APPENDIX B:

EMISSION INVENTORIES

APPENDIX B:

EMISSION INVENTORIES

B.1 New and RFFA Source Emission Inventories

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Big Horn	Bitter Creek Pipelines, L.L.C.	Connor 33 Battery	NG Compressor Station	355020	4984420	13	1097	02/08/01	3140-00	23.19	0.42	0.42		0.03	34.77	11.58		Permit to operate three 400-bhp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	Connor 33 Battery	NG Compressor Station	355020	4984420	13	1097	05/16/01	3140-01									Permit to change ownership.
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-14 Battery	NG Compressor Station	348490	4989160	13	1158	01/08/01	3141-00	23.19	0.42	0.42		0.03	34.77	11.58		Permit to operate three 400-bhp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-14 Battery	NG Compressor Station	348490	4989160	13	1158	05/18/01	3141-01									Permit to change ownership.
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-19 Battery	NG Compressor Station	351965	4988232	13	1122	08/10/00	3118-00	15.45	0.28	0.28		0.02	23.18	7.73		Permit to operate two 400-hp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-19 Battery	NG Compressor Station	351965	4988232	13	1122	05/16/01	3118-01									Permit for name change from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-24 Battery	NG Compressor Station	350880	4987732	13	1091	03/08/99	3036-00	14.68	0.26	0.26		0.01	22.02	7.34		Permit to operate two 380-hp CAT G3408TA NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-24 Battery	NG Compressor Station	350880	4987732	13	1091	11/10/00	3036-01									Permit to change ownership from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-24 Battery	NG Compressor Station	350880	4987732	13	1091	08/07/01	3036-02	7.73	0.13	0.13		0.01	11.59	3.86		Permit to add one 400-bhp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-25 Battery	NG Compressor Station	350070	4986300	13	1103	01/29/00	3037-00	14.68	0.26	0.26		0.01	22.02	7.34		Permit to operate two 380-hp CAT G3408TA NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-25 Battery	NG Compressor Station	350070	4986300	14	1103	10/25/00	3037-01									Permit to revise the incorrect location in the previous permit.
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-25 Battery	NG Compressor Station	350070	4986300	15	1103	05/04/01	3037-02									Permit for transfer of ownership from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-35 Battery	NG Compressor Station	348986	4985247	13	1119	08/10/00	3122-00	15.45	0.28	0.28		0.02	23.18	7.73		Permit to operate two 400-hp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	CX-35 Battery	NG Compressor Station	348986	4985247	13	1119	05/17/01	3122-01									Permit for name change from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	P&M 26 Battery	NG Compressor Station	348241	4986968	13	1195	08/10/00	3121-00	15.45	0.28	0.28		0.02	23.18	7.73		Permit to operate two 400-hp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	P&M 26 Battery	NG Compressor Station	348241	4986968	13	1195	05/21/01	3121-01									Permit for name change from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	P&M 34 Battery	NG Compressor Station	347286	4985087	13	1201	08/10/00	3120-00	15.45	0.28	0.28		0.02	23.18	7.73		Permit to operate two 400-hp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	P&M 34 Battery	NG Compressor Station	347286	4985087	13	1201	05/17/01	3120-01									Permit for name change from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	Shell 33 Battery	NG Compressor Station	345900	4984900	13	1113	08/10/00	3119-00	15.45	0.28	0.28		0.02	23.18	7.73		Permit to operate two 400-hp Waukesha NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	Shell 33 Battery	NG Compressor Station	345900	4984900	13	1113	05/17/01	3119-01									Permit for name change from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	Squirrel Creek	NG Compressor Station	351921	4986863	13	1079	04/05/01	3038-01									Permit for name change from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	State Line Battery	NG Compressor Station	351379	4984558	13	1074	10/28/99	3070-00	14.68	0.28	0.28		0.02	22.02	7.34		Permit to operate two 380-hp CAT G3408TA NG compressor engines
Big Horn	Bitter Creek Pipelines, L.L.C.	State Line Battery	NG Compressor Station	351379	4984558	13	1074	04/05/01	3070-01									Permit to change ownership from Redstone Gas Partners LLC
Big Horn	Bitter Creek Pipelines, L.L.C.	State Line Battery	NG Compressor Station	351379	4984558	13	1074	08/07/01	3070-02	7.73	0.14	0.14		0.01	11.59	3.86		Permit to add one 400-bhp Waukesha NG compressor engines
Big Horn	Redstone Gas Partners, LLC	School House Battery	NG Compressor Station	353259	4985082	13	1119	07/07/00	3035-01	15.45	0.28	0.28		0.02	23.18	7.73	1.54	Permit to replace two previously permitted 380-hp CAT G3408TA engines (permit no. 3035-00 issued on 3/7/99) with two 400-hp Waukesha F18GL compressor engines.
Broadwater	Diamond Hill Mining Inc	Diamond Hill Project	Underground Gold Mining and Ore Processing	449000	5129000	12	1768	08/15/96	2905-00	119.20	35.29	13.41	11.00		23.00	3.00		Permit for the operation of a gold mining and ore processing operation.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Broadwater	Diamond Hill Mining Inc	Diamond Hill Project	Underground Gold Mining and Ore Processing	449000	5129000	12	1768	02/12/98	2905-02									Permit for the discontinuation of metals analysis and the reduction of PM10 ambient sampling and for change in company name.
Broadwater	Diamond Hill Mining Inc	Diamond Hill Project	Underground Gold Mining and Ore Processing	449000	5129000	12	1768	09/30/98	2905-03	-18.23	-4.04	-4.04	-2.64		-0.61	-0.15		Permit to include diesel fuel consumption limits, compressor, diesel equipment, and explosives detonation.
Broadwater	Diamond Hill Mining Inc	Diamond Hill Project	Underground Gold Mining and Ore Processing	449000	5129000	12	1768	09/30/98	2905-04	0.65	1.04	0.40	0.52		5.89	2.34		Permit to reapportion the annual diesel fuel consumption limits for the electrical generators, compressor, and the diesel equipment, and to allow for the use of an auxiliary electrical generator for the underground mine.
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	03/20/96	1554-06									Permit to request an increase in the sulfur-in-fuel limit for the coal to the kilns and to establish enforceable limits.
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	07/03/96	1554-07		4.20	1.24						Permit to allow an increase in PM emission limit for the lime hydrator at the facility and authorize the extension of the hydrator stack to 94'.
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	03/23/97	1554-08									Permit to conduct a test burn using 744 tons of petroleum coke.
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	06/20/97	1554-09	0.00	2.90	0.85	278.54		0.00	0.00		Permit to use petroleum coke as fuel for the kilns at the plant and to install additional limestone processing equipment.
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	11/19/97	1554-10									Permit to remove the requirements for Continental Lime to send the lime kiln dust through a pugmill prior to transportation for on-site disposal.
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	12/31/98	1554-11									Permit to remove PM-10 monitors and addition of miscellaneous equipment - no permit is required pursuant to ARM 17.8.701(1)(q).
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	09/12/99	1554-12									Permit to replace an existing 700 hp DC fan motor with a 900 hp AC motor; new fan will be limited, by permit, to the existing motor's capacity, to 1750 RPM.
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	8/30/00	1554-13	197.10								Permit for the following changes: (1) facility name change from Continental Lime, Inc., (2) horsepower increase on the rotary Lime Kiln #2 I.D. fan motor from 700 to 900 hp, and (3) NOx emission increase from 77.5 to 100 lb/hr for rotary Lime Kilns #1
Broadwater	Graymont Western US Inc.	CL's Indian Creek Facility	Limestone Manufacturing	452997	5131000	12	1402	3/15/01	1554-14		0.75	0.22						Permit to install and operate a second silo vent on the existing syncoal silo #T-290.
Cascade	American Agri-Technology Operating LLC	Agri-Tech Ethanol Production Facility	Ethanol Production	483941	5263063	12	1049	9/24/95	2835-00	90.47	90.87	58.73		0.71	80.05	78.76		Permit for the operation of an ethanol plant.
Cascade	American Agri-Technology Operating LLC	Agri-Tech Ethanol Production Facility	Ethanol Production	483941	5263063	12	1049	5/6/98	2835-01									Permit for change in company name and updating rule references and revising permitting language.
Cascade	American Agri-Technology Operating LLC	Agri-Tech Ethanol Production Facility	Ethanol Production	483941	5263063	12	1049	10/1/98	2835-02									Permit for the construction of the facility (re-authorization because permit expired before construction begins).

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Cascade	American Agri-Technology Operating LLC	Agri-Tech Ethanol Production Facility	Ethanol Production	483941	5263063	12	1049	11/6/01	2835-03	123.13	142.43	74.47		0.99	41.55	4.24		Permit for a revised facility design to increase potential production capacity
Cascade	Croxford & Sons Funeral Home	Croxford & Sons Funeral Home	Human Crematorium	478522	5261150	12	1050	1/15/98	3032-00	7.95	1.52	1.01		1.79	1.46	1.05		Permit for the construction and operation of a human crematorium/incinerator
Cascade	Croxford & Sons Funeral Home	Croxford & Sons Funeral Home	Human Crematorium	478522	5261150	12	1050	6/7/00	3032-01									Permit for an administrative change per EPA's recommendation.
Cascade	Great Falls Redi-Mix Inc.	Great Falls Redi-Mix Plant	Concrete/Asphalt Plant	474208	5258735	12	1100	9/21/96	2862-00	0.43	42.42	23.31		0.05	0.80	0.73		Permit for the change in permitting agency (permit for the operation of an existing 1959 Madsen 2000 Pound Special Batch Asphalt Plant and a 1963 Johnson Concrete Batch Plant).
Cascade	Great Falls Redi-Mix Inc.	Great Falls Redi-Mix Plant	Concrete/Asphalt Plant	474208	5258735	12	1100	4/16/00	2862-01	27.39	7.11			2.02	13.55	9.68		Permit to replace a 1959 Madsen 2000-lb Special Batch Asphalt Plant with a 1967 Madsen 5000-Pound Batch Asphalt Plant; the replacement plant is covered under previous permit.
Cascade	Humane Society of Cascade County		Animal Crematorium	478190	5263729	12	1036	2/16/00	3082-00	8.66	2.17	1.45		2.67	1.53	1.39		Permit to install and operate an incinerator/crematorium at the existing animal shelter.
Cascade	Montana Refining Co.	Petroleum Refinery	Petroleum Refinery	478008	5263175	12	1021	9/6/94	2161-09	1.00	0.12	0.12	0.00		0.21	0.29		Permit for (1) a modification in the method of heating three previously permitted asphalt tanks; and (2) addition of output line from existing Tank #69.
Cascade	Montana Refining Co.	Petroleum Refinery	Petroleum Refinery	478008	5263175	12	1021	1/23/98	2161-11	0.71					1.77	-69.35		Permit for (1) the installation of a gasoline vapor collection system and flare; and (2) administrative changes and technically correct permit #2161-09.
Cascade	Montana Refining Co.	Petroleum Refinery	Petroleum Refinery	478008	5263175	12	1021	9/8/99	2161-13									Permit to place enforceable emissions limits on the facility and compliance demonstration methodology and conditions.
Cascade	Montana Refining Co.	Petroleum Refinery	Petroleum Refinery	478008	5263175	12	1021	8/4/01	2161-14									Permit for addition of five 1600 KW diesel generators
Cascade	Montana Specialty Mills LLC	Specialty Mills Plant	Grain Elevator and Vegetable Oil Production	476299	5261458	12	1120	12/15/96	2968-00	0.15	31.66	8.02		0.00	0.03	0.01		Permit to operate a vegetable oil processing plant and grain elevator.
Cascade	Montana Specialty Mills LLC	Specialty Mills Plant	Grain Elevator and Vegetable Oil Production	476299	5261458	12	1120	8/28/97	2968-01									Permit for change of ownership.
Cascade	NorthWestern Montana First Megawatts, LLC	NorthWestern Power Plant	Power Generation	479528	5265542	12	1066	10/12/01	3154-00	98.17	98.89	98.89		6.14	98.32	17.65		Permit to construct and operate 160-MW power generation facility
Cascade	NorthWestern Montana First Megawatts, LLC	NorthWestern Power Plant	Power Generation	479528	5265542	12	1066	1/23/02	3154-01									Permit modification to remove the requirement to install CO catalysts

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Cascade	Thompson Excavating		Raw Materials Processing	444900	5267600	12	1100	9/28/94	2826-00		38.44	11.12						Permit to operate a portable 1994 homemade shake screen and associated equipment.
Cascade	Thompson Excavating		Sand and Gravel Processing	455500	5265800	12	1021	12/8/95	2903-00	4.06	9.51	2.82		0.27	0.88	0.32		Permit for the operation of a portable 1981 Allis Chalmers 322 cone crusher (38 TPH) and associated equipment.
Chouteau	Montana Power Co.	Big Sandy Station 100	Gas Compressor Station	571700	5323500	12	941	7/17/01	3156-00	64.18	1	1.00		0.5	93.15	31.27		Permit to construct and operate two 1600-hp Solar Saturn Turbine-driven compressors
Chouteau	Ocean Energy Inc./Havre Pipeline Co.	Big Sandy Field, Station 102-1	NG Compressor Station	601838	5324714	12	1250	11/1/97	2772-02	12.95	0.22	0.22		0.01	2.88	2.59		Permit for change of ownership, addition of a 300-hp Ajax DPC engine, placement of an hourly operation limit to keep under the Title V permit threshold, and update of the rule reference.
Chouteau	Ocean Energy Inc./Havre Pipeline Co.	Big Sandy Field, Station 102-1	NG Compressor Station	601838	5324714	12	1250	6/27/99	2772-03									Permit for change of ownership.
Chouteau	Ocean Energy Inc./Havre Pipeline Co.	Big Sandy Field, Station 102-1	NG Compressor Station	601838	5324714	12	1250	11/7/99	2772-04	13.27	0.56	0.56		0.03	13.60	12.91		Permit for the installation of a 772 hp Superior 6GTLE compressor engine and an ALCO TEG dehydrator.
Chouteau	Ocean Energy Inc./Havre Pipeline Co.	Big Sandy Field, Station 102-1	NG Compressor Station	601838	5324714	12	1250	9/7/00	2772-05	-43.27	0.31	0.31		0.02	53.24	16.21		Permit for the installation of one 1,607-hp Waukesha L7042G and one 607-hp Waukesha 2895GSI compressor engines and the removal of an existing 600-hp White Superior compressor engine and a Sivalls dehydrator; and correct CO and VOC emissions for the Ajax c
Chouteau	Ocean Energy Inc./Havre Pipeline Co.	Big Sandy Field, Station 102-1	NG Compressor Station	601838	5324714	12	1250	9/12/01	2772-06	-29.15	-0.24	-0.24		-0.01	-42.77	-14.25		Permit for the installation of a 738-hp Waukesha compressor engine and the removal of the 1607-hp and 607-hp Waukesha compressor engines.
Custer	Allwaste Container Services	Allwaste Facility	Railcar Cleaning Facility	435996	5140488	13	716	1/6/96	2832-00	8.90	0.31	0.31	0.83		9.50	10.15		Permit for the operation of a rail car cleaning facility.
Custer	Allwaste Container Services	Allwaste Facility	Railcar Cleaning Facility	435996	5140488	13	716	7/4/96	2832-01									Permit for an extension to install a flare fuel flow meter.
Custer	Allwaste Container Services	Allwaste Facility	Railcar Cleaning Facility	435996	5140488	13	716	12/26/96	2832-02	13.34	0.40	0.31	1.18		30.68	9.49		Permit to increase amount of material processed annually, to use 50,000 gal/yr diesel fuel in the Superior natural gas fired boiler, and expand the list of chemicals Allwaste is allowed to process.
Custer	Allwaste Container Services	Allwaste Facility	Railcar Cleaning Facility	435996	5140488	13	716	4/11/97	2832-03									Permit to improve some of the wording in the permit and to extend the deadline for the installation of the general purpose rail car degassing system.
Custer	Allwaste Container Services	Allwaste Facility	Railcar Cleaning Facility	435996	5140488	13	716	8/23/98	2832-04									Permit to install a small vacuum system; and to exempt certain general purpose railcars from emissions control with the flaring system.
Custer	Allwaste Container Services	Allwaste Facility	Railcar Cleaning Facility	435996	5140488	13	716	9/2/00	2832-05									Permit to request to remove reference to the nuisance odor rule and to incorporate federally enforceable permit limits.
Custer	Allwaste Container Services	Allwaste Facility	Railcar Cleaning Facility	435996	5140488	13	716	3/11/01	2832-06									Permit for language modification.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Custer	Trinity Industries	Railcar Maintenance Facility	Railcar Maintenance Facility	435639	5140488	13	716	9/21/95	2833-00		0.88	0.09				33.55		Permit for the operation of the railcar maintenance facility
Custer	Trinity Industries	Railcar Maintenance Facility	Railcar Maintenance Facility	435639	5140488	13	716	4/17/97	2833-01									Permit for change of ownership from Trancisco Rail Svc to Trinity Industries, Inc.
Custer	Trinity Industries	Railcar Maintenance Facility	Railcar Maintenance Facility	435639	5140488	13	716	10/15/99	2833-02									Permit for replacement of the existing spraying booth and sand blasting operation.
Custer	Trinity Industries	Railcar Maintenance Facility	Railcar Maintenance Facility	435639	5140488	13	716	1/14/01	2833-03		31.89	5.49				64.45		Permit for the addition of a paint booth, a gritblasting, and sandblasting units.
Dawson	Cenex Harvest States Cooperatives	Cenex Grain Elevator	Grain Elevator	519700	5220900	13	700	8/27/00	3124-00		30.00	2.00						Permit for the construction and operation of a grain elevator
Dawson	Montana-Dakota Utilities Inc.	Glendive Generating Station	Power Generation	519700	5210970	13	649	3/6/98	1551-01	173.47	18.27	18.27	0.23		47.80	10.41		Permit to allow increased hours of operation of the turbine.
Dawson	Montana-Dakota Utilities Inc.	Glendive Generating Station	Power Generation	519700	5210970	13	649	4/5/00	1551-02									Permit to add fogging and Turbine Ice Peaking Power equipment to the station
Dawson	Montana-Dakota Utilities Inc.	Glendive Generating Station	Power Generation	519700	5210970	13	649	9/25/01	1551-03	247.00	12.21	12.21	6.13		129.66	35.20		Permit to install and operate an additional multi-fuel turbine, rated at 43 MW capacity, with 600-hp diesel starting engine
Fallon	Bear Paw Energy Inc.	Baker Gas Plant	NG Processing	571690	5136090	13	927	2/8/95	2736-01									Permit for removal of all reference to the second stack on the White Superior 8G-825, to reflect mass emission limits in lb/hr, and change from derated to rated horsepower.
Fallon	Bear Paw Energy Inc.	Baker Gas Plant	NG Processing	571690	5136090	13	927	8/25/96	2736-02									Permit to include all sources of VOCs and HAPs not previously identified.
Fallon	Bear Paw Energy Inc.	Baker Gas Plant	NG Processing	571690	5136090	13	927	6/27/97	2736-03	1.29	0.03	0.03		116.00	0.04	0.91		Permit to change ownership from WGR to Bear Paw Energy, Inc, to allow increase production from 1.4 to 4.2 MMSCFD, and for the addition of an amine sweetening unit and a new flare; the proposed amine until is to replace the currently permitted iron sponge.
Fallon	Bear Paw Energy Inc.	Baker Gas Plant	NG Processing	571690	5136090	13	927	11/21/97	2736-04									Permit to remove the requirement to route a pressurized tanks to flare.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Fallon	Bear Paw Energy Inc.	Baker Gas Plant	NG Processing	571690	5136090	13	927	11/8/98	2736-05	24.14	0.46	0.46		0.02	24.14	12.07		Permit for the addition of one 1250-hp Waukesha compressor engine or a series of compressor engines equivalent to 1250 hp.
Fallon	Bear Paw Energy Inc.	Baker Gas Plant	NG Processing	571690	5136090	13	927	12/13/01	2736-06					118.22				Permit to increase the facility's throughput from 4.2 to 8.5 MMSCF per day
Fallon	Bear Paw Energy Inc.	North Compressor Station	NG Compressor Station	545397	5156522	13	878	9/3/97	2982-00	13.28	0.37	0.37		1.50	11.93	12.29		Permit for the operation of a 600-hp CAT G398TA NG compressor station and associated equipment.
Fallon	Bear Paw Energy Inc.	North Compressor Station	NG Compressor Station	545397	5156522	13	878	3/17/00	2982-01									Permit for change incorrectly identify the location of the compressor station.
Fergus	Mountain Meadows Pet Products	Mountain Meadows Manufacturing Facility	Animal Bedding Production	620000	5245000	12	1207	3/10/95	2825-00	0.88	15.19	2.11		0.01	0.18	0.05		Permit for the operation of an animal bedding manufacturing plant
Fergus	Mountain Meadows Pet Products	Mountain Meadows Manufacturing Facility	Animal Bedding Production	620000	5245000	12	1207	9/29/95	2825-01		-5.51	-3.14						Permit to install a filter and fan to control particulate emissions.
Fergus	Mountain Meadows Pet Products	Mountain Meadows Manufacturing Facility	Animal Bedding Production	620000	5245000	12	1207	10/4/97	2825-02									Permit to remove the annual testing requirements for the primary dryer cyclone, the Carter Day MMP Baghouse and the Semco DCTV filter receiver.
Gallatin	A.M. Welles Inc.	A.M. Welles Plant	Sand and Gravel Processing	489200	5066500	12	1372	10/2/94	2837-00	16.83	108.01	31.83		0.29	4.40	0.60		Permit to operate a portable 1994 Fabtec 45" cone crusher (225 TPH) and associated equipment.
Gallatin	Big Sky Insulations Inc	EPS Facility	Insulation Material Production	484500	5069800	12	1350	8/23/95	2889-00	1.84	0.22	0.22		0.01	0.39	96.45		Permit to operate a insulation manufacturing facility.
Gallatin	City of Bozeman Sanitary Landfill	Bozeman's Landfill	Municipal Solid Waste Disposal	497970	5062450	12	1460	4/18/97	2951-00	10.73				3.07	76.65	0.04		Permit for the construction and operation of an utility candlestick flare
Gallatin	City of Bozeman Sanitary Landfill	Bozeman's Landfill	Municipal Solid Waste Disposal	497970	5062450	12	1460	10/16/98	2951-01									Permit to correct the flare inlet concentration limitations for ethyl chloride, toluene, and styrene.
Gallatin	City of Bozeman Sanitary Landfill	Bozeman's Landfill	Municipal Solid Waste Disposal	497970	5062450	12	1460	12/11/98	2951-02									Permit to correct the flare inlet concentration limitations (was inadvertently not corrected in permit -01).
Gallatin	City of Bozeman Sanitary Landfill	Bozeman's Landfill	Municipal Solid Waste Disposal	497970	5062450	12	1460	6/11/01	2951-03									Permit to remove hydrogen sulfide testing requirement
Gallatin	Dokken-Nelson Funeral Service	Dokken-Nelson Funeral Service	Human Crematorium	496977	5058088	12	1450	3/5/99	3041-00	7.95	1.52	1.01		1.79	1.46	1.05		Permit for the construction and operation of a human crematorium/incinerator
Gallatin	Gallatin Valley Cemetery & Crematory	GVCC Crematorium	Human Crematorium	493000	5064200	12	1399	10/2/01	3171-00	1.65	1.97	1.31		2.63	0.13	1.03		Permit to install and operate a crematorium
Gallatin	Holnam Inc	Trident Facility	Cement Manufacturing	464405	5087976	12	1372	7/29/95	982-03		10.84	5.81						Permit to upgrade the existing cement Finish Mill #2 baghouse to a modern baghouse, replace the Finish Mill #2 air slide, replace two existing dust collectors and construct a separate coke grinding, storage, and transport system.
Gallatin	Holnam Inc	Trident Facility	Cement Manufacturing	464405	5087976	12	1372	5/9/98	982-04		2.10	1.13						Permit for adding a pozzolan material (fly ash) system with associated equipment.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Gallatin	Holnam Inc	Trident Facility	Cement Manufacturing	464405	5087976	12	1372	9/30/98	982-05				15.00					Permit to conduct a test burn using petroleum coke, coal, and natural gas exceeding the operational limit.
Gallatin	Holnam Inc	Trident Facility	Cement Manufacturing	464405	5087976	12	1372	1/24/99	982-06									Permit to use an electrostatic precipitator.
Gallatin	Holnam Inc	Trident Facility	Cement Manufacturing	464405	5087976	12	1372	9/23/99	982-07		11.90	6.38						Permit to use post-consumer recycled container glass and landfill cement kiln dust in cement kiln.
Gallatin	Holnam Inc	Trident Facility	Cement Manufacturing	464405	5087976	12	1372	12/29/99	982-08									Permit to limit the use of pozzolan material fed through the pozzplan material system.
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	11/5/94	1996-03		1.30	0.75						Permit to (1) replace an existing baghouse (DC#22) with a larger baghouse identified as DC#22A; (2) for change of the feed system to the plant.
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	3/21/95	1996-04		3.67	2.11						Permit for (1) the installation of a Semi-Bulk Powder Densification System and associated equipment; (2) for the installation of a pre-separator dust collection and containment system; (3) and for the removal or discontinuation of some equipment from the
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	6/23/95	1996-05	0.88	5.32	3.06	0.04		0.70	0.17		Permit to install a Heat Treatment System (not installed as indicated in permit -06), include DC #21A in the Durrant Dust Collection System, and to reconfigure part of the crude ore handling dust collection system.
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	4/24/96	1996-06	4.02	24.08	13.87	0.00		0.80	0.22		Permit to install a new ACM mill circuit, expand a second pellet mill and a new vibrating fluid bed dryer, and replace existing collector, removal of the Heat Treat System from the permit, convert an existing storage silo, and replace the old feed system
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	12/7/97	1996-07									Permit for change of ownership.
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	1/2/99	1996-08									Permit to revise the testing schedule and removal of testing requirements for some equipment.
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	8/29/99	1996-09									Permit for the removal of testing requirement for the following equipment: product silo #6, silo #1, pelletizer feed in, the fine product silo #5, the packaging target box vent, and ACM #3.
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	12/31/99	1996-10									Permit for de minimis determination for the addition of a new feed bin for the existing classifier and for the installation of a new ground product storage silo.
Gallatin	Luzenac America Inc.	Montana Talc - Luzenac	Talc Processing	440000	5071500	12	1274	5/5/00	1996-11		1.35	0.78						Permit for the addition of 2 new fans on the existing fabric filters for 2 silos.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	9/14/94	2282-01		13.24	7.63						Permit to construct and operate Roller Mill Storage Bins (#1, 2, and 3) and MV Storage Bins (#1, 2, and 3), and associated equipment.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	10/16/94	2282-02		10.92	6.29						Permit to construct and install a new 66" Roller Mill Feed Bin and 66" Roller Mill System.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	7/3/95	2282-03		9.10	5.24						Permit to add a third ACM mill, feed bin and related fabric filter controls.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	9/5/98	2282-04		3.82	2.20						Permit for the installation of a new coating system.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	4/14/99	2282-05		10.80	6.22				39.00		Permit for the installation of a new coating system.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	8/29/99	2282-06		-1.80	-1.04						Permit to remove testing requirements for the Roller Mill System and Product Silos and to incorporate design modifications for the new coating, storage, and packaging system.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	10/16/99	2282-07									Permit to remove testing requirements for the Roller Mill Packers.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	12/19/99	2282-08		0.56	0.32						Permit for de minimis determination for the installation of a vacuum-rate baghouse.
Gallatin	Luzenac America Inc.	Luzenac America - Three Forks Plant	Talc Processing	457288	5081000	12	1243	3/24/00	2282-09		0.53	0.30						Permit for a de minims determination and modification for the installation of a new vacuum-rated baghouse (Coarse Powder Conveying Collector); previous permit request contained incorrect information.
Jefferson	Ash Grove Cement Company	AG Portland Cement Facility	Cement Manufacturing	428544	5154495	12	1265	6/13/96	2005-02									Permit for identifying several construction projects, e.g., altering existing primary crusher, upgrading finish mill dust collection system.
Jefferson	Ash Grove Cement Company	AG Portland Cement Facility	Cement Manufacturing	428544	5154495	12	1265	8/10/96	2005-03		0.38	0.13						Permit for the addition of a belt conveyor.
Jefferson	Ash Grove Cement Company	AG Portland Cement Facility	Cement Manufacturing	428544	5154495	12	1265	8/7/97	2005-05									Permit for the use of 250 TPY of post-consumer material as a raw material.
Jefferson	Ash Grove Cement Company	AG Portland Cement Facility	Cement Manufacturing	428544	5154495	12	1265	11/11/98	2005-06		6.75	2.38						Permit for the replacement of existing Raymond air separator with a new high efficiency separator.
Jefferson	Ash Grove Cement Company	AG Portland Cement Facility	Cement Manufacturing	428544	5154495	12	1265	10/12/01	2005-07	1294.14	9.03			102.83	18.56	18.56		Permit to install seven temporary diesel-fired generators (not beyond two years).
Jefferson	Montana Tunnels Mining Inc.	Montana Tunnels Mine	Surface Mine	412503	5135501	12	1920	5/1/96	1986-04	38.00	42.88	16.29	5.00		10.00			Permit for the construction and operation of a three stage crushing system to process ore from the Diamond Hill Mine.
Jefferson	Montana Tunnels Mining Inc.	Montana Tunnels Mine	Surface Mine	412503	5135501	12	1920	4/30/97	1986-05	354.00	54.58	20.74	38.00		249.00	42.00		Permit to allow increased ore and waste mining and milling activities and increase in diesel fuel consumption and increase in fugitive nitrogen oxides emissions.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Jefferson	Montana Tunnels Mining Inc.	Montana Tunnels Mine	Surface Mine	412503	5135501	12	1920	7/15/99	1986-06		14.15	5.38						Permit to (1) add a system to process over-size reject ore; (2) reduce ambient air sampling and discontinue ambient air monitoring at a site.
Jefferson	Montana Tunnels Mining Inc.	Montana Tunnels Mine	Surface Mine	412503	5135501	12	1920	9/7/99	1986-07	4.27	15.23	4.05		0.28	0.92	0.35		Permit for the addition of a portable jaw crusher and associated equipment.
Judith Basin	United Harvest, LLC	Moccasin Elevator	Rail Loadout Grain Sub-Terminal	585300	5211200	12	1260	10/7/00	3125-00		10.40	0.69						Permit to install and operate a rail loadout grain sub-terminal
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	2/15/95	1993-03	0.72	7.96	7.79	0.00		0.15	0.04		Permit for #33-#37 copper processing, #39 gas processor, #40 copper sizer, #3 & #4 furnaces baghouse.
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	7/17/96	1993-04	1.95	0.79	0.77	0.01		0.39	0.10		Permit issued for the construction of #41 copper furnace, alteration to #19 copper furnace, and ability to replace stack 001 with 20 meter stack.
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	7/2/97	1993-05									Permit for construction of a new #42 copper sizer, #43 copper blender, and associated baghouses.
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	4/17/98	1993-06									Permit to construct a separate stack for the #41 copper furnace.
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	8/14/98	1993-07									Permit to initiate four minor facility changes.
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	9/1/99	1993-08									Permit to (1) replace an existing baghouse with a new larger capacity baghouse; (2) to install and operate 3 new process units (#46 Copper Mill, the #47 Screen, and the #48 Copper Mill); and (3) for an extension of time to construct a 20-meter stack for t
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	9/22/00	1993-09	0.95	0.08	0.08	0.01		0.91	0.05		Permit to install and operate a new gas processor (#49) which would replace the #39 gas processor
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	1/27/01	1993-10	0.11	0.02	0.02	0.00		0.25	0.01		Permit to require the operation of nitrogen gas purge, to request permission to change the method for CO emissions control, etc.
Lewis and Clark	American Chemet Corporation	AC East Helena Facility	Copper Oxides and Zinc Oxides Production	429350	5159530	12	1189	10/12/01	1993-11									Permit for applications for changes in previous permit conditions
Lewis and Clark	ASARCO Inc.	ASARCO E. Helena Plant	Lead Smelter	429398	5159000	12	1195	1/7/96	2557-05		0.00		0.00					Permit for the construction of additional smelter equipment, controls, and new processes. A new Dross plant stack and a jet-pulse baghouse stack to provide emission vents for existing and new plant equipment.
Lewis and Clark	ASARCO Inc.	ASARCO E. Helena Plant	Lead Smelter	429398	5159000	12	1195	3/13/96	2557-06									Permit for the construction of a blast furnace baghouse dust handling system including the following: (1) baghouse dust cleanout baghouse; (2) pneumatic dust handling system; (3) pulse-jet baghouse to control emissions from the railcar loadout hopper.
Lewis and Clark	ASARCO Inc.	ASARCO E. Helena Plant	Lead Smelter	429398	5159000	12	1195	5/29/96	2557-07									Permit for the construction of a lead granulation system.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Lewis and Clark	ASARCO Inc.	ASARCO E. Helena Plant	Lead Smelter	429398	5159000	12	1195	1/3/97	2557-08									Permit to use the existing 130-ton acid dust bin and associated baghouse.
Lewis and Clark	ASARCO Inc.	ASARCO E. Helena Plant	Lead Smelter	429398	5159000	12	1195	4/5/98	2557-09									Permit for (1) a change in operational requirements of the blast furnace baghouse dust handling system in order to alleviate dust removal from the agglomerator; (2) redirect the emissions from the species granulating pit.
Lewis and Clark	ASARCO Inc.	ASARCO E. Helena Plant	Lead Smelter	429398	5159000	12	1195	8/3/00	2557-10	4.80	8.40	4.84	5.80		4.10			Permit for the construction and operation of a HERO water treatment facility with 2 air discharge points (degassifier vents and spray dryer system).
Lewis and Clark	Blackfoot Forest Products	Blackfoot Forest Products	Pellet Mill	387000	5206600	12	1494	4/15/95	2797-00	3.57	81.98	40.51		0.79	21.02	7.36		Permit for the operation of the pellet mill, which include the following: (1) wood-fired burner and dryer system; (2) classifier/hammermill system; (3) 2 cyclones; (4) bagging operations cyclone; (5) classifier/bagging cyclone. [Sawmill Operations]
Lewis and Clark	Blackfoot Forest Products	Blackfoot Forest Products	Pellet Mill	387000	5206600	12	1494	12/17/1995	2797-01									Permit to allow relocation of air flow fan for the dryer cyclone.
Lewis and Clark	Montana Power Co.	MP - Main Line #3	Gas Compressor Station	414110	5261148	12	1158	4/3/98	2997-00	42.50	1.04	1.04		0.06	63.74	15.94		Permit to add two 1100 hp Cooper Superior compressor engines and to limit three existing 1100 hp Solar Saturn turbines to a combined total of 20,000 operating hours per year.
Lewis and Clark	Montana Power Co.	MP - Main Line #3	Gas Compressor Station	414110	5261148	12	1158	10/16/98	2997-01	0.33	0.03	0.03		1.93	0.04	0.00		Permit to include a Smart Ash Burner for the disposal of rags and other wastes.
Lewis and Clark	Montana Power Co.	MP - Main Line #3	Gas Compressor Station	414110	5261148	12	1158	5/13/00	2997-02	0.86	-0.64	-0.64		0.10	-17.62	-1.50		Permit to facilitate the replacement of two 1100 hp Solar Saturn turbine compressors with two 1600 hp Solar Saturn turbine-driven compressors.
Lewis and Clark	Montana Power Co.	MP - Main Line #3	Gas Compressor Station	414110	5261148	12	1158	9/6/01	2997-03	0.43	-0.31	-0.31		0.04	-8.81	-0.75		Permit to facilitate the replacement of an 1100-hp Solar Saturn turbine compressor with a 1600-hp Solar Saturn turbine-driven compressor.
Lewis and Clark	Montana Power Co.	MP - Main Line #3	Gas Compressor Station	414110	5261148	12	1158	3/20/02	2997-04	27.24	0.63	0.63		0.21	7.53	2.13		Permit to facilitate the addition of three 1600-hp Solar Saturn turbine compressors.
Lewis and Clark	Montana Power Co.	MP - Main Line #4	Gas Compressor Station	409200	5178600	12	1350	3/30/02	3170-00	96.92	3.07	3.07		0.12	26.59	7.44		Permit to construct and operate three 1600-hp Solar Saturn Turbine-driven compressors
Madison	Barretts Minerals Inc. Regal Mine	Barretts Regal Mine	Talc Mine	387954	5012273	12	1707	5/6/00	3086-00	65.09	88.92	18.56	6.75		40.21	11.58		Permit to drill, blast, crush, screen, and stockpile talc.
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	12/2/94	1648-03		2.50	0.74						Permit for the construction and operation of a direct ship facility and associated equipment.
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	9/17/95	1648-04		28.57	8.40						Permit to (1) add two screens, portable sorter, and associated equipment; (2) permit to incorporate permit #1997-02 (Johnny Gulch Mine) into this permit. Luzenac America does not intend to mine the existing Johnny Gulch pit.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	2/24/96	1648-05		0.75	0.22						Permit to add (1) additional sorting stations and associated equipment, (2) installation of an automated sample cutter, conveyors, large impact crusher, and fabric filter duster collector, and (3) installation of an additional jaw crusher and conveyor.
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	6/19/98	1648-06	4.74	2.79	1.02		4.75	5.37	0.53		Permit for the addition of material handling and power generation equipment for oversized stockpiled ore.
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	10/19/00	1648-07		0.35	0.10						Permit for the addition of a FPS pilot scale process system to the existing equipment at the facility.
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	4/25/01	1648-08		2.40	0.71						Permit for the operation of an optical sorter, operating at a capacity of 8,000 tpy.
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	9/11/01	1648-09		4.73	1.39						Permit to install and operate a 7500 cfm capacity dust collector to control and process emissions from the surge bins.
Madison	Luzenac America Inc.	Yellowstone Mine	Talc Mining and Processing	442900	4991400	12	1859	5/6/02	1648-10		9.31	2.74						Permit to install and operate a dust control/product collection project that would include 4 separate dust collectors.
Madison	Montana Oregon Investment Group LLC	Alder Garnet Operation	Garnet Sand Production	414509	5019382	12	1554	8/4/95	2888-00	22.00	5.48	2.17	2.00		9.00	2.00		Permit for the operation of a placer garnet mining operation.
Madison	Montana Oregon Investment Group LLC	Alder Garnet Operation	Garnet Sand Production	414509	5019382	12	1554	3/24/00	2888-01									Permit to transfer facility ownership.
Madison	Sweetwater Garnet Inc	Sweetwater Garnet Project	Garnet Sand Mining and Processing	393166	4988550	12	2103	11/5/95	2899-00	32.00	19.68	7.48	2.00					Permit for a garnet mining operation.
Madison	Sweetwater Garnet Inc	Sweetwater Garnet Project	Garnet Sand Mining and Processing	393166	4988550	12	2103	9/6/96	2899-01									Permit to change the plant location and change of company name.
Musselshell	BMP Investments Incorporated	Bull Mountains Coal Mine	Underground Coal Mine	698500	5127850	12	1200	5/10/02	3179-00	3.60	115.10	43.74		0.30	10.70			Permit to construct and operate an underground coal mining operations
Park	Franzen-Davis Funeral Home Inc.	Franzen-Davis Funeral Home	Human Crematorium	533180	5056299	12	1367	1/6/99	3030-00	7.95	1.52	1.01		1.79	1.46	1.05		Permit to install and operate an incinerator/crematorium.
Park	TVX Mineral Hill Mine	First Chance Portal	Underground Gold Mining	531100	4986900	12	2499	5/26/96	2926-00	32.60	3.26	2.23	3.60			2.40		Permit for the operation of an underground gold mine facility
Phillips	Zortman Mining	Zortman Mine	Open-Pit Mine and Processing	683108	5311276	12	1402	6/30/96	1823-04	222.90	399.28	151.73	24.42		195.24	13.99		Permit for increase in ore and waste production and for the addition of a crushing system and a conveyor.
Phillips	Zortman Mining	Zortman Mine	Open-Pit Mine and processing	683108	5311276	12	1402	10/20/96	1823-05									Permit to add the existence of a baghouse and clarify the testing requirements on it.
Phillips	Zortman Mining	Zortman Mine	Open-Pit Mine and processing	683108	5311276	12	1402	5/8/97	1823-06	9.00	0.22	0.22	3.00		2.00	0.00		Permit to (1) specify permission in operating on-site electrical generation equipment (emergency diesel generators); (2) to changes to the ambient air monitoring plan; and (3) elimination and addition of sites.
Phillips	Zortman Mining	Zortman Mine	Open-Pit Mine and processing	683108	5311276	12	1402	3/20/99	1823-07									Permit to discontinue ambient air monitoring network

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Phillips	Zortman Mining Inc.	Landusky Mine	Surface Open Pit Gold Mine and Heap Leaching Facility	678497	5310019	12	1524	3/24/95	1825-05	163.80	42.62	16.20	18.20		214.30	8.90		Permit to increase the total mining rate (ore and waste) from 23 to 26.5 MTY.
Phillips	Zortman Mining Inc.	Landusky Mine	Surface Open Pit Gold Mine and Heap Leaching Facility	678497	5310019	12	1524	5/8/97	1825-06									Permit for a clarification on the hour of operation; addition of a new site and deletion of the Upper Alder Gulch and Francis Kolczak sites.
Phillips	Zortman Mining Inc.	Landusky Mine	Surface Open Pit Gold Mine and Heap Leaching Facility	678497	5310019	12	1524	3/25/99	1825-07									Permit for the discontinuance of the ambient air monitoring network.
Richland	Bear Paw Energy Inc.	Richland Compressor Station	Gas Compressor Station	551700	5291400	13	695	6/13/96	2792-01	22.52	-0.10	-0.10		-0.01	-4.90	-2.11		Permit to replace a 415-hp CAT G379TA compressor engine with a 245-hp CAT G379NA compressor engine.
Richland	Bear Paw Energy Inc.	Richland Compressor Station	Gas Compressor Station	551700	5291400	13	695	4/20/97	2792-02									Permit to change ownership.
Richland	Bear Paw Energy Inc.	North Yellowstone Compressor Station	NG Compressor Station	567400	5290200	13	584	2/29/96	2879-00	-50.47	0.15	0.15		0.00	17.00	3.73		Permit to operate an existing gas compressor station consisting of one 687 hp Waukesha 7042G compressor engine, a 300 hp White compressor engine, and a 1.2 MMBtu/hr glycol heater.
Richland	Bear Paw Energy Inc.	North Yellowstone Compressor Station	NG Compressor Station	567400	5290200	13	584	4/20/97	2879-01									Permit to change ownership.
Richland	EOTT Energy Operating L.P.	EOTT Richland Crude Oil Station	Crude Oil Station	557000	5301650	13	677	3/27/02	3183-00		1.16	0.17				37.68		Permit to rebuild an existing pump to increase crude oil throughput
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	1/6/95	1826-02									Permit to modify the language in limiting the hours of operation and references to applicable rules.
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	6/10/95	1826-03		0.09							Permit for the construction of 10 sugar silos and associated equipment.
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	4/14/96	1826-04									Permit to extend the operating schedule of the coal handling equipment.
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	2/28/98	1826-05									Permit to remove particulate and opacity testing requirements on 2 Union boilers.
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	7/27/98	1826-06		1.10							Permit to: (1) add a pebble lime hopper and pneumatic loading facility; and (2) clarify some language in previous permit.
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	2/26/99	1826-07		13.50							Permit to (1) increase pebble lime hopper throughput capacity; (2) clarification of the permit condition language.
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	10/29/99	1826-08		11.60							Permit to (1) increase in emissions from a new diffuser; (2) to add limitations to remain below PSD levels.
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	11/20/01	1826-09									Permit to request to add the language in permit condition
Richland	Holly Sugar Corporation	HS' Beet Sugar Plant	Sugar Processing	564834	5284978	13	590	2/20/02	1826-10	-15.04	0.69	0.69	0.00		11.25	0.06		Permit to install and operate a Superior Mohawk NG-fired boiler and remove a Cleaver Brooks NG-fired boiler

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Richland	WCCO-KRC Acquisition Corp.	Savage Mine	Surface Coal Mine	542998	5257523	13	686	5/1/96	1851-01	2.06	5.90	2.24	0.21		4.10	0.26		Permit for alteration to include a portable crushing facility and to increase the permitted annual coal production from 300,000 to 350,000 TPY.
Richland	WCCO-KRC Acquisition Corp.	Savage Mine	Surface Coal Mine	542998	5257523	13	686	2/26/97	1851-02									Permit for change of company name.
Richland	WCCO-KRC Acquisition Corp.	Savage Mine	Surface Coal Mine	542998	5257523	13	686	8/28/01	1851-03	4.10	11.60	4.41	0.40		8.20	0.50		Permit to increase the annual production limit from 350,000 to 450,000 ton/year.
Rosebud	PP&L Montana, LLC	Colstrip Units 1-4	Power Generation	374768	5082266	13	1000	6/17/98	0513-01		1.12	0.35						Permit to install and operate a new Syncoal Truck dump and lime silo bin vent.
Rosebud	PP&L Montana, LLC	Colstrip Units 1-4	Power Generation	374768	5082266	13	1000	1/8/00	0513-02									Permit for transfer of ownership from Montana Power Company.
Rosebud	PP&L Montana, LLC	Colstrip Units 1-4	Power Generation	374768	5082266	13	1000	9/10/00	0513-03									Permit to conduct a test burn of petroleum coke/syncoal/Rosebud coal fuel combination in Units 1&2.
Rosebud	PP&L Montana, LLC	Colstrip Units 1-4	Power Generation	374768	5082266	13	1000	7/7/01	0513-04	0.00	7.20	5.17	0.00		-45.10	-14.70		Permit to add petroleum coke to the list of fuels to be used in Units 1&2 that are currently permitted to burn Syncoal and Rosebud coal.
Silver Bow	Butte Crematories Inc	Butte Crematories Inc	Human Crematorium	380797	5093803	12	1661	4/15/98	2999-00	1.45	1.32	0.88		1.75	0.16	0.70		Permit for preconstruction permit to install and operate an additional crematorium/incinerator.
Silver Bow	Magnum Container & Recycling	Magnum's Drum Recycling Plant	Drum Recycling	385750	5095250	12	1689	9/7/95	2896-00	7.59	0.36	0.27		37.49	1.84	32.12		Permit for the construction of a drum recycling plant
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium Mine	588013	5025995	12	1536	6/18/95	2459-05									Modification of permit to clarify the performance testing on wet scrubber controlling emissions from concentrate dryer (test required within 60 days of achieving ore production rate of 2000 TPD). Also update of more specific applicable regulations.
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium	588013	5025995	12	1536	10/18/95	2459-06	0.60					0.20			Replace concentrate dryer wet scrubber with a fabric filter collector (baghouse).
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium Mine	588013	5025995	12	1536	4/17/97	2459-07		0.61	0.27						Adds crushing, screening, and hauling of bedding material to emission inventory. It had been inadvertently taken out of the emission inventory in a previous permitting action.
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium Mine	588013	5025995	12	1536	10/25/98	2459-08	127.95	23.17	8.80		16.01	253.10			Permit to increase production from 730,000 TPY (3,500 TPD) to 1,825,000 TPY (5,000 TPD). Also plan to construct and operate a new tailings impoundment and to install a pipeline system while expanding a waste rock storage area on the east side of the mine.
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium Mine	588013	5025995	12	1536	3/29/00	2459-09		13.25	3.90						Permit for the installation and operation of a new surface jaw crusher and conveying system.
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium Mine	588013	5025995	12	1536	4/11/01	2459-10									Permit for the addition of an emergency generator at the Hertzer Pump Station, a Nordberg cone crusher, and associated material handling equipment.
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium	588013	5025995	12	1536	12/27/01	2459-11									Permit for the addition of an existing but not-permitted cement batch plant.

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Stillwater	Stillwater Mining Co.	Stillwater Project	Underground Platinum/Palladium Mine	588013	5025995	12	1536	4/16/02	2459-12	1.74	18.88	7.17		0.12	0.38			Permit for the removal of the Hertzer Pump Station emergency diesel generator and addition of an emergency diesel generator (Paste Plant Emergency Flush Pump) to the Paste Plant facility.
Stillwater	Stillwater Mining Co.	Stillwater Mining Co. Smelter	Smelter - Precious Metals	637200	5054650	12	1091	3/24/95	2635-05									Permit to allow the processing of spent platinum and palladium catalyst (platinum group metal in a ceramic matrix).
Stillwater	Stillwater Mining Co.	Stillwater Mining Co. Smelter	Smelter - Precious Metals	637200	5054650	12	1091	8/5/98	2635-06	6.30	62.58	62.58	73.39		1.58			Application to add a second smelting circuit with an increased capacity of 100 TPD of concentrate and/or PGM catalyst. New smelter will include: new silos, bins, an electric furnace, Top Blown Rotary Converters (TBRCs), granulators, and a dryer.
Stillwater	Stillwater Mining Co.	Stillwater Mining Co. Smelter	Smelter - Precious Metals	637200	5054650	12	1091	9/13/00	2635-07	3.29	6.86	2.02	0.02		2.77	0.18		Permit for an alteration to the existing permit for the installation and operation of a natural gas-fired concentrate dryer in the Smelter and a natural gas-fired nickel-sulfate crystal dryer in the Base Metals Refinery.
Stillwater	Stillwater Mining Co.	Stillwater Mining Co. Smelter	Smelter - Precious Metals	637200	5054650	12	1091	3/18/01	2635-08		3.14	0.92						Permit: (1) a request for removal of the SO2 CEM requirement for Smelter Circuit #1 when only concentrate dryer is venting through the circuit; (2) a request for a de minimus determination for the construction and operation of a new 200-ton capacity dried
Sweet Grass	Lodestar Mining & Exploration	Greycliff Gold Ore Mine and Mill	Gold Ore Mine and Mill	592500	5069300	12	1219	10/22/00	3131-00	47.76	2.81	1.72	8.05		10.94			Permit to construct and operate a gold ore mine and mill
Sweet Grass	Stillwater Mining Company	East Boulder Operation	Underground Mining and Ore Processing	570667	5040457	12	1850	10/15/99	2653-02									Permit to change the control device from a wet scrubber to a baghouse without changing emission limitation; modify emission monitoring requirement; and change company name.
Sweet Grass	Stillwater mining company	East Boulder Operation	Underground Mining and Ore Processing	570667	5040457	12	1850	6/3/00	2653-03	32.64	12.50	4.75	-53.05		-30.98			Permit for an increase in handling load for waste rock, ore, and in acreage increase.
Sweet Grass	Stillwater mining company	East Boulder Operation	Underground Mining and Ore Processing	570667	5040457	12	1850	4/6/01	2653-04	-4.41	5.46	2.07	-0.10		-0.74			Permit for the construction and operation of a surface ore crushing system and associated ore handling facilities, and the removal of the concentrate dryer and all associated concentrate dryer permit requirements
Sweet Grass	Thiessen Team U.S.A., Inc.	Dry Mix Shotcrete Facility	Dry Mix Shotcrete Manufacturing Plant	583300	5077700	12	1219	9/29/00	3127-00	49.97	11.21	5.17		9.43	13.15	11.55		Permit to operate a Dry Mix Shotcrete manufacturing plant
Teton	Mountain View of Montana, LLC	Mountain View Grain Elevator	Grain Elevator	442300	5312200	12	1073	12/5/00	3135-00		25.00	1.67						Permit to install and operate a facility to receive, clean, store, and ship grain for nearby farmers
Wibaux	Pine Gas Gathering LLC	Pine Gas Compressor Station	NG compressor station	534780	5174300	13	835	1/16/99	3031-00	29.25	0.54	0.54		0.04	43.78	14.58		Permit for a new compressor station with two 755-hp Waukesha L7042GU compressor engines and one glycol dehydrator to compress and dehydrate natural gas to a receipt point or a fuel line.
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	674042	5058290	12	1000	2/1/97	1821-02	25.38	4.38	4.38		16.79	43.76	6.56		Permit to install a new gas-fired boiler to generate 80,000 lbs of steam per hour.
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673780	5058293	12	999	6/4/97	1821-03	0	-3.79	-3.79		2.87	0	0.11		Permit to modify emissions and operational limitations on components in the Hydrodesulfurization Complex (Reformer Heater [H-

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673875	5058240	12	999	6/4/97	1821-03	2.32	1.16	1.16		6.04	4.03	0.32		Permit to modify emissions and operational limitations on components in the Hydrodesulfurization Complex (Reactor Charge Heater [H-201]).
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673828	5058221	12	999	6/4/97	1821-03	2.08	1.3	1.3		4.4	3.13	0.25		Permit to modify emissions and operational limitations on components in the Hydrodesulfurization Complex (Fractionator [H-202]).
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673803	5058259	12	999	6/4/97	1821-03	12.01	0.57	0.57		0	52.14	3.88		Permit to modify emissions and operational limitations on components in the Hydrodesulfurization Complex (Compressor [C201-B]).
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673808	5058359	12	999	6/4/97	1821-03	1.43	0.27	0.27		0	1.08	0.15		Permit to modify emissions and operational limitations on components in the Hydrodesulfurization Complex (Sulfur recovery unit [E-407/INC-401]).
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673584	5058625	12	999	3/6/98	1821-04	1.82					4.54	4.54		Permit to install gasoline vapor collection system and enclosed flare to reduce VOCs and HAPs (Flare).
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673584	5058625	12	999	9/3/00	1821-05							-39.69		Permit to revamp its No. 1 Crude Unit in order to increase crude capacity, improve product quality, and enhance energy recovery.
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673584	5058625	12	999	4/26/01	1821-06									Permit for the installation and operation of eight, temporary, portable Genertek reciprocating engine electricity generators and two accompanying distillate fuel storage tanks.
Yellowstone	Cenex, Inc.	Laurel Refinery	Petroleum Refinery	673584	5058625	12	999	8/28/01	1821-07									Permit to change the wording in Section VII.A.2 regarding the stack.
Yellowstone	Cremation or Funeral Gallery	Cremation or Funeral Gallery Facility	Human Crematorium	691672	5071201	12	960	3/1/01	3116-00	2.30	1.98	1.32		2.64	0.26	1.06		Permit for transfer of permitting authority from Yellowstone County to the State of Montana
Yellowstone	Conoco, Inc.	Conoco Billings Refinery	Petroleum Refinery	694960	5072825	12	948	7/28/95	2619-07							2.89		Permit for construction and operation of new equipment within the refinery's alkylation and gas recovery plant/no. 1 amine units.
Yellowstone	Conoco, Inc.	Conoco Billings Refinery	Petroleum Refinery	694960	5072825	12	948	7/30/97	2619-10	7.89					19.74	19.82		Permit application to install a vapor collection system and enclosed flare to gather gasoline vapors from trucks during loading.
Yellowstone	Conoco, Inc.	Conoco Billings Refinery	Petroleum Refinery	694960	5072825	12	948	2/18/98	2619-11				0.9					Modification permit to allow the continuous incineration of a PB Merox Unit off gas stream in the firebox of Heater #16.
Yellowstone	Conoco, Inc.	Conoco Billings Refinery	Petroleum Refinery	694960	5072825	12	948	6/6/00	2619-12									Permit for replacement of the B-101 thermal reactor at the Jupiter Sulphur facility
Yellowstone	Conoco, Inc.	Conoco Billings Refinery	Petroleum Refinery	694960	5072825	12	948	3/1/01	2619-13									Permit for installation and operation of 19 diesel-powered temporary generators
Yellowstone	Conoco, Inc.	Conoco Billings Refinery	Petroleum Refinery	694960	5072825	12	948	4/13/01	2619-14									Retroactive permit application for Saturate Gas Plant Project (in 1982)
Yellowstone	Montana Sulphur & Chemical Co.	Montana Sulphur	Gas Processing Plant	699900	5076350	12	947	8/15/99	2611-02	8.38	1.23	1.23		37.42	2.73	0.42		Permit to install a 17 MMBtu/hr gas-fired boiler for steam generation and plant heating, and a 35 MMBtu/hr gas-fired incinerator to serve in 2 modes 1) back up to current incinerator; and 2) as sulfur feed to ammonium thiosulfate plant (Boiler).
Yellowstone	Montana Sulphur & C	Montana Sulphur	Gas Processing Plant	699900	5076350	12	947	8/15/99	2611-02	15.33	1.17	1.17		0.04	6.25	0.41	0.038	Permit to install a 17 MMBtu/hr gas-fired boiler for steam generation and plant heating, and a 35 MMBtu/hr incinerator to serve in 2 modes 1) back up to current incinerator; and 2) as sulfur feed to ammonium thiosulfate plant (Incinerator).

B.1.1 Montana New and RFFA Source Emission Inventories

B.1.1.1 Montana New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO2	SOx	CO	VOCs	HCHO	
Yellowstone	Montana Sulphur & C	Montana Sulphur	Gas Processing Plant	699900	5076350	12	947	1/4/02	2611-03									Permit to add conditions associated with the de minimis action for an emergency/backup generator
Yellowstone	United Harvest, LLC	Pompeys Pillar Elevator	Rail Loadout Grain Sub-Terminal	732200	5096500	12	878	10/24/01	3126-00		10.40	0.69						Permit to install and operate a rail loadout grain sub-terminal
Yellowstone	Yellowstone Energy Ltd. Partnership	YELP	Cogeneration Facility	700461	5076223	12	954	1/12/00	2650-05		9.62	3.02						Permit alteration to add an enclosed petroleum coke unloading/crushing/processing plant and a processed petroleum coke storage and handling building.

[a] Blank spaces in the columns of emissions indicate that no data are available from permit/application materials.

[b] $PM_{2.5}$ emissions were estimated from PM_{10} emissions using the AP-42 particle size distribution data for specific emission category.

B.1.1 Montana New and RFFA Source Emission Inventory

B.1.1.2 Montana RFFA Source Emission Inventory [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Application Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Big Horn	Rocky Mountain Power, Inc.	Hardin Generating Station	Power Generation	297849	5070216	13	880	06/11/02	3185-00	514.0	85.7	49.4		856.7	856.7	19.7		Permit to construct 113 MW pulverized coal-fired power plant. (Boiler)
Big Horn	Rocky Mountain Power, Inc.	Hardin Generating Station	Power Generation	297740	5070182	13	881	06/11/02	3185-00		18.8	5.9						Permit to construct 113 MW pulverized coal-fired power plant. (Coal Handling)
Big Horn	Rocky Mountain Power, Inc.	Hardin Generating Station	Power Generation	297910	5070180	13	890	06/11/02	3185-00		5.8							Permit to construct 113 MW pulverized coal-fired power plant. (COOL1-8)
Big Horn	Rocky Mountain Power, Inc.	Hardin Generating Station	Power Generation	297848	5070246	13	881	06/11/02	3185-00		0.8	0.3						Permit to construct 113 MW pulverized coal-fired power plant. (Silos)
Big Horn	Rocky Mountain Power, Inc.	Hardin Generating Station	Power Generation	297849	5070180	13	880	06/11/02	3185-00	0.1	0.3	0.3		0.1	0.2			Permit to construct 113 MW pulverized coal-fired power plant. (Haul Roads)
Musselshell	Bull Mountain Development Company	Roundup Power Plant	Power Generation	696255	5126856	12	1218	[c]	3182-00	1145.8				1964.0	2636.8			Permit to construct 780 MW pulverized coal-fired power plant. (MP1)
Musselshell	Bull Mountain Development Company	Roundup Power Plant	Power Generation	696305	5126808	12	1218		3182-00	1145.8				1964.0	2636.8			Permit to construct 780 MW pulverized coal-fired power plant. (MP2)
Musselshell	Bull Mountain Development Company	Roundup Power Plant	Power Generation	696118	5126756	12	1218		3182-00	16.6				5.4	18.1			Permit to construct 780 MW pulverized coal-fired power plant. (AB1)
Musselshell	Bull Mountain Development Company	Roundup Power Plant	Power Generation	696208	5126665	12	1218		3182-00	16.6				5.4	18.1			Permit to construct 780 MW pulverized coal-fired power plant. (AB2)
Musselshell	Bull Mountain Development Company	Roundup Power Plant	Power Generation	696106	5126783	12	1218		3182-00	4.4				0.1	4.2			Permit to construct 780 MW pulverized coal-fired power plant. (BG1)
Musselshell	Bull Mountain Development Company	Roundup Power Plant	Power Generation	696372	5126718	12	1218		3182-00		15.3	14.7						Permit to construct 780 MW pulverized coal-fired power plant. (Miscellaneous)
Big Horn Powder River Rosebud Yellowstone		CBM and Conventional Oil and Gas Well-Related Facilities on IR&FS Lands	Oil and Gas Production							2632.8 [d]	308.3 [d]	135.4 [d]	49.5 [d]		2686.7 [d]	1386.6 [d]		

[a] Blank spaces in the columns of emissions indicate that no data are available from permit/application materials.

[b] $PM_{2.5}$ emissions were estimated from PM_{10} emissions using the AP-42 particle size distribution data for specific emission category.

[c] Permit application was submitted but a permit has not been issued as of November 13, 2002.

[d] Peak-year emission during the 20-year project period.

B.1.2 Nebraska New Emission Inventory

B.1.2.1 Nebraska New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Application Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Box Butte	City of Alliance	Cody Substation Power Plant	Power Generation	674467	4662399	13	1212	07/23/01	1949-P	489	13.53	13.53		11.91	39	19.32		Permit to construct and operate 3 diesel-fueled engine generators.
Box Butte	Farmers Cooperative Elevator Co.	Hemingford Elevator	Grain Elevator	658826	4686723	13	1298	05/16/00	00-0021		3.38	0.95						Permit to add two 250K bushel concrete bins or 8 concrete bins with a total storage cap. of 500K bushels, a new dump pit, a new 30K bushel/hr leg, two conveyors to the bins and two drag conveyors under the bins.
Morrill	Progress Rail Company	Microturbine Test Site	Microturbine	671724	4622552	13	1283	08/04/00	00-0038	0.9					0.5			Permit to replace original microturbine with a new identical unit that can operate independently of the distribution grid resulting from upgraded electrical controls.
Scottsbluff	Crossroads Cooperative	Platte Valley Ethanol, LLC	Ethanol Manufacturing	612298	4631363	13	1183	Not issued	77078-P	87.22	29.18	4.78	1.7		44	56.59		Permit to construct a dry-mill ethanol manufacturing plant (proposed).
Scottsbluff	Crossroads Cooperative Association	Lyman Grain Elevator	Grain Elevator	590883	4647185	13	1226	08/04/95	GR-0221		10.22	2.88						Permit to construct a grain elevator facility (Facility 1).
Scottsbluff	Crossroads Cooperative Association	Lyman Grain Elevator	Grain Elevator	590883	4647185	13	1226	08/04/95	GR-0221		4.25	1.20						Permit to construct a grain elevator facility (Facility 2).
Scottsbluff	Crossroads Cooperative Association	Lyman Grain Elevator	Grain Elevator	590883	4647185	13	1226	08/04/95	GR-0221		4.22	1.19						Permit to construct a grain elevator facility (Facility 3).
Scottsbluff	N.A. Corporation	Portable Gravel Crushing and Screening Plant	Gravel Crushing, Receiving, and Storage	609946	4634657	13	1182	04/25/95	94-0018	22.9	10.46	3.29	1.48		4.9	2.24		Permit to construct a gravel crushing and screening plant. Annual production of 2 million tons of gravel, plant mix or combination.
Scottsbluff	New Alliance Bean & Grain	Bean & Grain Receiving and Storage	Grain Elevator	612684	4630499	13	1184	04/07/99	99-0009		0.47	0.13						Permit application for proposed installation of additional receiving and storing facilities.
Scottsbluff	Panhandle Humane Society		Animal Waste Incinerator	610872	4634321	13	1180	10/13/94	94-0026	0.5	0.9	0.60		1.4	0.03	0.5		Permit to install animal waste incinerator.
Scottsbluff	Simon Contractors	Asphalt Production	Asphalt Production	609660	4634700	13	1183	05/06/00	96-0006-CP	3.8	2.0	0.12	0.5		34	1.7	0.09	Permit to construct an asphalt production plant (stack emission).
Scottsbluff	Simon Contractors	Asphalt Production	Asphalt Production	609660	4634700	13	1183	05/06/00	96-0006-CP		5.8	1.82						Permit to construct an asphalt production plant (aggregate processing fugitive emissions).
Sheridan	Gordon Memorial Hospital	Gordon Memorial Hospital	Medical Waste Incinerator	728954	4743712	13	1090	08/28/97 [c]										

[a] Blank spaces in the columns of emissions indicate that no data are available from permit/application materials.

[b] $PM_{2.5}$ emissions were estimated from PM_{10} emissions using the AP-42 particle size distribution data for specific emission category.

[c] Information on 8/28/97 permit action was not available from the State of Nebraska DEQ emission inventory files.

B.1.3 North Dakota New Emission Inventory

B.1.3.1 North Dakota New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Application		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Application Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Bowman	Continental Resources, Inc.	Medicine Pole Hills Station	Air Injection Compressor Station	602800	5103800	13	964	08/05/99	PTC99012	51	< 1	< 1	< 1		41	11		Permit to install 2650 hp internal combustion engine
Bowman	Continental Resources, Inc.	Medicine Pole Hills Station	Air Injection Compressor Station	602800	5103800	13	964	08/05/99	PTC99013	51	< 1	< 1	< 1		41	11		Permit to install 2650 hp internal combustion engine
Bowman	Horse Creek Trading Co.		Air Injection Compressor Station	598200	5090900	13	983	1996	N/A	77	< 1	< 1	< 1		81	16		Permit to install 2650 hp internal combustion engine
Dunn	Northern Border Pipeline Co.	Station # 5	Compressor Station	672100	5235100	13	716	1997	N/A	233	14	14	5		98	13		Permit to install 38000 hp gas turbine
McKenzie	Bear Paw Energy	Alexander Station	Compressor Station	598600	5308800	13	640	1995	N/A	99	< 1	< 1	< 1		66	1		Permit to install 687 hp internal combustion engine

[a] Blank spaces in the columns of emissions indicate that no data are available from permit/application materials.

[b] $PM_{2.5}$ emissions were estimated from PM_{10} emissions using the AP-42 particle size distribution data for specific emission category.

B.1.4 South Dakota New Emission Inventory

B.1.4.1 South Dakota New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02)

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		Date	No.	NOx	PM_{10}	$PM_{2.5}$ [a]	SO2	SOx	CO	VOCs	HCHO	
Pennington	Black Hills Power and Light Company	Black Hills Power and Light Plant	Power Generation	639199.4	4886579	13	1062.4	10/10/00	28.0802-PSD	144.5	26.5	26.5	17.5		87.6	35.5		PSD Permit to construct peaking station with two NG-burning turbines power. Has not been constructed yet. (NG Turbine 1)
Pennington	Black Hills Power and Light Company	Black Hills Power and Light Plant	Power Generation	639220.6	4886579	13	1060.7	10/10/00	28.0802-PSD	144.5	26.5	26.5	17.5		87.6	35.5		PSD Permit to construct peaking station with two NG-burning turbines power. Has not been constructed yet. (NG Turbine 2)

[a] Emissions of $PM_{2.5}$ were assumed to be the same as those for PM_{10}.

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Albany	MIGC Incorporated	Mid-Point Compressor Station	Compressor Station	439200	4669900	13	2222	CT-1536	06/24/99	45					48	19	7.8	construct compressor station: 3, 2225 HP, Caterpillar G3608 engines (0.7 g/hp-hr Nox, 0.75 g/hp-hr CO); Total Formaldehyde emissions: 7.8 TPY
Big Horn	American Colloid Mineral Company	Lovell Plant	Bentonite Plant	711000	4970000	12	1148	MD-289	07/11/96		3.50	0.40						incorporate numerous minor sources and install bin vent filter on East/West holding tank AP-L26, [NO DELTA PRESENTED IN ANALYSIS FOR THE ABOVE ACTION] limit operating hours for various existing sources to reduce below PSD thresholds AP-P96
Big Horn	Devon Energy Production Co., L.P.	Worland Gas Field Compr. 3	Compressor Station	738890	4895373	12	1295	CT-1271	01/21/97	28.50					42.80	14.30		construction of a 1478 Hp Waukesha L-7042-GSI Compressor Engine
Big Horn	Texaco USA	Garland Compressor	Compressor Station	695400	4962200	12	1268	CT-1244	09/06/96	10.50				0.93	15.80	10.62		install 550 hp Caterpillar G398 TA LCR compressor engine with catalytic conversion
Big Horn	Wyoming Transportation Department	CT-1483	Crushing and Screening	726084	4922413	12	1213	CT-1483	02/15/99		7.5	2						construct highway materials production site that will include gravel crushing, hot mix production, and stockpiling capabilities
Campbell	Agave Energy Company	K-Bar Compressor Station	Compressor Station	445170	4841620	13	1524	CT-1481	02/10/99	10			0.01		9	4	0.52	construct 2 new compressor engines: either a 530 hp Waukesha H24GL or 400 hp Caterpillar G3408TL
Campbell	Agave Energy Company	K-Bar Compressor Station	Compressor Station	445170	4841620	13	1524	CT-1481	02/10/99	21			0.04		43	14	1.44	construct 2 new compressor engines: either a 1478 hp Waukesha 7042 GL or 1085 hp Caterpillar 3516LE
Campbell	Basin Electric Power Cooperative	Arvada Generation Station	Power Generation	422538	4949420	13	1242	CT-2689	01/22/02	110.4					137.1	34.8		construct 3 Taurus 70 natural gas combustion turbines
Campbell	Basin Electric Power Cooperative	Arvada Generation Station	Power Generation	422519	4949393	13	1240	CT-2689	01/22/02	2.3					2.4	0.03		construct 1 new CAT 3406C start-up generator.
Campbell	Basin Electric Power Cooperative	Barber Creek Generation Station	Power Generation	428737	4890978	13	1363	CT-2712	02/08/02	107.1					133.2	29.7		construct 3 Taurus 70 natural gas combustion turbines
Campbell	Basin Electric Power Cooperative	Barber Creek Generation Station	Power Generation	428718	4890953	13	1365	CT-2712	02/08/02	2.3					2.4	0.03		construct 1 new CAT 3406C start-up generator.
Campbell	Basin Electric Power Cooperative	Hartzog Generation Station	Power Generation	437169	4847016	13	1570	CT-2621	11/27/01	99.3					122.7	29.7		construct 3 Taurus 70 natural gas combustion turbines
Campbell	Basin Electric Power Cooperative	Hartzog Generation Station	Power Generation	437148	4846996	13	1570	CT-2621	11/27/01	2.3					2.4	0.03		construct 1 new CAT 3406C start-up generator.
Campbell	Bear Paw Energy Incorporated	Antelope Valley Compressor Station	Compressor Station	462241	4892929	13	1480	CT-1578	09/27/99	61.9					98.3	18.4	4	Permit to construct compressor station. 4, 1,580 hp Waukesha 7044GSI engines. engine emissions (1 g/hp-hr Nox, 1.6 g/hp-hr CO). Formaldehyde - 0.9 TPY per engine
Campbell	Bear Paw Energy Incorporated	Antelope Valley Compressor Station	Compressor Station	462241	4892929	13	1480	MD-446	03/16/00	30.4					30.4	9.2	2	install two additional 1580 Waukesha L7044GSI engines
Campbell	Bear Paw Energy Incorporated	Appel Compressor Station	Compressor Station	460169	4887783	13	1453	CT-1993	08/18/00	19.5					38.5	6	1.2	Permit to construct a new station consisting of either five (5) 400 hp Caterpillar G3408TA engines or five (5) 400 hp Waukesha F18GL engines. If installed, the F18GL engines will be equipped with oxidation catalyst
Campbell	Bear Paw Energy Incorporated	Black Rock Main Station	Compressor Station	428728	4891260	13	1335	CT-1737	02/19/00	91.2					91.2	27.6	5.5	permit proposed engines: six 1580 hp Waukesha L7044GSI compressor engines, glycol dehydrator
Campbell	Bear Paw Energy Incorporated	Black Rock Pod A Station	Compressor Station	427153	4892641	13	1362	CT-1738	02/19/00	55.8					78	15.2	3.3	permit proposed engines: 15--385 hp CAT G3408TA compressor engines
Campbell	Bear Paw Energy Incorporated	Black Rock Pod B	Compressor Station	429573	4889795	13	1407	CT-1739	02/19/00	70.7					98.8	19.2	4.2	permit proposed engines: 19--385 hp CAT G3408TA compressor engines
Campbell	Bear Paw Energy Incorporated	Black Rock Pod C	Compressor Station	429757	4887062	13	1346	CT-1740	02/19/00	44.6					62.4	12.1	2.7	permit proposed engines: 12--385 hp CAT G3408TA compressor engines
Campbell	Bear Paw Energy Incorporated	Bone Pile Booster Station	Compressor Station	454998	4891977	13	1498	CT-1726	02/15/00	13.4					13.4	4	1	permit proposed equipment: one 1390 hp Waukesha L7042GSI engine
Campbell	Bear Paw Energy Incorporated	Bone Pile Booster Station	Compressor Station	454998	4891977	13	1498	CT-1726	02/15/00	60.8					60.8	18.4	5.2	permit proposed equipment: four 1580 hp Waukesha L7044GSI engines

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Bear Paw Energy Incorporated	Busskohol Station	Compressor Station	454286	4894114	13	1494	CT-1724	02/15/00	22.3					44.7	6.1	1.7	permit proposed equipment: six 385 CAT G3408TA engines
Campbell	Bear Paw Energy Incorporated	Coal Seam Compressor Station	Compressor Station	466706	4893955	13	1456	MD-424	08/31/99	-11					-28	-6		Permit for modify operations: remove 585 hp Superior 8G825 Compressor engine
Campbell	Bear Paw Energy Incorporated	Coal Seam Compressor Station	Compressor Station	466706	4893955	13	1456	MD-424	08/31/99	13.4					26.8	4	0.45	Permit for modify operations: add 1,390 hp Waukesha L7042 GSI compressor engine (1 g/hp-hr Nox) (2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	Coal Seam Compressor Station	Compressor Station	466706	4893955	13	1456	MD-513	08/18/00	32.8					39.5	10	2.02	Permit to modify an existing station to include the addition of two (2) Waukesha L7044GSI engines and correct the site horsepower for the Waukesha L7042GSI
Campbell	Bear Paw Energy Incorporated	Doud Station	Compressor Station	450911	4896797	13	1456	CT-1721	02/15/00	7.4					14.9	2.2	0.46	permit proposed engines: two 385 hp CAT G3408TA compressor engines
Campbell	Bear Paw Energy Incorporated	East Rourke Compressor Station	Compressor Station	467655	4889055	13	1407	CT-1790	03/22/00	22.2					45	6.6	1.38	permit proposed equipment: six 385 horsepower Caterpillar G3408TA engines
Campbell	Bear Paw Energy Incorporated	Farleigh Compressor Station	Compressor Station	452957	4894805	13	1494	CT-1723	02/15/00	2.3					4.6	0.7	0.2	permit proposed engines plus the engine temp. waived for this site: one Waukesha F11GSI (waived under R40)
Campbell	Bear Paw Energy Incorporated	Farleigh Compressor Station	Compressor Station	452957	4894805	13	1494	CT-1723	02/15/00	11.1					22.5	3	0.9	permit proposed engines plus the engine temp. waived for this site: three CAT G3408TA
Campbell	Bear Paw Energy Incorporated	Harry Wolf Field Compressor	Compressor Station	465129	4896616	13	1421	CT-1570A	01/19/00	-3.7					-7.4	-1	-0.3	CT-1570: permit to construct two 385 hp Caterpillar G3408TA compressor engines (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO) at the existing G3408TA engine (2.0 g/hp-hr Nox, 2.0 g/hp-hr CO). CT-1570a: permit to remove one CAT G3408 and relocate to South Jim Wolf.
Campbell	Bear Paw Energy Incorporated	Harry Wolf Field Compressor	Compressor Station	465129	4896616	13	1421	CT-1570	09/23/99	7.4					14.8	2	0.6	Permit to construct two, 385 hp Caterpillar G3408TA compressor engines at the existing station (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO) ... existing engine (2.0 g/hp-hr Nox, 2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	Hemela Compressor Station	Compressor Station	465682	4894330	13	1451	CT-1571	09/23/99	11.1					22.2	3	0.69	Permit to construct three, 385 hp Caterpillar G3408TA compressor engines at existing facility (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO) existing engine (2.0 g/hp-hr Nox, 2.0 g/hp-hr CO
Campbell	Bear Paw Energy Incorporated	Hemela Compressor Station	Compressor Station	465682	4894330	13	1451	CT-1571A	01/19/00	-3.7					-7.4	-1	-0.23	remove one CAT G3408 and relocate to South Jim Wolf
Campbell	Bear Paw Energy Incorporated	J. Mill Iron Field Station	Compressor Station	461440	4896884	13	1435	CT-1576	09/23/99	11.1					22.2	3	0.69	Permit to construct compressor station: three 385 hp Caterpillar G3408TA compressor engines (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	Jim Wolf Field Comp. Station	Compressor Station	463173	4894189	13	1453	CT-1569	09/23/99	11.1					22.2	3	0.69	Permit to construct three, 385 hp Caterpillar G3408TA compressor engines (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO) - one engine already exists at this site.
Campbell	Bear Paw Energy Incorporated	Jim Wolf Field Comp. Station	Compressor Station	463174	4894190	13	1453	CT-1569A	01/19/00	-3.7					-7.4	-1	-0.23	remove one CAT G3408 and relocate to South Jim Wolf
Campbell	Bear Paw Energy Incorporated	Lone Tree Compressor Station	Compressor Station	452965	4908848	13	1425	CT-1582	10/01/99	11.1					22.2	3	0.69	Permit to construct compressor station: 3, site-rated 385 hp Caterpillar G3408 compressor engines emissions (each): 1.0 g/hp-hr Nox, 2.0 g/hp-hr CO
Campbell	Bear Paw Energy Incorporated	Lone Tree Compressor Station	Compressor Station	452965	4908848	13	1425	MD-523	08/29/00	24					47.1	7.5	1.45	Permit to modify an existing source to include the addition of either six 400 hp Caterpillar G3408TA engines or six 400 hp Waukesha F18GL engines equipped with oxidation catalysts
Campbell	Bear Paw Energy Incorporated	Meserve Field Station	Compressor Station	459533	4897347	13	1380	CT-1577	09/23/99	14.8					29.6	4	1.2	Permit to construct compressor station: four 385 hp Caterpillar G3408TA compressor engines (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO)

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Bear Paw Energy Incorporated	Meserve Field Station	Compressor Station	459533	4897347	13	1380	CT-1577A	07/05/00	4.7					8.9	2	0.3	add either 400 hp CAT 3408 or 400 hp Waukesha F18 and upgrade existing engines from 385 hp to 400 hp.
Campbell	Bear Paw Energy Incorporated	Milne Station	Compressor Station	456369	4892322	13	1460	CT-1725	02/15/00	14.9					29.8	4	1.2	permit proposed equipment: four 385 hp CAT G3408TA compressor engines
Campbell	Bear Paw Energy Incorporated	North Ostlund/Daly Compressor Station	Compressor Station	450444	4913512	13	1318	CT-1581	10/13/99	3.7					7.4	1	0.23	Permit to construct compressor station: one, 385 hp (site-rated) G3408TA Caterpillar engine emissions: 1.0 g/hp-hr Nox, 2.0 g/hp-hr CO
Campbell	Bear Paw Energy Incorporated	North Ostlund/Daly Compressor Station	Compressor Station	450444	4913512	13	1318	MD-440	03/16/00	3.7					7.4	1	0.23	install an additional Caterpillar G3408 engine, relocate
Campbell	Bear Paw Energy Incorporated	North Ostlund/Daly Compressor Station	Compressor Station	450444	4913512	13	1318	MD-522	08/29/00	12.3					24	3.9	0.69	Permit to modify an existing source to include the addition of either three 400 hp Caterpillar G3408TA engines or three 400 hp Waukesha F18GL engines equipped with oxidation catalysts, and also upgrade the existing CATS to 400 hp.
Campbell	Bear Paw Energy Incorporated	RAG Compressor Station	Compressor Station	461236	4888619	13	1419	CT-1994	08/18/00	31.2					61.6	9.6	1.8	Permit to construct a new station consisting of either eight (8) 400 hp Caterpillar G3408TA engines or eight (8) 400 hp Waukesha F18GL engines. If installed, the F18GL engines will be equipped with oxidation catalyst
Campbell	Bear Paw Energy Incorporated	Rourke Field Compressor Station	Compressor Station	465821	4891800	*13*	1409	CT-1572	09/23/99	25.9					51.8	7	1.56	Permit to construct seven additional 385 hp Caterpillar G3408TA compressor engines at the existing facility (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	Rourke Field Compressor Station	Compressor Station	465821	4891800	*13*	1409	CT-1572A2	07/05/00	-3.7					-7.4	-1	-0.3	remove one CAT 3408 to Meserve
Campbell	Bear Paw Energy Incorporated	South Coal Creek Pod A	Compressor Station	435562	4972488	13	1228	CT-1773	03/08/00	11.1					22.5	3.3	0.9	permit proposed equipment: three 385 hp CAT G3408TA engines
Campbell	Bear Paw Energy Incorporated	South Coal Creek Pod B	Compressor Station	438540	4969113	13	1250	CT-1774	03/08/00	14.8					30	4.4	1.2	permit proposed equipment: four 385 hp CAT G3408TA engines
Campbell	Bear Paw Energy Incorporated	South Jim Wolf Field Station	Compressor Station	462157	4891882	13	1438	CT-1573	09/23/99	18.5					37	5	1.5	Permit to construct compressor station: five 385 hp Caterpillar G3408TA engines (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	South Jim Wolf Field Station	Compressor Station	462157	4891882	13	1438	CT-1573A	01/19/00	11.1					22.2	3	0.9	relocation of 3 more CAT G3408 to this site from other Bear Paw Sites
Campbell	Bear Paw Energy Incorporated	South Jim Wolf Field Station	Compressor Station	462157	4891882	13	1438	MD-467	05/30/00	23.4					23.4	7.8	1.2	permit installation of six additional 400 hp CAT 3408 engines
Campbell	Bear Paw Energy Incorporated	South Joe Creek Booster	Compressor Station	438420	4966687	13	1254	CT-1772	03/08/00	45.7					45.7	13.7	3.6	permit proposed equipment; three 1580 hp Waukesha L7044 engines and one glycol dehydration unit
Campbell	Bear Paw Energy Incorporated	South Joe Creek Pod A	Compressor Station	432974	4968068	13	1127	CT-1775	03/08/00	11.1					22.5	3.3	0.9	permit proposed equipment: three 385 hp CAT 3408 engines
Campbell	Bear Paw Energy Incorporated	South Joe Creek Pod B	Compressor Station	436918	4966042	13	1170	CT-1776	03/08/00	7.4					15	2.2	0.6	permit proposed equipment: two 385 hp CAT 3408TA engines
Campbell	Bear Paw Energy Incorporated	South Joe Creek Pod C	Compressor Station	433972	4962752	13	1257	CT-1777	03/08/00	7.4					15	2.2	0.6	permit proposed equipment: two 385 CAT G3408TA engines
Campbell	Bear Paw Energy Incorporated	South Meserve Compressor Station	Compressor Station	459154	4895622	13	1428	CT-1902	05/30/00	23.2					47.4	7.8	1.2	permit proposed equipment: six 400 hp CAT G3408TA engines
Campbell	Bear Paw Energy Incorporated	South Ostlund/Daly Compressor Station	Compressor Station	450461	4909548	13	1384	CT-1580	10/13/99	7.4					14.8	2	0.46	Permit to construct compressor station: two, 385 hp (site-rated) Caterpillar G3408TA engines emissions: 1.0 g/hp-hr Nox, 2.0 g/hp-hr CO
Campbell	Bear Paw Energy Incorporated	South Ostlund/Daly Compressor Station	Compressor Station	450461	4909548	13	1384	MD-444	03/16/00	3.7					7.5	1.1	0.23	install additional Caterpillar 3408 engine

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Bear Paw Energy Incorporated	South Ostlund/Daly Compressor Station	Compressor Station	450461	4909548	13	1384	MD-521	08/29/00	16					31.4	5.2	0.98	Permit to modify an existing source to include the addition of either four 400 hp Caterpillar G3408TA engines or four 400 hp Waukesha F18GL engines equipped with oxidation catalysts. Also accounts for an increase in the horsepower of the existing compressors.
Campbell	Bear Paw Energy Incorporated	South Rourke Field Station	Compressor Station	465189	4888471	13	1399	CT-1574	09/23/99	22.2					44.4	6	1.33	Permit to construct compressor station: six 385 hp Caterpillar G3408TA compressor engines (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	Steinhoffal Field Station	Compressor Station	463917	4899462	13	1405	CT-1575	09/23/99	18.5					37	5	1.11	Permit to construct compressor station: five 385 hp Caterpillar G3408TA compressor engines (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	Swanson Field Compressor Station	Compressor Station	460102	4895164	13	1471	CT-1568	09/23/99	7.4					14.8	2	0.46	Permit to construct two, 385 hp Caterpillar G3408TA compressor engines (1 g/hp-hr Nox, 2.0 g/hp-hr CO), site already has two engines in existence
Campbell	Bear Paw Energy Incorporated	Swansong Station	Compressor Station	452618	4895846	13	1477	CT-1722	02/15/00	18.6					37.3	5.1	1.5	permit proposed equipment: five 385 hp CAT G3408TA compressor engines
Campbell	Bear Paw Energy Incorporated	Twenty Mile Compressor Station	Compressor Station	450273	4910844	13	1369	CT-1579	10/13/99	7.4					14.8	2	0.46	Permit to construct compressor station: two 385 hp (site-rated) G3408TA Caterpillar engines, Caterpillar emissions (1.0 g/hp-hr Nox, 2.0 g/hp-hr CO)
Campbell	Bear Paw Energy Incorporated	Twenty Mile Compressor Station	Compressor Station	450273	4910844	13	1369	CT-1579	10/13/99	13.4					20.1	4	3.1	Permit to construct compressor station: one 1,390 hp (site-rated) Waukesha L7042GSI compressor engine, Waukesha emissions (1.0 g/hp-hr Nox,
Campbell	Bear Paw Energy Incorporated	Twenty Mile Compressor Station	Compressor Station	450273	4910844	13	1369	MD-445	03/16/00	3.7					7.5	1.1	0.3	install one additional Caterpillar G3408, relocation
Campbell	Bear Paw Energy Incorporated	Twenty Mile Compressor Station	Compressor Station	450273	4910844	13	1369	MD-445	03/16/00	13.4					7.4	4	1	install one Waukesha 7042 engines, relocation
Campbell	Bear Paw Energy Incorporated	Twenty Mile Compressor Station	Compressor Station	450273	4910844	13	1369	MD-524	08/29/00	32.4					38.8	9.8	2.02	Permit to modify an existing source to include the addition of two 1680 hp Waukesha L7044GSI engines
Campbell	Bear Paw Energy Incorporated	Twenty Mile Compressor Station	Compressor Station	450273	4910844	13	1369	MD-524	08/29/00	4.5					8.6	1.5	0.27	Permit to modify an existing source to include the addition of either one 400 hp Caterpillar G3408TA engines or one 400 hp Waukesha F18GL engines equipped with oxidation catalysts and to correct the site horsepower rating from 385 to 400 hp
Campbell	Bear Paw Energy Incorporated	Twenty Mile Compressor Station	Compressor Station	450273	4910844	13	1369	MD-524	08/29/00	0.8					1.4	0.4	0.05	Permit to modify an existing source to correct the site horsepower rating of Waukesha L7042GSI from 1390 to 1434 hp
Campbell	Bitter Creek Pipelines LLC	Hall Battery	Storage Tank Battery	451560	4930670	13		MD-502	07/22/00	-6.6					-12.1	-1.3	-0.3	Permit to modify this compressor station: remove the existing engines
Campbell	Bitter Creek Pipelines LLC	Hall Battery	Storage Tank Battery	451560	4930670	13		MD-502	07/22/00	6					12.8	3.4	1.8	Permit to modify this compressor station: add two 316 horsepower Ajax 2802LE compressor engines
Campbell	Bitter Creek Pipelines LLC	North Daly Battery	Compressor Station	448446	4925917	13	1298	CT-1674	01/12/00	7.4					7.4	2.2	0.45	permit proposed compressor station with 2 Waukesha F18GSID engines
Campbell	Bitter Creek Pipelines LLC	Pineview Battery	Compressor Station	452003	4923000	13	1356	CT-1671	01/12/00	7.4					7.4	2.2	0.45	permit proposed compressor station with 2 Waukesha F18GSID engines
Campbell	Bitter Creek Pipelines LLC	South Landeck Battery	Storage Tank Battery	460029	4937560	13	1262	MD-421	07/27/99	3.7					9.2			installation of a 2nd site-rated 380 HP, Caterpillar G3408TA engine (1.0 g/hp-hr Nox, 2.5 g/hp-hr CO)
Campbell	Bitter Creek Pipelines LLC	East Hall Battery	Compressor Station	455078	4929048	13	1298	MD-422	07/27/99	3.7					9.2			installation of a 2nd site-rated 380 HP Caterpillar G3408TA engine (1.0 g/hp-hr Nox, 2.5 g/hp-hr CO)
Campbell	Bitter Creek Pipelines LLC	West Bowen Battery	Compressor Station	445352	4931104	13	1288	CT-1673	01/12/00	7.4					7.4	2.2	0.44	permit proposed compressor station with 2 Waukesha F18GSID engines
Campbell	Bitter Creek Pipelines LLC	West Bowen Battery	Compressor Station	445352	4931104	13	1288	CT-1673A	04/05/00	-3.7					-3.7	-1.1	-0.22	replace F18GSID with Ajax 2802LE (316 hp) (remove F18GSID)
Campbell	Bitter Creek Pipelines LLC	West Bowen Battery	Compressor Station	445352	4931104	13	1288	CT-1673A	04/05/00	3.1					6.4	1.7	0.3	replace F18GSID with Ajax 2802LE (316 hp) (add Ajax 2802LE)

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Bitter Creek Pipelines LLC	West Hill Battery	Compressor Station	451502	4925000	13	1356	CT-1672	01/12/00	7.4					7.4	2.2	0.44	permit proposed compressor station with 2 Waukesha F18GSID engines
Campbell	Bitter Creek Pipelines LLC	West Hill Battery	Compressor Station	451502	4925000	13	1356	CT-1672A	04/05/00	-3.7					-3.7	-1.1	-0.22	replace one F18GLD with 316 hp Ajax 2802LE (remove F18GLD)
Campbell	Bitter Creek Pipelines LLC	West Hill Battery	Compressor Station	451502	4925000	13	1356	CT-1672A	04/05/00	3.1					6.4	1.7	0.3	replace one F18GLD with 316 hp Ajax 2802LE (add Ajax 2802LE)
Campbell	Black Hills Corporation	Neil Simpson Two	Power Generation	469500	4903400	13	1347	MD-604	03/13/01	2.8								Permit to modify an existing source to add two (2) natural gas fired air preheaters at the inlet to the gas fired turbines and to construct two (2) modular cooling towers.
Campbell	Black Hills Power & Light	Neil Simpson Two	Power Generation	470578	4903345	13	1347	MD-441	02/17/00	297.8	52	52	36		184	70		install 2--40 MW General Electric LM6000PD electric generating turbines
Campbell	CMS Gas Gathering LLC	14-16Y Station	Compressor Station	415069	4948135	13	1158	CT-1585	09/27/99	35.6	1.65	1.65	0.10		93.6	17.8	2.9	Permit to construct compressor station: three, 1,215 hp Waukesha L5790GL compressor engines (1.0 g/hp-hr Nox, 2.7 g/hp-hr CO)
Campbell	CMS Gas Gathering LLC	Billy Creek Y	Compressor Station	432560	4892104	13	1402	CT-1604	10/19/99	36.1					94	17.7	6.9	Permit to construct compressor station: Three, 1,215 hp Waukesha L 5790 GL Compressor engines. engine emissions (each): 1.0 g/hp-hr Nox, 2.65 g/hp-hr CO
Campbell	CMS Gas Gathering LLC	Collums Central Station	Compressor Station	451283	4958664	13	1280	CT-1835	04/20/00	35.6					35.5	9	2.1	permit proposed equipment: three 1215 hp Waukesha 5790 engines, one dehydrator.
Campbell	CMS Gas Gathering LLC	Collums Compressor Station	Compressor Station	452619	4955604	13	1256	CT-1636	10/25/99	5.1					8.7	2.7	1	Permit proposed equipment: 1-530 hp Waukesha H24GL compressor engine, 210 bbl storage tank form.: 0.2 g/hp-hr
Campbell	CMS Gas Gathering LLC	Collums Prospect "B" Compressor Station	Compressor Station	451157	4956039	13	1278	CT-2034	08/29/00	23.4	1.08	1.08	0.06		62.2	5.8	1.6	Permit to construct a new station: two 1215 hp Waukesha L5790GL engines equipped with oxidation catalysts
Campbell	CMS Gas Gathering LLC	Collums Prospect "B" Compressor Station	Compressor Station	451157	4956039	13	1278	CT-2034	08/29/00	21	0.92	0.92	0.06		35.2	5.2	4	Permit to construct a new station: four 530 hp Waukesha H24GL engines, and associated equipment.
Campbell	CMS Gas Gathering LLC	Felix "B" Central Compressor Station	Compressor Station	438676	4913611	13	1325	CT-1935	07/05/00	35.7	1.66	1.66	0.10		93.4	8.7	2.1	Permit to construct a compressor station which consists of three 1215 hp Waukesha L5790GL engines with oxidation catalysts plus dehy unit.
Campbell	CMS Gas Gathering LLC	Felix Central Station	Compressor Station	437681	4915341	13	1335	CT-1836	04/20/00	35.6					35.5	9	2.1	permit proposed equipment: three 1215 hp Waukesha 5790 engines, one dehy
Campbell	CMS Gas Gathering LLC	Felix Prospect "B" Compressor Station	Compressor Station	441440	4912577	13	1402	CT-1630	10/25/99	5.1					8.7	2.7	1	Permit proposed equipment: 1-530 hp Waukesha H24GL engine, 210 bbl storage tank
Campbell	CMS Gas Gathering LLC	Felix Prospect "C" Compressor Station	Compressor Station	439840	4914538	13	1368	CT-1732	02/15/00	5	0.22	0.22	0.013		8.7	0.6	1.01	permit either a 400 hp Waukesha F18 or 530 hp Waukesha H24 and one storage tank. Emissions based on worst case
Campbell	CMS Gas Gathering LLC	Felix Prospect "C" Compressor Station	Compressor Station	439840	4914538	13	1368	MD-512	08/10/00	15.9	0.70	0.70	0.04		26.5	3.9	3	Permit to modify an existing station by adding three (3) 530 hp Waukesha H24GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Felix Prospect "C" Compressor Station	Compressor Station	439840	4914538	13	1368	MD-512	08/10/00	23.4	1.08	1.08	0.06		62.2	5.8	1.6	Permit to modify an existing station by adding two (2) 1215 hp Waukesha L5790GL engines
Campbell	CMS Gas Gathering LLC	Felix Prospect "D" Compressor Station	Compressor Station	436951	4913009	13	1341	CT-1730	02/15/00	5	0.22	0.22	0.013		8.7	0.6	1.2	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions based on worst case.
Campbell	CMS Gas Gathering LLC	Felix Prospect "E" Compressor Station	Compressor Station	439335	4910898	13	1402	CT-1728	02/15/00	5	0.22	0.22	0.013		8.7	0.6	1.2	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions based on worst case
Campbell	CMS Gas Gathering LLC	Felix Prospect "F" Compressor Station	Compressor Station	440410	4912074	13	1354	CT-1727	02/15/00	5	0.22	0.22	0.013		8.7	0.6	1.02	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions based on worst case
Campbell	CMS Gas Gathering LLC	Felix Prospect Compressor Station	Compressor Station	437791	4914698	13	1352	CT-1634	10/25/99	5.1					8.7	2.7	1	Permit proposed equipment: 1-530 hp Waukesha H24GL engine, 210 bbl storage tank

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	CMS Gas Gathering LLC	Felix Prospect Compressor Station	Compressor Station	437791	4914698	13	1352	MD-511	08/10/00	26.1	1.14	1.14	0.07		43.9	6.5	5	Permit to modify an existing station by adding five (5) 530 hp Waukesha H24GL engines
Campbell	CMS Gas Gathering LLC	Fitch Ranch "B" Central Compressor Station	Compressor Station	441574	4942644	13	1280	CT-1958	08/10/00	35.7	1.66	1.66	0.10		93.7	8.7	2.1	Permit to construct a new source consisting of three (3) 1215 hp Waukesha L5790GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Fitch Ranch "B" Compressor Station	Compressor Station	440766	4940543	13	1273	CT-1733	02/15/00	5	0.22	0.22	0.013		8.7	0.6	1.2	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions are based on worst case
Campbell	CMS Gas Gathering LLC	Fitch Ranch "B" Compressor Station	Compressor Station	440766	4940543	13	1273	MD-501	07/20/00	26	1.36	1.36	0.08		43.6	6.5	5	Permit to modify operations at this existing compressor station by adding five (5) 530 horsepower Waukesha H24GL compressor engines and associated equipment
Campbell	CMS Gas Gathering LLC	Fitch Ranch Central Station	Compressor Station	450795	4958176	13	1280	CT-1833	06/20/00	35.6	0.17	0.17	0.10		35.5	9	2.1	permit proposed equipment: three 1215 hp Waukesha 5790 engines, one dehy
Campbell	CMS Gas Gathering LLC	Fitch Ranch Compressor Station	Compressor Station	439785	4940402	13	1285	CT-1735	02/15/00	5	0.22	0.22	0.01		8.7	0.6	1.2	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions based on worst case
Campbell	CMS Gas Gathering LLC	Fitch Ranch Compressor Station	Compressor Station	439785	4940402	13	1285	MD-506	08/03/00	26.1	1.14	1.14	0.07		43.9	6.5	5	Permit to modify an existing station by adding five (5) 530 hp Waukesha H24GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Fitch Ranch Prospect "C" Compressor Station	Compressor Station	437832	4939822	13	1365	CT-1957	08/10/00	31.2	1.36	1.36	0.08		52.6	7.8	6	Permit to construct a new source consisting of six (6) 530 hp Waukesha H24GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Fitch Ranch Prospect "D" Compressor Station	Compressor Station	436682	4944505	13	1320	CT-1936	07/05/00	31.2	1.36	1.36	0.08		52.6	7.8	6	Permit to construct a new compressor station which consists of six 530 hp Waukesha H24GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Fitch Ranch Prospect "E" Compressor Station	Compressor Station	442965	4942561	13	1294	CT-1937	07/05/00	31.2	1.4	1.4	0.1		52.6	7.8	6	Permit to construct a new compressor station which consists of six 530 hp Waukesha H24GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Hank Williams Compressor Station	Compressor Station	417852	4949329	13	1171	CT-1934	07/06/00	23.6	1.08	1.08	0.06		62.2	6.2	1.4	Permit to construct the station including two 1215 horsepower Waukesha L5790GL engines
Campbell	CMS Gas Gathering LLC	Hank Williams Compressor Station	Compressor Station	417852	4949329	13	1171	CT-1934	07/06/00	21.7	0.92	0.92	0.06		35.3	5.2	4.8	Permit to construct the station including four 530 horsepower Waukesha H24GL engines, and associated equipment
Campbell	CMS Gas Gathering LLC	Inkline Prospect Compressor Station	Compressor Station	423630	4961795	13	1158	CT-1914	05/31/00	11.7	0.54	0.54	0.03		11.7	3	0.7	permit proposed equipment: one 1215 hp Waukesha 5790
Campbell	CMS Gas Gathering LLC	Inkline Prospect Compressor Station	Compressor Station	423630	4961795	13	1158	CT-1914	05/31/00	11.1	0.48	0.48	0.03		17.7	0.8	2.6	permit proposed equipment: two 530 hp Waukesha H24 engines, one TEG dehydration unit
Campbell	CMS Gas Gathering LLC	Iron Horse Prospect Compressor Station	Compressor Station	422191	4934881	13	1188	CT-2035	08/29/00	23.4	1.08	1.08	0.06		62.2	5.8	1.6	Permit to construct a new station: two 1215 hp Waukesha L5790GL engines equipped with oxidation catalysts
Campbell	CMS Gas Gathering LLC	Iron Horse Prospect Compressor Station	Compressor Station	422191	4934881	13	1188	CT-2035	08/29/00	21	0.92	0.92	0.06		35.2	5.2	4	Permit to construct a new station: four 530 hp Waukesha H24GL engines, and associated equipment.
Campbell	CMS Gas Gathering LLC	Kline Draw Compressor Station	Compressor Station	426564	4963325	13	1219	CT-1584	09/30/99	5.1					8.7	2.7	1.0	Permit to construct compressor station: one, 530 hp Waukesha H24GL lean burn screw compressor engine emissions: 1.0 g/hp-hr Nox, 1.7 g/hp-hr CO

