallon County and Payne County) designated as *attainment* for all criteria air pollutants (i.e., good air quality area). Further, this Connected Action is located mostly in a rural and agricultural area, so the existing air quality (including GHGs) and noise is expected to be similar to that of the proposed route.

3.12.4.2 Big Bend to Witten 230-kV Transmission Line

The Western Area Power Administration (Western) determined that a 230-kilovolt (kV) transmission line approximately 70 miles long would be required to ensure system reliability within the Western power grid given the power requirements for Pump Stations 20 and 21 in the Witten, South Dakota area. The transmission line would be located within or near five identified recreation areas managed by the Lower Brule Indian Reservation in the Lake Sharpe area: Good Soldier Creek Recreation Area, Trailwaters Recreation Area, Counselor Creek Recreation Area, Fort Thompson Recreation Area, and North Shore Recreation Area. These recreation areas are sensitive receptors for air quality and noise.

Similar to the proposed pipeline route, the Big Bend to Witten 230 kV Transmission Line corridors would pass through sparsely populated areas (Lyman and Tripp counties) which are designated as *attainment* for all criteria air pollutants (i.e., good air quality area). Further, this Connected Action is located mostly in a rural and agricultural area with some recreational activities (hiking, fishing, and hunting), so the existing air quality (including GHGs) and noise is expected to be similar to that of the proposed route.

3.12.4.3 Electrical Distribution Lines and Substations

The proposed Project would require electrical service from local power providers (see Section 2.2.4, Major Pipeline Route Alternatives, Connected Actions) for pump stations and other aboveground facilities. The electrical distribution lines would likely cross sensitive receptors such as recreation and special interest areas in Montana and South Dakota (see Table 3.9-12, Recreation and Special Interest Areas Likely to be Crossed by Power Distribution Lines). No recreation or special interest areas would be crossed by these features in Nebraska. In general, the transmission lines would be constructed in the vicinity of the proposed route, which are in areas designated as *attainment* (i.e., good air quality). As such, the existing air quality (including GHGs) and noise is expected to be similar to that of the proposed route.

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