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	CMS Gas Gathering LLC	Kline Draw Compressor Station	Compressor Station	426564	4963325	13	1219	MD-518	08/25/00	26.1	1.10	1.10	0.07		43.9	6.5	5	Permit to modify an existing station to include the addition of five (5) 530 hp Waukesha H24GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	LS Draw "B" Compressor Station	Compressor Station	428385	4961099	13	1219	CT-1731	02/15/00	5	0.22	0.22	0.013		8.7	0.6	1.2	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions are based on worst case
Campbell	CMS Gas Gathering LLC	LS Draw "B" Compressor Station	Compressor Station	428315	4960971	13	1219	MD-517	08/25/00	23.4	1.08	1.08	0.06		62.2	5.8	1.4	Permit to modify an existing source to include the addition of two (2) 1215 hp Waukesha L5790GL engines equipped with oxidation catalysts
Campbell	CMS Gas Gathering LLC	LS Draw "B" Compressor Station	Compressor Station	428315	4960971	13	1219	MD-517	08/25/00	15.9	0.70	0.70	0.04		26.5	3.9	3	Permit to modify an existing source to include the addition of three (3) 530 horsepower Waukesha H24GL engines, and associated equipment.
Campbell	CMS Gas Gathering LLC	LS Draw C Compressor Station	Compressor Station	428357	4962823	13	1219	CT-1729	02/15/00	5					8.7	0.6	1.0	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions based on worst case
Campbell	CMS Gas Gathering LLC	LS Draw C Compressor Station	Compressor Station	428357	4962823	13	1219	MD-516	08/25/00	23.4	1.08	1.08	0.06		62.2	5.8	1.4	Permit to modify an existing source to include the addition of two (2) 1215 hp Waukesha L5790GL engines equipped with oxidation catalysts
Campbell	CMS Gas Gathering LLC	LS Draw C Compressor Station	Compressor Station	428357	4962823	13	1219	MD-516	08/25/00	15.9	0.70	0.70	0.04		26.5	3.9	3	Permit to modify an existing source to include the addition of three (3) 530 horsepower Waukesha H24GL engines, and associated equipment.
Campbell	CMS Gas Gathering LLC	LS Draw Central Station	Compressor Station	429992	4961643	13	1219	CT-1834	04/20/00	35.6	0.17	0.17	0.10		35.5	9	2.1	permit proposed equipment: three 1215 hp Waukesha 5790 engines, one dehy
Campbell	CMS Gas Gathering LLC	LS Draw Compressor Station	Compressor Station	429292	4961459	13	1219	CT-1633	10/25/99	5.1					8.7	2.7	1	Permit proposed equipment: 1-530 hp Waukesha H24GL engine, 210 bbl storage tank
Campbell	CMS Gas Gathering LLC	LS Draw Compressor Station	Compressor Station	429292	4961459	13	1219	MD-515	08/25/00	23.4	1.08	1.08	0.06		62.2	5.8	1.4	Permit to modify an existing source to include the addition of two (2) 1215 hp Waukesha L5790GL engines equipped with oxidation catalysts
Campbell	CMS Gas Gathering LLC	LS Draw Compressor Station	Compressor Station	429292	4961459	13	1219	MD-515	08/25/00	15.9	0.66	0.66	0.04		26.5	3.9	3	Permit to modify an existing source to include the addition of three (3) 530 horsepower Waukesha H24GL engines, and associated equipment.
Campbell	CMS Gas Gathering LLC	Middle Prong Compressor Station	Compressor Station	426389	4942275	13	1242	CT-1635	10/25/99	5.1					8.7	2.7	1	Permit proposed equipment: 1-530 hp Waukesha H24GL engine, 210 bbl storage tank
Campbell	CMS Gas Gathering LLC	Railroad "B" Central Compressor Station	Compressor Station	429043	4925377	13	1228	CT-1960	08/10/00	35.7	1.66	1.66	0.10		93.7	8.7	2.1	Permit to construct a new source consisting of three (3) 1215 hp Waukesha L5790GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Railroad "C" Central Compressor Station	Compressor Station	427560	4927028	13	1207	CT-1959	08/10/00	35.7	1.66	1.66	0.10		93.7	8.7	2.1	Permit to construct a new source consisting of three (3) 1215 hp Waukesha L5790GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Railroad Prospect "B" Compressor Station	Compressor Station	426705	4929058	13	1216	CT-1736	02/15/00	5	0.22	0.22	0.013		8.7	0.6	1	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions based on worst case
Campbell	CMS Gas Gathering LLC	Railroad Prospect "C" Compressor Station	Compressor Station	429249	4925108	13	1238	CT-1938	07/05/00	23.4	1.08	1.08	0.06		62.2	6	1.6	Permit to construct a new compressor station: two 1215 hp Waukesha L5790GL engines
Campbell	CMS Gas Gathering LLC	Railroad Prospect "C" Compressor Station	Compressor Station	429249	4925108	13	1238	CT-1938	07/05/00	21	0.92	0.92	0.06		35.2	5.2	4	Permit to construct a new compressor station: four 530 hp Waukesha H24GL engines and associated equipment
Campbell	CMS Gas Gathering LLC	Railroad Prospect Compressor Station	Compressor Station	426583	4927479	13	1234	CT-1632	10/25/99	5.1					8.7	2.7	1	Permit proposed equipment: 1-530 hp Waukesha H24GL engine, 210 bbl storage tank

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	CMS Gas Gathering LLC	Spotted Horse Compressor Station	Compressor Station	437413	4948390	13	1280	CT-1631	10/25/99	5.1					8.7	2.7	1	Permit proposed equipment: 1-530 hp Waukesha H24GL engine, 210 bbl storage tank
Campbell	CMS Gas Gathering LLC	West Kitty	Compressor Station	444429	4910752	13	1402	CT-1734	02/15/00	5	0.22	0.22	0.013		8.7	0.6	0.97	permit either 400 hp Waukesha F18 or 530 hp Waukesha H24 and storage tank. Emissions based on worst case
Campbell	CMS Gas Gathering LLC	Wild Horse Compressor Station	Compressor Station	419074	4943038	13	1158	CT-1583	09/30/99	5.1	0.22	0.22	0.013		8.7	2.7	0.97	Permit to construct compressor station: one 530 hp Waukesha H24GL lean burn screw compressor engine emissions: 1.0 g/hp-hr Nox, 1.7 g/hp-hr CO
Campbell	CMS Gas Gathering LLC	Wild Horse Compressor Station	Compressor Station	419074	4943038	13	1158	MD-503	07/25/00	10.2	0.44	0.44	0.03		17.4	2.6	2	Permit to modify this existing compressor station to include two (2) additional 530 horsepower Waukesha H24GL engines and a tank-to-truck loadout operation
Campbell	CMS Gas Gathering LLC	Wild Horse Prospect "B" Station	Compressor Station	423712	4942163	13	1219	CT-1915	05/31/00	31.2	1.4	1.4	0.1		52.3	7.8	7.8	permit proposed equipment: six 530 hp Waukesha H24GL engines and a TEG dehy unit
Campbell	Coastal Field Services	Lazy B Station	Compressor Station	441634	4897185	13	1411	CT-1847	04/28/00	18.3					18.3	12.2	0.9	permit proposed equipment: one 1265 hp CAT 3516LE engine, controlled with oxidation catalyst
Campbell	Coastal field Services	PRFC #1 (Rawhide) Compressor Station	Compressor Station	456760	4916352	13	1325	CT-1637	11/04/99	14.5					29.1	9.7	3.39	Formaldehyde emissions is for total facility, with Caterpillar 3512 compressor engine (1004 hp Caterpillar G3512LE)
Campbell	Coastal field Services	PRFC #1 (Rawhide) Compressor Station	Compressor Station	456760	4916352	13	1325	CT-1637	11/04/99	5.9					11.6	3.9	1.35	Formaldehyde emissions is for total facility, with Waukesha F18 compressor engine (400 hp Waukesha F18GL)
Campbell	Coastal field Services	PRFC #1 (Rawhide) Compressor Station	Compressor Station	456760	4916352	13	1325	CT-1637A	03/23/00	-5.8					-11.6	-3.9	-1.35	replace Waukesha F18GL with 600 hp CAT 3412LE engine (remove F18GL)
Campbell	Coastal field Services	PRFC #1 (Rawhide) Compressor Station	Compressor Station	456760	4916352	13	1325	CT-1637A	03/23/00	5.8					17.4	5.8	2	replace Waukesha F18GL with 600 hp CAT 3412LE engine (add 3412LE)
Campbell	Coastal Field Services	PRFC #11 Station	Compressor Station	447351	4935876	13	1277	CT-1891	05/22/00	3.7					3.7	1.9	0.8	permit proposed equipment: one 400 hp Waukesha F18GL engine
Campbell	Coastal Field Services	PRFC #3 Compressor Station	Compressor Station	452025	4882611	13	1445	CT-1961	08/10/00	58.2					38.7	38.7	2.7	Permit a new station consisting of three 1340 hp Caterpillar 3516LE engines equipped with oxidation catalysts
Campbell	Encoal Corporation	Liquid from Coal Facility (Buckskin)	Coal Conversion	461750	4920950	13	1301	MD-520	08/29/00	0	4.8	1.8		0	0	4		Permit to modify an existing source to include a PDF finisher, a fines agglomeration system and associated equipment
Campbell	Encoal Corporation	Liquid from Coal Facility (Buckskin)	Coal Conversion	457600	4920900	13	1262	MD-761	05/16/02	17.9	57.4			11.9				Increase the coal feed rate from 750 tons per day to 1000 tons per day and to consolidate existing coal handling facilities.
Campbell	Enron Midstream Services, LLC	Box Draw Main Compressor Station	Compressor Station	449755	4919744	13	1333	CT-1622	10/18/99	32.4					32.4	16.2	2.02	Coal Bed Methane Compression; two (2) 1680 hp Waukesha L7044GSI engines
Campbell	Enron Midstream Services, LLC	Box Draw Main Compressor Station	Compressor Station	449755	4919744	13	1333	MD-507	08/03/00	32.4					32.4	16.2	2.02	Permit to modify an existing station by adding two 1680 hp Waukesha L7044GSI engines
Campbell	Enron Midstream Services, LLC	Box Draw Pod 1	Compressor Station	445921	4923170	13	1315	CT-1623	10/18/99	10.2					14.8	4.1	0.9	Coal Bed Methane Compression; two (2) 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Box Draw Pod 2	Compressor Station	446394	4919470	13	1403	CT-1624	10/18/99	10.2					14.8	4.1	0.9	Coal Bed Methane Compression; two (2) 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Box Draw Pod 3	Compressor Station	448996	4919424	13	1335	CT-1625	10/18/99	10.2					14.8	4.1	0.9	Coal Bed Methane Compression; two (2) 530 hp Waukesha H24GL engines

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Enron Midstream Services, LLC	Box Draw Pod 3	Compressor Station	448996	4919424	13	1335	MD-478	06/16/00	5.1					8.9	2.1	1	permit additional Waukesha H24GL engine
Campbell	Enron Midstream Services, LLC	Box Draw Pod 4	Compressor Station	448378	4917829	13	1350	CT-1626	10/18/99	10.2					14.8	4.1	0.9	Coal Bed Methane Compression; two (2) 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Box Draw Pod 4	Compressor Station	448378	4917829	13	1350	MD-479	06/16/00	5.1					8.9	2.1	1	permit one additional Waukesha H24GL engine
Campbell	Enron Midstream Services, LLC	Box Draw Pod 5	Compressor Station	451376	4919132	13	1321	CT-1627	10/18/99	5.1					7.4	2.1	0.45	Coal Bed Methane Compression; one (1) 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Box Draw Pod 5	Compressor Station	451376	4919132	13	1321	MD-508	08/03/00	5.1					9.2	2	1	Permit to modify an existing station by adding one 530 hp Waukesha H24GL engine
Campbell	Enron Midstream Services, LLC	Box Draw Pod 6	Compressor Station	452236	4920978	13	1310	CT-1628	10/18/99	5.1					7.4	2.1	0.45	Coal Bed Methane Compression; one (1) 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Box Draw Pod 6	Compressor Station	452236	4920978	13	1310	MD-509	08/03/00	5.1					9.2	2	1	Permit to modify an existing station by adding one 530 hp Waukesha H24GL engine
Campbell	Enron Midstream Services, LLC	Clydesdale Compressor System	Compressor Station	447063	4883770	13	1481	CT-1780	03/15/00	32.4					32.4	16.2	1.8	permit proposed equipment: two 1680 hp Waukesha L7044 engines
Campbell	Enron Midstream Services, LLC	Clydesdale Compressor System	Compressor Station	447063	4883770	13	1481	CT-1780	03/15/00	10.2					17.8	4.2	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Clydesdale Pod 1	Compressor Station	447528	4884210	13	1489	CT-1781	03/15/00	10.2					17.8	4.2	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Clydesdale Pod 2	Compressor Station	445511	4883836	13	1472	CT-1782	03/15/00	10.2					17.8	4.2	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Hannum Compressor Station	Compressor Station	448074	4878899	13	1488	CT-1640	11/08/99	32.6					32.6	16.2	2.02	Permit 2-1680 hp Waukesha L7044GSI engines
Campbell	Enron Midstream Services, LLC	Hannum Compressor Station	Compressor Station	448074	4878899	13	1488	MD-460	05/11/00	32.6					32.5	16.2	1.9	permit to add 2- 1680 hp Waukesha 7044 GSI compressor engines and 1 additional TEG dehy unit.
Campbell	Enron Midstream Services, LLC	Haracz Compressor Station	Compressor Station	453861	4882238	13	1436	CT-1788	03/15/00	32.4					32.4	16.2	1.95	permit proposed equipment: two 1680 hp Waukesha L7044GSI engines
Campbell	Enron Midstream Services, LLC	Hoe Creek Main Station	Compressor Station	437749	4880197	13	1471	CT-1856	05/05/00	32.4					32.4	16.2	2.4	permit proposed equipment: two 1680 hp Waukesha L7044GSI engines
Campbell	Enron Midstream Services, LLC	Hoe Creek Pod 1	Compressor Station	437336	4880605	13	1460	CT-1857	05/05/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Hoe Creek Pod 2 Station	Compressor Station	436565	4883280	13	1473	CT-1858	05/05/00	10.2					17.9	4	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Hoe Creek Pod 2 Station	Compressor Station	436565	4883280	13	1473	CT-1858A	07/12/00	20.4					35.6	8	3.6	move engines from Pod 3 and Pod 4 to new location (NOW 6 ENGINES)
Campbell	Enron Midstream Services, LLC	Hoe Creek Pod 5	Compressor Station	439160	4877789	13	1517	CT-1861	05/05/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Kudzu Main Compressor Station	Compressor Station	432450	4861406	13	1478	CT-1862	05/05/00	48.6					48.6	24.3	2.4	permit proposed equipment: three 1680 hp Waukesha L7044GSI engines
Campbell	Enron Midstream Services, LLC	Kudzu Main Compressor Station	Compressor Station	432450	4861406	13	1478	CT-1862	05/05/00	10.2					17.8	4	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Kudzu Pod 1	Compressor Station	426486	4862349	13	1479	CT-1863	05/05/00	10.2					17.9	4.1	1.7	permit proposed equipment: two 530 hp Waukesha H24GL engines

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Enron Midstream Services, LLC	Kudzu Pod 2	Compressor Station	419450	4862778	13	1458	CT-1864	05/05/00	10.2					17.9	4.1	1.7	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Kudzu Pod 3	Compressor Station	426457	4861085	13	1500	CT-1865	05/05/00	10.2					17.9	4.1	1.7	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Kudzu Pod 4	Compressor Station	427560	4859242	13	1513	CT-1866	05/05/00	10.2					17.9	4.1	1.7	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Kudzu Pod 5	Compressor Station	431635	4859019	13	1498	CT-1867	05/05/00	10.2					17.9	4.1	1.7	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Kudzu Pod 6	Compressor Station	429206	4856353	13	1526	CT-1868	05/05/00	10.2					17.9	4.1	1.7	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Maverick Compressor Station	Compressor Station	427915	4892331	13	1340	CT-1621	11/01/99	58.2					15.6	15.6	7.8	Permit to construct compressor station: three (3) - 1,340 HP Caterpillar 3516 TALE Lean Burn engines emissions: 1.5 g/hp-hr Nox, 0.4 g/hp-hr CO
Campbell	Enron Midstream Services, LLC	Maverick Compressor Station	Compressor Station	427915	4892331	13	1340	MD-463	05/16/00	19.4					5.2	5.2	2.6	install one additional 1340 hp CAT 3516LE engine (to be controlled with an oxidation catalyst)
Campbell	Enron Midstream Services, LLC	Mustang Main Station	Compressor Station	459291	4886429	13	1391	CT-1783	03/15/00	32.4					32.4	16.2	1.6	permit proposed equipment: two 1680 hp Waukesha L7044
Campbell	Enron Midstream Services, LLC	Mustang Main Station	Compressor Station	459291	4886429	13	1391	CT-1783	03/15/00	15.3					26.7	6.3	2.7	permit proposed equipment: three 530 Waukesha H24GL
Campbell	Enron Midstream Services, LLC	Mustang Pod 1	Compressor Station	458681	4887695	13	1397	CT-1784	03/15/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Mustang Pod 2	Compressor Station	458685	4887296	13	1395	CT-1785	03/15/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Mustang Pod 3	Compressor Station	459093	4887305	13	1398	CT-1786	03/15/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Mustang Pod 4	Compressor Station	458672	4886849	13	1390	CT-1787	03/15/00	5.1					8.9	2.1	0.9	permit proposed equipment: one 530 hp Waukesha H24GL engine
Campbell	Enron Midstream Services, LLC	Natural Gas Fuels Main Station	Compressor Station	453979	4867959	13	1448	CT-1923	06/15/00	16.2					16.2	8.1	1	permit proposed equipment: one 1680 hp Waukesha 7044
Campbell	Enron Midstream Services, LLC	Natural Gas Fuels Main Station	Compressor Station	453979	4867959	13	1448	CT-1923	06/15/00	5.1					9	2	1	permit proposed equipment: one 530 hp Waukesha H24GL
Campbell	Enron Midstream Services, LLC	Natural Gas Fuels Pod 1	Compressor Station	454000	4868859	13	1474	CT-1924	06/15/00	5.1					9	2	1	permit proposed equipment: one 530 hp Waukesha H24GL
Campbell	Enron Midstream Services, LLC	Natural Gas Fuels Pod 2	Compressor Station	454914	4868843	13	1482	CT-1925	06/15/00	5.1					9	2	1	permit proposed equipment: one 530 hp Waukesha H24GL engine
Campbell	Enron Midstream Services, LLC	Natural Gas Fuels Pod 3	Compressor Station	454827	4866339	13	1473	CT-1926	06/15/00	5.1					9	2	1	permit proposed equipment: one 530 hp Waukesha H24GL engine
Campbell	Enron Midstream Services, LLC	Palomino Compressor Station	Compressor Station	456729	4881053	13	1419	CT-1778	03/15/00	48.6					48.6	24.3	2.4	permit proposed equipment: three 1680 hp Waukesha L7044GSI engines
Campbell	Enron Midstream Services, LLC	Palomino Compressor Station	Compressor Station	456729	4881053	13	1419	CT-1778	03/15/00	30.6					53.4	12.6	5.4	permit proposed equipment: six 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	Palomino Pod 1	Compressor Station	453731	4877372	13	1437	CT-1779	03/15/00	15.4					26.8	6.2	2.7	Construct New Compressor Station with three 530 hp Waukesha H24GL engines.
Campbell	Enron Midstream Services, LLC	South Kitty Main Compressor Station	Compressor Station	447806	4900924	13	1447	CT-1870	05/08/00	48.6					48.6	24.3	2.4	permit proposed equipment: three 1680 hp Waukesha L7044GSI engines

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Enron Midstream Services, LLC	South Kitty Pod 1	Compressor Station	451096	4902559	13	1480	CT-1871	05/08/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	South Kitty Pod 2	Compressor Station	453507	4902203	13	1461	CT-1872	05/08/00	15.4					26.8	6.2	2.7	permit proposed equipment: three 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	South Kitty Pod 3	Compressor Station	450262	4899750	13	1439	CT-1873	05/08/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	South Kitty Pod 4	Compressor Station	448629	4900543	13	1442	CT-1874	05/08/00	10.2					17.9	4.1	1.8	permit proposed equipment: two 530 hp Waukesha H24GL engines
Campbell	Enron Midstream Services, LLC	True Oil Pod 1	Compressor Station	442935	4884559	13	1517	CT-1927	06/16/00	15.4					27	6	3	permit proposed equipment: three 530 hp Waukesha H24GL engines
Campbell	Hi-Pro Production	Echo Field Compressor Station	Compressor Station	455748	4914785	13	1327	CT-1917	06/01/00	3.9					5.8	1.9	0.8	permit one 400 hp Waukesha F18 engine
Campbell	Enron Midstream Services, LLC	South Kitty Pod 5	Compressor Station	448251	4904220	13	1453	CT-1875	05/08/00	15.4					26.8	6.2	2.7	permit proposed equipment: three 530 hp Waukesha H24GL engines
Campbell	Independent Production Company	Hannum Pod 1	Compressor Station	448069	4879111	13	1484	CT-1641	11/08/99	20.4					35.6	8	4	permit satellite pod with : 4 Waukesha 530 hp H24GL compressor engines
Campbell	Independent Production Company	Hannum Pod 1	Compressor Station	448069	4879111	13	1484	MD-461	05/16/00	15.3					26.7	6	3	install three additional 530 hp Waukesha H24GL compressor engines
Campbell	Independent Production Company	Pronghorn North	Compressor Station	447812	4882220	13	1455	CT-1889	05/22/00	15.3					26.7	6	3	permit proposed equipment; three 530 hp Waukesha H24GL engines
Campbell	Independent Production Company	Pronghorn South	Compressor Station	446544	4877331	13	1491	CT-1890	05/22/00	35.7					62.3	14	7	permit proposed equipment: seven 530 hp Waukesha H24GL engines
Campbell	Independent Production Company	Terra Compressor Station	Compressor Station	450850	4889398	13	1466	CT-1962	08/10/00	16.2					16.2	8.1	1	Permit to construct a new station: one 1680 hp Waukesha L7044GSI engine
Campbell	Independent Production Company	Terra Compressor Station	Compressor Station	450850	4889398	13	1466	CT-1962	08/10/00	10.2					17.8	4	2	Permit to construct a new station: two 530 hp Waukesha H24GL engines
Campbell	Jim's Water Service	JWS-COOK 1-1	Compressor Station	443750	4909448	13	1408	CT-1590	09/23/99	3.9					11.6	3.9	0.24	permit to construct compressor station: one 400 hp Caterpillar 3408 compressor engine (1.0 g/hp-hr Nox, 3.0 g/hp-hr CO) - formaldehyde emissions = 0.24 TPY
Campbell	Jim's Water Service	JWS-COOK 1-14	Compressor Station	441809	4907100	13	1433	CT-1589	09/23/99	3.9					11.6	3.9	0.24	Permit to construct compressor station: one 400 hp Caterpillar 3408 engine (1.0 g/hp-hr Nox, 3.0 g/hp-hr CO) - formaldehyde emissions = 0.24 TPY
Campbell	Jim's Water Service	JWS-COOK 1-15	Compressor Station	440173	4905940	13	1366	CT-1588	09/23/99	3.9					11.6	3.9	0.24	permit to construct compressor station: one, 400 hp Caterpillar 3408 compressor engine (1 g/hp-hr Nox, 3 g/hp-hr CO) - formaldehyde emissions = 0.24 TPY
Campbell	Jim's Water Service	JWS-COOK 1-16	Compressor Station	439807	4905766	13	1372	CT-1587	09/23/99	3.9					11.6	3.9	0.24	Permit to construct compressor station: one, 400 hp Caterpillar 3408 compressor engine (1.0 g/hp-hr Nox, 3.0 g/hp-hr CO) - formaldehyde emissions = 0.24 TPY
Campbell	KN Gas Gathering	North Buck Draw Compressor Station	Compressor Station	446551	4819024	13	1547	CT-1951	08/29/00	39.9					91.8	55.4	2.4	Permit to construct a new station which consists of three (3) 1380 hp Waukesha 5794GSI engines and associated equipment
Campbell	Maverick Pipeline LLC	Lazy B	Compressor Station	442921	4898655	13	1448	CT-1717	02/10/00	4					4	5.2	0.24	permit proposed equipment: 2-207 hp Waukesha F1905G compressor engines
Campbell	Maverick Pipeline LLC	LX Bar	Compressor Station	433062	4959100	13	1220	CT-1716	02/10/00	4					4	5.2	0.24	permit proposed compressor engines: 2 - 207 horsepower Waukesha F1905G engines
Campbell	Maverick Pipeline LLC	Wolf Compressor Station	Compressor Station	426903	4976530	13	1049	CT-1718	02/10/00	4					4	5.2	0.24	permit proposed equipment: 2- 207hp Waukesha F1905G
Campbell	MIGC Incorporated	Bonepile Compressor Station	Compressor Station	453172	4888497	13	1428	MD-464	05/23/00	3.9					11.6	3.9	0.04	install additional 400 hp CAT G3408 engine

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	MIGC Incorporated	Buck Draw Compressor Station	Compressor Station	447159	4819193	13	1546	CT-1657	12/21/99	14.5					28.9	14.5	0.14	Permit proposed equipment: 1500 hp Waukesha L7042GSI compressor engine and associated storage tanks
Campbell	MIGC Incorporated	Gas Draw Compressor Station	Compressor Station	442553	4945115	13	1260	CT-1452	12/08/98	29.4					86.9	29	0.2	construct a new compressor station to process coal seam gas -- 2 Waukesha 7042 GSI compressor engines site 1500 hp (1 gm/hp-hr) with catalytic converters and air/fuel ratio controllers, dehydration unit, dehy condensate tank, 6 lube oil tanks, 2 antifreez
Campbell	MIGC Incorporated	Gas Draw Compressor Station	Compressor Station	442553	4945115	13	1260	MD-465	05/23/00	32.4					64.8	32.4	0.4	permit additional two 1680 hp Waukesha 7044
Campbell	MIGC Incorporated	Gas Draw Compressor Station	Compressor Station	442553	4945115	13	1260	MD-465	05/23/00	15.6					46.4	15.6	0.4	permit additional four 400 hp Caterpillar G3409
Campbell	MTG Operating Company	Carter Pod Compressor Station	Compressor Station	460150	4879243	13	1406	CT-1697	01/27/00	5.1					7.4	2.6	0.86	permit proposed equipment: one 530 hp Waukesha H24GL engine 1.0 g/hp-hr Nox
Campbell	MTG Operating Company	Eagle II Compressor Station	Compressor Station	460141	4879311	13	1402	CT-1586	09/23/99	3.6					12.7	3.6	0.97	Permit to construct compressor station: one rotary screw site rated 375 hp Waukesha F-18GL Lean Burn compressor engine emissions: 1.0 g/hp-hr Nox, 3.5 g/hp-hr CO
Campbell	MTG Operating Company	Hawk Point	Compressor Station	455078	4879884	13	1450	CT-1698	01/27/00	10.2					14.8	5.2	1.72	permit proposed equipment: two 530 hp Waukesha H24GL engines 1.0 g/hp-hr
Campbell	MTG Operating Company	Madison #1	Compressor Station	457396	4884400	13	1408	CT-1689	01/27/00	10.2					14.8	4.1	1.72	permit proposed equipment: two 530 hp Waukesha H24GL engines 1.0 g/hp-hr Nox
Campbell	MTG Operating Company	Madison #2	Compressor Station	458640	4885650	13	1388	CT-1696	01/27/00	10.2					14.8	4.1	1.72	permit proposed equipment: two 530 hp Waukesha H24GL engines 1.0 g/hp-hr
Campbell	MTG Operating Company	MTG-1 Main Site	Compressor Station	460478	4884636	13	1389	CT-1692	01/27/00	22.4					32.2	16	1.95	permit proposed equipment: 2 1665 hp Cat 3606LE engines 0.7 g/hp-hr Nox
Campbell	MTG Operating Company	MTG-1A Pod Site	Compressor Station	459958	4883742	13	1437	CT-1693	01/27/00	5.1					7.4	2.1	0.86	permit proposed equipment: one 530 hp Waukesha H24GL engine 1.0 g/hp-hr Nox
Campbell	MTG Operating Company	MTG-1B Pod Site	Compressor Station	460828	4884171	13	1396	CT-1694	01/27/00	5.1					7.4	2.1	0.86	permit proposed equipment: one 530 hp Waukesha H24GL engine 1.0 g/hp-hr Nox
Campbell	MTG Operating Company	MTG-1C Pod Site	Compressor Station	461569	4884694	13	1385	CT-1695	01/27/00	5.1					7.4	2.1	0.86	permit proposed equipment: one 530 hp Waukesha H24GL engine 1.0 g/hp-hr
Campbell	MTG Operating Company	MTG-2 Main Site	Compressor Station	459920	4882562	13	1427	CT-1685	01/27/00	22.4					32.2	16	1.95	permit proposed equipment: two 1665 hp CAT3606LE engines 0.7 g/hp-hr Nox
Campbell	MTG Operating Company	MTG-2A Pod Site	Compressor Station	458833	4881993	13	1395	CT-1686	01/27/00	10.2					14.8	4.1	1.72	permit proposed equipment: two Waukesha H24GL engines site rated at 530 hp 1.0 g/hp-hr Nox
Campbell	MTG Operating Company	MTG-2B Pod Site	Compressor Station	460310	4882061	13	1416	CT-1687	01/27/00	10.2					14.8	4.1	1.72	permit proposed equipment: two 530 hp Waukesha H24GL engines 1.0 g/hp-hr Nox
Campbell	MTG Operating Company	MTG-3 Main Site	Compressor Station	456422	4881892	13	1410	CT-1688	01/27/00	22.4					32.2	16.2	1.95	Permit proposed equipment: two 1665 hp Caterpillar 3606LE 0.7g/hp-hr Nox
Campbell	MTG Operating Company	MTG-3B Pod Site	Compressor Station	456416	4882283	13	1402	CT-1690	01/27/00	10.2					14.8	4.1	1.72	permit proposed equipment: two 530 hp Waukesha H24GL engines 1.0 g/hp-hr
Campbell	MTG Operating Company	MTG-3C Pod Site	Compressor Station	457554	4882181	13	1400	CT-1691	01/27/00	10.2					14.8	4.1	1.72	Construct Compressor Station; two 530hp Waukesha H24GL engines
Campbell	MTG Operating Company	MTG-3C Pod Site	Compressor Station	457554	4882181	13	1400	CT-1691A	03/13/00	-5.1					-7.4	-2.1	-0.86	remove one engine from this site (WaukeshaH24) and move it to the 3C-1 site
Campbell	MTG Operating Company	MTG-3C-1 Pod Site	Compressor Station	457280	4880722	13	1419	CT-1691A	03/13/00	5.1					7.4	2.1	0.86	permit relocation of one Waukesha H24 to the 3C-1 from the 3C
Campbell	Nielson & Associates	Hawk Point CBM Pod Facility	Compressor Station	456071	4875106	13	1469	CT-1928	06/16/00	15.6					23.2	7.6	3.2	permit four 400 hp Waukesha F18GL engines
Campbell	Nielson & Associates	Hawk Point CBM Pod Facility	Compressor Station	456071	4875106	13	1469	CT-1928	06/16/00	11					16.5	2.8	0.4	permit one 1140 hp Waukesha L7042GSI engine
Campbell	North Finn	Kane Screw	Compressor Station	464016	4929477	13	1207	CT-1894	05/22/00	3.7					3.7	1.9	0.8	permit proposed equipment: one 400 hp Waukesha F18GL engine

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	North Finn	North Carson Screw	Compressor Station	445635	4949043	13	1295	CT-1892	05/22/00	3.7					3.7	1.9	0.8	permit proposed equipment: one 400 hp Waukesha engine
Campbell	North Finn	Oxbow Screw	Compressor Station	462422	4882589	13	1384	CT-1893	05/22/00	3.7					3.7	1.9	0.8	permit proposed equipment: one 400 hp Waukesha F18GL engine
Campbell	Petroleum Development Corporation	LX Bar Compressor Station	Compressor Station	433239	4959312	13	1158	CT-1520	05/24/99	14.3					28.5	4.3	0.9	Permit to construct Facility: Waukesha L7042GSI - catalytically controlled - 1478 hp - 1g/hp-hr Nox
Campbell	Petroleum Development Corporation	LX Bar Compressor Station	Compressor Station	433239	4959312	13	1158	MD-493	07/14/00	11.1					22.2	2.8	0.7	Permit to modify the station by adding one 1150 hp Waukesha L7042GSI compressor engine to the facility.
Campbell	Petroleum Development Corporation	Screw Compressor Station 1	Compressor Station	433268	4960083	13	1189	CT-1520	05/24/99	3.9					7.7	1.2	0.2	Permit to construct facility: 400 HP Caterpillar G3408 Engine (catalytically controlled) - 1g/hp-hr Nox
Campbell	Petroleum Development Corporation	Screw Compressor Station 1	Compressor Station	433268	4960083	13	1189	MD-494	07/14/00	3.9					5.8	1.9	0.8	Permit to modify an existing station by adding one 400 hp Waukesha F18GL compressor engine
Campbell	Petroleum Development Corporation	Screw Compressor Station 2	Compressor Station	433891	4960786	13	1250	CT-1520	05/24/99	3.9					7.7	1.2	0.2	Permit to construct facility: 400 hp Caterpillar G3408 Engine (catalytically controlled) 1 g/hp-hr Nox
Campbell	Petroleum Development Corporation	Screw Compressor Station 2	Compressor Station	433891	4960786	13	1250	MD-495	07/14/00	3.5					5.3	1.8	0.2	Permit to modify an existing station by adding one 365 hp Caterpillar G3408TA compressor engine
Campbell	Petroleum Development Corporation	Screw Compressor Station 3	Compressor Station	432458	4958302	13	1158	CT-1520	05/24/99	3.9					7.7	1.2	0.2	Permit to Construct Facility: 400 hp Caterpillar G3408 Engine (catalytically Controlled) 1 g/hp-hr Nox
Campbell	Petroleum Development Corporation	Screw Compressor Station 3	Compressor Station	432458	4958302	13	1158	MD-496	07/14/00	2.9					4.3	1.4	0.2	Permit to modify an existing station by adding one-300 hp Caterpillar G3406TA compressor engine
Campbell	Petroleum Development Corporation	Screw Compressor Station 4	Compressor Station	433321	4958787	13	1158	CT-1520	05/24/99	3.9					7.7	1.2	0.2	Permit to Construct facility: 400 HP Caterpillar G3408 Engine (catalytically controlled) 1 g/hp-hr Nox
Campbell	Petroleum Development Corporation	Screw Compressor Station 4	Compressor Station	433321	4958787	13	1158	MD-497	07/14/00	3.9					5.8	1.9	0.8	Permit to modify an existing station by adding one 400 hp Waukesha F18GL compressor engine
Campbell	Prima Oil & Gas Company	Stones Throw Main Station	Compressor Station	438721	4957206	13	1253	CT-1963	08/15/00	58.2					69.9	17.7	2.7	Permit to construct a new station with three (3) 1340 horsepower Caterpillar 3516LE engines equipped with oxidation catalysts
Campbell	Prima Oil & Gas Company	Stones Throw Pod 1 Station	Compressor Station	438700	4954803	13	1259	CT-1964	08/15/00	11.4					34	17	2.1	Permit to construct a new station with two (2) 586 hp Caterpillar G3412LE engines equipped with oxidation catalysts
Campbell	Prima Oil & Gas Company	Stones Throw Pod 2 Station	Compressor Station	436334	4955640	13	1243	CT-1965	08/15/00	11.4					34	17	2.1	Permit to construct a new station with two (2) 586 hp Caterpillar G3412LE engines equipped with oxidation catalysts
Campbell	Prima Oil & Gas Company	Stones Throw Pod 3 Station	Compressor Station	437560	4957315	13	1260	CT-1966	08/15/00	5.7					17	8.5	1.0	Permit to construct a new station with one (1) 586 hp Caterpillar G3412LE engine equipped with an oxidation catalysts
Campbell	Prima Oil & Gas Company	Stones Throw Pod 4 Station	Compressor Station	436876	4958514	13	1257	CT-1967	08/15/00	11.4					34	17	2.1	Permit to construct a new station with two (2) 586 hp Caterpillar G3412LE engines equipped with oxidation catalysts
Campbell	Prima Oil & Gas Company	Stones Throw Pod 5 Station	Compressor Station	438721	4957367	13	1249	CT-1968	08/15/00	11.4					34	17	2.1	Permit to construct a new station with two (2) 586 hp Caterpillar G3412LE engines equipped with oxidation catalysts
Campbell	Prima Oil & Gas Company	Stones Throw Pod 6 Station	Compressor Station	439744	4958962	13	1233	CT-1969	08/15/00	5.7					17	8.5	1.0	Permit to construct a new station with one (1) 586 hp Caterpillar G3412LE engine equipped with an oxidation catalyst
Campbell	Pumpkin Buttes Pipeline & Marketing LLP	Pumpkin Buttes	Compressor Station	424193	4843932	13	1542	CT-1702	02/03/00	4.8					14.4	4.8	0.86	permit proposed equipment: one 498 hp Waukesha H24GL engine

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Thunder Creek Gas Services	FB-1156	Compressor Station	422601	4955566	13	1205	CT-1789	03/16/00	58.2					58.2	38.7	2.7	permit proposed equipment: three 1340 hp CAT 3516LE engines
Campbell	Thunder Creek Gas Services	FB-1156	Compressor Station	422601	4955566	13	1205	CT-1789	03/16/00	18.3					25.7	21.3	1.2	permit proposed equipment: three 586 hp CAT 3412LE engines, two glycol dehydration units
Campbell	Thunder Creek Gas Services	FB-2055	Compressor Station	427566	4952360	13	1244	CT-1770	03/08/00	38.8					38.8	25.8	1.8	permit proposed equipment: two Cat 3516LE engines
Campbell	Thunder Creek Gas Services	FB-2055	Compressor Station	427566	4952360	13	1244	CT-1770	03/08/00	6.3					8.6	7.1	0.4	permit proposed equipment: one CAT 3412LE engine and a glycol dehydration unit.
Campbell	Thunder Creek Gas Services	House Creek Compressor Station	Compressor Station	436700	4855200	13	1527	CT-1564	09/17/99	30.1					53.7	35.2	3.01	Permit to construct compressor station: two, 2225 hp Caterpillar 3608 LE engines 0.7 g/hp-hr Nox 1.25 g/hp-hr CO
Campbell	Thunder Creek Gas Services	Kitty Booster Station	Compressor Station	447877	4923794	13	1310	MD-449	03/23/00	17					28.2	11.2	1.2	permit proposed equipment: two previously shut-down White Superior 8G825 engines
Campbell	Thunder Creek Gas Services	Kitty Booster Station	Compressor Station	447877	4923794	13	1310	MD-449	03/23/00	19.4					13.1	13.1	0.9	permit proposed equipment: one CAT 3516LE
Campbell	Thunder Creek Gas Services	Kitty Booster Station	Compressor Station	447877	4923794	13	1310	MD-449	03/23/00	11.4					14.6	11.4	0.8	permit proposed equipment: two CAT 3412LE engines
Campbell	Thunder Creek Gas Services	MTG Compressor Station	Compressor Station	450239	4928693	13	1246	CT-1519	05/07/99	129					161	129.1	5.84	construct new facility: 6 - 2225 hp Caterpillar 3608 LE engines with oxidation catalysts
Campbell	Thunder Creek Gas Services	SC-0113	Compressor Station	454300	4919400	13	1285	MD-481	06/20/00	11.4					25.4	11.4	3	permit proposed modification: install either 2 additional 586 hp CAT 3412LE engines or 2 400 hp Waukesha F18GL
Campbell	Thunder Creek Gas Services	SC-0113	Compressor Station	454300	4919400	13	1285	MD-481A	08/18/00	-5.7					-12.7	-5.7	-1.5	remove one 3412
Campbell	Thunder Creek Gas Services	SC-0113	Compressor Station	454300	4919400	13	1285	MD-481A	08/18/00	4.8					8.4	1.3	1	Install one 530hp Waukesha H24GL
Campbell	Thunder Creek Gas Services	SC-0156 Compressor Station	Compressor Station	423900	4957400	13	1183	CT-1992	08/18/00	11.4					29.4	14.2	3	Permit to construct a new station consisting of two (2) 586 horsepower Caterpillar 3412LE engines
Campbell	Thunder Creek Gas Services	SC-0513	Compressor Station	447091	4920144	13	1408	CT-1842	04/26/00	11.4					29.4	14.2	3	permit proposed equipment: two 586 hp CAT3412LE and storage tanks
Campbell	Thunder Creek Gas Services	SC-1003	Compressor Station	450831	4907493	13	1437	CT-1844	04/26/00	11.4					29.4	14.2	3	permit proposed equipment: two 586 hp CAT 3412LE engines
Campbell	Thunder Creek Gas Services	SC-1413	Compressor Station	452190	4916451	13	1318	MD-482	06/20/00	11.4					25.4	11.4	3	permit proposed modification: 2 additional 586 hp CAT 3412 engines or 2 400 hp Waukesha F18GL engines
Campbell	Thunder Creek Gas Services	SC-1513	Compressor Station	450108	4916216	13	1307	MD-483	06/20/00	5.7					12.7	5.7	1.5	permit proposed modification: 1 additional 586 hp CAT 3413
Campbell	Thunder Creek Gas Services	SC-1613	Compressor Station	449415	4916034	13	1319	MD-484	06/20/00	5.7					12.7	5.7	1.5	permit proposed modification: one additional 586 hp CAT 3412 engine
Campbell	Thunder Creek Gas Services	SC-2314	Compressor Station	442451	4915346	13	1389	CT-1843	04/26/00	11.4					29.4	14.2	3	permit proposed equipment: two 586 hp CAT 3412LE

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Thunder Creek Gas Services	SC-2613	Compressor Station	452414	4912766	13	1332	CT-1945	07/18/00	17.1					51	17.1	4.5	Permit to modify an existing compressor station by adding three 586 horsepower Caterpillar 3412LE compressor engines
Campbell	Thunder Creek Gas Services	SC-30-55	Compressor Station	426092	4951717	13	1238	CT-1769	03/08/00	5.7					14.8	7.1	1.53	permit proposed equipment: one 586 hp CAT 3412LE
Campbell	Thunder Creek Gas Services	SC-30-55	Compressor Station	426092	4951717	13	1238	CT-1769	03/08/00	3.6					4.7	1.4	0.73	permit proposed equipment: one 372 hp Waukesha F18
Campbell	Thunder Creek Gas Services	South Kitty (Kitty South #2)	Compressor Station	448563	4912582	13	1405	CT-1771	03/08/00	14.3					42.9	14.3	1.4	permit proposed equipment: one 1478 hp Waukesha 7042
Campbell	Thunder Creek Gas Services	South Kitty (Kitty South #2)	Compressor Station	448563	4912582	13	1405	CT-1771	03/08/00	58.2					39.3	39.3	2.7	permit proposed equipment: three 1340 hp CAT 3516LE
Campbell	Thunder Creek Gas Services	South Kitty (Kitty South #2)	Compressor Station	448563	4912582	13	1405	CT-1771	03/08/00	5.7					7.4	5.7	1.5	permit proposed equipment: one 586 hp CAT 3412 engine
Campbell	Thunder Creek Gas Services	South Kitty (Kitty South #2)	Compressor Station	448563	4912582	13	1405	MD-499	07/18/00	11.4					11.4	5.7	1.5	Permit to modify this existing station by adding two 586 hp Caterpillar 3412LE engines to the facility
Campbell	Western Gas Resources	Badger Station	Compressor Station	446146	4893515	13	1477	CT-1916	05/31/00	11.7					34.8	11.7	0.12	permit proposed equipment: three 400 hp CAT 3408 engines
Campbell	Western Gas Resources	Badger Station	Compressor Station	446146	4893515	13	1477	CT-1916	05/31/00	24.3					48.6	24.3	0.24	permit proposed equipment: three 840 hp Waukesha 3524 engines
Campbell	Western Gas Resources	Belle Creek Compressor Station	Compressor Station	445181	4885012	13	1478	CT-1538	06/28/99	31.6					48.8	22.6	2.3	Permit to construct compressor station: 2, Caterpillar G3608 engines (2225 HP) (0.7 g/hp-hr Nox, 0.75 g/hp-hr CO). Also, construction of 12 screw compressors: 1, Catalytically controlled 400-HP caterpillar G3408 engines (1.0 g/hp-hr Nox, 3.0 g/hp-hr CO)
Campbell	Western Gas Resources	Belle Creek Compressor Station	Compressor Station	445181	4885012	13	1478	CT-1898	05/23/00	32.9					65.2	32.4	0.4	permit installation of two additional 1680 hp Waukesha 7044GSI engines
Campbell	Western Gas Resources	Black Thunder Compressor Station	Compressor Station	469833	4834415	13	1467	MD-492	07/05/00	32.4					64.8	32.4	0.4	Permit to modify this station due to the addition of two 1680 horsepower Waukesha L7044GSI compressor engines
Campbell	Western Gas Resources	Bud Station	Compressor Station	462346	4858615	13	1459	CT-1887	05/16/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp Caterpillar 3408 engines
Campbell	Western Gas Resources	Bud Station	Compressor Station	462346	4858615	13	1459	CT-1887	05/16/00	16.2					32.4	16.2	0.16	permit proposed equipment: two 840 hp Waukesha 3524GSI engines
Campbell	Western Gas Resources	Caballo Pod Screw Compressor Station	Compressor Station	453418	4882965	13	1422	MD-400	04/20/99	7.8					23.6	7.8	0.08	construct 2 - 400 hp Caterpillar G3408 engines (Catalytic Control)
Campbell	Western Gas Resources	Clarkellen Compressor Station	Compressor Station	448068	4871660	13	1505	CT-1537	06/28/99	30.6					32.5	13	4.2	Permit to construct compressor station: 2, Caterpillar G3608 (2225HP) (0.7 g/hp-hr Nox, 0.75 g/hp-hr CO) and a 15 MSCFD dehydration unit. Also, construction of 12 screw compressor stations: 1, catalytically controlled, 400 HP Caterpillar G3408 (1.0 g/hp
Campbell	Western Gas Resources	Clarkellen Compressor Station	Compressor Station	448068	4871660	13	1505	CT-1830	04/13/00	98.4					195.6	97.2	0.9	permit additional six Waukesha 1680 hp 7044 engines and three glycol dehys

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Western Gas Resources	Comet Station	Compressor Station	441640	4870315	13	1574	CT-1827	04/13/00	15.4					46.3	15.4	0.16	permit proposed equipment: four 400 hp Caterpillar G3408 engines
Campbell	Western Gas Resources	Comet Station	Compressor Station	441640	4870315	13	1574	CT-1827	04/13/00	8.1					16.2	8.1	0.08	permit proposed equipment: one 840 hp Waukesha 3524GSI engine
Campbell	Western Gas Resources	Coyote Station	Compressor Station	446740	4886915	13	1497	CT-1900	05/23/00	11.7					34.8	11.7	0.12	permit proposed equipment: three 400 hp Caterpillar 3408 engines
Campbell	Western Gas Resources	Cumulus Station	Compressor Station	467035	4848315	13	1511	CT-1841	04/25/00	7.8					23.2	7.8	0.08	permit proposed equipment: two 400 hp CAT 3408 engines
Campbell	Western Gas Resources	Cumulus Station	Compressor Station	467035	4848315	13	1511	CT-1841	04/25/00	8.1					16.2	8.1	0.08	permit proposed equipment: one 840 hp Waukesha 3524 engine
Campbell	Western Gas Resources	Davis Station	Compressor Station	452346	4877015	13	1458	CT-1901	05/23/00	23.4					69.6	23.4	0.24	permit existing equipment: six 400 hp Caterpillar 3408 engines
Campbell	Western Gas Resources	Dopplebach Compressor Station	Compressor Station	456543	4893137	13	1482	MD-468	05/31/00	32.9					65.2	32.4	0.4	permit additional two 1680 hp Waukesha 7044 and dehy unit
Campbell	Western Gas Resources	Down Under Compressor Station	Compressor Station	455553	4872457	13	1500	CT-1768	03/07/00	32.4					64.8	32.4	0.32	permit to install two Waukesha L7044
Campbell	Western Gas Resources	Down Under Compressor Station	Compressor Station	455553	4872457	13	1500	CT-1768	03/07/00	4.3					11.7	3.9	0.04	permit to install one Caterpillar G3408, and one glycol dehy
Campbell	Western Gas Resources	Down Under Compressor Station	Compressor Station	455553	4872457	13	1500	MD-408	05/19/99	0.4					13.9	7		permit to modify operations: replace 1500 hp Waukesha 7042 with 2225 hp Caterpillar G3608 compressor engine, revise allowable Nox emissions rates from the (2) 1500 hp Waukesh7042 compressor engines. construct 6 individual screw compressor stations.
Campbell	Western Gas Resources	Hail Station	Compressor Station	475035	4843215	13	1457	CT-1839	04/25/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp CAT 3408 engines
Campbell	Western Gas Resources	Hawk Point Compressor Station	Compressor Station	451347	4881362	13	1431	MD-400	04/20/99	-14.5					-29	-14.5		remove 1500 hp Waukesha 7042 engine
Campbell	Western Gas Resources	Hawk Point Compressor Station	Compressor Station	451347	4881362	13	1431	MD-400	04/20/99	14.9					42.9	21.5		add 2225 hp Caterpillar G3608 engine
Campbell	Western Gas Resources	Hawk Point Compressor Station	Compressor Station	451347	4881362	13	1431	MD-452	04/14/00	48.6					97.2	48.6	0.48	permit modifications: install three 1680 hp Waukesha 7044 engines
Campbell	Western Gas Resources	Hawk Point Compressor Station	Compressor Station	451347	4881362	13	1431	MD-452	04/14/00	4.9					12.4	4.1	0.12	permit modifications: one 400 hp Caterpillar 3408, two dehys
Campbell	Western Gas Resources	Hay Creek Station	Compressor Station	455897	4852315	13	1536	CT-1885	05/16/00	97.7					194.8	97.2	1.2	permit proposed equipment: six 1680 hp Waukesha 7044GSI engines and a glycol dehy unit
Campbell	Western Gas Resources	Hilight Gas Plant	Sweet Gas Plant	471351	4854108	13	1467	MD-378	10/14/98	0					254.8	0		Modify allowable CO emissions for two 2000 hp Worthington SUTC engines (Unit 1-2)
Campbell	Western Gas Resources	Hilight Gas Plant	Sweet Gas Plant	471367	4854051	13	1467	MD-378	10/14/98	28.9					14.3	14.5		Increase the operating hours of two 1500 hp Waukesha 7042GSI engines (Unit 51-52)
Campbell	Western Gas Resources	Hilight Gas Plant	Sweet Gas Plant	471367	4853991	13	1467	MD-378	10/14/98	31.8					63.6	31.8	1.2	Install two 1650 hp Waukesha 7044 GSI engines (Unit 53-54)

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Western Gas Resources	Kestrel Station	Compressor Station	456829	4879715	13	1460	CT-1767	03/07/00	3.9					11.6	3.9	0.04	install Cat 3408
Campbell	Western Gas Resources	Kestrel Station	Compressor Station	456829	4879715	13	1460	MD-480	06/16/00	3.9					11.6	3.9	0.04	permit additional 400 hp CAT 3408 engine
Campbell	Western Gas Resources	Kestrel Station	Compressor Station	456829	4879715	13	1460	MD-480	06/16/00	8.1					24.4	8.1	0.08	permit additional 840 hp Waukesha 3524GSI engine
Campbell	Western Gas Resources	Kline Draw Station	Compressor Station	431635	4965515	13	1264	CT-1852	05/02/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp CAT G3408
Campbell	Western Gas Resources	Krypton Station	Compressor Station	451024	4869915	13	1473	CT-1537	06/28/99	7.8					23.2	7.8	0.08	2 CAT G3408 site rated at 400 hp
Campbell	Western Gas Resources	Lane Station	Compressor Station	446218	4870315	13	1501	CT-1537	06/28/99	11.7					34.8	11.7	0.12	3 CAT G3408 site rated at 400 hp
Campbell	Western Gas Resources	Lane Station	Compressor Station	446218	4870315	13	1501	CT-1824	04/13/00	-3.9					-11.6	-3.9	-0.04	replace one CAT 3408 with one Waukesha 3524 (remove CAT 3408)
Campbell	Western Gas Resources	Lane Station	Compressor Station	446218	4870315	13	1501	CT-1824	04/13/00	8.1					16.2	8.1	0.08	replace one CAT 3408 with one Waukesha 3524 (add Waukesha 3524)
Campbell	Western Gas Resources	Lane Station	Compressor Station	446218	4870315	13	1501	MD-489	06/22/00	7.8					23.2	7.8	0.08	install two additional 400 hp CAT 3408 engines
Campbell	Western Gas Resources	Lane Station	Compressor Station	446218	4870315	13	1501	MD-489	06/22/00	8.1					16.2	8.1	0.08	install one additional 840 hp Waukesha 3524 engine.
Campbell	Western Gas Resources	Lightning Station	Compressor Station	472751	4845615	13	1461	CT-1840	04/25/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp CAT 3408 engines
Campbell	Western Gas Resources	Linn Draw Station	Compressor Station	433035	4949015	13	1202	CT-1853	05/02/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp CAT G3408
Campbell	Western Gas Resources	Little Thunder Compressor Station	Compressor Station	463780	4839401	13	1482	CT-1453	12/08/98	43.8					130.2	43.4	0.20	new compressor station -- 3 1500 site HP Waukesha 7042 GSI compressor engines (1 gm/hp-hr NOx) with catalytic converters and air/fuel ratio controller, dehydration unit, dehy condensate tank, 9 lube oil tanks, 3 antifreeze tanks
Campbell	Western Gas Resources	Little Thunder Compressor Station	Compressor Station	463780	4839401	13	1482	MD-491	07/05/00	32.4					64.8	32.4	0.4	Permit to modify this station due to the addition of two 1680 horsepower Waukesha L7044GSI compressor engines
Campbell	Western Gas Resources	LX Bar Compressor	Compressor Station	433328	4959147	13	1237	CT-1855	05/02/00	2.3					1.9	0.8	0.08	permit proposed equipment: 80 hp Ajax DPC-80 engine
Campbell	Western Gas Resources	LX Bar Compressor	Compressor Station	433328	4959147	13	1237	CT-1855	05/02/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp CAT G3408 engines
Campbell	Western Gas Resources	Meserve Station	Compressor Station	457818	4891815	13	1454	MD-469	05/31/00	11.7					34.8	11.7	0.12	recognize as built configuration of MD-402
Campbell	Western Gas Resources	Meserve Station	Compressor Station	457829	4891815	13	1454	MD-469A	06/05/00	3.9					11.6	3.9	0.04	add Cattail pod engine to equipment list (400 hp CAT 3408)
Campbell	Western Gas Resources	Meteor Station	Compressor Station	444946	4865817	13	1501	CT-1826	04/13/00	15.4					46.3	15.4	0.16	permit proposed equipment: four 400 hp Caterpillar G3408TA engines
Campbell	Western Gas Resources	Meteor Station	Compressor Station	444946	4865817	13	1501	CT-1826	04/13/00	16.2					32.4	16.2	0.16	permit proposed equipment: two 840 hp Waukesha 3524GSI engines
Campbell	Western Gas Resources	Moon Station	Compressor Station	442494	4879615	13	1504	CT-1829	04/13/00	15.4					46.3	15.4	0.16	permit proposed equipment: four 400 hp CAT 3408 engines
Campbell	Western Gas Resources	Moon Station	Compressor Station	442494	4879615	13	1504	CT-1829	04/13/00	16.2					32.4	16.2	0.16	permit proposed equipment: two 840 hp Waukesha 3524GSI

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Western Gas Resources	Moser Compressor Station	Compressor Station	450535	4884615	13	1486	MD-472	05/31/00	15.6					46.4	15.6	0.16	recognize as built configuration of MD-402
Campbell	Western Gas Resources	MTG 2 Screw Compressor Station	Compressor Station	455078	4879884	13	1450	MD-400	04/20/99	3.9					11.8	3.9	0.04	construct 400 hp Caterpillar G3408 engine (Catalytic Control)
Campbell	Western Gas Resources	MTG 2 Screw Compressor Station	Compressor Station	455078	4879884	13	1450	MD-400	04/20/99	10.1					9	3.9	0.5	530 hp Waukesha H24GL engine (lean burn)
Campbell	Western Gas Resources	Porter Station	Compressor Station	454618	4898515	13	1436	MD-471	05/31/00	11.7					34.8	11.7	0.12	recognize as built configuration of MD-402
Campbell	Western Gas Resources	Reeves Station	Compressor Station	450635	4874015	13	1499	CT-1537	06/28/99	15.4					46.3	15.4	0.2	4 CAT G3408 site rated at 400 hp
Campbell	Western Gas Resources	Rocky Station	Compressor Station	458735	4854615	13	1528	CT-1888	05/16/00	7.8					23.2	7.8	0.08	permit proposed equipment: two 400 hp Caterpillar G3408 engines
Campbell	Western Gas Resources	Rocky Station	Compressor Station	458735	4854615	13	1528	CT-1888	05/16/00	16.2					32.4	16.2	0.16	permit proposed equipment: two 840 hp Waukesha 3524GSI engines
Campbell	Western Gas Resources	SA Creek Station	Compressor Station	429246	4955615	13	1166	CT-1854	05/02/00	23.4					69.6	23.4	0.24	permit proposed equipment: six 400 hp CAT G3408 engines
Campbell	Western Gas Resources	Sager Compressor Station	Compressor Station	463740	4853715	13	1452	CT-1886	05/16/00	7.8					23.2	7.8	0.08	permit proposed equipment: two 400 hp Caterpillar G3408 engines
Campbell	Western Gas Resources	Sager Compressor Station	Compressor Station	463740	4853715	13	1452	CT-1886	05/16/00	24.3					48.6	24.3	0.24	permit proposed equipment: three 840 Waukesha 3524GSI engines
Campbell	Western Gas Resources	Sleet Station	Compressor Station	475935	4846115	13	1503	CT-1838	04/25/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp CAT 3408 engines
Campbell	Western Gas Resources	Spotted Horse Station	Compressor Station	429064	4959715	13	1228	CT-1850	05/02/00	48.6					97.2	48.6	0.48	permit proposed equipment: three 1680 hp Waukesha L7044GSI engines
Campbell	Western Gas Resources	Spotted Horse Station	Compressor Station	429064	4959715	13	1228	CT-1850	05/02/00	23.9					70	23.4	0.24	permit proposed equipment: six 400 hp CAT G3408 engines and TEG dehydration unit.
Campbell	Western Gas Resources	Star Station	Compressor Station	443840	4876015	13	1499	CT-1828	04/13/00	15.4					46.3	15.4	0.16	permit four 400 hp Caterpillar G3408 engines
Campbell	Western Gas Resources	Star Station	Compressor Station	443840	4876015	13	1499	CT-1828	04/13/00	8.1					16.2	8.1	0.08	permit one 840 hp Waukesha 3524GSI engine
Campbell	Western Gas Resources	Stone Draw Station	Compressor Station	438135	4954015	13	1266	CT-1851	05/02/00	15.6					46.4	15.6	0.16	permit proposed equipment: four 400 hp CAT G3408 engines
Campbell	Western Gas Resources	Stout Compressor Station	Compressor Station	457229	4893815	13	1483	MD-470	05/31/00	7.8					23.2	7.8	0.08	recognize as built configuration of MD-402
Campbell	Western Gas Resources	Stout Compressor Station	Compressor Station	457229	4893815	13	1483	MD-470A	06/05/00	3.9					11.6	3.9	0.04	add engine from Wallam Station to equipment list (400 hp CAT 3408)
Campbell	Western Gas Resources	Tessmocker Station	Compressor Station	445729	4873215	13	1515	CT-1537	06/28/99	11.7					34.8	11.7	0.12	3 CAT G3408 site rated at 400 hp
Campbell	Western Gas Resources	Tessmocker Station	Compressor Station	445729	4873215	13	1515	CT-1825	04/13/00	-3.9					-11.6	-3.9	-0.04	replace one CAT 3408 with one Waukesha 3524 (remove CAT 3408)
Campbell	Western Gas Resources	Tessmocker Station	Compressor Station	445729	4873215	13	1515	CT-1825	04/13/00	8.1					16.2	8.1	0.08	replace one CAT 3408 with one Waukesha 3524 (add Waukesha 3526)
Campbell	Western Gas Resources	Wallaby Station	Compressor Station	455735	4871315	13	1510	CT-1766	03/07/00	15.6					46.4	15.6	0.16	install four Caterpillar G3408 engines
Campbell	Western Gas Resources	Werner Compressor Station	Compressor Station	434933	4952715	13	1249	CT-1849	05/02/00	14.5					29	14.5	0.14	permit proposed equipment: one 1500 hp Waukesha L7042GSI engine

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Western Gas Resources	Werner Compressor Station	Compressor Station	434933	4952715	13	1249	CT-1849	05/02/00	49.1					97.6	48.6	0.48	permit proposed equipment: three 1680 hp Waukesha L7044GSI engines and one TEG dehydration unit.
Campbell	Western Gas Resources	Wolf Compressor Station	Compressor Station	449740	4894715	13	1474	CT-1899	05/23/00	11.7					34.8	11.7	0.12	three 400 hp CAT G3408
Campbell	Wyoming Department of Transportation	Swansong Pit	Crushing and Screening	453600	4896600	13	1487	CT-2722	02/19/02		1.6	0.5						Permit to construct a crushing and stockpiling site.
Converse	Devon Energy Production Co., L.P.	Powell Pressure Maintenance Unit	Storage Tank Battery	442781	4806401	13	1596	MD-429	09/27/99	38.8					49.2	13	9	Permit to modify operations by installing two, 1,340 hp Caterpillar G3516 LE Compressor engines (1.5 g/hp-hr Nox, 1.9 g/hp-hr CO)
Converse	Devon Energy Production Co., L.P.	Sage Creek Gas Plant	Sweet Gas Plant	430723	4773633	13	1679	CT-1484	02/17/99	86					122	110	5.5	6 - 2114 hp Caterpillar G3608 engines
Converse	Devon Energy Production Co., L.P.	Sage Creek Gas Plant	Sweet Gas Plant	430723	4773633	13	1679	CT-1484	02/17/99	10					9.7	13.9	2.6	375 hp Caterpillar G3408 TA emergency electrical generator, amine regen heater, 3 TEG regen heaters, process heater, 3-phase separator, 3 TEG dehys, amine unit, 2 molecular sieves, demethanizer, turbo expander cryoge
Converse	Ft. Union Gas Gathering LLC	Medicine Bow Treating Plant	Sweet Gas Plant	450250	4738400	13	1579	CT-1459	01/27/99	21.2					42.4	21.2	2.1	construct coal bed methane treating facility: 2 Waukesha L5790GSI 1100 hp engines (1/1.5 gm/hp-hr)
Converse	Ft. Union Gas Gathering LLC	Medicine Bow Treating Plant	Sweet Gas Plant	450250	4738400	13	1579	CT-1459	01/27/99	10.1					6.1	0.24		construct coal bed methane treating facility: Amine Regeneration Heater, TEG Regeneration Heater, separator, TEG dehy., amine unit, 9 various storage tanks
Converse	KN Gas Gathering	Douglas Gas Plant	Sweet Gas Plant	471000	4737396	13	1500	MD-385	12/04/98	15.34					5	0.66		increase the amine circulation rate of the amine treater from 170 to 210 gal/min, add 2 heaters
Carbon	Colorado Interstate Gas	Muddy Gap Station	Compressor Station	300051	4693931	13		MD-387	01/04/99	0.3					1.5	6.8		construct a pig receiver, pressurized NGL bullet, and flare uncontrolled (167.3 TPY VOCs)
Carbon	Sinclair Oil Company	Sinclair Refinery	Petroleum Refinery	324900	4627200	13	2010	MD-410	06/01/99	-541			5		-19.7			Permit modification of operations to increase refinery crude oil throughput from 60,000 BPD to 74000 BPD by addition of a Hydrocracking unit and associated hydrogen plant, and replacing reformer with more efficient unit, replace 5 existing compressor engine
Carbon	Sinclair Oil Company	Sinclair Refinery	Petroleum Refinery	324900	4627200	13	2010	MD-439	02/19/00	10.9	0.8	0.8		3.6	5.5			install additional 35.7 MBtu/hr gas fired heater, H5, as part of hydrocracking unit, also has corrections to MD-401
Carbon	Wyoming State Penitentiary	Boiler System	Heat Plant	315945	4625879	13	2045	CT-1645	11/29/99	23.9	-2		-59.6		51.7	-0.73		Modify Operation to natural gas boiler fuel
Converse	71 Construction	Wills Pit	Crushing and Screening	463200	4722600	13	1615	CT-2641	12/10/01		1.7	0.53						Permit to construct a quarry. A dust suppressant will be applied during operations to control fugitive particulate matter emitted during crushing and screening.
Converse	Thunder Creek Gas Services	Buckshot Treating Facility	Compressor Station	449470	4737309	13	1570	CT-1528	06/15/99	58.8					35.3	37.8	5.9	Permit to construct 360MDFD gas treating facility: six 1,450 hp CAT 3606 LE turbo charged compressor station (0.7 gm/hp-hr Nox, 0.42 gm/hp-hr CO) each
Converse	Thunder Creek Gas Services	Buckshot Treating Facility	Compressor Station	449610	4737309	13	1570	CT-1528	06/15/99	39.4					34.4	42	0	Permit to construct 360MDFD gas treating facility: two 97.5 MMBtu/hr amine heaters and associated equipment
Converse	Western Gas Resources	Python Compressor Station	Compressor Station	455100	4799600	13	1499	MD-476	06/05/00	8.3					16.2	8.3	0.08	install 840 hp Waukesha L3524GSI engine Previously known as the Nortex
Converse	Western Gas Resources	Sand Dunes Plant	Sweet Gas Plant	426800	4770600	13	1735	MD-539	10/16/00	23.5								Permit to modify an existing source to include the addition of one (1) 1125 hp Waukesha 5790GSI engine
Converse	Wyoming Interstate Gas	Douglas Compressor Station	Compressor Station	449410	4736830	13	1569	CT-1540	07/20/99	27.5					30.6	8.8	2.20	Permit to construct compressor station: (1) 6,278 hp solar Taurus 60-T7300S field gas fired turbine (5.1 lb/hr Nox, 6.2 lb/hr CO)
Converse	Wyoming Interstate Gas	Douglas Compressor Station	Compressor Station	449410	4736830	13	1569	CT-1540	07/20/99	2.9					0.9	3.3	0.30	Permit to construct compressor station: (1) 529 hp emergency generator and associated equipment (2.6 g/hp-hr Nox, 1.8 g/hp-hr CO)

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Converse	Wyoming Interstate Gas	Douglas Compressor Station	Compressor Station	449410	4736830	13	1569	MD-453	04/15/00	27.5					30.6	8.8	2.20	permit modification for the installation of a 6278 hp Solar Taurus 60-T7300S gas fired turbine
Fremont	Burlington Resources Oil and Gas Co	Lost Cabin Gas Plant	Sour Gas Plant	289036	4795048	13	1693	CT-1946	07/20/00	59.1	4.4	2.9	1367		1445	0		permit construction of Train III (180 MSCFD); TGI #3 & sulfur pit #3
Fremont	Burlington Resources Oil and Gas Co	Lost Cabin Gas Plant	Sour Gas Plant	288977	4795160	13	1693	CT-1946	07/20/00	5.1	1.1	0.7	0.18		13.4	0		permit construction of Train III (180 MSCFD); Aux boiler #2
Fremont	Burlington Resources Oil and Gas Co	Lost Cabin Gas Plant	Sour Gas Plant	288919	4794728	13	1693	CT-1946	07/20/00				26.3					permit construction of Train III (180 MSCFD); Sulfur tank vent (routed to TGI #1)
Fremont	Burlington Resources Oil and Gas Co	Lost Cabin Gas Plant	Sour Gas Plant	288964	4794675	13	1693	CT-1946	07/20/00	7			1.2		1.2			permit construction of Train III (180 MSCFD); Rail spur travel & idle
Fremont	Enervest Operating LLC	Riverton Compressor Facility	Compressor Station	726060	4764627	12	1588	CT-1710	06/02/00	17.12					22.8	3.42	0.71	Permit proposed equipment: 1182 site horsepower Waukesha 7042 (1.5 g/hp-hr)
Fremont	Howell Petroleum Corporation	Big Sand Draw Compressor Station	Compressor Station	731601	4737026	12	1832	MD-438	05/22/00	5.7					5.7	1.1	0.32	permit modification: one 540 hp Waukesha F3521GSI compressor engine
Fremont	Santa Fe Snyder Corporation	Beaver Creek East Station	Compressor Station	719798	4747136	12	1609	CT-1970	08/14/00	10.2					8.9	11.3	2.4	Permit to construct a new station consisting of one (1) 709 hp Ajax DPC-2804LE engine and one (1) 150 bbl storage tank
Fremont	Santa Fe Snyder Corporation	Beaver Creek Gas Plant	Sweet Gas Plant	719529	4747186	12	1602	MD-401	05/17/99	27.2					27.2	8.2	0.22	installation of 2 1404 hp Waukesha L-7042-GSI compressor engines with catalytic control systems
Fremont	Santa Fe Snyder Corporation	Beaver Creek West Station	Compressor Station	719289	4747056	12	1599	CT-1971	08/14/00	10.2					8.9	11.3	2.4	Permit to construct a new station consisting of one (1) 709 hp Ajax DPC-2804LE engine and one (1) 150 bbl storage tank
Fremont	Wildhorse Energy Partners LLC	Pavillion Compressor Station	Compressor Station	669525	4790877	13	1620	MD-488	06/21/00	6.9					31.7	13.1		permit three additional dehydration units, 25 MSCFD, 15 MSCFD, and 35 MSCFD
Fremont	Wyoming Transportation Department	CT-1426	Crushing and Screening	726619	4782425	13	1476	CT-1426	10/19/98		9.8	3						Construction of a highway materials production site to include gravel crushing, hot mix production, and stockpiling capabilities
Fremont	Wyoming Transportation Department	CT-1541	Crushing and Screening	727357	4779435	13	1457	CT-1541	07/16/99		9.3	3						Permit to construct a highway materials production site , gravel crushing, hot mix production and stockpiling
Goshen	Wyoming Ethanol Company	Torrington Plant	Miscellaneous	565953	4654987	13	1250	MD-406	05/11/99	13	36.4	36.4	0.1		3.2	22.3		permit to modify permit to reflect "as built" operations
Goshen	Wyoming Ethanol Company	Torrington Plant	Miscellaneous	565953	4654987	13	1250	MD-428	09/20/99	6.2	0.2	0.2			12.4	0.7	0.04	Permit to modify operations: install a 40.4 MBtu/hr boiler
Johnson	KLT Gas Operating Company	Holler Draw Unit	Compressor Station	411292	4847226	13	1433	CT-1821	04/10/00	3.7					7.5	1	0.2	Construct 385-hp CAT G3408TA Compressor Engine
Johnson	Redstone Gas Partners LLC	Piney Creek Central Station	Compressor Station	357433	4929760	13	1441	CT-1950	07/25/00	86.2					85.9	31.8	5.4	Permit to construct a new compressor station which consists of six (6) 1478 Waukesha 7042GSI compressor engines and one (1) dehydration unit
Johnson	Williston Basin Pipeline Company	Billy Creek Compressor	Compressor Station	361520	4886923	13	1515	MD-415	06/21/99	14					36	7	0.89	Permit modifications at Compressor station.: installation of 1,478 HP Waukesha 7042GSI compressor engine. (Catalytically controlled) 1 g/hp-hr Nox, 2.5 g/hp-hr CO

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Johnson	Williston Basin Pipeline Company	Billy Creek Compressor	Compressor Station	361520	4886923	13	1515	MD-415	06/21/99	14					10	0.27		Permit modifications at Compressor station.: Establish enforceable limits so that station qualifies as synthetic minor - Increase operation hours of (2) 247 hp Ingersoll Rand compressors from 6175 to 7400 hours per year.
Johnson	Woodrow Barstad	CT-1491	Crushing and Screening	365063	4914370	13	1442	CT-1491	03/09/99		3.4	1						develop a sand and gravel production site
Johnson	Woodrow Barstad	Barstad Pit	Crushing and Screening	365400	4914000	13	1433	CT-2711	02/07/02	5.4	2.6	0.8		0.9				reopen an existing sand and gravel quarry, known as the Barstad Pit
Natrona	Barrett Resources Corporation	Cave Gulch 13	Compressor Station	311570	4778330	13	1844	MD-389	01/29/99	-13.6					-27.21	-10.88	-0.45	remove existing 940 hp Waukesha L7042GL (MD-359)
Natrona	Barrett Resources Corporation	Cave Gulch 13	Compressor Station	311570	4778330	13	1844	MD-389	01/29/99	18.58					12.08	2.79	2.14	add 963 hp Caterpillar 3516TALE compressor engine
Natrona	Barrett Resources Corporation	Cave Gulch 24	Compressor Station	320935	4777577	13	1906	CT-1629	11/04/99	19.5					34.4	13	4.5	1345 hp Waukesha 7042 GL nat. gas lean burn reciprocating engine
Natrona	Barrett Resources Corporation	Cave Gulch Gas Conditioning Plant	Sweet Gas Plant	320500	4776500	13	1920	MD-395	02/26/99	13.17					26.34	13.17	0.79	install 1365 hp Waukesha 7042 GSI with single bed catalytic converter permit also addressed VOC & HAP emissions from 210 barrel storage tank
Natrona	Black Hills Bentonite	Casper Plant	Bentonite Plant	352665	4758458	13	1768	MD-419	07/16/99	7.1	2.2	0.3	11		8.7	0.2	0	Permit modification to facility: Installation of new baghouse (will increase production through dryer) and construction of three granular screens; New baghouse
Natrona	Black Hills Bentonite	Casper Plant	Bentonite Plant	352665	4758458	13	1768	MD-419	07/16/99		19.2	2.2						Permit modification to facility: Installation of new baghouse (will increase production through dryer) and construction of three granular screens; screen baghouse
Natrona	Black Hills Bentonite	Casper Plant	Bentonite Plant	352665	4758458	13	1768	MD-419	07/16/99		22.5	2.6						Permit modification to facility: Installation of new baghouse (will increase production through dryer) and construction of three granular screens; fugitive emissions
Natrona	Chevron USA	Waltman #55 South Field Compression Facility	Compressor Station	320176	4773302	13	1881	CT-1941	07/18/00	21.9					39.4	24.4	4.4	Permit for a new source with condensate tanks, a separator, and a 1478 horsepower Waukesha P9390GL compressor engine with oxidation catalyst.
Natrona	Chevron USA	Waltman 35 Compressor Station	Compressor Station	322811	4853358	13	2073	CT-1952	07/28/00	9.1					12.6	8.1	0.4	Permit to construct a new compressor station with a 725 hp Waukesha L7042G engine, condensate tank, and associated equipment
Natrona	Northern Gas Company	Thirty Nine Mile Compressor Station	Compressor Station	298600	4749200	13	2120	MD-391	02/02/99	0					19.3	0	0	revise CO allowable emissions rate (CT-1312) for the 3335 hp Caterpillar G3612 lean burn compressor engine due to results of 8/10/98 quarterly portable emission testing of the engine
Park	Harris Trucking	Asphalt Plant (CT-1200)	Asphalt Plant	655000	4934000	12	1524	CT-1200	02/27/96		3.50	0						60 TPH ADM Plant, diesel fired burner, wet venturi scrubber, two 150 ton stock piles
Park	Marathon Oil Company	Oregon Basin North Chugwater Gas Facility	Storage Tank Battery	666617	4920890	12	1600	MD-475	06/02/00	14.7					19.7	37.7	1.4	re-route fluids form the J-T unit and consolidate previous air permits
Park	Wyoming Transportation Department	CT-1440	Crushing and Screening	622760	4961367	12	2024	CT-1440	11/10/98		4.5	1						construct highway materials production site that will include gravel crushing, hot mix production, and stockpiling capabilities
Platte	Dry Creek Resources	Wheatland Granite Quarry	Miscellaneous	492420	4646071	13	1530	CT-1396	08/07/98		316	99						Construction of a 1 million ton per year granite quarry and a railcar loadout facility PM emissions from Scenario #1 controlled
Platte	Rissler and McMurry Company	CT-1339 Limestone Quarry	Crushing and Screening					CT-1339	01/12/98	23.57	0.34	0		7.86	5.15	0.68		125,000 tons/yr processing rate; 1000-kW CAT D-399 Generator
Platte	Rissler and McMurry Company	CT-1339 Limestone Quarry	Crushing and Screening					CT-1339	01/12/98		6.6	2						125,000 tons/yr processing rate: crushers, screening plants, diesel generator, conveyors
Platte	Rissler and McMurry Company	Limestone Quarry	Miscellaneous					CT-1956	08/09/00		17.1	5						Permit to construct a limestone quarry in Platte County

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Platte	Wyoming Premium Farms LLC	Guernsey Feed Mill	Miscellaneous					CT-1848	05/01/00		15.6	3.6						permit proposed feedmill which will be used to supply feed for the swine facilities near Wheatland
Portable	Rissler and McMurry Company	CT-1246: Asphalt Plant	Asphalt Plant	567155	4659472	13	1284	CT-1246	09/10/96	3.70	7.20	0			51.10	4.20		virgin asphalt batch plant equipped with wet scrubber and de-mister to control particulate emissions
Sheridan	Conoco Incorporated	Sheridan Terminal	Storage Tank Battery	343427	4947328	13	1295	MD-634	05/25/01	12.5								Permit to modify an existing facility to limit the annual throughput of gasoline and distillate fuels. HAP emissions = 5.0 TPY
Sheridan	CMS Gas Gathering LLC	Arvada "T" Central Compressor Station	Compressor Station	415557	4949179	13	1192	CT-1947	07/20/00	35.7	1.7	1.7	0.1		93.4	8.7	2.1	Permit to construct a new compressor station with three (3) 1215 hp Waukesha L5790GL compressor engines equipped with oxidation catalysts and associated equipment
Sheridan	CMS Gas Gathering LLC	Hank Williams Prospect "B"	Compressor Station	414869	4945947	13	1124	CT-1944	07/18/00	23.4	1.1	1.1	0.1		62.2	5.8	1.4	Permit to construct a new compressor station with two 1215 hp Waukesha L5790GL engines equipped with oxidation catalysts.
Sheridan	CMS Gas Gathering LLC	Hank Williams Prospect "B"	Compressor Station	414869	4945947	13	1124	CT-1944	07/18/00	21	0.9	0.9	0.1		35.2	5.2	4	Permit to construct a new compressor station with four 530 hp Waukesha H24GL engines, and associated equipment.
Sheridan	CMS Gas Gathering LLC	Hank Williams Prospect "C"	Compressor Station	416611	4948118	13	1158	CT-1943	07/18/00	23.4	1.08	1.08	0.06		62.2	5.8	1.4	Permit to construct a new station: two 1215 hp Waukesha L5790GL engines equipped with oxidation catalysts
Sheridan	CMS Gas Gathering LLC	Hank Williams Prospect "C"	Compressor Station	416611	4948118	13	1158	CT-1943	07/18/00	21	0.92	0.92	0.06		35.2	4.2	4	Permit to construct a new station: four 530 hp Waukesha H24GL engines, and associated equipment.
Sheridan	CMS Gas Gathering LLC	Wild Horse Central Station	Compressor Station	419489	4942855	13	1158	CT-1832	06/05/00	35.6					35.5	9	2.1	permit proposed equipment: three 1215 hp Waukesha 5790 engines, one dehy
Sheridan	Cundy Asphalt Paving	CT-1216	Asphalt Plant	346500	4962200	13	1158	MD-610	04/10/01	5.3	7.2	6.09		0.1				Permit to modify an existing source to replace the wet scrubber with a baghouse and to use up to 20 percent recycled asphalt pavement.
Sheridan	Federated Oil and Gas	Wild Horse Creek Compressor Station	Compressor Station	417300	4943669	13	1147	CT-1942	07/17/00	14.3					14.3	10.7	0.14	Permit to construct a new compressor station with one 1478 horsepower Waukesha 7042GSI engine
Sheridan	Federated Oil and Gas	Wild Horse Creek Compressor Station	Compressor Station	417300	4943669	13	1147	CT-1942	07/17/00	7.8					11.6	3.8	0.08	Permit to construct a new compressor station with two 400 hp Waukesha F18GL engines with oxidation catalysts
Sheridan	Memorial Hospital of Sheridan	Memorial Hospital of Sheridan	Incineration	343200	4964000	13	1183	MD-558	12/05/00					12.9				Permit to modify an existing source to increase the sulfur content of the coal fueling the burner from 0.4% to 0.46%.
Sheridan	Redstone Gas Partners LLC	Gladewater Central Station	Compressor Station	351611	4979587	13	1168	MD-490	06/27/00	71.5					71.5	26.5	4.5	Modify the Gladewater Central Station due to the addition of five (5) 1478 horsepower Waukesha 7042GSI compressor engines.
Sheridan	Wyoming Department of Transportation	crushing, hot mix plant, stockpiling site	Crushing and Screening	365100	4937500	13	1356	CT-2225	01/23/01		2.9	0.9						Permit to construct a crushing site, hot mix plant, and stockpiling site.
Sheridan	Wyoming Transportation Department	CT-1567	Crushing and Screening					CT-1567	09/28/99		14.2	4.5						Permit to construct gravel crushing site, hotmix plant and stockpiling site
Sweetwater	Coastal Field Services	Wamsutter Regulator	Compressor Station	256864	4615709	13	2085	MD-414	06/21/99	-14.1					-21.15	-7.05		Permit to modify operations. Remove Superior 1712G (730 HP) engine
Sweetwater	Coastal Field Services	Wamsutter Regulator	Compressor Station	256864	4615709	13	2085	MD-414	06/21/99	19.26					38.53	12.84	1.3	Permit to modify operations. Install Waukesha 7042 GL (1330 HP), 1.5 g/hp-hr Nox, 3.0 g/hp-hr CO.
Sweetwater	Coastal Field Services	Wamsutter Regulator	Compressor Station	256864	4615709	13	2085	MD-414	06/21/99	15.93					31.87	10.62	1.07	Permit to modify operations. Install Caterpillar 3516LE (1100 HP) 1.5 g/hp-hr Nox, 3.0 g/hp-hr CO
Sweetwater	Mountain Gas Resources	Red Desert Gas Plant	Sweet Gas Plant	728327	4613395	12	2134	MD-392	05/17/99	-144.8					-16.94	69.6		Permit to modify operations to include a 40 MCFD glycol dehy and associated heater.ı establish fed. enforceable conditions to qualify facility as synthetic minor

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.1 Wyoming New Source Emission Inventory: Permit Actions (9/1/94 - 5/31/02) [a]

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Sweetwater	Williams Field Services	Frewen Lake Compressor Station	Compressor Station					MD-383	12/07/98	33.96					59.61	23.45		install 1101 hp Waukesha L7042GL compressor engine, reinstate existing 798 hp Waukesha L5108GL compressor engine, increase site rated hp of 2 Waukesha L5790GL engines
Washakie	Devon Energy Production Co., L.P.	Midwest Oil Recovery	Compressor Station					CT-1272	01/27/97	57.00					85.80	28.60		Permit for Two 1478 Hp Waukesha L-7042-GSI N.G. fired Compressor Engines
Washakie	Wyoming Transportation Department	CT-1523	Crushing and Screening	726440	4859443	13	1290	CT-1523	05/24/99		5.5	2						Permit to construct gravel crushing, hot mix plant and stockpiling site
Washakie	Wyoming Transportation Department	CT-1639	Crushing and Screening	731251	4864408	13	1295	CT-1639	10/26/99		5.5	2						Permit to construct a gravel crushing site, hot mix plant site and stockpiling site for the Worland-Thermopolis Road.

[a] Blank spaces in the columns of emission data indicate that no data are available from permit/application materials.

[b] $PM_{2.5}$ emissions were estimated from PM_{10} emissions using the AP-42 particle size distribution data for specific emission category.

B.1.5 Wyoming New and RFFA Source Emission Inventories

B.1.5.2 Wyoming RFFA Source Emission Inventory

County	Company	Facility	Facility Classification	Location			Elev. (m)	Permit/Waiver		Change in Potential Emissions due to the Permitting Action (TPY)								Permit/Waiver Description
				UTM X (m)	UTM Y (m)	Zone		No.	Date	NOx	PM_{10}	$PM_{2.5}$ [b]	SO_2	SOx	CO	VOCs	HCHO	
Campbell	Black Hills Corporation	WYGEN 2	Power Generation	469435	4903973	13	1341	[c]		1578	270	155.5	3381		3381			Construct a coal-fired power plant (PC001)
Campbell	Black Hills Corporation	WYGEN 2	Power Generation	469197	4903574	13	1344				8							Construct a coal-fired power plant (CDC001)
Campbell	Black Hills Corporation	WYGEN 2	Power Generation	469297	4903606	13	1344				5							Construct a coal-fired power plant (CDC002&003)
Campbell	Black Hills Corporation	WYGEN 2	Power Generation	469508	4903868	13	1341				11							Construct a coal-fired power plant (CDC004)
Campbell	Black Hills Corporation	WYGEN 2	Power Generation	469499	4903936	13	1341				4							Construct a coal-fired power plant (Miscellaneous)

[a] Blank spaces in the columns of emission data indicate that no data are available from permit/application materials.

[b] $PM_{2.5}$ emissions were estimated from PM_{10} emissions using the AP-42 particle size distribution data for specific emission category.

[c] Permit application was submitted but a permit has not been issued as of July 31, 2002.

B.2 Montana Project Emission Inventories

B.2.1 Emission Inventories for the Montana CBM Project Activities Under the Preferred Alternative (Alt. E)

B.2.1.1 Emission Inventory for the Montana CBM Project Construction Activities under the Preferred Alternative (Alt. E)

B.2.1.1.1 Heavy Equipment

B.2.1.1.1.1 Fugitive Dust Emissions

Emission Factors for Construction Activities:

			Reference
E =	1.2	tons of TSP/acre/month	EPA, *AP-42* , Volume I, Section 13.2.3 Heavy Construction Operations (1/95)
PM_{10} =	26	% of TSP	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
$PM_{2.5}$ =	15	% of PM_{10}	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
CE = control efficiency for watering	50	%	EPA, *Control of Open Fugitive Dust Sources* , Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Construction Activities:

Area Disturbed for CBM Wells	Emission Estimation Basis	Disturbed Area [a] (acre)	Av. # of Days to Complete [a]	Total # of Well Pads or Stations [b]	Total Disturbed Area (acre)	Emissions (lb/well pad, lb/stn, or lb/project)			Emissions (ton/project)		
						TSP	PM_{10}	$PM_{2.5}$	TSP	PM_{10}	$PM_{2.5}$
Road	per Well Pad	0.75	3	6,089	4,567	90	23	4	274	71	11
Well Pad	per Well Pad	0.25	3	6,089	1,522	30	8	1	91	24	4
Gathering Poly Pipeline (Low Pressure) [c]	per Well Pad	1.50	1	6,089	9,133	60	16	2	183	47	7
Steel Pipeline (Low/Intermediate Pressure) [c]	per Field Station	6.06	1	741	4,491	242	63	9	90	23	4
Sales Pipeline, 36" diam. X 600 miles [c,d]	per Project		1		1,316	52,641	13,687	2,053	26	7	1
Electric Line [c]	per Well Pad	0.35	1	6,089	2,131	14	4	1	43	11	2
Field Compressor Station	per Field Station	2.00	5	741	1,482	400	104	16	148	39	6
Sales Compressor Station	per Sales Station	1.00	5	76	76	200	52	8	8	2	0
Impoundment	per Impoundment	6	5	357	2,142	1,200	312	47	214	56	8
				Total	**26,860**				**1,077**	**280**	**42**

[a] Source: Alts-spread-Final.xls via e-mail from C. Laakso (BLM) to A. Oh (ANL) on 02/04/02.
Source: ALL Consulting "Preliminary Draft Montana Statewide Oil & Gas EIS and Amendment to the Powder River and Billings RMPs," 11/21/01.

[b] Source: PRED CBM WELL LOCS-del1.xls, comp-lat-long.xls, and PRED CBM IMPOUNDS.xls sent via e-mail from C. Laakso (BLM) to A. Oh (ANL) on 02/08/02.

[c] Duration of disturbance (clearing, digging, layout, and covering) for a given segment of pipeline or electric line construction is assumed to be one day.

[d] To be installed in the fourth year of the development. 25-feet wide, total length 600 miles.

B.2.1.1.1.2 Exhaust Emissions

Emission Factors for Construction Equipment:

Equipment	Emission Factors (g/hp-hr)					Equipment Category in AP-42 [a]
	NO_x	PM_{10}	SO_2	CO	VOCs	
Backhoe	8.81	0.81	0.86	2.71	0.97	Wheeled Loader
Dozer	7.81	0.69	0.85	2.15	0.75	Track-Type Tractor
Blade	7.14	0.63	0.87	1.54	0.36	Motor Grader
Trencher	11.01	0.90	0.93	4.60	1.01	Miscellaneous
Trackhoe	9.30	0.66	0.85	2.26	1.11	Track-Type Loader

[a] Emission factors for the listed equipment category were assumed for equipment used in MTO&G project construction.

Source: EPA, *AP-42*, Volume II, Section II-7 Heavy-Duty Construction Equipment (9/85).

Emissions Estimation for Construction Equipment:

Construction Site	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Oper. Hrs per Day	# of Oper. Days per Well Pad or per Station	# of Oper. Hrs per Well Pad or per Station	# of Well Pads or Stations	Emissions (lb/well pad, lb/station, or lb/project)					Emissions (ton/equipment type)					Emissions (ton/construction site)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs
Road	Blade	100	1	80	10	0.2	2	6,089	3	0.2	0.3	0.5	0.1	8	1	1	2	0	11	1	1	3	1
	Backhoe	80	1	75	10	0.1	1	6,089	1.2	0.1	0.1	0.4	0.1	4	0	0	1	0					
Well Pad	Backhoe	80	1	75	10	0.5	5	6,089	6	0.5	0.6	2	0.6	18	2	2	5	2	18	2	2	5	2
Gathering Pipeline (Low Pressure)	Blade	100	1	80	10	0.25	2.5	6,089	3	0.3	0.4	0.7	0.2	10	1	1	2	0	122	10	11	48	11
	Trencher	175	1	80	10	1	10	6,089	34	3	3	14	3	103	8	9	43	9					
	Backhoe	80	1	75	10	0.25	2.5	6,089	3	0.3	0.3	0.9	0.3	9	1	1	3	1					
Steel Pipeline (Low/Intermediate Pressure) [b]	Blade	100	1	80	10	5	50	741	63	5.6	7.7	13.6	3.2	23	2	3	5	1	129	10	12	42	12
	Trencher	175	1	80	10	5	50	741	170	13.9	14.4	71.0	15.6	63	5	5	26	6					
	Trackhoe	75	1	75	10	10	100	741	115	8.2	10.5	28.0	13.8	43	3	4	10	5					
Steel Pipeline (Sales)	Blade	100	1	80	10	43.4	434.3		547	48	67	118	28	0.27	0.02	0.03	0.06	0.01	1.39	0.11	0.13	0.46	0.13
	Trencher	175	1	80	10	43.4	434.3		1,476	121	125	617	135	0.74	0.06	0.06	0.31	0.07					
	Trackhoe	75	1	75	10	65.1	651.4		751	53	69	183	90	0.38	0.03	0.03	0.09	0.04					
Field Compressor Station	Dozer	350	1	80	8	2	16	741	77	7	8	21	7	29	2.5	3.1	8	2.7	51	4.6	5	15	5
	Backhoe	80	2	80	8	3	24	741	60	5	6	18	7	22	2.0	2.2	7	2.4					
Sales Compressor Station	Dozer	350	1	80	8	2	16	76	77	7	8	21	7	2.9	0.3	0.3	0.8	0.3	5	0.5	0.5	1.5	0.5
	Backhoe	80	2	80	8	3	24	76	60	5	6	18	7	2.3	0.2	0.2	0.7	0.2					
Impoundment	Dozer	350	1	80	8	0.4	3.2	357	15	1	2	4	1	2.8	0.2	0.3	0.8	0.3	3	0.3	0.4	0.9	0.3
	Blade	100	1	80	8	0.4	3.2	357	4	0	0	1	0	0.7	0.1	0.1	0.2	0.0					
													Subtotal	**337**	**28**	**32**	**115**	**32**	**341**	**28**	**32**	**115**	**32**

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.
[b] Per field compressor station.

Emission Factors for Industrial Engines:

Emission Source	Fuel Type	Emission Factors					
		Unit	NO_x	PM_{10}	SO_x	CO	VOCs
Industrial Engine [a]	Diesel	lb/hp-hr	3.10E-02	2.20E-03	2.05E-03	6.68E-03	2.51E-03
Flaring [b,c]	Natural Gas	lb/MMCF	69	7.6 [d]	0.6 [d]	377	64

[a] Source: EPA, *AP-42*, Volume I, Section 3.3 Gasoline and Diesel Industrial Engines (10/96).
[b] Source: EPA, *AP-42*, Volume I, Section 13.5 Industrial Flares (9/91).
[c] Assumed a fuel heating value of 1,020 Btu/scf.
[d] Source: EPA, *AP-42*, Volume I, Section 1.4 Natural Gas Combustion (7/98).

Emissions Estimation for Industrial Engines:

Construction Site Activity	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Operating Hours per Day	# of Operating Days per Well	# of Operating Hours per Well	# of Wells	Emissions (lb/well)					Emissions (ton/equipment type)					Emissions (ton/project activity)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs
Rig-up, Drilling, and Rig-down	Main Deck	400	1	60	11	3	33	18,266	246	17	16	53	20	2,242	159	148	483	182	3,262	231	216	703	265
	Auxiliary Pump	200	1	90	10	2	20	18,266	112	8	7	24	9	1,019	72	67	220	83					
Well Completion & Testing	Main Deck	400	1	60	10	1	10	18,266	74	5	5	16	6	679	48	45	146	55	13,722	975	905	3,156	1,145
	Auxiliary Pump	125	1	90	6	1	6	18,266	21	1	1	5	2	191	14	13	41	15					
	Equipment Type	**Capacity (kw)**	**Av. # of Wells Served**	**Av. Load Factor (%)**	**# of Operating Hours per Day**	**Av. # of Operating Days**	**# of Operating Hours per Well**	**# of Wells**															
	Field Generators for Pumps & Lighting	125	8	75	24	120	360	18,266	1,403	100	93	302	114	12,814	909	847	2,761	1,039					
	Emission Source	**Average Volume Flared (MCFD/well)**			**Average # of Days of Continuous Flaring**			**# of Wells**															
	Flaring of Natural Gas	60			1			18,266	4	0.5	0.0	23	4	38	4	0	207	35					
												Subtotal		**16,984**	**1,207**	**1,121**	**3,858**	**1,410**	**16,984**	**1,207**	**1,121**	**3,858**	**1,410**
													Total	**17,321**	**1,235**	**1,153**	**3,973**	**1,441**	**17,325**	**1,235**	**1,153**	**3,974**	**1,441**

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

B.2.1.1.2 Commuting Vehicles

B.2.1.1.2.1 Road Dust Emissions

Emission Factors for Road Traffic:

$$E\ (lb/VMT) = \frac{k\ (s/12)^a (W/3)^b}{(M/0.2)^c}$$

Parameter	PM_{10}	$PM_{2.5}$
k	2.6	0.38
a	0.8	0.8
b	0.4	0.4
c	0.3	0.3

Source: EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98).

Function/Variable Description	Assumed Value	Reference
E = size-specific emission factor (lb/VMT)		
s = surface material silt content (%)	5.1	EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98)
W = mean vehicle weight (tons)	Listed in the table below	
M = surface material moisture content (%)	0.2	default value in EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98)
CE = control efficiency for watering (%)	50	EPA, *Control of Open Fugitive Dust Sources* , Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Road Traffic:

Construction Site Destination	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well Pad or per Station	Miles Traveled per Well Pad or per Station	Total # of Well Pads or Stations	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions (lb/well pad, lb/stn, or lb/proj.)	Emissions (ton/veh. type)	Emissions (ton/const. site)	Controlled Em. Factor (lb/VMT)	Emissions (lb/well pad, lb/stn, or lb/proj.)	Emissions (ton/veh. type)	Emissions (ton/const. site)
Road	Semi Trucks	60,000	6	2.6	16	6,089	1.65	26	78	78	0.24	4	11	11
Well Pad	Haul Trucks	45,000	6	2	12	6,089	1.47	18	54	79	0.21	3	8	12
	Pickup Trucks	7,000	6	2	12	6,089	0.70	8	25		0.10	1	4	
Poly Pipeline, < 3"	Haul Trucks	45,000	6	4	24	6,089	1.47	35	107	158	0.21	5	16	23
	Pickup Trucks	7,000	6	4	24	6,089	0.70	17	51		0.10	2	7	
Steel Pipeline [a]	Semi Trucks	60,000	6	4	24	741	1.65	40	15	393	0.24	6	2	57
	Haul Trucks	45,000	6	40	240	741	1.47	352	131		0.21	51	19	
	Pickup Trucks	7,000	6	160	960	741	0.70	669	248		0.10	98	36	
Sales Pipeline, 36" diam. X 600 miles [b]	Semi Trucks	60,000	35 [c]	94 [d]	3,293 [e]		1.65	5,423	3	7	0.24	793	0	1
	Haul Trucks	45,000	35 [c]	94 [d]	3,293 [e]		1.47	4,834	2		0.21	706	0	
	Pickup Trucks	7,000	50 [c]	94 [d]	4,705 [e]		0.70	3,281	2		0.10	480	0	
Electric Line	Haul Trucks	45,000	6	1	6	6,089	1.47	9	27	52	0.21	1	4	8
	Pickup Trucks	7,000	6	2	12	6,089	0.70	8	25		0.10	1	4	
Field Compressor Station	Semi Trucks	60,000	10	15	150	741	1.65	247	92	849	0.24	36	13	124
	Haul Trucks	45,000	10	48	480	741	1.47	705	261		0.21	103	38	
	Pickup Trucks	7,000	10	192	1,920	741	0.70	1,339	496		0.10	196	72	
Sales Compressor Station	Semi Trucks	60,000	10	18.5	185	76	1.65	305	12	89	0.24	45	2	13
	Haul Trucks	45,000	10	48	480	76	1.47	705	27		0.21	103	4	
	Pickup Trucks	7,000	10	192	1,920	76	0.70	1,339	51		0.10	196	7	
Impoundment	Semi Trucks	60,000	6	0.02	0.12	357	1.65	0	0	0	0.24	0	0	0
	Haul Trucks	45,000	6	0.02	0.12	357	1.47	0	0		0.21	0	0	
	Pickup Trucks	7,000	6	0.02	0.12	357	0.70	0	0		0.10	0	0	
								Subtotal	**1,706**	**1,706**			**249**	**249**

[a] Per field compressor station. [b] To be installed in the fourth year of the development. [c] Per day. [d] Number of days. [e] Total miles.

B.2.1.1.2.1 Road Dust Emissions (Continued)

Construction Site Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well Pad or per Station	Miles Traveled per Well Pad or per Station	Total # of Wells or Stations	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions			Controlled Em. Factor (lb/VMT)	Emissions		
								(lb/well)	(ton/veh. type)	(ton/proj. activity)		(lb/well)	(ton/veh. type)	(ton/proj. activity)
Rig-up, Drilling, and Rig-down	Semi Rig Transport, Drill Rig	80,000	6	1	6	18,266	1.85	11	101	1,591	0.27	2	15	233
	Fuel Haul Truck	45,000	6	2	12	18,266	1.47	18	161		0.21	3	24	
	Mud Haul Truck, Water Hauling	60,000	6	7	42	18,266	1.65	69	632		0.24	10	92	
	Rig Crew	7,000	6	3	18	18,266	0.70	13	115		0.10	2	17	
	Co. Supervisor	7,000	6	8	48	18,266	0.70	33	306		0.10	5	45	
	Tool Pusher	7,000	6	6	36	18,266	0.70	25	229		0.10	4	34	
	Logger, Engr Truck	12,000	6	1	6	18,266	0.87	5	47		0.13	1	7	
Well Completion & Testing	Semi Casing	45,000	6	1	6	18,266	1.47	9	80	1,666	0.21	1	12	244
	Semi Completion, Unit Rig	80,000	6	1	6	18,266	1.85	11	101		0.27	2	15	
	Tubing Truck	45,000	6	1	6	18,266	1.47	9	80		0.21	1	12	
	Haul Cementer, Pump Truck	80,000	6	1	6	18,266	1.85	11	101		0.27	2	15	
	Haul Cementer, Cement Truck	60,000	6	1	6	18,266	1.65	10	90		0.24	1	13	
	Haul Completion, Equip Truck	20,000	6	1	6	18,266	1.06	6	58		0.16	1	8	
	Haul Perforators Logging Truck	12,000	6	1	6	18,266	0.87	5	47		0.13	1	7	
	Haul Welders	12,000	6	1	6	18,266	0.87	5	47		0.13	1	7	
	Haul Water Truck	60,000	6	9	54	18,266	1.65	89	812		0.24	13	119	
	Pickup Cementer, Engineer	7,000	6	1	6	18,266	0.70	4	38		0.10	1	6	
	Pickup Co. Supervisor	7,000	6	2	12	18,266	0.70	8	76		0.10	1	11	
	Pickup Miscellaneous Supplies	7,000	6	1	6	18,266	0.70	4	38		0.10	1	6	
	Pickup Roustabout Crew	12,000	6	2	12	18,266	0.87	10	95		0.13	2	14	
								Subtotal	**3,257**	**3,257**			**476**	**476**
								Total	**4,963**	**4,963**			**725**	**725**

B.2.1.1.2.2 Exhaust Emissions

Emission Factors for Road Traffic:

Vehicle		Emission Factors (g/mi)					
Type	Class	NO_x	PM_{10} [a,b]	$PM_{2.5}$ [a,b]	SO_x [a]	CO	VOCs
Light-Duty Gasoline Truck	LDGT2	1.01	0.10	0.08	0.11	11.64	0.75
Heavy-Duty Diesel Truck	HDDV	8.13	1.96	1.81	1.63	17.09	4.83

[a] Estimated using the EPA PART5 model (1995).
[b] Including tire and brake wear emissions.

Source: EPA, *AP-42*, Volume II, Appendix H-117, Table 3.1A.2 Light Duty Gasoline Powered Trucks II and
Appendix H-259, Table 7.1.2 Heavy Duty Diesel Powered Vehicles (High Altitude; Model Year 1991-1997; 50,000 mileage) (6/30/95).

Emissions Estimation for Road Traffic:

Construction Site Destination	Vehicle		Round Trip Distance (mi)	# of Round Trips per Well Pad or per Station	Miles Traveled per Well Pad or per Station	Total # of Well Pads or Stations	Emissions (lb/well pad, lb/station, or lb/project)						Emissions (ton/vehicle type)						Emissions (ton/construction site)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Road	Semi Trucks	HDDV	6	2.6	15.6	6,089	0.28	0.07	0.06	0.06	0.59	0.17	0.9	0.2	0.2	0.2	1.8	0.5	0.9	0.2	0.2	0.2	1.8	0.5
Well Pad	Haul Trucks	HDDV	6	2	12	6,089	0.22	0.05	0.05	0.04	0.45	0.13	0.7	0.2	0.1	0.1	1.4	0.4	0.7	0.2	0.2	0.1	2.3	0.4
	Pickup Trucks	LDGT2	6	2	12	6,089	0.03	0.00	0.00	0.00	0.31	0.02	0.1	0.0	0.0	0.0	0.9	0.1						
Poly Pipeline, < 3"	Haul Trucks	HDDV	6	4	24	6,089	0.43	0.10	0.10	0.09	0.90	0.26	1.3	0.3	0.3	0.3	2.8	0.8	1.5	0.3	0.3	0.3	4.6	0.9
	Pickup Trucks	LDGT2	6	4	24	6,089	0.05	0.01	0.00	0.01	0.62	0.04	0.2	0.0	0.0	0.0	1.9	0.1						
Steel Pipeline [a]	Semi Trucks	HDDV	6	4	24	741	0.43	0.10	0.10	0.09	0.90	0.26	0.2	0.0	0.0	0.0	0.3	0.1	2.5	0.5	0.4	0.4	12.8	1.6
	Haul Trucks	HDDV	6	40	240	741	4.30	1.04	0.96	0.86	9.04	2.56	1.6	0.4	0.4	0.3	3.4	0.9						
	Pickup Trucks	LDGT2	6	160	960	741	2.14	0.21	0.16	0.24	24.63	1.58	0.8	0.1	0.1	0.1	9.1	0.6						
Sales Pipeline, 36" X 600 miles [b]	Semi Trucks	HDDV	35 [c]	94 [d]	3,293 [e]		59.02	14.24	13.12	11.83	124.07	59.02	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.1
	Haul Trucks	HDDV	35 [c]	94 [d]	3,293 [e]		59.02	14.24	13.12	11.83	124.07	59.02	0.0	0.0	0.0	0.0	0.1	0.0						
	Pickup Trucks	LDGT2	50 [c]	94 [d]	4,705 [e]		10.48	1.02	0.78	1.17	120.72	10.48	0.0	0.0	0.0	0.0	0.1	0.0						
Electric Line	Haul Trucks	HDDV	6	1	6	6,089	0.11	0.03	0.02	0.02	0.23	0.06	0.3	0.1	0.1	0.1	0.7	0.2	0.4	0.1	0.1	0.1	1.6	0.3
	Pickup Trucks	LDGT2	6	2	12	6,089	0.03	0.00	0.00	0.00	0.31	0.02	0.1	0.0	0.0	0.0	0.9	0.1						
Field Compressor Station	Semi Trucks	HDDV	10	15	150	741	2.69	0.65	0.60	0.54	5.65	1.60	1.0	0.2	0.2	0.2	2.1	0.6	5.8	1.2	1.0	1.0	27.0	3.7
	Haul Trucks	HDDV	10	48	480	741	8.60	2.08	1.91	1.72	18.08	5.11	3.2	0.8	0.7	0.6	6.7	1.9						
	Pickup Trucks	LDGT2	10	192	1920	741	4.28	0.42	0.32	0.48	49.26	3.17	1.6	0.2	0.1	0.2	18.3	1.2						
Sales Compressor Station	Semi Trucks	HDDV	10	18.5	185	76	3.32	0.80	0.74	0.66	6.97	1.97	0.1	0.0	0.0	0.0	0.3	0.1	0.6	0.1	0.1	0.1	2.8	0.4
	Haul Trucks	HDDV	10	48	480	76	8.60	2.08	1.91	1.72	18.08	5.11	0.3	0.1	0.1	0.1	0.7	0.2						
	Pickup Trucks	LDGT2	10	192	1920	76	4.28	0.42	0.32	0.48	49.26	3.17	0.2	0.0	0.0	0.0	1.9	0.1						
Impoundment	Semi Trucks	HDDV	6	0.02	0.12	357	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Haul Trucks	HDDV	6	0.02	0.12	357	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0						
	Pickup Trucks	LDGT2	6	0.02	0.12	357	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0						
												Subtotal	**12**	**3**	**2**	**2**	**53**	**8**	**12**	**3**	**2**	**2**	**53**	**8**

[a] Per field compressor station. [b] To be installed in the fourth year of the development. [c] Per day. [d] Number of days. [e] Total miles.

B.2.1.1.2.2 Exhaust Emissions (Continued)

Construction Site Activity	Vehicle Type	Vehicle Class	Round Trip Distance (mi)	# of Round Trips per Well or per Station	Miles Traveled per Well or per Station	Total # of Wells or Stations	Emissions (lb/well)						Emissions (ton/vehicle type)						Emissions (ton/project activity)					
							NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Rig-up, Drilling, and Rig-down	Semi Rig Transport	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6	18.0	4.2	3.8	3.5	50.6	10.9
	Fuel Haul Truck	HDDV	6	2	12	18,266	0.22	0.05	0.05	0.04	0.45	0.13	2.0	0.5	0.4	0.4	4.1	1.2						
	Mud Haul Truck, Water	HDDV	6	7	42	18,266	0.75	0.18	0.17	0.15	1.58	0.45	6.9	1.7	1.5	1.4	14.5	4.1						
	Rig Crew	LDGT2	6	3	18	18,266	0.04	0.00	0.00	0.00	0.46	0.03	0.4	0.0	0.0	0.0	4.2	0.3						
	Co. Supervisor	LDGT2	6	8	48	18,266	0.11	0.01	0.01	0.01	1.23	0.08	1.0	0.1	0.1	0.1	11.2	0.7						
	Tool Pusher	HDDV	6	6	36	18,266	0.65	0.16	0.14	0.13	1.36	0.38	5.9	1.4	1.3	1.2	12.4	3.5						
	Logger, Engr Truck	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
Well Completion & Testing	Semi Casing Haulers	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6	21.1	5.0	4.6	4.2	49.0	12.6
	Semi Completion, Unit Rig	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Tubing Truck	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Haul Cementer, Pump Truck	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Haul Cementer, Cement Truck	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Haul Completion, Equip Truck	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Haul Service Tools	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Haul Perforators Logging Truck	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Haul Welders	HDDV	6	1	6	18,266	0.11	0.03	0.02	0.02	0.23	0.06	1.0	0.2	0.2	0.2	2.1	0.6						
	Haul Water Truck	HDDV	6	10	60	18,266	1.08	0.26	0.24	0.22	2.26	0.64	9.8	2.4	2.2	2.0	20.6	5.8						
	Pickup Cementer, Engineer	LDGT2	6	1	6	18,266	0.01	0.00	0.00	0.00	0.15	0.01	0.1	0.0	0.0	0.0	1.4	0.1						
	Pickup Co. Supervisor	LDGT2	6	2	12	18,266	0.03	0.00	0.00	0.00	0.31	0.02	0.2	0.0	0.0	0.0	2.8	0.2						
	Pickup Miscellaneous Supplies	LDGT2	6	1	6	18,266	0.01	0.00	0.00	0.00	0.15	0.01	0.1	0.0	0.0	0.0	1.4	0.1						
	Pickup Roustabout Crew	HDDV	6	2	12	18,266	0.22	0.05	0.05	0.04	0.45	0.13	2.0	0.5	0.4	0.4	4.1	1.2						
												Subtotal	**39**	**9**	**8**	**8**	**100**	**24**	**39**	**9**	**8**	**8**	**100**	**24**
												Total	**52**	**12**	**11**	**10**	**153**	**31**	**52**	**12**	**11**	**10**	**153**	**31**

B.2.1.2 Emission Inventory for the Montana CBM Project Operational Activities under the Preferred Alternative (Alt. E)

B.2.1.2.1 Compressors - Natural Gas Fired

Emission Factors for Compressors:

Compressor			Make	Model	Capacity (hp)	Emission Factors (g/hp-hr)					
						NOx [d]	PM_{10} [e,f]	SO_2 [e]	CO	VOCs	HCHO [g]
Field	Rich Burn [a]	50% [c]	Caterpillar	G3408	400	1.50	6.6E-02	2.0E-03	2.00	1.00	0.05
	Lean Burn [b]	50% [c]	Waukesha	F18GL	400	1.50	6.6E-02	2.0E-03	1.50	0.50	0.20
Sales	Rich Burn [a]	50% [c]	Waukesha	7044GSI	1680	1.50	6.6E-02	2.0E-03	2.00	1.00	0.05
	Lean Burn [b]	25% [c]	Caterpillar	G3516LE	1340	1.50	3.4E-02	2.0E-03	0.50	1.00	0.07
		25% [c]	Caterpillar	G3608	2225	1.50	3.4E-02	2.0E-03	0.30	1.00	0.07

[a] Emission factors for compressors equipped with NSCR catalyst (Source: C. Martinez [WGR], e-mail to K. Chun [ANL] on 4/10/01 except for PM_{10}, SO_2, and HCHO).

[b] Emission factors source: B. Dailey [WY DEQ], e-mail to P. Beels [BLM] on 8/28/01.

[c] Source: B. Dailey [WY DEQ], e-mail to P. Beels [BLM] on 8/28/01.

[d] Emission factor: per personal communication with S. Archer (BLM) on 10/18/02.

[e] Source: EPA, *AP-42* , Volume I, Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-2 & 3.2-3 (7/00).
Assumed a fuel consumption rate of 7,500 Btu/bhp-hr (Source: C. Martinez [WGR], e-mail to K. Chun [ANL] on 4/10/01).

[f] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

[g] Emission factors source: B. Dailey [WY DEQ], e-mail to P. Beels [BLM] on 8/28/01.

Emissions Estimation for Compressors:

Type of Compressors	Total # of Operating Station-Year	Operating Hours per Year	Total Emissions (ton/project) [a]				
			NOx	PM_{10}	SO_2	CO	VOCs
Field	8,989	8,760	52,082	2,293	69	60,762	26,041
Sales	1,084	8,760	27,183	898	36	21,086	18,122
		Total	**79,265**	**3,190**	**106**	**81,848**	**44,163**

[a] Assume that compressors would operate at full load.

B.2.1.2.2 Dehydrators

Emission Factors for Dehydrators:

Unit	NO_x	PM_{10} [a]	SO_2	CO	VOCs
lb/MMscf	100	7.6	0.6	84	5.5
lb/MMBtu [b]	9.80E-02	7.45E-03	5.88E-04	8.24E-02	5.39E-03

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

[b] Assumed a fuel heating value of 1,020 Btu/scf.

Source: EPA, *AP-42* , Volume I, Section 1.4 Natural Gas Combustion (7/98).

Emissions Estimation for Dehydrators:

Compressor Station	Total Gas Production Rate [a] (MMCFD-yr)	Firing Rate [b] (Btu/hr/MMCFD)	Operating Hours per Year [c]	Total Emissions (ton/project)				
				NOx	PM_{10} [d]	SO_2	CO	VOCs
Sales	45,728	25,000	8,760	491	37	3	412	27

[a] Source: Alts-spread-Final.xls via e-mail from C. Laakso (BLM) to A. Oh (ANL) on 02/04/02.

[b] D. Keanini (WGR), e-mail to K. Chun (ANL) on 5/24/01.

[c] Assumed conservatively that a dehydrator operates year-round.

[d] Emissions of $PM_{2.5}$ were assumed to be the same as those for PM_{10}.

B.2.1.2.3 Compressor Station Visits for Inspection and Repair

B.2.1.2.3.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Compressor Station	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	# of Stations Visited per Day [a]	# of Visits per Station per Year [b]	Miles Traveled per Station per Year	Total # of Operating Station-Yr	PM_{10}			$PM_{2.5}$		
									Em. Factor (lb/VMT) [c]	Emissions		Em. Factor (lb/VMT) [c]	Emissions	
										(lb/stn-yr)	(ton/proj.)		(lb/stn-yr)	(ton/proj.)
Inspection Visits for Compressor Stations	Field	Pickup Truck	7,000	20	15	12	16	8,989	1.03	16.4	74	0.15	2.4	11
	Sales	Pickup Truck	7,000	20	15	52	69	1,084	1.03	71.2	39	0.15	10.4	6
								Total			**113**			**16**

[a] Per D. Keanini (WGR) e-mail to K. Chun (ANL) on 5/24/01.
[b] Field and sales compressor stations are visited using a 200-hp pickup truck (4 wheels) once a month and once a week, respectively (per S. Archer [BLM] fax to A. Oh [ANL] on 1/30/02).
[c] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.1.2.3.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Compressor Station	Vehicle		Round Trip Distance (mi/day)	# of Stations Visited per Day [a]	# of Visits per Station per Year [b]	Miles Traveled per Station per Year	Total # of Operating Station-Yr	Emissions											
		Type	Class						(lb/station-yr)						(ton/project)					
									NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Inspection Visits for Compressor Stations	Field	Pickup Truck	LDGT2	20	15	12	16	8,989	0.04	0.00	0.00	0.00	0.41	0.03	0.2	0.0	0.0	0.0	1.8	0.1
	Sales	Pickup Truck	LDGT2	20	15	52	69	1,084	0.15	0.02	0.01	0.02	1.78	0.11	0.1	0.0	0.0	0.0	1.0	0.1
														Total	**0.2**	**0.0**	**0.0**	**0.0**	**2.8**	**0.2**

[a] Per D. Keanini (WGR) e-mail to K. Chun (ANL) on 5/24/01.
[b] Field and sales compressor stations are visited using a 200-hp pickup truck (4 wheels) once a month and once a week, respectively (per S. Archer [BLM] fax to A. Oh [ANL] on 1/30/02).

B.2.1.2.4 Well Workover

B.2.1.2.4.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells Drilled	PM_{10}			$PM_{2.5}$		
							Emission Factor (lb/VMT) [c]	Emissions (lb/well)	Emissions (ton/proj.)	Emission Factor (lb/VMT) [c]	Emissions (lb/well)	Emissions (ton/proj.)
Well Workover [a]	Bobtail Truck [b]	40,000 [b]	50	1	50	18,266	2.06	103	942	0.30	15	138

[a] Performed once in the first year of well operation for one day.
[b] A 400-hp bobtail truck operating 10 hours/day with a fuel consumption rate of 60 gpd (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.1.2.4.2 Exhaust Emissions - On-site

Emission Factors for Industrial Engines: See Section B.2.1.1.1.2.

Emissions Estimation for Industrial Engines:

Activity	Equipment	Capacity (hp)	Operating Hours per Day	Total # of Wells Drilled	Emissions (lb/well)					Emissions (ton/project)				
					NO_x	PM_{10} [c]	SO_x	CO	VOCs	NO_x	PM_{10} [c]	SO_x	CO	VOCs
Well Workover [a]	Truck-Mounted Unit [b]	400	10	18,266	124	9	8	27	10	1,132	80	75	244	93

[a] Performed once in the first year of well operation for one day.
[b] A 400-hp bobtail truck operating 10 hours/day with a fuel consumption rate of 60 gpd (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

B.2.1.2.4.2 Exhaust Emissions - On-road

Emission Factors for Road Traffic: See Section B.2.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi)	Round Trip Per Well	Miles Traveled per Well	Total # of Wells Drilled	Emissions (lb/well)						Emissions (ton/project)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Well Workover [a]	Bobtail Truck	HDDV	50	1	50	18,266	0.9	0.2	0.2	0.2	1.9	0.5	8	2	2	2	17	5

[a] Performed once in the first year of well operation for one day.

B.2.1.2.5 Well and Pipeline Visits for Inspection and Repair

B.2.1.2.5.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	# of Wells Visited per Day [a]	# of Visits per Well per Year [b]	Miles Traveled per Well per Year	Total # of Operating Well-Yr	PM_{10}			$PM_{2.5}$		
								Em. Factor (lb/VMT) [c]	Emissions		Em. Factor (lb/VMT) [c]	Emissions	
									(lb/well-yr)	(ton/proj.)		(lb/well-yr)	(ton/proj.)
Visits for Inspection and Repair	200-hp Pickup	7,000	75	120	12	7.5	228,640	1.03	7.7	881	0.15	1.1	129

[a] Per D. Gomendi (WGR) e-mail to K. Chun (ANL) on 5/11/01.
[b] Wells are visited once per month (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.1.2.5.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi/day)	# of Wells Visited per Day [a]	# of Visits per Well per Year [b]	Miles Traveled per Well per Year	Total # of Operating Well-Yr	Emissions											
								(lb/well-yr)						(ton/project)					
	Type	Class						NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Visits for Inspection and Repair	200-hp Pickup	LDGT2	75	120	12	7.5	228,640	0.017	0.002	0.001	0.002	0.192	0.012	1.9	0.2	0.1	0.2	22.0	1.4

[a] Per D. Gomendi (WGR) e-mail to K. Chun (ANL) on 5/11/01.
[b] Wells are visited once per month (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).

B.2.1.3 Emission Inventory for the Montana CBM Project Maintenance Activities under the Preferred Alternative (Alt. E)

B.2.1.3.1 Road Maintenance - Heavy Equipment

Given Data:

Maintenance [a]	Equipment/Vehicle			Road Length Worked On per Day (miles)	# of Operating Hours per Day
	Type	Fuel	Capacity (hp)		
Summer	Heavy Equipment [b]	Diesel	135 [c]	6	10
	Commuting Vehicle	Gasoline	225	6 [d]	1 [e]
Winter	Heavy Equipment [b]	Diesel	135 [c]	5	10
	Commuting Vehicle	Gasoline	225	6 [d]	1.5 [e]

[a] Road maintenance would be made twice in summer and once in winter every year (per D. Keanini [WGR] e-mail to K. Chun [ANL] on 5/30/01).
[b] Assume a motor grader (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] Revised from 100 hp to 135 hp (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[d] Average round trip mileage on unpaved road.
[e] Assume one round trip per day.

Estimation of Total and Cumulative Length of Roads:

Total Length of Roads Built (mi) [a]	6,224
Cumulative Length of Roads Maintained [b] (mi-yr)	77,907

[a] For Alts. C and E. (Source: ALL Consulting "Preliminary Draft Montana Statewide Oil & Gas EIS and Amendment to the Powder River and Billings RMPs," 11/21/01.)
[b] = (total length of roads) *(total no. of operating well-yr)/(total no. of drilled wells).

Estimation of Total Operation Days and Hours:

Season	# of Operation per Year	Cumulative Length of Roads (mi-yr)	Road Length Worked On (mi/day)	# of Operating Hours per Day	Total # of Operating Days	Total # of Operating Hours
Summer	2	77,907	6	10	25,969	259,689
Winter	1	77,907	5	10	15,581	155,813
				Total	**41,550**	**415,502**

B.2.1.3.1.1 Fugitive Dust Emissions

Emission Factors for Grader:

Pollutant	Emission Factor Equation (lb/VMT)	S [a] (mph)	Emission Factor (lb/VMT)
PM_{10}	$E = (0.6)(0.051)\ S^{2}$	5	0.765
$PM_{2.5}$	$E = (0.031)(0.04)\ S^{2.5}$	5	0.069

[a] Assumed a mean vehicle speed (S) of 5 mph.

Source: EPA, *AP-42* , Volume I, Section 11.9 Western Surface Coal Mining (10/98).

Emissions Estimation for Grader:

Activity	Equipment	Total # of Operating Hours [a]	Mean Vehicle Speed (mph)	Total Miles Maintained	PM_{10}		$PM_{2.5}$	
					Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Maintenance	Grader	249,301	5	1,246,505	0.765	477	0.069	43

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.

B.2.1.3.1.2 Exhaust Emissions

Emission Factors for Grader:

Equipment	Emission Factors (g/hp-hr)				
	NO_x	PM_{10} [a]	SO_2	CO	VOCs
Grader	7.14	0.63	0.87	1.54	0.36

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

Source: EPA, *AP-42* , Volume II, Section II-7 Heavy-Duty Construction Equipment (1985).

Emissions Estimation for Grader:

Activity	Vehicle Type	Capacity (hp)	Total # of Operating Hours [a]	Emissions									
				(lb/hr)					(ton/project)				
				NO_x	PM_{10} [b]	SO_x	CO	VOCs	NO_x	PM_{10} [b]	SO_x	CO	VOCs
Road Maintenance	Grader	135	249,301	2.13	0.19	0.26	0.46	0.11	265	23	32	57	13

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.
[b] Emissions of $PM_{2.5}$ were assumed to be the same as those for PM_{10}.

B.2.1.3.2 Road Maintenance - Commuting Vehicles

B.2.1.3.2.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	PM_{10}		$PM_{2.5}$	
						Em. Factor (lb/VMT) [a]	Emissions (ton/proj.)	Em. Factor (lb/VMT) [a]	Emissions (ton/proj.)
Road Maintenance	Pickup Truck	7,000	6	41,550	249,301	1.03	128	0.15	19

[a] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.1.3.2.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	Emissions (ton/project)					
	Type	Class				NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Road Maintenance	Pickup Truck	LDGT2	6	41,550	249,301	0.28	0.03	0.02	0.03	3.20	0.21

B.2.1.3.3 Maintenance Visits to Compressor Stations

B.2.1.3.3.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Compressor Station	# of Stations	Cumulative # of Station-Yr	# of Visits per Year [a]	Total # of Round Trips	Round Trip Distance (mi)	Total Miles Traveled	PM_{10}		PM2.5	
										Em. Factor (lb/VMT) [b]	Emissions (ton/proj.)	Em. Factor (lb/VMT) [b]	Emissions (ton/proj.)
Maintenance Visits to Compressor	Pickup Truck	7,000	Field	741	8,989	2	17,979	20	359,579	1.03	185	0.15	27
			Sales	76	1,084	2	2,168	20	43,362	1.03	22	0.15	3
								Total	**402,941**		**207**		**30**

[a] Maintenance visit frequency is twice a year (per S. Archer [BLM] fax to A. Oh [ANL] on 1/30/02).
[b] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.1.3.3.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.2.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Compressor Station	# of Stations	Cumulative # of Station-Yr	# of Visits per Year	Total # of Round Trips	Round Trip Distance (mi)	Total Miles Traveled	Emissions (ton/project)					
	Type	Class								NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Maintenance Visits to Compressor Stations	Pickup Truck	LDGT2	Field	741	8,989	2	17,979	20	359,579	0.40	0.04	0.03	0.04	4.61	0.30
			Sales	76	1,084	2	2,168	20	43,362	0.05	0.00	0.00	0.01	0.56	0.04
								Total	**402,941**	**0.45**	**0.04**	**0.03**	**0.05**	**5.17**	**0.33**

B.2.2 Emission Inventories for the Montana Conventional O&G Project Activities under the Preferred Alternative (Alt. E)

B.2.2.1 Emission Inventory for the Montana Conventional O&G Project Construction Activities under the Preferred Alternative (Alt. E)

B.2.2.1.1 Heavy Equipment

B.2.2.1.1.1 Fugitive Dust Emissions

Emission Factors for Construction Activities:

			Reference
E =	1.2	tons of TSP/acre/month	EPA, *AP-42* , Volume I, Section 13.2.3 Heavy Construction Operations (1/95)
PM_{10} =	26	% of TSP	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
$PM_{2.5}$ =	15	% of PM_{10}	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
CE = control efficiency for watering	50	%	EPA, *Control of Open Fugitive Dust Sources* , Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Construction Activities:

Area Disturbed for Oil Wells	Average Value per Well [a]			Total # of Wells	Total Area (acre)	Emissions					
						(lb/well)			(ton/project)		
	Length (mi)	Area (acre)	Av. # of Days to Complete			TSP	PM_{10}	$PM_{2.5}$	TSP	PM_{10}	$PM_{2.5}$
Bladed Road	1.0	0.5	3	1,855	928	60	16	2	56	14	2
Well Pad		0.5	3	1,855	928	56	14	2	56	14	2
				Total	**1,855**				**111**	**29**	**4**

[a] Source: ALL Consulting "Preliminary Draft Montana Statewide Oil & Gas EIS and Amendment to the Powder River and Billings RMPs," 11/21/01.

B.2.2.1.1.2 Exhaust Emissions

Emission Factors for Construction Equipment:

Equipment	Emission Factors (g/hp-hr)					Equipment Category in AP-42 [a]
	NO_x	PM_{10}	SO_2	CO	VOCs	
Dozer	7.81	0.69	0.85	2.15	0.75	Track-Type Tractor
Blade	7.14	0.63	0.87	1.54	0.36	Motor Grader

[a] Emission factors for the listed equipment category were assumed for equipment used in PRBO&G project construction.

Source: EPA, *AP-42* , Volume II, Section II-7 Heavy-Duty Construction Equipment (9/85).

Emissions Estimation for Construction Equipment:

Construction Site	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Oper. Hrs per Day	# of Oper. Days per Well	# of Oper. Hrs per Well	# of Wells	Emissions (lb/well)					Emissions (ton/equipment type)					Emissions (ton/construction site)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs
Bladed Road	Blade	100	1	75	10	2	20	1,855	24	2	3	5	1	22	2	3	5	1	22	2	3	5	1
Well Pad	Blade	100	1	75	10	3	30	1,855	35	3	4	8	2	33	3	4	7	2	90	8	10	23	7
	Dozer	150	1	80	10	3	30	1,855	62	5	7	17	6	57	5	6	16	6					
								Subtotal						**112**	**10**	**13**	**28**	**8**	**112**	**10**	**13**	**28**	**8**

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

Emission Factors for Industrial Engines and Flaring:

Emission Source	Fuel Type	Emission Factors					
		Unit	NO_x	PM_{10}	SO_x	CO	VOCs
Industrial Engine ≤ 600 hp [a]	Diesel	lb/hp-hr	3.10E-02	2.20E-03	2.05E-03	6.68E-03	2.51E-03
Industrial Engine > 600 hp [b]	Diesel [c]	lb/hp-hr	2.40E-02	7.00E-04	3.24E-03	5.50E-03	6.42E-04
Flaring [d,e]	Natural Gas	lb/MMCF	69	7.6 [f]	0.6 [f]	377	64

[a] Source: EPA, *AP-42* , Volume I, Section 3.3 Gasoline and Diesel Industrial Engines (10/96).
[b] Source: EPA, *AP-42* , Volume I, Section 3.4 Large Stationary Diesel and All Stationary Dual-Fuel Engines (10/96).
[c] Assume a sulfur content of 0.4%.
[d] Source: EPA, *AP-42* , Volume I, Section 13.5 Industrial Flares (9/91).
[e] Assumed a fuel heating value of 1,020 Btu/scf.
[f] Source: EPA, *AP-42* , Volume I, Section 1.4 Natural Gas Combustion (7/98).

Emissions Estimation for Industrial Engines and Flaring:

Construction Site Activity	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Operating Hours per Day	# of Operating Days per Well	# of Operating Hours per Well	# of Wells	Emissions (lb/well)					Emissions (ton/equipment type)					Emissions (ton/project activity)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs
Rig-up, Drilling, and Rig-down	Main Deck	1,000	3	70	24	16	384	1,855	19,354	564	2,610	4,435	517	17,950	524	2,420	4,114	480					
	Auxiliary Pump	600	1	80	8	15	120	1,855	1,786	127	118	385	145	1,656	118	110	357	134	20,849	729	2,612	4,738	715
	Generators	150	2	75	24	8	192	1,855	1,339	95	89	289	109	1,242	88	82	268	101					
Well Completion & Testing	Main Deck	600	1	50	11	5	55	1,855	512	36	34	110	41	474	34	31	102	38					
	Auxiliary Pump	225	1	80	8	2	16	1,855	89	6	6	19	7	83	6	5	18	7					
	Power Swivel	150	1	75	8	2	16	1,855	56	4	4	12	5	52	4	3	11	4					
	Equipment Type	**Capacity (kw)**	**Av. # of Wells Served**	**Average Load Factor [b] (%)**	**# of Operating Hours per Day**	**Av. # of Operating Days**	**# of Operating Hours per Well**	**# of Wells**															
	Field Generators for Pumps & Lighting	40	1	75	12	3	36	1,855	45	3	3	10	4	42	3	3	9	3	678	49	43	287	78
	Emission Source	**Average Volume Flared (MCFD/well)**			**Average # of Days of Continuous Flaring**			**# of Wells**															
	Flaring of Natural Gas	60			7			1,855	29	3	0	159	27	27	3	0	147	25					
								Subtotal						**21,526**	**778**	**2,655**	**5,025**	**793**	**21,526**	**778**	**2,655**	**5,025**	**793**
								Total						**21,639**	**788**	**2,668**	**5,053**	**801**	**21,639**	**788**	**2,668**	**5,053**	**801**

[a] Emissions of $PM_{2.5}$ was assumed to be the same as those for PM_{10}.
[b] Source: D. Gomendi (WGR), e-mail to K. Chun (ANL) on 5/11/01.

B.2.2.1.2 Commuting Vehicles

B.2.2.1.2.1 Road Dust Emissions

Emission Factors for Road Traffic:

$$E\ (lb/VMT) = \frac{k\ (s/12)^a\ (W/3)^b}{(M/0.2)^c}$$

Parameter	PM_{10}	$PM_{2.5}$
k	2.6	0.38
a	0.8	0.8
b	0.4	0.4
c	0.3	0.3

Source: EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98).

Function/Variable Description	Assumed Value	Reference
E = size-specific emission factor (lb/VMT)		
s = surface material silt content (%)	5.1	EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98)
W = mean vehicle weight (tons)	Listed in the table below	
M = surface material moisture content (%)	0.2	default value in EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98)
CE = control efficiency for watering (%)	50	EPA, *Control of Open Fugitive Dust Sources* , Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Road Traffic:

Construction Site Destination	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions			Controlled Em. Factor (lb/VMT)	Emissions		
								(lb/well)	(ton/veh. type)	(ton/const. site)		(lb/well)	(ton/veh. type)	(ton/const. site)
Bladed Road	Semi Trucks	65,000	2	47	94	1,855	1.70	160	148	152	0.25	23	22	22
	Pickup Trucks	7,000	2	3	6	1,855	0.70	4	4		0.10	0.6	0.6	
Well Pad	Semi Trucks	65,000	2	5	10	1,855	1.70	17	16	21	0.25	2.5	2.3	3
	Pickup Trucks	7,000	2	4	8	1,855	0.70	6	5		0.10	0.8	0.8	
Other Construction Activities	Semi Trucks	80,000	2	2	4	1,855	1.85	7	7	14	0.27	1.1	1.0	2
	Haul Trucks	45,000	2	2	4	1,855	1.47	6	5		0.21	0.9	0.8	
	Pickup Trucks	7,000	2	1	2	1,855	0.70	1.4	1.3		0.10	0.2	0.2	
								Subtotal		**187**				**27**

B.2.2.1.2.1 Road Dust Emissions (Continued)

Construction Site Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions			Controlled Em. Factor (lb/VMT)	Emissions		
								(lb/well)	(ton/veh. type)	(ton/proj. activity)		(lb/well)	(ton/veh. type)	(ton/proj. activity)
Rig-up, Drilling, and Rig-down	Semi Rig Transport, Drill Rig	60,000	2	44	88	1,855	1.65	145	134	302	0.24	21	20	44
	Fuel Haul Truck	50,000	2	6	12	1,855	1.53	18	17		0.22	3	2	
	Mud Haul Truck, Water Hauling	60,000	2	4	8	1,855	1.65	13	12		0.24	2	2	
	Rig Crew	7,000	2	51	102	1,855	0.70	71	66		0.10	10	10	
	Rig Mechanics	12,000	2	2	4	1,855	0.87	3	3		0.13	1	0	
	Co. Supervisor	7,000	2	20	40	1,855	0.70	28	26		0.10	4	4	
	Tool Pusher	7,000	2	8	16	1,855	0.70	11	10		0.10	2	2	
	Mud Logger	7,000	2	6	12	1,855	0.70	8	8		0.10	1	1	
	Mud Engineer	7,000	2	15	30	1,855	0.70	21	19		0.10	3	3	
	Logger, Engr Truck	45,000	2	1	2	1,855	1.47	3	3		0.21	0	0	
	Drill Bit Delivery	7,000	2	2	4	1,855	0.70	3	3		0.10	0	0	
Well Completion & Testing	Semi Casing Haulers	60,000	2	6	12	1,855	1.65	20	18	596	0.24	3	3	87
	Semi Completion, Unit Rig	120,000	2	1	2	1,855	2.17	4	4		0.32	1	1	
	Semi Pumping/Tank Battery	80,000	2	6	12	1,855	1.85	22	21		0.27	3	3	
	Tubing Truck	60,000	2	2	4	1,855	1.65	7	6		0.24	1	1	
	Haul Cementer, Pump Truck	85,000	2	2	4	1,855	1.89	8	7		0.28	1	1	
	Haul Cementer, Cement Truck	60,000	2	3	6	1,855	1.65	10	9		0.24	1	1	
	Haul Completion, Equip Truck	45,000	2	3	6	1,855	1.47	9	8		0.21	1	1	
	Haul Service Tools	7,000	2	2	4	1,855	0.70	3	3		0.10	0	0	
	Haul Perforators Logging Truck	45,000	2	1	2	1,855	1.47	3	3		0.21	0	0	
	Haul Anchor, Installation	40,000	2	1	2	1,855	1.40	3	3		0.20	0	0	
	Haul Anchor, Testing	12,000	2	1	2	1,855	0.87	2	2		0.13	0	0	
	Haul Welders	12,000	2	6	12	1,855	0.87	10	10		0.13	2	1	
	Haul Water Truck	60,000	2	150	300	1,855	1.65	494	458		0.24	72	67	
	Pickup Cementer, Engineer	7,000	2	2	4	1,855	0.70	3	3		0.10	0	0	
	Pickup Casing Crew	10,000	2	2	4	1,855	0.80	3	3		0.12	0	0	
	Pickup Completion Crew	10,000	2	5	10	1,855	0.80	8	7		0.12	1	1	
	Pickup Completion, Pusher	7,000	2	5	10	1,855	0.70	7	6		0.10	1	1	
	Pickup Perforators, Engineer	7,000	2	2	4	1,855	0.70	3	3		0.10	0	0	
	Pickup Co. Supervisor	7,000	2	10	20	1,855	0.70	14	13		0.10	2	2	
	Pickup Miscellaneous Supplies	7,000	2	3	6	1,855	0.70	4	4		0.10	1	1	
	Pickup Roustabout Crew	12,000	2	4	8	1,855	0.87	7	6		0.13	1	1	
								Subtotal		**898**				**131**
								Total		**1,084**				**158**

B.2.2.1.2.2 Exhaust Emissions

Emission Factors for Road Traffic:

Vehicle		Emission Factors (g/mi)					
Type	Class	NO_x	PM_{10} [a,b]	$PM_{2.5}$ [a,b]	SO_x [a]	CO	VOCs
Light-Duty Gasoline Truck	LDGT2	1.01	0.10	0.08	0.11	11.64	0.75
Heavy-Duty Diesel Truck	HDDV	8.13	1.96	1.81	1.63	17.09	4.83

[a] Estimated using the EPA PART5 model (1995).
[b] Including tire and brake wear emissions.

Source: EPA, *AP-42* , Volume II, Appendix H-117, Table 3.1A.2 Light-Duty Gasoline Powered Trucks II and
Appendix H-259, Table 7.1.2 Heavy Duty Diesel Powered Vehicles (High Altitude; Model Year 1991-1997; 50,000 mileage) (6/30/95).

Emissions Estimation Road Traffic:

Construction Site Destination	Vehicle		Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	Emissions																	
							(lb/well)						(ton/vehicle type)						(ton/construction site)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Bladed Road	Semi Trucks	HDDV	2	47	94	1,855	1.68	0.41	0.37	0.34	3.54	1.00	1.56	0.38	0.35	0.31	3.28	0.93	1.58	0.38	0.35	0.31	3.43	0.94
	Pickup Trucks	LDGT2	2	3	6	1,855	1.E-02	1.E-03	1.E-03	1.E-03	2.E-01	1.E-02	1.E-02	1.E-03	9.E-04	1.E-03	1.E-01	9.E-03						
Well Pad	Semi Trucks	HDDV	2	5	10	1,855	0.18	0.04	0.04	0.04	0.38	0.11	0.17	0.04	0.04	0.03	0.35	0.10	0.18	0.04	0.04	0.04	0.54	0.11
	Pickup Trucks	LDGT2	2	4	8	1,855	2.E-02	2.E-03	1.E-03	2.E-03	2.E-01	1.E-02	2.E-02	2.E-03	1.E-03	2.E-03	2.E-01	1.E-02						
Other Construction Activities	Semi Trucks	HDDV	2	2	4	1,855	0.07	0.02	0.02	0.01	0.15	0.04	0.07	0.02	0.01	0.01	0.14	0.04	0.14	0.03	0.03	0.03	0.33	0.08
	Haul Trucks	HDDV	2	2	4	1,855	0.07	0.02	0.02	0.01	0.15	0.04	0.07	0.02	0.01	0.01	0.14	0.04						
	Pickup Trucks	LDGT2	2	1	2	1,855	4.E-03	4.E-04	3.E-04	5.E-04	5.E-02	3.E-03	4.E-03	4.E-04	3.E-04	5.E-04	5.E-02	3.E-03						
												Subtotal							**1.9**	**0.5**	**0.4**	**0.4**	**4.3**	**1.1**

B.2.2.1.2.2 Exhaust Emissions (Continued)

Construction Site Activity	Vehicle		Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	Emissions (lb/well)						Emissions (ton/vehicle type)						Emissions (ton/project activity)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Rig-up, Drilling, and Rig-down	Semi Rig Transport, Drill Rig	HDDV	2	44	88	1,855	1.58	0.38	0.35	0.32	3.32	0.94	1.46	0.35	0.33	0.29	3.08	0.87	2.3	0.5	0.5	0.4	8.8	1.4
	Fuel Haul Truck	HDDV	2	6	12	1,855	0.22	0.05	0.05	0.04	0.45	0.13	0.20	0.05	0.04	0.04	0.42	0.12						
	Mud Haul Truck, Water Hauling	HDDV	2	4	8	1,855	0.14	0.03	0.03	0.03	0.30	0.09	0.13	0.03	0.03	0.03	0.28	0.08						
	Rig Crew	LDGT2	2	51	102	1,855	0.23	0.02	0.02	0.03	2.62	0.17	0.21	0.02	0.02	0.02	2.43	0.16						
	Rig Mechanics	HDDV	2	2	4	1,855	0.07	0.02	0.02	0.01	0.15	0.04	0.07	0.02	0.01	0.01	0.14	0.04						
	Co. Supervisor	LDGT2	2	20	40	1,855	0.09	0.01	0.01	0.01	1.03	0.07	0.08	0.01	0.01	0.01	0.95	0.06						
	Tool Pusher	LDGT2	2	8	16	1,855	0.04	0.00	0.00	0.00	0.41	0.03	0.03	0.00	0.00	0.00	0.38	0.02						
	Mud Logger	LDGT2	2	6	12	1,855	3.E-02	3.E-03	2.E-03	3.E-03	3.E-01	2.E-02	2.E-02	2.E-03	2.E-03	3.E-03	3.E-01	2.E-02						
	Mud Engineer	LDGT2	2	15	30	1,855	0.1	0.0	0.0	0.0	0.8	0.0	0.1	0.0	0.0	0.0	0.7	0.0						
	Logger, Engr Truck	HDDV	2	1	2	1,855	0.04	0.01	0.01	0.01	0.08	0.02	0.03	0.01	0.01	0.01	0.07	0.02						
	Drill Bit Delivery	LDGT2	2	2	4	1,855	9.E-03	9.E-04	7.E-04	1.E-03	1.E-01	7.E-03	8.E-03	8.E-04	6.E-04	9.E-04	1.E-01	6.E-03						
Well Completion & Testing	Semi Casing Haulers	HDDV	2	6	12	1,855	0.22	0.05	0.05	0.04	0.45	0.13	0.20	0.05	0.04	0.04	0.42	0.12	6.5	1.6	1.4	1.3	14.6	3.9
	Semi Completion, Unit Rig	HDDV	2	1	2	1,855	0.04	0.01	0.01	0.01	0.08	0.02	0.03	0.01	0.01	0.01	0.07	0.02						
	Semi Pumping/Tank Battery	HDDV	2	6	12	1,855	0.22	0.05	0.05	0.04	0.45	0.13	0.20	0.05	0.04	0.04	0.42	0.12						
	Tubing Truck	HDDV	2	2	4	1,855	0.07	0.02	0.02	0.01	0.15	0.04	0.07	0.02	0.01	0.01	0.14	0.04						
	Haul Cementer, Pump Truck	HDDV	2	2	4	1,855	0.07	0.02	0.02	0.01	0.15	0.04	0.07	0.02	0.01	0.01	0.14	0.04						
	Haul Cementer, Cement Truck	HDDV	2	3	6	1,855	0.11	0.03	0.02	0.02	0.23	0.06	0.10	0.02	0.02	0.02	0.21	0.06						
	Haul Completion, Equip Truck	HDDV	2	3	6	1,855	0.11	0.03	0.02	0.02	0.23	0.06	0.10	0.02	0.02	0.02	0.21	0.06						
	Haul Service Tools	LDGT2	2	2	4	1,855	0.01	0.00	0.00	0.00	0.10	0.01	0.01	0.00	0.00	0.00	0.10	0.01						
	Haul Perforators Logging Truck	HDDV	2	1	2	1,855	0.04	0.01	0.01	0.01	0.08	0.02	0.03	0.01	0.01	0.01	0.07	0.02						
	Haul Anchor, Installation	HDDV	2	1	2	1,855	0.04	0.01	0.01	0.01	0.08	0.02	0.03	0.01	0.01	0.01	0.07	0.02						
	Haul Anchor, Testing	HDDV	2	1	2	1,855	0.04	0.01	0.01	0.01	0.08	0.02	0.03	0.01	0.01	0.01	0.07	0.02						
	Haul Welders	HDDV	2	6	12	1,855	0.22	0.05	0.05	0.04	0.45	0.13	0.20	0.05	0.04	0.04	0.42	0.12						
	Haul Water Truck	HDDV	2	150	300	1,855	5.38	1.30	1.20	1.08	11.30	3.19	4.99	1.20	1.11	1.00	10.48	2.96						
	Pickup Cementer, Engineer	LDGT2	2	2	4	1,855	9.E-03	9.E-04	7.E-04	1.E-03	1.E-01	7.E-03	8.E-03	8.E-04	6.E-04	9.E-04	1.E-01	6.E-03						
	Pickup Casing Crew	HDDV	2	2	4	1,855	0.07	0.02	0.02	0.01	0.15	0.04	0.07	0.02	0.01	0.01	0.14	0.04						
	Pickup Completion Crew	HDDV	2	5	10	1,855	0.18	0.04	0.04	0.04	0.38	0.11	0.17	0.04	0.04	0.03	0.35	0.10						
	Pickup Completion, Pusher	LDGT2	2	5	10	1,855	2.E-02	2.E-03	2.E-03	2.E-03	3.E-01	2.E-02	2.E-02	2.E-03	2.E-03	2.E-03	2.E-01	2.E-02						
	Pickup Perforators, Engineer	LDGT2	2	2	4	1,855	9.E-03	9.E-04	7.E-04	1.E-03	1.E-01	7.E-03	8.E-03	8.E-04	6.E-04	9.E-04	1.E-01	6.E-03						
	Pickup Co. Supervisor	LDGT2	2	10	20	1,855	4.E-02	4.E-03	3.E-03	5.E-03	5.E-01	3.E-02	4.E-02	4.E-03	3.E-03	5.E-03	5.E-01	3.E-02						
	Pickup Miscellaneous Supplies	LDGT2	2	3	6	1,855	1.E-02	1.E-03	1.E-03	1.E-03	2.E-01	1.E-02	1.E-02	1.E-03	9.E-04	1.E-03	1.E-01	9.E-03						
	Pickup Roustabout Crew	HDDV	2	4	8	1,855	0.14	0.03	0.03	0.03	0.30	0.09	0.13	0.03	0.03	0.03	0.28	0.08						
												Subtotal							**9**	**2**	**2**	**2**	**23**	**5**
												Total							**11**	**3**	**2**	**2**	**28**	**6**

B.2.2.2 Emission Inventory for the Montana Conventional O&G Project Operational Activities under the Preferred Alternative (Alt. E)

B.2.2.2.1 Compressors - Natural Gas Fired

NOTE: Not applicable, as compressor installation will coincide with compressor installation for CBM operations. No additional compression required. [a]

B.2.2.2.2 Dehydrators

NOTE: Same as above. The small amount of conventional gas would be mingled with the CBM gas in the basin. No appreciable increase of emissions is expected. [a]

B.2.2.2.3 Compressor Station Visits for Inspection and Repair

NOTE: Not applicable, as compressor installation will coincide with compressor installation for CBM operations. [a]

[a] Source: C. Martinez (WGR), "Basic Data for Emission Estimation," e-mail to K. C. Chun on 3/30/01.

B.2.2.2.4 Well Workover

Equipment: Truck-mounted Unit: capacity **600 hp**, fuel **60 gpd**, hours/day **10**

B.2.2.2.4.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.2.2.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type [a]	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells Drilled	PM_{10}			$PM_{2.5}$		
							Emission Factor (lb/VMT) [b]	Emissions (lb/well)	Emissions (ton/proj.)	Emission Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/proj.)
Well Workover	WO Rig	120,000	2	1	2	1,855	3.20	6	6	0.47	1	1
	Haul Truck	60,000	2	1	2	1,855	2.43	5	5	0.35	1	1
	Pickup Truck	7,000	2	3	6	1,855	1.03	6	6	0.15	1	1
						Total			**16**			**2**

[a] Per D. Gomendi (WGR) e-mail to K. Chun (ANL) on 5/11/01.
[b] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.2.2.4.2 Exhaust Emissions - On-site

Emission Factors for Industrial Engines: See Section B.2.2.1.1.2.

Emissions Estimation for Industrial Engines:

Activity	Equipment Type	Capacity (hp)	# of Operating Hours per Day	# of Operating Days per Well	# of Operating Hours per Well	Total # of Wells Drilled	Emissions (lb/well)					Emissions (ton/project)				
							NO_x	PM_{10} [a]	SO_x	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs
Well Workover	Truck-Mounted Unit	600	10	3	30	1,855	558	40	37	120	46	518	37	34	112	42

[a] $PM_{2.5}$ was assumed to be same as PM_{10}.

B.2.2.2.4.2 Exhaust Emissions - On-road

Emission Factors for Road Traffic: See Section B.2.2.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi)	Round Trip per Well	Miles Traveled per Well	Total # of Wells Drilled	Emissions (lb/well)						Emissions (ton/project)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Well Workover [a]	WO Rig	HDDV	2	1	2	1,855	4.E-02	9.E-03	8.E-03	7.E-03	8.E-02	2.E-02	3.E-02	8.E-03	7.E-03	7.E-03	7.E-02	2.E-02
	Haul Truck	HDDV	2	1	2	1,855	4.E-02	9.E-03	8.E-03	7.E-03	8.E-02	2.E-02	3.E-02	8.E-03	7.E-03	7.E-03	7.E-02	2.E-02
	Pickup Truck	LDGT2	2	3	6	1,855	1.E-02	1.E-03	1.E-03	1.E-03	2.E-01	1.E-02	1.E-02	1.E-03	9.E-04	1.E-03	1.E-01	9.E-03
												Total	**8.E-02**	**2.E-02**	**2.E-02**	**1.E-02**	**3.E-01**	**5.E-02**

[a] Performed once in the first year of well operation for one day.

B.2.2.2.5 Well Visits for Inspection and Repair

Given Data: Frequency of visit: once/month; [a]

B.2.2.2.5.1 Road Dust Emissions

Emission Factor for Road Traffic: See Section B.2.2.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Visits per Well per Year [a]	Miles Traveled per Well per Year	Total # of Operating Well-Yr	PM_{10}			$PM_{2.5}$		
							Em. Factor (lb/VMT) [b]	Emissions		Em. Factor (lb/VMT)	Emissions	
								(lb/well-yr)	(ton/proj.)		(lb/well-yr)	(ton/proj.)
Inspection Visits for Wells	Pickup Truck	7,000	2	12	24	20,982	1.03	24.7	259	0.15	3.6	38

[a] Source: D. Gomendi (WGR), e-mail to K. Chun (ANL) on 5/11/01.
[b] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.2.2.5.2 Exhaust Emissions

Emission Factor for Road Traffic: See Section B.2.2.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi)	# of Visits per Well per Year [a]	Distance per Well per Year (mi)	Total # of Operating Well per Project	Emissions											
							(lb/well-yr)						(ton/project)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Inspection Visits for Wells	Pickup Truck	LDGT2	2	12	24	20,982	0.05	0.01	0.00	0.01	0.62	0.04	0.6	0.1	0.0	0.1	6.5	0.4

[a] Source: D. Gomendi (WGR), e-mail to K. Chun (ANL) on 5/11/01.

B.2.2.3 Emission Inventory for the Montana Conventional O&G Project Maintenance Activities under the Preferred Alternative (Alt. E)

B.2.2.3.1 Road Maintenance - Heavy Equipment

Given Data:

Maintenance [a]	Equipment/Vehicle			Road Length Worked On per Day (miles)	# of Operating Hours per Day
	Type	Fuel	Capacity (hp)		
Summer	Heavy Equipment [b]	Diesel-30 gpd	135 [c]	6	10
	Commuting Vehicle	Gas-5 gpd	225	6 [d]	1 [e]
Winter	Heavy Equipment [b]	Diesel-30 gpd	135 [c]	5	10
	Commuting Vehicle	Gas-5 gpd	225	6 [d]	2 [e]

[a] Road maintenance would be made twice in summer and once in winter every year (per D. Keanini [WGR] e-mail to K. Chun [ANL] on 5/30/01).
[b] Assume a motor grader (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] Revised from 100 hp to 135 hp (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[d] Average round trip mileage on unpaved road.
[e] Assume one round trip per day.

Estimation of Total and Cumulative Length of Roads for the Project:

Length of Bladed Roads per Well (mi) [a]	1
Number of Wells	1,855
Total Length of Bladed Roads (mi)	1,855
Cumulative Length of Roads [b] (mi-yr)	20,982

[a] Source: ALL Consulting "Preliminary Draft Montana Statewide Oil & Gas EIS and Amendment to the Powder River and Billings RMPs," 11/21/01.
[b] = (total length of roads) *(total no. of operating well-yr)/(total no. of drilled wells).

Estimation of Total Operation Days and Hours:

Season	# of Operations per Season	Cumulative Length of Roads (mi-yr)	Road Length Worked On (mi/day)	# of Operating Hours per Day	Total # of Operating Days	Total # of Operating Hours
Summer	2	20,982	6	10	6,994	69,940
Winter	1	20,982	5	10	4,196	41,964
				Total	**11,190**	**111,904**

B.2.2.3.1.1 Fugitive Dust Emissions

Emission Factors for Grader:

Pollutant	Emission Factor Equation (lb/VMT)	S [a] (mph)	Em. Factors (lb/VMT)
PM_{10}	$E = (0.6)(0.051)\ S^{2}$	5	0.765
$PM_{2.5}$	$E = (0.031)(0.04)\ S^{2.5}$	5	0.069

[a] Assumed a mean vehicle speed (S) of 5 mph.

Source: EPA, *AP-42* , Volume I, Section 11.9 Western Surface Coal Mining (10/98).

Emissions Estimation for Grader:

Activity	Equipment	Total # of Operating Hours [a]	Mean Vehicle Speed (mph)	Total Miles Maintained	PM_{10}		$PM_{2.5}$	
					Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Maintenance	Grader	67,142	5	335,712	0.765	128	0.069	12

[a] Assumed that a grader would operate at 60% of the time, considering hours for clothing change, lunch break, and other extra activities.

B.2.2.3.1.2 Exhaust Emissions

Emission Factors for Grader:

Equipment	Emission Factors (g/hp-hr)				
	NO_x	PM_{10} [a]	SO_2	CO	VOCs
Grader	7.14	0.63	0.87	1.54	0.36

[a] $PM_{2.5}$ was assumed to be same as PM_{10}.

Source: EPA, *AP-42* , Volume II., Section II-7, Heavy-Duty Construction Equipment (1985).

Emissions Estimation for Grader:

Activity	Vehicle Type	Capacity (hp)	Total # of Operating Hours [a]	Emissions									
				(lb/hr)					(ton/project)				
				NO_x	PM_{10} [b]	SO_x	CO	VOCs	NO_x	PM_{10} [b]	SO_x	CO	VOCs
Road Maintenance	Grader	135	67,142	2.13	0.19	0.26	0.46	0.11	71	6	9	15	4

[a] Assumed that a grader would operate at 60% of the time, considering hours for clothing change, lunch break, and other extra activities.
[b] $PM_{2.5}$ was assumed to be same as PM_{10}.

B.2.2.3.2 Commuting Vehicles

B.2.2.3.2.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.2.2.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	PM_{10}		$PM_{2.5}$	
						Em. Factor (lb/VMT) [a]	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Maintenance	Pickup Truck	7,000	6	11,190	67,142	1.03	34	0.15	5

[a] No dust control measures would be applied (per personal communication with S. Archer [BLM] on 10/18/02).

B.2.2.3.2.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.2.2.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	Emissions (ton/project)					
	Type	Class				NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Road Maintenance	Pickup Truck	LDGT2	6	11,190	67,142	0.07	0.01	0.01	0.01	0.86	0.06

B.2.2.3.3 Maintenance Visits to Compressor Stations

NOTE: Not applicable, as compressor installation will coincide with compressor installation for CBM operations. [a]

[a] Source: C. Martinez (WGR), "Basic Data for Emission Estimation," e-mail to K. C. Chun on 3/30/01.

B.3 Wyoming Project Emission Inventories

B.3.1 Emission Inventories for the Wyoming CBM Project Activities under the Proposed Action (Alt. 1)

B.3.1.1 Emission Inventories for the Wyoming CBM Project Construction Activities under the Proposed Action (Alt. 1)

B.3.1.1.1 Heavy Equipment

B.3.1.1.1.1 Fugitive Dust Emissions

Emission Factors for Construction Activities:

		Reference
E =	1.2 tons of TSP/acre/month	EPA, *AP-42*, Volume I, Section 13.2.3 Heavy Construction Operations (1/95)
PM_{10} =	26 % of TSP	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
$PM_{2.5}$ =	15 % of PM_{10}	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
CE = control efficiency for watering	50 %	EPA, *Control of Open Fugitive Dust Sources*, Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Construction Activities:

Area Disturbed for CBM Wells	Emission Estimation Basis	Average Value				Total # of Well Pads or Stations [b]	Total Area (acre)	Emissions (lb/well pad, lb/stn, or lb/project)			Emissions (ton/project)		
		Length [a] (mi)	Width [a] (ft)	Area (acre)	Av. # of Days to Complete			TSP	PM_{10}	$PM_{2.5}$	TSP	PM_{10}	$PM_{2.5}$
Improved Road	per Well Pad	0.35	40	1.69	1	25,997	43,879	68	18	3	878	228	34
Two-track Road	per Well Pad	0.55	10	0.67	1	25,997	17,330	27	7	1	347	90	14
Well Pad	per Well Pad			0.48	0.5	25,997	12,548	10	3	0	125	33	5
Pod (15 pads/pod)	per Pod			0.48	3	1,733	836	58	15	2	50	13	2
Poly Pipeline, < 3"	per Well Pad	0.73	10 [c]	0.89	1 [d]	25,997	23,050	35	9	1	461	120	18
Poly Pipeline, 12"	per Well Pad	0.27	20 [c]	0.67	1 [d]	25,997	17,331	27	7	1	347	90	14
Steel Pipeline, 12"	per Recip Station	9.83	30 [c]	36	1 [d]	61	2,180	1,430	372	56	44	11	2
Intrastate Pipeline [e]	per Project	150 [f]	50		1 [d]		909	36,364	9,455	1,418	18	5	1
Electric Line	per Well Pad	0.27	10	0.33	1 [d]	25,997	8,665	13	3	1	173	45	7
Booster Compressor Station	per Booster Station			4 [g]	2	184	736	320	83	12	29	8	1
Recip. Compressor Station	per Recip Station			6 [g]	2	61	366	480	125	19	15	4	1
						Total	**127,830**				**2,487**	**647**	**97**

[a] Source: P. Beels (BLM), "Alternatives for the PRB EIS," e-mail to K. Chun (ANL) on 12/20/00.
[b] Source: P. Beels (BLM), e-mail to K. Chun (ANL) on 8/17/01 and J. Jones' Watershed Compression Rev 60401.xls sent via e-mail from D. Keanini (WGR) to K. Chun (ANL) on June 6, 2001. Assumed 5.76 compressor units/booster station and 4.89 compressor units/reciprocating station (Source: D. Cameron [Greystone], e-mail to K. Chun [ANL] on September 21, 2001).
[c] Source: C. Martinez (WGR), e-mail to K. Chun (ANL) on 3/30/01.
[d] Duration of disturbance (clearing, digging, layout, and covering) for a given segment of pipeline or electric line construction is assumed to be one day.
[e] To be installed in 2004.
[f] Total miles.
[g] Source: C. Martinez (WGR), phone conversation with K. Chun (ANL) in April, 2001.

B.3.1.1.1.2 Exhaust Emissions

Emission Factors for Construction Equipment:

Equipment	Emission Factors (g/hp-hr)					Equipment Category in AP-42 [a]
	NO_x	PM_{10}	SO_2	CO	VOCs	
Backhoe	8.81	0.81	0.86	2.71	0.97	Wheeled Loader
Dozer	7.81	0.69	0.85	2.15	0.75	Track-Type Tractor
Blade	7.14	0.63	0.87	1.54	0.36	Motor Grader
Trencher	11.01	0.90	0.93	4.60	1.01	Miscellaneous
Trackhoe	9.30	0.66	0.85	2.26	1.11	Track-Type Loader

[a] Emission factors for the listed equipment category were assumed for equipment used in PRBO&G project construction.

Source: EPA, *AP-42*, Volume II, Section II-7 Heavy-Duty Construction Equipment (9/85).

Emissions Estimation for Construction Equipment:

Construction Site	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Oper. Hrs per Day	# of Oper. Days per Well Pad or per Station	# of Oper. Hrs per Well Pad or per Station	# of Well Pads or Stations	Emissions (lb/well pad, lb/station, or lb/project)					Emissions (ton/equipment type)					Emissions (ton/construction site)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs
Improved & Two-Track Road	Blade	100	1	80	10	0.2	2	25,997	3	0.2	0.3	0.5	0.1	33	3	4	7	2	48	4	5	12	3
	Backhoe	80	1	75	10	0.1	1	25,997	1.2	0.1	0.1	0.4	0.1	15	1	1	5	2					
Well Pad	Backhoe	80	1	75	10	0.5	5	25,997	6	0.5	0.6	2	0.6	76	7	7	23	8	76	7	7	23	8
Pod (15 pads/pod)	Backhoe	80	1	75	10	0.1	1	1,733	1.2	0.1	0.1	0.4	0.1	1	0.1	0.1	0.3	0.1	1	0.1	0.1	0.3	0.1
Poly Pipeline, < 3"	Blade	100	1	80	10	0.25	2.5	25,997	3	0.3	0.4	0.7	0.2	41	4	5	9	2	520	43	46	205	47
	Trencher	175	1	80	10	1	10	25,997	34	3	3	14	3	442	36	37	185	41					
	Backhoe	80	1	75	10	0.25	2.5	25,997	3	0.3	0.3	0.9	0.3	38	3	4	12	4					
Poly Pipeline, 12"	Blade	100	1	80	10	0.2	2	25,997	3	0.2	0.3	0.5	0.1	33	3	4	7	2	136	11	13	48	12
	Trencher	175	1	80	10	0.2	2	25,997	7	0.6	0.6	3	0.6	88	7	7	37	8					
	Trackhoe	75	1	75	10	0.1	1	25,997	1.2	0.1	0.1	0.3	0.1	15	1	1	4	2					
Steel Pipeline, bstr to recip [b]	Blade	100	1	80	10	5	50	61	63	6	8	14	3	2	0.2	0.2	0.4	0.1	11	0.8	1.0	3	1.0
	Trencher	175	1	80	10	5	50	61	170	14	14	71	16	5	0.4	0.4	2	0.5					
	Trackhoe	75	1	75	10	10	100	61	115	8	11	28	14	4	0.2	0.3	0.9	0.4					
Intrastate Pipeline, 36" X 150 miles	Blade	100	1	80	10	60	600		756	67	92	163	38	0.4	0.0	0.0	0.1	0.0	2	0.2	0.2	0.6	0.2
	Trencher	175	1	80	10	60	600		2,039	167	172	852	187	1.0	0.1	0.1	0.4	0.1					
	Trackhoe	75	1	75	10	90	900		1,038	74	95	252	124	0.5	0.0	0.0	0.1	0.1					
Booster Compressor Station	Dozer	350	1	80	8	2	16	184	77	7	8	21	7	7	0.6	0.8	2	0.7	13	1.1	1	4	1
	Backhoe	80	2	80	8	3	24	184	60	5	6	18	7	5	0.5	0.5	2	0.6					
Recip Compressor Station	Dozer	350	1	80	8	2	16	61	77	7	8	21	7	2.4	0.2	0.3	0.6	0.2	4	0.4	0.4	1.2	0.4
	Backhoe	80	2	80	8	3	24	61	60	5	6	18	7	1.8	0.2	0.2	0.6	0.2					
												Subtotal		810	68	75	297	73	810	68	75	297	73

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.
[b] Per recip compressor station.

Emission Factors for Industrial Engines:

Fuel Type	Emission Factors (lb/hp-hr)				
	NO_x	PM_{10}	SO_x	CO	VOCs
Diesel	3.10E-02	2.20E-03	2.05E-03	6.68E-03	2.51E-03

Source: EPA, *AP-42*, Volume I, Section 3.3 Gasoline and Diesel Industrial Engines (10/96).

Emissions Estimation for Industrial Engines:

Construction Site Activity	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Operating Hours per Day	# of Operating Days per Well	# of Operating Hours per Well	# of Wells	Emissions (lb/well)					Emissions (ton/equipment type)					Emissions (ton/project activity)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs
Rig-up, Drilling, and Rig-down	Main Deck	400	1	60	11	3	33	39,367	246	17	16	53	20	4,833	343	320	1,041	392	7,029	499	465	1,515	570
	Auxiliary Pump	200	1	90	10	2	20	39,367	112	8	7	24	9	2,197	156	145	473	178					
Well Completion & Testing	Main Deck	400	1	60	10	1	10	39,367	74	5	5	16	6	1,464	104	97	316	119	29,493	2,093	1,950	6,355	2,392
	Auxiliary Pump	125	1	90	6	1	6	39,367	21	1	1	5	2	412	29	27	89	33					
	Equipment Type	**Capacity [b] (kw)**	**Av. # of Wells Served**	**Av. Load Factor [b] (%)**	**# of Operating Hours per Day**	**Av. # of Operating Days**	**# of Operating Hours per Well**	**# of Wells**															
	Field Generators for Pumps & Lighting	125	8	75	24	120	360	39,367	1,403	100	93	302	114	27,616	1,960	1,826	5,951	2,240					
												Subtotal		36,522	2,592	2,415	7,870	2,962	36,522	2,592	2,415	7,870	2,962
													Total	37,333	2,660	2,490	8,167	3,035	37,333	2,660	2,490	8,167	3,035

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.
[b] Source: D. Gomendi (WGR), e-mail to K. Chun (ANL) on 5/11/01.

B.3.1.1.2 Commuting Vehicles

B.3.1.1.2.1 Road Dust Emissions

Emission Factors for Road Traffic:

$$E\ (lb/VMT) = \frac{k\ (s/12)^a (W/3)^b}{(M/0.2)^c}$$

Parameter	PM_{10}	$PM_{2.5}$
k	2.6	0.38
a	0.8	0.8
b	0.4	0.4
c	0.3	0.3

Source: EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98).

Function/Variable Description	Assumed Value	Reference
E = size-specific emission factor (lb/VMT)		
s = surface material silt content (%)	5.1	EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98)
W = mean vehicle weight (tons)	Listed in the table below	
M = surface material moisture content (%)	0.2	default value in EPA, *AP-42* , Volume I, Section 13.2.2 Unpaved Roads (9/98)
CE = control efficiency for watering (%)	50	EPA, *Control of Open Fugitive Dust Sources* , Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Road Traffic:

Construction Site Destination	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well Pad or per Station	Miles Traveled per Well Pad or per Station	Total # of Well Pads or Stations	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions (lb/well pad, lb/stn, or lb/proj.)	Emissions (ton/veh. type)	Emissions (ton/const. site)	Controlled Em. Factor (lb/VMT)	Emissions (lb/well pad, lb/stn, or lb/proj.)	Emissions (ton/veh. type)	Emissions (ton/const. site)
Improved & two-track road	Semi Trucks	60,000	6	2.6	16	25,997	1.65	26	334	334	0.24	4	49	49
Well Pad	Haul Trucks	45,000	6	2	12	25,997	1.47	18	229	338	0.21	3	33	49
	Pickup Trucks	7,000	6	2	12	25,997	0.70	8	109		0.10	1	16	
Pod (15 pads/pod)	Semi Trucks	60,000	6	1	6	1,733	1.65	10	9	27	0.24	1	1	4
	Haul Trucks	45,000	6	1	6	1,733	1.47	9	8		0.21	1	1	
	Pickup Trucks	7,000	6	3	18	1,733	0.70	13	11		0.10	2	2	
Poly Pipeline, < 3"	Haul Trucks	45,000	6	4	24	25,997	1.47	35	458	675	0.21	5	67	99
	Pickup Trucks	7,000	6	4	24	25,997	0.70	17	218		0.10	2	32	
Poly Pipeline, 12"	Haul Trucks	45,000	6	0.3	2	25,997	1.47	3	34	72	0.21	0	5	11
	Pickup Trucks	7,000	6	0.7	4	25,997	0.70	3	38		0.10	0	6	
Steel Pipeline, bstr to recip [a]	Semi Trucks	60,000	6	4	24	61	1.65	40	1	32	0.24	6	0	5
	Haul Trucks	45,000	6	40	240	61	1.47	352	11		0.21	51	2	
	Pickup Trucks	7,000	6	160	960	61	0.70	669	20		0.10	98	3	
Intrastate Pipeline, 36" diam. X 150 miles [b]	Semi Trucks	60,000	35 [c]	130 [d]	4,550 [e]		1.65	7,493	4	9	0.24	1,095	1	1
	Haul Trucks	45,000	35 [c]	130 [d]	4,550 [e]		1.47	6,679	3		0.21	976	0	
	Pickup Trucks	7,000	50 [c]	130 [d]	6,500 [e]		0.70	4,533	2		0.10	662	0	
Electric Line	Haul Trucks	45,000	6	1	6	25,997	1.47	9	114	223	0.21	1	17	33
	Pickup Trucks	7,000	6	2	12	25,997	0.70	8	109		0.10	1	16	
Booster Compressor Station	Semi Trucks	60,000	10	15	150	184	1.65	247	23	211	0.24	36	3	31
	Haul Trucks	45,000	10	48	480	184	1.47	705	65		0.21	103	9	
	Pickup Trucks	7,000	10	192	1,920	184	0.70	1,339	123		0.10	196	18	
Recip. Compressor Station	Semi Trucks	60,000	10	18.5	185	61	1.65	305	9	72	0.24	45	1	10
	Haul Trucks	45,000	10	48	480	61	1.47	705	21		0.21	103	3	
	Pickup Trucks	7,000	10	192	1,920	61	0.70	1,339	41		0.10	196	6	
								Subtotal	**1,994**	**1,994**			**291**	**291**

[a] Per recip compressor station. [b] To be installed in 2004. [c] Per day. [d] Number of days. [e] Total miles.

B.3.1.1.2.1 Road Dust Emissions (Continued)

Construction Site Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well or per Station	Miles Traveled per Well or per Station	Total # of Wells or Stations	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/veh. type)	Emissions (ton/proj. activity)	Controlled Em. Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/veh. type)	Emissions (ton/proj. activity)
Rig-up, Drilling, and Rig-down	Semi Rig Transport, Drill Rig	80,000	6	1	6	39,367	1.85	11	218	3,429	0.27	2	32	501
	Fuel Haul Truck	45,000	6	2	12	39,367	1.47	18	347		0.21	3	51	
	Mud Haul Truck, Water Hauling	60,000	6	7	42	39,367	1.65	69	1,361		0.24	10	199	
	Rig Crew	7,000	6	3	18	39,367	0.70	13	247		0.10	2	36	
	Co. Supervisor	7,000	6	8	48	39,367	0.70	33	659		0.10	5	96	
	Tool Pusher	7,000	6	6	36	39,367	0.70	25	494		0.10	4	72	
	Logger, Engr Truck	12,000	6	1	6	39,367	0.87	5	102		0.13	1	15	
Well Completion & Testing	Semi Casing	45,000	6	1	6	39,367	1.47	9	173	4,314	0.21	1	25	631
	Semi Completion, Unit Rig	80,000	6	1	6	39,367	1.85	11	218		0.27	2	32	
	Semi Fracing, Blender	20,000	6	1	6	39,367	1.06	6	125		0.16	1	18	
	Tubing Truck	45,000	6	1	6	39,367	1.47	9	173		0.21	1	25	
	Haul Cementer, Pump Truck	80,000	6	1	6	39,367	1.85	11	218		0.27	2	32	
	Haul Cementer, Cement Truck	60,000	6	1	6	39,367	1.65	10	194		0.24	1	28	
	Haul Completion, Equip Truck	20,000	6	1	6	39,367	1.06	6	125		0.16	1	18	
	Haul Perforators Logging Truck	12,000	6	1	6	39,367	0.87	5	102		0.13	1	15	
	Haul Fracing, Tank	45,000	6	2	12	39,367	1.47	18	347		0.21	3	51	
	Haul Fracing, Pump	20,000	6	2	12	39,367	1.06	13	251		0.16	2	37	
	Haul Welders	12,000	6	1	6	39,367	0.87	5	102		0.13	1	15	
	Haul Water Truck	60,000	6	9	54	39,367	1.65	89	1,750		0.24	13	256	
	Pickup Cementer, Engineer	7,000	6	1	6	39,367	0.70	4	82		0.10	1	12	
	Pickup Co. Supervisor	7,000	6	2	12	39,367	0.70	8	165		0.10	1	24	
	Pickup Miscellaneous Supplies	7,000	6	1	6	39,367	0.70	4	82		0.10	1	12	
	Pickup Roustabout Crew	12,000	6	2	12	39,367	0.87	10	204		0.13	2	30	
								Subtotal	**7,743**	**7,743**			**1,132**	**1,132**
								Total	**9,737**	**9,737**			**1,423**	**1,423**

B.3.1.1.2.2 Exhaust Emissions

Emission Factors for Road Traffic:

Vehicle		Emission Factors (g/mi)					
Type	Class	NO_x	PM_{10} [a,b]	$PM_{2.5}$ [a,b]	SO_x [a]	CO	VOCs
Light-Duty Gasoline Truck	LDGT2	1.01	0.10	0.08	0.11	11.64	0.75
Heavy-Duty Diesel Truck	HDDV	8.13	1.96	1.81	1.63	17.09	4.83

[a] Estimated using the EPA PART5 model (1995).
[b] Including tire and brake wear emissions.

Source: EPA, *AP-42*, Volume II, Appendix H-117, Table 3.1A.2 Light Duty Gasoline Powered Trucks II and Appendix H-259, Table 7.1.2 Heavy Duty Diesel Powered Vehicles (High Altitude; Model Year 1991-1997; 50,000 mileage) (6/30/95).

Emissions Estimation for Road Traffic:

Construction Site Destination	Vehicle		Round Trip Distance (mi)	# of Round Trips per Well Pad or per Station	Miles Traveled per Well Pad or per Station	Total # of Well Pads or Stations	Emissions (lb/well pad, lb/station, or lb/project)						Emissions (ton/vehicle type)						Emissions (ton/construction site)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Improved & Two-Track Road	Semi Trucks	HDDV	6	2.6	15.6	25,997	0.28	0.07	0.06	0.06	0.59	0.17	3.6	0.9	0.8	0.7	7.6	2.2	3.6	0.9	0.8	0.7	7.6	2.2
Well Pad	Haul Trucks	HDDV	6	2	12	25,997	0.22	0.05	0.05	0.04	0.45	0.13	2.8	0.7	0.6	0.6	5.9	1.7	3.1	0.7	0.6	0.6	9.9	1.9
	Pickup Trucks	LDGT2	6	2	12	25,997	0.03	0.00	0.00	0.00	0.31	0.02	0.3	0.0	0.0	0.0	4.0	0.3						
Pod (15 pads/pod)	Semi Trucks	HDDV	6	1	6	1,733	0.11	0.03	0.02	0.02	0.23	0.06	0.1	0.0	0.0	0.0	0.2	0.1						
	Haul Trucks	HDDV	6	1	6	1,733	0.11	0.03	0.02	0.02	0.23	0.06	0.1	0.0	0.0	0.0	0.2	0.1	0.2	0.0	0.0	0.0	0.8	0.1
	Pickup Trucks	LDGT2	6	3	18	1,733	0.04	0.00	0.00	0.00	0.46	0.03	0.0	0.0	0.0	0.0	0.4	0.0						
Poly Pipeline, < 3"	Haul Trucks	HDDV	6	4	24	25,997	0.43	0.10	0.10	0.09	0.90	0.26	5.6	1.3	1.2	1.1	11.8	3.3	6.3	1.4	1.3	1.2	19.8	3.8
	Pickup Trucks	LDGT2	6	4	24	25,997	0.05	0.01	0.00	0.01	0.62	0.04	0.7	0.1	0.1	0.1	8.0	0.5						
Poly Pipeline, 12"	Haul Trucks	HDDV	6	0.3	1.8	25,997	0.03	0.01	0.01	0.01	0.07	0.02	0.4	0.1	0.1	0.1	0.9	0.2	0.5	0.1	0.1	0.1	2.3	0.3
	Pickup Trucks	LDGT2	6	0.7	4.2	25,997	0.01	0.00	0.00	0.00	0.11	0.01	0.1	0.0	0.0	0.0	1.4	0.1						
Steel Pipeline, Recip Compressor to Pipeline [a]	Semi Trucks	HDDV	6	4	24	61	0.43	0.10	0.10	0.09	0.90	0.26	0.0	0.0	0.0	0.0	0.0	0.0						
	Haul Trucks	HDDV	6	40	240	61	4.30	1.04	0.96	0.86	9.04	2.56	0.1	0.0	0.0	0.0	0.3	0.1	0.2	0.0	0.0	0.0	1.1	0.1
	Pickup Trucks	LDGT2	6	160	960	61	2.14	0.21	0.16	0.24	24.63	1.58	0.1	0.0	0.0	0.0	0.8	0.0						
Intrastate Pipeline, 36" X 150 miles [b]	Semi Trucks	HDDV	35 [c]	130 [d]	4,550 [e]		81.55	19.67	18.13	16.34	171.43	81.55	0.0	0.0	0.0	0.0	0.1	0.0						
	Haul Trucks	HDDV	35 [c]	130 [d]	4,550 [e]		81.55	19.67	18.13	16.34	171.43	81.55	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.1
	Pickup Trucks	LDGT2	35 [c]	130 [d]	6,500 [e]		14.47	1.41	1.08	1.61	166.78	14.47	0.0	0.0	0.0	0.0	0.1	0.0						
Electric Line	Haul Trucks	HDDV	6	1	6	25,997	0.11	0.03	0.02	0.02	0.23	0.06	1.4	0.3	0.3	0.3	2.9	0.8	1.7	0.4	0.3	0.3	6.9	1.1
	Pickup Trucks	LDGT2	6	2	12	25,997	0.03	0.00	0.00	0.00	0.31	0.02	0.3	0.0	0.0	0.0	4.0	0.3						
Booster Compressor Station	Semi Trucks	HDDV	10	15	150	184	2.69	0.65	0.60	0.54	5.65	1.60	0.2	0.1	0.1	0.0	0.5	0.1						
	Haul Trucks	HDDV	10	48	480	184	8.60	2.08	1.91	1.72	18.08	5.11	0.8	0.2	0.2	0.2	1.7	0.5	1.4	0.3	0.3	0.3	6.7	0.9
	Pickup Trucks	LDGT2	10	192	1920	184	4.28	0.42	0.32	0.48	49.26	3.17	0.4	0.0	0.0	0.0	4.5	0.3						
Recip Compressor Station	Semi Trucks	HDDV	10	18.5	185	61	3.32	0.80	0.74	0.66	6.97	1.97	0.1	0.0	0.0	0.0	0.2	0.1						
	Haul Trucks	HDDV	10	48	480	61	8.60	2.08	1.91	1.72	18.08	5.11	0.3	0.1	0.1	0.1	0.6	0.2	0.5	0.1	0.1	0.1	2.3	0.3
	Pickup Trucks	LDGT2	10	192	1920	61	4.28	0.42	0.32	0.48	49.26	3.17	0.1	0.0	0.0	0.0	1.5	0.1						
												Subtotal	**18**	**4**	**4**	**3**	**58**	**11**	**18**	**4**	**4**	**3**	**58**	**11**

[a] Per recip compressor station. [b] To be installed in 2004. [c] Per day. [d] Number of days. [e] Total miles.

B.3.1.1.2.2 Exhaust Emissions (Continued)

Construction Site Activity	Vehicle Type	Vehicle Class	Round Trip Distance (mi)	# of Round Trips per Well or per Station	Miles Traveled per Well or per Station	Total # of Wells or Stations	Emissions (lb/well)						Emissions (ton/vehicle type)						Emissions (ton/project activity)					
							NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Rig-up, Drilling, and Rig-down	Semi Rig Transport	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3	38.9	9.0	8.2	7.5	109.0	23.5
	Fuel Haul Truck	HDDV	6	2	12	39,367	0.22	0.05	0.05	0.04	0.45	0.13	4.2	1.0	0.9	0.8	8.9	2.5						
	Mud Haul Truck, Water	HDDV	6	7	42	39,367	0.75	0.18	0.17	0.15	1.58	0.45	14.8	3.6	3.3	3.0	31.1	8.8						
	Rig Crew	LDGT2	6	3	18	39,367	0.04	0.00	0.00	0.00	0.46	0.03	0.8	0.1	0.1	0.1	9.1	0.6						
	Co. Supervisor	LDGT2	6	8	48	39,367	0.11	0.01	0.01	0.01	1.23	0.08	2.1	0.2	0.2	0.2	24.2	1.6						
	Tool Pusher	HDDV	6	6	36	39,367	0.65	0.16	0.14	0.13	1.36	0.38	12.7	3.1	2.8	2.5	26.7	7.5						
	Logger, Engr Truck	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
Well Completion & Testing	Semi Casing Haulers	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3	54.0	12.9	11.8	10.7	123.4	32.2
	Semi Completion, Unit Rig	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Semi Fracing, Blender	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Tubing Truck	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Cementer, Pump Truck	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Cementer, Cement Truck	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Completion, Equip Truck	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Service Tools	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Perforators Logging Truck	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Fracing, Tank	HDDV	6	2	12	39,367	0.22	0.05	0.05	0.04	0.45	0.13	4.2	1.0	0.9	0.8	8.9	2.5						
	Haul Fracing, Pump	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Welders	HDDV	6	1	6	39,367	0.11	0.03	0.02	0.02	0.23	0.06	2.1	0.5	0.5	0.4	4.4	1.3						
	Haul Water Truck	HDDV	6	10	60	39,367	1.08	0.26	0.24	0.22	2.26	0.64	21.2	5.1	4.7	4.2	44.5	12.6						
	Pickup Cementer, Engineer	LDGT2	6	1	6	39,367	0.01	0.00	0.00	0.00	0.15	0.01	0.3	0.0	0.0	0.0	3.0	0.2						
	Pickup Co. Supervisor	LDGT2	6	2	12	39,367	0.03	0.00	0.00	0.00	0.31	0.02	0.5	0.1	0.0	0.1	6.1	0.4						
	Pickup Miscellaneous Supplies	LDGT2	6	1	6	39,367	0.01	0.00	0.00	0.00	0.15	0.01	0.3	0.0	0.0	0.0	3.0	0.2						
	Pickup Roustabout Crew	HDDV	6	2	12	39,367	0.22	0.05	0.05	0.04	0.45	0.13	4.2	1.0	0.9	0.8	8.9	2.5						
												Subtotal	**93**	**22**	**20**	**18**	**232**	**56**	**93**	**22**	**20**	**18**	**232**	**56**
												Total	**111**	**26**	**24**	**22**	**290**	**67**	**111**	**26**	**24**	**22**	**290**	**67**

B.3.1.2 Emission Inventories for the Wyoming CBM Project Operational Activities under the Proposed Action (Alt. 1)

B.3.1.2.1 Compressors - Natural Gas Fired

Emission Factors for Compressors:

Compressor			Make	Model	Capacity (hp)	Emission Factors (g/hp-hr)					
						NOx	PM_{10} [d,e]	SO_2 [d]	CO	VOCs	HCHO [f]
Booster	Rich Burn [a]	50% [c]	Caterpillar	G3408	400	1.00	6.6E-02	2.0E-03	2.00	1.00	0.05
	Lean Burn [b]	50% [c]	Waukesha	F18GL	400	1.00	6.6E-02	2.0E-03	1.50	0.50	0.20
Recip	Rich Burn [a]	50% [c]	Waukesha	7044GSI	1680	1.00	6.6E-02	2.0E-03	2.00	1.00	0.05
	Lean Burn [b]	25% [c]	Caterpillar	G3516LE	1340	1.50	3.4E-02	2.0E-03	0.50	1.00	0.07
		25% [c]	Caterpillar	G3608	2225	0.70	3.4E-02	2.0E-03	0.30	1.00	0.07

[a] Emission factors for compressors equipped with NSCR catalyst (Source: C. Martinez [WGR], e-mail to K. Chun [ANL] on 4/10/01 except for PM_{10}, SO_2, and HCHO).

[b] Emission factors source: B. Dailey [WY DEQ], e-mail to P. Beels [BLM] on 8/28/01.

[c] Source: B. Dailey [WY DEQ], e-mail to P. Beels [BLM] on 8/28/01.

[d] Source: EPA, *AP-42* , Volume I, Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-2 & 3.2-3 (7/00).
Assumed a fuel consumption rate of 7,500 Btu/bhp-hr (Source: C. Martinez [WGR], e-mail to K. Chun [ANL] on 4/10/01).

[e] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

[f] Emission factors source: B. Dailey [WY DEQ], e-mail to P. Beels [BLM] on 8/28/01.

Emissions Estimation for Compressors:

Compressor Station	Capacity Required [a] (hp/MMCFD)	Total Gas Production Volume [b] (MMCFD/ project)	Operating Hours per Year	Total Emissions (ton/project)				
				NOx	PM_{10}	SO_2	CO	VOCs
Booster	160	19,149	8,760	29,584	1,954	59	51,772	22,188
Recip	183	19,149	8,760	35,529	1,692	68	40,604	33,837
			Total	**65,113**	**3,646**	**127**	**92,376**	**56,025**

[a] Compressor engine capacity required to transport unit volume of CBM (Source: D. Keanini [WGR], e-mail to K. Chun [ANL] on August 29, 2001).

[b] Shifted up 1 year from the data provided by J. Jones' Watershed Compression Rev 60401.xls sent via e-mail from D. Keanini (WGR) to K. Chun (ANL) on June 6, 2001.

B.3.1.2.2 Dehydrators

Emission Factors for Dehydrators:

Unit	NO_x	PM_{10} [a]	SO_2	CO	VOCs
lb/MMscf	100	7.6	0.6	84	5.5
lb/MMBtu [b]	9.80E-02	7.45E-03	5.88E-04	8.24E-02	5.39E-03

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

[b] Assumed a fuel heating value of 1,020 Btu/scf.

Source: EPA, *AP-42* , Volume I, Section 1.4 Natural Gas Combustion (7/98).

Emissions Estimation for Dehydrators:

Compressor Station	Total Gas Production Rate (MMCFD-yr)	Firing Rate [a] (Btu/hr/MMCFD)	Operating Hours per Year [b]	Total Emissions (ton/project)				
				NOx	PM_{10} [c]	SO_2	CO	VOCs
Recip	19,149	25,000	8,760	206	16	1	173	11

[a] D. Keanini (WGR), e-mail to K. Chun (ANL) on 5/24/01.

[b] Assumed conservatively that a dehydrator operates year-round.

[c] Emissions of $PM_{2.5}$ were assumed to be the same as those for PM_{10}.

B.3.1.2.3 Compressor Station Visits for Inspection and Repair

B.3.1.2.3.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Compressor Station	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	# of Stations Visited per Day	# of Visits per Station per Year [a]	Miles Traveled per Station per Year	Total # of Operating Station-Yr	PM_{10}			$PM_{2.5}$		
									Em. Factor (lb/VMT)	Emissions		Em. Factor (lb/VMT)	Emissions	
										(lb/stn-yr)	(ton/proj.)		(lb/stn-yr)	(ton/proj.)
Inspection Visits for Compressor Stations	Booster	Pickup Truck	7,000	20	15	182.5	243	1,604	0.70	169.7	136	0.10	24.8	20
	Recip	Pickup Truck	7,000	20	15	365	487	529	0.70	339.4	90	0.10	49.6	13
								Total			**226**			**33**

[a] Booster and reciprocating compressor stations are visited using a 200-hp pickup truck (4 wheels) every other day and every day, respectively (per D. Keanini [WGR] e-mail to K. Chun [ANL] on 5/24/01).

B.3.1.2.3.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Compressor Station	Vehicle		Round Trip Distance (mi/day)	# of Stations Visited per Day [a]	# of Visits per Station per Year [a]	Miles Traveled per Station per Year	Total # of Operating Station-Yr	Emissions											
		Type	Class						(lb/station-yr)						(ton/project)					
									NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Inspection Visits for Compressor Stations	Booster	Pickup Truck	LDGT2	20	15	182.5	243	1,604	0.54	0.05	0.04	0.06	6.24	0.40	0.4	0.0	0.0	0.0	5.0	0.3
	Recip	Pickup Truck	LDGT2	20	15	365	487	529	1.08	0.11	0.08	0.12	12.49	0.80	0.3	0.0	0.0	0.0	3.3	0.2
														Total	**0.7**	**0.1**	**0.1**	**0.1**	**8.3**	**0.5**

[a] Per D. Keanini (WGR) e-mail to K. Chun (ANL) on 5/24/01.

B.3.1.2.4 Well Workover

B.3.1.2.4.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells Drilled	PM_{10}			$PM_{2.5}$		
							Emission Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/proj.)	Emission Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/proj.)
Well Workover [a]	Bobtail Truck [b]	40,000 [b]	50	1	50	39,367	1.40	70	1,378	0.20	10	201

[a] Performed once in the first year of well operation for one day.
[b] A 400-hp bobtail truck operating 10 hours/day with a fuel consumption rate of 60 gpd (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).

B.3.1.2.4.2 Exhaust Emissions - On-site

Emission Factors for Industrial Engines: See Section B.3.1.1.1.2.

Emissions Estimation for Industrial Engines:

Activity	Equipment	Capacity (hp)	Operating Hours per Day	Total # of Wells Drilled	Emissions (lb/well)					Emissions (ton/project)				
					NO_x	PM_{10} [c]	SO_x	CO	VOCs	NO_x	PM_{10} [c]	SO_x	CO	VOCs
Well Workover [a]	Truck-Mounted Unit [b]	400	10	39,367	124	9	8	27	10	2,441	173	161	526	200

[a] Performed once in the first year of well operation for one day.
[b] A 400-hp bobtail truck operating 10 hours/day with a fuel consumption rate of 60 gpd (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

B.3.1.2.4.2 Exhaust Emissions - On-road

Emission Factors for Road Traffic: See Section B.3.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi)	Round Trip Per Well	Miles Traveled per Well	Total # of Wells Drilled	Emissions (lb/well)						Emissions (ton/project)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Well Workover [a]	Bobtail Truck	HDDV	50	1	50	39,367	0.9	0.2	0.2	0.2	1.9	0.5	18	4	4	4	37	10

[a] Performed once in the first year of well operation for one day.

B.3.1.2.5 Well and Pipeline Visits for Inspection and Repair

B.3.1.2.5.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	# of Wells Visited per Day [a]	# of Visits per Well per Year [b]	Miles Traveled per Well per Year	Total # of Operating Well-Yr	PM_{10}			$PM_{2.5}$		
								Em. Factor (lb/VMT)	Emissions (lb/well-yr)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (lb/well-yr)	Emissions (ton/proj.)
Visits for Inspection and Repair	200-hp Pickup	7,000	75	120	12	7.5	221,416	0.70	5.2	579	0.10	0.8	85

[a] Per D. Gomendi (WGR) e-mail to K. Chun (ANL) on 5/11/01.
[b] Wells are visited once per month (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).

B.3.1.2.5.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi/day)	# of Wells Visited per Day [a]	# of Visits per Well per Year [b]	Miles Traveled per Well per Year	Total # of Operating Well-Yr	Emissions (lb/well-yr)						Emissions (ton/project)					
	Type	Class						NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Visits for Inspection and Repair	200-hp Pickup	LDGT2	75	120	12	7.5	221,416	0.017	0.002	0.001	0.002	0.192	0.012	1.8	0.2	0.1	0.2	21.3	1.4

[a] Per D. Gomendi (WGR) e-mail to K. Chun (ANL) on 5/11/01.
[b] Wells are visited once per month (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).

B.3.1.3 Emission Inventories for the Wyoming CBM Project Maintenance Activities under the Proposed Action (Alt. 1)

B.3.1.3.1 Road Maintenance - Heavy Equipment

Given Data:

Maintenance [a]	Equipment/Vehicle			Road Length Worked On per Day (miles)	# of Operating Hours per Day
	Type	Fuel	Capacity (hp)		
Summer	Heavy Equipment [b]	Diesel	135 [c]	6	10
	Commuting Vehicle	Gasoline	225	6 [d]	1 [e]
Winter	Heavy Equipment [b]	Diesel	135 [c]	5	10
	Commuting Vehicle	Gasoline	225	6 [d]	1.5 [e]

[a] Road maintenance would be made twice in summer and once in winter every year (per D. Keanini [WGR] e-mail to K. Chun [ANL] on 5/30/01).
[b] Assume a motor grader (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] Revised from 100 hp to 135 hp (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[d] Average round trip mileage on unpaved road.
[e] Assume one round trip per day.

Estimation of Total and Cumulative Length of Roads for the Revised Proposed Action:

	Proposed Action	
	Original [a]	Revised
# of Well Pads	32,009	25,997 [b]
Length of Improved Roads (mi)	11,143	9,050
Length of Two-Track Roads (mi)	17,604	14,298
Total Length of Roads (mi)	28,747	23,348
Cumulative Length of Roads [c] (mi-yr)		131,317

[a] Per P. Beels (BLM) e-mail to K. Chun (ANL) on 12/20/00.
[b] Per P. Beels (BLM) e-mail to K. Chun (ANL) on 8/17/01.
[c] = (total length of roads) *(total no. of operating well-yr)/(total no. of drilled wells).

Estimation of Total Operation Days and Hours:

Season	# of Operation per Year	Cumulative Length of Roads (mi-yr)	Road Length Worked On (mi/day)	# of Operating Hours per Day	Total # of Operating Days	Total # of Operating Hours
Summer	2	131,317	6	10	43,772	437,723
Winter	1	131,317	5	10	26,263	262,634
				Total	**70,036**	**700,356**

B.3.1.3.1.1 Fugitive Dust Emissions

Emission Factors for Grader:

Pollutant	Emission Factor Equation (lb/VMT)	S [a] (mph)	Emission Factor (lb/VMT)
PM_{10}	$E = (0.6)(0.051)\ S^2$	5	0.765
$PM_{2.5}$	$E = (0.031)(0.04)\ S^{2.5}$	5	0.069

[a] Assumed a mean vehicle speed (S) of 5 mph.

Source: EPA, *AP-42* , Volume I, Section 11.9 Western Surface Coal Mining (10/98).

Emissions Estimation for Grader:

Activity	Equipment	Total # of Operating Hours [a]	Mean Vehicle Speed (mph)	Total Miles Maintained	PM_{10}		$PM_{2.5}$	
					Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Maintenance	Grader	420,214	5	2,101,069	0.765	804	0.069	73

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.

B.3.1.3.1.2 Exhaust Emissions

Emission Factors for Grader:

Equipment	Emission Factors (g/hp-hr)				
	NO_x	PM_{10} [a]	SO_2	CO	VOC
Grader	7.14	0.63	0.87	1.54	0.36

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

Source: EPA, *AP-42* , Volume II, Section II-7 Heavy-Duty Construction Equipment (1985).

Emissions Estimation for Grader:

Activity	Vehicle Type	Capacity (hp)	Total # of Operating Hours [a]	Emissions									
				(lb/hr)					(ton/project)				
				NO_x	PM_{10} [b]	SO_x	CO	VOC	NO_x	PM_{10} [b]	SO_x	CO	VOC
Road Maintenance	Grader	135	420,214	2.13	0.19	0.26	0.46	0.11	446	39	55	96	23

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.
[b] Emissions of $PM_{2.5}$ were assumed to be the same as those for PM_{10}.

B.3.1.3.2 Road Maintenance - Commuting Vehicles

B.3.1.3.2.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	PM_{10}		$PM_{2.5}$	
						Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Maintenance	Pickup Truck	7,000	6	70,036	420,214	0.70	147	0.10	21

B.3.1.3.2.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	Emissions (ton/project)					
	Type	Class				NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOC
Road Maintenance	Pickup Truck	LDGT2	6	70,036	420,214	0.47	0.05	0.03	0.05	5.39	0.35

B.3.1.3.3 Maintenance Visits to Compressor Stations

B.3.1.3.3.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Compressor Station	# of Stations	Cumulative # of Station-Yr	# of Visits per Year [a]	Total # of Round Trips	Round Trip Distance (mi)	Total Miles Traveled	PM_{10}		PM2.5	
										Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Maintenance Visits to Compressor	Pickup Truck	7,000	Booster	184	1,604	6	9,626	20	192,513	0.70	67	0.10	10
			Recip	61	529	6	3,174	20	63,473	0.70	22	0.10	3
								Total	**255,985**		**89**		**13**

[a] Maintenance visit frequency is approximately once every 60 days.
[b] Maintenance on compressor engines is mainly for oil changes.

B.3.1.3.3.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Compressor Station	# of Stations	Cumulative # of Station-Yr	# of Visits per Year	Total # of Round Trips	Round Trip Distance (mi)	Total Miles Traveled	Emissions (ton/project)					
	Type	Class								NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Maintenance Visits to Compressor Stations	Pickup Truck	LDGT2	Booster	184	1,604	6	9,626	20	192,513	0.21	0.02	0.02	0.02	2.47	0.16
			Recip	61	529	6	3,174	20	63,473	0.07	0.01	0.01	0.01	0.81	0.05
								Total	**255,985**	**0.28**	**0.03**	**0.02**	**0.03**	**3.28**	**0.21**

B.3.1.4 Emission Inventories for the Wyoming CBM Project Reclamation Activities under the Proposed Action (Alt. 1)

B.3.1.4.1 Reclamation of Roads - Heavy Equipment

Given Data: Compressor stations, pipelines, and electric utilities will be abandoned intact.

Type	Equipment/Vehicle				Miles/Day Worked On or Round Trip Mileage	# Hrs/Day
	Type	Number	Fuel	Engine Capacity (hp)		
Roads	Heavy Equipment	1	Diesel	80	6	10
	Commuting Vehicle	1	Gasoline	225	6	1.5
Wells [a]	Heavy Equipment	1	Diesel	100	N/A	10
	Commuting Vehicle	1	Gasoline	225	6	2

[a] Assumed ½ day with a blade and ½ day with a tractor for reseeding per well at time of abandonment.

Estimation of Total Lengths of Roads to be Built and to be Reclaimed for the Project Period (2002-2011) for the Revised Proposed Action:

	Proposed Action	
	Original [a]	Revised
# of Well Pads	32,009	25,997 [b]
Length of Improved Roads (mi)	11,143	9,050
Length of Two-Track Roads (mi)	17,604	14,298
Total Length of Roads (mi)	28,747	23,348
Length of Roads to be Reclaimed [c] (mi)		9,469

[a] Per P. Beels (BLM) e-mail to K. Chun (ANL) on 12/20/00.
[b] Per D. Keanini (WGR) e-mail to K. Chun (ANL) on 6/7/01 and R. Bell (Greystone) e-mail to K. Chun (ANL) on 6/15/01.
[c] Average well life is 7 years, so it was assumed that the roads would be reclaimed 7 years after their construction.
Used the equation = (total length of roads) * (total no. of well pads built from 2002 to 2004) / (total no. of well pads built from 2002 to 2011).

Estimation of Total Reclamation Days and Hours:

Length of Roads to be Reclaimed (mi)	Road Length Worked on (mi/day)	# of Operating Hours per Day	Total # of Operating Days	Total # of Operating Hours
9,469	6	10	1,578	15,782

B.3.1.4.1.1 Fugitive Dust Emissions

Emission Factors for Grader: See Section B.3.1.3.1.1.

Emissions Estimation for Grader:

Activity	Equipment	Total # of Operating Hours [a]	Mean Vehicle Speed (mph)	Total Miles Reclaimed	PM_{10}		$PM_{2.5}$	
					Em. Factor (lb/VMT)	Emissions (tons/proj.)	Em. Factor (lb/VMT)	Emissions (tons/proj.)
Road Reclamation	Grader	9,469	5	47,347	0.765	18	0.069	2

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.

B.3.1.4.1.2 Exhaust Emissions

Emission Factors for Grader: See Section B.3.1.3.1.2.

Emissions Estimation for Grader:

Activity	Vehicle Type	Capacity (hp)	Total # of Operating Hours [a]	Emissions									
				(lb/hr)					(ton/project)				
				NO_x	PM_{10} [b]	SO_x	CO	VOCs	NO_x	PM_{10} [b]	SO_x	CO	VOCs
Road Reclamation	Grader	80	9,469	1.26	0.11	0.15	0.27	0.06	6	1	1	1	0

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.
[b] Emissions of $PM_{2.5}$ were assumed to be the same as those for PM_{10}.

B.3.1.4.2 Reclamation of Roads - Commuting Vehicles

B.3.1.4.2.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	PM_{10}		$PM_{2.5}$	
						Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Reclamation	Pickup Truck	7,000	6	1,578	9,469	0.70	3	0.10	0

B.3.1.4.2.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	Emissions (ton/project)					
	Type	Class				NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Road Reclamation	Pickup Truck	LDGT2	6	1,578	9,469	0.01	0.00	0.00	0.00	0.12	0.01

B.3.1.4.3 Reclamation of Wells - Heavy Equipment

Estimation of Total Number of Wells to be Reclaimed for the Project Period (2002-2011):

Total Number of Wells to be Reclaimed [a] = 15,035

[a] Average well life is 7 years, so it was assumed that the wells would be reclaimed 7 years after their completion.

Estimation of Total Reclamation Days and Hours:

Equipment	# of Wells to be Reclaimed	# of Operating Hours per Day	Total # of Operating Days	Total # of Operating Hours
Grader [a]	15,035	10	15,035	150,350

[a] Assumed that a grader is working ½ day as a blade and ½ day as a tractor.

B.3.1.4.3.1 Fugitive Dust Emissions

Emission Factor for Grader: See Section B.3.1.3.1.1.

Emissions Estimation for Grader:

Activity	Equipment	Total # of Operating Hours [a]	Mean Vehicle Speed (mph)	Total Miles Reclaimed	PM_{10}		$PM_{2.5}$	
					Em. Factor (lb/VMT)	Emissions (tons/proj.)	Em. Factor (lb/VMT)	Emissions (tons/proj.)
Well Reclamation	Grader	90,210	5	451,050	0.765	173	0.069	16

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.

B.3.1.4.3.2 Exhaust Emissions

Emission Factor for Grader: See Section B.3.1.3.1.2.

Emissions Estimation for Grader:

Activity	Vehicle Type	Capacity (hp)	Total # of Operating Hours [a]	Emissions (lb/hr)					Emissions (ton/project)				
				NO_x	PM_{10} [b]	SO_x	CO	VOCs	NO_x	PM_{10} [b]	SO_x	CO	VOCs
Well Reclamation	Grader	100	90,210	1.57	0.14	0.19	0.34	0.08	71	6	9	15	4

[a] Assumed that a grader would operate for 60% of the time, considering hours for preparation and closing of the shift, lunch break, and other extra activities.
[b] Emissions of $PM_{2.5}$ were assumed to be same as those for PM_{10}.

B.3.1.4.4 Reclamation of Wells - Commuting Vehicles

B.3.1.4.4.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	PM_{10}		$PM_{2.5}$	
						Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Well Reclamation	Pickup Truck	7,000	6	15,035	90,210	0.70	31	0.10	5

B.3.1.4.4.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.3.1.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type		Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	Emissions (ton/project)					
	Type	Class				NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Well Reclamation	Pickup Truck	LDGT2	6	15,035	90,210	0.10	0.01	0.01	0.01	1.16	0.07

B.3.2 Emission Inventories for the Wyoming Conventional O&G Project Activities under the Proposed Action (Alt. 1)

B.3.2.1 Emission Inventory for the Wyoming Conventional O&G Project Construction Activities under the Proposed Action (Alt. 1)

B.3.2.1.1 Heavy Equipment

B.3.2.1.1.1 Fugitive Dust Emissions

Emission Factors for Construction Activities:

			Reference
E =	1.2	tons of TSP/acre/month	EPA, *AP-42* , Volume I, Section 13.2.3 Heavy Construction Operations (1/95)
PM_{10} =	26	% of TSP	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
$PM_{2.5}$ =	15	% of PM_{10}	G. Muleski (MRI), e-mail to A. Oh (ANL) on 5/15/01
CE = control efficiency for watering	50	%	EPA, *Control of Open Fugitive Dust Sources* , Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Construction Activities:

Area Disturbed for Oil Wells	Average Value per Well [a]				Total # of Wells	Total Area (acre)	Emissions					
							(lb/well)			(ton/project)		
	Length (mi)	Width (ft)	Area (acre)	Av. # of Days to Complete			TSP	PM_{10}	$PM_{2.5}$	TSP	PM_{10}	$PM_{2.5}$
Improved Road	1.0	40 [b]	4.8	1 [c]	3,200	15,515	194	50	8	310	81	12
Well Pad			4.0	3	3,200	12,800	768	200	30	768	200	30
					Total	**28,315**				**1,078**	**280**	**42**

[a] Source: C. Martinez (WGR), "Basic Data for Emission Estimation," e-mail to K. Chun (ANL) on 3/30/01.
[b] Assumed the same width of 40 ft as used for CBM wells.
[c] Duration of disturbance (clearing, digging, layout, and covering) for a given segment of road construction is assumed to be one day.

B.3.2.1.1.2 Exhaust Emissions

Emission Factors for Construction Equipment:

Equipment	Emission Factors (g/hp-hr)					Equipment Category in AP-42 [a]
	NO_x	PM_{10}	SO_2	CO	VOCs	
Dozer	7.81	0.69	0.85	2.15	0.75	Track-Type Tractor
Blade	7.14	0.63	0.87	1.54	0.36	Motor Grader

[a] Emission factors for the listed equipment category were assumed for equipment used in PRBO&G project construction.

Source: EPA, *AP-42* , Volume II, Section II-7 Heavy-Duty Construction Equipment (9/85).

Emissions Estimation for Construction Equipment:

Construction Site	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Oper. Hrs per Day	# of Oper. Days per Well	# of Oper. Hrs per Well	# of Wells	Emissions (lb/well)					Emissions (ton/equipment type)					Emissions (ton/construction site)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_2	CO	VOCs
Improved & Two-Track Road	Blade	100	1	75	10	2	20	3,200	24	2	3	5	1	38	3	5	8	2	38	3	5	8	2
Well Pad	Blade	100	1	75	10	3	30	3,200	35	3	4	8	2	57	5	7	12	3	156	14	18	40	12
	Dozer	150	1	80	10	3	30	3,200	62	5	7	17	6	99	9	11	27	10					
													Subtotal	**194**	**17**	**22**	**48**	**14**	**194**	**17**	**22**	**48**	**14**

[a] Emission factor for $PM_{2.5}$ was assumed to be the same as that for PM_{10}.

Emission Factors for Industrial Engines and Flaring:

Emission Source	Fuel Type	Emission Factors					
		Unit	NO_x	PM_{10}	SO_x	CO	VOCs
Industrial Engine ≤ 600 hp [a]	Diesel	lb/hp-hr	3.10E-02	2.20E-03	2.05E-03	6.68E-03	2.51E-03
Industrial Engine > 600 hp [b]	Diesel [c]	lb/hp-hr	2.40E-02	7.00E-04	3.24E-03	5.50E-03	6.42E-04
Flaring [d,e]	Natural Gas	lb/MMCF	69	7.6 [f]	0.6 [f]	377	64

[a] Source: EPA, *AP-42* , Volume I, Section 3.3 Gasoline and Diesel Industrial Engines (10/96).
[b] Source: EPA, *AP-42* , Volume I, Section 3.4 Large Stationary Diesel and All Stationary Dual-Fuel Engines (10/96).
[c] Assume a sulfur content of 0.4%.
[d] Source: EPA, *AP-42* , Volume I, Section 13.5 Industrial Flares (9/91).
[e] Assumed a fuel heating value of 1,020 Btu/scf.
[f] Source: EPA, *AP-42* , Volume I, Section 1.4 Natural Gas Combustion (7/98).

Emissions Estimation for Industrial Engines and Flaring:

Construction Site Activity	Equipment Type	Capacity (hp)	# of Units	Av. Load Factor (%)	# of Operating Hours per Day	# of Operating Days per Well	# of Operating Hours per Well	# of Wells	Emissions (lb/well)					Emissions (ton/equipment type)					Emissions (ton/project activity)				
									NO_x	PM_{10} [a]	SO_2	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs
Rig-up, Drilling, and Rig-down	Main Deck	1,000	3	70	24	16	384	3,200	19,354	564	2,610	4,435	517	30,966	903	4,175	7,096	828	35,965	1,258	4,506	8,174	1,233
	Auxiliary Pump	600	1	80	8	15	120	3,200	1,786	127	118	385	145	2,857	203	189	616	232					
	Generators	150	2	75	24	8	192	3,200	1,339	95	89	289	109	2,143	152	142	462	174					
Well Completion & Testing	Main Deck	600	1	50	11	5	55	3,200	512	36	34	110	41	818	58	54	176	66	1,262	95	75	1,003	221
	Auxiliary Pump	225	1	80	8	2	16	3,200	89	6	6	19	7	143	10	9	31	12					
	Power Swivel	150	1	75	8	2	16	3,200	56	4	4	12	5	89	6	6	19	7					
	Equipment Type	**Capacity (kw)**	**Av. # of Wells Served**	**Average Load Factor [b] (%)**	**# of Operating Hours per Day**	**Av. # of Operating Days**	**# of Operating Hours per Well**	**# of Wells**															
	Field Generators for Pumps & Lighting	40	1	75	12	3	36	3,200	45	3	3	10	4	72	5	5	15	6					
	Emission Source	**Average Volume Flared (MCFD/day/well)**			**Average of Days of Continuous Flaring**			**# of Wells**															
	Flaring of Natural Gas	60			21			3,200	87	10	1	476	81	140	15	1	761	130					
													Subtotal	**37,228**	**1,353**	**4,581**	**9,176**	**1,454**	**37,228**	**1,353**	**4,581**	**9,176**	**1,454**
													Total	**37,421**	**1,370**	**4,604**	**9,224**	**1,468**	**37,421**	**1,370**	**4,604**	**9,224**	**1,468**

[a] Emissions of $PM_{2.5}$ was assumed to be the same as those for PM_{10}.
[b] Source: D. Gomendi (WGR), e-mail to K. Chun (ANL) on 5/11/01.

B.3.2.1.2 Commuting Vehicles

B.3.2.1.2.1 Road Dust Emissions

Emission Factors for Road Traffic:

$$E\ (lb/VMT) = \frac{k\ (s/12)^a\ (W/3)^b}{(M/0.2)^c}$$

Parameter	PM_{10}	$PM_{2.5}$
k	2.6	0.38
a	0.8	0.8
b	0.4	0.4
c	0.3	0.3

Source: EPA, *AP-42*, Volume I, Section 13.2.2 Unpaved Roads (9/98).

Function/Variable Description	Assumed Value	Reference
E = size-specific emission factor (lb/VMT)		
s = surface material silt content (%)	5.1	EPA, *AP-42*, Volume I, Section 13.2.2 Unpaved Roads (9/98)
W = mean vehicle weight (tons)	Listed in the table below	
M = surface material moisture content (%)	0.2	default value in EPA, *AP-42*, Volume I, Section 13.2.2 Unpaved Roads (9/98)
CE = control efficiency for watering (%)	50	EPA, *Control of Open Fugitive Dust Sources*, Section 5.3.1 Watering of Unpaved Surfaces (1988)

Emissions Estimation for Road Traffic:

Construction Site Destination	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/veh. type)	Emissions (ton/const. site)	Controlled Em. Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/veh. type)	Emissions (ton/const. site)
Improved & Two-Track Road	Semi Trucks	65,000	2	47	94	3,200	1.70	160	256	262	0.25	23	37	38
	Pickup Trucks	7,000	2	3	6	3,200	0.70	4	7		0.10	0.6	1.0	
Well Pad	Semi Trucks	65,000	2	5	10	3,200	1.70	17	27	36	0.25	2.5	4.0	5
	Pickup Trucks	7,000	2	4	8	3,200	0.70	6	9		0.10	0.8	1.3	
Other Construction Activities	Semi Trucks	80,000	2	2	4	3,200	1.85	7	12	23	0.27	1.1	1.7	3
	Haul Trucks	45,000	2	2	4	3,200	1.47	6	9		0.21	0.9	1.4	
	Pickup Trucks	7,000	2	1	2	3,200	0.70	1.4	2.2		0.10	0.2	0.3	
								Subtotal		**322**				**47**

B.3.2.1.2.1 Road Dust Emissions (Continued)

Construction Site Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	PM_{10}				$PM_{2.5}$			
							Controlled Em. Factor (lb/VMT)	Emissions			Controlled Em. Factor (lb/VMT)	Emissions		
								(lb/well)	(ton/veh. type)	(ton/proj. activity)		(lb/well)	(ton/veh. type)	(ton/proj. activity)
Rig-up, Drilling, and Rig-down	Semi Rig Transport, Drill Rig	60,000	2	44	88	3,200	1.65	145	232		0.24	21	34	
	Fuel Haul Truck	50,000	2	6	12	3,200	1.53	18	29		0.22	3	4	
	Mud Haul Truck, Water Hauling	60,000	2	4	8	3,200	1.65	13	21		0.24	2	3	
	Rig Crew	7,000	2	51	102	3,200	0.70	71	114		0.10	10	17	
	Rig Mechanics	12,000	2	2	4	3,200	0.87	3	6	520	0.13	1	1	76
	Co. Supervisor	7,000	2	20	40	3,200	0.70	28	45		0.10	4	7	
	Tool Pusher	7,000	2	8	16	3,200	0.70	11	18		0.10	2	3	
	Mud Logger	7,000	2	6	12	3,200	0.70	8	13		0.10	1	2	
	Mud Engineer	7,000	2	15	30	3,200	0.70	21	33		0.10	3	5	
	Logger, Engr Truck	45,000	2	1	2	3,200	1.47	3	5		0.21	0	1	
	Drill Bit Delivery	7,000	2	2	4	3,200	0.70	3	4		0.10	0	1	
Well Completion & Testing	Semi Casing Haulers	60,000	2	6	12	3,200	1.65	20	32		0.24	3	5	
	Semi Completion, Unit Rig	120,000	2	1	2	3,200	2.17	4	7		0.32	1	1	
	Semi Fracing, Blender	85,000	2	1	2	3,200	1.89	4	6		0.28	1	1	
	Semi Pumping/Tank Battery	80,000	2	6	12	3,200	1.85	22	35		0.27	3	5	
	Tubing Truck	60,000	2	2	4	3,200	1.65	7	11		0.24	1	2	
	Haul Cementer, Pump Truck	85,000	2	2	4	3,200	1.89	8	12		0.28	1	2	
	Haul Cementer, Cement Truck	60,000	2	3	6	3,200	1.65	10	16		0.24	1	2	
	Haul Completion, Equip Truck	45,000	2	3	6	3,200	1.47	9	14		0.21	1	2	
	Haul Service Tools	7,000	2	2	4	3,200	0.70	3	4		0.10	0	1	
	Haul Perforators Logging Truck	45,000	2	1	2	3,200	1.47	3	5		0.21	0	1	
	Haul Anchor, Installation	40,000	2	1	2	3,200	1.40	3	4		0.20	0	1	
	Haul Anchor, Testing	12,000	2	1	2	3,200	0.87	2	3		0.13	0	0	
	Haul Fracing, Tank	40,000	2	6	12	3,200	1.40	17	27		0.20	2	4	
	Haul Fracing, Pump	85,000	2	3	6	3,200	1.89	11	18	1,122	0.28	2	3	164
	Haul Fracing, Chemical	45,000	2	1	2	3,200	1.47	3	5		0.21	0	1	
	Haul Fracing, Sand	60,000	2	4	8	3,200	1.65	13	21		0.24	2	3	
	Haul Fracing, Other	85,000	2	2	4	3,200	1.89	8	12		0.28	1	2	
	Haul Welders	12,000	2	6	12	3,200	0.87	10	17		0.13	2	2	
	Haul Water Truck	60,000	2	150	300	3,200	1.65	494	790		0.24	72	116	
	Pickup Cementer, Engineer	7,000	2	2	4	3,200	0.70	3	4		0.10	0	1	
	Pickup Casing Crew	10,000	2	2	4	3,200	0.80	3	5		0.12	0	1	
	Pickup Completion Crew	10,000	2	5	10	3,200	0.80	8	13		0.12	1	2	
	Pickup Completion, Pusher	7,000	2	5	10	3,200	0.70	7	11		0.10	1	2	
	Pickup Perforators, Engineer	7,000	2	2	4	3,200	0.70	3	4		0.10	0	1	
	Pickup Fracing, Engineer	10,000	2	2	4	3,200	0.80	3	5		0.12	0	1	
	Pickup Co. Supervisor	7,000	2	10	20	3,200	0.70	14	22		0.10	2	3	
	Pickup Miscellaneous Supplies	7,000	2	3	6	3,200	0.70	4	7		0.10	1	1	
	Pickup Roustabout Crew	12,000	2	4	8	3,200	0.87	7	11		0.13	1	2	
								Subtotal		**1,643**				**240**
								Total		**1,965**				**287**

B.3.2.1.2.2 Exhaust Emissions

Emission Factors for Road Traffic:

Vehicle		Emission Factors (g/mi)					
Type	Class	NO_x	PM_{10} [a,b]	$PM_{2.5}$ [a,b]	SO_x [a]	CO	VOCs
Light-Duty Gasoline Truck	LDGT2	1.01	0.10	0.08	0.11	11.64	0.75
Heavy-Duty Diesel Truck	HDDV	8.13	1.96	1.81	1.63	17.09	4.83

[a] Estimated using the EPA PART5 model (1995).
[b] Including tire and brake wear emissions.

Source: EPA, *AP-42* , Volume II, Appendix H-117, Table 3.1A.2 Light-Duty Gasoline Powered Trucks II and
Appendix H-259, Table 7.1.2 Heavy Duty Diesel Powered Vehicles (High Altitude; Model Year 1991-1997; 50,000 mileage) (6/30/95).

Emissions Estimation Road Traffic:

Construction Site Destination	Vehicle		Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	Emissions (lb/well)						Emissions (ton/vehicle type)						Emissions (ton/construction site)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Improved & Two-Track Road	Semi Trucks	HDDV	2	47	94	3,200	1.68	0.41	0.37	0.34	3.54	1.00	2.70	0.65	0.60	0.54	5.67	1.60	2.72	0.65	0.60	0.54	5.91	1.62
	Pickup Trucks	LDGT2	2	3	6	3,200	1.E-02	1.E-03	1.E-03	1.E-03	2.E-01	1.E-02	2.E-02	2.E-03	2.E-03	2.E-03	2.E-01	2.E-02						
Well Pad	Semi Trucks	HDDV	2	5	10	3,200	0.18	0.04	0.04	0.04	0.38	0.11	0.29	0.07	0.06	0.06	0.60	0.17	0.32	0.07	0.07	0.06	0.93	0.19
	Pickup Trucks	LDGT2	2	4	8	3,200	2.E-02	2.E-03	1.E-03	2.E-03	2.E-01	1.E-02	3.E-02	3.E-03	2.E-03	3.E-03	3.E-01	2.E-02						
Other Construction Activities	Semi Trucks	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07	0.24	0.06	0.05	0.05	0.56	0.14
	Haul Trucks	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07						
	Pickup Trucks	LDGT2	2	1	2	3,200	4.E-03	4.E-04	3.E-04	5.E-04	5.E-02	3.E-03	7.E-03	7.E-04	5.E-04	8.E-04	8.E-02	5.E-03						
												Subtotal							**3.3**	**0.8**	**0.7**	**0.6**	**7.4**	**2.0**

B.3.2.1.2.2 Exhaust Emissions (Continued)

Construction Site Activity	Vehicle		Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells	Emissions (lb/well)						Emissions (ton/vehicle type)						Emissions (ton/project activity)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO	VOCs
Rig-up, Drilling, and Rig-down	Semi Rig Transport, Drill Rig	HDDV	2	44	88	3,200	1.58	0.38	0.35	0.32	3.32	0.94	2.52	0.61	0.56	0.51	5.30	1.50	4.0	0.9	0.8	0.7	15.2	2.5
	Fuel Haul Truck	HDDV	2	6	12	3,200	0.22	0.05	0.05	0.04	0.45	0.13	0.34	0.08	0.08	0.07	0.72	0.20						
	Mud Haul Truck, Water Hauling	HDDV	2	4	8	3,200	0.14	0.03	0.03	0.03	0.30	0.09	0.23	0.06	0.05	0.05	0.48	0.14						
	Rig Crew	LDGT2	2	51	102	3,200	0.23	0.02	0.02	0.03	2.62	0.17	0.36	0.04	0.03	0.04	4.19	0.27						
	Rig Mechanics	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07						
	Co. Supervisor	LDGT2	2	20	40	3,200	0.09	0.01	0.01	0.01	1.03	0.07	0.14	0.01	0.01	0.02	1.64	0.11						
	Tool Pusher	LDGT2	2	8	16	3,200	0.04	0.00	0.00	0.00	0.41	0.03	0.06	0.01	0.00	0.01	0.66	0.04						
	Mud Logger	LDGT2	2	6	12	3,200	3.E-02	3.E-03	2.E-03	3.E-03	3.E-01	2.E-02	4.E-02	4.E-03	3.E-03	5.E-03	5.E-01	3.E-02						
	Mud Engineer	LDGT2	2	15	30	3,200	0.1	0.0	0.0	0.0	0.8	0.0	0.1	0.0	0.0	0.0	1.2	0.1						
	Logger, Engr Truck	HDDV	2	1	2	3,200	0.04	0.01	0.01	0.01	0.08	0.02	0.06	0.01	0.01	0.01	0.12	0.03						
	Drill Bit Delivery	LDGT2	2	2	4	3,200	9.E-03	9.E-04	7.E-04	1.E-03	1.E-01	7.E-03	1.E-02	1.E-03	1.E-03	2.E-03	2.E-01	1.E-02						
Well Completion & Testing	Semi Casing Haulers	HDDV	2	6	12	3,200	0.22	0.05	0.05	0.04	0.45	0.13	0.34	0.08	0.08	0.07	0.72	0.20	12.3	2.9	2.7	2.5	27.5	7.4
	Semi Completion, Unit Rig	HDDV	2	1	2	3,200	0.04	0.01	0.01	0.01	0.08	0.02	0.06	0.01	0.01	0.01	0.12	0.03						
	Semi Fracing, Blender	HDDV	2	1	2	3,200	0.04	0.01	0.01	0.01	0.08	0.02	0.06	0.01	0.01	0.01	0.12	0.03						
	Semi Pumping/Tank Battery	HDDV	2	6	12	3,200	0.22	0.05	0.05	0.04	0.45	0.13	0.34	0.08	0.08	0.07	0.72	0.20						
	Tubing Truck	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07						
	Haul Cementer, Pump Truck	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07						
	Haul Cementer, Cement Truck	HDDV	2	3	6	3,200	0.11	0.03	0.02	0.02	0.23	0.06	0.17	0.04	0.04	0.03	0.36	0.10						
	Haul Completion, Equip Truck	HDDV	2	3	6	3,200	0.11	0.03	0.02	0.02	0.23	0.06	0.17	0.04	0.04	0.03	0.36	0.10						
	Haul Service Tools	LDGT2	2	2	4	3,200	0.01	0.00	0.00	0.00	0.10	0.01	0.01	0.00	0.00	0.00	0.16	0.01						
	Haul Perforators Logging Truck	HDDV	2	1	2	3,200	0.04	0.01	0.01	0.01	0.08	0.02	0.06	0.01	0.01	0.01	0.12	0.03						
	Haul Anchor, Installation	HDDV	2	1	2	3,200	0.04	0.01	0.01	0.01	0.08	0.02	0.06	0.01	0.01	0.01	0.12	0.03						
	Haul Anchor, Testing	HDDV	2	1	2	3,200	0.04	0.01	0.01	0.01	0.08	0.02	0.06	0.01	0.01	0.01	0.12	0.03						
	Haul Fracing, Tank	HDDV	2	6	12	3,200	0.22	0.05	0.05	0.04	0.45	0.13	0.34	0.08	0.08	0.07	0.72	0.20						
	Haul Fracing, Pump	HDDV	2	3	6	3,200	0.11	0.03	0.02	0.02	0.23	0.06	0.17	0.04	0.04	0.03	0.36	0.10						
	Haul Fracing, Chemical	HDDV	2	1	2	3,200	0.04	0.01	0.01	0.01	0.08	0.02	0.06	0.01	0.01	0.01	0.12	0.03						
	Haul Fracing, Sand	HDDV	2	4	8	3,200	0.14	0.03	0.03	0.03	0.30	0.09	0.23	0.06	0.05	0.05	0.48	0.14						
	Haul Fracing, Other	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07						
	Haul Welders	HDDV	2	6	12	3,200	0.22	0.05	0.05	0.04	0.45	0.13	0.34	0.08	0.08	0.07	0.72	0.20						
	Haul Water Truck	HDDV	2	150	300	3,200	5.38	1.30	1.20	1.08	11.30	3.19	8.60	2.08	1.91	1.72	18.08	5.11						
	Pickup Cementer, Engineer	LDGT2	2	2	4	3,200	9.E-03	9.E-04	7.E-04	1.E-03	1.E-01	7.E-03	1.E-02	1.E-03	1.E-03	2.E-03	2.E-01	1.E-02						
	Pickup Casing Crew	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07						
	Pickup Completion Crew	HDDV	2	5	10	3,200	0.18	0.04	0.04	0.04	0.38	0.11	0.29	0.07	0.06	0.06	0.60	0.17						
	Pickup Completion, Pusher	LDGT2	2	5	10	3,200	2.E-02	2.E-03	2.E-03	2.E-03	3.E-01	2.E-02	4.E-02	3.E-03	3.E-03	4.E-03	4.E-01	3.E-02						
	Pickup Perforators, Engineer	LDGT2	2	2	4	3,200	9.E-03	9.E-04	7.E-04	1.E-03	1.E-01	7.E-03	1.E-02	1.E-03	1.E-03	2.E-03	2.E-01	1.E-02						
	Pickup Fracing, Engineer	HDDV	2	2	4	3,200	0.07	0.02	0.02	0.01	0.15	0.04	0.11	0.03	0.03	0.02	0.24	0.07						
	Pickup Co. Supervisor	LDGT2	2	10	20	3,200	4.E-02	4.E-03	3.E-03	5.E-03	5.E-01	3.E-02	7.E-02	7.E-03	5.E-03	8.E-03	8.E-01	5.E-02						
	Pickup Miscellaneous Supplies	LDGT2	2	3	6	3,200	1.E-02	1.E-03	1.E-03	1.E-03	2.E-01	1.E-02	2.E-02	2.E-03	2.E-03	2.E-03	2.E-01	2.E-02						
	Pickup Roustabout Crew	HDDV	2	4	8	3,200	0.14	0.03	0.03	0.03	0.30	0.09	0.23	0.06	0.05	0.05	0.48	0.14						
												Subtotal							**16**	**4**	**3**	**3**	**43**	**10**
												Total							**20**	**5**	**4**	**4**	**50**	**12**

B.3.2.2 Emission Inventory for the Wyoming Conventional O&G Project Operational Activities under the Proposed Action (Alt. 1)

B.3.2.2.1 Compressors - Natural Gas Fired

NOTE: Not applicable, as compressor installation will coincide with compressor installation for CBM operations. No additional compression required. [a]

B.3.2.2.2 Dehydrators

NOTE: Same as above. The small amount of conventional gas would be mingled with the CBM gas in the basin. No appreciable increase of emissions is expected. [a]

B.3.2.2.3 Compressor Station Visits for Inspection and Repair

NOTE: Not applicable, as compressor installation will coincide with compressor installation for CBM operations. [a]

[a] Source: C. Martinez (WGR), "Basic Data for Emission Estimation," e-mail to K. C. Chun on 3/30/01.

B.3.2.2.4 Well Workover

B.3.2.2.4.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.2.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type [a]	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Round Trips per Well	Miles Traveled per Well	Total # of Wells Drilled	PM_{10}			$PM_{2.5}$		
							Emission Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/proj.)	Emission Factor (lb/VMT)	Emissions (lb/well)	Emissions (ton/proj.)
Well Workover	WO Rig	120,000	2	1	2	3,200	2.17	4	7	0.32	1	1
	Haul Truck	60,000	2	1	2	3,200	1.65	3	5	0.24	0	1
	Pickup Truck	7,000	2	3	6	3,200	0.70	4	7	0.10	1	1
						Total			**19**			**3**

[a] Per D. Gomendi (WGR) e-mail to K. Chun (ANL) on 5/11/01.

B.3.2.2.4.2 Exhaust Emissions - On-site

Emission Factors for Industrial Engines: See Section B.3.2.1.1.2.

Emissions Estimation for Industrial Engines:

Activity	Equipment Type	Capacity (hp)	# of Operating Hours per Day	# of Operating Days per Well	# of Operating Hours per Well	Total # of Wells Drilled	Emissions (lb/well)					Emissions (ton/project)				
							NO_x	PM_{10} [a]	SO_x	CO	VOCs	NO_x	PM_{10} [a]	SO_x	CO	VOCs
Well Workover	Truck-Mounted Unit	600	10	3	30	3,200	558	40	37	120	46	893	63	59	192	73

[a] $PM_{2.5}$ was assumed to be same as PM_{10}.

B.3.2.2.4.2 Exhaust Emissions - On-road

Emission Factors for Road Traffic: See Section B.3.2.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi)	Round Trip per Well	Miles Traveled per Well	Total # of Wells Drilled	Emissions (lb/well)						Emissions (ton/project)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Well Workover [a]	WO Rig	HDDV	2	1	2	3,200	4.E-02	9.E-03	8.E-03	7.E-03	8.E-02	2.E-02	6.E-02	1.E-02	1.E-02	1.E-02	1.E-01	3.E-02
	Haul Truck	HDDV	2	1	2	3,200	4.E-02	9.E-03	8.E-03	7.E-03	8.E-02	2.E-02	6.E-02	1.E-02	1.E-02	1.E-02	1.E-01	3.E-02
	Pickup Truck	LDGT2	2	3	6	3,200	1.E-02	1.E-03	1.E-03	1.E-03	2.E-01	1.E-02	2.E-02	2.E-03	2.E-03	2.E-03	2.E-01	2.E-02
												Total	**1.E-01**	**3.E-02**	**3.E-02**	**3.E-02**	**5.E-01**	**8.E-02**

[a] Performed once in the first year of well operation for one day.

B.3.2.2.5 Well Visits for Inspection and Repair

B.3.2.2.5.1 Road Dust Emissions

Emission Factor for Road Traffic: See Section B.3.2.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi)	# of Visits per Well per Year [a]	Miles Traveled per Well per Year	Total # of Operating Well-Yr	PM_{10}			$PM_{2.5}$		
							Em. Factor (lb/VMT)	Emissions		Em. Factor (lb/VMT)	Emissions	
								(lb/well-yr)	(ton/proj.)		(lb/well-yr)	(ton/proj.)
Inspection Visits for Wells	Pickup Truck	7,000	2	12	24	17,600	0.70	16.7	147	0.10	2.4	22

[a] Source: D. Gomendi (WGR), e-mail to K. Chun (ANL) on 5/11/01.

B.3.2.2.5.2 Exhaust Emissions

Emission Factor for Road Traffic: See Section B.3.2.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi)	# of Visits per Well per Year [a]	Distance per Well per Year (mi)	Total # of Operating Well per Project	Emissions											
							(lb/well-yr)						(ton/project)					
	Type	Class					NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs	NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Inspection Visits for Wells	Pickup Truck	LDGT2	2	12	24	17,600	0.05	0.01	0.00	0.01	0.62	0.04	0.5	0.0	0.0	0.1	5.4	0.3

[a] Source: D. Gomendi (WGR), e-mail to K. Chun (ANL) on 5/11/01.

B.3.2.3 Emission Inventory for the Wyoming Conventional O&G Project Maintenance Activities under the Proposed Action (Alt. 1)

B.3.2.3.1 Road Maintenance - Heavy Equipment

Given Data:

Maintenance [a]	Equipment/Vehicle			Road Length Worked On per Day (miles)	# of Operating Hours per Day
	Type	Fuel	Capacity (hp)		
Summer	Heavy Equipment [b]	Diesel-30 gpd	135 [c]	6	10
	Commuting Vehicle	Gas-5 gpd	225	6 [d]	1 [e]
Winter	Heavy Equipment [b]	Diesel-30 gpd	135 [c]	5	10
	Commuting Vehicle	Gas-5 gpd	225	6 [d]	2 [e]

[a] Road maintenance would be made twice in summer and once in winter every year (per D. Keanini [WGR] e-mail to K. Chun [ANL] on 5/30/01).
[b] Assume a motor grader (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[c] Revised from 100 hp to 135 hp (per D. Gomendi [WGR] e-mail to K. Chun [ANL] on 5/11/01).
[d] Average round trip mileage on unpaved road.
[e] Assume one round trip per day.

Estimation of Total and Cumulative Length of Roads for the Project:

Length of Improved Roads per Well (mi) [a]	1
Number of Wells	3,200
Total Length of Improved Roads (mi)	3,200
Cumulative Length of Roads [b] (mi-yr)	17,600

[a] per C. Martinez e-mail on 3/30/01.
[b] = (total length of roads) *(total no. of operating well-yr)/(total no. of drilled wells).

Estimation of Total Operation Days and Hours:

Season	# of Operations per Season	Cumulative Length of Roads (mi-yr)	Road Length Worked On (mi/day)	# of Operating Hours per Day	Total # of Operating Days	Total # of Operating Hours
Summer	2	17,600	6	10	5,867	58,667
Winter	1	17,600	5	10	3,520	35,200
				Total	**9,387**	**93,867**

B.3.2.3.1.1 Fugitive Dust Emissions

Emission Factors for Grader:

Pollutant	Emission Factor Equation (lb/VMT)	S [a] (mph)	Em. Factors (lb/VMT)
PM_{10}	$E = (0.6)(0.051)\ S^{2}$	5	0.765
$PM_{2.5}$	$E = (0.031)(0.04)\ S^{2.5}$	5	0.069

[a] Assumed a mean vehicle speed (S) of 5 mph.

Source: EPA, *AP-42* , Volume I, Section 11.9 Western Surface Coal Mining (10/98).

Emissions Estimation for Grader:

Activity	Equipment	Total # of Operating Hours [a]	Mean Vehicle Speed (mph)	Total Miles Maintained	PM_{10}		$PM_{2.5}$	
					Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Maintenance	Grader	56,320	5	281,600	0.765	108	0.069	10

[a] Assumed that a grader would operate at 60% of the time, considering hours for clothing change, lunch break, and other extra activities.

B.3.2.3.1.2 Exhaust Emissions

Emission Factors for Grader:

Equipment	Emission Factors (g/hp-hr)				
	NO_x	PM_{10} [a]	SO_2	CO	VOCs
Grader	7.14	0.63	0.87	1.54	0.36

[a] $PM_{2.5}$ was assumed to be same as PM_{10}.

Source: EPA, *AP-42* , Volume II., Section II-7, Heavy-Duty Construction Equipment (1985).

Emissions Estimation for Grader:

Activity	Vehicle Type	Capacity (hp)	Total # of Operating Hours [a]	Emissions									
				(lb/hr)					(ton/project)				
				NO_x	PM_{10} [b]	SO_x	CO	VOCs	NO_x	PM_{10} [b]	SO_x	CO	VOCs
Road Maintenance	Grader	135	56,320	2.13	0.19	0.26	0.46	0.11	60	5	7	13	3

[a] Assumed that a grader would operate at 60% of the time, considering hours for clothing change, lunch break, and other extra activities.
[b] $PM_{2.5}$ was assumed to be same as PM_{10}.

B.3.2.3.2 Commuting Vehicles

B.3.2.3.2.1 Road Dust Emissions

Emission Factors for Road Traffic: See Section B.3.2.1.2.1.

Emissions Estimation for Road Traffic:

Activity	Vehicle Type	Av. Vehicle Weight (lb)	Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	PM_{10}		$PM_{2.5}$	
						Em. Factor (lb/VMT)	Emissions (ton/proj.)	Em. Factor (lb/VMT)	Emissions (ton/proj.)
Road Maintenance	Pickup Truck	7,000	6	9,387	56,320	0.70	20	0.10	3

B.3.2.3.2.2 Exhaust Emissions

Emission Factors for Road Traffic: See Section B.3.2.1.2.2.

Emissions Estimation for Road Traffic:

Activity	Vehicle		Round Trip Distance (mi/day)	Total # of Operating Days	Total Miles Traveled	Emissions (ton/project)					
	Type	Class				NO_x	PM_{10}	$PM_{2.5}$	SO_x	CO	VOCs
Road Maintenance	Pickup Truck	LDGT2	6	9,387	56,320	0.06	0.01	0.00	0.01	0.72	0.05

B.3.2.3.3 Maintenance Visits to Compressor Stations

NOTE: Not applicable, as compressor installation will coincide with compressor installation for CBM operations. [a]

[a] Source: C. Martinez (WGR), "Basic Data for Emission Estimation," e-mail to K. C. Chun on 3/30/01.

APPENDIX C:

ESTIMATED IMPACTS ON CRITERIA POLLUTANTS

APPENDIX C:

ESTIMATED IMPACTS ON CRITERIA POLLUTANTS

C.1 Estimated Criteria Pollutant Impacts for Montana EIS

C.1.1 Estimated Near-Field Criteria Pollutant Impacts of Montana Project, Non-Montana Project, and Cumulative Sources

C.1.1.1 Estimated Near-Field Criteria Pollutant Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 1[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt E	MT Project Alt Ea	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Near Field - MT	4.75	9.11	9.41	10.71	25	11.00	21.71	100	100	
NO_2	1-hour	Near Field - MT	180.52	99.69	102.30	207.27	-999	117.00	324.27	566	-999	
SO_2	Annual	Near Field - MT	0.97	0.66	0.66	1.20	20	16.00	17.20	60	80	
SO_2	24-hour	Near Field - MT	9.78	2.08	2.10	10.50	91	73.00	83.50	260	365	
SO_2	3-hour	Near Field - MT	22.61	3.54	3.54	23.58	512	291.00	314.58	-999	1300	
SO_2	1-hour	Near Field - MT	27.41	4.55	4.55	28.21	-999	666.00	694.21	1300	-999	
PM_{10}	Annual	Near Field - MT	13.07	3.56	3.65	14.32	17	30.00	44.32	50	50	
PM_{10}	24-hour	Near Field - MT	103.76	12.14	13.07	107.07	30	105.00	212.07	150	150	x y
$PM_{2.5}$	Annual	Near Field - MT	5.60	1.41	1.49	6.29	-999	8.00	14.29	15	15	
$PM_{2.5}$	24-hour	Near Field - MT	44.08	6.21	6.87	45.88	-999	20.00	65.88	65	65	x
CO	8-hour	Near Field - MT	311.25	74.08	77.18	337.21	-999	6600	6937	10000	10000	
CO	1-hour	Near Field - MT	540.00	108.67	112.64	548.24	-999	15000	15548	26000	40000	

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Ea sources include Alt. E sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.1.1.2 Estimated Near-Field Criteria Pollutant Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 1[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt D	MT Project Alt Da	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Near Field - MT	4.75	6.38	6.50	7.75	25	11.00	18.75	100	100	
NO_2	1-hour	Near Field - MT	180.52	49.53	49.58	195.09	-999	117.00	312.09	566	-999	
SO_2	Annual	Near Field - MT	0.97	0.65	0.66	1.19	20	16.00	17.19	60	80	
SO_2	24-hour	Near Field - MT	9.78	2.06	2.09	10.49	91	73.00	83.49	260	365	
SO_2	3-hour	Near Field - MT	22.61	3.52	3.52	23.57	512	291.00	314.57	-999	1300	
SO_2	1-hour	Near Field - MT	27.41	4.53	4.53	28.19	-999	666.00	694.20	1300	-999	
PM_{10}	Annual	Near Field - MT	13.07	3.31	3.37	14.07	17	30.00	44.07	50	50	
PM_{10}	24-hour	Near Field - MT	103.76	10.75	11.46	106.48	30	105.00	211.48	150	150	x y
$PM_{2.5}$	Annual	Near Field - MT	5.60	1.17	1.20	6.04	-999	8.00	14.04	15	15	
$PM_{2.5}$	24-hour	Near Field - MT	44.08	4.34	4.72	45.29	-999	20.00	65.29	65	65	x
CO	8-hour	Near Field - MT	311.25	29.11	29.64	319.76	-999	6600	6920	10000	10000	
CO	1-hour	Near Field - MT	540.00	47.63	47.74	540.83	-999	15000	15541	26000	40000	

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Da sources include Alt. D sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.1.1.3 Estimated Near-Field Criteria Pollutant Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Near Field - MT	4.75	1.94	5.96	25	11.00	16.96	100	100	
NO_2	1-hour	Near Field - MT	180.52	20.60	186.62	-999	117.00	303.62	566	-999	
SO_2	Annual	Near Field - MT	0.97	0.27	1.12	20	16.00	17.12	60	80	
SO_2	24-hour	Near Field - MT	9.78	0.87	10.22	91	73.00	83.22	260	365	
SO_2	3-hour	Near Field - MT	22.61	1.54	23.25	512	291.00	314.25	-999	1300	
SO_2	1-hour	Near Field - MT	27.41	1.86	27.99	-999	666.00	693.99	1300	-999	
PM_{10}	Annual	Near Field - MT	13.07	0.52	13.39	17	30.00	43.39	50	50	
PM_{10}	24-hour	Near Field - MT	103.76	1.83	104.50	30	105.00	209.50	150	150	x y
$PM_{2.5}$	Annual	Near Field - MT	5.60	0.27	5.75	-999	8.00	13.75	15	15	
$PM_{2.5}$	24-hour	Near Field - MT	44.08	0.97	44.42	-999	20.00	64.42	65	65	
CO	8-hour	Near Field - MT	311.25	29.78	313.96	-999	6600	6914	10000	10000	
CO	1-hour	Near Field - MT	540.00	49.40	540.13	-999	15000	15540	26000	40000	

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.1.2 Estimated Far-Field Impacts of Montana Project, Non-Montana Project, and Cumulative Sources

C.1.2.1 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 1[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt E	MT Project Alt Ea	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Badlands WA	0.25	0.02	0.03	0.28	2.5	16.50	16.78	100	100	
NO_2	Annual	Black Elk WA	0.37	0.02	0.03	0.40	25	16.50	16.90	100	100	
NO_2	Annual	Mt Rushmore NM	0.31	0.02	0.03	0.34	25	16.50	16.84	100	100	
NO_2	Annual	Wind Cave NP	0.48	0.03	0.04	0.52	2.5	16.50	17.02	100	100	
NO_2	Annual	Jewel Cave NM	0.62	0.03	0.04	0.66	25	16.50	17.16	100	100	
NO_2	Annual	Soldier Creek WA	0.50	0.02	0.03	0.53	25	16.50	17.03	100	100	
NO_2	Annual	Agate Fossil Beds NM	0.25	0.02	0.03	0.28	25	16.50	16.78	100	100	
NO_2	Annual	Ft Laramie NHS	0.23	0.02	0.02	0.25	25	16.50	16.75	100	100	
NO_2	Annual	Devils Tower NM	1.08	0.15	0.17	1.25	25	16.50	17.75	100	100	
NO_2	Annual	Cloud Peak WA	0.20	0.11	0.16	0.34	25	16.50	16.84	100	100	
NO_2	Annual	Northern Cheyenne IR	0.51	1.92	3.70	4.17	2.5	11.00	15.17	100	100	y
NO_2	Annual	Crow IR	1.10	3.93	4.66	5.38	25	11.00	16.38	100	100	
NO_2	Annual	Bighorn Canyon NRA	0.18	0.11	0.21	0.38	25	16.50	16.88	100	100	
NO_2	Annual	Bridger WA	0.02	0.01	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Fitzpatrick WA	0.02	0.01	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Popo Agie WA	0.03	0.01	0.01	0.04	25	16.50	16.54	100	100	
NO_2	Annual	Grand Teton NP	0.01	0.00	0.00	0.01	2.5	16.50	16.51	100	100	
NO_2	Annual	Teton WA	0.01	0.01	0.01	0.02	2.5	16.50	16.52	100	100	
NO_2	Annual	Washakie WA	0.03	0.02	0.02	0.05	2.5	16.50	16.55	100	100	
NO_2	Annual	North Absaroka WA	0.03	0.03	0.04	0.07	2.5	16.50	16.57	100	100	
NO_2	Annual	Yellowstone NP	0.07	0.01	0.01	0.08	2.5	16.50	16.58	100	100	
NO_2	Annual	Absaroka-Beartooth WA	0.66	0.06	0.06	0.69	25	11.00	11.69	100	100	
NO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.00	0.01	2.5	11.00	11.01	100	100	
NO_2	Annual	Gates of the Mtns WA	0.11	0.00	0.00	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Scapegoat WA	0.03	0.00	0.00	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	UL Bend WA	0.03	0.02	0.02	0.05	2.5	11.00	11.05	100	100	
NO_2	Annual	Ft Belknap IR	1.41	0.01	0.01	1.42	25	11.00	12.42	100	100	
NO_2	Annual	Ft Peck IR	0.02	0.01	0.01	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	Theodore Roosevelt NP/S	0.07	0.03	0.04	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Theodore Roosevelt NP/N	0.05	0.01	0.02	0.07	2.5	11.00	11.07	100	100	
NO_2	1-hour	Northern Cheyenne IR	26.41	52.89	54.63	67.54	-999	117.00	184.54	566	-999	
NO_2	1-hour	Crow IR	27.53	58.25	60.14	73.29	-999	117.00	190.29	566	-999	
NO_2	1-hour	Bighorn Canyon NRA	6.99	6.85	10.86	14.56	-999	117.00	131.56	566	-999	
NO_2	1-hour	Yellowstone NP	4.64	1.77	1.77	4.65	-999	117.00	121.65	566	-999	
NO_2	1-hour	Absaroka-Beartooth WA	35.92	2.63	3.22	35.93	-999	117.00	152.93	566	-999	
NO_2	1-hour	Red Rock Lakes WA	1.03	0.09	0.13	1.03	-999	117.00	118.03	566	-999	
NO_2	1-hour	Gates of the Mtns WA	1.93	0.45	0.55	1.93	-999	117.00	118.93	566	-999	
NO_2	1-hour	Scapegoat WA	1.39	0.11	0.11	1.47	-999	117.00	118.47	566	-999	
NO_2	1-hour	UL Bend WA	2.08	1.15	2.00	2.65	-999	117.00	119.65	566	-999	
NO_2	1-hour	Ft Belknap IR	28.11	1.50	2.23	28.11	-999	117.00	145.11	566	-999	
NO_2	1-hour	Ft Peck IR	3.30	1.10	1.39	3.77	-999	117.00	120.77	566	-999	
SO_2	Annual	Badlands WA	0.08	0.00	0.00	0.08	2	3.00	3.08	80	80	
SO_2	Annual	Black Elk WA	0.18	0.00	0.00	0.18	20	3.00	3.18	80	80	
SO_2	Annual	Mt Rushmore NM	0.13	0.00	0.00	0.13	20	3.00	3.13	80	80	
SO_2	Annual	Wind Cave NP	0.13	0.00	0.00	0.13	2	3.00	3.13	80	80	
SO_2	Annual	Jewel Cave NM	0.22	0.00	0.00	0.22	20	3.00	3.22	80	80	
SO_2	Annual	Soldier Creek WA	0.11	0.00	0.00	0.11	20	3.00	3.11	80	80	
SO_2	Annual	Agate Fossil Beds NM	0.08	0.00	0.00	0.08	20	3.00	3.08	80	80	
SO_2	Annual	Ft Laramie NHS	0.07	0.00	0.00	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Devils Tower NM	0.15	0.01	0.01	0.16	20	3.00	3.16	60	80	
SO_2	Annual	Cloud Peak WA	0.07	0.00	0.00	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Northern Cheyenne IR	0.12	0.08	0.13	0.25	2	16.00	16.25	60	80	
SO_2	Annual	Crow IR	0.40	0.29	0.30	0.42	20	16.00	16.42	60	80	
SO_2	Annual	Bighorn Canyon NRA	0.10	0.00	0.01	0.10	20	16.00	16.10	60	80	
SO_2	Annual	Bridger WA	0.03	0.00	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Fitzpatrick WA	0.03	0.00	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Popo Agie WA	0.03	0.00	0.00	0.03	20	3.00	3.03	60	80	
SO_2	Annual	Grand Teton NP	0.01	0.00	0.00	0.01	2	3.00	3.01	60	80	
SO_2	Annual	Teton WA	0.02	0.00	0.00	0.02	2	3.00	3.02	60	80	
SO_2	Annual	Washakie WA	0.04	0.00	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	North Absaroka WA	0.04	0.00	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	Yellowstone NP	0.02	0.00	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Absaroka-Beartooth WA	0.13	0.00	0.00	0.13	20	16.00	16.13	60	80	
SO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Gates of the Mtns WA	0.03	0.00	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Scapegoat WA	0.01	0.00	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	UL Bend WA	0.02	0.00	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Ft Belknap IR	0.26	0.00	0.00	0.26	20	16.00	16.26	60	80	
SO_2	Annual	Ft Peck IR	0.01	0.00	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Theodore Roosevelt NP/S	0.03	0.00	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Theodore Roosevelt NP/N	0.01	0.00	0.00	0.02	2	16.00	16.02	60	80	

C.1.2.1 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt E	MT Project Alt Ea	Cumulative	PSD	Background	Total	SAAQS	NAAQS
SO_2	24-hour	Badlands WA	0.64	0.02	0.02	0.64	5	8.00	8.64	365	365
SO_2	24-hour	Black Elk WA	1.32	0.01	0.01	1.32	91	8.00	9.32	365	365
SO_2	24-hour	Mt Rushmore NM	0.92	0.01	0.01	0.92	91	8.00	8.92	365	365
SO_2	24-hour	Wind Cave NP	0.93	0.01	0.01	0.94	5	8.00	8.94	365	365
SO_2	24-hour	Jewel Cave NM	1.61	0.01	0.01	1.61	91	8.00	9.61	365	365
SO_2	24-hour	Soldier Creek WA	0.61	0.01	0.01	0.61	91	8.00	8.61	365	365
SO_2	24-hour	Agate Fossil Beds NM	0.64	0.01	0.01	0.65	91	8.00	8.65	365	365
SO_2	24-hour	Ft Laramie NHS	1.18	0.01	0.01	1.19	91	8.00	9.19	260	365
SO_2	24-hour	Devils Tower NM	0.87	0.04	0.04	0.88	91	8.00	8.88	260	365
SO_2	24-hour	Cloud Peak WA	1.08	0.04	0.05	1.11	91	8.00	9.11	260	365
SO_2	24-hour	Northern Cheyenne IR	0.95	0.41	0.54	1.07	5	73.00	74.07	260	365
SO_2	24-hour	Crow IR	5.25	1.04	1.08	5.27	91	73.00	78.27	260	365
SO_2	24-hour	Bighorn Canyon NRA	1.89	0.06	0.08	1.90	91	73.00	74.90	260	365
SO_2	24-hour	Bridger WA	0.77	0.01	0.01	0.78	5	8.00	8.78	260	365
SO_2	24-hour	Fitzpatrick WA	1.18	0.01	0.01	1.18	5	8.00	9.18	260	365
SO_2	24-hour	Popo Agie WA	0.86	0.01	0.01	0.86	91	8.00	8.86	260	365
SO_2	24-hour	Grand Teton NP	0.56	0.01	0.01	0.57	5	8.00	8.57	260	365
SO_2	24-hour	Teton WA	0.47	0.01	0.01	0.48	5	8.00	8.48	260	365
SO_2	24-hour	Washakie WA	0.82	0.02	0.02	0.84	5	8.00	8.84	260	365
SO_2	24-hour	North Absaroka WA	0.73	0.03	0.03	0.75	5	8.00	8.75	260	365
SO_2	24-hour	Yellowstone NP	0.50	0.01	0.01	0.50	5	73.00	73.50	260	365
SO_2	24-hour	Absaroka-Beartooth WA	2.38	0.05	0.05	2.39	91	73.00	75.39	260	365
SO_2	24-hour	Red Rock Lakes WA	0.13	0.00	0.00	0.13	5	73.00	73.13	260	365
SO_2	24-hour	Gates of the Mtns WA	0.37	0.01	0.01	0.38	5	73.00	73.38	260	365
SO_2	24-hour	Scapegoat WA	0.28	0.00	0.00	0.29	5	73.00	73.29	260	365
SO_2	24-hour	UL Bend WA	0.47	0.02	0.02	0.47	5	73.00	73.47	260	365
SO_2	24-hour	Ft Belknap IR	1.16	0.02	0.02	1.16	91	73.00	74.16	260	365
SO_2	24-hour	Ft Peck IR	0.19	0.01	0.01	0.20	5	73.00	73.20	260	365
SO_2	24-hour	Theodore Roosevelt NP/S	0.33	0.01	0.02	0.34	5	73.00	73.34	260	365
SO_2	24-hour	Theodore Roosevelt NP/N	0.20	0.01	0.01	0.20	5	73.00	73.20	260	365
SO_2	3-hour	Badlands WA	1.91	0.05	0.05	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	Black Elk WA	3.45	0.05	0.05	3.45	512	8.00	11.45	1300	1300
SO_2	3-hour	Mt Rushmore NM	2.47	0.05	0.05	2.48	512	8.00	10.48	1300	1300
SO_2	3-hour	Wind Cave NP	2.68	0.04	0.05	2.68	25	8.00	10.68	1300	1300
SO_2	3-hour	Jewel Cave NM	4.08	0.03	0.04	4.08	512	8.00	12.08	1300	1300
SO_2	3-hour	Soldier Creek WA	1.87	0.07	0.07	1.88	512	8.00	9.88	1300	1300
SO_2	3-hour	Agate Fossil Beds NM	1.80	0.06	0.07	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Ft Laramie NHS	3.36	0.04	0.05	3.37	512	8.00	11.37	1300	1300
SO_2	3-hour	Devils Tower NM	3.19	0.19	0.20	3.19	512	8.00	11.19	1300	1300
SO_2	3-hour	Cloud Peak WA	2.28	0.09	0.11	2.30	512	8.00	10.30	1300	1300
SO_2	3-hour	Northern Cheyenne IR	5.08	0.98	1.17	5.09	25	291.00	296.09	-999	1300
SO_2	3-hour	Crow IR	17.06	1.74	1.80	17.09	512	291.00	308.10	-999	1300
SO_2	3-hour	Bighorn Canyon NRA	4.19	0.17	0.23	4.19	512	291.00	295.19	1300	1300
SO_2	3-hour	Bridger WA	1.94	0.03	0.03	1.94	25	8.00	9.94	1300	1300
SO_2	3-hour	Fitzpatrick WA	3.24	0.03	0.04	3.24	25	8.00	11.24	1300	1300
SO_2	3-hour	Popo Agie WA	1.73	0.03	0.03	1.73	512	8.00	9.73	1300	1300
SO_2	3-hour	Grand Teton NP	1.29	0.04	0.04	1.30	25	8.00	9.30	1300	1300
SO_2	3-hour	Teton WA	0.99	0.03	0.03	0.99	25	8.00	8.99	1300	1300
SO_2	3-hour	Washakie WA	1.90	0.06	0.06	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	North Absaroka WA	2.16	0.09	0.10	2.18	25	8.00	10.18	1300	1300
SO_2	3-hour	Yellowstone NP	2.03	0.08	0.08	2.05	25	291.00	293.05	1300	1300
SO_2	3-hour	Absaroka-Beartooth WA	4.43	0.12	0.12	4.43	512	291.00	295.43	-999	1300
SO_2	3-hour	Red Rock Lakes WA	0.44	0.00	0.01	0.44	25	291.00	291.44	-999	1300
SO_2	3-hour	Gates of the Mtns WA	0.83	0.02	0.02	0.83	25	291.00	291.83	-999	1300
SO_2	3-hour	Scapegoat WA	0.77	0.00	0.01	0.77	25	291.00	291.77	-999	1300
SO_2	3-hour	UL Bend WA	1.07	0.06	0.07	1.09	25	291.00	292.09	-999	1300
SO_2	3-hour	Ft Belknap IR	2.55	0.05	0.06	2.55	512	291.00	293.55	-999	1300
SO_2	3-hour	Ft Peck IR	0.73	0.02	0.03	0.74	25	291.00	291.74	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/S	0.90	0.04	0.04	0.91	25	291.00	291.91	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/N	0.53	0.02	0.03	0.53	25	291.00	291.53	-999	1300
SO_2	1-hour	Northern Cheyenne IR	5.55	1.49	1.66	5.56	-999	666.00	671.56	1300	-999
SO_2	1-hour	Crow IR	29.56	2.17	2.18	29.57	-999	666.00	695.57	1300	-999
SO_2	1-hour	Bighorn Canyon NRA	5.33	0.40	0.48	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Yellowstone NP	3.67	0.21	0.21	3.69	-999	666.00	669.69	1300	-999
SO_2	1-hour	Absaroka-Beartooth WA	5.34	0.23	0.23	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Red Rock Lakes WA	0.49	0.01	0.01	0.49	-999	666.00	666.49	1300	-999
SO_2	1-hour	Gates of the Mtns WA	1.50	0.04	0.04	1.50	-999	666.00	667.50	1300	-999
SO_2	1-hour	Scapegoat WA	1.09	0.01	0.01	1.09	-999	666.00	667.09	1300	-999
SO_2	1-hour	UL Bend WA	1.56	0.08	0.08	1.58	-999	666.00	667.58	1300	-999
SO_2	1-hour	Ft Belknap IR	4.03	0.10	0.10	4.03	-999	666.00	670.03	1300	-999
SO_2	1-hour	Ft Peck IR	0.83	0.03	0.03	0.83	-999	666.00	666.83	1300	-999
SO_2	1-hour	Theodore Roosevelt NP/S	1.13	0.05	0.05	1.14	-999	666.00	667.14	715	-999
SO_2	1-hour	Theodore Roosevelt NP/N	0.57	0.02	0.03	0.58	-999	666.00	666.58	715	-999

C.1.2.1 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt E	MT Project Alt Ea	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
PM_{10}	Annual	Badlands WA	0.30	0.03	0.04	0.34	4	17.00	17.34	50	50	
PM_{10}	Annual	Black Elk WA	0.39	0.04	0.05	0.44	17	17.00	17.44	50	50	
PM_{10}	Annual	Mt Rushmore NM	0.36	0.04	0.05	0.41	17	17.00	17.41	50	50	
PM_{10}	Annual	Wind Cave NP	0.41	0.04	0.05	0.46	4	17.00	17.46	50	50	
PM_{10}	Annual	Jewel Cave NM	0.49	0.04	0.05	0.54	17	17.00	17.54	50	50	
PM_{10}	Annual	Soldier Creek WA	0.30	0.03	0.04	0.34	17	17.00	17.34	50	50	
PM_{10}	Annual	Agate Fossil Beds NM	0.27	0.03	0.04	0.31	17	17.00	17.31	50	50	
PM_{10}	Annual	Ft Laramie NHS	0.31	0.03	0.04	0.35	17	17.00	17.35	50	50	
PM_{10}	Annual	Devils Tower NM	0.62	0.08	0.11	0.73	17	17.00	17.73	50	50	
PM_{10}	Annual	Cloud Peak WA	0.30	0.09	0.12	0.41	17	17.00	17.41	50	50	
PM_{10}	Annual	Northern Cheyenne IR	0.48	0.73	1.22	1.67	4	30.00	31.67	50	50	
PM_{10}	Annual	Crow IR	0.71	1.47	1.68	2.32	17	30.00	32.32	50	50	
PM_{10}	Annual	Bighorn Canyon NRA	0.29	0.09	0.15	0.41	17	30.00	30.41	50	50	
PM_{10}	Annual	Bridger WA	0.10	0.02	0.03	0.13	4	17.00	17.13	50	50	
PM_{10}	Annual	Fitzpatrick WA	0.11	0.02	0.03	0.14	4	17.00	17.14	50	50	
PM_{10}	Annual	Popo Agie WA	0.12	0.02	0.03	0.15	17	17.00	17.15	50	50	
PM_{10}	Annual	Grand Teton NP	0.05	0.01	0.01	0.06	4	17.00	17.06	50	50	
PM_{10}	Annual	Teton WA	0.08	0.02	0.03	0.11	4	17.00	17.11	50	50	
PM_{10}	Annual	Washakie WA	0.15	0.03	0.05	0.19	4	17.00	17.19	50	50	
PM_{10}	Annual	North Absaroka WA	0.12	0.03	0.05	0.16	4	17.00	17.16	50	50	
PM_{10}	Annual	Yellowstone NP	0.09	0.02	0.03	0.11	4	30.00	30.11	50	50	
PM_{10}	Annual	Absaroka-Beartooth WA	0.55	0.04	0.06	0.58	17	30.00	30.58	50	50	
PM_{10}	Annual	Red Rock Lakes WA	0.04	0.01	0.01	0.05	4	30.00	30.05	50	50	
PM_{10}	Annual	Gates of the Mtns WA	0.13	0.01	0.01	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Scapegoat WA	0.06	0.00	0.01	0.07	4	30.00	30.07	50	50	
PM_{10}	Annual	UL Bend WA	0.10	0.02	0.03	0.13	4	30.00	30.13	50	50	
PM_{10}	Annual	Ft Belknap IR	2.65	0.01	0.02	2.67	17	30.00	32.67	50	50	
PM_{10}	Annual	Ft Peck IR	0.05	0.01	0.02	0.07	4	30.00	30.07	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/S	0.11	0.03	0.04	0.15	4	30.00	30.15	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/N	0.07	0.02	0.02	0.09	4	30.00	30.09	50	50	
PM_{10}	24-hour	Badlands WA	3.13	0.38	0.51	3.37	8	42.00	45.37	150	150	
PM_{10}	24-hour	Black Elk WA	3.70	0.39	0.56	4.09	30	42.00	46.09	150	150	
PM_{10}	24-hour	Mt Rushmore NM	2.99	0.39	0.55	3.55	30	42.00	45.55	150	150	
PM_{10}	24-hour	Wind Cave NP	3.37	0.35	0.50	3.90	8	42.00	45.90	150	150	
PM_{10}	24-hour	Jewel Cave NM	4.11	0.41	0.54	4.77	30	42.00	46.77	150	150	
PM_{10}	24-hour	Soldier Creek WA	2.88	0.32	0.43	3.31	30	42.00	45.31	150	150	
PM_{10}	24-hour	Agate Fossil Beds NM	2.72	0.31	0.41	3.13	30	42.00	45.13	150	150	
PM_{10}	24-hour	Ft Laramie NHS	3.12	0.34	0.46	3.58	30	42.00	45.58	150	150	
PM_{10}	24-hour	Devils Tower NM	4.25	0.73	0.88	5.01	30	42.00	47.01	150	150	
PM_{10}	24-hour	Cloud Peak WA	5.23	1.22	1.71	6.16	30	42.00	48.16	150	150	
PM_{10}	24-hour	Northern Cheyenne IR	8.38	4.21	5.86	12.84	8	105.00	117.84	150	150	y
PM_{10}	24-hour	Crow IR	11.43	7.12	7.97	15.65	30	105.00	120.65	150	150	
PM_{10}	24-hour	Bighorn Canyon NRA	6.32	2.04	3.03	8.13	30	105.00	113.13	150	150	
PM_{10}	24-hour	Bridger WA	3.86	0.89	1.30	5.05	8	42.00	47.05	150	150	
PM_{10}	24-hour	Fitzpatrick WA	4.83	0.83	1.23	6.02	8	42.00	48.02	150	150	
PM_{10}	24-hour	Popo Agie WA	4.24	1.00	1.56	5.61	30	42.00	47.61	150	150	
PM_{10}	24-hour	Grand Teton NP	1.77	0.34	0.47	2.21	8	42.00	44.21	150	150	
PM_{10}	24-hour	Teton WA	3.67	0.72	1.04	4.67	8	42.00	46.67	150	150	
PM_{10}	24-hour	Washakie WA	7.23	1.35	1.97	9.18	8	42.00	51.18	150	150	y
PM_{10}	24-hour	North Absaroka WA	3.15	0.80	1.15	4.46	8	42.00	46.46	150	150	
PM_{10}	24-hour	Yellowstone NP	2.35	0.57	0.80	3.05	8	105.00	108.05	150	150	
PM_{10}	24-hour	Absaroka-Beartooth WA	7.29	0.87	1.31	7.31	30	105.00	112.31	150	150	
PM_{10}	24-hour	Red Rock Lakes WA	0.58	0.12	0.17	0.68	8	105.00	105.68	150	150	
PM_{10}	24-hour	Gates of the Mtns WA	1.88	0.36	0.49	2.37	8	105.00	107.37	150	150	
PM_{10}	24-hour	Scapegoat WA	1.51	0.28	0.37	1.94	8	105.00	106.94	150	150	
PM_{10}	24-hour	UL Bend WA	1.53	0.31	0.45	1.93	8	105.00	106.93	150	150	
PM_{10}	24-hour	Ft Belknap IR	29.72	0.30	0.41	29.72	30	105.00	134.72	150	150	
PM_{10}	24-hour	Ft Peck IR	0.72	0.30	0.52	0.97	8	105.00	105.97	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/S	1.46	0.73	0.89	1.85	8	105.00	106.85	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/N	0.99	0.31	0.52	1.25	8	105.00	106.25	150	150	
$PM_{2.5}$	Annual	Badlands WA	0.25	0.03	0.04	0.29	-999	7.60	7.89	15	15	
$PM_{2.5}$	Annual	Black Elk WA	0.32	0.03	0.04	0.37	-999	7.60	7.97	15	15	
$PM_{2.5}$	Annual	Mt Rushmore NM	0.30	0.03	0.04	0.34	-999	7.60	7.94	15	15	
$PM_{2.5}$	Annual	Wind Cave NP	0.33	0.03	0.04	0.37	-999	7.60	7.97	15	15	
$PM_{2.5}$	Annual	Jewel Cave NM	0.39	0.03	0.05	0.43	-999	7.60	8.03	15	15	
$PM_{2.5}$	Annual	Soldier Creek WA	0.25	0.03	0.04	0.28	-999	7.60	7.88	15	15	
$PM_{2.5}$	Annual	Agate Fossil Beds NM	0.22	0.02	0.03	0.25	-999	7.60	7.85	15	15	
$PM_{2.5}$	Annual	Ft Laramie NHS	0.22	0.03	0.03	0.26	-999	7.60	7.86	15	15	
$PM_{2.5}$	Annual	Devils Tower NM	0.47	0.07	0.09	0.56	-999	7.60	8.16	15	15	
$PM_{2.5}$	Annual	Cloud Peak WA	0.26	0.08	0.11	0.35	-999	7.60	7.95	15	15	
$PM_{2.5}$	Annual	Northern Cheyenne IR	0.36	0.36	0.62	0.96	-999	8.00	8.96	15	15	
$PM_{2.5}$	Annual	Crow IR	0.49	0.66	0.79	1.24	-999	8.00	9.24	15	15	
$PM_{2.5}$	Annual	Bighorn Canyon NRA	0.23	0.08	0.13	0.36	-999	8.00	8.36	15	15	
$PM_{2.5}$	Annual	Bridger WA	0.09	0.02	0.03	0.12	-999	7.60	7.72	15	15	
$PM_{2.5}$	Annual	Fitzpatrick WA	0.10	0.02	0.03	0.13	-999	7.60	7.73	15	15	

C.1.2.1 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt E	MT Project Alt Ea	Cumulative	PSD	Background	Total	SAAQS	NAAQS
$PM_{2.5}$	Annual	Popo Agie WA	0.11	0.02	0.03	0.14	-999	7.60	7.74	15	15
$PM_{2.5}$	Annual	Grand Teton NP	0.04	0.01	0.01	0.06	-999	7.60	7.66	15	15
$PM_{2.5}$	Annual	Teton WA	0.08	0.02	0.03	0.10	-999	7.60	7.70	15	15
$PM_{2.5}$	Annual	Washakie WA	0.13	0.03	0.05	0.18	-999	7.60	7.78	15	15
$PM_{2.5}$	Annual	North Absaroka WA	0.11	0.03	0.04	0.15	-999	7.60	7.75	15	15
$PM_{2.5}$	Annual	Yellowstone NP	0.08	0.02	0.03	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Absaroka-Beartooth WA	0.30	0.04	0.05	0.33	-999	8.00	8.33	15	15
$PM_{2.5}$	Annual	Red Rock Lakes WA	0.03	0.00	0.01	0.04	-999	8.00	8.04	15	15
$PM_{2.5}$	Annual	Gates of the Mtns WA	0.10	0.01	0.01	0.11	-999	8.00	8.11	15	15
$PM_{2.5}$	Annual	Scapegoat WA	0.04	0.00	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	UL Bend WA	0.08	0.02	0.02	0.11	-999	8.00	8.11	15	15
$PM_{2.5}$	Annual	Ft Belknap IR	1.19	0.01	0.02	1.20	-999	8.00	9.20	15	15
$PM_{2.5}$	Annual	Ft Peck IR	0.04	0.01	0.02	0.06	-999	8.00	8.06	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/S	0.09	0.03	0.03	0.13	-999	8.00	8.13	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/N	0.06	0.01	0.02	0.08	-999	8.00	8.08	15	15
$PM_{2.5}$	24-hour	Badlands WA	2.82	0.35	0.42	3.04	-999	19.00	22.04	65	65
$PM_{2.5}$	24-hour	Black Elk WA	3.20	0.38	0.54	3.69	-999	19.00	22.69	65	65
$PM_{2.5}$	24-hour	Mt Rushmore NM	2.81	0.38	0.54	3.38	-999	19.00	22.38	65	65
$PM_{2.5}$	24-hour	Wind Cave NP	3.02	0.35	0.49	3.35	-999	19.00	22.35	65	65
$PM_{2.5}$	24-hour	Jewel Cave NM	3.79	0.38	0.53	4.50	-999	19.00	23.50	65	65
$PM_{2.5}$	24-hour	Soldier Creek WA	2.64	0.30	0.40	3.04	-999	19.00	22.04	65	65
$PM_{2.5}$	24-hour	Agate Fossil Beds NM	2.46	0.29	0.39	2.85	-999	19.00	21.85	65	65
$PM_{2.5}$	24-hour	Ft Laramie NHS	2.63	0.32	0.43	3.06	-999	19.00	22.06	65	65
$PM_{2.5}$	24-hour	Devils Tower NM	3.96	0.68	0.82	4.71	-999	19.00	23.71	65	65
$PM_{2.5}$	24-hour	Cloud Peak WA	4.83	1.04	1.46	5.68	-999	19.00	24.68	65	65
$PM_{2.5}$	24-hour	Northern Cheyenne IR	7.55	3.09	4.02	10.97	-999	20.00	30.97	65	65
$PM_{2.5}$	24-hour	Crow IR	10.57	4.17	5.10	14.68	-999	20.00	34.68	65	65
$PM_{2.5}$	24-hour	Bighorn Canyon NRA	5.91	1.92	2.85	7.62	-999	20.00	27.62	65	65
$PM_{2.5}$	24-hour	Bridger WA	3.70	0.87	1.27	4.79	-999	19.00	23.79	65	65
$PM_{2.5}$	24-hour	Fitzpatrick WA	4.64	0.81	1.18	5.80	-999	19.00	24.80	65	65
$PM_{2.5}$	24-hour	Popo Agie WA	4.06	0.95	1.49	5.31	-999	19.00	24.31	65	65
$PM_{2.5}$	24-hour	Grand Teton NP	1.68	0.33	0.45	2.10	-999	19.00	21.10	65	65
$PM_{2.5}$	24-hour	Teton WA	3.50	0.70	1.01	4.46	-999	19.00	23.46	65	65
$PM_{2.5}$	24-hour	Washakie WA	6.95	1.32	1.92	8.85	-999	19.00	27.85	65	65
$PM_{2.5}$	24-hour	North Absaroka WA	3.01	0.76	1.10	4.27	-999	19.00	23.27	65	65
$PM_{2.5}$	24-hour	Yellowstone NP	2.23	0.53	0.75	2.92	-999	20.00	22.92	65	65
$PM_{2.5}$	24-hour	Absaroka-Beartooth WA	3.29	0.83	1.25	3.90	-999	20.00	23.90	65	65
$PM_{2.5}$	24-hour	Red Rock Lakes WA	0.49	0.11	0.16	0.58	-999	20.00	20.58	65	65
$PM_{2.5}$	24-hour	Gates of the Mtns WA	1.78	0.35	0.48	2.26	-999	20.00	22.26	65	65
$PM_{2.5}$	24-hour	Scapegoat WA	1.45	0.27	0.36	1.87	-999	20.00	21.87	65	65
$PM_{2.5}$	24-hour	UL Bend WA	1.45	0.28	0.39	1.84	-999	20.00	21.84	65	65
$PM_{2.5}$	24-hour	Ft Belknap IR	12.74	0.29	0.40	12.74	-999	20.00	32.74	65	65
$PM_{2.5}$	24-hour	Ft Peck IR	0.64	0.28	0.50	0.84	-999	20.00	20.84	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/S	1.25	0.66	0.81	1.62	-999	20.00	21.62	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/N	0.82	0.29	0.48	1.06	-999	20.00	21.06	65	65
CO	8-hour	Badlands WA	13.73	2.54	3.10	15.31	-999	1500	1515	10000	10000
CO	8-hour	Black Elk WA	19.14	2.17	3.05	21.43	-999	1500	1521	10000	10000
CO	8-hour	Mt Rushmore NM	17.40	1.99	2.79	19.70	-999	1500	1520	10000	10000
CO	8-hour	Wind Cave NP	19.11	2.09	2.99	21.20	-999	1500	1521	10000	10000
CO	8-hour	Jewel Cave NM	23.85	2.39	3.44	26.00	-999	1500	1526	10000	10000
CO	8-hour	Soldier Creek WA	7.44	1.28	1.92	8.98	-999	1500	1509	10000	10000
CO	8-hour	Agate Fossil Beds NM	6.96	1.46	2.01	8.97	-999	1500	1509	10000	10000
CO	8-hour	Ft Laramie NHS	10.90	1.48	2.10	12.83	-999	1500	1513	10000	10000
CO	8-hour	Devils Tower NM	18.60	4.94	5.19	21.53	-999	1500	1522	10000	10000
CO	8-hour	Cloud Peak WA	13.88	8.34	9.47	18.14	-999	1500	1518	10000	10000
CO	8-hour	Northern Cheyenne IR	28.89	56.31	57.77	77.99	-999	6600	6678	10000	10000
CO	8-hour	Crow IR	38.40	51.08	53.69	64.95	-999	6600	6665	10000	10000
CO	8-hour	Bighorn Canyon NRA	16.80	7.95	12.99	28.98	-999	6600	6629	10000	10000
CO	8-hour	Bridger WA	8.56	2.51	3.55	11.50	-999	1500	1512	10000	10000
CO	8-hour	Fitzpatrick WA	7.53	1.49	2.23	9.27	-999	1500	1509	10000	10000
CO	8-hour	Popo Agie WA	9.25	2.57	3.63	12.36	-999	1500	1512	10000	10000
CO	8-hour	Grand Teton NP	4.55	0.76	1.16	5.32	-999	1500	1505	10000	10000
CO	8-hour	Teton WA	6.03	1.67	2.36	8.11	-999	1500	1508	10000	10000
CO	8-hour	Washakie WA	11.40	2.57	3.67	14.42	-999	1500	1514	10000	10000
CO	8-hour	North Absaroka WA	7.71	3.69	5.14	12.85	-999	1500	1513	10000	10000
CO	8-hour	Yellowstone NP	6.36	2.70	3.78	10.13	-999	6600	6610	10000	10000
CO	8-hour	Absaroka-Beartooth WA	51.76	4.64	6.16	52.12	-999	6600	6652	10000	10000
CO	8-hour	Red Rock Lakes WA	1.53	0.48	0.67	2.07	-999	6600	6602	10000	10000
CO	8-hour	Gates of the Mtns WA	2.46	0.50	0.71	3.17	-999	6600	6603	10000	10000
CO	8-hour	Scapegoat WA	1.84	0.47	0.66	2.51	-999	6600	6603	10000	10000
CO	8-hour	UL Bend WA	4.60	1.81	3.26	6.08	-999	6600	6606	10000	10000
CO	8-hour	Ft Belknap IR	32.44	1.17	1.78	32.49	-999	6600	6632	10000	10000
CO	8-hour	Ft Peck IR	6.70	1.75	2.69	9.12	-999	6600	6609	10000	10000
CO	8-hour	Theodore Roosevelt NP/S	10.89	3.08	3.82	13.26	-999	6600	6613	10000	10000
CO	8-hour	Theodore Roosevelt NP/N	9.40	2.40	4.05	11.10	-999	6600	6611	10000	10000

C.1.2.1 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt E	MT Project Alt Ea	Cumulative	PSD	Background	Total	SAAQS	NAAQS
CO	1-hour	Badlands WA	19.24	3.91	4.66	21.17	-999	3500	3521	40000	40000
CO	1-hour	Black Elk WA	23.03	5.68	8.03	27.04	-999	3500	3527	40000	40000
CO	1-hour	Mt Rushmore NM	20.83	5.20	7.37	26.86	-999	3500	3527	40000	40000
CO	1-hour	Wind Cave NP	23.23	5.35	7.49	26.68	-999	3500	3527	40000	40000
CO	1-hour	Jewel Cave NM	27.80	5.09	7.39	29.99	-999	3500	3530	40000	40000
CO	1-hour	Soldier Creek WA	20.75	3.32	4.57	24.35	-999	3500	3524	40000	40000
CO	1-hour	Agate Fossil Beds NM	17.62	3.64	5.00	18.30	-999	3500	3518	40000	40000
CO	1-hour	Ft Laramie NHS	22.10	2.73	3.32	23.27	-999	3500	3523	40000	40000
CO	1-hour	Devils Tower NM	38.14	11.18	11.81	44.73	-999	3500	3545	40000	40000
CO	1-hour	Cloud Peak WA	16.26	11.51	13.18	21.27	-999	3500	3521	40000	40000
CO	1-hour	Northern Cheyenne IR	43.48	67.75	69.45	95.96	-999	15000	15096	26000	40000
CO	1-hour	Crow IR	48.95	64.24	66.58	88.42	-999	15000	15088	26000	40000
CO	1-hour	Bighorn Canyon NRA	25.61	9.47	16.52	38.27	-999	15000	15038	26000	40000
CO	1-hour	Bridger WA	12.27	2.75	3.87	12.60	-999	3500	3513	40000	40000
CO	1-hour	Fitzpatrick WA	11.07	1.77	2.40	11.43	-999	3500	3511	40000	40000
CO	1-hour	Popo Agie WA	11.57	2.92	4.08	13.40	-999	3500	3513	40000	40000
CO	1-hour	Grand Teton NP	5.14	0.94	1.37	6.04	-999	3500	3506	40000	40000
CO	1-hour	Teton WA	7.58	1.81	2.75	10.12	-999	3500	3510	40000	40000
CO	1-hour	Washakie WA	13.63	2.95	4.14	16.76	-999	3500	3517	40000	40000
CO	1-hour	North Absaroka WA	9.57	5.14	6.74	16.31	-999	3500	3516	40000	40000
CO	1-hour	Yellowstone NP	6.67	3.02	4.18	10.25	-999	15000	15010	26000	40000
CO	1-hour	Absaroka-Beartooth WA	100.00	5.52	7.28	100.01	-999	15000	15100	26000	40000
CO	1-hour	Red Rock Lakes WA	1.65	0.51	0.73	2.21	-999	15000	15002	26000	40000
CO	1-hour	Gates of the Mtns WA	2.54	0.55	0.85	3.26	-999	15000	15003	26000	40000
CO	1-hour	Scapegoat WA	2.56	0.50	0.71	3.11	-999	15000	15003	26000	40000
CO	1-hour	UL Bend WA	5.25	2.43	4.67	7.06	-999	15000	15007	26000	40000
CO	1-hour	Ft Belknap IR	55.01	1.48	2.13	55.05	-999	15000	15055	26000	40000
CO	1-hour	Ft Peck IR	8.76	2.55	3.92	11.52	-999	15000	15012	26000	40000
CO	1-hour	Theodore Roosevelt NP/S	12.69	3.46	4.53	16.23	-999	15000	15016	40000	40000
CO	1-hour	Theodore Roosevelt NP/N	13.61	2.97	4.34	16.73	-999	15000	15017	40000	40000

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Ea sources include Alt. E sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.1.2.2 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 1[a]

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt D	MT Project Alt Da	Cumulative	PSD	Background	Total	SAAQS	NAAQS
NO_2	Annual	Badlands WA	0.25	0.01	0.01	0.27	2.5	16.50	16.77	100	100
NO_2	Annual	Black Elk WA	0.37	0.01	0.02	0.38	25	16.50	16.88	100	100
NO_2	Annual	Mt Rushmore NM	0.31	0.01	0.02	0.33	25	16.50	16.83	100	100
NO_2	Annual	Wind Cave NP	0.48	0.01	0.02	0.50	2.5	16.50	17.00	100	100
NO_2	Annual	Jewel Cave NM	0.62	0.02	0.02	0.64	25	16.50	17.14	100	100
NO_2	Annual	Soldier Creek WA	0.50	0.01	0.02	0.52	25	16.50	17.02	100	100
NO_2	Annual	Agate Fossil Beds NM	0.25	0.01	0.01	0.27	25	16.50	16.77	100	100
NO_2	Annual	Ft Laramie NHS	0.23	0.01	0.01	0.24	25	16.50	16.74	100	100
NO_2	Annual	Devils Tower NM	1.08	0.08	0.09	1.17	25	16.50	17.67	100	100
NO_2	Annual	Cloud Peak WA	0.20	0.05	0.07	0.25	25	16.50	16.75	100	100
NO_2	Annual	Northern Cheyenne IR	0.51	1.08	1.98	2.45	2.5	11.00	13.45	100	100
NO_2	Annual	Crow IR	1.10	2.43	2.78	3.54	25	11.00	14.54	100	100
NO_2	Annual	Bighorn Canyon NRA	0.18	0.06	0.10	0.27	25	16.50	16.77	100	100
NO_2	Annual	Bridger WA	0.02	0.00	0.00	0.03	2.5	16.50	16.53	100	100
NO_2	Annual	Fitzpatrick WA	0.02	0.00	0.00	0.03	2.5	16.50	16.53	100	100
NO_2	Annual	Popo Agie WA	0.03	0.00	0.00	0.04	25	16.50	16.54	100	100
NO_2	Annual	Grand Teton NP	0.01	0.00	0.00	0.01	2.5	16.50	16.51	100	100
NO_2	Annual	Teton WA	0.01	0.00	0.00	0.02	2.5	16.50	16.52	100	100
NO_2	Annual	Washakie WA	0.03	0.01	0.01	0.04	2.5	16.50	16.54	100	100
NO_2	Annual	North Absaroka WA	0.03	0.02	0.02	0.06	2.5	16.50	16.56	100	100
NO_2	Annual	Yellowstone NP	0.07	0.01	0.01	0.08	2.5	16.50	16.58	100	100
NO_2	Annual	Absaroka-Beartooth WA	0.66	0.04	0.04	0.68	25	11.00	11.68	100	100
NO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.00	0.01	2.5	11.00	11.01	100	100
NO_2	Annual	Gates of the Mtns WA	0.11	0.00	0.00	0.11	2.5	11.00	11.11	100	100
NO_2	Annual	Scapegoat WA	0.03	0.00	0.00	0.03	2.5	11.00	11.03	100	100
NO_2	Annual	UL Bend WA	0.03	0.01	0.01	0.05	2.5	11.00	11.05	100	100
NO_2	Annual	Ft Belknap IR	1.41	0.01	0.01	1.41	25	11.00	12.41	100	100
NO_2	Annual	Ft Peck IR	0.02	0.01	0.01	0.03	2.5	11.00	11.03	100	100
NO_2	Annual	Theodore Roosevelt NP/S	0.07	0.01	0.02	0.09	2.5	11.00	11.09	100	100
NO_2	Annual	Theodore Roosevelt NP/N	0.05	0.01	0.01	0.06	2.5	11.00	11.06	100	100
NO_2	1-hour	Northern Cheyenne IR	26.41	23.73	25.02	38.36	-999	117.00	155.36	566	-999
NO_2	1-hour	Crow IR	27.53	32.72	32.73	43.91	-999	117.00	160.91	566	-999
NO_2	1-hour	Bighorn Canyon NRA	6.99	5.94	7.29	10.06	-999	117.00	127.06	566	-999
NO_2	1-hour	Yellowstone NP	4.64	1.74	1.74	4.65	-999	117.00	121.65	566	-999
NO_2	1-hour	Absaroka-Beartooth WA	35.92	2.02	2.03	35.93	-999	117.00	152.93	566	-999
NO_2	1-hour	Red Rock Lakes WA	1.03	0.05	0.07	1.03	-999	117.00	118.03	566	-999
NO_2	1-hour	Gates of the Mtns WA	1.93	0.41	0.45	1.93	-999	117.00	118.93	566	-999
NO_2	1-hour	Scapegoat WA	1.39	0.10	0.10	1.44	-999	117.00	118.44	566	-999
NO_2	1-hour	UL Bend WA	2.08	0.69	0.99	2.36	-999	117.00	119.36	566	-999
NO_2	1-hour	Ft Belknap IR	28.11	1.04	1.50	28.11	-999	117.00	145.11	566	-999
NO_2	1-hour	Ft Peck IR	3.30	0.53	0.68	3.52	-999	117.00	120.52	566	-999
SO_2	Annual	Badlands WA	0.08	0.00	0.00	0.08	2	3.00	3.08	80	80
SO_2	Annual	Black Elk WA	0.18	0.00	0.00	0.18	20	3.00	3.18	80	80
SO_2	Annual	Mt Rushmore NM	0.13	0.00	0.00	0.13	20	3.00	3.13	80	80
SO_2	Annual	Wind Cave NP	0.13	0.00	0.00	0.13	2	3.00	3.13	80	80
SO_2	Annual	Jewel Cave NM	0.22	0.00	0.00	0.22	20	3.00	3.22	80	80
SO_2	Annual	Soldier Creek WA	0.11	0.00	0.00	0.11	20	3.00	3.11	80	80
SO_2	Annual	Agate Fossil Beds NM	0.08	0.00	0.00	0.08	20	3.00	3.08	80	80
SO_2	Annual	Ft Laramie NHS	0.07	0.00	0.00	0.08	20	3.00	3.08	60	80
SO_2	Annual	Devils Tower NM	0.15	0.01	0.01	0.16	20	3.00	3.16	60	80
SO_2	Annual	Cloud Peak WA	0.07	0.00	0.00	0.08	20	3.00	3.08	60	80
SO_2	Annual	Northern Cheyenne IR	0.12	0.08	0.13	0.24	2	16.00	16.24	60	80
SO_2	Annual	Crow IR	0.40	0.29	0.30	0.41	20	16.00	16.41	60	80
SO_2	Annual	Bighorn Canyon NRA	0.10	0.00	0.01	0.10	20	16.00	16.10	60	80
SO_2	Annual	Bridger WA	0.03	0.00	0.00	0.03	2	3.00	3.03	60	80
SO_2	Annual	Fitzpatrick WA	0.03	0.00	0.00	0.03	2	3.00	3.03	60	80
SO_2	Annual	Popo Agie WA	0.03	0.00	0.00	0.03	20	3.00	3.03	60	80
SO_2	Annual	Grand Teton NP	0.01	0.00	0.00	0.01	2	3.00	3.01	60	80
SO_2	Annual	Teton WA	0.02	0.00	0.00	0.02	2	3.00	3.02	60	80
SO_2	Annual	Washakie WA	0.04	0.00	0.00	0.04	2	3.00	3.04	60	80
SO_2	Annual	North Absaroka WA	0.04	0.00	0.00	0.04	2	3.00	3.04	60	80
SO_2	Annual	Yellowstone NP	0.02	0.00	0.00	0.02	2	16.00	16.02	60	80
SO_2	Annual	Absaroka-Beartooth WA	0.13	0.00	0.00	0.13	20	16.00	16.13	60	80
SO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.00	0.01	2	16.00	16.01	60	80
SO_2	Annual	Gates of the Mtns WA	0.03	0.00	0.00	0.03	2	16.00	16.03	60	80
SO_2	Annual	Scapegoat WA	0.01	0.00	0.00	0.01	2	16.00	16.01	60	80
SO_2	Annual	UL Bend WA	0.02	0.00	0.00	0.02	2	16.00	16.02	60	80
SO_2	Annual	Ft Belknap IR	0.26	0.00	0.00	0.26	20	16.00	16.26	60	80
SO_2	Annual	Ft Peck IR	0.01	0.00	0.00	0.01	2	16.00	16.01	60	80
SO_2	Annual	Theodore Roosevelt NP/S	0.03	0.00	0.00	0.03	2	16.00	16.03	60	80
SO_2	Annual	Theodore Roosevelt NP/N	0.01	0.00	0.00	0.02	2	16.00	16.02	60	80

C.1.2.2 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt D	MT Project Alt Da	Cumulative	PSD	Background	Total	SAAQS	NAAQS
SO_2	24-hour	Badlands WA	0.64	0.01	0.02	0.64	5	8.00	8.64	365	365
SO_2	24-hour	Black Elk WA	1.32	0.01	0.01	1.32	91	8.00	9.32	365	365
SO_2	24-hour	Mt Rushmore NM	0.92	0.01	0.01	0.92	91	8.00	8.92	365	365
SO_2	24-hour	Wind Cave NP	0.93	0.01	0.01	0.94	5	8.00	8.94	365	365
SO_2	24-hour	Jewel Cave NM	1.61	0.01	0.01	1.61	91	8.00	9.61	365	365
SO_2	24-hour	Soldier Creek WA	0.61	0.01	0.01	0.61	91	8.00	8.61	365	365
SO_2	24-hour	Agate Fossil Beds NM	0.64	0.01	0.01	0.65	91	8.00	8.65	365	365
SO_2	24-hour	Ft Laramie NHS	1.18	0.01	0.01	1.19	91	8.00	9.19	260	365
SO_2	24-hour	Devils Tower NM	0.87	0.04	0.04	0.88	91	8.00	8.88	260	365
SO_2	24-hour	Cloud Peak WA	1.08	0.04	0.05	1.11	91	8.00	9.11	260	365
SO_2	24-hour	Northern Cheyenne IR	0.95	0.39	0.52	1.07	5	73.00	74.07	260	365
SO_2	24-hour	Crow IR	5.25	1.02	1.06	5.27	91	73.00	78.27	260	365
SO_2	24-hour	Bighorn Canyon NRA	1.89	0.06	0.08	1.90	91	73.00	74.90	260	365
SO_2	24-hour	Bridger WA	0.77	0.01	0.01	0.78	5	8.00	8.78	260	365
SO_2	24-hour	Fitzpatrick WA	1.18	0.01	0.01	1.18	5	8.00	9.18	260	365
SO_2	24-hour	Popo Agie WA	0.86	0.01	0.01	0.86	91	8.00	8.86	260	365
SO_2	24-hour	Grand Teton NP	0.56	0.01	0.01	0.57	5	8.00	8.57	260	365
SO_2	24-hour	Teton WA	0.47	0.01	0.01	0.48	5	8.00	8.48	260	365
SO_2	24-hour	Washakie WA	0.82	0.02	0.02	0.84	5	8.00	8.84	260	365
SO_2	24-hour	North Absaroka WA	0.73	0.03	0.03	0.75	5	8.00	8.75	260	365
SO_2	24-hour	Yellowstone NP	0.50	0.01	0.01	0.50	5	73.00	73.50	260	365
SO_2	24-hour	Absaroka-Beartooth WA	2.38	0.05	0.05	2.39	91	73.00	75.39	260	365
SO_2	24-hour	Red Rock Lakes WA	0.13	0.00	0.00	0.13	5	73.00	73.13	260	365
SO_2	24-hour	Gates of the Mtns WA	0.37	0.01	0.01	0.38	5	73.00	73.38	260	365
SO_2	24-hour	Scapegoat WA	0.28	0.00	0.00	0.29	5	73.00	73.29	260	365
SO_2	24-hour	UL Bend WA	0.47	0.02	0.02	0.47	5	73.00	73.47	260	365
SO_2	24-hour	Ft Belknap IR	1.16	0.02	0.02	1.16	91	73.00	74.16	260	365
SO_2	24-hour	Ft Peck IR	0.19	0.01	0.01	0.20	5	73.00	73.20	260	365
SO_2	24-hour	Theodore Roosevelt NP/S	0.33	0.01	0.02	0.34	5	73.00	73.34	260	365
SO_2	24-hour	Theodore Roosevelt NP/N	0.20	0.01	0.01	0.20	5	73.00	73.20	260	365
SO_2	3-hour	Badlands WA	1.91	0.05	0.05	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	Black Elk WA	3.45	0.05	0.05	3.45	512	8.00	11.45	1300	1300
SO_2	3-hour	Mt Rushmore NM	2.47	0.05	0.05	2.48	512	8.00	10.48	1300	1300
SO_2	3-hour	Wind Cave NP	2.68	0.04	0.05	2.68	25	8.00	10.68	1300	1300
SO_2	3-hour	Jewel Cave NM	4.08	0.03	0.04	4.08	512	8.00	12.08	1300	1300
SO_2	3-hour	Soldier Creek WA	1.87	0.07	0.07	1.88	512	8.00	9.88	1300	1300
SO_2	3-hour	Agate Fossil Beds NM	1.80	0.05	0.07	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Ft Laramie NHS	3.36	0.04	0.04	3.37	512	8.00	11.37	1300	1300
SO_2	3-hour	Devils Tower NM	3.19	0.19	0.20	3.19	512	8.00	11.19	1300	1300
SO_2	3-hour	Cloud Peak WA	2.28	0.08	0.10	2.30	512	8.00	10.30	1300	1300
SO_2	3-hour	Northern Cheyenne IR	5.08	0.97	1.15	5.09	25	291.00	296.09	-999	1300
SO_2	3-hour	Crow IR	17.06	1.72	1.77	17.09	512	291.00	308.10	-999	1300
SO_2	3-hour	Bighorn Canyon NRA	4.19	0.17	0.22	4.19	512	291.00	295.19	1300	1300
SO_2	3-hour	Bridger WA	1.94	0.03	0.03	1.94	25	8.00	9.94	1300	1300
SO_2	3-hour	Fitzpatrick WA	3.24	0.03	0.04	3.24	25	8.00	11.24	1300	1300
SO_2	3-hour	Popo Agie WA	1.73	0.03	0.03	1.73	512	8.00	9.73	1300	1300
SO_2	3-hour	Grand Teton NP	1.29	0.04	0.04	1.30	25	8.00	9.30	1300	1300
SO_2	3-hour	Teton WA	0.99	0.03	0.03	0.99	25	8.00	8.99	1300	1300
SO_2	3-hour	Washakie WA	1.90	0.06	0.06	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	North Absaroka WA	2.16	0.09	0.10	2.18	25	8.00	10.18	1300	1300
SO_2	3-hour	Yellowstone NP	2.03	0.08	0.08	2.05	25	291.00	293.05	1300	1300
SO_2	3-hour	Absaroka-Beartooth WA	4.43	0.12	0.12	4.43	512	291.00	295.43	-999	1300
SO_2	3-hour	Red Rock Lakes WA	0.44	0.00	0.00	0.44	25	291.00	291.44	-999	1300
SO_2	3-hour	Gates of the Mtns WA	0.83	0.02	0.02	0.83	25	291.00	291.83	-999	1300
SO_2	3-hour	Scapegoat WA	0.77	0.00	0.01	0.77	25	291.00	291.77	-999	1300
SO_2	3-hour	UL Bend WA	1.07	0.06	0.07	1.09	25	291.00	292.09	-999	1300
SO_2	3-hour	Ft Belknap IR	2.55	0.05	0.06	2.55	512	291.00	293.55	-999	1300
SO_2	3-hour	Ft Peck IR	0.73	0.02	0.03	0.74	25	291.00	291.74	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/S	0.90	0.04	0.04	0.91	25	291.00	291.91	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/N	0.53	0.02	0.03	0.53	25	291.00	291.53	-999	1300
SO_2	1-hour	Northern Cheyenne IR	5.55	1.48	1.64	5.56	-999	666.00	671.56	1300	-999
SO_2	1-hour	Crow IR	29.56	2.15	2.16	29.57	-999	666.00	695.57	1300	-999
SO_2	1-hour	Bighorn Canyon NRA	5.33	0.39	0.48	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Yellowstone NP	3.67	0.21	0.21	3.69	-999	666.00	669.69	1300	-999
SO_2	1-hour	Absaroka-Beartooth WA	5.34	0.23	0.23	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Red Rock Lakes WA	0.49	0.01	0.01	0.49	-999	666.00	666.49	1300	-999
SO_2	1-hour	Gates of the Mtns WA	1.50	0.04	0.04	1.50	-999	666.00	667.50	1300	-999
SO_2	1-hour	Scapegoat WA	1.09	0.01	0.01	1.09	-999	666.00	667.09	1300	-999
SO_2	1-hour	UL Bend WA	1.56	0.08	0.08	1.58	-999	666.00	667.58	1300	-999
SO_2	1-hour	Ft Belknap IR	4.03	0.10	0.10	4.03	-999	666.00	670.03	1300	-999
SO_2	1-hour	Ft Peck IR	0.83	0.03	0.03	0.83	-999	666.00	666.83	1300	-999
SO_2	1-hour	Theodore Roosevelt NP/S	1.13	0.04	0.05	1.14	-999	666.00	667.14	715	-999
SO_2	1-hour	Theodore Roosevelt NP/N	0.57	0.02	0.03	0.58	-999	666.00	666.58	715	-999

C.1.2.2 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt D	MT Project Alt Da	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
PM_{10}	Annual	Badlands WA	0.30	0.02	0.02	0.32	4	17.00	17.32	50	50	
PM_{10}	Annual	Black Elk WA	0.39	0.02	0.03	0.42	17	17.00	17.42	50	50	
PM_{10}	Annual	Mt Rushmore NM	0.36	0.02	0.03	0.38	17	17.00	17.38	50	50	
PM_{10}	Annual	Wind Cave NP	0.41	0.02	0.03	0.44	4	17.00	17.44	50	50	
PM_{10}	Annual	Jewel Cave NM	0.49	0.02	0.03	0.52	17	17.00	17.52	50	50	
PM_{10}	Annual	Soldier Creek WA	0.30	0.02	0.02	0.32	17	17.00	17.32	50	50	
PM_{10}	Annual	Agate Fossil Beds NM	0.27	0.02	0.02	0.29	17	17.00	17.29	50	50	
PM_{10}	Annual	Ft Laramie NHS	0.31	0.02	0.02	0.33	17	17.00	17.33	50	50	
PM_{10}	Annual	Devils Tower NM	0.62	0.05	0.07	0.69	17	17.00	17.69	50	50	
PM_{10}	Annual	Cloud Peak WA	0.30	0.05	0.07	0.36	17	17.00	17.36	50	50	
PM_{10}	Annual	Northern Cheyenne IR	0.48	0.62	1.03	1.48	4	30.00	31.48	50	50	
PM_{10}	Annual	Crow IR	0.71	1.30	1.46	2.10	17	30.00	32.10	50	50	
PM_{10}	Annual	Bighorn Canyon NRA	0.29	0.06	0.09	0.35	17	30.00	30.35	50	50	
PM_{10}	Annual	Bridger WA	0.10	0.01	0.01	0.12	4	17.00	17.12	50	50	
PM_{10}	Annual	Fitzpatrick WA	0.11	0.01	0.02	0.12	4	17.00	17.12	50	50	
PM_{10}	Annual	Popo Agie WA	0.12	0.01	0.02	0.14	17	17.00	17.14	50	50	
PM_{10}	Annual	Grand Teton NP	0.05	0.01	0.01	0.06	4	17.00	17.06	50	50	
PM_{10}	Annual	Teton WA	0.08	0.01	0.01	0.10	4	17.00	17.10	50	50	
PM_{10}	Annual	Washakie WA	0.15	0.02	0.03	0.17	4	17.00	17.17	50	50	
PM_{10}	Annual	North Absaroka WA	0.12	0.02	0.03	0.14	4	17.00	17.14	50	50	
PM_{10}	Annual	Yellowstone NP	0.09	0.01	0.02	0.10	4	30.00	30.10	50	50	
PM_{10}	Annual	Absaroka-Beartooth WA	0.55	0.03	0.03	0.57	17	30.00	30.57	50	50	
PM_{10}	Annual	Red Rock Lakes WA	0.04	0.00	0.00	0.05	4	30.00	30.05	50	50	
PM_{10}	Annual	Gates of the Mtns WA	0.13	0.00	0.00	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Scapegoat WA	0.06	0.00	0.00	0.06	4	30.00	30.06	50	50	
PM_{10}	Annual	UL Bend WA	0.10	0.01	0.02	0.12	4	30.00	30.12	50	50	
PM_{10}	Annual	Ft Belknap IR	2.65	0.01	0.01	2.66	17	30.00	32.66	50	50	
PM_{10}	Annual	Ft Peck IR	0.05	0.01	0.01	0.06	4	30.00	30.06	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/S	0.11	0.02	0.02	0.13	4	30.00	30.13	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/N	0.07	0.01	0.01	0.08	4	30.00	30.08	50	50	
PM_{10}	24-hour	Badlands WA	3.13	0.20	0.27	3.28	8	42.00	45.28	150	150	
PM_{10}	24-hour	Black Elk WA	3.70	0.23	0.28	3.89	30	42.00	45.89	150	150	
PM_{10}	24-hour	Mt Rushmore NM	2.99	0.23	0.29	3.26	30	42.00	45.26	150	150	
PM_{10}	24-hour	Wind Cave NP	3.37	0.21	0.27	3.72	8	42.00	45.72	150	150	
PM_{10}	24-hour	Jewel Cave NM	4.11	0.20	0.27	4.40	30	42.00	46.40	150	150	
PM_{10}	24-hour	Soldier Creek WA	2.88	0.17	0.22	3.09	30	42.00	45.09	150	150	
PM_{10}	24-hour	Agate Fossil Beds NM	2.72	0.16	0.21	2.93	30	42.00	44.93	150	150	
PM_{10}	24-hour	Ft Laramie NHS	3.12	0.18	0.24	3.36	30	42.00	45.36	150	150	
PM_{10}	24-hour	Devils Tower NM	4.25	0.42	0.50	4.76	30	42.00	46.76	150	150	
PM_{10}	24-hour	Cloud Peak WA	5.23	0.66	0.92	5.72	30	42.00	47.72	150	150	
PM_{10}	24-hour	Northern Cheyenne IR	8.38	3.33	4.42	11.12	8	105.00	116.12	150	150	y
PM_{10}	24-hour	Crow IR	11.43	5.52	6.09	13.73	30	105.00	118.73	150	150	
PM_{10}	24-hour	Bighorn Canyon NRA	6.32	1.03	1.47	7.21	30	105.00	112.21	150	150	
PM_{10}	24-hour	Bridger WA	3.86	0.41	0.56	4.32	8	42.00	46.32	150	150	
PM_{10}	24-hour	Fitzpatrick WA	4.83	0.40	0.58	5.33	8	42.00	47.33	150	150	
PM_{10}	24-hour	Popo Agie WA	4.24	0.49	0.67	4.82	30	42.00	46.82	150	150	
PM_{10}	24-hour	Grand Teton NP	1.77	0.16	0.22	1.99	8	42.00	43.99	150	150	
PM_{10}	24-hour	Teton WA	3.67	0.33	0.46	4.12	8	42.00	46.12	150	150	
PM_{10}	24-hour	Washakie WA	7.23	0.61	0.85	8.07	8	42.00	50.07	150	150	y
PM_{10}	24-hour	North Absaroka WA	3.15	0.44	0.58	3.81	8	42.00	45.81	150	150	
PM_{10}	24-hour	Yellowstone NP	2.35	0.29	0.38	2.68	8	105.00	107.68	150	150	
PM_{10}	24-hour	Absaroka-Beartooth WA	7.29	0.46	0.65	7.30	30	105.00	112.30	150	150	
PM_{10}	24-hour	Red Rock Lakes WA	0.58	0.06	0.09	0.65	8	105.00	105.65	150	150	
PM_{10}	24-hour	Gates of the Mtns WA	1.88	0.16	0.22	2.10	8	105.00	107.10	150	150	
PM_{10}	24-hour	Scapegoat WA	1.51	0.14	0.19	1.70	8	105.00	106.70	150	150	
PM_{10}	24-hour	UL Bend WA	1.53	0.21	0.28	1.72	8	105.00	106.72	150	150	
PM_{10}	24-hour	Ft Belknap IR	29.72	0.14	0.19	29.72	30	105.00	134.72	150	150	
PM_{10}	24-hour	Ft Peck IR	0.72	0.18	0.26	0.87	8	105.00	105.87	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/S	1.46	0.41	0.49	1.66	8	105.00	106.66	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/N	0.99	0.17	0.28	1.10	8	105.00	106.10	150	150	
$PM_{2.5}$	Annual	Badlands WA	0.25	0.02	0.02	0.27	-999	7.60	7.87	15	15	
$PM_{2.5}$	Annual	Black Elk WA	0.32	0.02	0.02	0.35	-999	7.60	7.95	15	15	
$PM_{2.5}$	Annual	Mt Rushmore NM	0.30	0.02	0.02	0.32	-999	7.60	7.92	15	15	
$PM_{2.5}$	Annual	Wind Cave NP	0.33	0.02	0.02	0.35	-999	7.60	7.95	15	15	
$PM_{2.5}$	Annual	Jewel Cave NM	0.39	0.02	0.02	0.41	-999	7.60	8.01	15	15	
$PM_{2.5}$	Annual	Soldier Creek WA	0.25	0.01	0.02	0.27	-999	7.60	7.87	15	15	
$PM_{2.5}$	Annual	Agate Fossil Beds NM	0.22	0.01	0.02	0.24	-999	7.60	7.84	15	15	
$PM_{2.5}$	Annual	Ft Laramie NHS	0.22	0.01	0.02	0.24	-999	7.60	7.84	15	15	
$PM_{2.5}$	Annual	Devils Tower NM	0.47	0.04	0.05	0.52	-999	7.60	8.12	15	15	
$PM_{2.5}$	Annual	Cloud Peak WA	0.26	0.04	0.05	0.30	-999	7.60	7.90	15	15	
$PM_{2.5}$	Annual	Northern Cheyenne IR	0.36	0.26	0.43	0.77	-999	8.00	8.77	15	15	
$PM_{2.5}$	Annual	Crow IR	0.49	0.50	0.57	1.02	-999	8.00	9.02	15	15	
$PM_{2.5}$	Annual	Bighorn Canyon NRA	0.23	0.04	0.07	0.29	-999	8.00	8.29	15	15	
$PM_{2.5}$	Annual	Bridger WA	0.09	0.01	0.01	0.11	-999	7.60	7.71	15	15	
$PM_{2.5}$	Annual	Fitzpatrick WA	0.10	0.01	0.01	0.11	-999	7.60	7.71	15	15	

C.1.2.2 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt D	MT Project Alt Da	Cumulative	PSD	Background	Total	SAAQS	NAAQS
$PM_{2.5}$	Annual	Popo Agie WA	0.11	0.01	0.01	0.12	-999	7.60	7.72	15	15
$PM_{2.5}$	Annual	Grand Teton NP	0.04	0.01	0.01	0.05	-999	7.60	7.65	15	15
$PM_{2.5}$	Annual	Teton WA	0.08	0.01	0.01	0.09	-999	7.60	7.69	15	15
$PM_{2.5}$	Annual	Washakie WA	0.13	0.02	0.02	0.16	-999	7.60	7.76	15	15
$PM_{2.5}$	Annual	North Absaroka WA	0.11	0.02	0.02	0.13	-999	7.60	7.73	15	15
$PM_{2.5}$	Annual	Yellowstone NP	0.08	0.01	0.01	0.09	-999	8.00	8.09	15	15
$PM_{2.5}$	Annual	Absaroka-Beartooth WA	0.30	0.02	0.03	0.32	-999	8.00	8.32	15	15
$PM_{2.5}$	Annual	Red Rock Lakes WA	0.03	0.00	0.00	0.03	-999	8.00	8.03	15	15
$PM_{2.5}$	Annual	Gates of the Mtns WA	0.10	0.00	0.00	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Scapegoat WA	0.04	0.00	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	UL Bend WA	0.08	0.01	0.01	0.09	-999	8.00	8.09	15	15
$PM_{2.5}$	Annual	Ft Belknap IR	1.19	0.01	0.01	1.20	-999	8.00	9.20	15	15
$PM_{2.5}$	Annual	Ft Peck IR	0.04	0.01	0.01	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/S	0.09	0.01	0.02	0.11	-999	8.00	8.11	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/N	0.06	0.01	0.01	0.07	-999	8.00	8.07	15	15
$PM_{2.5}$	24-hour	Badlands WA	2.82	0.17	0.23	2.96	-999	19.00	21.96	65	65
$PM_{2.5}$	24-hour	Black Elk WA	3.20	0.18	0.23	3.38	-999	19.00	22.38	65	65
$PM_{2.5}$	24-hour	Mt Rushmore NM	2.81	0.17	0.23	3.09	-999	19.00	22.09	65	65
$PM_{2.5}$	24-hour	Wind Cave NP	3.02	0.18	0.23	3.17	-999	19.00	22.17	65	65
$PM_{2.5}$	24-hour	Jewel Cave NM	3.79	0.18	0.24	4.13	-999	19.00	23.13	65	65
$PM_{2.5}$	24-hour	Soldier Creek WA	2.64	0.15	0.19	2.83	-999	19.00	21.83	65	65
$PM_{2.5}$	24-hour	Agate Fossil Beds NM	2.46	0.14	0.18	2.65	-999	19.00	21.65	65	65
$PM_{2.5}$	24-hour	Ft Laramie NHS	2.63	0.16	0.21	2.84	-999	19.00	21.84	65	65
$PM_{2.5}$	24-hour	Devils Tower NM	3.96	0.34	0.41	4.17	-999	19.00	23.17	65	65
$PM_{2.5}$	24-hour	Cloud Peak WA	4.83	0.51	0.68	5.24	-999	19.00	24.24	65	65
$PM_{2.5}$	24-hour	Northern Cheyenne IR	7.55	1.66	2.50	9.25	-999	20.00	29.25	65	65
$PM_{2.5}$	24-hour	Crow IR	10.57	2.58	2.89	12.76	-999	20.00	32.76	65	65
$PM_{2.5}$	24-hour	Bighorn Canyon NRA	5.91	0.91	1.29	6.69	-999	20.00	26.69	65	65
$PM_{2.5}$	24-hour	Bridger WA	3.70	0.38	0.53	4.07	-999	19.00	23.07	65	65
$PM_{2.5}$	24-hour	Fitzpatrick WA	4.64	0.36	0.53	5.11	-999	19.00	24.11	65	65
$PM_{2.5}$	24-hour	Popo Agie WA	4.06	0.46	0.64	4.52	-999	19.00	23.52	65	65
$PM_{2.5}$	24-hour	Grand Teton NP	1.68	0.15	0.21	1.88	-999	19.00	20.88	65	65
$PM_{2.5}$	24-hour	Teton WA	3.50	0.31	0.43	3.92	-999	19.00	22.92	65	65
$PM_{2.5}$	24-hour	Washakie WA	6.95	0.58	0.80	7.74	-999	19.00	26.74	65	65
$PM_{2.5}$	24-hour	North Absaroka WA	3.01	0.40	0.54	3.62	-999	19.00	22.62	65	65
$PM_{2.5}$	24-hour	Yellowstone NP	2.23	0.25	0.33	2.54	-999	20.00	22.54	65	65
$PM_{2.5}$	24-hour	Absaroka-Beartooth WA	3.29	0.42	0.59	3.44	-999	20.00	23.44	65	65
$PM_{2.5}$	24-hour	Red Rock Lakes WA	0.49	0.06	0.08	0.55	-999	20.00	20.55	65	65
$PM_{2.5}$	24-hour	Gates of the Mtns WA	1.78	0.16	0.21	1.99	-999	20.00	21.99	65	65
$PM_{2.5}$	24-hour	Scapegoat WA	1.45	0.13	0.18	1.63	-999	20.00	21.63	65	65
$PM_{2.5}$	24-hour	UL Bend WA	1.45	0.17	0.22	1.63	-999	20.00	21.63	65	65
$PM_{2.5}$	24-hour	Ft Belknap IR	12.74	0.14	0.18	12.74	-999	20.00	32.74	65	65
$PM_{2.5}$	24-hour	Ft Peck IR	0.64	0.16	0.23	0.74	-999	20.00	20.74	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/S	1.25	0.34	0.41	1.42	-999	20.00	21.42	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/N	0.82	0.15	0.24	0.92	-999	20.00	20.92	65	65
CO	8-hour	Badlands WA	13.73	0.78	0.94	14.14	-999	1500	1514	10000	10000
CO	8-hour	Black Elk WA	19.14	0.65	0.88	19.75	-999	1500	1520	10000	10000
CO	8-hour	Mt Rushmore NM	17.40	0.59	0.80	18.01	-999	1500	1518	10000	10000
CO	8-hour	Wind Cave NP	19.11	0.63	0.85	19.66	-999	1500	1520	10000	10000
CO	8-hour	Jewel Cave NM	23.85	0.69	0.97	24.42	-999	1500	1524	10000	10000
CO	8-hour	Soldier Creek WA	7.44	0.41	0.53	7.59	-999	1500	1508	10000	10000
CO	8-hour	Agate Fossil Beds NM	6.96	0.44	0.59	7.55	-999	1500	1508	10000	10000
CO	8-hour	Ft Laramie NHS	10.90	0.44	0.61	11.46	-999	1500	1511	10000	10000
CO	8-hour	Devils Tower NM	18.60	1.15	1.31	19.38	-999	1500	1519	10000	10000
CO	8-hour	Cloud Peak WA	13.88	2.07	2.23	15.07	-999	1500	1515	10000	10000
CO	8-hour	Northern Cheyenne IR	28.89	15.11	15.79	36.01	-999	6600	6636	10000	10000
CO	8-hour	Crow IR	38.40	13.04	13.40	44.05	-999	6600	6644	10000	10000
CO	8-hour	Bighorn Canyon NRA	16.80	2.35	3.39	20.18	-999	6600	6620	10000	10000
CO	8-hour	Bridger WA	8.56	0.71	0.98	9.36	-999	1500	1509	10000	10000
CO	8-hour	Fitzpatrick WA	7.53	0.41	0.60	7.97	-999	1500	1508	10000	10000
CO	8-hour	Popo Agie WA	9.25	0.74	1.00	10.10	-999	1500	1510	10000	10000
CO	8-hour	Grand Teton NP	4.55	0.23	0.34	4.78	-999	1500	1505	10000	10000
CO	8-hour	Teton WA	6.03	0.45	0.62	6.56	-999	1500	1507	10000	10000
CO	8-hour	Washakie WA	11.40	0.71	0.97	12.20	-999	1500	1512	10000	10000
CO	8-hour	North Absaroka WA	7.71	1.11	1.46	9.18	-999	1500	1509	10000	10000
CO	8-hour	Yellowstone NP	6.36	0.76	1.02	7.37	-999	6600	6607	10000	10000
CO	8-hour	Absaroka-Beartooth WA	51.76	1.43	1.82	51.83	-999	6600	6652	10000	10000
CO	8-hour	Red Rock Lakes WA	1.53	0.14	0.19	1.66	-999	6600	6602	10000	10000
CO	8-hour	Gates of the Mtns WA	2.46	0.16	0.21	2.67	-999	6600	6603	10000	10000
CO	8-hour	Scapegoat WA	1.84	0.13	0.18	2.02	-999	6600	6602	10000	10000
CO	8-hour	UL Bend WA	4.60	0.60	0.93	5.02	-999	6600	6605	10000	10000
CO	8-hour	Ft Belknap IR	32.44	0.35	0.51	32.45	-999	6600	6632	10000	10000
CO	8-hour	Ft Peck IR	6.70	0.52	0.75	7.40	-999	6600	6607	10000	10000
CO	8-hour	Theodore Roosevelt NP/S	10.89	0.89	1.09	11.58	-999	6600	6612	10000	10000
CO	8-hour	Theodore Roosevelt NP/N	9.40	0.74	1.22	9.89	-999	6600	6610	10000	10000

C.1.2.2 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 1[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Project Alt D	MT Project Alt Da	Cumulative	PSD	Background	Total	SAAQS	NAAQS
CO	1-hour	Badlands WA	19.24	1.21	1.41	19.75	-999	3500	3520	40000	40000
CO	1-hour	Black Elk WA	23.03	1.75	2.40	23.61	-999	3500	3524	40000	40000
CO	1-hour	Mt Rushmore NM	20.83	1.59	2.18	21.68	-999	3500	3522	40000	40000
CO	1-hour	Wind Cave NP	23.23	1.66	2.25	23.77	-999	3500	3524	40000	40000
CO	1-hour	Jewel Cave NM	27.80	1.54	2.17	28.37	-999	3500	3528	40000	40000
CO	1-hour	Soldier Creek WA	20.75	1.02	1.35	21.82	-999	3500	3522	40000	40000
CO	1-hour	Agate Fossil Beds NM	17.62	1.08	1.46	17.62	-999	3500	3518	40000	40000
CO	1-hour	Ft Laramie NHS	22.10	0.86	1.02	22.42	-999	3500	3522	40000	40000
CO	1-hour	Devils Tower NM	38.14	2.55	2.85	40.06	-999	3500	3540	40000	40000
CO	1-hour	Cloud Peak WA	16.26	3.13	3.47	16.90	-999	3500	3517	40000	40000
CO	1-hour	Northern Cheyenne IR	43.48	18.84	25.43	51.16	-999	15000	15051	26000	40000
CO	1-hour	Crow IR	48.95	20.92	25.31	55.49	-999	15000	15055	26000	40000
CO	1-hour	Bighorn Canyon NRA	25.61	3.03	4.30	28.78	-999	15000	15029	26000	40000
CO	1-hour	Bridger WA	12.27	0.78	1.06	12.37	-999	3500	3512	40000	40000
CO	1-hour	Fitzpatrick WA	11.07	0.54	0.64	11.17	-999	3500	3511	40000	40000
CO	1-hour	Popo Agie WA	11.57	0.83	1.13	11.62	-999	3500	3512	40000	40000
CO	1-hour	Grand Teton NP	5.14	0.35	0.41	5.41	-999	3500	3505	40000	40000
CO	1-hour	Teton WA	7.58	0.51	0.72	8.24	-999	3500	3508	40000	40000
CO	1-hour	Washakie WA	13.63	0.87	1.17	14.40	-999	3500	3514	40000	40000
CO	1-hour	North Absaroka WA	9.57	1.94	2.35	11.92	-999	3500	3512	40000	40000
CO	1-hour	Yellowstone NP	6.67	0.90	1.19	7.48	-999	15000	15007	26000	40000
CO	1-hour	Absaroka-Beartooth WA	100.00	1.80	2.23	100.00	-999	15000	15100	26000	40000
CO	1-hour	Red Rock Lakes WA	1.65	0.16	0.21	1.79	-999	15000	15002	26000	40000
CO	1-hour	Gates of the Mtns WA	2.54	0.19	0.26	2.74	-999	15000	15003	26000	40000
CO	1-hour	Scapegoat WA	2.56	0.14	0.19	2.73	-999	15000	15003	26000	40000
CO	1-hour	UL Bend WA	5.25	0.73	1.24	5.76	-999	15000	15006	26000	40000
CO	1-hour	Ft Belknap IR	55.01	0.57	0.82	55.02	-999	15000	15055	26000	40000
CO	1-hour	Ft Peck IR	8.76	0.80	1.15	9.56	-999	15000	15010	26000	40000
CO	1-hour	Theodore Roosevelt NP/S	12.69	1.00	1.35	13.35	-999	15000	15013	40000	40000
CO	1-hour	Theodore Roosevelt NP/N	13.61	0.90	1.31	14.52	-999	15000	15015	40000	40000

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Da sources include Alt. D sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.1.2.3 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1[a]

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
NO_2	Annual	Badlands WA	0.25	0.00	0.26	2.5	16.50	16.76	100	100
NO_2	Annual	Black Elk WA	0.37	0.00	0.37	25	16.50	16.87	100	100
NO_2	Annual	Mt Rushmore NM	0.31	0.00	0.31	25	16.50	16.81	100	100
NO_2	Annual	Wind Cave NP	0.48	0.00	0.49	2.5	16.50	16.99	100	100
NO_2	Annual	Jewel Cave NM	0.62	0.00	0.62	25	16.50	17.12	100	100
NO_2	Annual	Soldier Creek WA	0.50	0.00	0.50	25	16.50	17.00	100	100
NO_2	Annual	Agate Fossil Beds NM	0.25	0.00	0.26	25	16.50	16.76	100	100
NO_2	Annual	Ft Laramie NHS	0.23	0.00	0.23	25	16.50	16.73	100	100
NO_2	Annual	Devils Tower NM	1.08	0.03	1.10	25	16.50	17.60	100	100
NO_2	Annual	Cloud Peak WA	0.20	0.01	0.21	25	16.50	16.71	100	100
NO_2	Annual	Northern Cheyenne IR	0.51	0.17	0.68	2.5	11.00	11.68	100	100
NO_2	Annual	Crow IR	1.10	1.15	2.01	25	11.00	13.01	100	100
NO_2	Annual	Bighorn Canyon NRA	0.18	0.03	0.21	25	16.50	16.71	100	100
NO_2	Annual	Bridger WA	0.02	0.00	0.03	2.5	16.50	16.53	100	100
NO_2	Annual	Fitzpatrick WA	0.02	0.00	0.03	2.5	16.50	16.53	100	100
NO_2	Annual	Popo Agie WA	0.03	0.00	0.04	25	16.50	16.54	100	100
NO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2.5	16.50	16.51	100	100
NO_2	Annual	Teton WA	0.01	0.00	0.02	2.5	16.50	16.52	100	100
NO_2	Annual	Washakie WA	0.03	0.01	0.04	2.5	16.50	16.54	100	100
NO_2	Annual	North Absaroka WA	0.03	0.01	0.05	2.5	16.50	16.55	100	100
NO_2	Annual	Yellowstone NP	0.07	0.00	0.07	2.5	16.50	16.57	100	100
NO_2	Annual	Absaroka-Beartooth WA	0.66	0.03	0.67	25	11.00	11.67	100	100
NO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2.5	11.00	11.01	100	100
NO_2	Annual	Gates of the Mtns WA	0.11	0.00	0.11	2.5	11.00	11.11	100	100
NO_2	Annual	Scapegoat WA	0.03	0.00	0.03	2.5	11.00	11.03	100	100
NO_2	Annual	UL Bend WA	0.03	0.01	0.04	2.5	11.00	11.04	100	100
NO_2	Annual	Ft Belknap IR	1.41	0.00	1.41	25	11.00	12.41	100	100
NO_2	Annual	Ft Peck IR	0.02	0.00	0.02	2.5	11.00	11.02	100	100
NO_2	Annual	Theodore Roosevelt NP/S	0.07	0.00	0.08	2.5	11.00	11.08	100	100
NO_2	Annual	Theodore Roosevelt NP/N	0.05	0.00	0.06	2.5	11.00	11.06	100	100
NO_2	1-hour	Northern Cheyenne IR	26.41	6.66	28.53	-999	117.00	145.53	566	-999
NO_2	1-hour	Crow IR	27.53	12.83	33.23	-999	117.00	150.23	566	-999
NO_2	1-hour	Bighorn Canyon NRA	6.99	2.18	7.14	-999	117.00	124.14	566	-999
NO_2	1-hour	Yellowstone NP	4.64	1.71	4.65	-999	117.00	121.65	566	-999
NO_2	1-hour	Absaroka-Beartooth WA	35.92	1.98	35.93	-999	117.00	152.93	566	-999
NO_2	1-hour	Red Rock Lakes WA	1.03	0.06	1.03	-999	117.00	118.03	566	-999
NO_2	1-hour	Gates of the Mtns WA	1.93	0.38	1.93	-999	117.00	118.93	566	-999
NO_2	1-hour	Scapegoat WA	1.39	0.09	1.42	-999	117.00	118.42	566	-999
NO_2	1-hour	UL Bend WA	2.08	0.49	2.11	-999	117.00	119.11	566	-999
NO_2	1-hour	Ft Belknap IR	28.11	0.78	28.11	-999	117.00	145.11	566	-999
NO_2	1-hour	Ft Peck IR	3.30	0.15	3.34	-999	117.00	120.34	566	-999
SO_2	Annual	Badlands WA	0.08	0.00	0.08	2	3.00	3.08	80	80
SO_2	Annual	Black Elk WA	0.18	0.00	0.18	20	3.00	3.18	80	80
SO_2	Annual	Mt Rushmore NM	0.13	0.00	0.13	20	3.00	3.13	80	80
SO_2	Annual	Wind Cave NP	0.13	0.00	0.13	2	3.00	3.13	80	80
SO_2	Annual	Jewel Cave NM	0.22	0.00	0.22	20	3.00	3.22	80	80
SO_2	Annual	Soldier Creek WA	0.11	0.00	0.11	20	3.00	3.11	80	80
SO_2	Annual	Agate Fossil Beds NM	0.08	0.00	0.08	20	3.00	3.08	80	80
SO_2	Annual	Ft Laramie NHS	0.07	0.00	0.07	20	3.00	3.07	60	80
SO_2	Annual	Devils Tower NM	0.15	0.00	0.15	20	3.00	3.15	60	80
SO_2	Annual	Cloud Peak WA	0.07	0.00	0.07	20	3.00	3.07	60	80
SO_2	Annual	Northern Cheyenne IR	0.12	0.02	0.13	2	16.00	16.13	60	80
SO_2	Annual	Crow IR	0.40	0.17	0.41	20	16.00	16.41	60	80
SO_2	Annual	Bighorn Canyon NRA	0.10	0.00	0.10	20	16.00	16.10	60	80
SO_2	Annual	Bridger WA	0.03	0.00	0.03	2	3.00	3.03	60	80
SO_2	Annual	Fitzpatrick WA	0.03	0.00	0.03	2	3.00	3.03	60	80
SO_2	Annual	Popo Agie WA	0.03	0.00	0.03	20	3.00	3.03	60	80
SO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2	3.00	3.01	60	80
SO_2	Annual	Teton WA	0.02	0.00	0.02	2	3.00	3.02	60	80
SO_2	Annual	Washakie WA	0.04	0.00	0.04	2	3.00	3.04	60	80
SO_2	Annual	North Absaroka WA	0.04	0.00	0.04	2	3.00	3.04	60	80
SO_2	Annual	Yellowstone NP	0.02	0.00	0.02	2	16.00	16.02	60	80
SO_2	Annual	Absaroka-Beartooth WA	0.13	0.00	0.13	20	16.00	16.13	60	80
SO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2	16.00	16.01	60	80
SO_2	Annual	Gates of the Mtns WA	0.03	0.00	0.03	2	16.00	16.03	60	80
SO_2	Annual	Scapegoat WA	0.01	0.00	0.01	2	16.00	16.01	60	80
SO_2	Annual	UL Bend WA	0.02	0.00	0.02	2	16.00	16.02	60	80
SO_2	Annual	Ft Belknap IR	0.26	0.00	0.26	20	16.00	16.26	60	80
SO_2	Annual	Ft Peck IR	0.01	0.00	0.01	2	16.00	16.01	60	80
SO_2	Annual	Theodore Roosevelt NP/S	0.03	0.00	0.03	2	16.00	16.03	60	80
SO_2	Annual	Theodore Roosevelt NP/N	0.01	0.00	0.01	2	16.00	16.01	60	80

C.1.2.3 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
SO_2	24-hour	Badlands WA	0.64	0.01	0.64	5	8.00	8.64	365	365
SO_2	24-hour	Black Elk WA	1.32	0.01	1.32	91	8.00	9.32	365	365
SO_2	24-hour	Mt Rushmore NM	0.92	0.01	0.92	91	8.00	8.92	365	365
SO_2	24-hour	Wind Cave NP	0.93	0.01	0.93	5	8.00	8.93	365	365
SO_2	24-hour	Jewel Cave NM	1.61	0.01	1.61	91	8.00	9.61	365	365
SO_2	24-hour	Soldier Creek WA	0.61	0.01	0.61	91	8.00	8.61	365	365
SO_2	24-hour	Agate Fossil Beds NM	0.64	0.00	0.65	91	8.00	8.65	365	365
SO_2	24-hour	Ft Laramie NHS	1.18	0.01	1.18	91	8.00	9.18	260	365
SO_2	24-hour	Devils Tower NM	0.87	0.04	0.87	91	8.00	8.87	260	365
SO_2	24-hour	Cloud Peak WA	1.08	0.02	1.10	91	8.00	9.10	260	365
SO_2	24-hour	Northern Cheyenne IR	0.95	0.14	0.97	5	73.00	73.97	260	365
SO_2	24-hour	Crow IR	5.25	0.57	5.27	91	73.00	78.27	260	365
SO_2	24-hour	Bighorn Canyon NRA	1.89	0.03	1.90	91	73.00	74.90	260	365
SO_2	24-hour	Bridger WA	0.77	0.01	0.78	5	8.00	8.78	260	365
SO_2	24-hour	Fitzpatrick WA	1.18	0.01	1.18	5	8.00	9.18	260	365
SO_2	24-hour	Popo Agie WA	0.86	0.01	0.86	91	8.00	8.86	260	365
SO_2	24-hour	Grand Teton NP	0.56	0.01	0.56	5	8.00	8.56	260	365
SO_2	24-hour	Teton WA	0.47	0.00	0.48	5	8.00	8.48	260	365
SO_2	24-hour	Washakie WA	0.82	0.02	0.83	5	8.00	8.83	260	365
SO_2	24-hour	North Absaroka WA	0.73	0.02	0.75	5	8.00	8.75	260	365
SO_2	24-hour	Yellowstone NP	0.50	0.01	0.50	5	73.00	73.50	260	365
SO_2	24-hour	Absaroka-Beartooth WA	2.38	0.04	2.39	91	73.00	75.39	260	365
SO_2	24-hour	Red Rock Lakes WA	0.13	0.00	0.13	5	73.00	73.13	260	365
SO_2	24-hour	Gates of the Mtns WA	0.37	0.00	0.38	5	73.00	73.38	260	365
SO_2	24-hour	Scapegoat WA	0.28	0.00	0.29	5	73.00	73.29	260	365
SO_2	24-hour	UL Bend WA	0.47	0.02	0.47	5	73.00	73.47	260	365
SO_2	24-hour	Ft Belknap IR	1.16	0.02	1.16	91	73.00	74.16	260	365
SO_2	24-hour	Ft Peck IR	0.19	0.01	0.19	5	73.00	73.19	260	365
SO_2	24-hour	Theodore Roosevelt NP/S	0.33	0.01	0.33	5	73.00	73.33	260	365
SO_2	24-hour	Theodore Roosevelt NP/N	0.20	0.01	0.20	5	73.00	73.20	260	365
SO_2	3-hour	Badlands WA	1.91	0.03	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	Black Elk WA	3.45	0.03	3.45	512	8.00	11.45	1300	1300
SO_2	3-hour	Mt Rushmore NM	2.47	0.03	2.48	512	8.00	10.48	1300	1300
SO_2	3-hour	Wind Cave NP	2.68	0.04	2.68	25	8.00	10.68	1300	1300
SO_2	3-hour	Jewel Cave NM	4.08	0.02	4.08	512	8.00	12.08	1300	1300
SO_2	3-hour	Soldier Creek WA	1.87	0.04	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Agate Fossil Beds NM	1.80	0.02	1.82	512	8.00	9.82	1300	1300
SO_2	3-hour	Ft Laramie NHS	3.36	0.03	3.36	512	8.00	11.36	1300	1300
SO_2	3-hour	Devils Tower NM	3.19	0.16	3.19	512	8.00	11.19	1300	1300
SO_2	3-hour	Cloud Peak WA	2.28	0.03	2.29	512	8.00	10.29	1300	1300
SO_2	3-hour	Northern Cheyenne IR	5.08	0.41	5.08	25	291.00	296.08	-999	1300
SO_2	3-hour	Crow IR	17.06	0.98	17.09	512	291.00	308.10	-999	1300
SO_2	3-hour	Bighorn Canyon NRA	4.19	0.13	4.19	512	291.00	295.19	1300	1300
SO_2	3-hour	Bridger WA	1.94	0.03	1.94	25	8.00	9.94	1300	1300
SO_2	3-hour	Fitzpatrick WA	3.24	0.02	3.24	25	8.00	11.24	1300	1300
SO_2	3-hour	Popo Agie WA	1.73	0.03	1.73	512	8.00	9.73	1300	1300
SO_2	3-hour	Grand Teton NP	1.29	0.04	1.30	25	8.00	9.30	1300	1300
SO_2	3-hour	Teton WA	0.99	0.03	0.99	25	8.00	8.99	1300	1300
SO_2	3-hour	Washakie WA	1.90	0.06	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	North Absaroka WA	2.16	0.08	2.18	25	8.00	10.18	1300	1300
SO_2	3-hour	Yellowstone NP	2.03	0.08	2.05	25	291.00	293.05	1300	1300
SO_2	3-hour	Absaroka-Beartooth WA	4.43	0.12	4.43	512	291.00	295.43	-999	1300
SO_2	3-hour	Red Rock Lakes WA	0.44	0.00	0.44	25	291.00	291.44	-999	1300
SO_2	3-hour	Gates of the Mtns WA	0.83	0.02	0.83	25	291.00	291.83	-999	1300
SO_2	3-hour	Scapegoat WA	0.77	0.00	0.77	25	291.00	291.77	-999	1300
SO_2	3-hour	UL Bend WA	1.07	0.06	1.09	25	291.00	292.09	-999	1300
SO_2	3-hour	Ft Belknap IR	2.55	0.05	2.55	512	291.00	293.55	-999	1300
SO_2	3-hour	Ft Peck IR	0.73	0.02	0.74	25	291.00	291.74	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/S	0.90	0.02	0.91	25	291.00	291.91	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/N	0.53	0.02	0.53	25	291.00	291.53	-999	1300
SO_2	1-hour	Northern Cheyenne IR	5.55	0.60	5.55	-999	666.00	671.55	1300	-999
SO_2	1-hour	Crow IR	29.56	1.24	29.57	-999	666.00	695.57	1300	-999
SO_2	1-hour	Bighorn Canyon NRA	5.33	0.26	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Yellowstone NP	3.67	0.21	3.69	-999	666.00	669.69	1300	-999
SO_2	1-hour	Absaroka-Beartooth WA	5.34	0.23	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Red Rock Lakes WA	0.49	0.01	0.49	-999	666.00	666.49	1300	-999
SO_2	1-hour	Gates of the Mtns WA	1.50	0.04	1.50	-999	666.00	667.50	1300	-999
SO_2	1-hour	Scapegoat WA	1.09	0.01	1.09	-999	666.00	667.09	1300	-999
SO_2	1-hour	UL Bend WA	1.56	0.07	1.58	-999	666.00	667.58	1300	-999
SO_2	1-hour	Ft Belknap IR	4.03	0.10	4.03	-999	666.00	670.03	1300	-999
SO_2	1-hour	Ft Peck IR	0.83	0.02	0.83	-999	666.00	666.83	1300	-999
SO_2	1-hour	Theodore Roosevelt NP/S	1.13	0.02	1.14	-999	666.00	667.14	715	-999
SO_2	1-hour	Theodore Roosevelt NP/N	0.57	0.02	0.58	-999	666.00	666.58	715	-999

C.1.2.3 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
PM_{10}	Annual	Badlands WA	0.30	0.00	0.30	4	17.00	17.30	50	50	
PM_{10}	Annual	Black Elk WA	0.39	0.01	0.40	17	17.00	17.40	50	50	
PM_{10}	Annual	Mt Rushmore NM	0.36	0.01	0.36	17	17.00	17.36	50	50	
PM_{10}	Annual	Wind Cave NP	0.41	0.01	0.42	4	17.00	17.42	50	50	
PM_{10}	Annual	Jewel Cave NM	0.49	0.01	0.50	17	17.00	17.50	50	50	
PM_{10}	Annual	Soldier Creek WA	0.30	0.00	0.30	17	17.00	17.30	50	50	
PM_{10}	Annual	Agate Fossil Beds NM	0.27	0.00	0.28	17	17.00	17.28	50	50	
PM_{10}	Annual	Ft Laramie NHS	0.31	0.00	0.31	17	17.00	17.31	50	50	
PM_{10}	Annual	Devils Tower NM	0.62	0.01	0.63	17	17.00	17.63	50	50	
PM_{10}	Annual	Cloud Peak WA	0.30	0.01	0.31	17	17.00	17.31	50	50	
PM_{10}	Annual	Northern Cheyenne IR	0.48	0.06	0.53	4	30.00	30.53	50	50	
PM_{10}	Annual	Crow IR	0.71	0.32	1.03	17	30.00	31.03	50	50	
PM_{10}	Annual	Bighorn Canyon NRA	0.29	0.02	0.31	17	30.00	30.31	50	50	
PM_{10}	Annual	Bridger WA	0.10	0.00	0.11	4	17.00	17.11	50	50	
PM_{10}	Annual	Fitzpatrick WA	0.11	0.00	0.11	4	17.00	17.11	50	50	
PM_{10}	Annual	Popo Agie WA	0.12	0.00	0.12	17	17.00	17.12	50	50	
PM_{10}	Annual	Grand Teton NP	0.05	0.00	0.05	4	17.00	17.05	50	50	
PM_{10}	Annual	Teton WA	0.08	0.00	0.09	4	17.00	17.09	50	50	
PM_{10}	Annual	Washakie WA	0.15	0.01	0.15	4	17.00	17.15	50	50	
PM_{10}	Annual	North Absaroka WA	0.12	0.01	0.13	4	17.00	17.13	50	50	
PM_{10}	Annual	Yellowstone NP	0.09	0.00	0.09	4	30.00	30.09	50	50	
PM_{10}	Annual	Absaroka-Beartooth WA	0.55	0.01	0.55	17	30.00	30.55	50	50	
PM_{10}	Annual	Red Rock Lakes WA	0.04	0.00	0.04	4	30.00	30.04	50	50	
PM_{10}	Annual	Gates of the Mtns WA	0.13	0.00	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Scapegoat WA	0.06	0.00	0.06	4	30.00	30.06	50	50	
PM_{10}	Annual	UL Bend WA	0.10	0.01	0.11	4	30.00	30.11	50	50	
PM_{10}	Annual	Ft Belknap IR	2.65	0.00	2.65	17	30.00	32.65	50	50	
PM_{10}	Annual	Ft Peck IR	0.05	0.00	0.05	4	30.00	30.05	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/S	0.11	0.00	0.11	4	30.00	30.11	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/N	0.07	0.00	0.07	4	30.00	30.07	50	50	
PM_{10}	24-hour	Badlands WA	3.13	0.04	3.19	8	42.00	45.19	150	150	
PM_{10}	24-hour	Black Elk WA	3.70	0.05	3.73	30	42.00	45.73	150	150	
PM_{10}	24-hour	Mt Rushmore NM	2.99	0.05	3.04	30	42.00	45.04	150	150	
PM_{10}	24-hour	Wind Cave NP	3.37	0.05	3.46	8	42.00	45.46	150	150	
PM_{10}	24-hour	Jewel Cave NM	4.11	0.05	4.13	30	42.00	46.13	150	150	
PM_{10}	24-hour	Soldier Creek WA	2.88	0.04	2.92	30	42.00	44.92	150	150	
PM_{10}	24-hour	Agate Fossil Beds NM	2.72	0.04	2.76	30	42.00	44.76	150	150	
PM_{10}	24-hour	Ft Laramie NHS	3.12	0.05	3.17	30	42.00	45.17	150	150	
PM_{10}	24-hour	Devils Tower NM	4.25	0.10	4.33	30	42.00	46.33	150	150	
PM_{10}	24-hour	Cloud Peak WA	5.23	0.15	5.32	30	42.00	47.32	150	150	
PM_{10}	24-hour	Northern Cheyenne IR	8.38	0.52	8.66	8	105.00	113.66	150	150	y
PM_{10}	24-hour	Crow IR	11.43	1.28	12.01	30	105.00	117.01	150	150	
PM_{10}	24-hour	Bighorn Canyon NRA	6.32	0.25	6.48	30	105.00	111.48	150	150	
PM_{10}	24-hour	Bridger WA	3.86	0.09	3.93	8	42.00	45.93	150	150	
PM_{10}	24-hour	Fitzpatrick WA	4.83	0.10	4.91	8	42.00	46.91	150	150	
PM_{10}	24-hour	Popo Agie WA	4.24	0.10	4.30	30	42.00	46.30	150	150	
PM_{10}	24-hour	Grand Teton NP	1.77	0.05	1.82	8	42.00	43.82	150	150	
PM_{10}	24-hour	Teton WA	3.67	0.08	3.75	8	42.00	45.75	150	150	
PM_{10}	24-hour	Washakie WA	7.23	0.15	7.38	8	42.00	49.38	150	150	
PM_{10}	24-hour	North Absaroka WA	3.15	0.15	3.29	8	42.00	45.29	150	150	
PM_{10}	24-hour	Yellowstone NP	2.35	0.07	2.41	8	105.00	107.42	150	150	
PM_{10}	24-hour	Absaroka-Beartooth WA	7.29	0.15	7.30	30	105.00	112.30	150	150	
PM_{10}	24-hour	Red Rock Lakes WA	0.58	0.02	0.60	8	105.00	105.60	150	150	
PM_{10}	24-hour	Gates of the Mtns WA	1.88	0.04	1.92	8	105.00	106.92	150	150	
PM_{10}	24-hour	Scapegoat WA	1.51	0.03	1.54	8	105.00	106.54	150	150	
PM_{10}	24-hour	UL Bend WA	1.53	0.10	1.57	8	105.00	106.57	150	150	
PM_{10}	24-hour	Ft Belknap IR	29.72	0.07	29.72	30	105.00	134.72	150	150	
PM_{10}	24-hour	Ft Peck IR	0.72	0.06	0.75	8	105.00	105.75	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/S	1.46	0.07	1.49	8	105.00	106.49	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/N	0.99	0.05	1.01	8	105.00	106.01	150	150	
$PM_{2.5}$	Annual	Badlands WA	0.25	0.00	0.25	-999	7.60	7.85	15	15	
$PM_{2.5}$	Annual	Black Elk WA	0.32	0.01	0.33	-999	7.60	7.93	15	15	
$PM_{2.5}$	Annual	Mt Rushmore NM	0.30	0.01	0.31	-999	7.60	7.91	15	15	
$PM_{2.5}$	Annual	Wind Cave NP	0.33	0.00	0.34	-999	7.60	7.94	15	15	
$PM_{2.5}$	Annual	Jewel Cave NM	0.39	0.01	0.39	-999	7.60	7.99	15	15	
$PM_{2.5}$	Annual	Soldier Creek WA	0.25	0.00	0.25	-999	7.60	7.85	15	15	
$PM_{2.5}$	Annual	Agate Fossil Beds NM	0.22	0.00	0.22	-999	7.60	7.82	15	15	
$PM_{2.5}$	Annual	Ft Laramie NHS	0.22	0.00	0.23	-999	7.60	7.83	15	15	
$PM_{2.5}$	Annual	Devils Tower NM	0.47	0.01	0.48	-999	7.60	8.08	15	15	
$PM_{2.5}$	Annual	Cloud Peak WA	0.26	0.01	0.27	-999	7.60	7.87	15	15	
$PM_{2.5}$	Annual	Northern Cheyenne IR	0.36	0.03	0.39	-999	8.00	8.39	15	15	
$PM_{2.5}$	Annual	Crow IR	0.49	0.15	0.63	-999	8.00	8.63	15	15	
$PM_{2.5}$	Annual	Bighorn Canyon NRA	0.23	0.01	0.24	-999	8.00	8.24	15	15	
$PM_{2.5}$	Annual	Bridger WA	0.09	0.00	0.10	-999	7.60	7.70	15	15	
$PM_{2.5}$	Annual	Fitzpatrick WA	0.10	0.00	0.10	-999	7.60	7.70	15	15	

C.1.2.3 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
$PM_{2.5}$	Annual	Popo Agie WA	0.11	0.00	0.11	-999	7.60	7.71	15	15
$PM_{2.5}$	Annual	Grand Teton NP	0.04	0.00	0.05	-999	7.60	7.65	15	15
$PM_{2.5}$	Annual	Teton WA	0.08	0.00	0.08	-999	7.60	7.68	15	15
$PM_{2.5}$	Annual	Washakie WA	0.13	0.01	0.14	-999	7.60	7.74	15	15
$PM_{2.5}$	Annual	North Absaroka WA	0.11	0.01	0.11	-999	7.60	7.71	15	15
$PM_{2.5}$	Annual	Yellowstone NP	0.08	0.00	0.08	-999	8.00	8.08	15	15
$PM_{2.5}$	Annual	Absaroka-Beartooth WA	0.30	0.01	0.31	-999	8.00	8.31	15	15
$PM_{2.5}$	Annual	Red Rock Lakes WA	0.03	0.00	0.03	-999	8.00	8.03	15	15
$PM_{2.5}$	Annual	Gates of the Mtns WA	0.10	0.00	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Scapegoat WA	0.04	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	UL Bend WA	0.08	0.00	0.09	-999	8.00	8.09	15	15
$PM_{2.5}$	Annual	Ft Belknap IR	1.19	0.00	1.19	-999	8.00	9.19	15	15
$PM_{2.5}$	Annual	Ft Peck IR	0.04	0.00	0.04	-999	8.00	8.04	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/S	0.09	0.00	0.09	-999	8.00	8.09	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/N	0.06	0.00	0.06	-999	8.00	8.06	15	15
$PM_{2.5}$	24-hour	Badlands WA	2.82	0.04	2.86	-999	19.00	21.86	65	65
$PM_{2.5}$	24-hour	Black Elk WA	3.20	0.05	3.23	-999	19.00	22.23	65	65
$PM_{2.5}$	24-hour	Mt Rushmore NM	2.81	0.05	2.89	-999	19.00	21.89	65	65
$PM_{2.5}$	24-hour	Wind Cave NP	3.02	0.05	3.04	-999	19.00	22.04	65	65
$PM_{2.5}$	24-hour	Jewel Cave NM	3.79	0.05	3.88	-999	19.00	22.88	65	65
$PM_{2.5}$	24-hour	Soldier Creek WA	2.64	0.04	2.67	-999	19.00	21.67	65	65
$PM_{2.5}$	24-hour	Agate Fossil Beds NM	2.46	0.04	2.50	-999	19.00	21.50	65	65
$PM_{2.5}$	24-hour	Ft Laramie NHS	2.63	0.04	2.67	-999	19.00	21.67	65	65
$PM_{2.5}$	24-hour	Devils Tower NM	3.96	0.08	4.02	-999	19.00	23.02	65	65
$PM_{2.5}$	24-hour	Cloud Peak WA	4.83	0.14	4.92	-999	19.00	23.92	65	65
$PM_{2.5}$	24-hour	Northern Cheyenne IR	7.55	0.32	7.79	-999	20.00	27.79	65	65
$PM_{2.5}$	24-hour	Crow IR	10.57	0.68	11.10	-999	20.00	31.10	65	65
$PM_{2.5}$	24-hour	Bighorn Canyon NRA	5.91	0.23	6.05	-999	20.00	26.05	65	65
$PM_{2.5}$	24-hour	Bridger WA	3.70	0.09	3.76	-999	19.00	22.76	65	65
$PM_{2.5}$	24-hour	Fitzpatrick WA	4.64	0.10	4.71	-999	19.00	23.71	65	65
$PM_{2.5}$	24-hour	Popo Agie WA	4.06	0.10	4.13	-999	19.00	23.13	65	65
$PM_{2.5}$	24-hour	Grand Teton NP	1.68	0.05	1.72	-999	19.00	20.72	65	65
$PM_{2.5}$	24-hour	Teton WA	3.50	0.08	3.57	-999	19.00	22.57	65	65
$PM_{2.5}$	24-hour	Washakie WA	6.95	0.14	7.08	-999	19.00	26.08	65	65
$PM_{2.5}$	24-hour	North Absaroka WA	3.01	0.14	3.15	-999	19.00	22.15	65	65
$PM_{2.5}$	24-hour	Yellowstone NP	2.23	0.07	2.30	-999	20.00	22.30	65	65
$PM_{2.5}$	24-hour	Absaroka-Beartooth WA	3.29	0.12	3.38	-999	20.00	23.38	65	65
$PM_{2.5}$	24-hour	Red Rock Lakes WA	0.49	0.02	0.51	-999	20.00	20.51	65	65
$PM_{2.5}$	24-hour	Gates of the Mtns WA	1.78	0.04	1.82	-999	20.00	21.82	65	65
$PM_{2.5}$	24-hour	Scapegoat WA	1.45	0.03	1.48	-999	20.00	21.48	65	65
$PM_{2.5}$	24-hour	UL Bend WA	1.45	0.09	1.49	-999	20.00	21.49	65	65
$PM_{2.5}$	24-hour	Ft Belknap IR	12.74	0.06	12.74	-999	20.00	32.74	65	65
$PM_{2.5}$	24-hour	Ft Peck IR	0.64	0.05	0.66	-999	20.00	20.66	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/S	1.25	0.06	1.28	-999	20.00	21.28	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/N	0.82	0.04	0.84	-999	20.00	20.84	65	65
CO	8-hour	Badlands WA	13.73	0.13	13.79	-999	1500	1514	10000	10000
CO	8-hour	Black Elk WA	19.14	0.13	19.23	-999	1500	1519	10000	10000
CO	8-hour	Mt Rushmore NM	17.40	0.12	17.49	-999	1500	1517	10000	10000
CO	8-hour	Wind Cave NP	19.11	0.13	19.19	-999	1500	1519	10000	10000
CO	8-hour	Jewel Cave NM	23.85	0.14	23.93	-999	1500	1524	10000	10000
CO	8-hour	Soldier Creek WA	7.44	0.09	7.44	-999	1500	1507	10000	10000
CO	8-hour	Agate Fossil Beds NM	6.96	0.09	7.05	-999	1500	1507	10000	10000
CO	8-hour	Ft Laramie NHS	10.90	0.09	10.97	-999	1500	1511	10000	10000
CO	8-hour	Devils Tower NM	18.60	0.44	18.72	-999	1500	1519	10000	10000
CO	8-hour	Cloud Peak WA	13.88	0.39	14.13	-999	1500	1514	10000	10000
CO	8-hour	Northern Cheyenne IR	28.89	4.72	29.34	-999	6600	6629	10000	10000
CO	8-hour	Crow IR	38.40	6.22	41.03	-999	6600	6641	10000	10000
CO	8-hour	Bighorn Canyon NRA	16.80	0.72	17.30	-999	6600	6617	10000	10000
CO	8-hour	Bridger WA	8.56	0.14	8.66	-999	1500	1509	10000	10000
CO	8-hour	Fitzpatrick WA	7.53	0.09	7.58	-999	1500	1508	10000	10000
CO	8-hour	Popo Agie WA	9.25	0.14	9.36	-999	1500	1509	10000	10000
CO	8-hour	Grand Teton NP	4.55	0.06	4.59	-999	1500	1505	10000	10000
CO	8-hour	Teton WA	6.03	0.09	6.10	-999	1500	1506	10000	10000
CO	8-hour	Washakie WA	11.40	0.14	11.50	-999	1500	1511	10000	10000
CO	8-hour	North Absaroka WA	7.71	0.27	7.98	-999	1500	1508	10000	10000
CO	8-hour	Yellowstone NP	6.36	0.15	6.51	-999	6600	6607	10000	10000
CO	8-hour	Absaroka-Beartooth WA	51.76	0.39	51.80	-999	6600	6652	10000	10000
CO	8-hour	Red Rock Lakes WA	1.53	0.04	1.55	-999	6600	6602	10000	10000
CO	8-hour	Gates of the Mtns WA	2.46	0.05	2.50	-999	6600	6602	10000	10000
CO	8-hour	Scapegoat WA	1.84	0.03	1.87	-999	6600	6602	10000	10000
CO	8-hour	UL Bend WA	4.60	0.26	4.66	-999	6600	6605	10000	10000
CO	8-hour	Ft Belknap IR	32.44	0.18	32.44	-999	6600	6632	10000	10000
CO	8-hour	Ft Peck IR	6.70	0.11	6.80	-999	6600	6607	10000	10000
CO	8-hour	Theodore Roosevelt NP/S	10.89	0.15	10.99	-999	6600	6611	10000	10000
CO	8-hour	Theodore Roosevelt NP/N	9.40	0.20	9.48	-999	6600	6609	10000	10000

C.1.2.3 Estimated Far-Field Criteria Pollutant Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-MT Proj	MT Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
CO	1-hour	Badlands WA	19.24	0.23	19.31	-999	3500	3519	40000	40000
CO	1-hour	Black Elk WA	23.03	0.33	23.11	-999	3500	3523	40000	40000
CO	1-hour	Mt Rushmore NM	20.83	0.31	20.92	-999	3500	3521	40000	40000
CO	1-hour	Wind Cave NP	23.23	0.31	23.30	-999	3500	3523	40000	40000
CO	1-hour	Jewel Cave NM	27.80	0.29	27.88	-999	3500	3528	40000	40000
CO	1-hour	Soldier Creek WA	20.75	0.25	20.88	-999	3500	3521	40000	40000
CO	1-hour	Agate Fossil Beds NM	17.62	0.20	17.62	-999	3500	3518	40000	40000
CO	1-hour	Ft Laramie NHS	22.10	0.17	22.16	-999	3500	3522	40000	40000
CO	1-hour	Devils Tower NM	38.14	0.96	38.38	-999	3500	3538	40000	40000
CO	1-hour	Cloud Peak WA	16.26	0.58	16.34	-999	3500	3516	40000	40000
CO	1-hour	Northern Cheyenne IR	43.48	6.71	44.37	-999	15000	15044	26000	40000
CO	1-hour	Crow IR	48.95	14.06	52.53	-999	15000	15053	26000	40000
CO	1-hour	Bighorn Canyon NRA	25.61	1.06	26.14	-999	15000	15026	26000	40000
CO	1-hour	Bridger WA	12.27	0.21	12.29	-999	3500	3512	40000	40000
CO	1-hour	Fitzpatrick WA	11.07	0.16	11.09	-999	3500	3511	40000	40000
CO	1-hour	Popo Agie WA	11.57	0.18	11.58	-999	3500	3512	40000	40000
CO	1-hour	Grand Teton NP	5.14	0.35	5.19	-999	3500	3505	40000	40000
CO	1-hour	Teton WA	7.58	0.19	7.66	-999	3500	3508	40000	40000
CO	1-hour	Washakie WA	13.63	0.52	13.72	-999	3500	3514	40000	40000
CO	1-hour	North Absaroka WA	9.57	0.80	10.37	-999	3500	3510	40000	40000
CO	1-hour	Yellowstone NP	6.67	0.80	6.68	-999	15000	15007	26000	40000
CO	1-hour	Absaroka-Beartooth WA	100.00	0.72	100.00	-999	15000	15100	26000	40000
CO	1-hour	Red Rock Lakes WA	1.65	0.04	1.67	-999	15000	15002	26000	40000
CO	1-hour	Gates of the Mtns WA	2.54	0.14	2.57	-999	15000	15003	26000	40000
CO	1-hour	Scapegoat WA	2.56	0.04	2.59	-999	15000	15003	26000	40000
CO	1-hour	UL Bend WA	5.25	0.31	5.32	-999	15000	15005	26000	40000
CO	1-hour	Ft Belknap IR	55.01	0.39	55.01	-999	15000	15055	26000	40000
CO	1-hour	Ft Peck IR	8.76	0.17	8.87	-999	15000	15009	26000	40000
CO	1-hour	Theodore Roosevelt NP/S	12.69	0.23	12.78	-999	15000	15013	40000	40000
CO	1-hour	Theodore Roosevelt NP/N	13.61	0.22	13.75	-999	15000	15014	40000	40000

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2 Estimated Criteria Pollutant Impacts for Wyoming EIS

C.2.1 Estimated Near-Field Criteria Pollutant Impacts of Wyoming Project, Non-Wyoming Project, and Cumulative Sources

C.2.1.1 Estimated Near-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E[a]

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Near Field - WY	3.26	8.00	10.48	25	16.50	26.98	100	100	
SO_2	Annual	Near Field - WY	0.20	0.46	0.63	20	3.00	3.63	60	80	
SO_2	24-hour	Near Field - WY	1.75	1.69	3.17	91	8.00	11.17	260	365	
SO_2	3-hour	Near Field - WY	4.53	3.29	4.63	512	8.00	12.63	1300	1300	
PM_{10}	Annual	Near Field - WY	0.86	3.28	4.06	17	17.00	21.06	50	50	
PM_{10}	24-hour	Near Field - WY	9.34	20.23	30.79	30	42.00	72.79	150	150	y
$PM_{2.5}$	Annual	Near Field - WY	0.70	1.67	2.32	-999	7.60	9.92	15	15	
$PM_{2.5}$	24-hour	Near Field - WY	8.55	15.99	24.38	-999	19.00	43.38	65	65	
CO	8-hour	Near Field - WY	123.95	156.20	156.24	-999	1500	1656	10000	10000	
CO	1-hour	Near Field - WY	141.72	223.30	223.84	-999	3500	3724	40000	40000	

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2.1.2 Estimated Near-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E[a]

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
NO_2	Annual	Near Field - WY	3.26	7.16	9.64	25	16.50	26.14	100	100
SO_2	Annual	Near Field - WY	0.20	0.46	0.62	20	3.00	3.62	60	80
SO_2	24-hour	Near Field - WY	1.75	1.68	3.16	91	8.00	11.16	260	365
SO_2	3-hour	Near Field - WY	4.53	3.28	4.63	512	8.00	12.63	1300	1300
PM_{10}	Annual	Near Field - WY	0.86	3.08	3.87	17	17.00	20.87	50	50
PM_{10}	24-hour	Near Field - WY	9.34	17.49	27.71	30	42.00	69.71	150	150
$PM_{2.5}$	Annual	Near Field - WY	0.70	1.47	2.12	-999	7.60	9.72	15	15
$PM_{2.5}$	24-hour	Near Field - WY	8.55	12.98	21.30	-999	19.00	40.30	65	65
CO	8-hour	Near Field - WY	123.95	93.03	131.70	-999	1500	1632	10000	10000
CO	1-hour	Near Field - WY	141.72	157.76	196.64	-999	3500	3697	40000	40000

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2.1.3 Estimated Near-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
NO_2	Annual	Near Field - WY	3.26	6.28	8.79	25	16.50	25.29	100	100
SO_2	Annual	Near Field - WY	0.20	0.46	0.62	20	3.00	3.62	60	80
SO_2	24-hour	Near Field - WY	1.75	1.68	3.16	91	8.00	11.16	260	365
SO_2	3-hour	Near Field - WY	4.53	3.26	4.63	512	8.00	12.63	1300	1300
PM_{10}	Annual	Near Field - WY	0.86	2.94	3.72	17	17.00	20.72	50	50
PM_{10}	24-hour	Near Field - WY	9.34	15.15	25.45	30	42.00	67.45	150	150
$PM_{2.5}$	Annual	Near Field - WY	0.70	1.32	1.97	-999	7.60	9.57	15	15
$PM_{2.5}$	24-hour	Near Field - WY	8.55	10.73	19.03	-999	19.00	38.03	65	65
CO	8-hour	Near Field - WY	123.95	77.26	124.02	-999	1500	1624	10000	10000
CO	1-hour	Near Field - WY	141.72	156.95	169.84	-999	3500	3670	40000	40000

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2.1.4 Estimated Near-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
NO_2	Annual	Near Field - WY	3.26	2.99	5.79	25	16.50	22.29	100	100
SO_2	Annual	Near Field - WY	0.20	0.16	0.29	20	3.00	3.29	60	80
SO_2	24-hour	Near Field - WY	1.75	0.56	2.17	91	8.00	10.17	260	365
SO_2	3-hour	Near Field - WY	4.53	1.19	4.56	512	8.00	12.56	1300	1300
PM_{10}	Annual	Near Field - WY	0.86	1.18	1.85	17	17.00	18.85	50	50
PM_{10}	24-hour	Near Field - WY	9.34	7.05	15.64	30	42.00	57.64	150	150
$PM_{2.5}$	Annual	Near Field - WY	0.70	0.72	1.25	-999	7.60	8.85	15	15
$PM_{2.5}$	24-hour	Near Field - WY	8.55	5.73	13.48	-999	19.00	32.48	65	65
CO	8-hour	Near Field - WY	123.95	182.64	182.70	-999	1500	1683	10000	10000
CO	1-hour	Near Field - WY	141.72	261.06	261.07	-999	3500	3761	40000	40000

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2.2 Estimated Far-Field Criteria Pollutant Impacts of of Wyoming Project, Non-Wyoming Project, and Cumulative Sources

C.2.2.1 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Badlands WA	0.19	0.08	0.28	2.5	16.50	16.78	100	100	
NO_2	Annual	Black Elk WA	0.28	0.11	0.40	25	16.50	16.90	100	100	
NO_2	Annual	Mt Rushmore NM	0.24	0.10	0.34	25	16.50	16.84	100	100	
NO_2	Annual	Wind Cave NP	0.37	0.15	0.52	2.5	16.50	17.02	100	100	
NO_2	Annual	Jewel Cave NM	0.46	0.20	0.66	25	16.50	17.16	100	100	
NO_2	Annual	Soldier Creek WA	0.45	0.08	0.53	25	16.50	17.03	100	100	
NO_2	Annual	Agate Fossil Beds NM	0.20	0.08	0.28	25	16.50	16.78	100	100	
NO_2	Annual	Ft Laramie NHS	0.17	0.08	0.25	25	16.50	16.75	100	100	
NO_2	Annual	Devils Tower NM	0.68	0.58	1.25	25	16.50	17.75	100	100	
NO_2	Annual	Cloud Peak WA	0.24	0.11	0.34	25	16.50	16.84	100	100	
NO_2	Annual	Northern Cheyenne IR	3.92	0.26	4.17	2.5	11.00	15.17	100	100	y
NO_2	Annual	Crow IR	5.07	0.40	5.38	25	11.00	16.38	100	100	
NO_2	Annual	Bighorn Canyon NRA	0.33	0.05	0.38	25	16.50	16.88	100	100	
NO_2	Annual	Bridger WA	0.02	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Fitzpatrick WA	0.02	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Popo Agie WA	0.03	0.01	0.04	25	16.50	16.54	100	100	
NO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2.5	16.50	16.51	100	100	
NO_2	Annual	Teton WA	0.02	0.00	0.02	2.5	16.50	16.52	100	100	
NO_2	Annual	Washakie WA	0.04	0.01	0.05	2.5	16.50	16.55	100	100	
NO_2	Annual	North Absaroka WA	0.06	0.01	0.07	2.5	16.50	16.57	100	100	
NO_2	Annual	Yellowstone NP	0.08	0.00	0.08	2.5	16.50	16.58	100	100	
NO_2	Annual	Absaroka-Beartooth WA	0.69	0.01	0.69	25	11.00	11.69	100	100	
NO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2.5	11.00	11.01	100	100	
NO_2	Annual	Gates of the Mtns WA	0.11	0.00	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Scapegoat WA	0.03	0.00	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	UL Bend WA	0.05	0.01	0.05	2.5	11.00	11.05	100	100	
NO_2	Annual	Ft Belknap IR	1.41	0.00	1.42	25	11.00	12.42	100	100	
NO_2	Annual	Ft Peck IR	0.03	0.01	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	Theodore Roosevelt NP/S	0.08	0.03	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Theodore Roosevelt NP/N	0.06	0.02	0.07	2.5	11.00	11.07	100	100	
NO_2	1-hour	Northern Cheyenne IR	60.43	21.32	67.54	-999	117.00	184.54	566	-999	
NO_2	1-hour	Crow IR	69.48	16.62	73.29	-999	117.00	190.29	566	-999	
NO_2	1-hour	Bighorn Canyon NRA	11.23	3.97	14.56	-999	117.00	131.56	566	-999	
NO_2	1-hour	Yellowstone NP	4.65	0.93	4.65	-999	117.00	121.65	566	-999	
NO_2	1-hour	Absaroka-Beartooth WA	35.93	1.54	35.93	-999	117.00	152.93	566	-999	
NO_2	1-hour	Red Rock Lakes WA	1.03	0.24	1.03	-999	117.00	118.03	566	-999	
NO_2	1-hour	Gates of the Mtns WA	1.93	0.06	1.93	-999	117.00	118.93	566	-999	
NO_2	1-hour	Scapegoat WA	1.43	0.04	1.47	-999	117.00	118.47	566	-999	
NO_2	1-hour	UL Bend WA	2.24	1.25	2.65	-999	117.00	119.65	566	-999	
NO_2	1-hour	Ft Belknap IR	28.11	0.57	28.11	-999	117.00	145.11	566	-999	
NO_2	1-hour	Ft Peck IR	1.97	2.00	3.77	-999	117.00	120.77	566	-999	
SO_2	Annual	Badlands WA	0.07	0.00	0.08	2	3.00	3.08	80	80	
SO_2	Annual	Black Elk WA	0.17	0.01	0.18	20	3.00	3.18	80	80	
SO_2	Annual	Mt Rushmore NM	0.12	0.01	0.13	20	3.00	3.13	80	80	
SO_2	Annual	Wind Cave NP	0.12	0.01	0.13	2	3.00	3.13	80	80	
SO_2	Annual	Jewel Cave NM	0.21	0.01	0.22	20	3.00	3.22	80	80	
SO_2	Annual	Soldier Creek WA	0.10	0.01	0.11	20	3.00	3.11	80	80	
SO_2	Annual	Agate Fossil Beds NM	0.08	0.00	0.08	20	3.00	3.08	80	80	
SO_2	Annual	Ft Laramie NHS	0.07	0.00	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Devils Tower NM	0.12	0.04	0.16	20	3.00	3.16	60	80	
SO_2	Annual	Cloud Peak WA	0.07	0.01	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Northern Cheyenne IR	0.23	0.01	0.25	2	16.00	16.25	60	80	
SO_2	Annual	Crow IR	0.41	0.02	0.42	20	16.00	16.42	60	80	
SO_2	Annual	Bighorn Canyon NRA	0.10	0.00	0.10	20	16.00	16.10	60	80	
SO_2	Annual	Bridger WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Fitzpatrick WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Popo Agie WA	0.03	0.00	0.03	20	3.00	3.03	60	80	
SO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2	3.00	3.01	60	80	
SO_2	Annual	Teton WA	0.02	0.00	0.02	2	3.00	3.02	60	80	
SO_2	Annual	Washakie WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	North Absaroka WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	Yellowstone NP	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Absaroka-Beartooth WA	0.13	0.00	0.13	20	16.00	16.13	60	80	
SO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Gates of the Mtns WA	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Scapegoat WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	UL Bend WA	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Ft Belknap IR	0.26	0.00	0.26	20	16.00	16.26	60	80	
SO_2	Annual	Ft Peck IR	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Theodore Roosevelt NP/S	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Theodore Roosevelt NP/N	0.01	0.00	0.02	2	16.00	16.02	60	80	

C.2.2.1 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
SO_2	24-hour	Badlands WA	0.63	0.06	0.64	5	8.00	8.64	365	365
SO_2	24-hour	Black Elk WA	1.30	0.05	1.32	91	8.00	9.32	365	365
SO_2	24-hour	Mt Rushmore NM	0.88	0.04	0.92	91	8.00	8.92	365	365
SO_2	24-hour	Wind Cave NP	0.90	0.07	0.94	5	8.00	8.94	365	365
SO_2	24-hour	Jewel Cave NM	1.58	0.07	1.61	91	8.00	9.61	365	365
SO_2	24-hour	Soldier Creek WA	0.60	0.05	0.61	91	8.00	8.61	365	365
SO_2	24-hour	Agate Fossil Beds NM	0.63	0.04	0.65	91	8.00	8.65	365	365
SO_2	24-hour	Ft Laramie NHS	1.15	0.06	1.19	91	8.00	9.19	260	365
SO_2	24-hour	Devils Tower NM	0.82	0.18	0.88	91	8.00	8.88	260	365
SO_2	24-hour	Cloud Peak WA	1.07	0.10	1.11	91	8.00	9.11	260	365
SO_2	24-hour	Northern Cheyenne IR	1.00	0.20	1.07	5	73.00	74.07	260	365
SO_2	24-hour	Crow IR	5.26	0.30	5.27	91	73.00	78.27	260	365
SO_2	24-hour	Bighorn Canyon NRA	1.90	0.06	1.90	91	73.00	74.90	260	365
SO_2	24-hour	Bridger WA	0.74	0.06	0.78	5	8.00	8.78	260	365
SO_2	24-hour	Fitzpatrick WA	1.13	0.11	1.18	5	8.00	9.18	260	365
SO_2	24-hour	Popo Agie WA	0.84	0.07	0.86	91	8.00	8.86	260	365
SO_2	24-hour	Grand Teton NP	0.55	0.02	0.57	5	8.00	8.57	260	365
SO_2	24-hour	Teton WA	0.45	0.03	0.48	5	8.00	8.48	260	365
SO_2	24-hour	Washakie WA	0.81	0.04	0.84	5	8.00	8.84	260	365
SO_2	24-hour	North Absaroka WA	0.75	0.02	0.75	5	8.00	8.75	260	365
SO_2	24-hour	Yellowstone NP	0.50	0.02	0.50	5	73.00	73.50	260	365
SO_2	24-hour	Absaroka-Beartooth WA	2.39	0.03	2.39	91	73.00	75.39	260	365
SO_2	24-hour	Red Rock Lakes WA	0.13	0.00	0.13	5	73.00	73.13	260	365
SO_2	24-hour	Gates of the Mtns WA	0.37	0.01	0.38	5	73.00	73.38	260	365
SO_2	24-hour	Scapegoat WA	0.29	0.00	0.29	5	73.00	73.29	260	365
SO_2	24-hour	UL Bend WA	0.46	0.02	0.47	5	73.00	73.47	260	365
SO_2	24-hour	Ft Belknap IR	1.16	0.01	1.16	91	73.00	74.16	260	365
SO_2	24-hour	Ft Peck IR	0.18	0.02	0.20	5	73.00	73.20	260	365
SO_2	24-hour	Theodore Roosevelt NP/S	0.30	0.04	0.34	5	73.00	73.34	260	365
SO_2	24-hour	Theodore Roosevelt NP/N	0.18	0.03	0.20	5	73.00	73.20	260	365
SO_2	3-hour	Badlands WA	1.83	0.20	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	Black Elk WA	3.40	0.15	3.45	512	8.00	11.45	1300	1300
SO_2	3-hour	Mt Rushmore NM	2.39	0.13	2.48	512	8.00	10.48	1300	1300
SO_2	3-hour	Wind Cave NP	2.60	0.22	2.68	25	8.00	10.68	1300	1300
SO_2	3-hour	Jewel Cave NM	4.04	0.23	4.08	512	8.00	12.08	1300	1300
SO_2	3-hour	Soldier Creek WA	1.79	0.22	1.88	512	8.00	9.88	1300	1300
SO_2	3-hour	Agate Fossil Beds NM	1.65	0.22	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Ft Laramie NHS	3.29	0.26	3.37	512	8.00	11.37	1300	1300
SO_2	3-hour	Devils Tower NM	3.16	0.53	3.19	512	8.00	11.19	1300	1300
SO_2	3-hour	Cloud Peak WA	2.29	0.28	2.30	512	8.00	10.30	1300	1300
SO_2	3-hour	Northern Cheyenne IR	5.09	0.64	5.09	25	291.00	296.09	-999	1300
SO_2	3-hour	Crow IR	17.09	0.70	17.09	512	291.00	308.10	-999	1300
SO_2	3-hour	Bighorn Canyon NRA	4.19	0.16	4.19	512	291.00	295.19	1300	1300
SO_2	3-hour	Bridger WA	1.92	0.29	1.94	25	8.00	9.94	1300	1300
SO_2	3-hour	Fitzpatrick WA	3.20	0.40	3.24	25	8.00	11.24	1300	1300
SO_2	3-hour	Popo Agie WA	1.72	0.45	1.73	512	8.00	9.73	1300	1300
SO_2	3-hour	Grand Teton NP	1.28	0.05	1.30	25	8.00	9.30	1300	1300
SO_2	3-hour	Teton WA	0.99	0.09	0.99	25	8.00	8.99	1300	1300
SO_2	3-hour	Washakie WA	1.92	0.19	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	North Absaroka WA	2.18	0.04	2.18	25	8.00	10.18	1300	1300
SO_2	3-hour	Yellowstone NP	2.05	0.04	2.05	25	291.00	293.05	1300	1300
SO_2	3-hour	Absaroka-Beartooth WA	4.43	0.07	4.43	512	291.00	295.43	-999	1300
SO_2	3-hour	Red Rock Lakes WA	0.44	0.01	0.44	25	291.00	291.44	-999	1300
SO_2	3-hour	Gates of the Mtns WA	0.83	0.01	0.83	25	291.00	291.83	-999	1300
SO_2	3-hour	Scapegoat WA	0.77	0.01	0.77	25	291.00	291.77	-999	1300
SO_2	3-hour	UL Bend WA	1.09	0.05	1.09	25	291.00	292.09	-999	1300
SO_2	3-hour	Ft Belknap IR	2.55	0.03	2.55	512	291.00	293.55	-999	1300
SO_2	3-hour	Ft Peck IR	0.70	0.08	0.74	25	291.00	291.74	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/S	0.91	0.14	0.91	25	291.00	291.91	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/N	0.52	0.09	0.53	25	291.00	291.53	-999	1300
SO_2	1-hour	Northern Cheyenne IR	5.56	1.46	5.56	-999	666.00	671.56	1300	-999
SO_2	1-hour	Crow IR	29.57	1.02	29.57	-999	666.00	695.57	1300	-999
SO_2	1-hour	Bighorn Canyon NRA	5.34	0.24	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Yellowstone NP	3.69	0.04	3.69	-999	666.00	669.69	1300	-999
SO_2	1-hour	Absaroka-Beartooth WA	5.35	0.07	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Red Rock Lakes WA	0.49	0.01	0.49	-999	666.00	666.49	1300	-999
SO_2	1-hour	Gates of the Mtns WA	1.50	0.01	1.50	-999	666.00	667.50	1300	-999
SO_2	1-hour	Scapegoat WA	1.09	0.01	1.09	-999	666.00	667.09	1300	-999
SO_2	1-hour	UL Bend WA	1.58	0.06	1.58	-999	666.00	667.58	1300	-999
SO_2	1-hour	Ft Belknap IR	4.03	0.04	4.03	-999	666.00	670.03	1300	-999
SO_2	1-hour	Ft Peck IR	0.80	0.09	0.83	-999	666.00	666.83	1300	-999
SO_2	1-hour	Theodore Roosevelt NP/S	1.14	0.17	1.14	-999	666.00	667.14	715	-999
SO_2	1-hour	Theodore Roosevelt NP/N	0.58	0.11	0.58	-999	666.00	666.58	715	-999

C.2.2.1 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Back-Ground	Total	SAAQS	NAAQS	
PM_{10}	Annual	Badlands WA	0.24	0.10	0.34	4	17.00	17.34	50	50	
PM_{10}	Annual	Black Elk WA	0.32	0.12	0.44	17	17.00	17.44	50	50	
PM_{10}	Annual	Mt Rushmore NM	0.29	0.11	0.41	17	17.00	17.41	50	50	
PM_{10}	Annual	Wind Cave NP	0.33	0.12	0.46	4	17.00	17.46	50	50	
PM_{10}	Annual	Jewel Cave NM	0.40	0.14	0.54	17	17.00	17.54	50	50	
PM_{10}	Annual	Soldier Creek WA	0.25	0.09	0.34	17	17.00	17.34	50	50	
PM_{10}	Annual	Agate Fossil Beds NM	0.23	0.08	0.31	17	17.00	17.31	50	50	
PM_{10}	Annual	Ft Laramie NHS	0.27	0.08	0.35	17	17.00	17.35	50	50	
PM_{10}	Annual	Devils Tower NM	0.45	0.28	0.73	17	17.00	17.73	50	50	
PM_{10}	Annual	Cloud Peak WA	0.28	0.14	0.41	17	17.00	17.41	50	50	
PM_{10}	Annual	Northern Cheyenne IR	1.49	0.19	1.67	4	30.00	31.67	50	50	
PM_{10}	Annual	Crow IR	2.11	0.26	2.32	17	30.00	32.32	50	50	
PM_{10}	Annual	Bighorn Canyon NRA	0.33	0.09	0.41	17	30.00	30.41	50	50	
PM_{10}	Annual	Bridger WA	0.10	0.03	0.13	4	17.00	17.13	50	50	
PM_{10}	Annual	Fitzpatrick WA	0.10	0.04	0.14	4	17.00	17.14	50	50	
PM_{10}	Annual	Popo Agie WA	0.11	0.04	0.15	17	17.00	17.15	50	50	
PM_{10}	Annual	Grand Teton NP	0.05	0.01	0.06	4	17.00	17.06	50	50	
PM_{10}	Annual	Teton WA	0.09	0.02	0.11	4	17.00	17.11	50	50	
PM_{10}	Annual	Washakie WA	0.15	0.05	0.19	4	17.00	17.19	50	50	
PM_{10}	Annual	North Absaroka WA	0.13	0.03	0.16	4	17.00	17.16	50	50	
PM_{10}	Annual	Yellowstone NP	0.09	0.02	0.11	4	30.00	30.11	50	50	
PM_{10}	Annual	Absaroka-Beartooth WA	0.56	0.03	0.58	17	30.00	30.58	50	50	
PM_{10}	Annual	Red Rock Lakes WA	0.04	0.01	0.05	4	30.00	30.05	50	50	
PM_{10}	Annual	Gates of the Mtns WA	0.14	0.01	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Scapegoat WA	0.06	0.00	0.07	4	30.00	30.07	50	50	
PM_{10}	Annual	UL Bend WA	0.11	0.02	0.13	4	30.00	30.13	50	50	
PM_{10}	Annual	Ft Belknap IR	2.65	0.01	2.67	17	30.00	32.67	50	50	
PM_{10}	Annual	Ft Peck IR	0.06	0.01	0.07	4	30.00	30.07	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/S	0.11	0.04	0.15	4	30.00	30.15	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/N	0.07	0.02	0.09	4	30.00	30.09	50	50	
PM_{10}	24-hour	Badlands WA	2.19	1.54	3.37	8	42.00	45.37	150	150	
PM_{10}	24-hour	Black Elk WA	2.99	1.22	4.09	30	42.00	46.09	150	150	
PM_{10}	24-hour	Mt Rushmore NM	2.40	1.07	3.55	30	42.00	45.55	150	150	
PM_{10}	24-hour	Wind Cave NP	2.58	1.12	3.90	8	42.00	45.90	150	150	
PM_{10}	24-hour	Jewel Cave NM	3.84	1.62	4.77	30	42.00	46.77	150	150	
PM_{10}	24-hour	Soldier Creek WA	2.37	0.93	3.31	30	42.00	45.31	150	150	
PM_{10}	24-hour	Agate Fossil Beds NM	2.27	0.86	3.13	30	42.00	45.13	150	150	
PM_{10}	24-hour	Ft Laramie NHS	2.70	0.88	3.58	30	42.00	45.58	150	150	
PM_{10}	24-hour	Devils Tower NM	3.16	2.34	5.01	30	42.00	47.01	150	150	
PM_{10}	24-hour	Cloud Peak WA	4.10	2.27	6.16	30	42.00	48.16	150	150	
PM_{10}	24-hour	Northern Cheyenne IR	9.40	3.87	12.84	8	105.00	117.84	150	150	y
PM_{10}	24-hour	Crow IR	11.23	5.45	15.65	30	105.00	120.65	150	150	
PM_{10}	24-hour	Bighorn Canyon NRA	5.76	3.36	8.13	30	105.00	113.13	150	150	
PM_{10}	24-hour	Bridger WA	3.61	1.43	5.05	8	42.00	47.05	150	150	
PM_{10}	24-hour	Fitzpatrick WA	4.48	1.54	6.02	8	42.00	48.02	150	150	
PM_{10}	24-hour	Popo Agie WA	3.99	1.62	5.61	30	42.00	47.61	150	150	
PM_{10}	24-hour	Grand Teton NP	1.57	0.64	2.21	8	42.00	44.21	150	150	
PM_{10}	24-hour	Teton WA	3.38	1.29	4.67	8	42.00	46.67	150	150	
PM_{10}	24-hour	Washakie WA	6.98	2.20	9.18	8	42.00	51.18	150	150	y
PM_{10}	24-hour	North Absaroka WA	3.18	1.19	4.46	8	42.00	46.46	150	150	
PM_{10}	24-hour	Yellowstone NP	2.26	0.81	3.05	8	105.00	108.05	150	150	
PM_{10}	24-hour	Absaroka-Beartooth WA	7.30	1.24	7.31	30	105.00	112.31	150	150	
PM_{10}	24-hour	Red Rock Lakes WA	0.54	0.17	0.68	8	105.00	105.68	150	150	
PM_{10}	24-hour	Gates of the Mtns WA	1.85	0.53	2.37	8	105.00	107.37	150	150	
PM_{10}	24-hour	Scapegoat WA	1.49	0.43	1.94	8	105.00	106.94	150	150	
PM_{10}	24-hour	UL Bend WA	1.43	0.51	1.93	8	105.00	106.93	150	150	
PM_{10}	24-hour	Ft Belknap IR	29.72	0.48	29.72	30	105.00	134.72	150	150	
PM_{10}	24-hour	Ft Peck IR	0.81	0.35	0.97	8	105.00	105.97	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/S	1.47	0.76	1.85	8	105.00	106.85	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/N	0.92	0.53	1.25	8	105.00	106.25	150	150	
$PM_{2.5}$	Annual	Badlands WA	0.21	0.08	0.29	-999	7.60	7.89	15	15	
$PM_{2.5}$	Annual	Black Elk WA	0.27	0.10	0.37	-999	7.60	7.97	15	15	
$PM_{2.5}$	Annual	Mt Rushmore NM	0.25	0.10	0.34	-999	7.60	7.94	15	15	
$PM_{2.5}$	Annual	Wind Cave NP	0.27	0.10	0.37	-999	7.60	7.97	15	15	
$PM_{2.5}$	Annual	Jewel Cave NM	0.32	0.12	0.43	-999	7.60	8.03	15	15	
$PM_{2.5}$	Annual	Soldier Creek WA	0.21	0.07	0.28	-999	7.60	7.88	15	15	
$PM_{2.5}$	Annual	Agate Fossil Beds NM	0.19	0.07	0.25	-999	7.60	7.85	15	15	
$PM_{2.5}$	Annual	Ft Laramie NHS	0.19	0.07	0.26	-999	7.60	7.86	15	15	
$PM_{2.5}$	Annual	Devils Tower NM	0.35	0.21	0.56	-999	7.60	8.16	15	15	
$PM_{2.5}$	Annual	Cloud Peak WA	0.25	0.12	0.35	-999	7.60	7.95	15	15	
$PM_{2.5}$	Annual	Northern Cheyenne IR	0.82	0.14	0.96	-999	8.00	8.96	15	15	
$PM_{2.5}$	Annual	Crow IR	1.09	0.18	1.24	-999	8.00	9.24	15	15	
$PM_{2.5}$	Annual	Bighorn Canyon NRA	0.28	0.08	0.36	-999	8.00	8.36	15	15	
$PM_{2.5}$	Annual	Bridger WA	0.09	0.03	0.12	-999	7.60	7.72	15	15	
$PM_{2.5}$	Annual	Fitzpatrick WA	0.09	0.03	0.13	-999	7.60	7.73	15	15	

C.2.2.1 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
$PM_{2.5}$	Annual	Popo Agie WA	0.10	0.04	0.14	-999	7.60	7.74	15	15
$PM_{2.5}$	Annual	Grand Teton NP	0.04	0.01	0.06	-999	7.60	7.66	15	15
$PM_{2.5}$	Annual	Teton WA	0.08	0.02	0.10	-999	7.60	7.70	15	15
$PM_{2.5}$	Annual	Washakie WA	0.14	0.04	0.18	-999	7.60	7.78	15	15
$PM_{2.5}$	Annual	North Absaroka WA	0.12	0.03	0.15	-999	7.60	7.75	15	15
$PM_{2.5}$	Annual	Yellowstone NP	0.08	0.02	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Absaroka-Beartooth WA	0.31	0.03	0.33	-999	8.00	8.33	15	15
$PM_{2.5}$	Annual	Red Rock Lakes WA	0.03	0.01	0.04	-999	8.00	8.04	15	15
$PM_{2.5}$	Annual	Gates of the Mtns WA	0.10	0.01	0.11	-999	8.00	8.11	15	15
$PM_{2.5}$	Annual	Scapegoat WA	0.04	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	UL Bend WA	0.09	0.02	0.11	-999	8.00	8.11	15	15
$PM_{2.5}$	Annual	Ft Belknap IR	1.19	0.01	1.20	-999	8.00	9.20	15	15
$PM_{2.5}$	Annual	Ft Peck IR	0.05	0.01	0.06	-999	8.00	8.06	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/S	0.09	0.03	0.13	-999	8.00	8.13	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/N	0.06	0.02	0.08	-999	8.00	8.08	15	15
$PM_{2.5}$	24-hour	Badlands WA	2.11	1.38	3.04	-999	19.00	22.04	65	65
$PM_{2.5}$	24-hour	Black Elk WA	2.63	1.11	3.69	-999	19.00	22.69	65	65
$PM_{2.5}$	24-hour	Mt Rushmore NM	2.14	0.97	3.38	-999	19.00	22.38	65	65
$PM_{2.5}$	24-hour	Wind Cave NP	2.33	1.02	3.35	-999	19.00	22.35	65	65
$PM_{2.5}$	24-hour	Jewel Cave NM	3.40	1.43	4.50	-999	19.00	23.50	65	65
$PM_{2.5}$	24-hour	Soldier Creek WA	2.17	0.87	3.04	-999	19.00	22.04	65	65
$PM_{2.5}$	24-hour	Agate Fossil Beds NM	2.05	0.80	2.85	-999	19.00	21.85	65	65
$PM_{2.5}$	24-hour	Ft Laramie NHS	2.25	0.82	3.06	-999	19.00	22.06	65	65
$PM_{2.5}$	24-hour	Devils Tower NM	2.80	1.95	4.71	-999	19.00	23.71	65	65
$PM_{2.5}$	24-hour	Cloud Peak WA	3.81	2.01	5.68	-999	19.00	24.68	65	65
$PM_{2.5}$	24-hour	Northern Cheyenne IR	7.58	3.51	10.97	-999	20.00	30.97	65	65
$PM_{2.5}$	24-hour	Crow IR	9.67	5.14	14.68	-999	20.00	34.68	65	65
$PM_{2.5}$	24-hour	Bighorn Canyon NRA	5.42	3.13	7.62	-999	20.00	27.62	65	65
$PM_{2.5}$	24-hour	Bridger WA	3.44	1.34	4.79	-999	19.00	23.79	65	65
$PM_{2.5}$	24-hour	Fitzpatrick WA	4.30	1.50	5.80	-999	19.00	24.80	65	65
$PM_{2.5}$	24-hour	Popo Agie WA	3.80	1.51	5.31	-999	19.00	24.31	65	65
$PM_{2.5}$	24-hour	Grand Teton NP	1.50	0.60	2.10	-999	19.00	21.10	65	65
$PM_{2.5}$	24-hour	Teton WA	3.23	1.23	4.46	-999	19.00	23.46	65	65
$PM_{2.5}$	24-hour	Washakie WA	6.71	2.14	8.85	-999	19.00	27.85	65	65
$PM_{2.5}$	24-hour	North Absaroka WA	3.05	1.15	4.27	-999	19.00	23.27	65	65
$PM_{2.5}$	24-hour	Yellowstone NP	2.18	0.77	2.92	-999	20.00	22.92	65	65
$PM_{2.5}$	24-hour	Absaroka-Beartooth WA	3.53	1.14	3.90	-999	20.00	23.90	65	65
$PM_{2.5}$	24-hour	Red Rock Lakes WA	0.48	0.16	0.58	-999	20.00	20.58	65	65
$PM_{2.5}$	24-hour	Gates of the Mtns WA	1.75	0.51	2.26	-999	20.00	22.26	65	65
$PM_{2.5}$	24-hour	Scapegoat WA	1.43	0.41	1.87	-999	20.00	21.87	65	65
$PM_{2.5}$	24-hour	UL Bend WA	1.35	0.48	1.84	-999	20.00	21.84	65	65
$PM_{2.5}$	24-hour	Ft Belknap IR	12.74	0.47	12.74	-999	20.00	32.74	65	65
$PM_{2.5}$	24-hour	Ft Peck IR	0.72	0.30	0.84	-999	20.00	20.84	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/S	1.30	0.66	1.62	-999	20.00	21.62	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/N	0.86	0.44	1.06	-999	20.00	21.06	65	65
CO	8-hour	Badlands WA	7.88	7.59	15.31	-999	1500	1515	10000	10000
CO	8-hour	Black Elk WA	11.05	10.42	21.43	-999	1500	1521	10000	10000
CO	8-hour	Mt Rushmore NM	10.09	9.61	19.70	-999	1500	1520	10000	10000
CO	8-hour	Wind Cave NP	10.88	10.32	21.20	-999	1500	1521	10000	10000
CO	8-hour	Jewel Cave NM	13.66	12.35	26.00	-999	1500	1526	10000	10000
CO	8-hour	Soldier Creek WA	5.45	4.23	8.98	-999	1500	1509	10000	10000
CO	8-hour	Agate Fossil Beds NM	5.46	3.51	8.97	-999	1500	1509	10000	10000
CO	8-hour	Ft Laramie NHS	7.84	4.99	12.83	-999	1500	1513	10000	10000
CO	8-hour	Devils Tower NM	12.47	10.46	21.53	-999	1500	1522	10000	10000
CO	8-hour	Cloud Peak WA	14.09	8.66	18.14	-999	1500	1518	10000	10000
CO	8-hour	Northern Cheyenne IR	69.55	19.09	77.99	-999	6600	6678	10000	10000
CO	8-hour	Crow IR	62.15	17.70	64.95	-999	6600	6665	10000	10000
CO	8-hour	Bighorn Canyon NRA	19.70	9.31	28.98	-999	6600	6629	10000	10000
CO	8-hour	Bridger WA	7.81	3.69	11.50	-999	1500	1512	10000	10000
CO	8-hour	Fitzpatrick WA	5.87	3.40	9.27	-999	1500	1509	10000	10000
CO	8-hour	Popo Agie WA	8.32	4.05	12.36	-999	1500	1512	10000	10000
CO	8-hour	Grand Teton NP	3.30	2.02	5.32	-999	1500	1505	10000	10000
CO	8-hour	Teton WA	5.38	2.75	8.11	-999	1500	1508	10000	10000
CO	8-hour	Washakie WA	9.33	5.09	14.42	-999	1500	1514	10000	10000
CO	8-hour	North Absaroka WA	8.86	3.99	12.85	-999	1500	1513	10000	10000
CO	8-hour	Yellowstone NP	6.76	3.38	10.13	-999	6600	6610	10000	10000
CO	8-hour	Absaroka-Beartooth WA	52.12	5.05	52.12	-999	6600	6652	10000	10000
CO	8-hour	Red Rock Lakes WA	1.27	0.80	2.07	-999	6600	6602	10000	10000
CO	8-hour	Gates of the Mtns WA	2.31	0.85	3.17	-999	6600	6603	10000	10000
CO	8-hour	Scapegoat WA	1.74	0.77	2.51	-999	6600	6603	10000	10000
CO	8-hour	UL Bend WA	4.07	2.13	6.08	-999	6600	6606	10000	10000
CO	8-hour	Ft Belknap IR	32.45	1.57	32.49	-999	6600	6632	10000	10000
CO	8-hour	Ft Peck IR	5.25	3.87	9.12	-999	6600	6609	10000	10000
CO	8-hour	Theodore Roosevelt NP/S	7.17	6.09	13.26	-999	6600	6613	10000	10000
CO	8-hour	Theodore Roosevelt NP/N	6.01	5.09	11.10	-999	6600	6611	10000	10000

C.2.2.1 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
CO	1-hour	Badlands WA	10.69	10.47	21.17	-999	3500	3521	40000	40000
CO	1-hour	Black Elk WA	17.37	12.31	27.04	-999	3500	3527	40000	40000
CO	1-hour	Mt Rushmore NM	16.80	11.53	26.86	-999	3500	3527	40000	40000
CO	1-hour	Wind Cave NP	16.45	12.40	26.68	-999	3500	3527	40000	40000
CO	1-hour	Jewel Cave NM	15.65	14.34	29.99	-999	3500	3530	40000	40000
CO	1-hour	Soldier Creek WA	13.50	10.85	24.35	-999	3500	3524	40000	40000
CO	1-hour	Agate Fossil Beds NM	12.20	8.46	18.30	-999	3500	3518	40000	40000
CO	1-hour	Ft Laramie NHS	13.15	10.12	23.27	-999	3500	3523	40000	40000
CO	1-hour	Devils Tower NM	19.69	25.03	44.73	-999	3500	3545	40000	40000
CO	1-hour	Cloud Peak WA	18.03	12.33	21.27	-999	3500	3521	40000	40000
CO	1-hour	Northern Cheyenne IR	85.21	26.99	95.96	-999	15000	15096	26000	40000
CO	1-hour	Crow IR	83.44	21.30	88.42	-999	15000	15088	26000	40000
CO	1-hour	Bighorn Canyon NRA	25.16	13.97	38.27	-999	15000	15038	26000	40000
CO	1-hour	Bridger WA	10.93	3.96	12.60	-999	3500	3513	40000	40000
CO	1-hour	Fitzpatrick WA	9.58	3.78	11.43	-999	3500	3511	40000	40000
CO	1-hour	Popo Agie WA	9.43	4.35	13.40	-999	3500	3513	40000	40000
CO	1-hour	Grand Teton NP	4.99	2.52	6.04	-999	3500	3506	40000	40000
CO	1-hour	Teton WA	6.75	3.46	10.12	-999	3500	3510	40000	40000
CO	1-hour	Washakie WA	10.91	5.90	16.76	-999	3500	3517	40000	40000
CO	1-hour	North Absaroka WA	12.30	4.05	16.31	-999	3500	3516	40000	40000
CO	1-hour	Yellowstone NP	6.99	3.49	10.25	-999	15000	15010	26000	40000
CO	1-hour	Absaroka-Beartooth WA	100.01	5.16	100.01	-999	15000	15100	26000	40000
CO	1-hour	Red Rock Lakes WA	1.61	0.87	2.21	-999	15000	15002	26000	40000
CO	1-hour	Gates of the Mtns WA	2.38	0.92	3.26	-999	15000	15003	26000	40000
CO	1-hour	Scapegoat WA	2.56	0.80	3.11	-999	15000	15003	26000	40000
CO	1-hour	UL Bend WA	5.52	2.46	7.06	-999	15000	15007	26000	40000
CO	1-hour	Ft Belknap IR	55.04	1.68	55.05	-999	15000	15055	26000	40000
CO	1-hour	Ft Peck IR	6.64	5.01	11.52	-999	15000	15012	26000	40000
CO	1-hour	Theodore Roosevelt NP/S	9.57	7.36	16.23	-999	15000	15016	40000	40000
CO	1-hour	Theodore Roosevelt NP/N	9.22	7.65	16.73	-999	15000	15017	40000	40000

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2.2.2 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Badlands WA	0.19	0.07	0.27	2.5	16.50	16.77	100	100	
NO_2	Annual	Black Elk WA	0.28	0.10	0.39	25	16.50	16.89	100	100	
NO_2	Annual	Mt Rushmore NM	0.24	0.09	0.33	25	16.50	16.83	100	100	
NO_2	Annual	Wind Cave NP	0.37	0.13	0.50	2.5	16.50	17.00	100	100	
NO_2	Annual	Jewel Cave NM	0.46	0.18	0.63	25	16.50	17.13	100	100	
NO_2	Annual	Soldier Creek WA	0.45	0.08	0.52	25	16.50	17.02	100	100	
NO_2	Annual	Agate Fossil Beds NM	0.20	0.07	0.27	25	16.50	16.77	100	100	
NO_2	Annual	Ft Laramie NHS	0.17	0.07	0.24	25	16.50	16.74	100	100	
NO_2	Annual	Devils Tower NM	0.68	0.52	1.19	25	16.50	17.69	100	100	
NO_2	Annual	Cloud Peak WA	0.24	0.10	0.33	25	16.50	16.83	100	100	
NO_2	Annual	Northern Cheyenne IR	3.92	0.23	4.14	2.5	11.00	15.14	100	100	y
NO_2	Annual	Crow IR	5.07	0.37	5.35	25	11.00	16.35	100	100	
NO_2	Annual	Bighorn Canyon NRA	0.33	0.04	0.37	25	16.50	16.87	100	100	
NO_2	Annual	Bridger WA	0.02	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Fitzpatrick WA	0.02	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Popo Agie WA	0.03	0.01	0.04	25	16.50	16.54	100	100	
NO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2.5	16.50	16.51	100	100	
NO_2	Annual	Teton WA	0.02	0.00	0.02	2.5	16.50	16.52	100	100	
NO_2	Annual	Washakie WA	0.04	0.01	0.05	2.5	16.50	16.55	100	100	
NO_2	Annual	North Absaroka WA	0.06	0.00	0.07	2.5	16.50	16.57	100	100	
NO_2	Annual	Yellowstone NP	0.08	0.00	0.08	2.5	16.50	16.58	100	100	
NO_2	Annual	Absaroka-Beartooth WA	0.69	0.01	0.69	25	11.00	11.69	100	100	
NO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2.5	11.00	11.01	100	100	
NO_2	Annual	Gates of the Mtns WA	0.11	0.00	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Scapegoat WA	0.03	0.00	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	UL Bend WA	0.05	0.01	0.05	2.5	11.00	11.05	100	100	
NO_2	Annual	Ft Belknap IR	1.41	0.00	1.42	25	11.00	12.42	100	100	
NO_2	Annual	Ft Peck IR	0.03	0.01	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	Theodore Roosevelt NP/S	0.08	0.03	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Theodore Roosevelt NP/N	0.06	0.01	0.07	2.5	11.00	11.07	100	100	
NO_2	1-hour	Northern Cheyenne IR	60.43	20.46	66.67	-999	117.00	183.67	566	-999	
NO_2	1-hour	Crow IR	69.48	15.29	72.74	-999	117.00	189.74	566	-999	
NO_2	1-hour	Bighorn Canyon NRA	11.23	3.70	14.09	-999	117.00	131.09	566	-999	
NO_2	1-hour	Yellowstone NP	4.65	0.81	4.65	-999	117.00	121.65	566	-999	
NO_2	1-hour	Absaroka-Beartooth WA	35.93	1.33	35.93	-999	117.00	152.93	566	-999	
NO_2	1-hour	Red Rock Lakes WA	1.03	0.21	1.03	-999	117.00	118.03	566	-999	
NO_2	1-hour	Gates of the Mtns WA	1.93	0.06	1.93	-999	117.00	118.93	566	-999	
NO_2	1-hour	Scapegoat WA	1.43	0.04	1.47	-999	117.00	118.47	566	-999	
NO_2	1-hour	UL Bend WA	2.24	1.09	2.48	-999	117.00	119.48	566	-999	
NO_2	1-hour	Ft Belknap IR	28.11	0.53	28.11	-999	117.00	145.11	566	-999	
NO_2	1-hour	Ft Peck IR	1.97	1.74	3.51	-999	117.00	120.51	566	-999	
SO_2	Annual	Badlands WA	0.07	0.00	0.08	2	3.00	3.08	80	80	
SO_2	Annual	Black Elk WA	0.17	0.01	0.18	20	3.00	3.18	80	80	
SO_2	Annual	Mt Rushmore NM	0.12	0.01	0.13	20	3.00	3.13	80	80	
SO_2	Annual	Wind Cave NP	0.12	0.01	0.13	2	3.00	3.13	80	80	
SO_2	Annual	Jewel Cave NM	0.21	0.01	0.22	20	3.00	3.22	80	80	
SO_2	Annual	Soldier Creek WA	0.10	0.01	0.11	20	3.00	3.11	80	80	
SO_2	Annual	Agate Fossil Beds NM	0.08	0.00	0.08	20	3.00	3.08	80	80	
SO_2	Annual	Ft Laramie NHS	0.07	0.00	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Devils Tower NM	0.12	0.04	0.16	20	3.00	3.16	60	80	
SO_2	Annual	Cloud Peak WA	0.07	0.01	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Northern Cheyenne IR	0.23	0.01	0.25	2	16.00	16.25	60	80	
SO_2	Annual	Crow IR	0.41	0.02	0.42	20	16.00	16.42	60	80	
SO_2	Annual	Bighorn Canyon NRA	0.10	0.00	0.10	20	16.00	16.10	60	80	
SO_2	Annual	Bridger WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Fitzpatrick WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Popo Agie WA	0.03	0.00	0.03	20	3.00	3.03	60	80	
SO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2	3.00	3.01	60	80	
SO_2	Annual	Teton WA	0.02	0.00	0.02	2	3.00	3.02	60	80	
SO_2	Annual	Washakie WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	North Absaroka WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	Yellowstone NP	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Absaroka-Beartooth WA	0.13	0.00	0.13	20	16.00	16.13	60	80	
SO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Gates of the Mtns WA	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Scapegoat WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	UL Bend WA	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Ft Belknap IR	0.26	0.00	0.26	20	16.00	16.26	60	80	
SO_2	Annual	Ft Peck IR	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Theodore Roosevelt NP/S	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Theodore Roosevelt NP/N	0.01	0.00	0.02	2	16.00	16.02	60	80	

C.2.2.2 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
SO_2	24-hour	Badlands WA	0.63	0.06	0.64	5	8.00	8.64	365	365
SO_2	24-hour	Black Elk WA	1.30	0.05	1.32	91	8.00	9.32	365	365
SO_2	24-hour	Mt Rushmore NM	0.88	0.04	0.92	91	8.00	8.92	365	365
SO_2	24-hour	Wind Cave NP	0.90	0.07	0.94	5	8.00	8.94	365	365
SO_2	24-hour	Jewel Cave NM	1.58	0.07	1.61	91	8.00	9.61	365	365
SO_2	24-hour	Soldier Creek WA	0.60	0.04	0.61	91	8.00	8.61	365	365
SO_2	24-hour	Agate Fossil Beds NM	0.63	0.04	0.65	91	8.00	8.65	365	365
SO_2	24-hour	Ft Laramie NHS	1.15	0.06	1.19	91	8.00	9.19	260	365
SO_2	24-hour	Devils Tower NM	0.82	0.18	0.88	91	8.00	8.88	260	365
SO_2	24-hour	Cloud Peak WA	1.07	0.10	1.11	91	8.00	9.11	260	365
SO_2	24-hour	Northern Cheyenne IR	1.00	0.20	1.07	5	73.00	74.07	260	365
SO_2	24-hour	Crow IR	5.26	0.30	5.27	91	73.00	78.27	260	365
SO_2	24-hour	Bighorn Canyon NRA	1.90	0.06	1.90	91	73.00	74.90	260	365
SO_2	24-hour	Bridger WA	0.74	0.06	0.78	5	8.00	8.78	260	365
SO_2	24-hour	Fitzpatrick WA	1.13	0.11	1.18	5	8.00	9.18	260	365
SO_2	24-hour	Popo Agie WA	0.84	0.07	0.86	91	8.00	8.86	260	365
SO_2	24-hour	Grand Teton NP	0.55	0.02	0.57	5	8.00	8.57	260	365
SO_2	24-hour	Teton WA	0.45	0.03	0.48	5	8.00	8.48	260	365
SO_2	24-hour	Washakie WA	0.81	0.04	0.84	5	8.00	8.84	260	365
SO_2	24-hour	North Absaroka WA	0.75	0.02	0.75	5	8.00	8.75	260	365
SO_2	24-hour	Yellowstone NP	0.50	0.02	0.50	5	73.00	73.50	260	365
SO_2	24-hour	Absaroka-Beartooth WA	2.39	0.03	2.39	91	73.00	75.39	260	365
SO_2	24-hour	Red Rock Lakes WA	0.13	0.00	0.13	5	73.00	73.13	260	365
SO_2	24-hour	Gates of the Mtns WA	0.37	0.01	0.38	5	73.00	73.38	260	365
SO_2	24-hour	Scapegoat WA	0.29	0.00	0.29	5	73.00	73.29	260	365
SO_2	24-hour	UL Bend WA	0.46	0.02	0.47	5	73.00	73.47	260	365
SO_2	24-hour	Ft Belknap IR	1.16	0.01	1.16	91	73.00	74.16	260	365
SO_2	24-hour	Ft Peck IR	0.18	0.02	0.20	5	73.00	73.20	260	365
SO_2	24-hour	Theodore Roosevelt NP/S	0.30	0.04	0.34	5	73.00	73.34	260	365
SO_2	24-hour	Theodore Roosevelt NP/N	0.18	0.03	0.20	5	73.00	73.20	260	365
SO_2	3-hour	Badlands WA	1.83	0.20	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	Black Elk WA	3.40	0.15	3.45	512	8.00	11.45	1300	1300
SO_2	3-hour	Mt Rushmore NM	2.39	0.13	2.48	512	8.00	10.48	1300	1300
SO_2	3-hour	Wind Cave NP	2.60	0.22	2.68	25	8.00	10.68	1300	1300
SO_2	3-hour	Jewel Cave NM	4.04	0.23	4.08	512	8.00	12.08	1300	1300
SO_2	3-hour	Soldier Creek WA	1.79	0.22	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Agate Fossil Beds NM	1.65	0.22	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Ft Laramie NHS	3.29	0.26	3.37	512	8.00	11.37	1300	1300
SO_2	3-hour	Devils Tower NM	3.16	0.53	3.19	512	8.00	11.19	1300	1300
SO_2	3-hour	Cloud Peak WA	2.29	0.28	2.30	512	8.00	10.30	1300	1300
SO_2	3-hour	Northern Cheyenne IR	5.09	0.64	5.09	25	291.00	296.09	-999	1300
SO_2	3-hour	Crow IR	17.09	0.70	17.09	512	291.00	308.10	-999	1300
SO_2	3-hour	Bighorn Canyon NRA	4.19	0.16	4.19	512	291.00	295.19	1300	1300
SO_2	3-hour	Bridger WA	1.92	0.29	1.94	25	8.00	9.94	1300	1300
SO_2	3-hour	Fitzpatrick WA	3.20	0.40	3.24	25	8.00	11.24	1300	1300
SO_2	3-hour	Popo Agie WA	1.72	0.45	1.73	512	8.00	9.73	1300	1300
SO_2	3-hour	Grand Teton NP	1.28	0.05	1.30	25	8.00	9.30	1300	1300
SO_2	3-hour	Teton WA	0.99	0.09	0.99	25	8.00	8.99	1300	1300
SO_2	3-hour	Washakie WA	1.92	0.19	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	North Absaroka WA	2.18	0.04	2.18	25	8.00	10.18	1300	1300
SO_2	3-hour	Yellowstone NP	2.05	0.04	2.05	25	291.00	293.05	1300	1300
SO_2	3-hour	Absaroka-Beartooth WA	4.43	0.07	4.43	512	291.00	295.43	-999	1300
SO_2	3-hour	Red Rock Lakes WA	0.44	0.01	0.44	25	291.00	291.44	-999	1300
SO_2	3-hour	Gates of the Mtns WA	0.83	0.01	0.83	25	291.00	291.83	-999	1300
SO_2	3-hour	Scapegoat WA	0.77	0.01	0.77	25	291.00	291.77	-999	1300
SO_2	3-hour	UL Bend WA	1.09	0.05	1.09	25	291.00	292.09	-999	1300
SO_2	3-hour	Ft Belknap IR	2.55	0.03	2.55	512	291.00	293.55	-999	1300
SO_2	3-hour	Ft Peck IR	0.70	0.08	0.74	25	291.00	291.74	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/S	0.91	0.14	0.91	25	291.00	291.91	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/N	0.52	0.09	0.53	25	291.00	291.53	-999	1300
SO_2	1-hour	Northern Cheyenne IR	5.56	1.46	5.56	-999	666.00	671.56	1300	-999
SO_2	1-hour	Crow IR	29.57	1.02	29.57	-999	666.00	695.57	1300	-999
SO_2	1-hour	Bighorn Canyon NRA	5.34	0.24	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Yellowstone NP	3.69	0.04	3.69	-999	666.00	669.69	1300	-999
SO_2	1-hour	Absaroka-Beartooth WA	5.35	0.07	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Red Rock Lakes WA	0.49	0.01	0.49	-999	666.00	666.49	1300	-999
SO_2	1-hour	Gates of the Mtns WA	1.50	0.01	1.50	-999	666.00	667.50	1300	-999
SO_2	1-hour	Scapegoat WA	1.09	0.01	1.09	-999	666.00	667.09	1300	-999
SO_2	1-hour	UL Bend WA	1.58	0.06	1.58	-999	666.00	667.58	1300	-999
SO_2	1-hour	Ft Belknap IR	4.03	0.04	4.03	-999	666.00	670.03	1300	-999
SO_2	1-hour	Ft Peck IR	0.80	0.09	0.83	-999	666.00	666.83	1300	-999
SO_2	1-hour	Theodore Roosevelt NP/S	1.14	0.17	1.14	-999	666.00	667.14	715	-999
SO_2	1-hour	Theodore Roosevelt NP/N	0.58	0.10	0.58	-999	666.00	666.58	715	-999

C.2.2.2 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
PM_{10}	Annual	Badlands WA	0.24	0.09	0.33	4	17.00	17.33	50	50	
PM_{10}	Annual	Black Elk WA	0.32	0.10	0.43	17	17.00	17.43	50	50	
PM_{10}	Annual	Mt Rushmore NM	0.29	0.10	0.39	17	17.00	17.39	50	50	
PM_{10}	Annual	Wind Cave NP	0.33	0.11	0.45	4	17.00	17.45	50	50	
PM_{10}	Annual	Jewel Cave NM	0.40	0.13	0.53	17	17.00	17.53	50	50	
PM_{10}	Annual	Soldier Creek WA	0.25	0.08	0.33	17	17.00	17.33	50	50	
PM_{10}	Annual	Agate Fossil Beds NM	0.23	0.07	0.30	17	17.00	17.30	50	50	
PM_{10}	Annual	Ft Laramie NHS	0.27	0.07	0.34	17	17.00	17.34	50	50	
PM_{10}	Annual	Devils Tower NM	0.45	0.25	0.70	17	17.00	17.70	50	50	
PM_{10}	Annual	Cloud Peak WA	0.28	0.13	0.40	17	17.00	17.40	50	50	
PM_{10}	Annual	Northern Cheyenne IR	1.49	0.17	1.66	4	30.00	31.66	50	50	
PM_{10}	Annual	Crow IR	2.11	0.24	2.30	17	30.00	32.30	50	50	
PM_{10}	Annual	Bighorn Canyon NRA	0.33	0.08	0.40	17	30.00	30.40	50	50	
PM_{10}	Annual	Bridger WA	0.10	0.03	0.13	4	17.00	17.13	50	50	
PM_{10}	Annual	Fitzpatrick WA	0.10	0.03	0.13	4	17.00	17.13	50	50	
PM_{10}	Annual	Popo Agie WA	0.11	0.03	0.15	17	17.00	17.15	50	50	
PM_{10}	Annual	Grand Teton NP	0.05	0.01	0.06	4	17.00	17.06	50	50	
PM_{10}	Annual	Teton WA	0.09	0.02	0.11	4	17.00	17.11	50	50	
PM_{10}	Annual	Washakie WA	0.15	0.04	0.19	4	17.00	17.19	50	50	
PM_{10}	Annual	North Absaroka WA	0.13	0.03	0.16	4	17.00	17.16	50	50	
PM_{10}	Annual	Yellowstone NP	0.09	0.02	0.11	4	30.00	30.11	50	50	
PM_{10}	Annual	Absaroka-Beartooth WA	0.56	0.03	0.58	17	30.00	30.58	50	50	
PM_{10}	Annual	Red Rock Lakes WA	0.04	0.01	0.05	4	30.00	30.05	50	50	
PM_{10}	Annual	Gates of the Mtns WA	0.14	0.01	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Scapegoat WA	0.06	0.00	0.06	4	30.00	30.06	50	50	
PM_{10}	Annual	UL Bend WA	0.11	0.02	0.12	4	30.00	30.12	50	50	
PM_{10}	Annual	Ft Belknap IR	2.65	0.01	2.67	17	30.00	32.67	50	50	
PM_{10}	Annual	Ft Peck IR	0.06	0.01	0.07	4	30.00	30.07	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/S	0.11	0.04	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/N	0.07	0.02	0.09	4	30.00	30.09	50	50	
PM_{10}	24-hour	Badlands WA	2.19	1.32	3.17	8	42.00	45.17	150	150	
PM_{10}	24-hour	Black Elk WA	2.99	1.05	3.90	30	42.00	45.90	150	150	
PM_{10}	24-hour	Mt Rushmore NM	2.40	0.92	3.46	30	42.00	45.46	150	150	
PM_{10}	24-hour	Wind Cave NP	2.58	0.96	3.68	8	42.00	45.68	150	150	
PM_{10}	24-hour	Jewel Cave NM	3.84	1.39	4.64	30	42.00	46.64	150	150	
PM_{10}	24-hour	Soldier Creek WA	2.37	0.78	3.15	30	42.00	45.15	150	150	
PM_{10}	24-hour	Agate Fossil Beds NM	2.27	0.72	2.99	30	42.00	44.99	150	150	
PM_{10}	24-hour	Ft Laramie NHS	2.70	0.75	3.44	30	42.00	45.44	150	150	
PM_{10}	24-hour	Devils Tower NM	3.16	2.04	4.84	30	42.00	46.84	150	150	
PM_{10}	24-hour	Cloud Peak WA	4.10	2.01	5.89	30	42.00	47.89	150	150	
PM_{10}	24-hour	Northern Cheyenne IR	9.40	3.41	12.43	8	105.00	117.43	150	150	y
PM_{10}	24-hour	Crow IR	11.23	4.77	15.04	30	105.00	120.04	150	150	
PM_{10}	24-hour	Bighorn Canyon NRA	5.76	2.92	7.76	30	105.00	112.76	150	150	
PM_{10}	24-hour	Bridger WA	3.61	1.25	4.86	8	42.00	46.86	150	150	
PM_{10}	24-hour	Fitzpatrick WA	4.48	1.28	5.76	8	42.00	47.76	150	150	
PM_{10}	24-hour	Popo Agie WA	3.99	1.42	5.41	30	42.00	47.41	150	150	
PM_{10}	24-hour	Grand Teton NP	1.57	0.55	2.13	8	42.00	44.13	150	150	
PM_{10}	24-hour	Teton WA	3.38	1.09	4.48	8	42.00	46.48	150	150	
PM_{10}	24-hour	Washakie WA	6.98	1.81	8.79	8	42.00	50.79	150	150	y
PM_{10}	24-hour	North Absaroka WA	3.18	1.00	4.28	8	42.00	46.28	150	150	
PM_{10}	24-hour	Yellowstone NP	2.26	0.70	2.93	8	105.00	107.93	150	150	
PM_{10}	24-hour	Absaroka-Beartooth WA	7.30	1.06	7.31	30	105.00	112.31	150	150	
PM_{10}	24-hour	Red Rock Lakes WA	0.54	0.16	0.67	8	105.00	105.67	150	150	
PM_{10}	24-hour	Gates of the Mtns WA	1.85	0.45	2.29	8	105.00	107.29	150	150	
PM_{10}	24-hour	Scapegoat WA	1.49	0.37	1.87	8	105.00	106.87	150	150	
PM_{10}	24-hour	UL Bend WA	1.43	0.44	1.86	8	105.00	106.86	150	150	
PM_{10}	24-hour	Ft Belknap IR	29.72	0.41	29.72	30	105.00	134.72	150	150	
PM_{10}	24-hour	Ft Peck IR	0.81	0.31	0.93	8	105.00	105.93	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/S	1.47	0.68	1.78	8	105.00	106.78	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/N	0.92	0.47	1.21	8	105.00	106.21	150	150	
$PM_{2.5}$	Annual	Badlands WA	0.21	0.07	0.28	-999	7.60	7.88	15	15	
$PM_{2.5}$	Annual	Black Elk WA	0.27	0.09	0.36	-999	7.60	7.96	15	15	
$PM_{2.5}$	Annual	Mt Rushmore NM	0.25	0.08	0.33	-999	7.60	7.93	15	15	
$PM_{2.5}$	Annual	Wind Cave NP	0.27	0.09	0.36	-999	7.60	7.96	15	15	
$PM_{2.5}$	Annual	Jewel Cave NM	0.32	0.10	0.42	-999	7.60	8.02	15	15	
$PM_{2.5}$	Annual	Soldier Creek WA	0.21	0.06	0.28	-999	7.60	7.88	15	15	
$PM_{2.5}$	Annual	Agate Fossil Beds NM	0.19	0.06	0.24	-999	7.60	7.84	15	15	
$PM_{2.5}$	Annual	Ft Laramie NHS	0.19	0.06	0.25	-999	7.60	7.85	15	15	
$PM_{2.5}$	Annual	Devils Tower NM	0.35	0.18	0.54	-999	7.60	8.14	15	15	
$PM_{2.5}$	Annual	Cloud Peak WA	0.25	0.10	0.34	-999	7.60	7.94	15	15	
$PM_{2.5}$	Annual	Northern Cheyenne IR	0.82	0.13	0.95	-999	8.00	8.95	15	15	
$PM_{2.5}$	Annual	Crow IR	1.09	0.16	1.23	-999	8.00	9.23	15	15	
$PM_{2.5}$	Annual	Bighorn Canyon NRA	0.28	0.07	0.35	-999	8.00	8.35	15	15	
$PM_{2.5}$	Annual	Bridger WA	0.09	0.03	0.12	-999	7.60	7.72	15	15	
$PM_{2.5}$	Annual	Fitzpatrick WA	0.09	0.03	0.12	-999	7.60	7.72	15	15	

C.2.2.2 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
$PM_{2.5}$	Annual	Popo Agie WA	0.10	0.03	0.14	-999	7.60	7.74	15	15
$PM_{2.5}$	Annual	Grand Teton NP	0.04	0.01	0.06	-999	7.60	7.66	15	15
$PM_{2.5}$	Annual	Teton WA	0.08	0.02	0.10	-999	7.60	7.70	15	15
$PM_{2.5}$	Annual	Washakie WA	0.14	0.04	0.17	-999	7.60	7.77	15	15
$PM_{2.5}$	Annual	North Absaroka WA	0.12	0.02	0.14	-999	7.60	7.74	15	15
$PM_{2.5}$	Annual	Yellowstone NP	0.08	0.02	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Absaroka-Beartooth WA	0.31	0.02	0.33	-999	8.00	8.33	15	15
$PM_{2.5}$	Annual	Red Rock Lakes WA	0.03	0.00	0.03	-999	8.00	8.03	15	15
$PM_{2.5}$	Annual	Gates of the Mtns WA	0.10	0.01	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Scapegoat WA	0.04	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	UL Bend WA	0.09	0.02	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Ft Belknap IR	1.19	0.01	1.20	-999	8.00	9.20	15	15
$PM_{2.5}$	Annual	Ft Peck IR	0.05	0.01	0.06	-999	8.00	8.06	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/S	0.09	0.03	0.12	-999	8.00	8.12	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/N	0.06	0.02	0.08	-999	8.00	8.08	15	15
$PM_{2.5}$	24-hour	Badlands WA	2.11	1.16	2.84	-999	19.00	21.84	65	65
$PM_{2.5}$	24-hour	Black Elk WA	2.63	0.94	3.56	-999	19.00	22.56	65	65
$PM_{2.5}$	24-hour	Mt Rushmore NM	2.14	0.82	3.22	-999	19.00	22.22	65	65
$PM_{2.5}$	24-hour	Wind Cave NP	2.33	0.86	3.13	-999	19.00	22.13	65	65
$PM_{2.5}$	24-hour	Jewel Cave NM	3.40	1.20	4.36	-999	19.00	23.36	65	65
$PM_{2.5}$	24-hour	Soldier Creek WA	2.17	0.72	2.89	-999	19.00	21.89	65	65
$PM_{2.5}$	24-hour	Agate Fossil Beds NM	2.05	0.66	2.71	-999	19.00	21.71	65	65
$PM_{2.5}$	24-hour	Ft Laramie NHS	2.25	0.68	2.93	-999	19.00	21.93	65	65
$PM_{2.5}$	24-hour	Devils Tower NM	2.80	1.70	4.47	-999	19.00	23.47	65	65
$PM_{2.5}$	24-hour	Cloud Peak WA	3.81	1.75	5.42	-999	19.00	24.42	65	65
$PM_{2.5}$	24-hour	Northern Cheyenne IR	7.58	3.05	10.54	-999	20.00	30.54	65	65
$PM_{2.5}$	24-hour	Crow IR	9.67	4.45	14.01	-999	20.00	34.01	65	65
$PM_{2.5}$	24-hour	Bighorn Canyon NRA	5.42	2.70	7.27	-999	20.00	27.27	65	65
$PM_{2.5}$	24-hour	Bridger WA	3.44	1.16	4.60	-999	19.00	23.60	65	65
$PM_{2.5}$	24-hour	Fitzpatrick WA	4.30	1.25	5.54	-999	19.00	24.54	65	65
$PM_{2.5}$	24-hour	Popo Agie WA	3.80	1.31	5.11	-999	19.00	24.11	65	65
$PM_{2.5}$	24-hour	Grand Teton NP	1.50	0.52	2.02	-999	19.00	21.02	65	65
$PM_{2.5}$	24-hour	Teton WA	3.23	1.04	4.27	-999	19.00	23.27	65	65
$PM_{2.5}$	24-hour	Washakie WA	6.71	1.75	8.46	-999	19.00	27.46	65	65
$PM_{2.5}$	24-hour	North Absaroka WA	3.05	0.96	4.09	-999	19.00	23.09	65	65
$PM_{2.5}$	24-hour	Yellowstone NP	2.18	0.66	2.82	-999	20.00	22.82	65	65
$PM_{2.5}$	24-hour	Absaroka-Beartooth WA	3.53	0.96	3.72	-999	20.00	23.72	65	65
$PM_{2.5}$	24-hour	Red Rock Lakes WA	0.48	0.15	0.57	-999	20.00	20.57	65	65
$PM_{2.5}$	24-hour	Gates of the Mtns WA	1.75	0.43	2.18	-999	20.00	22.18	65	65
$PM_{2.5}$	24-hour	Scapegoat WA	1.43	0.35	1.80	-999	20.00	21.80	65	65
$PM_{2.5}$	24-hour	UL Bend WA	1.35	0.42	1.77	-999	20.00	21.77	65	65
$PM_{2.5}$	24-hour	Ft Belknap IR	12.74	0.40	12.74	-999	20.00	32.74	65	65
$PM_{2.5}$	24-hour	Ft Peck IR	0.72	0.27	0.80	-999	20.00	20.80	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/S	1.30	0.57	1.56	-999	20.00	21.56	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/N	0.86	0.38	1.04	-999	20.00	21.04	65	65
CO	8-hour	Badlands WA	7.88	5.62	13.34	-999	1500	1513	10000	10000
CO	8-hour	Black Elk WA	11.05	7.75	18.76	-999	1500	1519	10000	10000
CO	8-hour	Mt Rushmore NM	10.09	7.14	17.23	-999	1500	1517	10000	10000
CO	8-hour	Wind Cave NP	10.88	7.65	18.54	-999	1500	1519	10000	10000
CO	8-hour	Jewel Cave NM	13.66	9.20	22.86	-999	1500	1523	10000	10000
CO	8-hour	Soldier Creek WA	5.45	3.11	8.10	-999	1500	1508	10000	10000
CO	8-hour	Agate Fossil Beds NM	5.46	2.68	8.14	-999	1500	1508	10000	10000
CO	8-hour	Ft Laramie NHS	7.84	3.77	11.62	-999	1500	1512	10000	10000
CO	8-hour	Devils Tower NM	12.47	7.84	19.29	-999	1500	1519	10000	10000
CO	8-hour	Cloud Peak WA	14.09	6.62	16.62	-999	1500	1517	10000	10000
CO	8-hour	Northern Cheyenne IR	69.55	14.15	76.04	-999	6600	6676	10000	10000
CO	8-hour	Crow IR	62.15	13.63	64.45	-999	6600	6664	10000	10000
CO	8-hour	Bighorn Canyon NRA	19.70	6.97	26.64	-999	6600	6627	10000	10000
CO	8-hour	Bridger WA	7.81	2.77	10.58	-999	1500	1511	10000	10000
CO	8-hour	Fitzpatrick WA	5.87	2.51	8.38	-999	1500	1508	10000	10000
CO	8-hour	Popo Agie WA	8.32	3.04	11.35	-999	1500	1511	10000	10000
CO	8-hour	Grand Teton NP	3.30	1.51	4.81	-999	1500	1505	10000	10000
CO	8-hour	Teton WA	5.38	2.03	7.39	-999	1500	1507	10000	10000
CO	8-hour	Washakie WA	9.33	3.77	13.10	-999	1500	1513	10000	10000
CO	8-hour	North Absaroka WA	8.86	2.98	11.84	-999	1500	1512	10000	10000
CO	8-hour	Yellowstone NP	6.76	2.52	9.28	-999	6600	6609	10000	10000
CO	8-hour	Absaroka-Beartooth WA	52.12	3.78	52.12	-999	6600	6652	10000	10000
CO	8-hour	Red Rock Lakes WA	1.27	0.59	1.86	-999	6600	6602	10000	10000
CO	8-hour	Gates of the Mtns WA	2.31	0.65	2.96	-999	6600	6603	10000	10000
CO	8-hour	Scapegoat WA	1.74	0.58	2.32	-999	6600	6602	10000	10000
CO	8-hour	UL Bend WA	4.07	1.62	5.57	-999	6600	6606	10000	10000
CO	8-hour	Ft Belknap IR	32.45	1.21	32.48	-999	6600	6632	10000	10000
CO	8-hour	Ft Peck IR	5.25	2.96	8.21	-999	6600	6608	10000	10000
CO	8-hour	Theodore Roosevelt NP/S	7.17	4.56	11.74	-999	6600	6612	10000	10000
CO	8-hour	Theodore Roosevelt NP/N	6.01	3.85	9.86	-999	6600	6610	10000	10000

C.2.2.2 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
CO	1-hour	Badlands WA	10.69	7.76	18.45	-999	3500	3518	40000	40000
CO	1-hour	Black Elk WA	17.37	9.16	24.57	-999	3500	3525	40000	40000
CO	1-hour	Mt Rushmore NM	16.80	8.56	24.41	-999	3500	3524	40000	40000
CO	1-hour	Wind Cave NP	16.45	9.20	24.17	-999	3500	3524	40000	40000
CO	1-hour	Jewel Cave NM	15.65	10.69	26.34	-999	3500	3526	40000	40000
CO	1-hour	Soldier Creek WA	13.50	8.17	21.67	-999	3500	3522	40000	40000
CO	1-hour	Agate Fossil Beds NM	12.20	6.38	16.63	-999	3500	3517	40000	40000
CO	1-hour	Ft Laramie NHS	13.15	7.61	20.76	-999	3500	3521	40000	40000
CO	1-hour	Devils Tower NM	19.69	18.79	38.49	-999	3500	3538	40000	40000
CO	1-hour	Cloud Peak WA	18.03	9.36	20.48	-999	3500	3520	40000	40000
CO	1-hour	Northern Cheyenne IR	85.21	20.62	93.50	-999	15000	15093	26000	40000
CO	1-hour	Crow IR	83.44	15.92	87.28	-999	15000	15087	26000	40000
CO	1-hour	Bighorn Canyon NRA	25.16	10.44	34.96	-999	15000	15035	26000	40000
CO	1-hour	Bridger WA	10.93	2.97	12.30	-999	3500	3512	40000	40000
CO	1-hour	Fitzpatrick WA	9.58	2.79	11.11	-999	3500	3511	40000	40000
CO	1-hour	Popo Agie WA	9.43	3.27	12.35	-999	3500	3512	40000	40000
CO	1-hour	Grand Teton NP	4.99	1.87	5.43	-999	3500	3505	40000	40000
CO	1-hour	Teton WA	6.75	2.56	9.22	-999	3500	3509	40000	40000
CO	1-hour	Washakie WA	10.91	4.37	15.24	-999	3500	3515	40000	40000
CO	1-hour	North Absaroka WA	12.30	3.02	15.32	-999	3500	3515	40000	40000
CO	1-hour	Yellowstone NP	6.99	2.59	9.43	-999	15000	15009	26000	40000
CO	1-hour	Absaroka-Beartooth WA	100.01	3.89	100.01	-999	15000	15100	26000	40000
CO	1-hour	Red Rock Lakes WA	1.61	0.64	1.99	-999	15000	15002	26000	40000
CO	1-hour	Gates of the Mtns WA	2.38	0.70	3.05	-999	15000	15003	26000	40000
CO	1-hour	Scapegoat WA	2.56	0.61	2.98	-999	15000	15003	26000	40000
CO	1-hour	UL Bend WA	5.52	1.88	6.47	-999	15000	15006	26000	40000
CO	1-hour	Ft Belknap IR	55.04	1.29	55.05	-999	15000	15055	26000	40000
CO	1-hour	Ft Peck IR	6.64	3.83	10.36	-999	15000	15010	26000	40000
CO	1-hour	Theodore Roosevelt NP/S	9.57	5.51	14.56	-999	15000	15015	40000	40000
CO	1-hour	Theodore Roosevelt NP/N	9.22	5.80	14.93	-999	15000	15015	40000	40000

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2.2.3 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E[a]

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Badlands WA	0.19	0.06	0.26	2.5	16.50	16.76	100	100	
NO_2	Annual	Black Elk WA	0.28	0.09	0.37	25	16.50	16.87	100	100	
NO_2	Annual	Mt Rushmore NM	0.24	0.08	0.32	25	16.50	16.82	100	100	
NO_2	Annual	Wind Cave NP	0.37	0.11	0.48	2.5	16.50	16.98	100	100	
NO_2	Annual	Jewel Cave NM	0.46	0.15	0.61	25	16.50	17.11	100	100	
NO_2	Annual	Soldier Creek WA	0.45	0.07	0.51	25	16.50	17.01	100	100	
NO_2	Annual	Agate Fossil Beds NM	0.20	0.06	0.26	25	16.50	16.76	100	100	
NO_2	Annual	Ft Laramie NHS	0.17	0.06	0.23	25	16.50	16.73	100	100	
NO_2	Annual	Devils Tower NM	0.68	0.46	1.14	25	16.50	17.64	100	100	
NO_2	Annual	Cloud Peak WA	0.24	0.09	0.32	25	16.50	16.82	100	100	
NO_2	Annual	Northern Cheyenne IR	3.92	0.20	4.11	2.5	11.00	15.11	100	100	y
NO_2	Annual	Crow IR	5.07	0.34	5.32	25	11.00	16.32	100	100	
NO_2	Annual	Bighorn Canyon NRA	0.33	0.04	0.36	25	16.50	16.86	100	100	
NO_2	Annual	Bridger WA	0.02	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Fitzpatrick WA	0.02	0.01	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Popo Agie WA	0.03	0.01	0.04	25	16.50	16.54	100	100	
NO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2.5	16.50	16.51	100	100	
NO_2	Annual	Teton WA	0.02	0.00	0.02	2.5	16.50	16.52	100	100	
NO_2	Annual	Washakie WA	0.04	0.01	0.05	2.5	16.50	16.55	100	100	
NO_2	Annual	North Absaroka WA	0.06	0.00	0.07	2.5	16.50	16.57	100	100	
NO_2	Annual	Yellowstone NP	0.08	0.00	0.08	2.5	16.50	16.58	100	100	
NO_2	Annual	Absaroka-Beartooth WA	0.69	0.01	0.69	25	11.00	11.69	100	100	
NO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2.5	11.00	11.01	100	100	
NO_2	Annual	Gates of the Mtns WA	0.11	0.00	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Scapegoat WA	0.03	0.00	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	UL Bend WA	0.05	0.01	0.05	2.5	11.00	11.05	100	100	
NO_2	Annual	Ft Belknap IR	1.41	0.00	1.41	25	11.00	12.41	100	100	
NO_2	Annual	Ft Peck IR	0.03	0.01	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	Theodore Roosevelt NP/S	0.08	0.02	0.10	2.5	11.00	11.10	100	100	
NO_2	Annual	Theodore Roosevelt NP/N	0.06	0.01	0.07	2.5	11.00	11.07	100	100	
NO_2	1-hour	Northern Cheyenne IR	60.43	19.55	65.74	-999	117.00	182.74	566	-999	
NO_2	1-hour	Crow IR	69.48	14.25	72.18	-999	117.00	189.18	566	-999	
NO_2	1-hour	Bighorn Canyon NRA	11.23	3.51	13.60	-999	117.00	130.60	566	-999	
NO_2	1-hour	Yellowstone NP	4.65	0.68	4.65	-999	117.00	121.65	566	-999	
NO_2	1-hour	Absaroka-Beartooth WA	35.93	1.15	35.93	-999	117.00	152.93	566	-999	
NO_2	1-hour	Red Rock Lakes WA	1.03	0.18	1.03	-999	117.00	118.03	566	-999	
NO_2	1-hour	Gates of the Mtns WA	1.93	0.06	1.93	-999	117.00	118.93	566	-999	
NO_2	1-hour	Scapegoat WA	1.43	0.04	1.47	-999	117.00	118.47	566	-999	
NO_2	1-hour	UL Bend WA	2.24	0.93	2.34	-999	117.00	119.34	566	-999	
NO_2	1-hour	Ft Belknap IR	28.11	0.49	28.11	-999	117.00	145.11	566	-999	
NO_2	1-hour	Ft Peck IR	1.97	1.46	3.24	-999	117.00	120.24	566	-999	
SO_2	Annual	Badlands WA	0.07	0.00	0.08	2	3.00	3.08	80	80	
SO_2	Annual	Black Elk WA	0.17	0.01	0.18	20	3.00	3.18	80	80	
SO_2	Annual	Mt Rushmore NM	0.12	0.01	0.13	20	3.00	3.13	80	80	
SO_2	Annual	Wind Cave NP	0.12	0.01	0.13	2	3.00	3.13	80	80	
SO_2	Annual	Jewel Cave NM	0.21	0.01	0.22	20	3.00	3.22	80	80	
SO_2	Annual	Soldier Creek WA	0.10	0.01	0.11	20	3.00	3.11	80	80	
SO_2	Annual	Agate Fossil Beds NM	0.08	0.00	0.08	20	3.00	3.08	80	80	
SO_2	Annual	Ft Laramie NHS	0.07	0.00	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Devils Tower NM	0.12	0.04	0.16	20	3.00	3.16	60	80	
SO_2	Annual	Cloud Peak WA	0.07	0.01	0.08	20	3.00	3.08	60	80	
SO_2	Annual	Northern Cheyenne IR	0.23	0.01	0.25	2	16.00	16.25	60	80	
SO_2	Annual	Crow IR	0.41	0.02	0.42	20	16.00	16.42	60	80	
SO_2	Annual	Bighorn Canyon NRA	0.10	0.00	0.10	20	16.00	16.10	60	80	
SO_2	Annual	Bridger WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Fitzpatrick WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Popo Agie WA	0.03	0.00	0.03	20	3.00	3.03	60	80	
SO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2	3.00	3.01	60	80	
SO_2	Annual	Teton WA	0.02	0.00	0.02	2	3.00	3.02	60	80	
SO_2	Annual	Washakie WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	North Absaroka WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	Yellowstone NP	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Absaroka-Beartooth WA	0.13	0.00	0.13	20	16.00	16.13	60	80	
SO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Gates of the Mtns WA	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Scapegoat WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	UL Bend WA	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Ft Belknap IR	0.26	0.00	0.26	20	16.00	16.26	60	80	
SO_2	Annual	Ft Peck IR	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Theodore Roosevelt NP/S	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Theodore Roosevelt NP/N	0.01	0.00	0.02	2	16.00	16.02	60	80	

C.2.2.3 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
SO_2	24-hour	Badlands WA	0.63	0.06	0.64	5	8.00	8.64	365	365
SO_2	24-hour	Black Elk WA	1.30	0.04	1.32	91	8.00	9.32	365	365
SO_2	24-hour	Mt Rushmore NM	0.88	0.04	0.92	91	8.00	8.92	365	365
SO_2	24-hour	Wind Cave NP	0.90	0.07	0.94	5	8.00	8.94	365	365
SO_2	24-hour	Jewel Cave NM	1.58	0.07	1.61	91	8.00	9.61	365	365
SO_2	24-hour	Soldier Creek WA	0.60	0.04	0.61	91	8.00	8.61	365	365
SO_2	24-hour	Agate Fossil Beds NM	0.63	0.04	0.65	91	8.00	8.65	365	365
SO_2	24-hour	Ft Laramie NHS	1.15	0.06	1.19	91	8.00	9.19	260	365
SO_2	24-hour	Devils Tower NM	0.82	0.18	0.88	91	8.00	8.88	260	365
SO_2	24-hour	Cloud Peak WA	1.07	0.10	1.11	91	8.00	9.11	260	365
SO_2	24-hour	Northern Cheyenne IR	1.00	0.20	1.07	5	73.00	74.07	260	365
SO_2	24-hour	Crow IR	5.26	0.29	5.27	91	73.00	78.27	260	365
SO_2	24-hour	Bighorn Canyon NRA	1.90	0.06	1.90	91	73.00	74.90	260	365
SO_2	24-hour	Bridger WA	0.74	0.06	0.78	5	8.00	8.78	260	365
SO_2	24-hour	Fitzpatrick WA	1.13	0.11	1.18	5	8.00	9.18	260	365
SO_2	24-hour	Popo Agie WA	0.84	0.07	0.86	91	8.00	8.86	260	365
SO_2	24-hour	Grand Teton NP	0.55	0.02	0.57	5	8.00	8.57	260	365
SO_2	24-hour	Teton WA	0.45	0.03	0.48	5	8.00	8.48	260	365
SO_2	24-hour	Washakie WA	0.81	0.04	0.84	5	8.00	8.84	260	365
SO_2	24-hour	North Absaroka WA	0.75	0.02	0.75	5	8.00	8.75	260	365
SO_2	24-hour	Yellowstone NP	0.50	0.02	0.50	5	73.00	73.50	260	365
SO_2	24-hour	Absaroka-Beartooth WA	2.39	0.03	2.39	91	73.00	75.39	260	365
SO_2	24-hour	Red Rock Lakes WA	0.13	0.00	0.13	5	73.00	73.13	260	365
SO_2	24-hour	Gates of the Mtns WA	0.37	0.01	0.38	5	73.00	73.38	260	365
SO_2	24-hour	Scapegoat WA	0.29	0.00	0.29	5	73.00	73.29	260	365
SO_2	24-hour	UL Bend WA	0.46	0.02	0.47	5	73.00	73.47	260	365
SO_2	24-hour	Ft Belknap IR	1.16	0.01	1.16	91	73.00	74.16	260	365
SO_2	24-hour	Ft Peck IR	0.18	0.02	0.20	5	73.00	73.20	260	365
SO_2	24-hour	Theodore Roosevelt NP/S	0.30	0.04	0.34	5	73.00	73.34	260	365
SO_2	24-hour	Theodore Roosevelt NP/N	0.18	0.03	0.20	5	73.00	73.20	260	365
SO_2	3-hour	Badlands WA	1.83	0.20	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	Black Elk WA	3.40	0.15	3.45	512	8.00	11.45	1300	1300
SO_2	3-hour	Mt Rushmore NM	2.39	0.13	2.48	512	8.00	10.48	1300	1300
SO_2	3-hour	Wind Cave NP	2.60	0.22	2.68	25	8.00	10.68	1300	1300
SO_2	3-hour	Jewel Cave NM	4.04	0.23	4.08	512	8.00	12.08	1300	1300
SO_2	3-hour	Soldier Creek WA	1.79	0.22	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Agate Fossil Beds NM	1.65	0.22	1.87	512	8.00	9.87	1300	1300
SO_2	3-hour	Ft Laramie NHS	3.29	0.26	3.37	512	8.00	11.37	1300	1300
SO_2	3-hour	Devils Tower NM	3.16	0.53	3.19	512	8.00	11.19	1300	1300
SO_2	3-hour	Cloud Peak WA	2.29	0.28	2.30	512	8.00	10.30	1300	1300
SO_2	3-hour	Northern Cheyenne IR	5.09	0.64	5.09	25	291.00	296.09	-999	1300
SO_2	3-hour	Crow IR	17.09	0.70	17.09	512	291.00	308.10	-999	1300
SO_2	3-hour	Bighorn Canyon NRA	4.19	0.16	4.19	512	291.00	295.19	1300	1300
SO_2	3-hour	Bridger WA	1.92	0.29	1.94	25	8.00	9.94	1300	1300
SO_2	3-hour	Fitzpatrick WA	3.20	0.40	3.24	25	8.00	11.24	1300	1300
SO_2	3-hour	Popo Agie WA	1.72	0.45	1.73	512	8.00	9.73	1300	1300
SO_2	3-hour	Grand Teton NP	1.28	0.05	1.30	25	8.00	9.30	1300	1300
SO_2	3-hour	Teton WA	0.99	0.09	0.99	25	8.00	8.99	1300	1300
SO_2	3-hour	Washakie WA	1.92	0.19	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	North Absaroka WA	2.18	0.04	2.18	25	8.00	10.18	1300	1300
SO_2	3-hour	Yellowstone NP	2.05	0.04	2.05	25	291.00	293.05	1300	1300
SO_2	3-hour	Absaroka-Beartooth WA	4.43	0.07	4.43	512	291.00	295.43	-999	1300
SO_2	3-hour	Red Rock Lakes WA	0.44	0.01	0.44	25	291.00	291.44	-999	1300
SO_2	3-hour	Gates of the Mtns WA	0.83	0.01	0.83	25	291.00	291.83	-999	1300
SO_2	3-hour	Scapegoat WA	0.77	0.01	0.77	25	291.00	291.77	-999	1300
SO_2	3-hour	UL Bend WA	1.09	0.05	1.09	25	291.00	292.09	-999	1300
SO_2	3-hour	Ft Belknap IR	2.55	0.03	2.55	512	291.00	293.55	-999	1300
SO_2	3-hour	Ft Peck IR	0.70	0.08	0.74	25	291.00	291.74	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/S	0.91	0.14	0.91	25	291.00	291.91	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/N	0.52	0.09	0.53	25	291.00	291.53	-999	1300
SO_2	1-hour	Northern Cheyenne IR	5.56	1.46	5.56	-999	666.00	671.56	1300	-999
SO_2	1-hour	Crow IR	29.57	1.02	29.57	-999	666.00	695.57	1300	-999
SO_2	1-hour	Bighorn Canyon NRA	5.34	0.24	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Yellowstone NP	3.69	0.04	3.69	-999	666.00	669.69	1300	-999
SO_2	1-hour	Absaroka-Beartooth WA	5.35	0.07	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Red Rock Lakes WA	0.49	0.01	0.49	-999	666.00	666.49	1300	-999
SO_2	1-hour	Gates of the Mtns WA	1.50	0.01	1.50	-999	666.00	667.50	1300	-999
SO_2	1-hour	Scapegoat WA	1.09	0.01	1.09	-999	666.00	667.09	1300	-999
SO_2	1-hour	UL Bend WA	1.58	0.06	1.58	-999	666.00	667.58	1300	-999
SO_2	1-hour	Ft Belknap IR	4.03	0.04	4.03	-999	666.00	670.03	1300	-999
SO_2	1-hour	Ft Peck IR	0.80	0.09	0.83	-999	666.00	666.83	1300	-999
SO_2	1-hour	Theodore Roosevelt NP/S	1.14	0.17	1.14	-999	666.00	667.14	715	-999
SO_2	1-hour	Theodore Roosevelt NP/N	0.58	0.10	0.58	-999	666.00	666.58	715	-999

C.2.2.3 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Back-Ground	Total	SAAQS	NAAQS	
PM_{10}	Annual	Badlands WA	0.24	0.08	0.32	4	17.00	17.32	50	50	
PM_{10}	Annual	Black Elk WA	0.32	0.09	0.41	17	17.00	17.41	50	50	
PM_{10}	Annual	Mt Rushmore NM	0.29	0.09	0.38	17	17.00	17.38	50	50	
PM_{10}	Annual	Wind Cave NP	0.33	0.10	0.43	4	17.00	17.43	50	50	
PM_{10}	Annual	Jewel Cave NM	0.40	0.12	0.51	17	17.00	17.51	50	50	
PM_{10}	Annual	Soldier Creek WA	0.25	0.07	0.32	17	17.00	17.32	50	50	
PM_{10}	Annual	Agate Fossil Beds NM	0.23	0.06	0.29	17	17.00	17.29	50	50	
PM_{10}	Annual	Ft Laramie NHS	0.27	0.06	0.33	17	17.00	17.33	50	50	
PM_{10}	Annual	Devils Tower NM	0.45	0.23	0.68	17	17.00	17.68	50	50	
PM_{10}	Annual	Cloud Peak WA	0.28	0.11	0.39	17	17.00	17.39	50	50	
PM_{10}	Annual	Northern Cheyenne IR	1.49	0.16	1.64	4	30.00	31.64	50	50	
PM_{10}	Annual	Crow IR	2.11	0.22	2.29	17	30.00	32.29	50	50	
PM_{10}	Annual	Bighorn Canyon NRA	0.33	0.07	0.39	17	30.00	30.39	50	50	
PM_{10}	Annual	Bridger WA	0.10	0.03	0.12	4	17.00	17.12	50	50	
PM_{10}	Annual	Fitzpatrick WA	0.10	0.03	0.13	4	17.00	17.13	50	50	
PM_{10}	Annual	Popo Agie WA	0.11	0.03	0.14	17	17.00	17.14	50	50	
PM_{10}	Annual	Grand Teton NP	0.05	0.01	0.06	4	17.00	17.06	50	50	
PM_{10}	Annual	Teton WA	0.09	0.02	0.10	4	17.00	17.10	50	50	
PM_{10}	Annual	Washakie WA	0.15	0.03	0.18	4	17.00	17.18	50	50	
PM_{10}	Annual	North Absaroka WA	0.13	0.02	0.16	4	17.00	17.16	50	50	
PM_{10}	Annual	Yellowstone NP	0.09	0.02	0.11	4	30.00	30.11	50	50	
PM_{10}	Annual	Absaroka-Beartooth WA	0.56	0.02	0.58	17	30.00	30.58	50	50	
PM_{10}	Annual	Red Rock Lakes WA	0.04	0.00	0.05	4	30.00	30.05	50	50	
PM_{10}	Annual	Gates of the Mtns WA	0.14	0.00	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Scapegoat WA	0.06	0.00	0.06	4	30.00	30.06	50	50	
PM_{10}	Annual	UL Bend WA	0.11	0.02	0.12	4	30.00	30.12	50	50	
PM_{10}	Annual	Ft Belknap IR	2.65	0.01	2.66	17	30.00	32.66	50	50	
PM_{10}	Annual	Ft Peck IR	0.06	0.01	0.07	4	30.00	30.07	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/S	0.11	0.03	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/N	0.07	0.02	0.09	4	30.00	30.09	50	50	
PM_{10}	24-hour	Badlands WA	2.19	1.12	2.98	8	42.00	44.98	150	150	
PM_{10}	24-hour	Black Elk WA	2.99	0.90	3.76	30	42.00	45.76	150	150	
PM_{10}	24-hour	Mt Rushmore NM	2.40	0.79	3.38	30	42.00	45.38	150	150	
PM_{10}	24-hour	Wind Cave NP	2.58	0.82	3.48	8	42.00	45.48	150	150	
PM_{10}	24-hour	Jewel Cave NM	3.84	1.18	4.52	30	42.00	46.52	150	150	
PM_{10}	24-hour	Soldier Creek WA	2.37	0.65	3.03	30	42.00	45.03	150	150	
PM_{10}	24-hour	Agate Fossil Beds NM	2.27	0.61	2.88	30	42.00	44.88	150	150	
PM_{10}	24-hour	Ft Laramie NHS	2.70	0.63	3.33	30	42.00	45.33	150	150	
PM_{10}	24-hour	Devils Tower NM	3.16	1.78	4.68	30	42.00	46.68	150	150	
PM_{10}	24-hour	Cloud Peak WA	4.10	1.77	5.65	30	42.00	47.65	150	150	
PM_{10}	24-hour	Northern Cheyenne IR	9.40	2.96	12.05	8	105.00	117.05	150	150	y
PM_{10}	24-hour	Crow IR	11.23	4.10	14.54	30	105.00	119.54	150	150	
PM_{10}	24-hour	Bighorn Canyon NRA	5.76	2.50	7.50	30	105.00	112.50	150	150	
PM_{10}	24-hour	Bridger WA	3.61	1.08	4.70	8	42.00	46.70	150	150	
PM_{10}	24-hour	Fitzpatrick WA	4.48	1.10	5.53	8	42.00	47.53	150	150	
PM_{10}	24-hour	Popo Agie WA	3.99	1.23	5.22	30	42.00	47.22	150	150	
PM_{10}	24-hour	Grand Teton NP	1.57	0.48	2.05	8	42.00	44.05	150	150	
PM_{10}	24-hour	Teton WA	3.38	0.90	4.31	8	42.00	46.31	150	150	
PM_{10}	24-hour	Washakie WA	6.98	1.47	8.45	8	42.00	50.45	150	150	y
PM_{10}	24-hour	North Absaroka WA	3.18	0.83	4.13	8	42.00	46.13	150	150	
PM_{10}	24-hour	Yellowstone NP	2.26	0.60	2.84	8	105.00	107.84	150	150	
PM_{10}	24-hour	Absaroka-Beartooth WA	7.30	0.90	7.30	30	105.00	112.30	150	150	
PM_{10}	24-hour	Red Rock Lakes WA	0.54	0.15	0.66	8	105.00	105.66	150	150	
PM_{10}	24-hour	Gates of the Mtns WA	1.85	0.38	2.22	8	105.00	107.22	150	150	
PM_{10}	24-hour	Scapegoat WA	1.49	0.32	1.81	8	105.00	106.81	150	150	
PM_{10}	24-hour	UL Bend WA	1.43	0.38	1.80	8	105.00	106.80	150	150	
PM_{10}	24-hour	Ft Belknap IR	29.72	0.36	29.72	30	105.00	134.72	150	150	
PM_{10}	24-hour	Ft Peck IR	0.81	0.28	0.89	8	105.00	105.89	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/S	1.47	0.59	1.75	8	105.00	106.75	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/N	0.92	0.42	1.18	8	105.00	106.18	150	150	
$PM_{2.5}$	Annual	Badlands WA	0.21	0.06	0.27	-999	7.60	7.87	15	15	
$PM_{2.5}$	Annual	Black Elk WA	0.27	0.07	0.34	-999	7.60	7.94	15	15	
$PM_{2.5}$	Annual	Mt Rushmore NM	0.25	0.07	0.32	-999	7.60	7.92	15	15	
$PM_{2.5}$	Annual	Wind Cave NP	0.27	0.08	0.35	-999	7.60	7.95	15	15	
$PM_{2.5}$	Annual	Jewel Cave NM	0.32	0.09	0.40	-999	7.60	8.00	15	15	
$PM_{2.5}$	Annual	Soldier Creek WA	0.21	0.06	0.27	-999	7.60	7.87	15	15	
$PM_{2.5}$	Annual	Agate Fossil Beds NM	0.19	0.05	0.24	-999	7.60	7.84	15	15	
$PM_{2.5}$	Annual	Ft Laramie NHS	0.19	0.05	0.24	-999	7.60	7.84	15	15	
$PM_{2.5}$	Annual	Devils Tower NM	0.35	0.16	0.51	-999	7.60	8.11	15	15	
$PM_{2.5}$	Annual	Cloud Peak WA	0.25	0.09	0.33	-999	7.60	7.93	15	15	
$PM_{2.5}$	Annual	Northern Cheyenne IR	0.82	0.11	0.93	-999	8.00	8.93	15	15	
$PM_{2.5}$	Annual	Crow IR	1.09	0.14	1.21	-999	8.00	9.21	15	15	
$PM_{2.5}$	Annual	Bighorn Canyon NRA	0.28	0.06	0.34	-999	8.00	8.34	15	15	
$PM_{2.5}$	Annual	Bridger WA	0.09	0.02	0.11	-999	7.60	7.71	15	15	
$PM_{2.5}$	Annual	Fitzpatrick WA	0.09	0.02	0.12	-999	7.60	7.72	15	15	

C.2.2.3 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
$PM_{2.5}$	Annual	Popo Agie WA	0.10	0.03	0.13	-999	7.60	7.73	15	15
$PM_{2.5}$	Annual	Grand Teton NP	0.04	0.01	0.05	-999	7.60	7.65	15	15
$PM_{2.5}$	Annual	Teton WA	0.08	0.02	0.10	-999	7.60	7.70	15	15
$PM_{2.5}$	Annual	Washakie WA	0.14	0.03	0.17	-999	7.60	7.77	15	15
$PM_{2.5}$	Annual	North Absaroka WA	0.12	0.02	0.14	-999	7.60	7.74	15	15
$PM_{2.5}$	Annual	Yellowstone NP	0.08	0.01	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Absaroka-Beartooth WA	0.31	0.02	0.33	-999	8.00	8.33	15	15
$PM_{2.5}$	Annual	Red Rock Lakes WA	0.03	0.00	0.03	-999	8.00	8.03	15	15
$PM_{2.5}$	Annual	Gates of the Mtns WA	0.10	0.00	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Scapegoat WA	0.04	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	UL Bend WA	0.09	0.01	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Ft Belknap IR	1.19	0.01	1.20	-999	8.00	9.20	15	15
$PM_{2.5}$	Annual	Ft Peck IR	0.05	0.01	0.06	-999	8.00	8.06	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/S	0.09	0.03	0.12	-999	8.00	8.12	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/N	0.06	0.01	0.07	-999	8.00	8.07	15	15
$PM_{2.5}$	24-hour	Badlands WA	2.11	0.96	2.66	-999	19.00	21.66	65	65
$PM_{2.5}$	24-hour	Black Elk WA	2.63	0.78	3.41	-999	19.00	22.41	65	65
$PM_{2.5}$	24-hour	Mt Rushmore NM	2.14	0.69	3.02	-999	19.00	22.02	65	65
$PM_{2.5}$	24-hour	Wind Cave NP	2.33	0.72	2.97	-999	19.00	21.97	65	65
$PM_{2.5}$	24-hour	Jewel Cave NM	3.40	1.00	4.25	-999	19.00	23.25	65	65
$PM_{2.5}$	24-hour	Soldier Creek WA	2.17	0.59	2.76	-999	19.00	21.76	65	65
$PM_{2.5}$	24-hour	Agate Fossil Beds NM	2.05	0.55	2.60	-999	19.00	21.60	65	65
$PM_{2.5}$	24-hour	Ft Laramie NHS	2.25	0.56	2.81	-999	19.00	21.81	65	65
$PM_{2.5}$	24-hour	Devils Tower NM	2.80	1.47	4.21	-999	19.00	23.21	65	65
$PM_{2.5}$	24-hour	Cloud Peak WA	3.81	1.51	5.18	-999	19.00	24.18	65	65
$PM_{2.5}$	24-hour	Northern Cheyenne IR	7.58	2.60	10.10	-999	20.00	30.10	65	65
$PM_{2.5}$	24-hour	Crow IR	9.67	3.79	13.36	-999	20.00	33.36	65	65
$PM_{2.5}$	24-hour	Bighorn Canyon NRA	5.42	2.28	7.01	-999	20.00	27.01	65	65
$PM_{2.5}$	24-hour	Bridger WA	3.44	0.99	4.44	-999	19.00	23.44	65	65
$PM_{2.5}$	24-hour	Fitzpatrick WA	4.30	1.07	5.30	-999	19.00	24.30	65	65
$PM_{2.5}$	24-hour	Popo Agie WA	3.80	1.12	4.92	-999	19.00	23.92	65	65
$PM_{2.5}$	24-hour	Grand Teton NP	1.50	0.45	1.95	-999	19.00	20.95	65	65
$PM_{2.5}$	24-hour	Teton WA	3.23	0.86	4.10	-999	19.00	23.10	65	65
$PM_{2.5}$	24-hour	Washakie WA	6.71	1.40	8.12	-999	19.00	27.12	65	65
$PM_{2.5}$	24-hour	North Absaroka WA	3.05	0.79	3.94	-999	19.00	22.94	65	65
$PM_{2.5}$	24-hour	Yellowstone NP	2.18	0.56	2.73	-999	20.00	22.73	65	65
$PM_{2.5}$	24-hour	Absaroka-Beartooth WA	3.53	0.80	3.56	-999	20.00	23.56	65	65
$PM_{2.5}$	24-hour	Red Rock Lakes WA	0.48	0.14	0.56	-999	20.00	20.56	65	65
$PM_{2.5}$	24-hour	Gates of the Mtns WA	1.75	0.36	2.11	-999	20.00	22.11	65	65
$PM_{2.5}$	24-hour	Scapegoat WA	1.43	0.31	1.74	-999	20.00	21.74	65	65
$PM_{2.5}$	24-hour	UL Bend WA	1.35	0.36	1.71	-999	20.00	21.71	65	65
$PM_{2.5}$	24-hour	Ft Belknap IR	12.74	0.34	12.74	-999	20.00	32.74	65	65
$PM_{2.5}$	24-hour	Ft Peck IR	0.72	0.23	0.75	-999	20.00	20.75	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/S	1.30	0.48	1.53	-999	20.00	21.53	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/N	0.86	0.33	1.04	-999	20.00	21.04	65	65
CO	8-hour	Badlands WA	7.88	3.65	11.38	-999	1500	1511	10000	10000
CO	8-hour	Black Elk WA	11.05	5.08	16.08	-999	1500	1516	10000	10000
CO	8-hour	Mt Rushmore NM	10.09	4.67	14.76	-999	1500	1515	10000	10000
CO	8-hour	Wind Cave NP	10.88	4.99	15.87	-999	1500	1516	10000	10000
CO	8-hour	Jewel Cave NM	13.66	6.06	19.72	-999	1500	1520	10000	10000
CO	8-hour	Soldier Creek WA	5.45	1.98	7.22	-999	1500	1507	10000	10000
CO	8-hour	Agate Fossil Beds NM	5.46	1.85	7.31	-999	1500	1507	10000	10000
CO	8-hour	Ft Laramie NHS	7.84	2.56	10.40	-999	1500	1510	10000	10000
CO	8-hour	Devils Tower NM	12.47	5.21	17.05	-999	1500	1517	10000	10000
CO	8-hour	Cloud Peak WA	14.09	4.65	15.80	-999	1500	1516	10000	10000
CO	8-hour	Northern Cheyenne IR	69.55	9.23	74.10	-999	6600	6674	10000	10000
CO	8-hour	Crow IR	62.15	9.56	63.95	-999	6600	6664	10000	10000
CO	8-hour	Bighorn Canyon NRA	19.70	4.63	24.31	-999	6600	6624	10000	10000
CO	8-hour	Bridger WA	7.81	1.85	9.66	-999	1500	1510	10000	10000
CO	8-hour	Fitzpatrick WA	5.87	1.62	7.49	-999	1500	1507	10000	10000
CO	8-hour	Popo Agie WA	8.32	2.03	10.35	-999	1500	1510	10000	10000
CO	8-hour	Grand Teton NP	3.30	0.99	4.29	-999	1500	1504	10000	10000
CO	8-hour	Teton WA	5.38	1.30	6.67	-999	1500	1507	10000	10000
CO	8-hour	Washakie WA	9.33	2.45	11.78	-999	1500	1512	10000	10000
CO	8-hour	North Absaroka WA	8.86	1.96	10.83	-999	1500	1511	10000	10000
CO	8-hour	Yellowstone NP	6.76	1.67	8.42	-999	6600	6608	10000	10000
CO	8-hour	Absaroka-Beartooth WA	52.12	2.51	52.12	-999	6600	6652	10000	10000
CO	8-hour	Red Rock Lakes WA	1.27	0.39	1.66	-999	6600	6602	10000	10000
CO	8-hour	Gates of the Mtns WA	2.31	0.45	2.76	-999	6600	6603	10000	10000
CO	8-hour	Scapegoat WA	1.74	0.39	2.13	-999	6600	6602	10000	10000
CO	8-hour	UL Bend WA	4.07	1.11	5.06	-999	6600	6605	10000	10000
CO	8-hour	Ft Belknap IR	32.45	0.84	32.47	-999	6600	6632	10000	10000
CO	8-hour	Ft Peck IR	5.25	2.05	7.30	-999	6600	6607	10000	10000
CO	8-hour	Theodore Roosevelt NP/S	7.17	3.04	10.21	-999	6600	6610	10000	10000
CO	8-hour	Theodore Roosevelt NP/N	6.01	2.61	8.62	-999	6600	6609	10000	10000

C.2.2.3 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
CO	1-hour	Badlands WA	10.69	5.04	15.73	-999	3500	3516	40000	40000
CO	1-hour	Black Elk WA	17.37	6.01	22.10	-999	3500	3522	40000	40000
CO	1-hour	Mt Rushmore NM	16.80	5.59	21.95	-999	3500	3522	40000	40000
CO	1-hour	Wind Cave NP	16.45	6.01	21.66	-999	3500	3522	40000	40000
CO	1-hour	Jewel Cave NM	15.65	7.05	22.70	-999	3500	3523	40000	40000
CO	1-hour	Soldier Creek WA	13.50	5.50	19.00	-999	3500	3519	40000	40000
CO	1-hour	Agate Fossil Beds NM	12.20	4.32	15.22	-999	3500	3515	40000	40000
CO	1-hour	Ft Laramie NHS	13.15	5.10	18.25	-999	3500	3518	40000	40000
CO	1-hour	Devils Tower NM	19.69	12.56	32.25	-999	3500	3532	40000	40000
CO	1-hour	Cloud Peak WA	18.03	6.40	19.69	-999	3500	3520	40000	40000
CO	1-hour	Northern Cheyenne IR	85.21	14.31	91.04	-999	15000	15091	26000	40000
CO	1-hour	Crow IR	83.44	10.76	86.15	-999	15000	15086	26000	40000
CO	1-hour	Bighorn Canyon NRA	25.16	6.91	31.65	-999	15000	15032	26000	40000
CO	1-hour	Bridger WA	10.93	2.01	12.01	-999	3500	3512	40000	40000
CO	1-hour	Fitzpatrick WA	9.58	2.60	10.80	-999	3500	3511	40000	40000
CO	1-hour	Popo Agie WA	9.43	2.91	11.30	-999	3500	3511	40000	40000
CO	1-hour	Grand Teton NP	4.99	1.23	5.28	-999	3500	3505	40000	40000
CO	1-hour	Teton WA	6.75	1.65	8.33	-999	3500	3508	40000	40000
CO	1-hour	Washakie WA	10.91	2.83	13.72	-999	3500	3514	40000	40000
CO	1-hour	North Absaroka WA	12.30	2.02	14.32	-999	3500	3514	40000	40000
CO	1-hour	Yellowstone NP	6.99	1.70	8.62	-999	15000	15009	26000	40000
CO	1-hour	Absaroka-Beartooth WA	100.01	2.62	100.01	-999	15000	15100	26000	40000
CO	1-hour	Red Rock Lakes WA	1.61	0.42	1.77	-999	15000	15002	26000	40000
CO	1-hour	Gates of the Mtns WA	2.38	0.49	2.84	-999	15000	15003	26000	40000
CO	1-hour	Scapegoat WA	2.56	0.42	2.85	-999	15000	15003	26000	40000
CO	1-hour	UL Bend WA	5.52	1.29	5.89	-999	15000	15006	26000	40000
CO	1-hour	Ft Belknap IR	55.04	0.89	55.05	-999	15000	15055	26000	40000
CO	1-hour	Ft Peck IR	6.64	2.66	9.23	-999	15000	15009	26000	40000
CO	1-hour	Theodore Roosevelt NP/S	9.57	3.66	12.89	-999	15000	15013	40000	40000
CO	1-hour	Theodore Roosevelt NP/N	9.22	3.94	13.13	-999	15000	15013	40000	40000

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

C.2.2.4 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E[a]

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
NO_2	Annual	Badlands WA	0.19	0.03	0.23	2.5	16.50	16.73	100	100	
NO_2	Annual	Black Elk WA	0.28	0.04	0.33	25	16.50	16.83	100	100	
NO_2	Annual	Mt Rushmore NM	0.24	0.04	0.28	25	16.50	16.78	100	100	
NO_2	Annual	Wind Cave NP	0.37	0.06	0.43	2.5	16.50	16.93	100	100	
NO_2	Annual	Jewel Cave NM	0.46	0.08	0.54	25	16.50	17.04	100	100	
NO_2	Annual	Soldier Creek WA	0.45	0.03	0.48	25	16.50	16.98	100	100	
NO_2	Annual	Agate Fossil Beds NM	0.20	0.03	0.23	25	16.50	16.73	100	100	
NO_2	Annual	Ft Laramie NHS	0.17	0.03	0.20	25	16.50	16.70	100	100	
NO_2	Annual	Devils Tower NM	0.68	0.22	0.89	25	16.50	17.39	100	100	
NO_2	Annual	Cloud Peak WA	0.24	0.05	0.29	25	16.50	16.79	100	100	
NO_2	Annual	Northern Cheyenne IR	3.92	0.13	4.05	2.5	11.00	15.05	100	100	y
NO_2	Annual	Crow IR	5.07	0.28	5.26	25	11.00	16.26	100	100	
NO_2	Annual	Bighorn Canyon NRA	0.33	0.02	0.35	25	16.50	16.85	100	100	
NO_2	Annual	Bridger WA	0.02	0.00	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Fitzpatrick WA	0.02	0.00	0.03	2.5	16.50	16.53	100	100	
NO_2	Annual	Popo Agie WA	0.03	0.00	0.04	25	16.50	16.54	100	100	
NO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2.5	16.50	16.51	100	100	
NO_2	Annual	Teton WA	0.02	0.00	0.02	2.5	16.50	16.52	100	100	
NO_2	Annual	Washakie WA	0.04	0.00	0.05	2.5	16.50	16.55	100	100	
NO_2	Annual	North Absaroka WA	0.06	0.00	0.07	2.5	16.50	16.57	100	100	
NO_2	Annual	Yellowstone NP	0.08	0.00	0.08	2.5	16.50	16.58	100	100	
NO_2	Annual	Absaroka-Beartooth WA	0.69	0.00	0.69	25	11.00	11.69	100	100	
NO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2.5	11.00	11.01	100	100	
NO_2	Annual	Gates of the Mtns WA	0.11	0.00	0.11	2.5	11.00	11.11	100	100	
NO_2	Annual	Scapegoat WA	0.03	0.00	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	UL Bend WA	0.05	0.00	0.05	2.5	11.00	11.05	100	100	
NO_2	Annual	Ft Belknap IR	1.41	0.00	1.41	25	11.00	12.41	100	100	
NO_2	Annual	Ft Peck IR	0.03	0.00	0.03	2.5	11.00	11.03	100	100	
NO_2	Annual	Theodore Roosevelt NP/S	0.08	0.01	0.09	2.5	11.00	11.09	100	100	
NO_2	Annual	Theodore Roosevelt NP/N	0.06	0.01	0.06	2.5	11.00	11.06	100	100	
NO_2	1-hour	Northern Cheyenne IR	60.43	10.09	64.67	-999	117.00	181.67	566	-999	
NO_2	1-hour	Crow IR	69.48	9.82	72.98	-999	117.00	189.98	566	-999	
NO_2	1-hour	Bighorn Canyon NRA	11.23	2.19	12.79	-999	117.00	129.79	566	-999	
NO_2	1-hour	Yellowstone NP	4.65	0.33	4.65	-999	117.00	121.65	566	-999	
NO_2	1-hour	Absaroka-Beartooth WA	35.93	0.58	35.93	-999	117.00	152.93	566	-999	
NO_2	1-hour	Red Rock Lakes WA	1.03	0.09	1.03	-999	117.00	118.03	566	-999	
NO_2	1-hour	Gates of the Mtns WA	1.93	0.02	1.93	-999	117.00	118.93	566	-999	
NO_2	1-hour	Scapegoat WA	1.43	0.01	1.44	-999	117.00	118.44	566	-999	
NO_2	1-hour	UL Bend WA	2.24	0.40	2.30	-999	117.00	119.30	566	-999	
NO_2	1-hour	Ft Belknap IR	28.11	0.22	28.11	-999	117.00	145.11	566	-999	
NO_2	1-hour	Ft Peck IR	1.97	0.73	2.50	-999	117.00	119.50	566	-999	
SO_2	Annual	Badlands WA	0.07	0.00	0.08	2	3.00	3.08	80	80	
SO_2	Annual	Black Elk WA	0.17	0.00	0.18	20	3.00	3.18	80	80	
SO_2	Annual	Mt Rushmore NM	0.12	0.00	0.13	20	3.00	3.13	80	80	
SO_2	Annual	Wind Cave NP	0.12	0.00	0.13	2	3.00	3.13	80	80	
SO_2	Annual	Jewel Cave NM	0.21	0.00	0.21	20	3.00	3.21	80	80	
SO_2	Annual	Soldier Creek WA	0.10	0.00	0.10	20	3.00	3.10	80	80	
SO_2	Annual	Agate Fossil Beds NM	0.08	0.00	0.08	20	3.00	3.08	80	80	
SO_2	Annual	Ft Laramie NHS	0.07	0.00	0.07	20	3.00	3.07	60	80	
SO_2	Annual	Devils Tower NM	0.12	0.01	0.13	20	3.00	3.13	60	80	
SO_2	Annual	Cloud Peak WA	0.07	0.00	0.07	20	3.00	3.07	60	80	
SO_2	Annual	Northern Cheyenne IR	0.23	0.01	0.24	2	16.00	16.24	60	80	
SO_2	Annual	Crow IR	0.41	0.01	0.41	20	16.00	16.41	60	80	
SO_2	Annual	Bighorn Canyon NRA	0.10	0.00	0.10	20	16.00	16.10	60	80	
SO_2	Annual	Bridger WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Fitzpatrick WA	0.03	0.00	0.03	2	3.00	3.03	60	80	
SO_2	Annual	Popo Agie WA	0.03	0.00	0.03	20	3.00	3.03	60	80	
SO_2	Annual	Grand Teton NP	0.01	0.00	0.01	2	3.00	3.01	60	80	
SO_2	Annual	Teton WA	0.02	0.00	0.02	2	3.00	3.02	60	80	
SO_2	Annual	Washakie WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	North Absaroka WA	0.04	0.00	0.04	2	3.00	3.04	60	80	
SO_2	Annual	Yellowstone NP	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Absaroka-Beartooth WA	0.13	0.00	0.13	20	16.00	16.13	60	80	
SO_2	Annual	Red Rock Lakes WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Gates of the Mtns WA	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Scapegoat WA	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	UL Bend WA	0.02	0.00	0.02	2	16.00	16.02	60	80	
SO_2	Annual	Ft Belknap IR	0.26	0.00	0.26	20	16.00	16.26	60	80	
SO_2	Annual	Ft Peck IR	0.01	0.00	0.01	2	16.00	16.01	60	80	
SO_2	Annual	Theodore Roosevelt NP/S	0.03	0.00	0.03	2	16.00	16.03	60	80	
SO_2	Annual	Theodore Roosevelt NP/N	0.01	0.00	0.01	2	16.00	16.01	60	80	

C.2.2.4 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E[a] (Cont.)

(unit : μg/m^3)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
SO_2	24-hour	Badlands WA	0.63	0.02	0.63	5	8.00	8.63	365	365
SO_2	24-hour	Black Elk WA	1.30	0.02	1.31	91	8.00	9.31	365	365
SO_2	24-hour	Mt Rushmore NM	0.88	0.02	0.90	91	8.00	8.90	365	365
SO_2	24-hour	Wind Cave NP	0.90	0.03	0.92	5	8.00	8.92	365	365
SO_2	24-hour	Jewel Cave NM	1.58	0.03	1.59	91	8.00	9.59	365	365
SO_2	24-hour	Soldier Creek WA	0.60	0.02	0.61	91	8.00	8.61	365	365
SO_2	24-hour	Agate Fossil Beds NM	0.63	0.02	0.64	91	8.00	8.64	365	365
SO_2	24-hour	Ft Laramie NHS	1.15	0.02	1.16	91	8.00	9.16	260	365
SO_2	24-hour	Devils Tower NM	0.82	0.07	0.84	91	8.00	8.84	260	365
SO_2	24-hour	Cloud Peak WA	1.07	0.04	1.09	91	8.00	9.09	260	365
SO_2	24-hour	Northern Cheyenne IR	1.00	0.08	1.03	5	73.00	74.03	260	365
SO_2	24-hour	Crow IR	5.26	0.14	5.27	91	73.00	78.27	260	365
SO_2	24-hour	Bighorn Canyon NRA	1.90	0.03	1.90	91	73.00	74.90	260	365
SO_2	24-hour	Bridger WA	0.74	0.02	0.76	5	8.00	8.76	260	365
SO_2	24-hour	Fitzpatrick WA	1.13	0.04	1.15	5	8.00	9.15	260	365
SO_2	24-hour	Popo Agie WA	0.84	0.03	0.85	91	8.00	8.85	260	365
SO_2	24-hour	Grand Teton NP	0.55	0.01	0.55	5	8.00	8.55	260	365
SO_2	24-hour	Teton WA	0.45	0.01	0.46	5	8.00	8.46	260	365
SO_2	24-hour	Washakie WA	0.81	0.02	0.82	5	8.00	8.82	260	365
SO_2	24-hour	North Absaroka WA	0.75	0.01	0.75	5	8.00	8.75	260	365
SO_2	24-hour	Yellowstone NP	0.50	0.01	0.50	5	73.00	73.50	260	365
SO_2	24-hour	Absaroka-Beartooth WA	2.39	0.01	2.39	91	73.00	75.39	260	365
SO_2	24-hour	Red Rock Lakes WA	0.13	0.00	0.13	5	73.00	73.13	260	365
SO_2	24-hour	Gates of the Mtns WA	0.37	0.00	0.38	5	73.00	73.38	260	365
SO_2	24-hour	Scapegoat WA	0.29	0.00	0.29	5	73.00	73.29	260	365
SO_2	24-hour	UL Bend WA	0.46	0.01	0.46	5	73.00	73.46	260	365
SO_2	24-hour	Ft Belknap IR	1.16	0.01	1.16	91	73.00	74.16	260	365
SO_2	24-hour	Ft Peck IR	0.18	0.01	0.19	5	73.00	73.19	260	365
SO_2	24-hour	Theodore Roosevelt NP/S	0.30	0.01	0.32	5	73.00	73.32	260	365
SO_2	24-hour	Theodore Roosevelt NP/N	0.18	0.01	0.19	5	73.00	73.19	260	365
SO_2	3-hour	Badlands WA	1.83	0.08	1.86	25	8.00	9.86	1300	1300
SO_2	3-hour	Black Elk WA	3.40	0.06	3.42	512	8.00	11.42	1300	1300
SO_2	3-hour	Mt Rushmore NM	2.39	0.05	2.43	512	8.00	10.43	1300	1300
SO_2	3-hour	Wind Cave NP	2.60	0.09	2.63	25	8.00	10.63	1300	1300
SO_2	3-hour	Jewel Cave NM	4.04	0.09	4.05	512	8.00	12.05	1300	1300
SO_2	3-hour	Soldier Creek WA	1.79	0.09	1.82	512	8.00	9.82	1300	1300
SO_2	3-hour	Agate Fossil Beds NM	1.65	0.08	1.74	512	8.00	9.74	1300	1300
SO_2	3-hour	Ft Laramie NHS	3.29	0.10	3.32	512	8.00	11.32	1300	1300
SO_2	3-hour	Devils Tower NM	3.16	0.21	3.17	512	8.00	11.17	1300	1300
SO_2	3-hour	Cloud Peak WA	2.29	0.12	2.29	512	8.00	10.29	1300	1300
SO_2	3-hour	Northern Cheyenne IR	5.09	0.28	5.09	25	291.00	296.09	-999	1300
SO_2	3-hour	Crow IR	17.09	0.31	17.09	512	291.00	308.10	-999	1300
SO_2	3-hour	Bighorn Canyon NRA	4.19	0.06	4.19	512	291.00	295.19	1300	1300
SO_2	3-hour	Bridger WA	1.92	0.10	1.93	25	8.00	9.93	1300	1300
SO_2	3-hour	Fitzpatrick WA	3.20	0.14	3.22	25	8.00	11.22	1300	1300
SO_2	3-hour	Popo Agie WA	1.72	0.18	1.73	512	8.00	9.73	1300	1300
SO_2	3-hour	Grand Teton NP	1.28	0.02	1.29	25	8.00	9.29	1300	1300
SO_2	3-hour	Teton WA	0.99	0.03	0.99	25	8.00	8.99	1300	1300
SO_2	3-hour	Washakie WA	1.92	0.10	1.92	25	8.00	9.92	1300	1300
SO_2	3-hour	North Absaroka WA	2.18	0.02	2.18	25	8.00	10.18	1300	1300
SO_2	3-hour	Yellowstone NP	2.05	0.01	2.05	25	291.00	293.05	1300	1300
SO_2	3-hour	Absaroka-Beartooth WA	4.43	0.03	4.43	512	291.00	295.43	-999	1300
SO_2	3-hour	Red Rock Lakes WA	0.44	0.00	0.44	25	291.00	291.44	-999	1300
SO_2	3-hour	Gates of the Mtns WA	0.83	0.00	0.83	25	291.00	291.83	-999	1300
SO_2	3-hour	Scapegoat WA	0.77	0.00	0.77	25	291.00	291.77	-999	1300
SO_2	3-hour	UL Bend WA	1.09	0.02	1.09	25	291.00	292.09	-999	1300
SO_2	3-hour	Ft Belknap IR	2.55	0.01	2.55	512	291.00	293.55	-999	1300
SO_2	3-hour	Ft Peck IR	0.70	0.03	0.72	25	291.00	291.72	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/S	0.91	0.06	0.91	25	291.00	291.91	-999	1300
SO_2	3-hour	Theodore Roosevelt NP/N	0.52	0.04	0.52	25	291.00	291.52	-999	1300
SO_2	1-hour	Northern Cheyenne IR	5.56	0.67	5.56	-999	666.00	671.56	1300	-999
SO_2	1-hour	Crow IR	29.57	0.46	29.57	-999	666.00	695.57	1300	-999
SO_2	1-hour	Bighorn Canyon NRA	5.34	0.11	5.34	-999	666.00	671.34	1300	-999
SO_2	1-hour	Yellowstone NP	3.69	0.02	3.69	-999	666.00	669.69	1300	-999
SO_2	1-hour	Absaroka-Beartooth WA	5.35	0.03	5.35	-999	666.00	671.35	1300	-999
SO_2	1-hour	Red Rock Lakes WA	0.49	0.00	0.49	-999	666.00	666.49	1300	-999
SO_2	1-hour	Gates of the Mtns WA	1.50	0.01	1.50	-999	666.00	667.50	1300	-999
SO_2	1-hour	Scapegoat WA	1.09	0.00	1.09	-999	666.00	667.09	1300	-999
SO_2	1-hour	UL Bend WA	1.58	0.02	1.58	-999	666.00	667.58	1300	-999
SO_2	1-hour	Ft Belknap IR	4.03	0.02	4.03	-999	666.00	670.03	1300	-999
SO_2	1-hour	Ft Peck IR	0.80	0.03	0.81	-999	666.00	666.81	1300	-999
SO_2	1-hour	Theodore Roosevelt NP/S	1.14	0.07	1.14	-999	666.00	667.14	715	-999
SO_2	1-hour	Theodore Roosevelt NP/N	0.58	0.04	0.58	-999	666.00	666.58	715	-999

C.2.2.4 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS	
PM_{10}	Annual	Badlands WA	0.24	0.04	0.28	4	17.00	17.28	50	50	
PM_{10}	Annual	Black Elk WA	0.32	0.05	0.37	17	17.00	17.37	50	50	
PM_{10}	Annual	Mt Rushmore NM	0.29	0.04	0.34	17	17.00	17.34	50	50	
PM_{10}	Annual	Wind Cave NP	0.33	0.05	0.38	4	17.00	17.38	50	50	
PM_{10}	Annual	Jewel Cave NM	0.40	0.06	0.45	17	17.00	17.45	50	50	
PM_{10}	Annual	Soldier Creek WA	0.25	0.03	0.29	17	17.00	17.29	50	50	
PM_{10}	Annual	Agate Fossil Beds NM	0.23	0.03	0.26	17	17.00	17.26	50	50	
PM_{10}	Annual	Ft Laramie NHS	0.27	0.03	0.30	17	17.00	17.30	50	50	
PM_{10}	Annual	Devils Tower NM	0.45	0.11	0.56	17	17.00	17.56	50	50	
PM_{10}	Annual	Cloud Peak WA	0.28	0.06	0.34	17	17.00	17.34	50	50	
PM_{10}	Annual	Northern Cheyenne IR	1.49	0.09	1.57	4	30.00	31.57	50	50	
PM_{10}	Annual	Crow IR	2.11	0.15	2.22	17	30.00	32.22	50	50	
PM_{10}	Annual	Bighorn Canyon NRA	0.33	0.04	0.36	17	30.00	30.36	50	50	
PM_{10}	Annual	Bridger WA	0.10	0.01	0.11	4	17.00	17.11	50	50	
PM_{10}	Annual	Fitzpatrick WA	0.10	0.01	0.11	4	17.00	17.11	50	50	
PM_{10}	Annual	Popo Agie WA	0.11	0.01	0.13	17	17.00	17.13	50	50	
PM_{10}	Annual	Grand Teton NP	0.05	0.01	0.05	4	17.00	17.05	50	50	
PM_{10}	Annual	Teton WA	0.09	0.01	0.09	4	17.00	17.09	50	50	
PM_{10}	Annual	Washakie WA	0.15	0.02	0.17	4	17.00	17.17	50	50	
PM_{10}	Annual	North Absaroka WA	0.13	0.01	0.15	4	17.00	17.15	50	50	
PM_{10}	Annual	Yellowstone NP	0.09	0.01	0.10	4	30.00	30.10	50	50	
PM_{10}	Annual	Absaroka-Beartooth WA	0.56	0.01	0.57	17	30.00	30.57	50	50	
PM_{10}	Annual	Red Rock Lakes WA	0.04	0.00	0.04	4	30.00	30.04	50	50	
PM_{10}	Annual	Gates of the Mtns WA	0.14	0.00	0.14	4	30.00	30.14	50	50	
PM_{10}	Annual	Scapegoat WA	0.06	0.00	0.06	4	30.00	30.06	50	50	
PM_{10}	Annual	UL Bend WA	0.11	0.01	0.11	4	30.00	30.11	50	50	
PM_{10}	Annual	Ft Belknap IR	2.65	0.01	2.66	17	30.00	32.66	50	50	
PM_{10}	Annual	Ft Peck IR	0.06	0.01	0.06	4	30.00	30.06	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/S	0.11	0.02	0.12	4	30.00	30.12	50	50	
PM_{10}	Annual	Theodore Roosevelt NP/N	0.07	0.01	0.08	4	30.00	30.08	50	50	
PM_{10}	24-hour	Badlands WA	2.19	0.60	2.49	8	42.00	44.49	150	150	
PM_{10}	24-hour	Black Elk WA	2.99	0.49	3.46	30	42.00	45.46	150	150	
PM_{10}	24-hour	Mt Rushmore NM	2.40	0.42	3.02	30	42.00	45.02	150	150	
PM_{10}	24-hour	Wind Cave NP	2.58	0.45	2.95	8	42.00	44.95	150	150	
PM_{10}	24-hour	Jewel Cave NM	3.84	0.62	4.21	30	42.00	46.21	150	150	
PM_{10}	24-hour	Soldier Creek WA	2.37	0.35	2.73	30	42.00	44.73	150	150	
PM_{10}	24-hour	Agate Fossil Beds NM	2.27	0.32	2.60	30	42.00	44.60	150	150	
PM_{10}	24-hour	Ft Laramie NHS	2.70	0.33	3.03	30	42.00	45.03	150	150	
PM_{10}	24-hour	Devils Tower NM	3.16	0.91	3.92	30	42.00	45.92	150	150	
PM_{10}	24-hour	Cloud Peak WA	4.10	1.01	4.94	30	42.00	46.94	150	150	
PM_{10}	24-hour	Northern Cheyenne IR	9.40	1.51	10.74	8	105.00	115.74	150	150	y
PM_{10}	24-hour	Crow IR	11.23	2.09	13.11	30	105.00	118.11	150	150	
PM_{10}	24-hour	Bighorn Canyon NRA	5.76	1.30	6.71	30	105.00	111.71	150	150	
PM_{10}	24-hour	Bridger WA	3.61	0.56	4.17	8	42.00	46.17	150	150	
PM_{10}	24-hour	Fitzpatrick WA	4.48	0.59	5.07	8	42.00	47.07	150	150	
PM_{10}	24-hour	Popo Agie WA	3.99	0.63	4.62	30	42.00	46.62	150	150	
PM_{10}	24-hour	Grand Teton NP	1.57	0.24	1.82	8	42.00	43.82	150	150	
PM_{10}	24-hour	Teton WA	3.38	0.50	3.88	8	42.00	45.88	150	150	
PM_{10}	24-hour	Washakie WA	6.98	0.85	7.83	8	42.00	49.83	150	150	
PM_{10}	24-hour	North Absaroka WA	3.18	0.46	3.68	8	42.00	45.68	150	150	
PM_{10}	24-hour	Yellowstone NP	2.26	0.31	2.57	8	105.00	107.57	150	150	
PM_{10}	24-hour	Absaroka-Beartooth WA	7.30	0.46	7.30	30	105.00	112.30	150	150	
PM_{10}	24-hour	Red Rock Lakes WA	0.54	0.06	0.57	8	105.00	105.57	150	150	
PM_{10}	24-hour	Gates of the Mtns WA	1.85	0.19	2.04	8	105.00	107.04	150	150	
PM_{10}	24-hour	Scapegoat WA	1.49	0.16	1.65	8	105.00	106.65	150	150	
PM_{10}	24-hour	UL Bend WA	1.43	0.19	1.62	8	105.00	106.62	150	150	
PM_{10}	24-hour	Ft Belknap IR	29.72	0.18	29.72	30	105.00	134.72	150	150	
PM_{10}	24-hour	Ft Peck IR	0.81	0.13	0.81	8	105.00	105.81	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/S	1.47	0.29	1.68	8	105.00	106.68	150	150	
PM_{10}	24-hour	Theodore Roosevelt NP/N	0.92	0.20	1.05	8	105.00	106.05	150	150	
$PM_{2.5}$	Annual	Badlands WA	0.21	0.03	0.24	-999	7.60	7.84	15	15	
$PM_{2.5}$	Annual	Black Elk WA	0.27	0.04	0.31	-999	7.60	7.91	15	15	
$PM_{2.5}$	Annual	Mt Rushmore NM	0.25	0.04	0.29	-999	7.60	7.89	15	15	
$PM_{2.5}$	Annual	Wind Cave NP	0.27	0.04	0.31	-999	7.60	7.91	15	15	
$PM_{2.5}$	Annual	Jewel Cave NM	0.32	0.05	0.36	-999	7.60	7.96	15	15	
$PM_{2.5}$	Annual	Soldier Creek WA	0.21	0.03	0.24	-999	7.60	7.84	15	15	
$PM_{2.5}$	Annual	Agate Fossil Beds NM	0.19	0.03	0.21	-999	7.60	7.81	15	15	
$PM_{2.5}$	Annual	Ft Laramie NHS	0.19	0.03	0.22	-999	7.60	7.82	15	15	
$PM_{2.5}$	Annual	Devils Tower NM	0.35	0.08	0.43	-999	7.60	8.03	15	15	
$PM_{2.5}$	Annual	Cloud Peak WA	0.25	0.05	0.29	-999	7.60	7.89	15	15	
$PM_{2.5}$	Annual	Northern Cheyenne IR	0.82	0.06	0.89	-999	8.00	8.89	15	15	
$PM_{2.5}$	Annual	Crow IR	1.09	0.10	1.17	-999	8.00	9.17	15	15	
$PM_{2.5}$	Annual	Bighorn Canyon NRA	0.28	0.03	0.31	-999	8.00	8.31	15	15	
$PM_{2.5}$	Annual	Bridger WA	0.09	0.01	0.10	-999	7.60	7.70	15	15	
$PM_{2.5}$	Annual	Fitzpatrick WA	0.09	0.01	0.11	-999	7.60	7.71	15	15	

C.2.2.4 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
$PM_{2.5}$	Annual	Popo Agie WA	0.10	0.01	0.12	-999	7.60	7.72	15	15
$PM_{2.5}$	Annual	Grand Teton NP	0.04	0.01	0.05	-999	7.60	7.65	15	15
$PM_{2.5}$	Annual	Teton WA	0.08	0.01	0.09	-999	7.60	7.69	15	15
$PM_{2.5}$	Annual	Washakie WA	0.14	0.02	0.15	-999	7.60	7.75	15	15
$PM_{2.5}$	Annual	North Absaroka WA	0.12	0.01	0.13	-999	7.60	7.73	15	15
$PM_{2.5}$	Annual	Yellowstone NP	0.08	0.01	0.09	-999	8.00	8.09	15	15
$PM_{2.5}$	Annual	Absaroka-Beartooth WA	0.31	0.01	0.32	-999	8.00	8.32	15	15
$PM_{2.5}$	Annual	Red Rock Lakes WA	0.03	0.00	0.03	-999	8.00	8.03	15	15
$PM_{2.5}$	Annual	Gates of the Mtns WA	0.10	0.00	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Scapegoat WA	0.04	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	UL Bend WA	0.09	0.01	0.09	-999	8.00	8.09	15	15
$PM_{2.5}$	Annual	Ft Belknap IR	1.19	0.00	1.20	-999	8.00	9.20	15	15
$PM_{2.5}$	Annual	Ft Peck IR	0.05	0.00	0.05	-999	8.00	8.05	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/S	0.09	0.01	0.10	-999	8.00	8.10	15	15
$PM_{2.5}$	Annual	Theodore Roosevelt NP/N	0.06	0.01	0.07	-999	8.00	8.07	15	15
$PM_{2.5}$	24-hour	Badlands WA	2.11	0.53	2.31	-999	19.00	21.31	65	65
$PM_{2.5}$	24-hour	Black Elk WA	2.63	0.44	3.07	-999	19.00	22.07	65	65
$PM_{2.5}$	24-hour	Mt Rushmore NM	2.14	0.38	2.57	-999	19.00	21.57	65	65
$PM_{2.5}$	24-hour	Wind Cave NP	2.33	0.41	2.64	-999	19.00	21.64	65	65
$PM_{2.5}$	24-hour	Jewel Cave NM	3.40	0.55	3.97	-999	19.00	22.97	65	65
$PM_{2.5}$	24-hour	Soldier Creek WA	2.17	0.33	2.50	-999	19.00	21.50	65	65
$PM_{2.5}$	24-hour	Agate Fossil Beds NM	2.05	0.30	2.35	-999	19.00	21.35	65	65
$PM_{2.5}$	24-hour	Ft Laramie NHS	2.25	0.31	2.56	-999	19.00	21.56	65	65
$PM_{2.5}$	24-hour	Devils Tower NM	2.80	0.79	3.53	-999	19.00	22.53	65	65
$PM_{2.5}$	24-hour	Cloud Peak WA	3.81	0.86	4.56	-999	19.00	23.56	65	65
$PM_{2.5}$	24-hour	Northern Cheyenne IR	7.58	1.37	8.89	-999	20.00	28.89	65	65
$PM_{2.5}$	24-hour	Crow IR	9.67	1.97	11.58	-999	20.00	31.58	65	65
$PM_{2.5}$	24-hour	Bighorn Canyon NRA	5.42	1.21	6.30	-999	20.00	26.30	65	65
$PM_{2.5}$	24-hour	Bridger WA	3.44	0.52	3.96	-999	19.00	22.96	65	65
$PM_{2.5}$	24-hour	Fitzpatrick WA	4.30	0.58	4.88	-999	19.00	23.88	65	65
$PM_{2.5}$	24-hour	Popo Agie WA	3.80	0.59	4.39	-999	19.00	23.39	65	65
$PM_{2.5}$	24-hour	Grand Teton NP	1.50	0.23	1.73	-999	19.00	20.73	65	65
$PM_{2.5}$	24-hour	Teton WA	3.23	0.47	3.71	-999	19.00	22.71	65	65
$PM_{2.5}$	24-hour	Washakie WA	6.71	0.83	7.53	-999	19.00	26.53	65	65
$PM_{2.5}$	24-hour	North Absaroka WA	3.05	0.44	3.52	-999	19.00	22.52	65	65
$PM_{2.5}$	24-hour	Yellowstone NP	2.18	0.30	2.48	-999	20.00	22.48	65	65
$PM_{2.5}$	24-hour	Absaroka-Beartooth WA	3.53	0.42	3.53	-999	20.00	23.53	65	65
$PM_{2.5}$	24-hour	Red Rock Lakes WA	0.48	0.06	0.51	-999	20.00	20.51	65	65
$PM_{2.5}$	24-hour	Gates of the Mtns WA	1.75	0.19	1.94	-999	20.00	21.94	65	65
$PM_{2.5}$	24-hour	Scapegoat WA	1.43	0.16	1.59	-999	20.00	21.59	65	65
$PM_{2.5}$	24-hour	UL Bend WA	1.35	0.18	1.54	-999	20.00	21.54	65	65
$PM_{2.5}$	24-hour	Ft Belknap IR	12.74	0.17	12.74	-999	20.00	32.74	65	65
$PM_{2.5}$	24-hour	Ft Peck IR	0.72	0.12	0.72	-999	20.00	20.72	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/S	1.30	0.25	1.48	-999	20.00	21.48	65	65
$PM_{2.5}$	24-hour	Theodore Roosevelt NP/N	0.86	0.17	0.98	-999	20.00	20.98	65	65
CO	8-hour	Badlands WA	7.88	2.87	10.63	-999	1500	1511	10000	10000
CO	8-hour	Black Elk WA	11.05	3.99	15.02	-999	1500	1515	10000	10000
CO	8-hour	Mt Rushmore NM	10.09	3.68	13.77	-999	1500	1514	10000	10000
CO	8-hour	Wind Cave NP	10.88	3.96	14.84	-999	1500	1515	10000	10000
CO	8-hour	Jewel Cave NM	13.66	4.70	18.35	-999	1500	1518	10000	10000
CO	8-hour	Soldier Creek WA	5.45	1.43	6.81	-999	1500	1507	10000	10000
CO	8-hour	Agate Fossil Beds NM	5.46	1.36	6.82	-999	1500	1507	10000	10000
CO	8-hour	Ft Laramie NHS	7.84	1.95	9.73	-999	1500	1510	10000	10000
CO	8-hour	Devils Tower NM	12.47	4.11	16.39	-999	1500	1516	10000	10000
CO	8-hour	Cloud Peak WA	14.09	3.84	15.71	-999	1500	1516	10000	10000
CO	8-hour	Northern Cheyenne IR	69.55	8.23	74.98	-999	6600	6675	10000	10000
CO	8-hour	Crow IR	62.15	8.98	64.27	-999	6600	6664	10000	10000
CO	8-hour	Bighorn Canyon NRA	19.70	3.78	23.39	-999	6600	6623	10000	10000
CO	8-hour	Bridger WA	7.81	1.45	9.26	-999	1500	1509	10000	10000
CO	8-hour	Fitzpatrick WA	5.87	1.29	7.16	-999	1500	1507	10000	10000
CO	8-hour	Popo Agie WA	8.32	1.60	9.91	-999	1500	1510	10000	10000
CO	8-hour	Grand Teton NP	3.30	0.71	4.01	-999	1500	1504	10000	10000
CO	8-hour	Teton WA	5.38	1.05	6.41	-999	1500	1506	10000	10000
CO	8-hour	Washakie WA	9.33	1.91	11.24	-999	1500	1511	10000	10000
CO	8-hour	North Absaroka WA	8.86	1.47	10.33	-999	1500	1510	10000	10000
CO	8-hour	Yellowstone NP	6.76	1.26	8.01	-999	6600	6608	10000	10000
CO	8-hour	Absaroka-Beartooth WA	52.12	1.86	52.12	-999	6600	6652	10000	10000
CO	8-hour	Red Rock Lakes WA	1.27	0.30	1.57	-999	6600	6602	10000	10000
CO	8-hour	Gates of the Mtns WA	2.31	0.32	2.63	-999	6600	6603	10000	10000
CO	8-hour	Scapegoat WA	1.74	0.28	2.02	-999	6600	6602	10000	10000
CO	8-hour	UL Bend WA	4.07	0.81	4.76	-999	6600	6605	10000	10000
CO	8-hour	Ft Belknap IR	32.45	0.60	32.47	-999	6600	6632	10000	10000
CO	8-hour	Ft Peck IR	5.25	1.48	6.73	-999	6600	6607	10000	10000
CO	8-hour	Theodore Roosevelt NP/S	7.17	2.30	9.48	-999	6600	6609	10000	10000
CO	8-hour	Theodore Roosevelt NP/N	6.01	1.92	7.93	-999	6600	6608	10000	10000

C.2.2.4 Estimated Far-Field Criteria Pollutant Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E[a] (Cont.)

(unit : $\mu g/m^3$)

Pollutant	Avg. Time	Receptor Area	Non-WY Proj	WY Proj	Cumulative	PSD	Background	Total	SAAQS	NAAQS
CO	1-hour	Badlands WA	10.69	4.00	14.70	-999	3500	3515	40000	40000
CO	1-hour	Black Elk WA	17.37	4.73	20.89	-999	3500	3521	40000	40000
CO	1-hour	Mt Rushmore NM	16.80	4.38	20.74	-999	3500	3521	40000	40000
CO	1-hour	Wind Cave NP	16.45	4.75	20.40	-999	3500	3520	40000	40000
CO	1-hour	Jewel Cave NM	15.65	5.47	21.13	-999	3500	3521	40000	40000
CO	1-hour	Soldier Creek WA	13.50	4.06	17.55	-999	3500	3518	40000	40000
CO	1-hour	Agate Fossil Beds NM	12.20	2.98	14.46	-999	3500	3514	40000	40000
CO	1-hour	Ft Laramie NHS	13.15	4.00	17.15	-999	3500	3517	40000	40000
CO	1-hour	Devils Tower NM	19.69	8.66	28.35	-999	3500	3528	40000	40000
CO	1-hour	Cloud Peak WA	18.03	4.88	19.74	-999	3500	3520	40000	40000
CO	1-hour	Northern Cheyenne IR	85.21	12.34	92.65	-999	15000	15093	26000	40000
CO	1-hour	Crow IR	83.44	11.40	88.93	-999	15000	15089	26000	40000
CO	1-hour	Bighorn Canyon NRA	25.16	5.35	30.28	-999	15000	15030	26000	40000
CO	1-hour	Bridger WA	10.93	1.65	11.56	-999	3500	3512	40000	40000
CO	1-hour	Fitzpatrick WA	9.58	1.44	10.26	-999	3500	3510	40000	40000
CO	1-hour	Popo Agie WA	9.43	1.79	10.96	-999	3500	3511	40000	40000
CO	1-hour	Grand Teton NP	4.99	0.87	5.23	-999	3500	3505	40000	40000
CO	1-hour	Teton WA	6.75	1.32	8.02	-999	3500	3508	40000	40000
CO	1-hour	Washakie WA	10.91	2.20	13.09	-999	3500	3513	40000	40000
CO	1-hour	North Absaroka WA	12.30	1.50	13.80	-999	3500	3514	40000	40000
CO	1-hour	Yellowstone NP	6.99	1.28	8.21	-999	15000	15008	26000	40000
CO	1-hour	Absaroka-Beartooth WA	100.01	1.92	100.01	-999	15000	15100	26000	40000
CO	1-hour	Red Rock Lakes WA	1.61	0.33	1.68	-999	15000	15002	26000	40000
CO	1-hour	Gates of the Mtns WA	2.38	0.35	2.70	-999	15000	15003	26000	40000
CO	1-hour	Scapegoat WA	2.56	0.30	2.78	-999	15000	15003	26000	40000
CO	1-hour	UL Bend WA	5.52	0.93	5.63	-999	15000	15006	26000	40000
CO	1-hour	Ft Belknap IR	55.04	0.66	55.04	-999	15000	15055	26000	40000
CO	1-hour	Ft Peck IR	6.64	1.91	8.50	-999	15000	15008	26000	40000
CO	1-hour	Theodore Roosevelt NP/S	9.57	2.80	12.13	-999	15000	15012	40000	40000
CO	1-hour	Theodore Roosevelt NP/N	9.22	2.89	12.07	-999	15000	15012	40000	40000

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

x = SAAQS/NAAQS exceedance.
y = PSD exceedance.

APPENDIX D:

ESTIMATED VISIBILITY IMPACTS AT SENSITIVE RECEPTORS - FLAG AND WYOMING SCREENING ANALYSIS

APPENDIX D:

ESTIMATED VISIBILITY IMPACTS AT SENSITIVE RECEPTORS - FLAG AND WYOMING SCREENING ANALYSIS

D.2 Potential Visibility Impacts Estimated by Screening Procedure for Wyoming EIS

D.2.1 Potential Visibility Impacts of Non-Wyoming Project Sources Estimated by Screening Procedure

D.2.1.1 Potential Visibility Impacts of New and RFFA Sources Estimated by Screening Procedure
D.2.1.2 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. E, Estimated by Screening Procedure
D.2.1.3 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. A, Estimated by Screening Procedure

D.2.2 Potential Visibility Impacts of Wyoming Project Sources Estimated by Screening Procedure

D.2.2.1 Potential Visibility Impacts of Wyoming Project under Alt. 1, Estimated by Screening Procedure
D.2.2.2 Potential Visibility Impacts of Wyoming Project under Alt. 2a, Estimated by Screening Procedure
D.2.2.3 Potential Visibility Impacts of Wyoming Project under Alt. 2b, Estimated by Screening Procedure
D.2.2.4 Potential Visibility Impacts of Wyoming Project under Alt. 3, Estimated by Screening Procedure

D.2.3 Potential Visibility Impacts of Cumulative Sources Estimated by Screening Procedure

D.2.3.1 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E, Estimated by Screening Procedure
D.2.3.2 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. A, Estimated by Screening Procedure
D.2.3.3 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E, Estimated by Screening Procedure
D.2.3.4 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. A, Estimated by Screening Procedure
D.2.3.5 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E, Estimated by Screening Procedure
D.2.3.6 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. A, Estimated by Screening Procedure
D.2.3.7 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E, Estimated by Screening Procedure
D.2.3.8 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. A, Estimated by Screening Procedure

D.1 Potential Visibility Impacts Estimated by Screening Procedure for Montana EIS

D.1.1 Potential Visibility Impacts of Non-Montana Project Sources Estimated by Screening Procedure

D.1.1.1 Potential Visibility Impacts of New and RFFA Sources Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	108	56	5.05
Bridger Wilderness Area	BG	I	WDEQ	42	21	10.77
Fitzpatrick Wilderness Area	FZ	I	WDEQ	42	19	12.31
North Absaroka Wilderness Area	NA	I	WDEQ	50	26	8.58
Washakie Wilderness Area	WK	I	WDEQ	56	33	15.25
Wind Cave National Park	WC	I	WDEQ	134	67	7.41
Badlands Wilderness Area	BL	I	FLAG	191	112	9.49
Bridger Wilderness Area	BG	I	FLAG	51	25	13.50
Fitzpatrick Wilderness Area	FZ	I	FLAG	51	23	15.31
Fort Peck Indian Reservation	FP	I	FLAG	39	13	3.35
Gates of the Mountains Wilderness Area	GM	I	FLAG	144	57	9.22
Grand Teton National Park	GT	I	FLAG	24	15	5.42
North Absaroka Wilderness Area	NA	I	FLAG	68	42	11.49
Northern Cheyenne Indian Reservation	NC	I	FLAG	332	254	20.38
Red Rock Lakes Wilderness Area	RR	I	FLAG	30	13	1.75
Scapegoat Wilderness Area	SG	I	FLAG	51	26	5.46
Teton Wilderness Area	TT	I	FLAG	46	22	11.36
Theodore Roosevelt National Park - North	TN	I	FLAG	44	18	3.62
Theodore Roosevelt National Park - South	TS	I	FLAG	82	31	4.28
UL Bend Wilderness Area	UB	I	FLAG	81	34	12.14
Washakie Wilderness Area	WK	I	FLAG	68	46	19.51
Wind Cave National Park	WC	I	FLAG	235	154	12.69
Yellowstone National Park	YS	I	FLAG	72	35	8.63
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	175	129	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	193	102	15.73
Bighorn Canyon National Recreation Area	BC	II	FLAG	249	166	20.41
Black Elk Wilderness Area	BE	II	FLAG	229	146	12.16
Cloud Peak Wilderness Area	CP	II	FLAG	115	69	15.16
Crow Indian Reservation	CI	II	FLAG	356	306	32.34
Devils Tower National Monument	DT	II	FLAG	240	170	13.52
Fort Belknap Indian Reservation	FB	II	FLAG	354	326	146.42
Fort Laramie National Historic Site	FL	II	FLAG	195	108	20.66
Jewel Cave National Monument	JC	II	FLAG	238	167	16.26
Mount Rushmore National Memorial	MR	II	FLAG	213	133	10.88
Popo Agie Wilderness Area	PA	II	FLAG	54	30	17.10
Soldier Creek Wilderness Area	SC	II	FLAG	207	125	14.41

[a] Do not include RFFA sources on the IR and FS lands.

D.1.1.2 Potential Visibility Impacts of New and RFFA Sources and Wyoming Project under Alt. 1, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	146	79	9.22
Bridger Wilderness Area	BG	I	WDEQ	53	30	16.59
Fitzpatrick Wilderness Area	FZ	I	WDEQ	50	26	18.79
North Absaroka Wilderness Area	NA	I	WDEQ	52	33	12.11
Washakie Wilderness Area	WK	I	WDEQ	61	43	21.61
Wind Cave National Park	WC	I	WDEQ	170	91	9.58
Badlands Wilderness Area	BL	I	FLAG	228	154	17.44
Bridger Wilderness Area	BG	I	FLAG	58	35	21.05
Fitzpatrick Wilderness Area	FZ	I	FLAG	56	33	23.67
Fort Peck Indian Reservation	FP	I	FLAG	54	26	5.03
Gates of the Mountains Wilderness Area	GM	I	FLAG	146	59	11.63
Grand Teton National Park	GT	I	FLAG	32	17	8.19
North Absaroka Wilderness Area	NA	I	FLAG	73	47	16.36
Northern Cheyenne Indian Reservation	NC	I	FLAG	333	263	37.50
Red Rock Lakes Wilderness Area	RR	I	FLAG	36	17	2.43
Scapegoat Wilderness Area	SG	I	FLAG	52	27	7.32
Teton Wilderness Area	TT	I	FLAG	49	28	16.63
Theodore Roosevelt National Park - North	TN	I	FLAG	62	32	6.78
Theodore Roosevelt National Park - South	TS	I	FLAG	100	53	8.90
UL Bend Wilderness Area	UB	I	FLAG	90	40	18.98
Washakie Wilderness Area	WK	I	FLAG	74	53	28.92
Wind Cave National Park	WC	I	FLAG	253	196	17.38
Yellowstone National Park	YS	I	FLAG	75	39	12.66
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	175	132	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	213	128	22.60
Bighorn Canyon National Recreation Area	BC	II	FLAG	253	175	33.97
Black Elk Wilderness Area	BE	II	FLAG	259	192	18.55
Cloud Peak Wilderness Area	CP	II	FLAG	144	111	29.78
Crow Indian Reservation	CI	II	FLAG	356	308	54.05
Devils Tower National Monument	DT	II	FLAG	281	234	20.86
Fort Belknap Indian Reservation	FB	II	FLAG	356	326	146.45
Fort Laramie National Historic Site	FL	II	FLAG	216	137	32.31
Jewel Cave National Monument	JC	II	FLAG	256	207	24.34
Mount Rushmore National Memorial	MR	II	FLAG	240	168	17.65
Popo Agie Wilderness Area	PA	II	FLAG	62	44	26.48
Soldier Creek Wilderness Area	SC	II	FLAG	234	156	20.09

[a] Do not include RFFA sources on the IR and FS lands.

D.1.1.3 Potential Visibility Impacts of New and RFFA Sources and Wyoming Project under Alt. 3, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	129	63	6.68
Bridger Wilderness Area	BG	I	WDEQ	48	25	13.02
Fitzpatrick Wilderness Area	FZ	I	WDEQ	46	20	14.83
North Absaroka Wilderness Area	NA	I	WDEQ	51	28	9.95
Washakie Wilderness Area	WK	I	WDEQ	58	41	17.75
Wind Cave National Park	WC	I	WDEQ	154	75	8.28
Badlands Wilderness Area	BL	I	FLAG	208	130	12.57
Bridger Wilderness Area	BG	I	FLAG	57	29	16.41
Fitzpatrick Wilderness Area	FZ	I	FLAG	53	27	18.56
Fort Peck Indian Reservation	FP	I	FLAG	46	16	3.93
Gates of the Mountains Wilderness Area	GM	I	FLAG	146	58	10.14
Grand Teton National Park	GT	I	FLAG	26	17	6.48
North Absaroka Wilderness Area	NA	I	FLAG	68	46	13.37
Northern Cheyenne Indian Reservation	NC	I	FLAG	332	259	27.29
Red Rock Lakes Wilderness Area	RR	I	FLAG	31	16	1.99
Scapegoat Wilderness Area	SG	I	FLAG	51	26	6.18
Teton Wilderness Area	TT	I	FLAG	47	24	13.39
Theodore Roosevelt National Park - North	TN	I	FLAG	52	26	4.83
Theodore Roosevelt National Park - South	TS	I	FLAG	90	44	6.01
UL Bend Wilderness Area	UB	I	FLAG	82	38	14.76
Washakie Wilderness Area	WK	I	FLAG	72	49	23.26
Wind Cave National Park	WC	I	FLAG	241	172	14.21
Yellowstone National Park	YS	I	FLAG	73	39	10.18
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	175	129	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	202	110	18.43
Bighorn Canyon National Recreation Area	BC	II	FLAG	251	170	26.27
Black Elk Wilderness Area	BE	II	FLAG	243	162	14.58
Cloud Peak Wilderness Area	CP	II	FLAG	130	91	21.27
Crow Indian Reservation	CI	II	FLAG	356	306	41.24
Devils Tower National Monument	DT	II	FLAG	266	204	15.90
Fort Belknap Indian Reservation	FB	II	FLAG	355	326	146.43
Fort Laramie National Historic Site	FL	II	FLAG	204	117	25.17
Jewel Cave National Monument	JC	II	FLAG	249	181	19.50
Mount Rushmore National Memorial	MR	II	FLAG	227	144	12.70
Popo Agie Wilderness Area	PA	II	FLAG	56	34	20.73
Soldier Creek Wilderness Area	SC	II	FLAG	223	139	16.65

[a] Do not include RFFA sources on the IR and FS lands.

D.1.2 Potential Visibility Impacts of Montana Project Sources Estimated by Screening Procedure

D.1.2.1 Potential Visibility Impacts of Montana Project under Alt. E (and Ea), Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$		# Days $\Delta dv \geq 1.0$		Highest Δdv	
				Alt. E	Alt. Ea	Alt. E	Alt. Ea	Alt. E	Alt. Ea
Badlands Wilderness Area	BL	I	WDEQ	12	15	2	7	1.14	1.53
Bridger Wilderness Area	BG	I	WDEQ	15	21	9	10	2.75	4.23
Fitzpatrick Wilderness Area	FZ	I	WDEQ	14	18	7	8	3.14	4.44
North Absaroka Wilderness Area	NA	I	WDEQ	22	30	7	16	2.54	3.70
Washakie Wilderness Area	WK	I	WDEQ	18	29	11	16	4.18	6.04
Wind Cave National Park	WC	I	WDEQ	12	23	1	8	1.49	2.08
Badlands Wilderness Area	BL	I	FLAG	33	53	10	15	2.30	2.73
Bridger Wilderness Area	BG	I	FLAG	16	23	9	11	3.48	5.46
Fitzpatrick Wilderness Area	FZ	I	FLAG	17	21	8	14	3.90	5.51
Fort Peck Indian Reservation	FP	I	FLAG	14	20	6	10	1.53	2.36
Gates of the Mountains Wilderness Area	GM	I	FLAG	3	6	2	3	1.57	2.13
Grand Teton National Park	GT	I	FLAG	10	13	4	7	1.33	1.84
North Absaroka Wilderness Area	NA	I	FLAG	28	39	14	21	3.54	5.12
Northern Cheyenne Indian Reservation	NC	I	FLAG	363	364	333	362	24.81	29.15
Red Rock Lakes Wilderness Area	RR	I	FLAG	1	5	0	0	0.62	0.88
Scapegoat Wilderness Area	SG	I	FLAG	4	4	2	2	1.41	1.95
Teton Wilderness Area	TT	I	FLAG	15	20	9	13	2.92	4.18
Theodore Roosevelt National Park - North	TN	I	FLAG	21	27	5	11	2.51	4.37
Theodore Roosevelt National Park - South	TS	I	FLAG	32	43	11	25	4.68	5.96
UL Bend Wilderness Area	UB	I	FLAG	22	24	5	12	3.57	4.89
Washakie Wilderness Area	WK	I	FLAG	24	38	15	20	5.52	8.01
Wind Cave National Park	WC	I	FLAG	32	44	12	16	2.58	3.60
Yellowstone National Park	YS	I	FLAG	23	28	9	17	2.72	3.81
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	44	47	19	26	4.89	6.63
Agate Fossil Beds National Monument	AF	II	FLAG	24	32	5	9	4.00	5.63
Bighorn Canyon National Recreation Area	BC	II	FLAG	69	94	46	63	9.88	14.23
Black Elk Wilderness Area	BE	II	FLAG	33	43	12	16	2.14	2.98
Cloud Peak Wilderness Area	CP	II	FLAG	78	97	52	68	6.86	9.72
Crow Indian Reservation	CI	II	FLAG	364	364	364	364	39.89	43.16
Devils Tower National Monument	DT	II	FLAG	84	100	37	52	4.54	5.96
Fort Belknap Indian Reservation	FB	II	FLAG	11	18	2	7	3.33	4.53
Fort Laramie National Historic Site	FL	II	FLAG	24	33	8	15	4.94	6.76
Jewel Cave National Monument	JC	II	FLAG	29	41	13	21	2.47	3.43
Mount Rushmore National Memorial	MR	II	FLAG	31	43	12	16	2.01	2.79
Popo Agie Wilderness Area	PA	II	FLAG	15	26	8	10	4.17	6.00
Soldier Creek Wilderness Area	SC	II	FLAG	24	38	5	9	3.57	5.03

[a] Alt. Ea sources include Alt. E sources and RFFA sources on the IR and FS lands.

D.1.2.2 Potential Visibility Impacts of Montana Project under Alt. D (and Da), Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$		# Days $\Delta dv \geq 1.0$		Highest Δdv	
				Alt. D	Alt. Da	Alt. D	Alt. Da	Alt. D	Alt. Da
Badlands Wilderness Area	BL	I	WDEQ	2	7	0	0	0.60	0.71
Bridger Wilderness Area	BG	I	WDEQ	9	9	3	4	1.29	1.92
Fitzpatrick Wilderness Area	FZ	I	WDEQ	6	8	3	3	1.35	1.84
North Absaroka Wilderness Area	NA	I	WDEQ	7	17	4	4	1.29	1.78
Washakie Wilderness Area	WK	I	WDEQ	10	16	4	8	1.87	2.59
Wind Cave National Park	WC	I	WDEQ	1	7	0	0	0.74	0.98
Badlands Wilderness Area	BL	I	FLAG	13	18	1	5	1.39	1.62
Bridger Wilderness Area	BG	I	FLAG	9	13	4	6	1.77	2.63
Fitzpatrick Wilderness Area	FZ	I	FLAG	8	12	3	6	1.75	2.38
Fort Peck Indian Reservation	FP	I	FLAG	8	13	0	4	0.86	1.29
Gates of the Mountains Wilderness Area	GM	I	FLAG	2	3	0	1	0.86	1.11
Grand Teton National Park	GT	I	FLAG	4	8	0	0	0.67	0.91
North Absaroka Wilderness Area	NA	I	FLAG	18	26	5	10	1.90	2.60
Northern Cheyenne Indian Reservation	NC	I	FLAG	362	364	329	362	18.02	21.53
Red Rock Lakes Wilderness Area	RR	I	FLAG	0	0	0	0	0.30	0.42
Scapegoat Wilderness Area	SG	I	FLAG	2	2	0	0	0.65	0.85
Teton Wilderness Area	TT	I	FLAG	9	12	3	5	1.34	1.86
Theodore Roosevelt National Park - North	TN	I	FLAG	8	14	1	2	1.51	2.51
Theodore Roosevelt National Park - South	TS	I	FLAG	21	29	4	7	2.71	3.38
UL Bend Wilderness Area	UB	I	FLAG	7	20	1	3	1.86	2.46
Washakie Wilderness Area	WK	I	FLAG	18	21	6	11	2.59	3.63
Wind Cave National Park	WC	I	FLAG	14	21	2	4	1.35	1.77
Yellowstone National Park	YS	I	FLAG	11	17	3	7	1.36	1.81
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	28	30	8	12	2.64	3.39
Agate Fossil Beds National Monument	AF	II	FLAG	5	10	1	2	1.95	2.62
Bighorn Canyon National Recreation Area	BC	II	FLAG	52	69	32	46	5.43	7.44
Black Elk Wilderness Area	BE	II	FLAG	15	18	2	6	1.17	1.48
Cloud Peak Wilderness Area	CP	II	FLAG	62	71	29	42	3.62	5.15
Crow Indian Reservation	CI	II	FLAG	364	364	364	364	30.22	32.27
Devils Tower National Monument	DT	II	FLAG	49	65	15	25	2.28	2.93
Fort Belknap Indian Reservation	FB	II	FLAG	5	10	1	1	1.76	2.30
Fort Laramie National Historic Site	FL	II	FLAG	9	14	1	3	2.46	3.23
Jewel Cave National Monument	JC	II	FLAG	13	22	1	5	1.30	1.70
Mount Rushmore National Memorial	MR	II	FLAG	14	17	2	6	1.18	1.47
Popo Agie Wilderness Area	PA	II	FLAG	8	10	5	6	1.96	2.91
Soldier Creek Wilderness Area	SC	II	FLAG	6	11	1	2	1.73	2.33

[a] Alt. Da sources include Alt. D sources and RFFA sources on the IR and FS lands.

D.1.2.3 Potential Visibility Impacts of Montana Project under Alt. A, Estimated by Screening Procedure

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	0	0	0.17
Bridger Wilderness Area	BG	I	WDEQ	0	0	0.35
Fitzpatrick Wilderness Area	FZ	I	WDEQ	0	0	0.32
North Absaroka Wilderness Area	NA	I	WDEQ	0	0	0.44
Washakie Wilderness Area	WK	I	WDEQ	0	0	0.44
Wind Cave National Park	WC	I	WDEQ	0	0	0.25
Badlands Wilderness Area	BL	I	FLAG	0	0	0.30
Bridger Wilderness Area	BG	I	FLAG	0	0	0.46
Fitzpatrick Wilderness Area	FZ	I	FLAG	0	0	0.42
Fort Peck Indian Reservation	FP	I	FLAG	0	0	0.42
Gates of the Mountains Wilderness Area	GM	I	FLAG	0	0	0.28
Grand Teton National Park	GT	I	FLAG	0	0	0.23
North Absaroka Wilderness Area	NA	I	FLAG	2	0	0.65
Northern Cheyenne Indian Reservation	NC	I	FLAG	95	27	3.15
Red Rock Lakes Wilderness Area	RR	I	FLAG	0	0	0.16
Scapegoat Wilderness Area	SG	I	FLAG	0	0	0.22
Teton Wilderness Area	TT	I	FLAG	0	0	0.36
Theodore Roosevelt National Park - North	TN	I	FLAG	1	0	0.55
Theodore Roosevelt National Park - South	TS	I	FLAG	0	0	0.49
UL Bend Wilderness Area	UB	I	FLAG	0	0	0.50
Washakie Wilderness Area	WK	I	FLAG	3	0	0.62
Wind Cave National Park	WC	I	FLAG	0	0	0.45
Yellowstone National Park	YS	I	FLAG	0	0	0.39
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	3	0	0.76
Agate Fossil Beds National Monument	AF	II	FLAG	0	0	0.50
Bighorn Canyon National Recreation Area	BC	II	FLAG	11	2	1.61
Black Elk Wilderness Area	BE	II	FLAG	0	0	0.39
Cloud Peak Wilderness Area	CP	II	FLAG	4	0	0.88
Crow Indian Reservation	CI	II	FLAG	362	259	7.54
Devils Tower National Monument	DT	II	FLAG	0	0	0.46
Fort Belknap Indian Reservation	FB	II	FLAG	1	0	0.51
Fort Laramie National Historic Site	FL	II	FLAG	1	0	0.55
Jewel Cave National Monument	JC	II	FLAG	0	0	0.44
Mount Rushmore National Memorial	MR	II	FLAG	0	0	0.38
Popo Agie Wilderness Area	PA	II	FLAG	1	0	0.51
Soldier Creek Wilderness Area	SC	II	FLAG	0	0	0.46

D.1.3 Potential Visibility Impacts of Cumulative Sources Estimated by Screening Procedure

D.1.3.1 Potential Visibility Impacts of Montana Project under Alt. E and Wyoming Project under Alt. 1, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	158	88	10.45
Bridger Wilderness Area	BG	I	WDEQ	59	41	20.41
Fitzpatrick Wilderness Area	FZ	I	WDEQ	57	36	23.04
North Absaroka Wilderness Area	NA	I	WDEQ	65	43	15.51
Washakie Wilderness Area	WK	I	WDEQ	68	53	27.10
Wind Cave National Park	WC	I	WDEQ	182	103	11.63
Badlands Wilderness Area	BL	I	FLAG	240	167	19.61
Bridger Wilderness Area	BG	I	FLAG	66	48	25.82
Fitzpatrick Wilderness Area	FZ	I	FLAG	63	46	28.97
Fort Peck Indian Reservation	FP	I	FLAG	71	39	6.30
Gates of the Mountains Wilderness Area	GM	I	FLAG	149	60	13.71
Grand Teton National Park	GT	I	FLAG	35	20	10.03
North Absaroka Wilderness Area	NA	I	FLAG	89	57	20.97
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	363	61.74
Red Rock Lakes Wilderness Area	RR	I	FLAG	38	19	3.02
Scapegoat Wilderness Area	SG	I	FLAG	56	30	8.93
Teton Wilderness Area	TT	I	FLAG	58	40	20.73
Theodore Roosevelt National Park - North	TN	I	FLAG	83	44	7.66
Theodore Roosevelt National Park - South	TS	I	FLAG	117	77	12.00
UL Bend Wilderness Area	UB	I	FLAG	103	49	23.87
Washakie Wilderness Area	WK	I	FLAG	83	61	35.15
Wind Cave National Park	WC	I	FLAG	265	202	20.07
Yellowstone National Park	YS	I	FLAG	83	46	15.70
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	136	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	221	140	28.19
Bighorn Canyon National Recreation Area	BC	II	FLAG	269	194	42.48
Black Elk Wilderness Area	BE	II	FLAG	268	209	20.54
Cloud Peak Wilderness Area	CP	II	FLAG	158	128	34.27
Crow Indian Reservation	CI	II	FLAG	364	364	69.95
Devils Tower National Monument	DT	II	FLAG	302	255	26.51
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.47
Fort Laramie National Historic Site	FL	II	FLAG	228	145	38.37
Jewel Cave National Monument	JC	II	FLAG	268	220	26.94
Mount Rushmore National Memorial	MR	II	FLAG	253	186	19.65
Popo Agie Wilderness Area	PA	II	FLAG	64	47	32.28
Soldier Creek Wilderness Area	SC	II	FLAG	243	166	25.08

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

D.1.3.2 Potential Visibility Impacts of Montana Project under Alt. E and Wyoming Project under Alt. 3, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	145	76	7.90
Bridger Wilderness Area	BG	I	WDEQ	54	35	16.87
Fitzpatrick Wilderness Area	FZ	I	WDEQ	55	33	19.17
North Absaroka Wilderness Area	NA	I	WDEQ	64	42	13.36
Washakie Wilderness Area	WK	I	WDEQ	68	51	23.47
Wind Cave National Park	WC	I	WDEQ	165	86	10.33
Badlands Wilderness Area	BL	I	FLAG	231	153	14.74
Bridger Wilderness Area	BG	I	FLAG	63	42	21.23
Fitzpatrick Wilderness Area	FZ	I	FLAG	61	41	23.95
Fort Peck Indian Reservation	FP	I	FLAG	67	34	5.22
Gates of the Mountains Wilderness Area	GM	I	FLAG	148	60	12.23
Grand Teton National Park	GT	I	FLAG	32	18	8.32
North Absaroka Wilderness Area	NA	I	FLAG	88	56	17.99
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	363	52.88
Red Rock Lakes Wilderness Area	RR	I	FLAG	37	17	2.48
Scapegoat Wilderness Area	SG	I	FLAG	56	28	7.79
Teton Wilderness Area	TT	I	FLAG	57	37	17.53
Theodore Roosevelt National Park - North	TN	I	FLAG	68	39	5.71
Theodore Roosevelt National Park - South	TS	I	FLAG	110	66	9.32
UL Bend Wilderness Area	UB	I	FLAG	101	49	19.65
Washakie Wilderness Area	WK	I	FLAG	82	59	30.28
Wind Cave National Park	WC	I	FLAG	255	190	17.77
Yellowstone National Park	YS	I	FLAG	82	44	13.23
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	135	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	211	126	24.03
Bighorn Canyon National Recreation Area	BC	II	FLAG	269	193	36.42
Black Elk Wilderness Area	BE	II	FLAG	260	184	16.89
Cloud Peak Wilderness Area	CP	II	FLAG	152	118	26.48
Crow Indian Reservation	CI	II	FLAG	364	364	67.83
Devils Tower National Monument	DT	II	FLAG	291	238	19.42
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.46
Fort Laramie National Historic Site	FL	II	FLAG	212	130	31.62
Jewel Cave National Monument	JC	II	FLAG	263	204	22.10
Mount Rushmore National Memorial	MR	II	FLAG	245	162	14.86
Popo Agie Wilderness Area	PA	II	FLAG	62	46	26.62
Soldier Creek Wilderness Area	SC	II	FLAG	232	154	21.63

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

D.1.3.3 Potential Visibility Impacts of Montana Project under Alt. D and Wyoming Project under Alt. 1, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	155	83	9.76
Bridger Wilderness Area	BG	I	WDEQ	56	36	18.17
Fitzpatrick Wilderness Area	FZ	I	WDEQ	55	29	20.56
North Absaroka Wilderness Area	NA	I	WDEQ	61	40	13.57
Washakie Wilderness Area	WK	I	WDEQ	66	50	23.94
Wind Cave National Park	WC	I	WDEQ	174	99	10.55
Badlands Wilderness Area	BL	I	FLAG	238	163	18.48
Bridger Wilderness Area	BG	I	FLAG	66	45	23.10
Fitzpatrick Wilderness Area	FZ	I	FLAG	62	42	25.98
Fort Peck Indian Reservation	FP	I	FLAG	66	33	5.77
Gates of the Mountains Wilderness Area	GM	I	FLAG	148	59	12.72
Grand Teton National Park	GT	I	FLAG	34	18	9.07
North Absaroka Wilderness Area	NA	I	FLAG	84	55	18.41
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	362	54.90
Red Rock Lakes Wilderness Area	RR	I	FLAG	38	17	2.72
Scapegoat Wilderness Area	SG	I	FLAG	55	29	8.16
Teton Wilderness Area	TT	I	FLAG	55	35	18.41
Theodore Roosevelt National Park - North	TN	I	FLAG	75	37	7.29
Theodore Roosevelt National Park - South	TS	I	FLAG	113	71	10.12
UL Bend Wilderness Area	UB	I	FLAG	101	49	21.44
Washakie Wilderness Area	WK	I	FLAG	80	59	31.86
Wind Cave National Park	WC	I	FLAG	262	201	18.27
Yellowstone National Park	YS	I	FLAG	83	41	14.03
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	134	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	216	137	25.20
Bighorn Canyon National Recreation Area	BC	II	FLAG	266	190	38.97
Black Elk Wilderness Area	BE	II	FLAG	266	201	19.48
Cloud Peak Wilderness Area	CP	II	FLAG	155	120	32.31
Crow Indian Reservation	CI	II	FLAG	364	364	66.14
Devils Tower National Monument	DT	II	FLAG	293	250	23.48
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.46
Fort Laramie National Historic Site	FL	II	FLAG	220	141	35.28
Jewel Cave National Monument	JC	II	FLAG	264	214	25.61
Mount Rushmore National Memorial	MR	II	FLAG	251	180	18.61
Popo Agie Wilderness Area	PA	II	FLAG	63	46	28.96
Soldier Creek Wilderness Area	SC	II	FLAG	238	165	22.40

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

D.1.3.4 Potential Visibility Impacts of Montana Project under Alt. D and Wyoming Project under Alt. 3, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	133	69	7.22
Bridger Wilderness Area	BG	I	WDEQ	52	29	14.60
Fitzpatrick Wilderness Area	FZ	I	WDEQ	51	25	16.63
North Absaroka Wilderness Area	NA	I	WDEQ	61	39	11.41
Washakie Wilderness Area	WK	I	WDEQ	66	47	20.14
Wind Cave National Park	WC	I	WDEQ	158	79	9.24
Badlands Wilderness Area	BL	I	FLAG	224	143	13.62
Bridger Wilderness Area	BG	I	FLAG	61	37	18.48
Fitzpatrick Wilderness Area	FZ	I	FLAG	57	35	20.90
Fort Peck Indian Reservation	FP	I	FLAG	57	27	4.55
Gates of the Mountains Wilderness Area	GM	I	FLAG	148	59	11.24
Grand Teton National Park	GT	I	FLAG	31	17	7.36
North Absaroka Wilderness Area	NA	I	FLAG	81	53	15.44
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	362	45.53
Red Rock Lakes Wilderness Area	RR	I	FLAG	36	17	2.29
Scapegoat Wilderness Area	SG	I	FLAG	54	27	7.01
Teton Wilderness Area	TT	I	FLAG	54	30	15.18
Theodore Roosevelt National Park - North	TN	I	FLAG	65	32	5.34
Theodore Roosevelt National Park - South	TS	I	FLAG	105	59	7.40
UL Bend Wilderness Area	UB	I	FLAG	96	46	17.21
Washakie Wilderness Area	WK	I	FLAG	79	55	26.50
Wind Cave National Park	WC	I	FLAG	250	185	15.97
Yellowstone National Park	YS	I	FLAG	82	41	11.55
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	134	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	209	123	21.04
Bighorn Canyon National Recreation Area	BC	II	FLAG	266	187	32.10
Black Elk Wilderness Area	BE	II	FLAG	255	175	15.71
Cloud Peak Wilderness Area	CP	II	FLAG	150	111	24.07
Crow Indian Reservation	CI	II	FLAG	364	364	56.96
Devils Tower National Monument	DT	II	FLAG	285	230	17.58
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.45
Fort Laramie National Historic Site	FL	II	FLAG	210	124	28.28
Jewel Cave National Monument	JC	II	FLAG	255	198	20.76
Mount Rushmore National Memorial	MR	II	FLAG	240	156	13.66
Popo Agie Wilderness Area	PA	II	FLAG	62	41	23.24
Soldier Creek Wilderness Area	SC	II	FLAG	228	147	18.95

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

D.1.3.5 Potential Visibility Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	147	80	9.30
Bridger Wilderness Area	BG	I	WDEQ	53	31	16.85
Fitzpatrick Wilderness Area	FZ	I	WDEQ	50	27	19.09
North Absaroka Wilderness Area	NA	I	WDEQ	60	38	12.40
Washakie Wilderness Area	WK	I	WDEQ	63	46	22.02
Wind Cave National Park	WC	I	WDEQ	170	95	9.83
Badlands Wilderness Area	BL	I	FLAG	229	154	17.58
Bridger Wilderness Area	BG	I	FLAG	62	38	21.38
Fitzpatrick Wilderness Area	FZ	I	FLAG	59	38	24.05
Fort Peck Indian Reservation	FP	I	FLAG	59	27	5.15
Gates of the Mountains Wilderness Area	GM	I	FLAG	147	59	11.91
Grand Teton National Park	GT	I	FLAG	32	17	8.37
North Absaroka Wilderness Area	NA	I	FLAG	78	53	16.77
Northern Cheyenne Indian Reservation	NC	I	FLAG	338	271	40.14
Red Rock Lakes Wilderness Area	RR	I	FLAG	37	17	2.53
Scapegoat Wilderness Area	SG	I	FLAG	53	28	7.54
Teton Wilderness Area	TT	I	FLAG	50	32	16.94
Theodore Roosevelt National Park - North	TN	I	FLAG	67	32	6.86
Theodore Roosevelt National Park - South	TS	I	FLAG	106	59	9.12
UL Bend Wilderness Area	UB	I	FLAG	94	43	19.48
Washakie Wilderness Area	WK	I	FLAG	77	54	29.43
Wind Cave National Park	WC	I	FLAG	254	198	17.49
Yellowstone National Park	YS	I	FLAG	81	41	12.93
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	177	133	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	215	131	23.09
Bighorn Canyon National Recreation Area	BC	II	FLAG	259	182	35.05
Black Elk Wilderness Area	BE	II	FLAG	261	195	18.68
Cloud Peak Wilderness Area	CP	II	FLAG	148	114	30.31
Crow Indian Reservation	CI	II	FLAG	364	348	56.66
Devils Tower National Monument	DT	II	FLAG	286	237	20.94
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.46
Fort Laramie National Historic Site	FL	II	FLAG	218	137	32.82
Jewel Cave National Monument	JC	II	FLAG	258	210	24.51
Mount Rushmore National Memorial	MR	II	FLAG	242	173	17.78
Popo Agie Wilderness Area	PA	II	FLAG	63	45	26.87
Soldier Creek Wilderness Area	SC	II	FLAG	235	157	20.54

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

D.1.3.6 Potential Visibility Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 3, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	131	65	6.75
Bridger Wilderness Area	BG	I	WDEQ	50	26	13.28
Fitzpatrick Wilderness Area	FZ	I	WDEQ	47	21	15.13
North Absaroka Wilderness Area	NA	I	WDEQ	57	35	10.24
Washakie Wilderness Area	WK	I	WDEQ	59	45	18.16
Wind Cave National Park	WC	I	WDEQ	156	77	8.52
Badlands Wilderness Area	BL	I	FLAG	210	133	12.71
Bridger Wilderness Area	BG	I	FLAG	58	29	16.75
Fitzpatrick Wilderness Area	FZ	I	FLAG	54	31	18.94
Fort Peck Indian Reservation	FP	I	FLAG	52	17	4.06
Gates of the Mountains Wilderness Area	GM	I	FLAG	147	58	10.42
Grand Teton National Park	GT	I	FLAG	27	17	6.66
North Absaroka Wilderness Area	NA	I	FLAG	75	51	13.79
Northern Cheyenne Indian Reservation	NC	I	FLAG	337	266	30.01
Red Rock Lakes Wilderness Area	RR	I	FLAG	36	16	2.09
Scapegoat Wilderness Area	SG	I	FLAG	52	27	6.40
Teton Wilderness Area	TT	I	FLAG	47	27	13.71
Theodore Roosevelt National Park - North	TN	I	FLAG	56	28	4.91
Theodore Roosevelt National Park - South	TS	I	FLAG	92	49	6.23
UL Bend Wilderness Area	UB	I	FLAG	86	41	15.25
Washakie Wilderness Area	WK	I	FLAG	74	51	23.82
Wind Cave National Park	WC	I	FLAG	245	175	14.66
Yellowstone National Park	YS	I	FLAG	79	41	10.44
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	177	133	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	203	113	18.92
Bighorn Canyon National Recreation Area	BC	II	FLAG	259	179	27.57
Black Elk Wilderness Area	BE	II	FLAG	248	163	14.74
Cloud Peak Wilderness Area	CP	II	FLAG	137	100	21.84
Crow Indian Reservation	CI	II	FLAG	364	348	44.15
Devils Tower National Monument	DT	II	FLAG	270	208	16.27
Fort Belknap Indian Reservation	FB	II	FLAG	356	326	146.44
Fort Laramie National Historic Site	FL	II	FLAG	205	118	25.70
Jewel Cave National Monument	JC	II	FLAG	249	187	19.67
Mount Rushmore National Memorial	MR	II	FLAG	229	146	12.83
Popo Agie Wilderness Area	PA	II	FLAG	59	39	21.12
Soldier Creek Wilderness Area	SC	II	FLAG	224	140	17.10

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

D.2 Potential Visibility Impacts Estimated by Screening Procedure for Wyoming EIS

D.2.1 Potential Visibility Impacts of Non-Wyoming Project Sources Estimated by Screening Procedure

D.2.1.1 Potential Visibility Impacts of New and RFFA Sources Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	108	56	5.05
Bridger Wilderness Area	BG	I	WDEQ	42	21	10.77
Fitzpatrick Wilderness Area	FZ	I	WDEQ	42	19	12.31
North Absaroka Wilderness Area	NA	I	WDEQ	50	26	8.58
Washakie Wilderness Area	WK	I	WDEQ	56	33	15.25
Wind Cave National Park	WC	I	WDEQ	134	67	7.41
Badlands Wilderness Area	BL	I	FLAG	191	112	9.49
Bridger Wilderness Area	BG	I	FLAG	51	25	13.50
Fitzpatrick Wilderness Area	FZ	I	FLAG	51	23	15.31
Fort Peck Indian Reservation	FP	I	FLAG	39	13	3.35
Gates of the Mountains Wilderness Area	GM	I	FLAG	144	57	9.22
Grand Teton National Park	GT	I	FLAG	24	15	5.42
North Absaroka Wilderness Area	NA	I	FLAG	68	42	11.49
Northern Cheyenne Indian Reservation	NC	I	FLAG	332	254	20.38
Red Rock Lakes Wilderness Area	RR	I	FLAG	30	13	1.75
Scapegoat Wilderness Area	SG	I	FLAG	51	26	5.46
Teton Wilderness Area	TT	I	FLAG	46	22	11.36
Theodore Roosevelt National Park - North	TN	I	FLAG	44	18	3.62
Theodore Roosevelt National Park - South	TS	I	FLAG	82	31	4.28
UL Bend Wilderness Area	UB	I	FLAG	81	34	12.14
Washakie Wilderness Area	WK	I	FLAG	68	46	19.51
Wind Cave National Park	WC	I	FLAG	235	154	12.69
Yellowstone National Park	YS	I	FLAG	72	35	8.63
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	175	129	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	193	102	15.73
Bighorn Canyon National Recreation Area	BC	II	FLAG	249	166	20.41
Black Elk Wilderness Area	BE	II	FLAG	229	146	12.16
Cloud Peak Wilderness Area	CP	II	FLAG	115	69	15.16
Crow Indian Reservation	CI	II	FLAG	356	306	32.34
Devils Tower National Monument	DT	II	FLAG	240	170	13.52
Fort Belknap Indian Reservation	FB	II	FLAG	354	326	146.42
Fort Laramie National Historic Site	FL	II	FLAG	195	108	20.66
Jewel Cave National Monument	JC	II	FLAG	238	167	16.26
Mount Rushmore National Memorial	MR	II	FLAG	213	133	10.88
Popo Agie Wilderness Area	PA	II	FLAG	54	30	17.10
Soldier Creek Wilderness Area	SC	II	FLAG	207	125	14.41

[a] Do not include RFFA sources on the IR and FS lands.

D.2.1.2 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. E, Estimated by Screening Procedure

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	129	69	6.28
Bridger Wilderness Area	BG	I	WDEQ	54	29	14.64
Fitzpatrick Wilderness Area	FZ	I	WDEQ	52	27	16.69
North Absaroka Wilderness Area	NA	I	WDEQ	63	42	12.00
Washakie Wilderness Area	WK	I	WDEQ	67	49	21.05
Wind Cave National Park	WC	I	WDEQ	149	78	9.47
Badlands Wilderness Area	BL	I	FLAG	215	134	11.66
Bridger Wilderness Area	BG	I	FLAG	60	40	18.34
Fitzpatrick Wilderness Area	FZ	I	FLAG	58	37	20.75
Fort Peck Indian Reservation	FP	I	FLAG	61	28	4.64
Gates of the Mountains Wilderness Area	GM	I	FLAG	148	60	11.31
Grand Teton National Park	GT	I	FLAG	32	18	7.26
North Absaroka Wilderness Area	NA	I	FLAG	87	54	16.12
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	363	46.17
Red Rock Lakes Wilderness Area	RR	I	FLAG	36	17	2.18
Scapegoat Wilderness Area	SG	I	FLAG	55	27	7.08
Teton Wilderness Area	TT	I	FLAG	56	35	15.51
Theodore Roosevelt National Park - North	TN	I	FLAG	64	36	5.25
Theodore Roosevelt National Park - South	TS	I	FLAG	104	61	7.46
UL Bend Wilderness Area	UB	I	FLAG	101	47	17.03
Washakie Wilderness Area	WK	I	FLAG	81	58	27.05
Wind Cave National Park	WC	I	FLAG	249	172	16.25
Yellowstone National Park	YS	I	FLAG	82	43	11.68
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	135	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	204	116	21.33
Bighorn Canyon National Recreation Area	BC	II	FLAG	269	191	32.17
Black Elk Wilderness Area	BE	II	FLAG	250	165	14.90
Cloud Peak Wilderness Area	CP	II	FLAG	142	110	20.61
Crow Indian Reservation	CI	II	FLAG	364	364	65.65
Devils Tower National Monument	DT	II	FLAG	284	213	17.05
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.45
Fort Laramie National Historic Site	FL	II	FLAG	207	122	27.21
Jewel Cave National Monument	JC	II	FLAG	257	189	18.86
Mount Rushmore National Memorial	MR	II	FLAG	235	153	13.65
Popo Agie Wilderness Area	PA	II	FLAG	60	41	23.02
Soldier Creek Wilderness Area	SC	II	FLAG	223	141	19.40

D.2.1.3 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. A, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	111	57	5.13
Bridger Wilderness Area	BG	I	WDEQ	45	21	11.03
Fitzpatrick Wilderness Area	FZ	I	WDEQ	46	19	12.62
North Absaroka Wilderness Area	NA	I	WDEQ	53	32	8.87
Washakie Wilderness Area	WK	I	WDEQ	56	38	15.66
Wind Cave National Park	WC	I	WDEQ	139	70	7.66
Badlands Wilderness Area	BL	I	FLAG	196	117	9.63
Bridger Wilderness Area	BG	I	FLAG	53	25	13.84
Fitzpatrick Wilderness Area	FZ	I	FLAG	52	26	15.70
Fort Peck Indian Reservation	FP	I	FLAG	42	13	3.47
Gates of the Mountains Wilderness Area	GM	I	FLAG	145	58	9.49
Grand Teton National Park	GT	I	FLAG	25	15	5.60
North Absaroka Wilderness Area	NA	I	FLAG	72	48	11.92
Northern Cheyenne Indian Reservation	NC	I	FLAG	337	263	23.05
Red Rock Lakes Wilderness Area	RR	I	FLAG	32	14	1.89
Scapegoat Wilderness Area	SG	I	FLAG	52	27	5.69
Teton Wilderness Area	TT	I	FLAG	46	25	11.67
Theodore Roosevelt National Park - North	TN	I	FLAG	49	20	3.71
Theodore Roosevelt National Park - South	TS	I	FLAG	85	36	4.46
UL Bend Wilderness Area	UB	I	FLAG	82	39	12.63
Washakie Wilderness Area	WK	I	FLAG	71	48	20.06
Wind Cave National Park	WC	I	FLAG	235	156	13.14
Yellowstone National Park	YS	I	FLAG	78	40	8.89
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	177	130	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	194	103	16.23
Bighorn Canyon National Recreation Area	BC	II	FLAG	257	177	21.84
Black Elk Wilderness Area	BE	II	FLAG	231	148	12.36
Cloud Peak Wilderness Area	CP	II	FLAG	121	76	15.75
Crow Indian Reservation	CI	II	FLAG	364	348	35.24
Devils Tower National Monument	DT	II	FLAG	253	176	13.89
Fort Belknap Indian Reservation	FB	II	FLAG	355	326	146.43
Fort Laramie National Historic Site	FL	II	FLAG	195	112	21.20
Jewel Cave National Monument	JC	II	FLAG	240	169	16.43
Mount Rushmore National Memorial	MR	II	FLAG	217	137	11.25
Popo Agie Wilderness Area	PA	II	FLAG	56	31	17.49
Soldier Creek Wilderness Area	SC	II	FLAG	210	127	14.87

[a] Do not include RFFA sources on the IR and FS lands.

D.2.2 Potential Visibility Impacts of Wyoming Project Sources Estimated by Screening Procedure

D.2.2.1 Potential Visibility Impacts of Wyoming Project under Alt. 1, Estimated by Screening Procedure

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	55	27	4.18
Bridger Wilderness Area	BG	I	WDEQ	21	12	5.89
Fitzpatrick Wilderness Area	FZ	I	WDEQ	20	9	6.63
North Absaroka Wilderness Area	NA	I	WDEQ	19	10	3.65
Washakie Wilderness Area	WK	I	WDEQ	24	14	7.99
Wind Cave National Park	WC	I	WDEQ	54	28	4.12
Badlands Wilderness Area	BL	I	FLAG	102	57	8.70
Bridger Wilderness Area	BG	I	FLAG	26	14	7.62
Fitzpatrick Wilderness Area	FZ	I	FLAG	22	12	8.53
Fort Peck Indian Reservation	FP	I	FLAG	14	5	2.64
Gates of the Mountains Wilderness Area	GM	I	FLAG	5	2	2.46
Grand Teton National Park	GT	I	FLAG	14	8	2.77
North Absaroka Wilderness Area	NA	I	FLAG	21	14	5.11
Northern Cheyenne Indian Reservation	NC	I	FLAG	124	92	22.66
Red Rock Lakes Wilderness Area	RR	I	FLAG	6	0	0.87
Scapegoat Wilderness Area	SG	I	FLAG	3	3	2.07
Teton Wilderness Area	TT	I	FLAG	18	11	5.31
Theodore Roosevelt National Park - North	TN	I	FLAG	24	13	3.69
Theodore Roosevelt National Park - South	TS	I	FLAG	44	27	4.65
UL Bend Wilderness Area	UB	I	FLAG	17	7	6.85
Washakie Wilderness Area	WK	I	FLAG	29	19	10.86
Wind Cave National Park	WC	I	FLAG	124	62	7.72
Yellowstone National Park	YS	I	FLAG	20	13	4.06
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	20	15	6.05
Agate Fossil Beds National Monument	AF	II	FLAG	85	34	6.89
Bighorn Canyon National Recreation Area	BC	II	FLAG	54	36	17.18
Black Elk Wilderness Area	BE	II	FLAG	117	58	8.06
Cloud Peak Wilderness Area	CP	II	FLAG	105	65	15.47
Crow Indian Reservation	CI	II	FLAG	166	123	25.69
Devils Tower National Monument	DT	II	FLAG	215	144	11.66
Fort Belknap Indian Reservation	FB	II	FLAG	13	5	5.67
Fort Laramie National Historic Site	FL	II	FLAG	62	39	12.06
Jewel Cave National Monument	JC	II	FLAG	138	71	8.09
Mount Rushmore National Memorial	MR	II	FLAG	110	53	8.01
Popo Agie Wilderness Area	PA	II	FLAG	26	15	9.54
Soldier Creek Wilderness Area	SC	II	FLAG	94	35	5.74

D.2.2.2 Potential Visibility Impacts of Wyoming Project under Alt. 2a, Estimated by Screening Procedure

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	44	23	3.50
Bridger Wilderness Area	BG	I	WDEQ	20	11	4.91
Fitzpatrick Wilderness Area	FZ	I	WDEQ	18	8	5.54
North Absaroka Wilderness Area	NA	I	WDEQ	18	9	3.11
Washakie Wilderness Area	WK	I	WDEQ	22	12	6.74
Wind Cave National Park	WC	I	WDEQ	47	23	3.44
Badlands Wilderness Area	BL	I	FLAG	91	50	7.77
Bridger Wilderness Area	BG	I	FLAG	24	13	6.41
Fitzpatrick Wilderness Area	FZ	I	FLAG	21	11	7.19
Fort Peck Indian Reservation	FP	I	FLAG	12	3	2.36
Gates of the Mountains Wilderness Area	GM	I	FLAG	5	2	2.15
Grand Teton National Park	GT	I	FLAG	11	6	2.38
North Absaroka Wilderness Area	NA	I	FLAG	21	12	4.39
Northern Cheyenne Indian Reservation	NC	I	FLAG	121	87	20.18
Red Rock Lakes Wilderness Area	RR	I	FLAG	5	0	0.75
Scapegoat Wilderness Area	SG	I	FLAG	3	2	1.75
Teton Wilderness Area	TT	I	FLAG	18	9	4.44
Theodore Roosevelt National Park - North	TN	I	FLAG	20	13	3.29
Theodore Roosevelt National Park - South	TS	I	FLAG	40	24	4.07
UL Bend Wilderness Area	UB	I	FLAG	15	7	5.98
Washakie Wilderness Area	WK	I	FLAG	27	17	9.24
Wind Cave National Park	WC	I	FLAG	109	54	6.58
Yellowstone National Park	YS	I	FLAG	19	10	3.43
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	19	13	5.22
Agate Fossil Beds National Monument	AF	II	FLAG	78	28	5.86
Bighorn Canyon National Recreation Area	BC	II	FLAG	50	32	15.14
Black Elk Wilderness Area	BE	II	FLAG	107	49	6.89
Cloud Peak Wilderness Area	CP	II	FLAG	100	60	13.40
Crow Indian Reservation	CI	II	FLAG	164	116	22.82
Devils Tower National Monument	DT	II	FLAG	211	130	10.13
Fort Belknap Indian Reservation	FB	II	FLAG	10	4	4.96
Fort Laramie National Historic Site	FL	II	FLAG	56	33	10.42
Jewel Cave National Monument	JC	II	FLAG	127	64	6.91
Mount Rushmore National Memorial	MR	II	FLAG	100	43	6.85
Popo Agie Wilderness Area	PA	II	FLAG	26	14	7.99
Soldier Creek Wilderness Area	SC	II	FLAG	88	32	4.86

D.2.2.3 Potential Visibility Impacts of Wyoming Project under Alt. 2b, Estimated by Screening Procedure

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	40	20	3.06
Bridger Wilderness Area	BG	I	WDEQ	15	8	4.02
Fitzpatrick Wilderness Area	FZ	I	WDEQ	14	8	4.55
North Absaroka Wilderness Area	NA	I	WDEQ	14	9	2.65
Washakie Wilderness Area	WK	I	WDEQ	22	12	5.59
Wind Cave National Park	WC	I	WDEQ	38	19	2.86
Badlands Wilderness Area	BL	I	FLAG	86	44	6.90
Bridger Wilderness Area	BG	I	FLAG	23	12	5.30
Fitzpatrick Wilderness Area	FZ	I	FLAG	21	9	5.96
Fort Peck Indian Reservation	FP	I	FLAG	12	3	2.09
Gates of the Mountains Wilderness Area	GM	I	FLAG	4	2	1.87
Grand Teton National Park	GT	I	FLAG	11	6	2.05
North Absaroka Wilderness Area	NA	I	FLAG	19	10	3.78
Northern Cheyenne Indian Reservation	NC	I	FLAG	117	85	17.75
Red Rock Lakes Wilderness Area	RR	I	FLAG	4	0	0.65
Scapegoat Wilderness Area	SG	I	FLAG	3	2	1.47
Teton Wilderness Area	TT	I	FLAG	16	9	3.67
Theodore Roosevelt National Park - North	TN	I	FLAG	19	9	2.91
Theodore Roosevelt National Park - South	TS	I	FLAG	36	20	3.51
UL Bend Wilderness Area	UB	I	FLAG	14	6	5.19
Washakie Wilderness Area	WK	I	FLAG	26	15	7.74
Wind Cave National Park	WC	I	FLAG	102	45	5.58
Yellowstone National Park	YS	I	FLAG	16	10	2.88
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	18	12	4.43
Agate Fossil Beds National Monument	AF	II	FLAG	67	26	4.96
Bighorn Canyon National Recreation Area	BC	II	FLAG	48	29	13.12
Black Elk Wilderness Area	BE	II	FLAG	96	40	5.86
Cloud Peak Wilderness Area	CP	II	FLAG	97	56	11.48
Crow Indian Reservation	CI	II	FLAG	162	113	20.29
Devils Tower National Monument	DT	II	FLAG	203	124	8.79
Fort Belknap Indian Reservation	FB	II	FLAG	8	4	4.33
Fort Laramie National Historic Site	FL	II	FLAG	53	26	8.91
Jewel Cave National Monument	JC	II	FLAG	119	53	5.90
Mount Rushmore National Memorial	MR	II	FLAG	85	38	5.82
Popo Agie Wilderness Area	PA	II	FLAG	25	13	6.55
Soldier Creek Wilderness Area	SC	II	FLAG	85	29	4.10

D.2.2.4 Potential Visibility Impacts of Wyoming Project under Alt. 3, Estimated by Screening Procedure

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	21	2	1.63
Bridger Wilderness Area	BG	I	WDEQ	8	4	2.27
Fitzpatrick Wilderness Area	FZ	I	WDEQ	6	4	2.56
North Absaroka Wilderness Area	NA	I	WDEQ	8	4	1.42
Washakie Wilderness Area	WK	I	WDEQ	12	4	3.09
Wind Cave National Park	WC	I	WDEQ	20	2	1.59
Badlands Wilderness Area	BL	I	FLAG	44	20	3.15
Bridger Wilderness Area	BG	I	FLAG	12	6	2.94
Fitzpatrick Wilderness Area	FZ	I	FLAG	10	6	3.29
Fort Peck Indian Reservation	FP	I	FLAG	3	1	1.02
Gates of the Mountains Wilderness Area	GM	I	FLAG	2	0	0.94
Grand Teton National Park	GT	I	FLAG	6	1	1.06
North Absaroka Wilderness Area	NA	I	FLAG	10	5	2.00
Northern Cheyenne Indian Reservation	NC	I	FLAG	90	46	9.37
Red Rock Lakes Wilderness Area	RR	I	FLAG	0	0	0.33
Scapegoat Wilderness Area	SG	I	FLAG	2	0	0.77
Teton Wilderness Area	TT	I	FLAG	9	5	2.04
Theodore Roosevelt National Park - North	TN	I	FLAG	8	2	1.30
Theodore Roosevelt National Park - South	TS	I	FLAG	19	5	1.86
UL Bend Wilderness Area	UB	I	FLAG	6	1	2.62
Washakie Wilderness Area	WK	I	FLAG	15	7	4.20
Wind Cave National Park	WC	I	FLAG	43	21	2.97
Yellowstone National Park	YS	I	FLAG	10	5	1.56
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	12	6	2.34
Agate Fossil Beds National Monument	AF	II	FLAG	25	5	2.71
Bighorn Canyon National Recreation Area	BC	II	FLAG	33	17	6.84
Black Elk Wilderness Area	BE	II	FLAG	38	18	3.09
Cloud Peak Wilderness Area	CP	II	FLAG	62	31	6.41
Crow Indian Reservation	CI	II	FLAG	140	87	11.54
Devils Tower National Monument	DT	II	FLAG	120	54	4.53
Fort Belknap Indian Reservation	FB	II	FLAG	4	1	2.18
Fort Laramie National Historic Site	FL	II	FLAG	27	10	4.63
Jewel Cave National Monument	JC	II	FLAG	52	23	3.24
Mount Rushmore National Memorial	MR	II	FLAG	37	18	3.06
Popo Agie Wilderness Area	PA	II	FLAG	12	5	3.68
Soldier Creek Wilderness Area	SC	II	FLAG	26	6	2.26

D.2.3 Potential Visibility Impacts of Cumulative Sources Estimated by Screening Procedure

D.2.3.1 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	158	88	10.45
Bridger Wilderness Area	BG	I	WDEQ	59	41	20.41
Fitzpatrick Wilderness Area	FZ	I	WDEQ	57	36	23.04
North Absaroka Wilderness Area	NA	I	WDEQ	65	43	15.51
Washakie Wilderness Area	WK	I	WDEQ	68	53	27.10
Wind Cave National Park	WC	I	WDEQ	182	103	11.63
Badlands Wilderness Area	BL	I	FLAG	240	167	19.61
Bridger Wilderness Area	BG	I	FLAG	66	48	25.82
Fitzpatrick Wilderness Area	FZ	I	FLAG	63	46	28.97
Fort Peck Indian Reservation	FP	I	FLAG	71	39	6.30
Gates of the Mountains Wilderness Area	GM	I	FLAG	149	60	13.71
Grand Teton National Park	GT	I	FLAG	35	20	10.03
North Absaroka Wilderness Area	NA	I	FLAG	89	57	20.97
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	363	61.74
Red Rock Lakes Wilderness Area	RR	I	FLAG	38	19	3.02
Scapegoat Wilderness Area	SG	I	FLAG	56	30	8.93
Teton Wilderness Area	TT	I	FLAG	58	40	20.73
Theodore Roosevelt National Park - North	TN	I	FLAG	83	44	7.66
Theodore Roosevelt National Park - South	TS	I	FLAG	117	77	12.00
UL Bend Wilderness Area	UB	I	FLAG	103	49	23.87
Washakie Wilderness Area	WK	I	FLAG	83	61	35.15
Wind Cave National Park	WC	I	FLAG	265	202	20.07
Yellowstone National Park	YS	I	FLAG	83	46	15.70
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	136	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	221	140	28.19
Bighorn Canyon National Recreation Area	BC	II	FLAG	269	194	42.48
Black Elk Wilderness Area	BE	II	FLAG	268	209	20.54
Cloud Peak Wilderness Area	CP	II	FLAG	158	128	34.27
Crow Indian Reservation	CI	II	FLAG	364	364	69.95
Devils Tower National Monument	DT	II	FLAG	302	255	26.51
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.47
Fort Laramie National Historic Site	FL	II	FLAG	228	145	38.37
Jewel Cave National Monument	JC	II	FLAG	268	220	26.94
Mount Rushmore National Memorial	MR	II	FLAG	253	186	19.65
Popo Agie Wilderness Area	PA	II	FLAG	64	47	32.28
Soldier Creek Wilderness Area	SC	II	FLAG	243	166	25.08

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

D.2.3.2 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. A, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	147	80	9.30
Bridger Wilderness Area	BG	I	WDEQ	53	31	16.85
Fitzpatrick Wilderness Area	FZ	I	WDEQ	50	27	19.09
North Absaroka Wilderness Area	NA	I	WDEQ	60	38	12.40
Washakie Wilderness Area	WK	I	WDEQ	63	46	22.02
Wind Cave National Park	WC	I	WDEQ	170	95	9.83
Badlands Wilderness Area	BL	I	FLAG	229	154	17.58
Bridger Wilderness Area	BG	I	FLAG	62	38	21.38
Fitzpatrick Wilderness Area	FZ	I	FLAG	59	38	24.05
Fort Peck Indian Reservation	FP	I	FLAG	59	27	5.15
Gates of the Mountains Wilderness Area	GM	I	FLAG	147	59	11.91
Grand Teton National Park	GT	I	FLAG	32	17	8.37
North Absaroka Wilderness Area	NA	I	FLAG	78	53	16.77
Northern Cheyenne Indian Reservation	NC	I	FLAG	338	271	40.14
Red Rock Lakes Wilderness Area	RR	I	FLAG	37	17	2.53
Scapegoat Wilderness Area	SG	I	FLAG	53	28	7.54
Teton Wilderness Area	TT	I	FLAG	50	32	16.94
Theodore Roosevelt National Park - North	TN	I	FLAG	67	32	6.86
Theodore Roosevelt National Park - South	TS	I	FLAG	106	59	9.12
UL Bend Wilderness Area	UB	I	FLAG	94	43	19.48
Washakie Wilderness Area	WK	I	FLAG	77	54	29.43
Wind Cave National Park	WC	I	FLAG	254	198	17.49
Yellowstone National Park	YS	I	FLAG	81	41	12.93
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	177	133	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	215	131	23.09
Bighorn Canyon National Recreation Area	BC	II	FLAG	259	182	35.05
Black Elk Wilderness Area	BE	II	FLAG	261	195	18.68
Cloud Peak Wilderness Area	CP	II	FLAG	148	114	30.31
Crow Indian Reservation	CI	II	FLAG	364	348	56.66
Devils Tower National Monument	DT	II	FLAG	286	237	20.94
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.46
Fort Laramie National Historic Site	FL	II	FLAG	218	137	32.82
Jewel Cave National Monument	JC	II	FLAG	258	210	24.51
Mount Rushmore National Memorial	MR	II	FLAG	242	173	17.78
Popo Agie Wilderness Area	PA	II	FLAG	63	45	26.87
Soldier Creek Wilderness Area	SC	II	FLAG	235	157	20.54

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

D.2.3.3 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	154	86	9.76
Bridger Wilderness Area	BG	I	WDEQ	59	40	19.46
Fitzpatrick Wilderness Area	FZ	I	WDEQ	57	36	22.02
North Absaroka Wilderness Area	NA	I	WDEQ	65	43	14.93
Washakie Wilderness Area	WK	I	WDEQ	68	53	26.06
Wind Cave National Park	WC	I	WDEQ	177	98	11.30
Badlands Wilderness Area	BL	I	FLAG	240	163	18.43
Bridger Wilderness Area	BG	I	FLAG	66	48	24.64
Fitzpatrick Wilderness Area	FZ	I	FLAG	63	46	27.70
Fort Peck Indian Reservation	FP	I	FLAG	71	38	6.02
Gates of the Mountains Wilderness Area	GM	I	FLAG	149	60	13.41
Grand Teton National Park	GT	I	FLAG	35	19	9.64
North Absaroka Wilderness Area	NA	I	FLAG	89	57	20.19
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	363	60.15
Red Rock Lakes Wilderness Area	RR	I	FLAG	38	18	2.90
Scapegoat Wilderness Area	SG	I	FLAG	56	30	8.69
Teton Wilderness Area	TT	I	FLAG	58	40	19.88
Theodore Roosevelt National Park - North	TN	I	FLAG	82	44	7.30
Theodore Roosevelt National Park - South	TS	I	FLAG	117	75	11.48
UL Bend Wilderness Area	UB	I	FLAG	103	49	23.00
Washakie Wilderness Area	WK	I	FLAG	83	61	33.95
Wind Cave National Park	WC	I	FLAG	264	201	19.50
Yellowstone National Park	YS	I	FLAG	83	45	15.09
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	136	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	220	139	27.17
Bighorn Canyon National Recreation Area	BC	II	FLAG	269	194	41.46
Black Elk Wilderness Area	BE	II	FLAG	268	207	19.67
Cloud Peak Wilderness Area	CP	II	FLAG	158	125	32.63
Crow Indian Reservation	CI	II	FLAG	364	364	68.80
Devils Tower National Monument	DT	II	FLAG	301	253	24.98
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.47
Fort Laramie National Historic Site	FL	II	FLAG	224	143	36.96
Jewel Cave National Monument	JC	II	FLAG	268	215	25.75
Mount Rushmore National Memorial	MR	II	FLAG	251	182	18.48
Popo Agie Wilderness Area	PA	II	FLAG	64	47	30.80
Soldier Creek Wilderness Area	SC	II	FLAG	242	165	24.22

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

D.2.3.4 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. A, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	144	76	8.61
Bridger Wilderness Area	BG	I	WDEQ	53	29	15.89
Fitzpatrick Wilderness Area	FZ	I	WDEQ	50	27	18.04
North Absaroka Wilderness Area	NA	I	WDEQ	60	37	11.82
Washakie Wilderness Area	WK	I	WDEQ	63	46	21.01
Wind Cave National Park	WC	I	WDEQ	168	88	9.50
Badlands Wilderness Area	BL	I	FLAG	229	152	16.40
Bridger Wilderness Area	BG	I	FLAG	61	36	20.18
Fitzpatrick Wilderness Area	FZ	I	FLAG	58	36	22.76
Fort Peck Indian Reservation	FP	I	FLAG	57	27	4.87
Gates of the Mountains Wilderness Area	GM	I	FLAG	147	59	11.60
Grand Teton National Park	GT	I	FLAG	32	17	7.98
North Absaroka Wilderness Area	NA	I	FLAG	78	52	15.99
Northern Cheyenne Indian Reservation	NC	I	FLAG	338	270	38.25
Red Rock Lakes Wilderness Area	RR	I	FLAG	37	17	2.49
Scapegoat Wilderness Area	SG	I	FLAG	53	28	7.30
Teton Wilderness Area	TT	I	FLAG	50	32	16.08
Theodore Roosevelt National Park - North	TN	I	FLAG	65	31	6.51
Theodore Roosevelt National Park - South	TS	I	FLAG	105	57	8.54
UL Bend Wilderness Area	UB	I	FLAG	93	42	18.61
Washakie Wilderness Area	WK	I	FLAG	77	54	28.15
Wind Cave National Park	WC	I	FLAG	254	197	16.40
Yellowstone National Park	YS	I	FLAG	80	41	12.31
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	177	133	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	213	127	22.07
Bighorn Canyon National Recreation Area	BC	II	FLAG	259	182	33.70
Black Elk Wilderness Area	BE	II	FLAG	259	190	17.52
Cloud Peak Wilderness Area	CP	II	FLAG	147	112	28.44
Crow Indian Reservation	CI	II	FLAG	364	348	54.53
Devils Tower National Monument	DT	II	FLAG	285	234	19.90
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.45
Fort Laramie National Historic Site	FL	II	FLAG	216	135	31.28
Jewel Cave National Monument	JC	II	FLAG	257	205	23.32
Mount Rushmore National Memorial	MR	II	FLAG	239	167	16.61
Popo Agie Wilderness Area	PA	II	FLAG	62	44	25.36
Soldier Creek Wilderness Area	SC	II	FLAG	235	156	19.68

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

D.2.3.5 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	153	85	9.18
Bridger Wilderness Area	BG	I	WDEQ	58	37	18.59
Fitzpatrick Wilderness Area	FZ	I	WDEQ	57	35	21.09
North Absaroka Wilderness Area	NA	I	WDEQ	65	43	14.42
Washakie Wilderness Area	WK	I	WDEQ	68	53	25.12
Wind Cave National Park	WC	I	WDEQ	174	95	11.02
Badlands Wilderness Area	BL	I	FLAG	239	162	17.39
Bridger Wilderness Area	BG	I	FLAG	66	48	23.55
Fitzpatrick Wilderness Area	FZ	I	FLAG	63	45	26.53
Fort Peck Indian Reservation	FP	I	FLAG	71	37	5.76
Gates of the Mountains Wilderness Area	GM	I	FLAG	149	60	13.14
Grand Teton National Park	GT	I	FLAG	35	19	9.31
North Absaroka Wilderness Area	NA	I	FLAG	89	57	19.50
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	363	58.48
Red Rock Lakes Wilderness Area	RR	I	FLAG	38	18	2.80
Scapegoat Wilderness Area	SG	I	FLAG	56	30	8.49
Teton Wilderness Area	TT	I	FLAG	57	39	19.13
Theodore Roosevelt National Park - North	TN	I	FLAG	80	43	6.97
Theodore Roosevelt National Park - South	TS	I	FLAG	114	73	10.97
UL Bend Wilderness Area	UB	I	FLAG	103	49	22.21
Washakie Wilderness Area	WK	I	FLAG	83	61	32.90
Wind Cave National Park	WC	I	FLAG	263	201	19.02
Yellowstone National Park	YS	I	FLAG	83	45	14.54
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	136	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	218	135	26.27
Bighorn Canyon National Recreation Area	BC	II	FLAG	269	193	40.40
Black Elk Wilderness Area	BE	II	FLAG	268	200	18.89
Cloud Peak Wilderness Area	CP	II	FLAG	157	124	31.07
Crow Indian Reservation	CI	II	FLAG	364	364	68.49
Devils Tower National Monument	DT	II	FLAG	299	251	23.64
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.47
Fort Laramie National Historic Site	FL	II	FLAG	222	140	35.61
Jewel Cave National Monument	JC	II	FLAG	268	214	24.69
Mount Rushmore National Memorial	MR	II	FLAG	251	177	17.46
Popo Agie Wilderness Area	PA	II	FLAG	64	47	29.42
Soldier Creek Wilderness Area	SC	II	FLAG	239	164	23.46

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

D.2.3.6 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. A, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	141	75	8.03
Bridger Wilderness Area	BG	I	WDEQ	52	29	15.01
Fitzpatrick Wilderness Area	FZ	I	WDEQ	50	26	17.08
North Absaroka Wilderness Area	NA	I	WDEQ	58	37	11.30
Washakie Wilderness Area	WK	I	WDEQ	63	46	20.10
Wind Cave National Park	WC	I	WDEQ	166	85	9.21
Badlands Wilderness Area	BL	I	FLAG	228	152	15.36
Bridger Wilderness Area	BG	I	FLAG	61	35	19.08
Fitzpatrick Wilderness Area	FZ	I	FLAG	57	34	21.56
Fort Peck Indian Reservation	FP	I	FLAG	56	26	4.60
Gates of the Mountains Wilderness Area	GM	I	FLAG	147	59	11.33
Grand Teton National Park	GT	I	FLAG	32	17	7.64
North Absaroka Wilderness Area	NA	I	FLAG	78	51	15.30
Northern Cheyenne Indian Reservation	NC	I	FLAG	338	269	36.31
Red Rock Lakes Wilderness Area	RR	I	FLAG	37	17	2.45
Scapegoat Wilderness Area	SG	I	FLAG	52	27	7.10
Teton Wilderness Area	TT	I	FLAG	49	32	15.32
Theodore Roosevelt National Park - North	TN	I	FLAG	64	30	6.17
Theodore Roosevelt National Park - South	TS	I	FLAG	103	56	7.97
UL Bend Wilderness Area	UB	I	FLAG	93	42	17.81
Washakie Wilderness Area	WK	I	FLAG	77	53	26.92
Wind Cave National Park	WC	I	FLAG	254	194	15.91
Yellowstone National Park	YS	I	FLAG	80	41	11.76
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	177	133	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	211	124	21.17
Bighorn Canyon National Recreation Area	BC	II	FLAG	259	182	32.35
Black Elk Wilderness Area	BE	II	FLAG	258	185	16.74
Cloud Peak Wilderness Area	CP	II	FLAG	147	111	26.71
Crow Indian Reservation	CI	II	FLAG	364	348	52.58
Devils Tower National Monument	DT	II	FLAG	285	233	19.00
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.45
Fort Laramie National Historic Site	FL	II	FLAG	215	133	29.85
Jewel Cave National Monument	JC	II	FLAG	257	202	22.26
Mount Rushmore National Memorial	MR	II	FLAG	239	164	15.58
Popo Agie Wilderness Area	PA	II	FLAG	62	44	23.95
Soldier Creek Wilderness Area	SC	II	FLAG	234	154	18.92

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

D.2.3.7 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	145	76	7.90
Bridger Wilderness Area	BG	I	WDEQ	54	35	16.87
Fitzpatrick Wilderness Area	FZ	I	WDEQ	55	33	19.17
North Absaroka Wilderness Area	NA	I	WDEQ	64	42	13.36
Washakie Wilderness Area	WK	I	WDEQ	68	51	23.47
Wind Cave National Park	WC	I	WDEQ	165	86	10.33
Badlands Wilderness Area	BL	I	FLAG	231	153	14.74
Bridger Wilderness Area	BG	I	FLAG	63	42	21.23
Fitzpatrick Wilderness Area	FZ	I	FLAG	61	41	23.95
Fort Peck Indian Reservation	FP	I	FLAG	67	34	5.22
Gates of the Mountains Wilderness Area	GM	I	FLAG	148	60	12.23
Grand Teton National Park	GT	I	FLAG	32	18	8.32
North Absaroka Wilderness Area	NA	I	FLAG	88	56	17.99
Northern Cheyenne Indian Reservation	NC	I	FLAG	364	363	52.88
Red Rock Lakes Wilderness Area	RR	I	FLAG	37	17	2.48
Scapegoat Wilderness Area	SG	I	FLAG	56	28	7.79
Teton Wilderness Area	TT	I	FLAG	57	37	17.53
Theodore Roosevelt National Park - North	TN	I	FLAG	68	39	5.71
Theodore Roosevelt National Park - South	TS	I	FLAG	110	66	9.32
UL Bend Wilderness Area	UB	I	FLAG	101	49	19.65
Washakie Wilderness Area	WK	I	FLAG	82	59	30.28
Wind Cave National Park	WC	I	FLAG	255	190	17.77
Yellowstone National Park	YS	I	FLAG	82	44	13.23
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	178	135	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	211	126	24.03
Bighorn Canyon National Recreation Area	BC	II	FLAG	269	193	36.42
Black Elk Wilderness Area	BE	II	FLAG	260	184	16.89
Cloud Peak Wilderness Area	CP	II	FLAG	152	118	26.48
Crow Indian Reservation	CI	II	FLAG	364	364	67.83
Devils Tower National Monument	DT	II	FLAG	291	238	19.42
Fort Belknap Indian Reservation	FB	II	FLAG	356	327	146.46
Fort Laramie National Historic Site	FL	II	FLAG	212	130	31.62
Jewel Cave National Monument	JC	II	FLAG	263	204	22.10
Mount Rushmore National Memorial	MR	II	FLAG	245	162	14.86
Popo Agie Wilderness Area	PA	II	FLAG	62	46	26.62
Soldier Creek Wilderness Area	SC	II	FLAG	232	154	21.63

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

D.2.3.8 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. A, Estimated by Screening Procedure[a]

Receptor Area	ID	PSD Class	Screening Procedure	# Days $\Delta dv \geq 0.5$	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	WDEQ	131	65	6.75
Bridger Wilderness Area	BG	I	WDEQ	50	26	13.28
Fitzpatrick Wilderness Area	FZ	I	WDEQ	47	21	15.13
North Absaroka Wilderness Area	NA	I	WDEQ	57	35	10.24
Washakie Wilderness Area	WK	I	WDEQ	59	45	18.16
Wind Cave National Park	WC	I	WDEQ	156	77	8.52
Badlands Wilderness Area	BL	I	FLAG	210	133	12.71
Bridger Wilderness Area	BG	I	FLAG	58	29	16.75
Fitzpatrick Wilderness Area	FZ	I	FLAG	54	31	18.94
Fort Peck Indian Reservation	FP	I	FLAG	52	17	4.06
Gates of the Mountains Wilderness Area	GM	I	FLAG	147	58	10.42
Grand Teton National Park	GT	I	FLAG	27	17	6.66
North Absaroka Wilderness Area	NA	I	FLAG	75	51	13.79
Northern Cheyenne Indian Reservation	NC	I	FLAG	337	266	30.01
Red Rock Lakes Wilderness Area	RR	I	FLAG	36	16	2.09
Scapegoat Wilderness Area	SG	I	FLAG	52	27	6.40
Teton Wilderness Area	TT	I	FLAG	47	27	13.71
Theodore Roosevelt National Park - North	TN	I	FLAG	56	28	4.91
Theodore Roosevelt National Park - South	TS	I	FLAG	92	49	6.23
UL Bend Wilderness Area	UB	I	FLAG	86	41	15.25
Washakie Wilderness Area	WK	I	FLAG	74	51	23.82
Wind Cave National Park	WC	I	FLAG	245	175	14.66
Yellowstone National Park	YS	I	FLAG	79	41	10.44
Absaroka-Beartooth Wilderness Area	AB	II	FLAG	177	133	34.98
Agate Fossil Beds National Monument	AF	II	FLAG	203	113	18.92
Bighorn Canyon National Recreation Area	BC	II	FLAG	259	179	27.57
Black Elk Wilderness Area	BE	II	FLAG	248	163	14.74
Cloud Peak Wilderness Area	CP	II	FLAG	137	100	21.84
Crow Indian Reservation	CI	II	FLAG	364	348	44.15
Devils Tower National Monument	DT	II	FLAG	270	208	16.27
Fort Belknap Indian Reservation	FB	II	FLAG	356	326	146.44
Fort Laramie National Historic Site	FL	II	FLAG	205	118	25.70
Jewel Cave National Monument	JC	II	FLAG	249	187	19.67
Mount Rushmore National Memorial	MR	II	FLAG	229	146	12.83
Popo Agie Wilderness Area	PA	II	FLAG	59	39	21.12
Soldier Creek Wilderness Area	SC	II	FLAG	224	140	17.10

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

APPENDIX E:

ESTIMATED VISIBILITY IMPACTS AT SENSITIVE RECEPTORS - REFINED ANALYSIS

APPENDIX E:

ESTIMATED VISIBILITY IMPACTS AT SENSITIVE RECEPTORS - REFINED ANALYSIS

E.2 Potential Visibility Impacts Estimated by Refined Procedure for Wyoming EIS

E.2.1 Potential Visibility Impacts of Non-Wyoming Project Sources Estimated by Refined Procedure

E.2.1.1 Potential Visibility Impacts of New and RFFA Sources Estimated by Refined Procedure
E.2.1.2 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. E, Estimated by Refined Procedure
E.2.1.3 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. A, Estimated by Refined Procedure

E.2.2 Potential Visibility Impacts of Wyoming Project Sources Estimated by Refined Procedure

E.2.2.1 Potential Visibility Impacts of Wyoming Project under Alt. 1, Estimated by Refined Procedure
E.2.2.2 Potential Visibility Impacts of Wyoming Project under Alt. 2a, Estimated by Refined Procedure
E.2.2.3 Potential Visibility Impacts of Wyoming Project under Alt. 2b, Estimated by Refined Procedure
E.2.2.4 Potential Visibility Impacts of Wyoming Project under Alt. 3, Estimated by Refined Procedure

E.2.3 Potential Visibility Impacts of Cumulative Sources Estimated by Refined Procedure

E.2.3.1 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E, Estimated by Refined Procedure
E.2.3.2 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. A, Estimated by Refined Procedure
E.2.3.3 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E, Estimated by Refined Procedure
E.2.3.4 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. A, Estimated by Refined Procedure
E.2.3.5 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E, Estimated by Refined Procedure
E.2.3.6 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. A, Estimated by Refined Procedure
E.2.3.7 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E, Estimated by Refined Procedure
E.2.3.8 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. A, Estimated by Refined Procedure

E.1 Potential Visibility Impacts Estimated by Refined Procedure for Montana EIS

E.1.1 Potential Visibility Impacts of Non-Montana Project Sources Estimated by Refined Procedure

E.1.1.1 Potential Visibility Impacts of New and RFFA Sources Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	12.55	7.58
Bridger Wilderness Area	BG	I	6.27	7.24
Fitzpatrick Wilderness Area	FZ	I	6.09	9.12
Fort Peck Indian Reservation	FP	I	0.82	4.05
Gates of the Mountains Wilderness Area	GM	I	2.73	9.52
Grand Teton National Park	GT	I	2.82	3.80
North Absaroka Wilderness Area	NA	I	8.73	7.86
Northern Cheyenne Indian Reservation	NC	I	23.55	19.41
Red Rock Lakes Wilderness Area	RR	I	0.09	1.44
Scapegoat Wilderness Area	SG	I	1.91	5.81
Teton Wilderness Area	TT	I	5.55	8.08
Theodore Roosevelt National Park - North	TN	I	0.18	1.79
Theodore Roosevelt National Park - South	TS	I	0.91	2.06
UL Bend Wilderness Area	UB	I	4.09	15.00
Washakie Wilderness Area	WK	I	8.91	13.93
Wind Cave National Park	WC	I	16.73	5.78
Yellowstone National Park	YS	I	6.91	5.87
Absaroka-Beartooth Wilderness Area	AB	II	27.36	8.44
Agate Fossil Beds National Monument	AF	II	7.45	7.18
Bighorn Canyon National Recreation Area	BC	II	15.73	13.61
Black Elk Wilderness Area	BE	II	16.45	5.69
Cloud Peak Wilderness Area	CP	II	16.09	8.78
Crow Indian Reservation	CI	II	47.09	26.72
Devils Tower National Monument	DT	II	16.18	6.60
Fort Belknap Indian Reservation	FB	II	60.09	21.51
Fort Laramie National Historic Site	FL	II	9.91	9.15
Jewel Cave National Monument	JC	II	18.45	7.49
Mount Rushmore National Memorial	MR	II	13.27	4.92
Popo Agie Wilderness Area	PA	II	6.45	7.99
Soldier Creek Wilderness Area	SC	II	9.27	6.56

[a] Does not include RFFA sources on the IR and FS lands.

E.1.1.2 Potential Visibility Impacts of New and RFFA Sources and Wyoming Project under Alt. 1, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	24.55	9.91
Bridger Wilderness Area	BG	I	9.55	10.67
Fitzpatrick Wilderness Area	FZ	I	8.91	13.29
Fort Peck Indian Reservation	FP	I	2.36	5.81
Gates of the Mountains Wilderness Area	GM	I	3.64	12.41
Grand Teton National Park	GT	I	5.73	5.69
North Absaroka Wilderness Area	NA	I	11.91	11.09
Northern Cheyenne Indian Reservation	NC	I	37.82	38.65
Red Rock Lakes Wilderness Area	RR	I	0.73	2.23
Scapegoat Wilderness Area	SG	I	2.36	7.96
Teton Wilderness Area	TT	I	9.36	11.70
Theodore Roosevelt National Park - North	TN	I	1.55	3.23
Theodore Roosevelt National Park - South	TS	I	4.18	3.83
UL Bend Wilderness Area	UB	I	5.45	23.12
Washakie Wilderness Area	WK	I	14.36	19.75
Wind Cave National Park	WC	I	27.27	7.45
Yellowstone National Park	YS	I	11.09	8.73
Absaroka-Beartooth Wilderness Area	AB	II	29.18	14.64
Agate Fossil Beds National Monument	AF	II	15.00	10.20
Bighorn Canyon National Recreation Area	BC	II	21.27	27.57
Black Elk Wilderness Area	BE	II	25.91	8.30
Cloud Peak Wilderness Area	CP	II	28.36	13.66
Crow Indian Reservation	CI	II	60.55	51.60
Devils Tower National Monument	DT	II	38.18	9.51
Fort Belknap Indian Reservation	FB	II	60.82	23.00
Fort Laramie National Historic Site	FL	II	17.27	14.21
Jewel Cave National Monument	JC	II	31.18	10.95
Mount Rushmore National Memorial	MR	II	22.18	7.46
Popo Agie Wilderness Area	PA	II	9.82	11.73
Soldier Creek Wilderness Area	SC	II	17.64	9.12

[a] Does not include RFFA sources on the IR and FS lands.

E.1.1.3 Potential Visibility Impacts of New and RFFA Sources and Wyoming Project under Alt. 3, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	17.00	8.46
Bridger Wilderness Area	BG	I	7.91	8.58
Fitzpatrick Wilderness Area	FZ	I	7.27	10.73
Fort Peck Indian Reservation	FP	I	1.36	4.73
Gates of the Mountains Wilderness Area	GM	I	2.91	10.59
Grand Teton National Park	GT	I	4.00	4.52
North Absaroka Wilderness Area	NA	I	10.18	9.08
Northern Cheyenne Indian Reservation	NC	I	29.82	27.15
Red Rock Lakes Wilderness Area	RR	I	0.36	1.75
Scapegoat Wilderness Area	SG	I	2.18	6.63
Teton Wilderness Area	TT	I	6.82	9.50
Theodore Roosevelt National Park - North	TN	I	0.73	2.34
Theodore Roosevelt National Park - South	TS	I	1.73	2.74
UL Bend Wilderness Area	UB	I	4.64	18.08
Washakie Wilderness Area	WK	I	11.27	16.21
Wind Cave National Park	WC	I	21.36	6.46
Yellowstone National Park	YS	I	8.55	6.90
Absaroka-Beartooth Wilderness Area	AB	II	28.18	10.77
Agate Fossil Beds National Monument	AF	II	9.64	8.38
Bighorn Canyon National Recreation Area	BC	II	18.64	19.16
Black Elk Wilderness Area	BE	II	19.82	6.73
Cloud Peak Wilderness Area	CP	II	21.45	10.68
Crow Indian Reservation	CI	II	55.64	37.04
Devils Tower National Monument	DT	II	23.91	7.74
Fort Belknap Indian Reservation	FB	II	60.36	21.52
Fort Laramie National Historic Site	FL	II	12.82	11.10
Jewel Cave National Monument	JC	II	23.91	8.87
Mount Rushmore National Memorial	MR	II	16.82	5.48
Popo Agie Wilderness Area	PA	II	8.09	9.45
Soldier Creek Wilderness Area	SC	II	12.73	7.58

[a] Does not include RFFA sources on the IR and FS lands.

E.1.2 Potential Visibility Impacts of Montana Project Sources Estimated by Refined Procedure

E.1.2.1 Potential Visibility Impacts of Montana Project under Alt. E (and Ea), Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$		Highest Δdv	
			Alt. E	Alt. Ea	Alt. E	Alt. Ea
Badlands Wilderness Area	BL	I	0.00	0.27	0.85	1.19
Bridger Wilderness Area	BG	I	2.09	2.91	2.45	3.75
Fitzpatrick Wilderness Area	FZ	I	2.00	2.64	2.30	3.31
Fort Peck Indian Reservation	FP	I	0.00	0.82	0.78	1.55
Gates of the Mountains Wilderness Area	GM	I	0.09	0.18	1.93	2.61
Grand Teton National Park	GT	I	0.00	0.27	0.93	1.32
North Absaroka Wilderness Area	NA	I	2.18	4.00	3.62	5.17
Northern Cheyenne Indian Reservation	NC	I	32.73	59.73	13.42	20.37
Red Rock Lakes Wilderness Area	RR	I	0.00	0.00	0.00	0.00
Scapegoat Wilderness Area	SG	I	0.09	0.09	1.44	1.94
Teton Wilderness Area	TT	I	1.18	2.82	2.06	2.95
Theodore Roosevelt National Park - North	TN	I	0.00	0.09	0.91	1.58
Theodore Roosevelt National Park - South	TS	I	0.18	0.73	1.68	2.18
UL Bend Wilderness Area	UB	I	0.55	0.73	4.34	5.97
Washakie Wilderness Area	WK	I	3.00	5.09	3.74	5.46
Wind Cave National Park	WC	I	0.09	0.27	1.16	1.62
Yellowstone National Park	YS	I	0.91	2.55	2.96	4.17
Absaroka-Beartooth Wilderness Area	AB	II	2.18	3.91	4.98	6.90
Agate Fossil Beds National Monument	AF	II	0.18	0.27	1.82	2.56
Bighorn Canyon National Recreation Area	BC	II	9.27	16.82	5.42	7.80
Black Elk Wilderness Area	BE	II	0.00	0.55	0.96	1.34
Cloud Peak Wilderness Area	CP	II	6.36	10.00	3.84	5.26
Crow Indian Reservation	CI	II	60.82	75.36	21.50	29.52
Devils Tower National Monument	DT	II	1.45	2.64	2.80	2.98
Fort Belknap Indian Reservation	FB	II	0.55	0.73	4.10	5.59
Fort Laramie National Historic Site	FL	II	0.18	0.55	2.23	3.05
Jewel Cave National Monument	JC	II	0.09	0.36	1.11	1.54
Mount Rushmore National Memorial	MR	II	0.00	0.45	0.93	1.32
Popo Agie Wilderness Area	PA	II	2.18	3.00	2.60	4.07
Soldier Creek Wilderness Area	SC	II	0.09	0.18	1.63	2.29

[a] Alt. Ea sources include Alt. E sources and RFFA sources on the IR and FS lands.

E.1.2.2 Potential Visibility Impacts of Montana Project under Alt. D (and Da), Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$		Highest Δdv	
			Alt. D	Alt. Da	Alt. D	Alt. Da
Badlands Wilderness Area	BL	I	0.00	0.00	0.28	0.55
Bridger Wilderness Area	BG	I	0.36	0.82	1.17	1.70
Fitzpatrick Wilderness Area	FZ	I	0.00	0.45	0.99	1.46
Fort Peck Indian Reservation	FP	I	0.00	0.00	0.00	0.61
Gates of the Mountains Wilderness Area	GM	I	0.00	0.09	0.00	1.30
Grand Teton National Park	GT	I	0.00	0.00	0.00	0.00
North Absaroka Wilderness Area	NA	I	0.09	0.55	1.70	2.31
Northern Cheyenne Indian Reservation	NC	I	17.09	38.09	7.76	11.56
Red Rock Lakes Wilderness Area	RR	I	0.00	0.00	0.00	0.00
Scapegoat Wilderness Area	SG	I	0.00	0.00	0.00	0.00
Teton Wilderness Area	TT	I	0.00	0.18	0.89	1.22
Theodore Roosevelt National Park - North	TN	I	0.00	0.00	0.50	0.82
Theodore Roosevelt National Park - South	TS	I	0.00	0.09	0.86	1.10
UL Bend Wilderness Area	UB	I	0.18	0.36	2.16	2.84
Washakie Wilderness Area	WK	I	0.55	1.36	1.64	2.28
Wind Cave National Park	WC	I	0.00	0.00	0.58	0.76
Yellowstone National Park	YS	I	0.09	0.18	1.37	1.84
Absaroka-Beartooth Wilderness Area	AB	II	0.36	0.73	2.44	3.20
Agate Fossil Beds National Monument	AF	II	0.00	0.09	0.85	1.15
Bighorn Canyon National Recreation Area	BC	II	2.55	7.00	2.61	3.59
Black Elk Wilderness Area	BE	II	0.00	0.00	0.49	0.64
Cloud Peak Wilderness Area	CP	II	0.91	2.27	1.86	2.49
Crow Indian Reservation	CI	II	42.45	55.73	11.04	14.55
Devils Tower National Monument	DT	II	0.09	0.27	1.37	1.45
Fort Belknap Indian Reservation	FB	II	0.09	0.27	2.08	2.71
Fort Laramie National Historic Site	FL	II	0.09	0.09	1.06	1.40
Jewel Cave National Monument	JC	II	0.00	0.00	0.55	0.73
Mount Rushmore National Memorial	MR	II	0.00	0.00	0.46	0.60
Popo Agie Wilderness Area	PA	II	0.45	1.09	1.26	1.87
Soldier Creek Wilderness Area	SC	II	0.00	0.09	0.76	1.02

[a] Alt. Da sources include Alt. D sources and RFFA sources on the IR and FS lands.

E.1.2.3 Potential Visibility Impacts of Montana Project under Alt. A, Estimated by Refined Procedure

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	0.00	0.00
Bridger Wilderness Area	BG	I	0.00	0.00
Fitzpatrick Wilderness Area	FZ	I	0.00	0.00
Fort Peck Indian Reservation	FP	I	0.00	0.00
Gates of the Mountains Wilderness Area	GM	I	0.00	0.00
Grand Teton National Park	GT	I	0.00	0.00
North Absaroka Wilderness Area	NA	I	0.00	0.00
Northern Cheyenne Indian Reservation	NC	I	0.18	2.09
Red Rock Lakes Wilderness Area	RR	I	0.00	0.00
Scapegoat Wilderness Area	SG	I	0.00	0.00
Teton Wilderness Area	TT	I	0.00	0.00
Theodore Roosevelt National Park - North	TN	I	0.00	0.00
Theodore Roosevelt National Park - South	TS	I	0.00	0.00
UL Bend Wilderness Area	UB	I	0.00	0.00
Washakie Wilderness Area	WK	I	0.00	0.00
Wind Cave National Park	WC	I	0.00	0.00
Yellowstone National Park	YS	I	0.00	0.00
Absaroka-Beartooth Wilderness Area	AB	II	0.00	0.00
Agate Fossil Beds National Monument	AF	II	0.00	0.00
Bighorn Canyon National Recreation Area	BC	II	0.00	0.69
Black Elk Wilderness Area	BE	II	0.00	0.00
Cloud Peak Wilderness Area	CP	II	0.00	0.00
Crow Indian Reservation	CI	II	2.00	3.06
Devils Tower National Monument	DT	II	0.00	0.00
Fort Belknap Indian Reservation	FB	II	0.00	0.00
Fort Laramie National Historic Site	FL	II	0.00	0.00
Jewel Cave National Monument	JC	II	0.00	0.00
Mount Rushmore National Memorial	MR	II	0.00	0.00
Popo Agie Wilderness Area	PA	II	0.00	0.00
Soldier Creek Wilderness Area	SC	II	0.00	0.00

E.1.3 Potential Visibility Impacts of Cumulative Sources Estimated by Refined Procedure

E.1.3.1 Potential Visibility Impacts of Montana Project under Alt. E and Wyoming Project under Alt. 1, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	28.45	10.91
Bridger Wilderness Area	BG	I	12.00	13.28
Fitzpatrick Wilderness Area	FZ	I	11.82	16.57
Fort Peck Indian Reservation	FP	I	4.64	7.36
Gates of the Mountains Wilderness Area	GM	I	4.27	14.99
Grand Teton National Park	GT	I	8.00	6.95
North Absaroka Wilderness Area	NA	I	14.64	14.89
Northern Cheyenne Indian Reservation	NC	I	91.82	54.75
Red Rock Lakes Wilderness Area	RR	I	2.91	2.85
Scapegoat Wilderness Area	SG	I	3.09	9.89
Teton Wilderness Area	TT	I	11.27	14.59
Theodore Roosevelt National Park - North	TN	I	3.36	3.65
Theodore Roosevelt National Park - South	TS	I	7.36	4.62
UL Bend Wilderness Area	UB	I	7.73	29.05
Washakie Wilderness Area	WK	I	18.09	24.79
Wind Cave National Park	WC	I	31.82	9.05
Yellowstone National Park	YS	I	13.45	12.79
Absaroka-Beartooth Wilderness Area	AB	II	33.27	21.47
Agate Fossil Beds National Monument	AF	II	18.64	12.77
Bighorn Canyon National Recreation Area	BC	II	34.36	34.03
Black Elk Wilderness Area	BE	II	31.00	9.36
Cloud Peak Wilderness Area	CP	II	39.18	16.32
Crow Indian Reservation	CI	II	115.73	66.92
Devils Tower National Monument	DT	II	47.00	11.37
Fort Belknap Indian Reservation	FB	II	61.55	28.38
Fort Laramie National Historic Site	FL	II	19.73	16.91
Jewel Cave National Monument	JC	II	36.45	12.12
Mount Rushmore National Memorial	MR	II	26.09	8.41
Popo Agie Wilderness Area	PA	II	12.64	14.61
Soldier Creek Wilderness Area	SC	II	21.18	11.38

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

E.1.3.2 Potential Visibility Impacts of Montana Project under Alt. E and Wyoming Project under Alt. 3, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	21.36	9.46
Bridger Wilderness Area	BG	I	10.36	11.15
Fitzpatrick Wilderness Area	FZ	I	9.64	14.01
Fort Peck Indian Reservation	FP	I	3.73	6.27
Gates of the Mountains Wilderness Area	GM	I	3.91	13.17
Grand Teton National Park	GT	I	6.27	5.80
North Absaroka Wilderness Area	NA	I	13.36	12.21
Northern Cheyenne Indian Reservation	NC	I	87.00	45.02
Red Rock Lakes Wilderness Area	RR	I	1.64	2.37
Scapegoat Wilderness Area	SG	I	2.82	8.55
Teton Wilderness Area	TT	I	10.18	12.38
Theodore Roosevelt National Park - North	TN	I	2.00	2.75
Theodore Roosevelt National Park - South	TS	I	4.18	3.51
UL Bend Wilderness Area	UB	I	6.36	24.01
Washakie Wilderness Area	WK	I	15.64	21.48
Wind Cave National Park	WC	I	24.64	8.06
Yellowstone National Park	YS	I	12.36	10.25
Absaroka-Beartooth Wilderness Area	AB	II	32.18	17.44
Agate Fossil Beds National Monument	AF	II	14.00	10.92
Bighorn Canyon National Recreation Area	BC	II	32.00	26.09
Black Elk Wilderness Area	BE	II	23.55	7.79
Cloud Peak Wilderness Area	CP	II	35.00	13.39
Crow Indian Reservation	CI	II	112.55	59.20
Devils Tower National Monument	DT	II	34.27	9.50
Fort Belknap Indian Reservation	FB	II	60.91	24.28
Fort Laramie National Historic Site	FL	II	16.27	14.01
Jewel Cave National Monument	JC	II	27.64	10.05
Mount Rushmore National Memorial	MR	II	20.09	6.71
Popo Agie Wilderness Area	PA	II	10.55	12.33
Soldier Creek Wilderness Area	SC	II	15.82	9.84

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

E.1.3.3 Potential Visibility Impacts of Montana Project under Alt. D and Wyoming Project under Alt. 1, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	26.45	10.43
Bridger Wilderness Area	BG	I	10.64	11.74
Fitzpatrick Wilderness Area	FZ	I	10.18	14.64
Fort Peck Indian Reservation	FP	I	3.00	6.53
Gates of the Mountains Wilderness Area	GM	I	3.91	13.69
Grand Teton National Park	GT	I	6.73	6.25
North Absaroka Wilderness Area	NA	I	13.55	12.40
Northern Cheyenne Indian Reservation	NC	I	76.09	47.85
Red Rock Lakes Wilderness Area	RR	I	1.73	2.55
Scapegoat Wilderness Area	SG	I	2.73	8.91
Teton Wilderness Area	TT	I	10.27	12.89
Theodore Roosevelt National Park - North	TN	I	2.45	3.45
Theodore Roosevelt National Park - South	TS	I	5.36	4.15
UL Bend Wilderness Area	UB	I	6.27	25.97
Washakie Wilderness Area	WK	I	15.64	21.89
Wind Cave National Park	WC	I	29.18	8.20
Yellowstone National Park	YS	I	12.09	10.48
Absaroka-Beartooth Wilderness Area	AB	II	31.00	17.77
Agate Fossil Beds National Monument	AF	II	16.73	11.35
Bighorn Canyon National Recreation Area	BC	II	27.64	30.55
Black Elk Wilderness Area	BE	II	28.45	8.77
Cloud Peak Wilderness Area	CP	II	34.82	14.88
Crow Indian Reservation	CI	II	105.36	59.25
Devils Tower National Monument	DT	II	42.18	10.30
Fort Belknap Indian Reservation	FB	II	61.00	25.54
Fort Laramie National Historic Site	FL	II	18.27	15.49
Jewel Cave National Monument	JC	II	33.82	11.49
Mount Rushmore National Memorial	MR	II	23.45	7.89
Popo Agie Wilderness Area	PA	II	10.91	12.87
Soldier Creek Wilderness Area	SC	II	19.73	10.12

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

E.1.3.4 Potential Visibility Impacts of Montana Project under Alt. D and Wyoming Project under Alt. 3, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	19.73	8.97
Bridger Wilderness Area	BG	I	9.27	9.61
Fitzpatrick Wilderness Area	FZ	I	8.27	12.08
Fort Peck Indian Reservation	FP	I	2.09	5.44
Gates of the Mountains Wilderness Area	GM	I	3.36	11.87
Grand Teton National Park	GT	I	5.45	5.10
North Absaroka Wilderness Area	NA	I	11.91	10.43
Northern Cheyenne Indian Reservation	NC	I	69.64	37.36
Red Rock Lakes Wilderness Area	RR	I	0.73	2.07
Scapegoat Wilderness Area	SG	I	2.36	7.59
Teton Wilderness Area	TT	I	8.73	10.69
Theodore Roosevelt National Park - North	TN	I	1.27	2.56
Theodore Roosevelt National Park - South	TS	I	2.82	3.06
UL Bend Wilderness Area	UB	I	5.00	20.93
Washakie Wilderness Area	WK	I	13.91	18.43
Wind Cave National Park	WC	I	22.82	7.21
Yellowstone National Park	YS	I	10.91	7.95
Absaroka-Beartooth Wilderness Area	AB	II	29.91	13.74
Agate Fossil Beds National Monument	AF	II	11.64	9.50
Bighorn Canyon National Recreation Area	BC	II	25.09	22.29
Black Elk Wilderness Area	BE	II	22.00	7.20
Cloud Peak Wilderness Area	CP	II	28.36	11.88
Crow Indian Reservation	CI	II	102.45	48.94
Devils Tower National Monument	DT	II	29.36	8.54
Fort Belknap Indian Reservation	FB	II	60.64	21.52
Fort Laramie National Historic Site	FL	II	14.55	12.45
Jewel Cave National Monument	JC	II	25.73	9.38
Mount Rushmore National Memorial	MR	II	18.36	6.08
Popo Agie Wilderness Area	PA	II	9.09	10.59
Soldier Creek Wilderness Area	SC	II	14.36	8.57

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

E.1.3.5 Potential Visibility Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	24.91	9.98
Bridger Wilderness Area	BG	I	9.82	10.87
Fitzpatrick Wilderness Area	FZ	I	9.55	13.49
Fort Peck Indian Reservation	FP	I	2.36	5.95
Gates of the Mountains Wilderness Area	GM	I	3.73	12.74
Grand Teton National Park	GT	I	5.91	5.82
North Absaroka Wilderness Area	NA	I	12.45	11.34
Northern Cheyenne Indian Reservation	NC	I	41.82	39.93
Red Rock Lakes Wilderness Area	RR	I	1.00	2.31
Scapegoat Wilderness Area	SG	I	2.55	8.23
Teton Wilderness Area	TT	I	9.55	11.91
Theodore Roosevelt National Park - North	TN	I	1.64	3.27
Theodore Roosevelt National Park - South	TS	I	4.18	3.89
UL Bend Wilderness Area	UB	I	5.55	23.69
Washakie Wilderness Area	WK	I	14.55	20.15
Wind Cave National Park	WC	I	27.64	7.65
Yellowstone National Park	YS	I	11.36	9.02
Absaroka-Beartooth Wilderness Area	AB	II	29.64	15.21
Agate Fossil Beds National Monument	AF	II	15.27	10.43
Bighorn Canyon National Recreation Area	BC	II	22.55	28.22
Black Elk Wilderness Area	BE	II	26.09	8.38
Cloud Peak Wilderness Area	CP	II	29.91	13.91
Crow Indian Reservation	CI	II	69.36	52.99
Devils Tower National Monument	DT	II	38.91	9.68
Fort Belknap Indian Reservation	FB	II	60.82	23.57
Fort Laramie National Historic Site	FL	II	17.45	14.43
Jewel Cave National Monument	JC	II	31.64	11.03
Mount Rushmore National Memorial	MR	II	22.18	7.54
Popo Agie Wilderness Area	PA	II	10.09	11.89
Soldier Creek Wilderness Area	SC	II	18.09	9.32

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

E.1.3.6 Potential Visibility Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 3, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	17.55	8.53
Bridger Wilderness Area	BG	I	8.45	8.74
Fitzpatrick Wilderness Area	FZ	I	7.64	10.94
Fort Peck Indian Reservation	FP	I	1.64	4.88
Gates of the Mountains Wilderness Area	GM	I	3.00	11.00
Grand Teton National Park	GT	I	4.09	4.64
North Absaroka Wilderness Area	NA	I	10.82	9.36
Northern Cheyenne Indian Reservation	NC	I	33.18	28.58
Red Rock Lakes Wilderness Area	RR	I	0.45	1.83
Scapegoat Wilderness Area	SG	I	2.36	6.90
Teton Wilderness Area	TT	I	7.36	9.70
Theodore Roosevelt National Park - North	TN	I	0.91	2.38
Theodore Roosevelt National Park - South	TS	I	1.73	2.80
UL Bend Wilderness Area	UB	I	4.73	18.65
Washakie Wilderness Area	WK	I	12.09	16.62
Wind Cave National Park	WC	I	21.82	6.66
Yellowstone National Park	YS	I	9.00	7.10
Absaroka-Beartooth Wilderness Area	AB	II	28.36	11.27
Agate Fossil Beds National Monument	AF	II	10.00	8.60
Bighorn Canyon National Recreation Area	BC	II	19.27	19.74
Black Elk Wilderness Area	BE	II	20.09	6.81
Cloud Peak Wilderness Area	CP	II	23.00	10.93
Crow Indian Reservation	CI	II	65.18	39.57
Devils Tower National Monument	DT	II	25.64	7.92
Fort Belknap Indian Reservation	FB	II	60.55	21.52
Fort Laramie National Historic Site	FL	II	13.09	11.33
Jewel Cave National Monument	JC	II	24.27	8.95
Mount Rushmore National Memorial	MR	II	17.00	5.64
Popo Agie Wilderness Area	PA	II	8.45	9.61
Soldier Creek Wilderness Area	SC	II	13.09	7.77

[a] Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

E.2 Potential Visibility Impacts Estimated by Refined Procedure for Wyoming EIS

E.2.1 Potential Visibility Impacts of Non-Wyoming Project Sources Estimated by Refined Procedure

E.2.1.1 Potential Visibility Impacts of New and RFFA Sources Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	12.55	7.58
Bridger Wilderness Area	BG	I	6.27	7.24
Fitzpatrick Wilderness Area	FZ	I	6.09	9.12
Fort Peck Indian Reservation	FP	I	0.82	4.05
Gates of the Mountains Wilderness Area	GM	I	2.73	9.52
Grand Teton National Park	GT	I	2.82	3.80
North Absaroka Wilderness Area	NA	I	8.73	7.86
Northern Cheyenne Indian Reservation	NC	I	23.55	19.41
Red Rock Lakes Wilderness Area	RR	I	0.09	1.44
Scapegoat Wilderness Area	SG	I	1.91	5.81
Teton Wilderness Area	TT	I	5.55	8.08
Theodore Roosevelt National Park - North	TN	I	0.18	1.79
Theodore Roosevelt National Park - South	TS	I	0.91	2.06
UL Bend Wilderness Area	UB	I	4.09	15.00
Washakie Wilderness Area	WK	I	8.91	13.93
Wind Cave National Park	WC	I	16.73	5.78
Yellowstone National Park	YS	I	6.91	5.87
Absaroka-Beartooth Wilderness Area	AB	II	27.36	8.44
Agate Fossil Beds National Monument	AF	II	7.45	7.18
Bighorn Canyon National Recreation Area	BC	II	15.73	13.61
Black Elk Wilderness Area	BE	II	16.45	5.69
Cloud Peak Wilderness Area	CP	II	16.09	8.78
Crow Indian Reservation	CI	II	47.09	26.72
Devils Tower National Monument	DT	II	16.18	6.60
Fort Belknap Indian Reservation	FB	II	60.09	21.51
Fort Laramie National Historic Site	FL	II	9.91	9.15
Jewel Cave National Monument	JC	II	18.45	7.49
Mount Rushmore National Memorial	MR	II	13.27	4.92
Popo Agie Wilderness Area	PA	II	6.45	7.99
Soldier Creek Wilderness Area	SC	II	9.27	6.56

[a] Does not include RFFA sources on the IR and FS lands.

E.2.1.2 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. E, Estimated by Refined Procedure

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	16.73	8.57
Bridger Wilderness Area	BG	I	9.45	9.82
Fitzpatrick Wilderness Area	FZ	I	8.55	12.39
Fort Peck Indian Reservation	FP	I	3.27	5.60
Gates of the Mountains Wilderness Area	GM	I	3.55	12.07
Grand Teton National Park	GT	I	5.36	5.08
North Absaroka Wilderness Area	NA	I	12.91	10.99
Northern Cheyenne Indian Reservation	NC	I	81.82	38.09
Red Rock Lakes Wilderness Area	RR	I	1.09	2.07
Scapegoat Wilderness Area	SG	I	2.45	7.73
Teton Wilderness Area	TT	I	9.36	11.01
Theodore Roosevelt National Park - North	TN	I	1.18	2.20
Theodore Roosevelt National Park - South	TS	I	3.00	2.82
UL Bend Wilderness Area	UB	I	5.45	20.93
Washakie Wilderness Area	WK	I	14.09	19.24
Wind Cave National Park	WC	I	20.91	7.38
Yellowstone National Park	YS	I	11.36	8.75
Absaroka-Beartooth Wilderness Area	AB	II	31.64	15.07
Agate Fossil Beds National Monument	AF	II	10.55	9.71
Bighorn Canyon National Recreation Area	BC	II	29.82	20.83
Black Elk Wilderness Area	BE	II	19.73	6.75
Cloud Peak Wilderness Area	CP	II	30.27	11.53
Crow Indian Reservation	CI	II	107.64	52.53
Devils Tower National Monument	DT	II	25.00	8.40
Fort Belknap Indian Reservation	FB	II	60.64	21.76
Fort Laramie National Historic Site	FL	II	13.91	12.09
Jewel Cave National Monument	JC	II	23.00	8.67
Mount Rushmore National Memorial	MR	II	17.27	6.18
Popo Agie Wilderness Area	PA	II	9.09	10.88
Soldier Creek Wilderness Area	SC	II	13.09	8.85

E.2.1.3 Potential Visibility Impacts of New and RFFA Sources and Montana Project under Alt. A, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	12.91	7.65
Bridger Wilderness Area	BG	I	6.91	7.41
Fitzpatrick Wilderness Area	FZ	I	6.27	9.33
Fort Peck Indian Reservation	FP	I	1.00	4.21
Gates of the Mountains Wilderness Area	GM	I	2.82	9.85
Grand Teton National Park	GT	I	3.18	3.92
North Absaroka Wilderness Area	NA	I	9.27	8.10
Northern Cheyenne Indian Reservation	NC	I	26.82	21.05
Red Rock Lakes Wilderness Area	RR	I	0.18	1.53
Scapegoat Wilderness Area	SG	I	1.91	6.07
Teton Wilderness Area	TT	I	5.82	8.32
Theodore Roosevelt National Park - North	TN	I	0.18	1.83
Theodore Roosevelt National Park - South	TS	I	0.91	2.11
UL Bend Wilderness Area	UB	I	4.36	15.58
Washakie Wilderness Area	WK	I	9.91	14.34
Wind Cave National Park	WC	I	17.45	5.97
Yellowstone National Park	YS	I	7.73	6.07
Absaroka-Beartooth Wilderness Area	AB	II	27.82	8.97
Agate Fossil Beds National Monument	AF	II	7.55	7.40
Bighorn Canyon National Recreation Area	BC	II	17.00	14.26
Black Elk Wilderness Area	BE	II	17.09	5.77
Cloud Peak Wilderness Area	CP	II	16.82	8.99
Crow Indian Reservation	CI	II	58.55	29.42
Devils Tower National Monument	DT	II	17.00	6.78
Fort Belknap Indian Reservation	FB	II	60.18	21.52
Fort Laramie National Historic Site	FL	II	10.27	9.38
Jewel Cave National Monument	JC	II	19.27	7.54
Mount Rushmore National Memorial	MR	II	13.45	5.12
Popo Agie Wilderness Area	PA	II	6.64	8.19
Soldier Creek Wilderness Area	SC	II	9.55	6.79

[a] Does not include RFFA sources on the IR and FS lands.

E.2.2 Potential Visibility Impacts of Wyoming Project Sources Estimated by Refined Procedure

E.2.2.1 Potential Visibility Impacts of Wyoming Project under Alt. 1, Estimated by Refined Procedure

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	3.36	3.49
Bridger Wilderness Area	BG	I	3.73	4.01
Fitzpatrick Wilderness Area	FZ	I	3.64	4.38
Fort Peck Indian Reservation	FP	I	0.27	1.76
Gates of the Mountains Wilderness Area	GM	I	0.36	2.95
Grand Teton National Park	GT	I	1.27	1.88
North Absaroka Wilderness Area	NA	I	3.73	4.69
Northern Cheyenne Indian Reservation	NC	I	16.82	22.39
Red Rock Lakes Wilderness Area	RR	I	0.00	0.00
Scapegoat Wilderness Area	SG	I	0.18	2.18
Teton Wilderness Area	TT	I	3.00	3.65
Theodore Roosevelt National Park - North	TN	I	0.36	1.44
Theodore Roosevelt National Park - South	TS	I	0.55	1.80
UL Bend Wilderness Area	UB	I	0.91	8.12
Washakie Wilderness Area	WK	I	5.00	6.01
Wind Cave National Park	WC	I	3.82	3.25
Yellowstone National Park	YS	I	3.27	4.09
Absaroka-Beartooth Wilderness Area	AB	II	3.73	6.38
Agate Fossil Beds National Monument	AF	II	1.64	3.05
Bighorn Canyon National Recreation Area	BC	II	9.09	14.79
Black Elk Wilderness Area	BE	II	3.55	3.37
Cloud Peak Wilderness Area	CP	II	13.18	6.51
Crow Indian Reservation	CI	II	19.82	27.57
Devils Tower National Monument	DT	II	8.73	4.60
Fort Belknap Indian Reservation	FB	II	0.82	6.85
Fort Laramie National Historic Site	FL	II	2.18	5.26
Jewel Cave National Monument	JC	II	4.45	3.47
Mount Rushmore National Memorial	MR	II	3.09	3.36
Popo Agie Wilderness Area	PA	II	3.73	4.26
Soldier Creek Wilderness Area	SC	II	1.64	2.55

E.2.2.2 Potential Visibility Impacts of Wyoming Project under Alt. 2a, Estimated by Refined Procedure

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	2.55	3.08
Bridger Wilderness Area	BG	I	3.55	3.48
Fitzpatrick Wilderness Area	FZ	I	3.45	3.81
Fort Peck Indian Reservation	FP	I	0.18	1.49
Gates of the Mountains Wilderness Area	GM	I	0.18	2.55
Grand Teton National Park	GT	I	1.00	1.60
North Absaroka Wilderness Area	NA	I	3.18	3.95
Northern Cheyenne Indian Reservation	NC	I	15.64	19.43
Red Rock Lakes Wilderness Area	RR	I	0.00	0.00
Scapegoat Wilderness Area	SG	I	0.09	1.89
Teton Wilderness Area	TT	I	2.73	3.03
Theodore Roosevelt National Park - North	TN	I	0.27	1.25
Theodore Roosevelt National Park - South	TS	I	0.45	1.55
UL Bend Wilderness Area	UB	I	0.82	7.06
Washakie Wilderness Area	WK	I	4.00	4.92
Wind Cave National Park	WC	I	2.55	2.71
Yellowstone National Park	YS	I	2.27	3.44
Absaroka-Beartooth Wilderness Area	AB	II	3.09	5.38
Agate Fossil Beds National Monument	AF	II	0.64	2.58
Bighorn Canyon National Recreation Area	BC	II	8.09	12.70
Black Elk Wilderness Area	BE	II	2.55	2.82
Cloud Peak Wilderness Area	CP	II	11.91	5.55
Crow Indian Reservation	CI	II	16.18	23.93
Devils Tower National Monument	DT	II	6.45	3.91
Fort Belknap Indian Reservation	FB	II	0.82	5.95
Fort Laramie National Historic Site	FL	II	1.64	4.51
Jewel Cave National Monument	JC	II	3.27	2.91
Mount Rushmore National Memorial	MR	II	2.27	2.81
Popo Agie Wilderness Area	PA	II	3.18	3.70
Soldier Creek Wilderness Area	SC	II	0.82	2.15

E.2.2.3 Potential Visibility Impacts of Wyoming Project under Alt. 2b, Estimated by Refined Procedure

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	1.45	2.69
Bridger Wilderness Area	BG	I	2.91	2.97
Fitzpatrick Wilderness Area	FZ	I	2.82	3.26
Fort Peck Indian Reservation	FP	I	0.18	1.28
Gates of the Mountains Wilderness Area	GM	I	0.18	2.21
Grand Teton National Park	GT	I	0.45	1.37
North Absaroka Wilderness Area	NA	I	2.27	3.29
Northern Cheyenne Indian Reservation	NC	I	14.00	16.62
Red Rock Lakes Wilderness Area	RR	I	0.00	0.00
Scapegoat Wilderness Area	SG	I	0.09	1.63
Teton Wilderness Area	TT	I	1.91	2.48
Theodore Roosevelt National Park - North	TN	I	0.09	1.09
Theodore Roosevelt National Park - South	TS	I	0.27	1.34
UL Bend Wilderness Area	UB	I	0.73	6.07
Washakie Wilderness Area	WK	I	3.64	3.95
Wind Cave National Park	WC	I	1.64	2.26
Yellowstone National Park	YS	I	1.27	2.88
Absaroka-Beartooth Wilderness Area	AB	II	2.55	4.49
Agate Fossil Beds National Monument	AF	II	0.45	2.17
Bighorn Canyon National Recreation Area	BC	II	7.09	10.77
Black Elk Wilderness Area	BE	II	1.64	2.35
Cloud Peak Wilderness Area	CP	II	9.27	4.68
Crow Indian Reservation	CI	II	14.36	20.52
Devils Tower National Monument	DT	II	4.73	3.30
Fort Belknap Indian Reservation	FB	II	0.82	5.15
Fort Laramie National Historic Site	FL	II	1.27	3.84
Jewel Cave National Monument	JC	II	2.09	2.42
Mount Rushmore National Memorial	MR	II	1.36	2.34
Popo Agie Wilderness Area	PA	II	2.64	3.15
Soldier Creek Wilderness Area	SC	II	0.55	1.80

E.2.2.4 Potential Visibility Impacts of Wyoming Project under Alt. 3, Estimated by Refined Procedure

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	0.27	1.28
Bridger Wilderness Area	BG	I	0.82	1.41
Fitzpatrick Wilderness Area	FZ	I	1.00	1.62
Fort Peck Indian Reservation	FP	I	0.00	0.62
Gates of the Mountains Wilderness Area	GM	I	0.00	0.00
Grand Teton National Park	GT	I	0.00	0.72
North Absaroka Wilderness Area	NA	I	0.27	1.74
Northern Cheyenne Indian Reservation	NC	I	6.91	9.07
Red Rock Lakes Wilderness Area	RR	I	0.00	0.00
Scapegoat Wilderness Area	SG	I	0.00	0.00
Teton Wilderness Area	TT	I	0.18	1.41
Theodore Roosevelt National Park - North	TN	I	0.00	0.55
Theodore Roosevelt National Park - South	TS	I	0.00	0.69
UL Bend Wilderness Area	UB	I	0.36	3.11
Washakie Wilderness Area	WK	I	1.45	2.33
Wind Cave National Park	WC	I	0.18	1.26
Yellowstone National Park	YS	I	0.18	1.52
Absaroka-Beartooth Wilderness Area	AB	II	0.45	2.37
Agate Fossil Beds National Monument	AF	II	0.09	1.20
Bighorn Canyon National Recreation Area	BC	II	2.82	5.77
Black Elk Wilderness Area	BE	II	0.27	1.30
Cloud Peak Wilderness Area	CP	II	3.00	2.73
Crow Indian Reservation	CI	II	9.91	10.95
Devils Tower National Monument	DT	II	1.00	1.80
Fort Belknap Indian Reservation	FB	II	0.18	2.63
Fort Laramie National Historic Site	FL	II	0.18	2.02
Jewel Cave National Monument	JC	II	0.27	1.39
Mount Rushmore National Memorial	MR	II	0.18	1.29
Popo Agie Wilderness Area	PA	II	1.18	1.59
Soldier Creek Wilderness Area	SC	II	0.09	1.00

E.2.3 Potential Visibility Impacts of Cumulative Sources Estimated by Refined Procedure

E.2.3.1 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	28.45	10.91
Bridger Wilderness Area	BG	I	12.00	13.28
Fitzpatrick Wilderness Area	FZ	I	11.82	16.57
Fort Peck Indian Reservation	FP	I	4.64	7.36
Gates of the Mountains Wilderness Area	GM	I	4.27	14.99
Grand Teton National Park	GT	I	8.00	6.95
North Absaroka Wilderness Area	NA	I	14.64	14.89
Northern Cheyenne Indian Reservation	NC	I	91.82	54.75
Red Rock Lakes Wilderness Area	RR	I	2.91	2.85
Scapegoat Wilderness Area	SG	I	3.09	9.89
Teton Wilderness Area	TT	I	11.27	14.59
Theodore Roosevelt National Park - North	TN	I	3.36	3.65
Theodore Roosevelt National Park - South	TS	I	7.36	4.62
UL Bend Wilderness Area	UB	I	7.73	29.05
Washakie Wilderness Area	WK	I	18.09	24.79
Wind Cave National Park	WC	I	31.82	9.05
Yellowstone National Park	YS	I	13.45	12.79
Absaroka-Beartooth Wilderness Area	AB	II	33.27	21.47
Agate Fossil Beds National Monument	AF	II	18.64	12.77
Bighorn Canyon National Recreation Area	BC	II	34.36	34.03
Black Elk Wilderness Area	BE	II	31.00	9.36
Cloud Peak Wilderness Area	CP	II	39.18	16.32
Crow Indian Reservation	CI	II	115.73	66.92
Devils Tower National Monument	DT	II	47.00	11.37
Fort Belknap Indian Reservation	FB	II	61.55	28.38
Fort Laramie National Historic Site	FL	II	19.73	16.91
Jewel Cave National Monument	JC	II	36.45	12.12
Mount Rushmore National Memorial	MR	II	26.09	8.41
Popo Agie Wilderness Area	PA	II	12.64	14.61
Soldier Creek Wilderness Area	SC	II	21.18	11.38

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

E.2.3.2 Potential Visibility Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. A, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	24.91	9.98
Bridger Wilderness Area	BG	I	9.82	10.87
Fitzpatrick Wilderness Area	FZ	I	9.55	13.49
Fort Peck Indian Reservation	FP	I	2.36	5.95
Gates of the Mountains Wilderness Area	GM	I	3.73	12.74
Grand Teton National Park	GT	I	5.91	5.82
North Absaroka Wilderness Area	NA	I	12.45	11.34
Northern Cheyenne Indian Reservation	NC	I	41.82	39.93
Red Rock Lakes Wilderness Area	RR	I	1.00	2.31
Scapegoat Wilderness Area	SG	I	2.55	8.23
Teton Wilderness Area	TT	I	9.55	11.91
Theodore Roosevelt National Park - North	TN	I	1.64	3.27
Theodore Roosevelt National Park - South	TS	I	4.18	3.89
UL Bend Wilderness Area	UB	I	5.55	23.69
Washakie Wilderness Area	WK	I	14.55	20.15
Wind Cave National Park	WC	I	27.64	7.65
Yellowstone National Park	YS	I	11.36	9.02
Absaroka-Beartooth Wilderness Area	AB	II	29.64	15.21
Agate Fossil Beds National Monument	AF	II	15.27	10.43
Bighorn Canyon National Recreation Area	BC	II	22.55	28.22
Black Elk Wilderness Area	BE	II	26.09	8.38
Cloud Peak Wilderness Area	CP	II	29.91	13.91
Crow Indian Reservation	CI	II	69.36	52.99
Devils Tower National Monument	DT	II	38.91	9.68
Fort Belknap Indian Reservation	FB	II	60.82	23.57
Fort Laramie National Historic Site	FL	II	17.45	14.43
Jewel Cave National Monument	JC	II	31.64	11.03
Mount Rushmore National Memorial	MR	II	22.18	7.54
Popo Agie Wilderness Area	PA	II	10.09	11.89
Soldier Creek Wilderness Area	SC	II	18.09	9.32

[a] Cumulative sources include Wyoming Project Sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

E.2.3.3 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	27.27	10.67
Bridger Wilderness Area	BG	I	11.73	12.67
Fitzpatrick Wilderness Area	FZ	I	11.64	15.83
Fort Peck Indian Reservation	FP	I	4.64	7.10
Gates of the Mountains Wilderness Area	GM	I	4.27	14.61
Grand Teton National Park	GT	I	7.36	6.67
North Absaroka Wilderness Area	NA	I	14.18	14.12
Northern Cheyenne Indian Reservation	NC	I	90.55	52.80
Red Rock Lakes Wilderness Area	RR	I	2.64	2.75
Scapegoat Wilderness Area	SG	I	3.09	9.58
Teton Wilderness Area	TT	I	11.00	13.97
Theodore Roosevelt National Park - North	TN	I	3.00	3.46
Theodore Roosevelt National Park - South	TS	I	6.45	4.37
UL Bend Wilderness Area	UB	I	7.55	27.97
Washakie Wilderness Area	WK	I	17.55	23.82
Wind Cave National Park	WC	I	29.82	8.81
Yellowstone National Park	YS	I	13.09	12.19
Absaroka-Beartooth Wilderness Area	AB	II	33.09	20.44
Agate Fossil Beds National Monument	AF	II	17.36	12.29
Bighorn Canyon National Recreation Area	BC	II	33.82	32.25
Black Elk Wilderness Area	BE	II	29.18	8.95
Cloud Peak Wilderness Area	CP	II	38.18	15.62
Crow Indian Reservation	CI	II	115.27	65.41
Devils Tower National Monument	DT	II	44.45	10.86
Fort Belknap Indian Reservation	FB	II	61.45	27.53
Fort Laramie National Historic Site	FL	II	19.00	16.27
Jewel Cave National Monument	JC	II	34.82	11.56
Mount Rushmore National Memorial	MR	II	24.55	7.85
Popo Agie Wilderness Area	PA	II	12.09	13.95
Soldier Creek Wilderness Area	SC	II	20.55	10.99

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

E.2.3.4 Potential Visibility Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. A, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	23.82	9.74
Bridger Wilderness Area	BG	I	9.55	10.25
Fitzpatrick Wilderness Area	FZ	I	8.91	12.76
Fort Peck Indian Reservation	FP	I	2.18	5.70
Gates of the Mountains Wilderness Area	GM	I	3.55	12.36
Grand Teton National Park	GT	I	5.55	5.51
North Absaroka Wilderness Area	NA	I	12.09	10.79
Northern Cheyenne Indian Reservation	NC	I	39.09	37.53
Red Rock Lakes Wilderness Area	RR	I	0.82	2.21
Scapegoat Wilderness Area	SG	I	2.36	7.94
Teton Wilderness Area	TT	I	9.09	11.33
Theodore Roosevelt National Park - North	TN	I	1.55	3.09
Theodore Roosevelt National Park - South	TS	I	3.73	3.66
UL Bend Wilderness Area	UB	I	5.45	22.61
Washakie Wilderness Area	WK	I	14.45	19.11
Wind Cave National Park	WC	I	26.64	7.40
Yellowstone National Park	YS	I	11.27	8.38
Absaroka-Beartooth Wilderness Area	AB	II	29.27	14.18
Agate Fossil Beds National Monument	AF	II	14.27	9.97
Bighorn Canyon National Recreation Area	BC	II	22.09	26.29
Black Elk Wilderness Area	BE	II	25.36	7.97
Cloud Peak Wilderness Area	CP	II	28.36	13.21
Crow Indian Reservation	CI	II	68.82	49.66
Devils Tower National Monument	DT	II	35.91	9.28
Fort Belknap Indian Reservation	FB	II	60.82	22.72
Fort Laramie National Historic Site	FL	II	16.91	13.73
Jewel Cave National Monument	JC	II	30.18	10.47
Mount Rushmore National Memorial	MR	II	21.36	6.97
Popo Agie Wilderness Area	PA	II	9.73	11.23
Soldier Creek Wilderness Area	SC	II	16.91	8.92

[a] Cumulative sources include Wyoming Project Sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

E.2.3.5 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	26.45	10.43
Bridger Wilderness Area	BG	I	11.27	12.21
Fitzpatrick Wilderness Area	FZ	I	11.45	15.21
Fort Peck Indian Reservation	FP	I	4.36	6.88
Gates of the Mountains Wilderness Area	GM	I	4.27	14.22
Grand Teton National Park	GT	I	7.27	6.44
North Absaroka Wilderness Area	NA	I	14.00	13.51
Northern Cheyenne Indian Reservation	NC	I	89.55	50.71
Red Rock Lakes Wilderness Area	RR	I	2.36	2.67
Scapegoat Wilderness Area	SG	I	2.91	9.35
Teton Wilderness Area	TT	I	10.82	13.46
Theodore Roosevelt National Park - North	TN	I	2.64	3.29
Theodore Roosevelt National Park - South	TS	I	6.09	4.14
UL Bend Wilderness Area	UB	I	7.36	26.97
Washakie Wilderness Area	WK	I	17.09	22.96
Wind Cave National Park	WC	I	28.45	8.59
Yellowstone National Park	YS	I	13.00	11.59
Absaroka-Beartooth Wilderness Area	AB	II	32.82	19.57
Agate Fossil Beds National Monument	AF	II	16.36	11.89
Bighorn Canyon National Recreation Area	BC	II	33.27	30.55
Black Elk Wilderness Area	BE	II	27.82	8.58
Cloud Peak Wilderness Area	CP	II	37.00	15.00
Crow Indian Reservation	CI	II	114.64	63.92
Devils Tower National Monument	DT	II	42.36	10.49
Fort Belknap Indian Reservation	FB	II	61.36	26.69
Fort Laramie National Historic Site	FL	II	18.55	15.66
Jewel Cave National Monument	JC	II	33.18	11.07
Mount Rushmore National Memorial	MR	II	23.82	7.39
Popo Agie Wilderness Area	PA	II	11.55	13.45
Soldier Creek Wilderness Area	SC	II	19.91	10.66

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

E.2.3.6 Potential Visibility Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. A, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	22.09	9.49
Bridger Wilderness Area	BG	I	9.18	9.75
Fitzpatrick Wilderness Area	FZ	I	8.55	12.14
Fort Peck Indian Reservation	FP	I	1.91	5.48
Gates of the Mountains Wilderness Area	GM	I	3.55	12.05
Grand Teton National Park	GT	I	5.45	5.27
North Absaroka Wilderness Area	NA	I	12.00	10.33
Northern Cheyenne Indian Reservation	NC	I	37.55	35.12
Red Rock Lakes Wilderness Area	RR	I	0.73	2.12
Scapegoat Wilderness Area	SG	I	2.36	7.69
Teton Wilderness Area	TT	I	8.64	10.78
Theodore Roosevelt National Park - North	TN	I	1.27	2.91
Theodore Roosevelt National Park - South	TS	I	3.36	3.45
UL Bend Wilderness Area	UB	I	5.27	21.61
Washakie Wilderness Area	WK	I	14.09	18.18
Wind Cave National Park	WC	I	24.91	7.19
Yellowstone National Park	YS	I	10.91	7.90
Absaroka-Beartooth Wilderness Area	AB	II	29.09	13.32
Agate Fossil Beds National Monument	AF	II	13.27	9.55
Bighorn Canyon National Recreation Area	BC	II	21.36	24.43
Black Elk Wilderness Area	BE	II	24.09	7.60
Cloud Peak Wilderness Area	CP	II	26.82	12.58
Crow Indian Reservation	CI	II	68.36	47.30
Devils Tower National Monument	DT	II	34.27	8.91
Fort Belknap Indian Reservation	FB	II	60.64	21.95
Fort Laramie National Historic Site	FL	II	15.91	13.10
Jewel Cave National Monument	JC	II	28.64	9.98
Mount Rushmore National Memorial	MR	II	20.64	6.52
Popo Agie Wilderness Area	PA	II	9.64	10.69
Soldier Creek Wilderness Area	SC	II	15.64	8.56

[a] Cumulative sources include Wyoming Project Sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

E.2.3.7 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	21.36	9.46
Bridger Wilderness Area	BG	I	10.36	11.15
Fitzpatrick Wilderness Area	FZ	I	9.64	14.01
Fort Peck Indian Reservation	FP	I	3.73	6.27
Gates of the Mountains Wilderness Area	GM	I	3.91	13.17
Grand Teton National Park	GT	I	6.27	5.80
North Absaroka Wilderness Area	NA	I	13.36	12.21
Northern Cheyenne Indian Reservation	NC	I	87.00	45.02
Red Rock Lakes Wilderness Area	RR	I	1.64	2.37
Scapegoat Wilderness Area	SG	I	2.82	8.55
Teton Wilderness Area	TT	I	10.18	12.38
Theodore Roosevelt National Park - North	TN	I	2.00	2.75
Theodore Roosevelt National Park - South	TS	I	4.18	3.51
UL Bend Wilderness Area	UB	I	6.36	24.01
Washakie Wilderness Area	WK	I	15.64	21.48
Wind Cave National Park	WC	I	24.64	8.06
Yellowstone National Park	YS	I	12.36	10.25
Absaroka-Beartooth Wilderness Area	AB	II	32.18	17.44
Agate Fossil Beds National Monument	AF	II	14.00	10.92
Bighorn Canyon National Recreation Area	BC	II	32.00	26.09
Black Elk Wilderness Area	BE	II	23.55	7.79
Cloud Peak Wilderness Area	CP	II	35.00	13.39
Crow Indian Reservation	CI	II	112.55	59.20
Devils Tower National Monument	DT	II	34.27	9.50
Fort Belknap Indian Reservation	FB	II	60.91	24.28
Fort Laramie National Historic Site	FL	II	16.27	14.01
Jewel Cave National Monument	JC	II	27.64	10.05
Mount Rushmore National Memorial	MR	II	20.09	6.71
Popo Agie Wilderness Area	PA	II	10.55	12.33
Soldier Creek Wilderness Area	SC	II	15.82	9.84

[a] Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

E.2.3.8 Potential Visibility Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. A, Estimated by Refined Procedure[a]

Receptor Area	ID	PSD Class	# Days $\Delta dv \geq 1.0$	Highest Δdv
Badlands Wilderness Area	BL	I	17.55	8.53
Bridger Wilderness Area	BG	I	8.45	8.74
Fitzpatrick Wilderness Area	FZ	I	7.64	10.94
Fort Peck Indian Reservation	FP	I	1.64	4.88
Gates of the Mountains Wilderness Area	GM	I	3.00	11.00
Grand Teton National Park	GT	I	4.09	4.64
North Absaroka Wilderness Area	NA	I	10.82	9.36
Northern Cheyenne Indian Reservation	NC	I	33.18	28.58
Red Rock Lakes Wilderness Area	RR	I	0.45	1.83
Scapegoat Wilderness Area	SG	I	2.36	6.90
Teton Wilderness Area	TT	I	7.36	9.70
Theodore Roosevelt National Park - North	TN	I	0.91	2.38
Theodore Roosevelt National Park - South	TS	I	1.73	2.80
UL Bend Wilderness Area	UB	I	4.73	18.65
Washakie Wilderness Area	WK	I	12.09	16.62
Wind Cave National Park	WC	I	21.82	6.66
Yellowstone National Park	YS	I	9.00	7.10
Absaroka-Beartooth Wilderness Area	AB	II	28.36	11.27
Agate Fossil Beds National Monument	AF	II	10.00	8.60
Bighorn Canyon National Recreation Area	BC	II	19.27	19.74
Black Elk Wilderness Area	BE	II	20.09	6.81
Cloud Peak Wilderness Area	CP	II	23.00	10.93
Crow Indian Reservation	CI	II	65.18	39.57
Devils Tower National Monument	DT	II	25.64	7.92
Fort Belknap Indian Reservation	FB	II	60.55	21.52
Fort Laramie National Historic Site	FL	II	13.09	11.33
Jewel Cave National Monument	JC	II	24.27	8.95
Mount Rushmore National Memorial	MR	II	17.00	5.64
Popo Agie Wilderness Area	PA	II	8.45	9.61
Soldier Creek Wilderness Area	SC	II	13.09	7.77

[a] Cumulative sources include Wyoming Project Sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

APPENDIX F:

ESTIMATED ACID DEPOSITION IMPACTS AT SENSITIVE LAKES

APPENDIX F:

ESTIMATED ACID DEPOSITION IMPACTS AT SENSITIVE LAKES

F.1 Estimated Acid Deposition Impacts for Montana EIS

F.1.1 Estimated Acid Deposition Impacts of Non-Montana Project Sources

F.1.1.1 Estimated Acid Deposition Impacts of New and RFFA Sources and Wyoming Project under Alt. 1[a]

Receptor Area	Sulfur (kg/ha/yr) Non-Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Non-MT Proj.	Nitrogen (kg/ha/yr) Non-Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Non-MT Proj.	Percent ANC Change Non-Proj.	Percent ANC Change WY Proj.	Percent ANC Change Non-MT Proj.
Badlands WA	0.0326	0.0018	0.0343	0.0695	0.0357	0.1045			
Black Elk WA	0.0982	0.0035	0.1017	0.1354	0.0619	0.1973			
Mt Rushmore NM	0.0750	0.0031	0.0781	0.1222	0.0577	0.1799			
Wind Cave NP	0.0643	0.0035	0.0677	0.1314	0.0587	0.1896			
Jewel Cave NM	0.1083	0.0048	0.1132	0.1718	0.0780	0.2499			
Soldier Creek WA	0.0439	0.0023	0.0460	0.1226	0.0398	0.1618			
Agate Fossil Beds NM	0.0310	0.0019	0.0328	0.0673	0.0331	0.1004			
Ft Laramie NHS	0.0293	0.0017	0.0310	0.0612	0.0310	0.0921			
Devils Tower NM	0.0706	0.0145	0.0851	0.1974	0.1793	0.3767			
Cloud Peak WA	0.0340	0.0027	0.0367	0.0498	0.0520	0.1018			
Northern Cheyenne IR	0.0584	0.0053	0.0610	0.0980	0.0885	0.1844			
Crow IR	0.0965	0.0056	0.0979	0.1240	0.0868	0.2107			
Bighorn Canyon NRA	0.0350	0.0012	0.0362	0.0543	0.0275	0.0819			
Bridger WA	0.0098	0.0004	0.0102	0.0165	0.0115	0.0279			
Fitzpatrick WA	0.0087	0.0004	0.0090	0.0113	0.0076	0.0189			
Popo Agie WA	0.0122	0.0005	0.0126	0.0191	0.0134	0.0325			
Grand Teton NP	0.0045	0.0002	0.0047	0.0076	0.0049	0.0124			
Teton WA	0.0072	0.0002	0.0074	0.0102	0.0056	0.0156			
Washakie WA	0.0132	0.0004	0.0136	0.0155	0.0089	0.0241			
North Absaroka WA	0.0145	0.0003	0.0148	0.0168	0.0063	0.0231			
Yellowstone NP	0.0119	0.0002	0.0121	0.0224	0.0052	0.0264			
Absaroka-Beartooth WA	0.0539	0.0003	0.0541	0.1781	0.0070	0.1834			
Red Rock Lakes WA	0.0034	0.0001	0.0035	0.0062	0.0023	0.0085			
Gates of the Mtns WA	0.0139	0.0001	0.0140	0.0325	0.0016	0.0341			
Scapegoat WA	0.0053	0.0000	0.0053	0.0100	0.0009	0.0109			
UL Bend WA	0.0130	0.0004	0.0134	0.0210	0.0073	0.0283			
Ft Belknap IR	0.1239	0.0002	0.1241	0.6007	0.0049	0.6056			
Ft Peck IR	0.0077	0.0003	0.0080	0.0144	0.0069	0.0212			
Theodore Roosevelt NP/S	0.0210	0.0011	0.0221	0.0429	0.0235	0.0663			
Theodore Roosevelt NP/N	0.0126	0.0006	0.0132	0.0271	0.0116	0.0387			
Black Joe Lake	0.0086	0.0004	0.0090	0.0153	0.0108	0.0261	1.49	0.73	2.22
Deep Lake	0.0086	0.0004	0.0090	0.0153	0.0108	0.0261	1.69	0.82	2.51
Hobbs Lake	0.0055	0.0002	0.0057	0.0095	0.0064	0.0158	0.83	0.38	1.21
Upper Frozen Lake[b]	0.0087	0.0004	0.0091	0.0154	0.0109	0.0263	1.05	0.51	1.55
Ross Lake	0.0070	0.0003	0.0073	0.0098	0.0067	0.0165	1.15	0.51	1.65
Stepping Stone Lake	0.0151	0.0002	0.0154	0.0184	0.0055	0.0239	1.69	0.30	1.99
Twin Island Lake	0.0147	0.0002	0.0149	0.0180	0.0055	0.0235	1.20	0.22	1.42
Emerald Lake	0.0264	0.0017	0.0280	0.0378	0.0350	0.0728	2.78	1.66	4.44
Florence Lake	0.0261	0.0018	0.0280	0.0396	0.0380	0.0776	4.96	3.14	8.09
Lower Saddlebag Lake	0.0111	0.0004	0.0115	0.0179	0.0123	0.0302	2.17	1.00	3.17

[a] Non-project sources include other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFD sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.1.1.2 Estimated Acid Deposition Impacts of New and RFFA Sources and Wyoming Project under Alt. 3[a]

Receptor Area	Sulfur (kg/ha/yr) Non-Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Non-MT Proj.	Nitrogen (kg/ha/yr) Non-Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Non-MT Proj.	Percent ANC Change Non-Proj.	Percent ANC Change WY Proj.	Percent ANC Change Non-MT Proj.
Badlands WA	0.0326	0.0007	0.0333	0.0695	0.0137	0.0829			
Black Elk WA	0.0982	0.0014	0.0996	0.1354	0.0242	0.1597			
Mt Rushmore NM	0.0750	0.0012	0.0762	0.1222	0.0225	0.1447			
Wind Cave NP	0.0643	0.0014	0.0657	0.1314	0.0229	0.1540			
Jewel Cave NM	0.1083	0.0019	0.1102	0.1718	0.0308	0.2026			
Soldier Creek WA	0.0439	0.0009	0.0447	0.1226	0.0152	0.1376			
Agate Fossil Beds NM	0.0310	0.0007	0.0317	0.0673	0.0127	0.0800			
Ft Laramie NHS	0.0293	0.0007	0.0300	0.0612	0.0117	0.0729			
Devils Tower NM	0.0706	0.0057	0.0763	0.1974	0.0686	0.2660			
Cloud Peak WA	0.0340	0.0012	0.0353	0.0498	0.0234	0.0732			
Northern Cheyenne IR	0.0584	0.0022	0.0595	0.0980	0.0398	0.1377			
Crow IR	0.0965	0.0030	0.0970	0.1240	0.0493	0.1732			
Bighorn Canyon NRA	0.0350	0.0005	0.0355	0.0543	0.0113	0.0656			
Bridger WA	0.0098	0.0001	0.0099	0.0165	0.0042	0.0207			
Fitzpatrick WA	0.0087	0.0001	0.0088	0.0113	0.0030	0.0143			
Popo Agie WA	0.0122	0.0002	0.0123	0.0191	0.0049	0.0241			
Grand Teton NP	0.0045	0.0001	0.0046	0.0076	0.0018	0.0093			
Teton WA	0.0072	0.0001	0.0073	0.0102	0.0021	0.0123			
Washakie WA	0.0132	0.0002	0.0134	0.0155	0.0035	0.0189			
North Absaroka WA	0.0145	0.0001	0.0146	0.0168	0.0024	0.0192			
Yellowstone NP	0.0119	0.0001	0.0120	0.0224	0.0020	0.0239			
Absaroka-Beartooth WA	0.0539	0.0001	0.0540	0.1781	0.0028	0.1802			
Red Rock Lakes WA	0.0034	0.0000	0.0034	0.0062	0.0009	0.0071			
Gates of the Mtns WA	0.0139	0.0000	0.0140	0.0325	0.0007	0.0332			
Scapegoat WA	0.0053	0.0000	0.0053	0.0100	0.0004	0.0103			
UL Bend WA	0.0130	0.0001	0.0131	0.0210	0.0028	0.0239			
Ft Belknap IR	0.1239	0.0001	0.1239	0.6007	0.0019	0.6026			
Ft Peck IR	0.0077	0.0001	0.0078	0.0144	0.0027	0.0170			
Theodore Roosevelt NP/S	0.0210	0.0004	0.0214	0.0429	0.0090	0.0518			
Theodore Roosevelt NP/N	0.0126	0.0002	0.0128	0.0271	0.0044	0.0315			
Black Joe Lake	0.0086	0.0001	0.0087	0.0153	0.0040	0.0192	1.49	0.27	1.76
Deep Lake	0.0086	0.0001	0.0087	0.0153	0.0040	0.0192	1.69	0.30	1.99
Hobbs Lake	0.0055	0.0001	0.0056	0.0095	0.0025	0.0119	0.83	0.15	0.98
Upper Frozen Lake[b]	0.0087	0.0001	0.0089	0.0154	0.0040	0.0194	1.05	0.19	1.23
Ross Lake	0.0070	0.0001	0.0071	0.0098	0.0026	0.0123	1.15	0.19	1.34
Stepping Stone Lake	0.0151	0.0001	0.0152	0.0184	0.0021	0.0205	1.69	0.12	1.81
Twin Island Lake	0.0147	0.0001	0.0147	0.0180	0.0021	0.0202	1.20	0.09	1.28
Emerald Lake	0.0264	0.0007	0.0271	0.0378	0.0146	0.0524	2.78	0.69	3.47
Florence Lake	0.0261	0.0008	0.0269	0.0396	0.0157	0.0554	4.96	1.30	6.26
Lower Saddlebag Lake	0.0111	0.0002	0.0112	0.0179	0.0046	0.0225	2.17	0.37	2.54

[a] Non-project sources include other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFD sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.1.2 Estimated Acid Deposition Impacts of Montana Project and Cumulative Sources

F.1.2.1 Estimated Acid Deposition Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 1[a]

Receptor Area	Sulfur (kg/ha/yr)				Nitrogen (kg/ha/yr)				Percent ANC Change			
	Non-MT Proj.	MT Project Alt E	MT Project Alt Ea	Cumulative	Non-MT Proj.	MT Project Alt E	MT Project Alt Ea	Cumulative	Non-MT Proj.	MT Project Alt E	MT Project Alt Ea	Cumulative
Badlands WA	0.0343	0.0004	0.0005	0.0348	0.1045	0.0131	0.0172	0.1217				
Black Elk WA	0.1017	0.0007	0.0008	0.1025	0.1973	0.0198	0.0259	0.2231				
Mt Rushmore NM	0.0781	0.0006	0.0007	0.0788	0.1799	0.0193	0.0253	0.2052				
Wind Cave NP	0.0677	0.0006	0.0007	0.0684	0.1896	0.0169	0.0222	0.2111				
Jewel Cave NM	0.1132	0.0007	0.0008	0.1140	0.2499	0.0196	0.0256	0.2755				
Soldier Creek WA	0.0460	0.0005	0.0006	0.0466	0.1618	0.0137	0.0182	0.1800				
Agate Fossil Beds NM	0.0328	0.0004	0.0005	0.0333	0.1004	0.0121	0.0161	0.1165				
Ft Laramie NHS	0.0310	0.0003	0.0004	0.0314	0.0921	0.0101	0.0135	0.1056				
Devils Tower NM	0.0851	0.0025	0.0027	0.0878	0.3767	0.0526	0.0647	0.4414				
Cloud Peak WA	0.0367	0.0011	0.0014	0.0382	0.1018	0.0360	0.0496	0.1515				
Northern Cheyenne IR	0.0610	0.0245	0.0434	0.0999	0.1844	0.4056	0.7879	0.9670				
Crow IR	0.0979	0.0562	0.0583	0.1042	0.2107	0.6230	0.7547	0.8996				
Bighorn Canyon NRA	0.0362	0.0014	0.0018	0.0380	0.0819	0.0325	0.0540	0.1359				
Bridger WA	0.0102	0.0001	0.0001	0.0103	0.0279	0.0043	0.0058	0.0335				
Fitzpatrick WA	0.0090	0.0001	0.0002	0.0092	0.0189	0.0048	0.0066	0.0252				
Popo Agie WA	0.0126	0.0001	0.0002	0.0128	0.0325	0.0050	0.0067	0.0388				
Grand Teton NP	0.0047	0.0001	0.0001	0.0048	0.0124	0.0025	0.0033	0.0157				
Teton WA	0.0074	0.0002	0.0002	0.0076	0.0156	0.0044	0.0058	0.0214				
Washakie WA	0.0136	0.0004	0.0004	0.0140	0.0241	0.0077	0.0107	0.0348				
North Absaroka WA	0.0148	0.0007	0.0007	0.0155	0.0231	0.0104	0.0126	0.0357				
Yellowstone NP	0.0121	0.0003	0.0003	0.0124	0.0264	0.0061	0.0076	0.0321				
Absaroka-Beartooth WA	0.0541	0.0013	0.0013	0.0546	0.1834	0.0173	0.0202	0.1975				
Red Rock Lakes WA	0.0035	0.0001	0.0001	0.0036	0.0085	0.0021	0.0028	0.0113				
Gates of the Mtns WA	0.0140	0.0001	0.0001	0.0141	0.0341	0.0029	0.0041	0.0383				
Scapegoat WA	0.0053	0.0001	0.0001	0.0054	0.0109	0.0014	0.0019	0.0128				
UL Bend WA	0.0134	0.0004	0.0005	0.0139	0.0283	0.0078	0.0106	0.0389				
Ft Belknap IR	0.1241	0.0002	0.0003	0.1244	0.6056	0.0048	0.0064	0.6120				
Ft Peck IR	0.0080	0.0002	0.0003	0.0082	0.0212	0.0055	0.0074	0.0285				
Theodore Roosevelt NP/S	0.0221	0.0005	0.0006	0.0227	0.0663	0.0152	0.0208	0.0870				
Theodore Roosevelt NP/N	0.0132	0.0003	0.0003	0.0135	0.0387	0.0077	0.0105	0.0492				
Black Joe Lake	0.0090	0.0001	0.0001	0.0091	0.0261	0.0043	0.0057	0.0318	2.22	0.29	0.38	2.60
Deep Lake	0.0090	0.0001	0.0001	0.0091	0.0261	0.0042	0.0056	0.0317	2.51	0.32	0.43	2.94
Hobbs Lake	0.0057	0.0001	0.0001	0.0058	0.0158	0.0036	0.0049	0.0207	1.21	0.21	0.29	1.50
Upper Frozen Lake[b]	0.0091	0.0001	0.0001	0.0092	0.0263	0.0041	0.0055	0.0318	1.55	0.19	0.25	1.81
Ross Lake	0.0073	0.0001	0.0001	0.0074	0.0165	0.0039	0.0054	0.0219	1.65	0.29	0.40	2.06
Stepping Stone Lake	0.0154	0.0004	0.0004	0.0158	0.0239	0.0080	0.0099	0.0337	1.99	0.44	0.55	2.54
Twin Island Lake	0.0149	0.0004	0.0004	0.0153	0.0235	0.0078	0.0097	0.0332	1.42	0.32	0.39	1.81
Emerald Lake	0.0280	0.0007	0.0009	0.0289	0.0728	0.0227	0.0305	0.1033	4.44	1.06	1.43	5.86
Florence Lake	0.0280	0.0007	0.0008	0.0288	0.0776	0.0207	0.0280	0.1056	8.09	1.68	2.28	10.37
Lower Saddlebag Lake	0.0115	0.0001	0.0001	0.0117	0.0302	0.0043	0.0057	0.0360	3.17	0.35	0.46	3.63

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Ea sources include Alt. E sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.1.2.2 Estimated Acid Deposition Impacts of Montana Project under Alt. E (and Ea) and Wyoming Project under Alt. 3[a]

Receptor Area	Sulfur (kg/ha/yr)				Nitrogen (kg/ha/yr)				Percent ANC Change			
	Non-MT Proj.	MT Project Alt E	MT Project Alt Ea	Cumulative	Non-MT Proj.	MT Project Alt E	MT Project Alt Ea	Cumulative	Non-MT Proj.	MT Project Alt E	MT Project Alt Ea	Cumulative
Badlands WA	0.0333	0.0004	0.0005	0.0337	0.0829	0.0131	0.0172	0.0998				
Black Elk WA	0.0996	0.0007	0.0008	0.1004	0.1597	0.0198	0.0259	0.1855				
Mt Rushmore NM	0.0762	0.0006	0.0007	0.0769	0.1447	0.0193	0.0253	0.1700				
Wind Cave NP	0.0657	0.0006	0.0007	0.0663	0.1540	0.0169	0.0222	0.1756				
Jewel Cave NM	0.1102	0.0007	0.0008	0.1110	0.2026	0.0196	0.0256	0.2282				
Soldier Creek WA	0.0447	0.0005	0.0006	0.0453	0.1376	0.0137	0.0182	0.1558				
Agate Fossil Beds NM	0.0317	0.0004	0.0005	0.0322	0.0800	0.0121	0.0161	0.0961				
Ft Laramie NHS	0.0300	0.0003	0.0004	0.0304	0.0729	0.0101	0.0135	0.0864				
Devils Tower NM	0.0763	0.0025	0.0027	0.0790	0.2660	0.0526	0.0647	0.3307				
Cloud Peak WA	0.0353	0.0011	0.0014	0.0367	0.0732	0.0360	0.0496	0.1229				
Northern Cheyenne IR	0.0595	0.0245	0.0434	0.0979	0.1377	0.4056	0.7879	0.9187				
Crow IR	0.0970	0.0562	0.0583	0.1026	0.1732	0.6230	0.7547	0.8634				
Bighorn Canyon NRA	0.0355	0.0014	0.0018	0.0373	0.0656	0.0325	0.0540	0.1196				
Bridger WA	0.0099	0.0001	0.0001	0.0101	0.0207	0.0043	0.0058	0.0262				
Fitzpatrick WA	0.0088	0.0001	0.0002	0.0089	0.0143	0.0048	0.0066	0.0206				
Popo Agie WA	0.0123	0.0001	0.0002	0.0125	0.0241	0.0050	0.0067	0.0303				
Grand Teton NP	0.0046	0.0001	0.0001	0.0047	0.0093	0.0025	0.0033	0.0126				
Teton WA	0.0073	0.0002	0.0002	0.0075	0.0123	0.0044	0.0058	0.0180				
Washakie WA	0.0134	0.0004	0.0004	0.0137	0.0189	0.0077	0.0107	0.0296				
North Absaroka WA	0.0146	0.0007	0.0007	0.0153	0.0192	0.0104	0.0126	0.0318				
Yellowstone NP	0.0120	0.0003	0.0003	0.0123	0.0239	0.0061	0.0076	0.0296				
Absaroka-Beartooth WA	0.0540	0.0013	0.0013	0.0545	0.1802	0.0173	0.0202	0.1943				
Red Rock Lakes WA	0.0034	0.0001	0.0001	0.0035	0.0071	0.0021	0.0028	0.0099				
Gates of the Mtns WA	0.0140	0.0001	0.0001	0.0141	0.0332	0.0029	0.0041	0.0373				
Scapegoat WA	0.0053	0.0001	0.0001	0.0053	0.0103	0.0014	0.0019	0.0122				
UL Bend WA	0.0131	0.0004	0.0005	0.0136	0.0239	0.0078	0.0106	0.0345				
Ft Belknap IR	0.1239	0.0002	0.0003	0.1242	0.6026	0.0048	0.0064	0.6090				
Ft Peck IR	0.0078	0.0002	0.0003	0.0080	0.0170	0.0055	0.0074	0.0244				
Theodore Roosevelt NP/S	0.0214	0.0005	0.0006	0.0220	0.0518	0.0152	0.0208	0.0726				
Theodore Roosevelt NP/N	0.0128	0.0003	0.0003	0.0132	0.0315	0.0077	0.0105	0.0420				
Black Joe Lake	0.0087	0.0001	0.0001	0.0089	0.0192	0.0043	0.0057	0.0250	1.76	0.29	0.38	2.14
Deep Lake	0.0087	0.0001	0.0001	0.0089	0.0192	0.0042	0.0056	0.0249	1.99	0.32	0.43	2.42
Hobbs Lake	0.0056	0.0001	0.0001	0.0057	0.0119	0.0036	0.0049	0.0168	0.98	0.21	0.29	1.27
Upper Frozen Lake[b]	0.0089	0.0001	0.0001	0.0090	0.0194	0.0041	0.0055	0.0249	1.23	0.19	0.25	1.49
Ross Lake	0.0071	0.0001	0.0001	0.0072	0.0123	0.0039	0.0054	0.0177	1.34	0.29	0.40	1.74
Stepping Stone Lake	0.0152	0.0004	0.0004	0.0156	0.0205	0.0080	0.0099	0.0304	1.81	0.44	0.55	2.35
Twin Island Lake	0.0147	0.0004	0.0004	0.0151	0.0202	0.0078	0.0097	0.0299	1.28	0.32	0.39	1.68
Emerald Lake	0.0271	0.0007	0.0009	0.0280	0.0524	0.0227	0.0305	0.0829	3.47	1.06	1.43	4.90
Florence Lake	0.0269	0.0007	0.0008	0.0277	0.0554	0.0207	0.0280	0.0834	6.26	1.68	2.28	8.53
Lower Saddlebag Lake	0.0112	0.0001	0.0001	0.0114	0.0225	0.0043	0.0057	0.0282	2.54	0.35	0.46	3.00

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Ea sources include Alt. E sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.1.2.3 Estimated Acid Deposition Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 1[a]

Receptor Area	Sulfur (kg/ha/yr)				Nitrogen (kg/ha/yr)				Percent ANC Change			
	Non-MT Proj.	MT Project Alt D	MT Project Alt Da	Cumulative	Non-MT Proj.	MT Project Alt D	MT Project Alt Da	Cumulative	Non-MT Proj.	MT Project Alt D	MT Project Alt Da	Cumulative
Badlands WA	0.0343	0.0004	0.0005	0.0348	0.1045	0.0067	0.0085	0.1130				
Black Elk WA	0.1017	0.0006	0.0007	0.1025	0.1973	0.0103	0.0130	0.2103				
Mt Rushmore NM	0.0781	0.0006	0.0007	0.0788	0.1799	0.0100	0.0127	0.1925				
Wind Cave NP	0.0677	0.0006	0.0006	0.0684	0.1896	0.0088	0.0112	0.2004				
Jewel Cave NM	0.1132	0.0007	0.0008	0.1139	0.2499	0.0103	0.0129	0.2628				
Soldier Creek WA	0.0460	0.0005	0.0005	0.0466	0.1618	0.0073	0.0092	0.1710				
Agate Fossil Beds NM	0.0328	0.0004	0.0005	0.0333	0.1004	0.0063	0.0081	0.1085				
Ft Laramie NHS	0.0310	0.0003	0.0004	0.0314	0.0921	0.0054	0.0069	0.0990				
Devils Tower NM	0.0851	0.0024	0.0027	0.0878	0.3767	0.0293	0.0348	0.4115				
Cloud Peak WA	0.0367	0.0011	0.0014	0.0381	0.1018	0.0177	0.0236	0.1255				
Northern Cheyenne IR	0.0610	0.0242	0.0428	0.0992	0.1844	0.2561	0.5069	0.6629				
Crow IR	0.0979	0.0558	0.0579	0.1036	0.2107	0.4315	0.4859	0.6599				
Bighorn Canyon NRA	0.0362	0.0014	0.0017	0.0380	0.0819	0.0174	0.0262	0.1081				
Bridger WA	0.0102	0.0001	0.0001	0.0103	0.0279	0.0023	0.0029	0.0307				
Fitzpatrick WA	0.0090	0.0001	0.0002	0.0092	0.0189	0.0025	0.0033	0.0220				
Popo Agie WA	0.0126	0.0001	0.0002	0.0128	0.0325	0.0027	0.0034	0.0357				
Grand Teton NP	0.0047	0.0001	0.0001	0.0048	0.0124	0.0014	0.0017	0.0141				
Teton WA	0.0074	0.0002	0.0002	0.0076	0.0156	0.0025	0.0031	0.0187				
Washakie WA	0.0136	0.0004	0.0004	0.0139	0.0241	0.0043	0.0056	0.0297				
North Absaroka WA	0.0148	0.0007	0.0007	0.0154	0.0231	0.0065	0.0074	0.0305				
Yellowstone NP	0.0121	0.0003	0.0003	0.0124	0.0264	0.0035	0.0041	0.0295				
Absaroka-Beartooth WA	0.0541	0.0012	0.0013	0.0546	0.1834	0.0110	0.0122	0.1909				
Red Rock Lakes WA	0.0035	0.0001	0.0001	0.0036	0.0085	0.0011	0.0014	0.0100				
Gates of the Mtns WA	0.0140	0.0001	0.0001	0.0141	0.0341	0.0017	0.0022	0.0363				
Scapegoat WA	0.0053	0.0001	0.0001	0.0054	0.0109	0.0008	0.0010	0.0119				
UL Bend WA	0.0134	0.0004	0.0005	0.0138	0.0283	0.0046	0.0058	0.0341				
Ft Belknap IR	0.1241	0.0002	0.0003	0.1244	0.6056	0.0027	0.0035	0.6090				
Ft Peck IR	0.0080	0.0002	0.0002	0.0082	0.0212	0.0030	0.0038	0.0249				
Theodore Roosevelt NP/S	0.0221	0.0005	0.0006	0.0227	0.0663	0.0081	0.0105	0.0768				
Theodore Roosevelt NP/N	0.0132	0.0003	0.0003	0.0135	0.0387	0.0041	0.0053	0.0440				
Black Joe Lake	0.0090	0.0001	0.0001	0.0091	0.0261	0.0023	0.0029	0.0290	2.22	0.16	0.20	2.42
Deep Lake	0.0090	0.0001	0.0001	0.0091	0.0261	0.0022	0.0028	0.0289	2.51	0.17	0.22	2.73
Hobbs Lake	0.0057	0.0001	0.0001	0.0058	0.0158	0.0019	0.0025	0.0183	1.21	0.12	0.15	1.36
Upper Frozen Lake[b]	0.0091	0.0001	0.0001	0.0092	0.0263	0.0022	0.0028	0.0291	1.55	0.10	0.13	1.68
Ross Lake	0.0073	0.0001	0.0001	0.0074	0.0165	0.0021	0.0028	0.0192	1.65	0.16	0.21	1.86
Stepping Stone Lake	0.0154	0.0004	0.0004	0.0158	0.0239	0.0046	0.0054	0.0293	1.99	0.26	0.31	2.30
Twin Island Lake	0.0149	0.0004	0.0004	0.0153	0.0235	0.0045	0.0053	0.0289	1.42	0.19	0.22	1.64
Emerald Lake	0.0280	0.0007	0.0008	0.0289	0.0728	0.0115	0.0148	0.0876	4.44	0.55	0.71	5.15
Florence Lake	0.0280	0.0006	0.0008	0.0287	0.0776	0.0104	0.0135	0.0911	8.09	0.87	1.13	9.22
Lower Saddlebag Lake	0.0115	0.0001	0.0001	0.0116	0.0302	0.0023	0.0029	0.0332	3.17	0.19	0.24	3.41

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Da sources include Alt. D sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.1.2.4 Estimated Acid Deposition Impacts of Montana Project under Alt. D (and Da) and Wyoming Project under Alt. 3[a]

Receptor Area	Sulfur (kg/ha/yr)				Nitrogen (kg/ha/yr)				Percent ANC Change			
	Non-MT Proj.	MT Project Alt D	MT Project Alt Da	Cumulative	Non-MT Proj.	MT Project Alt D	MT Project Alt Da	Cumulative	Non-MT Proj.	MT Project Alt D	MT Project Alt Da	Cumulative
Badlands WA	0.0333	0.0004	0.0005	0.0337	0.0829	0.0067	0.0085	0.0910				
Black Elk WA	0.0996	0.0006	0.0007	0.1003	0.1597	0.0103	0.0130	0.1726				
Mt Rushmore NM	0.0762	0.0006	0.0007	0.0769	0.1447	0.0100	0.0127	0.1574				
Wind Cave NP	0.0657	0.0006	0.0006	0.0663	0.1540	0.0088	0.0112	0.1648				
Jewel Cave NM	0.1102	0.0007	0.0008	0.1110	0.2026	0.0103	0.0129	0.2156				
Soldier Creek WA	0.0447	0.0005	0.0005	0.0453	0.1376	0.0073	0.0092	0.1468				
Agate Fossil Beds NM	0.0317	0.0004	0.0005	0.0322	0.0800	0.0063	0.0081	0.0881				
Ft Laramie NHS	0.0300	0.0003	0.0004	0.0304	0.0729	0.0054	0.0069	0.0797				
Devils Tower NM	0.0763	0.0024	0.0027	0.0789	0.2660	0.0293	0.0348	0.3008				
Cloud Peak WA	0.0353	0.0011	0.0014	0.0367	0.0732	0.0177	0.0236	0.0969				
Northern Cheyenne IR	0.0595	0.0242	0.0428	0.0972	0.1377	0.2561	0.5069	0.6163				
Crow IR	0.0970	0.0558	0.0579	0.1020	0.1732	0.4315	0.4859	0.6238				
Bighorn Canyon NRA	0.0355	0.0014	0.0017	0.0373	0.0656	0.0174	0.0262	0.0918				
Bridger WA	0.0099	0.0001	0.0001	0.0101	0.0207	0.0023	0.0029	0.0235				
Fitzpatrick WA	0.0088	0.0001	0.0002	0.0089	0.0143	0.0025	0.0033	0.0174				
Popo Agie WA	0.0123	0.0001	0.0002	0.0125	0.0241	0.0027	0.0034	0.0272				
Grand Teton NP	0.0046	0.0001	0.0001	0.0047	0.0093	0.0014	0.0017	0.0111				
Teton WA	0.0073	0.0002	0.0002	0.0075	0.0123	0.0025	0.0031	0.0154				
Washakie WA	0.0134	0.0004	0.0004	0.0137	0.0189	0.0043	0.0056	0.0245				
North Absaroka WA	0.0146	0.0007	0.0007	0.0153	0.0192	0.0065	0.0074	0.0266				
Yellowstone NP	0.0120	0.0003	0.0003	0.0123	0.0239	0.0035	0.0041	0.0270				
Absaroka-Beartooth WA	0.0540	0.0012	0.0013	0.0545	0.1802	0.0110	0.0122	0.1876				
Red Rock Lakes WA	0.0034	0.0001	0.0001	0.0035	0.0071	0.0011	0.0014	0.0085				
Gates of the Mtns WA	0.0140	0.0001	0.0001	0.0141	0.0332	0.0017	0.0022	0.0354				
Scapegoat WA	0.0053	0.0001	0.0001	0.0053	0.0103	0.0008	0.0010	0.0113				
UL Bend WA	0.0131	0.0004	0.0005	0.0136	0.0239	0.0046	0.0058	0.0297				
Ft Belknap IR	0.1239	0.0002	0.0003	0.1242	0.6026	0.0027	0.0035	0.6061				
Ft Peck IR	0.0078	0.0002	0.0002	0.0080	0.0170	0.0030	0.0038	0.0208				
Theodore Roosevelt NP/S	0.0214	0.0005	0.0006	0.0220	0.0518	0.0081	0.0105	0.0623				
Theodore Roosevelt NP/N	0.0128	0.0003	0.0003	0.0132	0.0315	0.0041	0.0053	0.0369				
Black Joe Lake	0.0087	0.0001	0.0001	0.0089	0.0192	0.0023	0.0029	0.0221	1.76	0.16	0.20	1.96
Deep Lake	0.0087	0.0001	0.0001	0.0089	0.0192	0.0022	0.0028	0.0221	1.99	0.17	0.22	2.21
Hobbs Lake	0.0056	0.0001	0.0001	0.0057	0.0119	0.0019	0.0025	0.0144	0.98	0.12	0.15	1.13
Upper Frozen Lake[b]	0.0089	0.0001	0.0001	0.0090	0.0194	0.0022	0.0028	0.0222	1.23	0.10	0.13	1.36
Ross Lake	0.0071	0.0001	0.0001	0.0072	0.0123	0.0021	0.0028	0.0151	1.34	0.16	0.21	1.55
Stepping Stone Lake	0.0152	0.0004	0.0004	0.0156	0.0205	0.0046	0.0054	0.0259	1.81	0.26	0.31	2.12
Twin Island Lake	0.0147	0.0004	0.0004	0.0151	0.0202	0.0045	0.0053	0.0255	1.28	0.19	0.22	1.51
Emerald Lake	0.0271	0.0007	0.0008	0.0279	0.0524	0.0115	0.0148	0.0672	3.47	0.55	0.71	4.18
Florence Lake	0.0269	0.0006	0.0008	0.0277	0.0554	0.0104	0.0135	0.0689	6.26	0.87	1.13	7.38
Lower Saddlebag Lake	0.0112	0.0001	0.0001	0.0114	0.0225	0.0023	0.0029	0.0254	2.54	0.19	0.24	2.78

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Alt. Da sources include Alt. D sources and RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.1.2.5 Estimated Acid Deposition Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 1[a]

Receptor Area	Sulfur (kg/ha/yr) Non-MT Proj.	Sulfur (kg/ha/yr) MT Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-MT Proj.	Nitrogen (kg/ha/yr) MT Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-MT Proj.	Percent ANC Change MT Proj.	Percent ANC Change Cumulative
Badlands WA	0.0343	0.0002	0.0346	0.1045	0.0021	0.1066			
Black Elk WA	0.1017	0.0004	0.1021	0.1973	0.0032	0.2005			
Mt Rushmore NM	0.0781	0.0004	0.0785	0.1799	0.0031	0.1830			
Wind Cave NP	0.0677	0.0003	0.0681	0.1896	0.0027	0.1921			
Jewel Cave NM	0.1132	0.0004	0.1136	0.2499	0.0031	0.2530			
Soldier Creek WA	0.0460	0.0003	0.0463	0.1618	0.0021	0.1639			
Agate Fossil Beds NM	0.0328	0.0002	0.0331	0.1004	0.0019	0.1023			
Ft Laramie NHS	0.0310	0.0002	0.0312	0.0921	0.0017	0.0938			
Devils Tower NM	0.0851	0.0015	0.0866	0.3767	0.0095	0.3862			
Cloud Peak WA	0.0367	0.0006	0.0374	0.1018	0.0054	0.1072			
Northern Cheyenne IR	0.0610	0.0051	0.0642	0.1844	0.0378	0.2195			
Crow IR	0.0979	0.0329	0.0991	0.2107	0.2008	0.3818			
Bighorn Canyon NRA	0.0362	0.0010	0.0372	0.0819	0.0069	0.0888			
Bridger WA	0.0102	0.0001	0.0102	0.0279	0.0008	0.0287			
Fitzpatrick WA	0.0090	0.0001	0.0091	0.0189	0.0009	0.0197			
Popo Agie WA	0.0126	0.0001	0.0127	0.0325	0.0009	0.0334			
Grand Teton NP	0.0047	0.0001	0.0047	0.0124	0.0006	0.0130			
Teton WA	0.0074	0.0001	0.0076	0.0156	0.0012	0.0168			
Washakie WA	0.0136	0.0003	0.0138	0.0241	0.0021	0.0259			
North Absaroka WA	0.0148	0.0006	0.0153	0.0231	0.0037	0.0268			
Yellowstone NP	0.0121	0.0002	0.0124	0.0264	0.0018	0.0276			
Absaroka-Beartooth WA	0.0541	0.0011	0.0545	0.1834	0.0065	0.1864			
Red Rock Lakes WA	0.0035	0.0000	0.0035	0.0085	0.0005	0.0090			
Gates of the Mtns WA	0.0140	0.0001	0.0141	0.0341	0.0008	0.0350			
Scapegoat WA	0.0053	0.0000	0.0054	0.0109	0.0004	0.0113			
UL Bend WA	0.0134	0.0004	0.0137	0.0283	0.0023	0.0306			
Ft Belknap IR	0.1241	0.0002	0.1243	0.6056	0.0013	0.6069			
Ft Peck IR	0.0080	0.0002	0.0082	0.0212	0.0011	0.0223			
Theodore Roosevelt NP/S	0.0221	0.0003	0.0224	0.0663	0.0027	0.0690			
Theodore Roosevelt NP/N	0.0132	0.0002	0.0134	0.0387	0.0015	0.0402			
Black Joe Lake	0.0090	0.0001	0.0090	0.0261	0.0008	0.0269	2.22	0.06	2.28
Deep Lake	0.0090	0.0001	0.0090	0.0261	0.0008	0.0269	2.51	0.06	2.57
Hobbs Lake	0.0057	0.0001	0.0058	0.0158	0.0007	0.0165	1.21	0.04	1.26
Upper Frozen Lake[b]	0.0091	0.0001	0.0092	0.0263	0.0008	0.0271	1.55	0.04	1.59
Ross Lake	0.0073	0.0001	0.0073	0.0165	0.0008	0.0172	1.65	0.06	1.71
Stepping Stone Lake	0.0154	0.0003	0.0157	0.0239	0.0022	0.0261	1.99	0.13	2.13
Twin Island Lake	0.0149	0.0003	0.0152	0.0235	0.0022	0.0258	1.42	0.10	1.52
Emerald Lake	0.0280	0.0004	0.0285	0.0728	0.0036	0.0764	4.44	0.18	4.62
Florence Lake	0.0280	0.0004	0.0283	0.0776	0.0032	0.0808	8.09	0.28	8.38
Lower Saddlebag Lake	0.0115	0.0001	0.0116	0.0302	0.0008	0.0310	3.17	0.07	3.24

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.1.2.6 Estimated Acid Deposition Impacts of Montana Project under Alt. A and Wyoming Project under Alt. 3[a]

Receptor Area	Sulfur (kg/ha/yr) Non-MT Proj.	Sulfur (kg/ha/yr) MT Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-MT Proj.	Nitrogen (kg/ha/yr) MT Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-MT Proj.	Percent ANC Change MT Proj.	Percent ANC Change Cumulative
Badlands WA	0.0333	0.0002	0.0335	0.0829	0.0021	0.0849			
Black Elk WA	0.0996	0.0004	0.1000	0.1597	0.0032	0.1628			
Mt Rushmore NM	0.0762	0.0004	0.0766	0.1447	0.0031	0.1478			
Wind Cave NP	0.0657	0.0003	0.0660	0.1540	0.0027	0.1565			
Jewel Cave NM	0.1102	0.0004	0.1106	0.2026	0.0031	0.2057			
Soldier Creek WA	0.0447	0.0003	0.0450	0.1376	0.0021	0.1397			
Agate Fossil Beds NM	0.0317	0.0002	0.0319	0.0800	0.0019	0.0819			
Ft Laramie NHS	0.0300	0.0002	0.0302	0.0729	0.0017	0.0746			
Devils Tower NM	0.0763	0.0015	0.0778	0.2660	0.0095	0.2755			
Cloud Peak WA	0.0353	0.0006	0.0359	0.0732	0.0054	0.0786			
Northern Cheyenne IR	0.0595	0.0051	0.0620	0.1377	0.0378	0.1755			
Crow IR	0.0970	0.0329	0.0983	0.1732	0.2008	0.3457			
Bighorn Canyon NRA	0.0355	0.0010	0.0365	0.0656	0.0069	0.0725			
Bridger WA	0.0099	0.0001	0.0100	0.0207	0.0008	0.0215			
Fitzpatrick WA	0.0088	0.0001	0.0089	0.0143	0.0009	0.0151			
Popo Agie WA	0.0123	0.0001	0.0124	0.0241	0.0009	0.0249			
Grand Teton NP	0.0046	0.0001	0.0046	0.0093	0.0006	0.0099			
Teton WA	0.0073	0.0001	0.0074	0.0123	0.0012	0.0135			
Washakie WA	0.0134	0.0003	0.0136	0.0189	0.0021	0.0207			
North Absaroka WA	0.0146	0.0006	0.0152	0.0192	0.0037	0.0229			
Yellowstone NP	0.0120	0.0002	0.0122	0.0239	0.0018	0.0251			
Absaroka-Beartooth WA	0.0540	0.0011	0.0544	0.1802	0.0065	0.1832			
Red Rock Lakes WA	0.0034	0.0000	0.0035	0.0071	0.0005	0.0075			
Gates of the Mtns WA	0.0140	0.0001	0.0140	0.0332	0.0008	0.0340			
Scapegoat WA	0.0053	0.0000	0.0053	0.0103	0.0004	0.0107			
UL Bend WA	0.0131	0.0004	0.0135	0.0239	0.0023	0.0262			
Ft Belknap IR	0.1239	0.0002	0.1241	0.6026	0.0013	0.6039			
Ft Peck IR	0.0078	0.0002	0.0080	0.0170	0.0011	0.0181			
Theodore Roosevelt NP/S	0.0214	0.0003	0.0218	0.0518	0.0027	0.0545			
Theodore Roosevelt NP/N	0.0128	0.0002	0.0130	0.0315	0.0015	0.0330			
Black Joe Lake	0.0087	0.0001	0.0088	0.0192	0.0008	0.0200	1.76	0.06	1.82
Deep Lake	0.0087	0.0001	0.0088	0.0192	0.0008	0.0200	1.99	0.06	2.05
Hobbs Lake	0.0056	0.0001	0.0056	0.0119	0.0007	0.0126	0.98	0.04	1.02
Upper Frozen Lake[b]	0.0089	0.0001	0.0090	0.0194	0.0008	0.0202	1.23	0.04	1.27
Ross Lake	0.0071	0.0001	0.0071	0.0123	0.0008	0.0131	1.34	0.06	1.40
Stepping Stone Lake	0.0152	0.0003	0.0155	0.0205	0.0022	0.0227	1.81	0.13	1.94
Twin Island Lake	0.0147	0.0003	0.0150	0.0202	0.0022	0.0224	1.28	0.10	1.38
Emerald Lake	0.0271	0.0004	0.0275	0.0524	0.0036	0.0560	3.47	0.18	3.65
Florence Lake	0.0269	0.0004	0.0273	0.0554	0.0032	0.0586	6.26	0.28	6.54
Lower Saddlebag Lake	0.0112	0.0001	0.0113	0.0225	0.0008	0.0233	2.54	0.07	2.61

[a] Non-Montana Project sources include Wyoming Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Montana Project sources, Wyoming Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2 Estimated Acid Deposition Impacts for Wyoming EIS

F.2.1 Estimated Acid Deposition Impacts of Non-Wyoming Project Sources

F.2.1.1 Estimated Acid Deposition Impacts of New and RFFA Sources and Montana Project under Alt. E[a]

Receptor Area	Sulfur (kg/ha/yr)			Nitrogen (kg/ha/yr)			Percent ANC Change		
	Non-Proj.	MT Proj.	Non-WY Proj.	Non-Proj.	MT Proj.	Non-WY Proj.	Non-Proj.	MT Proj.	Non-WY Proj.
Badlands WA	0.0326	0.0005	0.0330	0.0695	0.0172	0.0861			
Black Elk WA	0.0982	0.0008	0.0990	0.1354	0.0259	0.1612			
Mt Rushmore NM	0.0750	0.0007	0.0757	0.1222	0.0253	0.1475			
Wind Cave NP	0.0643	0.0007	0.0650	0.1314	0.0222	0.1529			
Jewel Cave NM	0.1083	0.0008	0.1091	0.1718	0.0256	0.1975			
Soldier Creek WA	0.0439	0.0006	0.0444	0.1226	0.0182	0.1408			
Agate Fossil Beds NM	0.0310	0.0005	0.0314	0.0673	0.0161	0.0834			
Ft Laramie NHS	0.0293	0.0004	0.0297	0.0612	0.0135	0.0747			
Devils Tower NM	0.0706	0.0027	0.0733	0.1974	0.0647	0.2620			
Cloud Peak WA	0.0340	0.0014	0.0355	0.0498	0.0496	0.0994			
Northern Cheyenne IR	0.0584	0.0434	0.0963	0.0980	0.7879	0.8818			
Crow IR	0.0965	0.0583	0.1014	0.1240	0.7547	0.8280			
Bighorn Canyon NRA	0.0350	0.0018	0.0368	0.0543	0.0540	0.1083			
Bridger WA	0.0098	0.0001	0.0099	0.0165	0.0058	0.0220			
Fitzpatrick WA	0.0087	0.0002	0.0088	0.0113	0.0066	0.0177			
Popo Agie WA	0.0122	0.0002	0.0123	0.0191	0.0067	0.0254			
Grand Teton NP	0.0045	0.0001	0.0046	0.0076	0.0033	0.0109			
Teton WA	0.0072	0.0002	0.0074	0.0102	0.0058	0.0160			
Washakie WA	0.0132	0.0004	0.0136	0.0155	0.0107	0.0262			
North Absaroka WA	0.0145	0.0007	0.0152	0.0168	0.0126	0.0294			
Yellowstone NP	0.0119	0.0003	0.0122	0.0224	0.0076	0.0280			
Absaroka-Beartooth WA	0.0539	0.0013	0.0544	0.1781	0.0202	0.1922			
Red Rock Lakes WA	0.0034	0.0001	0.0035	0.0062	0.0028	0.0090			
Gates of the Mtns WA	0.0139	0.0001	0.0141	0.0325	0.0041	0.0366			
Scapegoat WA	0.0053	0.0001	0.0053	0.0100	0.0019	0.0118			
UL Bend WA	0.0130	0.0005	0.0135	0.0210	0.0106	0.0317			
Ft Belknap IR	0.1239	0.0003	0.1241	0.6007	0.0064	0.6071			
Ft Peck IR	0.0077	0.0003	0.0079	0.0144	0.0074	0.0218			
Theodore Roosevelt NP/S	0.0210	0.0006	0.0216	0.0429	0.0208	0.0636			
Theodore Roosevelt NP/N	0.0126	0.0003	0.0129	0.0271	0.0105	0.0376			
Black Joe Lake	0.0086	0.0001	0.0087	0.0153	0.0057	0.0210	1.49	0.38	1.88
Deep Lake	0.0086	0.0001	0.0087	0.0153	0.0056	0.0209	1.69	0.43	2.12
Hobbs Lake	0.0055	0.0001	0.0056	0.0095	0.0049	0.0143	0.83	0.29	1.12
Upper Frozen Lake[b]	0.0087	0.0001	0.0089	0.0154	0.0055	0.0209	1.05	0.25	1.30
Ross Lake	0.0070	0.0001	0.0071	0.0098	0.0054	0.0152	1.15	0.40	1.55
Stepping Stone Lake	0.0151	0.0004	0.0155	0.0184	0.0099	0.0283	1.69	0.55	2.24
Twin Island Lake	0.0147	0.0004	0.0151	0.0180	0.0097	0.0277	1.20	0.39	1.59
Emerald Lake	0.0264	0.0009	0.0273	0.0378	0.0305	0.0684	2.78	1.43	4.20
Florence Lake	0.0261	0.0008	0.0269	0.0396	0.0280	0.0676	4.96	2.28	7.23
Lower Saddlebag Lake	0.0111	0.0001	0.0112	0.0179	0.0057	0.0236	2.17	0.46	2.63

[a] Non-project sources include other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.1.2 Estimated Acid Deposition Impacts of New and RFFA Sources and Montana Project under Alt. A[a]

Receptor Area	Sulfur (kg/ha/yr) Non-Proj.	Sulfur (kg/ha/yr) MT Proj.	Sulfur (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) Non-Proj.	Nitrogen (kg/ha/yr) MT Proj.	Nitrogen (kg/ha/yr) Non-WY Proj.	Percent ANC Change Non-Proj.	Percent ANC Change MT Proj.	Percent ANC Change Non-WY Proj.
Badlands WA	0.0326	0.0002	0.0328	0.0695	0.0021	0.0715			
Black Elk WA	0.0982	0.0004	0.0986	0.1354	0.0032	0.1386			
Mt Rushmore NM	0.0750	0.0004	0.0753	0.1222	0.0031	0.1253			
Wind Cave NP	0.0643	0.0003	0.0647	0.1314	0.0027	0.1339			
Jewel Cave NM	0.1083	0.0004	0.1087	0.1718	0.0031	0.1749			
Soldier Creek WA	0.0439	0.0003	0.0441	0.1226	0.0021	0.1247			
Agate Fossil Beds NM	0.0310	0.0002	0.0312	0.0673	0.0019	0.0692			
Ft Laramie NHS	0.0293	0.0002	0.0295	0.0612	0.0017	0.0628			
Devils Tower NM	0.0706	0.0015	0.0721	0.1974	0.0095	0.2069			
Cloud Peak WA	0.0340	0.0006	0.0347	0.0498	0.0054	0.0552			
Northern Cheyenne IR	0.0584	0.0051	0.0610	0.0980	0.0378	0.1357			
Crow IR	0.0965	0.0329	0.0977	0.1240	0.2008	0.3053			
Bighorn Canyon NRA	0.0350	0.0010	0.0360	0.0543	0.0069	0.0613			
Bridger WA	0.0098	0.0001	0.0099	0.0165	0.0008	0.0172			
Fitzpatrick WA	0.0087	0.0001	0.0088	0.0113	0.0009	0.0121			
Popo Agie WA	0.0122	0.0001	0.0122	0.0191	0.0009	0.0200			
Grand Teton NP	0.0045	0.0001	0.0046	0.0076	0.0006	0.0082			
Teton WA	0.0072	0.0001	0.0074	0.0102	0.0012	0.0114			
Washakie WA	0.0132	0.0003	0.0135	0.0155	0.0021	0.0173			
North Absaroka WA	0.0145	0.0006	0.0151	0.0168	0.0037	0.0205			
Yellowstone NP	0.0119	0.0002	0.0121	0.0224	0.0018	0.0235			
Absaroka-Beartooth WA	0.0539	0.0011	0.0543	0.1781	0.0065	0.1811			
Red Rock Lakes WA	0.0034	0.0000	0.0035	0.0062	0.0005	0.0067			
Gates of the Mtns WA	0.0139	0.0001	0.0140	0.0325	0.0008	0.0333			
Scapegoat WA	0.0053	0.0000	0.0053	0.0100	0.0004	0.0104			
UL Bend WA	0.0130	0.0004	0.0134	0.0210	0.0023	0.0234			
Ft Belknap IR	0.1239	0.0002	0.1241	0.6007	0.0013	0.6020			
Ft Peck IR	0.0077	0.0002	0.0078	0.0144	0.0011	0.0155			
Theodore Roosevelt NP/S	0.0210	0.0003	0.0213	0.0429	0.0027	0.0455			
Theodore Roosevelt NP/N	0.0126	0.0002	0.0128	0.0271	0.0015	0.0286			
Black Joe Lake	0.0086	0.0001	0.0087	0.0153	0.0008	0.0161	1.49	0.06	1.55
Deep Lake	0.0086	0.0001	0.0087	0.0153	0.0008	0.0161	1.69	0.06	1.75
Hobbs Lake	0.0055	0.0001	0.0055	0.0095	0.0007	0.0101	0.83	0.04	0.87
Upper Frozen Lake[b]	0.0087	0.0001	0.0088	0.0154	0.0008	0.0162	1.05	0.04	1.08
Ross Lake	0.0070	0.0001	0.0070	0.0098	0.0008	0.0105	1.15	0.06	1.21
Stepping Stone Lake	0.0151	0.0003	0.0154	0.0184	0.0022	0.0206	1.69	0.13	1.82
Twin Island Lake	0.0147	0.0003	0.0150	0.0180	0.0022	0.0203	1.20	0.10	1.30
Emerald Lake	0.0264	0.0004	0.0268	0.0378	0.0036	0.0414	2.78	0.18	2.96
Florence Lake	0.0261	0.0004	0.0265	0.0396	0.0032	0.0429	4.96	0.28	5.24
Lower Saddlebag Lake	0.0111	0.0001	0.0112	0.0179	0.0008	0.0187	2.17	0.07	2.24

[a] Non-project sources include other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2 Estimated Acid Deposition Impacts of Wyoming Project and Cumulative Sources

F.2.2.1 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. E[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0330	0.0018	0.0348	0.0861	0.0357	0.1217			
Black Elk WA	0.0990	0.0035	0.1025	0.1612	0.0619	0.2231			
Mt Rushmore NM	0.0757	0.0031	0.0788	0.1475	0.0577	0.2052			
Wind Cave NP	0.0650	0.0035	0.0684	0.1529	0.0587	0.2111			
Jewel Cave NM	0.1091	0.0048	0.1140	0.1975	0.0780	0.2755			
Soldier Creek WA	0.0444	0.0023	0.0466	0.1408	0.0398	0.1800			
Agate Fossil Beds NM	0.0314	0.0019	0.0333	0.0834	0.0331	0.1165			
Ft Laramie NHS	0.0297	0.0017	0.0314	0.0747	0.0310	0.1056			
Devils Tower NM	0.0733	0.0145	0.0878	0.2620	0.1793	0.4414			
Cloud Peak WA	0.0355	0.0027	0.0382	0.0994	0.0520	0.1515			
Northern Cheyenne IR	0.0963	0.0053	0.0999	0.8818	0.0885	0.9670			
Crow IR	0.1014	0.0056	0.1042	0.8280	0.0868	0.8996			
Bighorn Canyon NRA	0.0368	0.0012	0.0380	0.1083	0.0275	0.1359			
Bridger WA	0.0099	0.0004	0.0103	0.0220	0.0115	0.0335			
Fitzpatrick WA	0.0088	0.0004	0.0092	0.0177	0.0076	0.0252			
Popo Agie WA	0.0123	0.0005	0.0128	0.0254	0.0134	0.0388			
Grand Teton NP	0.0046	0.0002	0.0048	0.0109	0.0049	0.0157			
Teton WA	0.0074	0.0002	0.0076	0.0160	0.0056	0.0214			
Washakie WA	0.0136	0.0004	0.0140	0.0262	0.0089	0.0348			
North Absaroka WA	0.0152	0.0003	0.0155	0.0294	0.0063	0.0357			
Yellowstone NP	0.0122	0.0002	0.0124	0.0280	0.0052	0.0321			
Absaroka-Beartooth WA	0.0544	0.0003	0.0546	0.1922	0.0070	0.1975			
Red Rock Lakes WA	0.0035	0.0001	0.0036	0.0090	0.0023	0.0113			
Gates of the Mtns WA	0.0141	0.0001	0.0141	0.0366	0.0016	0.0383			
Scapegoat WA	0.0053	0.0000	0.0054	0.0118	0.0009	0.0128			
UL Bend WA	0.0135	0.0004	0.0139	0.0317	0.0073	0.0389			
Ft Belknap IR	0.1241	0.0002	0.1244	0.6071	0.0049	0.6120			
Ft Peck IR	0.0079	0.0003	0.0082	0.0218	0.0069	0.0285			
Theodore Roosevelt NP/S	0.0216	0.0011	0.0227	0.0636	0.0235	0.0870			
Theodore Roosevelt NP/N	0.0129	0.0006	0.0135	0.0376	0.0116	0.0492			
Black Joe Lake	0.0087	0.0004	0.0091	0.0210	0.0108	0.0318	1.88	0.73	2.60
Deep Lake	0.0087	0.0004	0.0091	0.0209	0.0108	0.0317	2.12	0.82	2.94
Hobbs Lake	0.0056	0.0002	0.0058	0.0143	0.0064	0.0207	1.12	0.38	1.50
Upper Frozen Lake[b]	0.0089	0.0004	0.0092	0.0209	0.0109	0.0318	1.30	0.51	1.81
Ross Lake	0.0071	0.0003	0.0074	0.0152	0.0067	0.0219	1.55	0.51	2.06
Stepping Stone Lake	0.0155	0.0002	0.0158	0.0283	0.0055	0.0337	2.24	0.30	2.54
Twin Island Lake	0.0151	0.0002	0.0153	0.0277	0.0055	0.0332	1.59	0.22	1.81
Emerald Lake	0.0273	0.0017	0.0289	0.0684	0.0350	0.1033	4.20	1.66	5.86
Florence Lake	0.0269	0.0018	0.0288	0.0676	0.0380	0.1056	7.23	3.14	10.37
Lower Saddlebag Lake	0.0112	0.0004	0.0117	0.0236	0.0123	0.0360	2.63	1.00	3.63

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2.2 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 1 and Montana Project under Alt. A[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0328	0.0018	0.0346	0.0715	0.0357	0.1066			
Black Elk WA	0.0986	0.0035	0.1021	0.1386	0.0619	0.2005			
Mt Rushmore NM	0.0753	0.0031	0.0785	0.1253	0.0577	0.1830			
Wind Cave NP	0.0647	0.0035	0.0681	0.1339	0.0587	0.1921			
Jewel Cave NM	0.1087	0.0048	0.1136	0.1749	0.0780	0.2530			
Soldier Creek WA	0.0441	0.0023	0.0463	0.1247	0.0398	0.1639			
Agate Fossil Beds NM	0.0312	0.0019	0.0331	0.0692	0.0331	0.1023			
Ft Laramie NHS	0.0295	0.0017	0.0312	0.0628	0.0310	0.0938			
Devils Tower NM	0.0721	0.0145	0.0866	0.2069	0.1793	0.3862			
Cloud Peak WA	0.0347	0.0027	0.0374	0.0552	0.0520	0.1072			
Northern Cheyenne IR	0.0610	0.0053	0.0642	0.1357	0.0885	0.2195			
Crow IR	0.0977	0.0056	0.0991	0.3053	0.0868	0.3818			
Bighorn Canyon NRA	0.0360	0.0012	0.0372	0.0613	0.0275	0.0888			
Bridger WA	0.0099	0.0004	0.0102	0.0172	0.0115	0.0287			
Fitzpatrick WA	0.0088	0.0004	0.0091	0.0121	0.0076	0.0197			
Popo Agie WA	0.0122	0.0005	0.0127	0.0200	0.0134	0.0334			
Grand Teton NP	0.0046	0.0002	0.0047	0.0082	0.0049	0.0130			
Teton WA	0.0074	0.0002	0.0076	0.0114	0.0056	0.0168			
Washakie WA	0.0135	0.0004	0.0138	0.0173	0.0089	0.0259			
North Absaroka WA	0.0151	0.0003	0.0153	0.0205	0.0063	0.0268			
Yellowstone NP	0.0121	0.0002	0.0124	0.0235	0.0052	0.0276			
Absaroka-Beartooth WA	0.0543	0.0003	0.0545	0.1811	0.0070	0.1864			
Red Rock Lakes WA	0.0035	0.0001	0.0035	0.0067	0.0023	0.0090			
Gates of the Mtns WA	0.0140	0.0001	0.0141	0.0333	0.0016	0.0350			
Scapegoat WA	0.0053	0.0000	0.0054	0.0104	0.0009	0.0113			
UL Bend WA	0.0134	0.0004	0.0137	0.0234	0.0073	0.0306			
Ft Belknap IR	0.1241	0.0002	0.1243	0.6020	0.0049	0.6069			
Ft Peck IR	0.0078	0.0003	0.0082	0.0155	0.0069	0.0223			
Theodore Roosevelt NP/S	0.0213	0.0011	0.0224	0.0455	0.0235	0.0690			
Theodore Roosevelt NP/N	0.0128	0.0006	0.0134	0.0286	0.0116	0.0402			
Black Joe Lake	0.0087	0.0004	0.0090	0.0161	0.0108	0.0269	1.55	0.73	2.28
Deep Lake	0.0087	0.0004	0.0090	0.0161	0.0108	0.0269	1.75	0.82	2.57
Hobbs Lake	0.0055	0.0002	0.0058	0.0101	0.0064	0.0165	0.87	0.38	1.26
Upper Frozen Lake[b]	0.0088	0.0004	0.0092	0.0162	0.0109	0.0271	1.08	0.51	1.59
Ross Lake	0.0070	0.0003	0.0073	0.0105	0.0067	0.0172	1.21	0.51	1.71
Stepping Stone Lake	0.0154	0.0002	0.0157	0.0206	0.0055	0.0261	1.82	0.30	2.13
Twin Island Lake	0.0150	0.0002	0.0152	0.0203	0.0055	0.0258	1.30	0.22	1.52
Emerald Lake	0.0268	0.0017	0.0285	0.0414	0.0350	0.0764	2.96	1.66	4.62
Florence Lake	0.0265	0.0018	0.0283	0.0429	0.0380	0.0808	5.24	3.14	8.38
Lower Saddlebag Lake	0.0112	0.0004	0.0116	0.0187	0.0123	0.0310	2.24	1.00	3.24

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2.3 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. E[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0330	0.0018	0.0348	0.0861	0.0312	0.1172			
Black Elk WA	0.0990	0.0035	0.1025	0.1612	0.0544	0.2156			
Mt Rushmore NM	0.0757	0.0031	0.0788	0.1475	0.0505	0.1980			
Wind Cave NP	0.0650	0.0034	0.0684	0.1529	0.0516	0.2041			
Jewel Cave NM	0.1091	0.0048	0.1139	0.1975	0.0690	0.2664			
Soldier Creek WA	0.0444	0.0022	0.0466	0.1408	0.0349	0.1752			
Agate Fossil Beds NM	0.0314	0.0018	0.0333	0.0834	0.0291	0.1125			
Ft Laramie NHS	0.0297	0.0017	0.0314	0.0747	0.0273	0.1019			
Devils Tower NM	0.0733	0.0145	0.0878	0.2620	0.1601	0.4222			
Cloud Peak WA	0.0355	0.0027	0.0382	0.0994	0.0459	0.1453			
Northern Cheyenne IR	0.0963	0.0052	0.0998	0.8818	0.0782	0.9568			
Crow IR	0.1014	0.0055	0.1042	0.8280	0.0778	0.8913			
Bighorn Canyon NRA	0.0368	0.0012	0.0380	0.1083	0.0239	0.1322			
Bridger WA	0.0099	0.0004	0.0103	0.0220	0.0101	0.0320			
Fitzpatrick WA	0.0088	0.0004	0.0092	0.0177	0.0067	0.0244			
Popo Agie WA	0.0123	0.0005	0.0128	0.0254	0.0117	0.0371			
Grand Teton NP	0.0046	0.0002	0.0048	0.0109	0.0043	0.0151			
Teton WA	0.0074	0.0002	0.0076	0.0160	0.0049	0.0207			
Washakie WA	0.0136	0.0004	0.0139	0.0262	0.0078	0.0337			
North Absaroka WA	0.0152	0.0003	0.0155	0.0294	0.0055	0.0349			
Yellowstone NP	0.0122	0.0002	0.0124	0.0280	0.0045	0.0316			
Absaroka-Beartooth WA	0.0544	0.0003	0.0546	0.1922	0.0061	0.1968			
Red Rock Lakes WA	0.0035	0.0001	0.0036	0.0090	0.0020	0.0111			
Gates of the Mtns WA	0.0141	0.0001	0.0141	0.0366	0.0014	0.0381			
Scapegoat WA	0.0053	0.0000	0.0054	0.0118	0.0008	0.0127			
UL Bend WA	0.0135	0.0004	0.0139	0.0317	0.0064	0.0380			
Ft Belknap IR	0.1241	0.0002	0.1244	0.6071	0.0043	0.6114			
Ft Peck IR	0.0079	0.0003	0.0082	0.0218	0.0061	0.0277			
Theodore Roosevelt NP/S	0.0216	0.0011	0.0227	0.0636	0.0206	0.0842			
Theodore Roosevelt NP/N	0.0129	0.0006	0.0135	0.0376	0.0102	0.0478			
Black Joe Lake	0.0087	0.0004	0.0091	0.0210	0.0095	0.0305	1.88	0.64	2.52
Deep Lake	0.0087	0.0004	0.0091	0.0209	0.0095	0.0304	2.12	0.72	2.84
Hobbs Lake	0.0056	0.0002	0.0058	0.0143	0.0056	0.0199	1.12	0.34	1.46
Upper Frozen Lake[b]	0.0089	0.0004	0.0092	0.0209	0.0095	0.0305	1.30	0.45	1.75
Ross Lake	0.0071	0.0003	0.0074	0.0152	0.0059	0.0211	1.55	0.45	2.00
Stepping Stone Lake	0.0155	0.0002	0.0158	0.0283	0.0048	0.0330	2.24	0.27	2.50
Twin Island Lake	0.0151	0.0002	0.0153	0.0277	0.0048	0.0325	1.59	0.19	1.78
Emerald Lake	0.0273	0.0017	0.0289	0.0684	0.0309	0.0993	4.20	1.47	5.68
Florence Lake	0.0269	0.0018	0.0288	0.0676	0.0335	0.1011	7.23	2.79	10.02
Lower Saddlebag Lake	0.0112	0.0004	0.0116	0.0236	0.0108	0.0345	2.63	0.88	3.51

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2.4 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 2a and Montana Project under Alt. A[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0328	0.0018	0.0346	0.0715	0.0312	0.1021			
Black Elk WA	0.0986	0.0035	0.1021	0.1386	0.0544	0.1929			
Mt Rushmore NM	0.0753	0.0031	0.0785	0.1253	0.0505	0.1759			
Wind Cave NP	0.0647	0.0034	0.0680	0.1339	0.0516	0.1851			
Jewel Cave NM	0.1087	0.0048	0.1135	0.1749	0.0690	0.2439			
Soldier Creek WA	0.0441	0.0022	0.0463	0.1247	0.0349	0.1591			
Agate Fossil Beds NM	0.0312	0.0018	0.0330	0.0692	0.0291	0.0983			
Ft Laramie NHS	0.0295	0.0017	0.0312	0.0628	0.0273	0.0901			
Devils Tower NM	0.0721	0.0145	0.0866	0.2069	0.1601	0.3670			
Cloud Peak WA	0.0347	0.0027	0.0373	0.0552	0.0459	0.1011			
Northern Cheyenne IR	0.0610	0.0052	0.0642	0.1357	0.0782	0.2095			
Crow IR	0.0977	0.0055	0.0991	0.3053	0.0778	0.3733			
Bighorn Canyon NRA	0.0360	0.0012	0.0372	0.0613	0.0239	0.0852			
Bridger WA	0.0099	0.0004	0.0102	0.0172	0.0101	0.0273			
Fitzpatrick WA	0.0088	0.0004	0.0091	0.0121	0.0067	0.0188			
Popo Agie WA	0.0122	0.0005	0.0127	0.0200	0.0117	0.0317			
Grand Teton NP	0.0046	0.0002	0.0047	0.0082	0.0043	0.0124			
Teton WA	0.0074	0.0002	0.0076	0.0114	0.0049	0.0161			
Washakie WA	0.0135	0.0004	0.0138	0.0173	0.0078	0.0248			
North Absaroka WA	0.0151	0.0003	0.0153	0.0205	0.0055	0.0260			
Yellowstone NP	0.0121	0.0002	0.0124	0.0235	0.0045	0.0271			
Absaroka-Beartooth WA	0.0543	0.0003	0.0545	0.1811	0.0061	0.1857			
Red Rock Lakes WA	0.0035	0.0001	0.0035	0.0067	0.0020	0.0087			
Gates of the Mtns WA	0.0140	0.0001	0.0141	0.0333	0.0014	0.0348			
Scapegoat WA	0.0053	0.0000	0.0054	0.0104	0.0008	0.0112			
UL Bend WA	0.0134	0.0004	0.0137	0.0234	0.0064	0.0298			
Ft Belknap IR	0.1241	0.0002	0.1243	0.6020	0.0043	0.6063			
Ft Peck IR	0.0078	0.0003	0.0082	0.0155	0.0061	0.0215			
Theodore Roosevelt NP/S	0.0213	0.0011	0.0224	0.0455	0.0206	0.0661			
Theodore Roosevelt NP/N	0.0128	0.0006	0.0134	0.0286	0.0102	0.0388			
Black Joe Lake	0.0087	0.0004	0.0090	0.0161	0.0095	0.0255	1.55	0.64	2.19
Deep Lake	0.0087	0.0004	0.0090	0.0161	0.0095	0.0255	1.75	0.72	2.48
Hobbs Lake	0.0055	0.0002	0.0058	0.0101	0.0056	0.0157	0.87	0.34	1.21
Upper Frozen Lake[b]	0.0088	0.0004	0.0092	0.0162	0.0095	0.0257	1.08	0.45	1.53
Ross Lake	0.0070	0.0003	0.0073	0.0105	0.0059	0.0165	1.21	0.45	1.66
Stepping Stone Lake	0.0154	0.0002	0.0157	0.0206	0.0048	0.0254	1.82	0.27	2.09
Twin Island Lake	0.0150	0.0002	0.0152	0.0203	0.0048	0.0251	1.30	0.19	1.49
Emerald Lake	0.0268	0.0017	0.0284	0.0414	0.0309	0.0723	2.96	1.47	4.43
Florence Lake	0.0265	0.0018	0.0283	0.0429	0.0335	0.0764	5.24	2.79	8.02
Lower Saddlebag Lake	0.0112	0.0004	0.0116	0.0187	0.0108	0.0295	2.24	0.88	3.12

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2.5 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. E[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0330	0.0018	0.0348	0.0861	0.0270	0.1130			
Black Elk WA	0.0990	0.0035	0.1024	0.1612	0.0471	0.2084			
Mt Rushmore NM	0.0757	0.0031	0.0788	0.1475	0.0437	0.1912			
Wind Cave NP	0.0650	0.0034	0.0684	0.1529	0.0447	0.1974			
Jewel Cave NM	0.1091	0.0048	0.1139	0.1975	0.0601	0.2576			
Soldier Creek WA	0.0444	0.0022	0.0466	0.1408	0.0304	0.1707			
Agate Fossil Beds NM	0.0314	0.0018	0.0333	0.0834	0.0254	0.1089			
Ft Laramie NHS	0.0297	0.0017	0.0314	0.0747	0.0238	0.0985			
Devils Tower NM	0.0733	0.0144	0.0877	0.2620	0.1412	0.4032			
Cloud Peak WA	0.0355	0.0027	0.0381	0.0994	0.0401	0.1395			
Northern Cheyenne IR	0.0963	0.0052	0.0998	0.8818	0.0681	0.9469			
Crow IR	0.1014	0.0055	0.1042	0.8280	0.0690	0.8833			
Bighorn Canyon NRA	0.0368	0.0012	0.0380	0.1083	0.0205	0.1288			
Bridger WA	0.0099	0.0004	0.0103	0.0220	0.0087	0.0307			
Fitzpatrick WA	0.0088	0.0004	0.0092	0.0177	0.0058	0.0235			
Popo Agie WA	0.0123	0.0005	0.0128	0.0254	0.0101	0.0355			
Grand Teton NP	0.0046	0.0002	0.0048	0.0109	0.0037	0.0145			
Teton WA	0.0074	0.0002	0.0076	0.0160	0.0042	0.0200			
Washakie WA	0.0136	0.0004	0.0139	0.0262	0.0068	0.0328			
North Absaroka WA	0.0152	0.0003	0.0155	0.0294	0.0048	0.0342			
Yellowstone NP	0.0122	0.0002	0.0124	0.0280	0.0039	0.0311			
Absaroka-Beartooth WA	0.0544	0.0003	0.0546	0.1922	0.0053	0.1962			
Red Rock Lakes WA	0.0035	0.0001	0.0036	0.0090	0.0018	0.0108			
Gates of the Mtns WA	0.0141	0.0001	0.0141	0.0366	0.0013	0.0379			
Scapegoat WA	0.0053	0.0000	0.0054	0.0118	0.0007	0.0126			
UL Bend WA	0.0135	0.0004	0.0138	0.0317	0.0056	0.0373			
Ft Belknap IR	0.1241	0.0002	0.1244	0.6071	0.0038	0.6109			
Ft Peck IR	0.0079	0.0003	0.0082	0.0218	0.0053	0.0270			
Theodore Roosevelt NP/S	0.0216	0.0011	0.0227	0.0636	0.0180	0.0816			
Theodore Roosevelt NP/N	0.0129	0.0006	0.0135	0.0376	0.0089	0.0465			
Black Joe Lake	0.0087	0.0004	0.0091	0.0210	0.0082	0.0292	1.88	0.56	2.43
Deep Lake	0.0087	0.0004	0.0091	0.0209	0.0082	0.0291	2.12	0.63	2.74
Hobbs Lake	0.0056	0.0002	0.0058	0.0143	0.0049	0.0192	1.12	0.29	1.42
Upper Frozen Lake[b]	0.0089	0.0004	0.0092	0.0209	0.0082	0.0292	1.30	0.39	1.69
Ross Lake	0.0071	0.0003	0.0074	0.0152	0.0052	0.0204	1.55	0.40	1.95
Stepping Stone Lake	0.0155	0.0002	0.0158	0.0283	0.0041	0.0324	2.24	0.23	2.47
Twin Island Lake	0.0151	0.0002	0.0153	0.0277	0.0042	0.0319	1.59	0.17	1.76
Emerald Lake	0.0273	0.0016	0.0289	0.0684	0.0270	0.0954	4.20	1.30	5.50
Florence Lake	0.0269	0.0018	0.0287	0.0676	0.0293	0.0969	7.23	2.45	9.68
Lower Saddlebag Lake	0.0112	0.0004	0.0116	0.0236	0.0093	0.0330	2.63	0.76	3.40

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2.6 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 2b and Montana Project under Alt. A[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0328	0.0018	0.0346	0.0715	0.0270	0.0979			
Black Elk WA	0.0986	0.0035	0.1021	0.1386	0.0471	0.1857			
Mt Rushmore NM	0.0753	0.0031	0.0784	0.1253	0.0437	0.1690			
Wind Cave NP	0.0647	0.0034	0.0680	0.1339	0.0447	0.1783			
Jewel Cave NM	0.1087	0.0048	0.1135	0.1749	0.0601	0.2351			
Soldier Creek WA	0.0441	0.0022	0.0463	0.1247	0.0304	0.1546			
Agate Fossil Beds NM	0.0312	0.0018	0.0330	0.0692	0.0254	0.0947			
Ft Laramie NHS	0.0295	0.0017	0.0312	0.0628	0.0238	0.0866			
Devils Tower NM	0.0721	0.0144	0.0865	0.2069	0.1412	0.3481			
Cloud Peak WA	0.0347	0.0027	0.0373	0.0552	0.0401	0.0952			
Northern Cheyenne IR	0.0610	0.0052	0.0642	0.1357	0.0681	0.1997			
Crow IR	0.0977	0.0055	0.0991	0.3053	0.0690	0.3650			
Bighorn Canyon NRA	0.0360	0.0012	0.0372	0.0613	0.0205	0.0817			
Bridger WA	0.0099	0.0004	0.0102	0.0172	0.0087	0.0259			
Fitzpatrick WA	0.0088	0.0004	0.0091	0.0121	0.0058	0.0179			
Popo Agie WA	0.0122	0.0005	0.0127	0.0200	0.0101	0.0301			
Grand Teton NP	0.0046	0.0002	0.0047	0.0082	0.0037	0.0118			
Teton WA	0.0074	0.0002	0.0076	0.0114	0.0042	0.0155			
Washakie WA	0.0135	0.0004	0.0138	0.0173	0.0068	0.0239			
North Absaroka WA	0.0151	0.0003	0.0153	0.0205	0.0048	0.0252			
Yellowstone NP	0.0121	0.0002	0.0123	0.0235	0.0039	0.0266			
Absaroka-Beartooth WA	0.0543	0.0003	0.0545	0.1811	0.0053	0.1851			
Red Rock Lakes WA	0.0035	0.0001	0.0035	0.0067	0.0018	0.0084			
Gates of the Mtns WA	0.0140	0.0001	0.0141	0.0333	0.0013	0.0346			
Scapegoat WA	0.0053	0.0000	0.0054	0.0104	0.0007	0.0111			
UL Bend WA	0.0134	0.0004	0.0137	0.0234	0.0056	0.0290			
Ft Belknap IR	0.1241	0.0002	0.1243	0.6020	0.0038	0.6058			
Ft Peck IR	0.0078	0.0003	0.0081	0.0155	0.0053	0.0207			
Theodore Roosevelt NP/S	0.0213	0.0011	0.0224	0.0455	0.0180	0.0635			
Theodore Roosevelt NP/N	0.0128	0.0006	0.0134	0.0286	0.0089	0.0375			
Black Joe Lake	0.0087	0.0004	0.0090	0.0161	0.0082	0.0243	1.55	0.56	2.11
Deep Lake	0.0087	0.0004	0.0090	0.0161	0.0082	0.0242	1.75	0.63	2.38
Hobbs Lake	0.0055	0.0002	0.0058	0.0101	0.0049	0.0150	0.87	0.29	1.17
Upper Frozen Lake[b]	0.0088	0.0004	0.0092	0.0162	0.0082	0.0244	1.08	0.39	1.47
Ross Lake	0.0070	0.0003	0.0073	0.0105	0.0052	0.0157	1.21	0.40	1.61
Stepping Stone Lake	0.0154	0.0002	0.0157	0.0206	0.0041	0.0248	1.82	0.23	2.06
Twin Island Lake	0.0150	0.0002	0.0152	0.0203	0.0042	0.0244	1.30	0.17	1.47
Emerald Lake	0.0268	0.0016	0.0284	0.0414	0.0270	0.0684	2.96	1.30	4.26
Florence Lake	0.0265	0.0018	0.0283	0.0429	0.0293	0.0722	5.24	2.45	7.69
Lower Saddlebag Lake	0.0112	0.0004	0.0116	0.0187	0.0093	0.0280	2.24	0.76	3.00

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2.7 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. E[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0330	0.0007	0.0337	0.0861	0.0137	0.0998			
Black Elk WA	0.0990	0.0014	0.1004	0.1612	0.0242	0.1855			
Mt Rushmore NM	0.0757	0.0012	0.0769	0.1475	0.0225	0.1700			
Wind Cave NP	0.0650	0.0014	0.0663	0.1529	0.0229	0.1756			
Jewel Cave NM	0.1091	0.0019	0.1110	0.1975	0.0308	0.2282			
Soldier Creek WA	0.0444	0.0009	0.0453	0.1408	0.0152	0.1558			
Agate Fossil Beds NM	0.0314	0.0007	0.0322	0.0834	0.0127	0.0961			
Ft Laramie NHS	0.0297	0.0007	0.0304	0.0747	0.0117	0.0864			
Devils Tower NM	0.0733	0.0057	0.0790	0.2620	0.0686	0.3307			
Cloud Peak WA	0.0355	0.0012	0.0367	0.0994	0.0234	0.1229			
Northern Cheyenne IR	0.0963	0.0022	0.0979	0.8818	0.0398	0.9187			
Crow IR	0.1014	0.0030	0.1026	0.8280	0.0493	0.8634			
Bighorn Canyon NRA	0.0368	0.0005	0.0373	0.1083	0.0113	0.1196			
Bridger WA	0.0099	0.0001	0.0101	0.0220	0.0042	0.0262			
Fitzpatrick WA	0.0088	0.0001	0.0089	0.0177	0.0030	0.0206			
Popo Agie WA	0.0123	0.0002	0.0125	0.0254	0.0049	0.0303			
Grand Teton NP	0.0046	0.0001	0.0047	0.0109	0.0018	0.0126			
Teton WA	0.0074	0.0001	0.0075	0.0160	0.0021	0.0180			
Washakie WA	0.0136	0.0002	0.0137	0.0262	0.0035	0.0296			
North Absaroka WA	0.0152	0.0001	0.0153	0.0294	0.0024	0.0318			
Yellowstone NP	0.0122	0.0001	0.0123	0.0280	0.0020	0.0296			
Absaroka-Beartooth WA	0.0544	0.0001	0.0545	0.1922	0.0028	0.1943			
Red Rock Lakes WA	0.0035	0.0000	0.0035	0.0090	0.0009	0.0099			
Gates of the Mtns WA	0.0141	0.0000	0.0141	0.0366	0.0007	0.0373			
Scapegoat WA	0.0053	0.0000	0.0053	0.0118	0.0004	0.0122			
UL Bend WA	0.0135	0.0001	0.0136	0.0317	0.0028	0.0345			
Ft Belknap IR	0.1241	0.0001	0.1242	0.6071	0.0019	0.6090			
Ft Peck IR	0.0079	0.0001	0.0080	0.0218	0.0027	0.0244			
Theodore Roosevelt NP/S	0.0216	0.0004	0.0220	0.0636	0.0090	0.0726			
Theodore Roosevelt NP/N	0.0129	0.0002	0.0132	0.0376	0.0044	0.0420			
Black Joe Lake	0.0087	0.0001	0.0089	0.0210	0.0040	0.0250	1.88	0.27	2.14
Deep Lake	0.0087	0.0001	0.0089	0.0209	0.0040	0.0249	2.12	0.30	2.42
Hobbs Lake	0.0056	0.0001	0.0057	0.0143	0.0025	0.0168	1.12	0.15	1.27
Upper Frozen Lake[b]	0.0089	0.0001	0.0090	0.0209	0.0040	0.0249	1.30	0.19	1.49
Ross Lake	0.0071	0.0001	0.0072	0.0152	0.0026	0.0177	1.55	0.19	1.74
Stepping Stone Lake	0.0155	0.0001	0.0156	0.0283	0.0021	0.0304	2.24	0.12	2.35
Twin Island Lake	0.0151	0.0001	0.0151	0.0277	0.0021	0.0299	1.59	0.09	1.68
Emerald Lake	0.0273	0.0007	0.0280	0.0684	0.0146	0.0829	4.20	0.69	4.90
Florence Lake	0.0269	0.0008	0.0277	0.0676	0.0157	0.0834	7.23	1.30	8.53
Lower Saddlebag Lake	0.0112	0.0002	0.0114	0.0236	0.0046	0.0282	2.63	0.37	3.00

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.

F.2.2.8 Estimated Acid Deposition Impacts of Wyoming Project under Alt. 3 and Montana Project under Alt. A[a]

Receptor Area	Sulfur (kg/ha/yr) Non-WY Proj.	Sulfur (kg/ha/yr) WY Proj.	Sulfur (kg/ha/yr) Cumulative	Nitrogen (kg/ha/yr) Non-WY Proj.	Nitrogen (kg/ha/yr) WY Proj.	Nitrogen (kg/ha/yr) Cumulative	Percent ANC Change Non-WY Proj.	Percent ANC Change WY Proj.	Percent ANC Change Cumulative
Badlands WA	0.0328	0.0007	0.0335	0.0715	0.0137	0.0849			
Black Elk WA	0.0986	0.0014	0.1000	0.1386	0.0242	0.1628			
Mt Rushmore NM	0.0753	0.0012	0.0766	0.1253	0.0225	0.1478			
Wind Cave NP	0.0647	0.0014	0.0660	0.1339	0.0229	0.1565			
Jewel Cave NM	0.1087	0.0019	0.1106	0.1749	0.0308	0.2057			
Soldier Creek WA	0.0441	0.0009	0.0450	0.1247	0.0152	0.1397			
Agate Fossil Beds NM	0.0312	0.0007	0.0319	0.0692	0.0127	0.0819			
Ft Laramie NHS	0.0295	0.0007	0.0302	0.0628	0.0117	0.0746			
Devils Tower NM	0.0721	0.0057	0.0778	0.2069	0.0686	0.2755			
Cloud Peak WA	0.0347	0.0012	0.0359	0.0552	0.0234	0.0786			
Northern Cheyenne IR	0.0610	0.0022	0.0620	0.1357	0.0398	0.1755			
Crow IR	0.0977	0.0030	0.0983	0.3053	0.0493	0.3457			
Bighorn Canyon NRA	0.0360	0.0005	0.0365	0.0613	0.0113	0.0725			
Bridger WA	0.0099	0.0001	0.0100	0.0172	0.0042	0.0215			
Fitzpatrick WA	0.0088	0.0001	0.0089	0.0121	0.0030	0.0151			
Popo Agie WA	0.0122	0.0002	0.0124	0.0200	0.0049	0.0249			
Grand Teton NP	0.0046	0.0001	0.0046	0.0082	0.0018	0.0099			
Teton WA	0.0074	0.0001	0.0074	0.0114	0.0021	0.0135			
Washakie WA	0.0135	0.0002	0.0136	0.0173	0.0035	0.0207			
North Absaroka WA	0.0151	0.0001	0.0152	0.0205	0.0024	0.0229			
Yellowstone NP	0.0121	0.0001	0.0122	0.0235	0.0020	0.0251			
Absaroka-Beartooth WA	0.0543	0.0001	0.0544	0.1811	0.0028	0.1832			
Red Rock Lakes WA	0.0035	0.0000	0.0035	0.0067	0.0009	0.0075			
Gates of the Mtns WA	0.0140	0.0000	0.0140	0.0333	0.0007	0.0340			
Scapegoat WA	0.0053	0.0000	0.0053	0.0104	0.0004	0.0107			
UL Bend WA	0.0134	0.0001	0.0135	0.0234	0.0028	0.0262			
Ft Belknap IR	0.1241	0.0001	0.1241	0.6020	0.0019	0.6039			
Ft Peck IR	0.0078	0.0001	0.0080	0.0155	0.0027	0.0181			
Theodore Roosevelt NP/S	0.0213	0.0004	0.0218	0.0455	0.0090	0.0545			
Theodore Roosevelt NP/N	0.0128	0.0002	0.0130	0.0286	0.0044	0.0330			
Black Joe Lake	0.0087	0.0001	0.0088	0.0161	0.0040	0.0200	1.55	0.27	1.82
Deep Lake	0.0087	0.0001	0.0088	0.0161	0.0040	0.0200	1.75	0.30	2.05
Hobbs Lake	0.0055	0.0001	0.0056	0.0101	0.0025	0.0126	0.87	0.15	1.02
Upper Frozen Lake[b]	0.0088	0.0001	0.0090	0.0162	0.0040	0.0202	1.08	0.19	1.27
Ross Lake	0.0070	0.0001	0.0071	0.0105	0.0026	0.0131	1.21	0.19	1.40
Stepping Stone Lake	0.0154	0.0001	0.0155	0.0206	0.0021	0.0227	1.82	0.12	1.94
Twin Island Lake	0.0150	0.0001	0.0150	0.0203	0.0021	0.0224	1.30	0.09	1.38
Emerald Lake	0.0268	0.0007	0.0275	0.0414	0.0146	0.0560	2.96	0.69	3.65
Florence Lake	0.0265	0.0008	0.0273	0.0429	0.0157	0.0586	5.24	1.30	6.54
Lower Saddlebag Lake	0.0112	0.0002	0.0113	0.0187	0.0046	0.0233	2.24	0.37	2.61

[a] Non-Wyoming Project sources include Montana Project sources and other new and RFFA sources, excluding RFFA sources on the IR and FS lands. Cumulative sources include Wyoming Project sources, Montana Project sources, and other new and RFFA sources, excluding RFFA sources on the IR and FS lands.

[b] ANC changes are in μeq/L. The baseline ANC is 5.80 μeq/L.