

Surface Mobile																					
Onroad or Nonroad?	Fuel type	Unit Type	Manufacturer	Description	Model	Mine Unit #	Mine Working	Road Type	MOVES name (assumed model year 2020 except as stated in notes in this column)	max. gross hp		Onroad NOx emission	Onroad SO2 emission	Nonroad NOx emission	Nonroad SO2 emission	Nonroad Load	NOx emissions g/yr	NOx emissions t/yr	SO2 emissions g/yr	SO2 emissions t/yr	
Nonroad?							Group	Travelled		rating (hp)	km/yr	operating hr/yr	factor g/km	factor g/km	factor g/hp-hr	factor g/hp-hr	Factor				
nonroad	diesel	Loader	CAT		IT62H	65LOA01	E&I	PIT	Rubber Tire Loaders	230.0	N/A	2610	N/A	N/A	0.11	0.0035	0.59	39549	0.04	1252	0.0013
nonroad	diesel	Loader	KOMATSU		WA500	65LOA02	E&I	PIT	Rubber Tire Loaders	357.0	N/A	3489	N/A	N/A	0.11	0.0035	0.59	81870	0.08	2597	0.0026
nonroad	diesel	Loader	KOMATSU		WA500	65LOA03	CONST	PIT	Rubber Tire Loaders	357.0	N/A	1937	N/A	N/A	0.11	0.0035	0.59	45452	0.05	1442	0.0014
nonroad	diesel	Loader	CAT	DYNO	962H	65LOA04	DYNO	PIT	Rubber Tire Loaders	230.0	N/A	2678	N/A	N/A	0.11	0.0035	0.59	40580	0.04	1284	0.0013
nonroad	diesel	Loader	CAT		980M	65LOA06	E&I	PIT	Rubber Tire Loaders	425.0	N/A	4467	N/A	N/A	0.11	0.0035	0.59	124784	0.12	3958	0.0040
nonroad	diesel	Loader	CAT		914M	65LOA07	CONST	PIT	Rubber Tire Loaders	102.0	N/A	1146	N/A	N/A	0.17	0.0035	0.59	11641	0.01	244	0.0002
nonroad	diesel	Loader	CAT		988K	65LOA08	E&I	PIT	Rubber Tire Loaders	580.0	N/A	4937	N/A	N/A	0.11	0.0035	0.59	188211	0.19	5970	0.0060
nonroad	diesel	Loader	CAT		988K	65LOA09	E&I	PIT	Rubber Tire Loaders	580.0	N/A	3766	N/A	N/A	0.11	0.0035	0.59	143570	0.14	4554	0.0046
nonroad	diesel	Loader	CAT		988K	65LOA10	E&I	PIT	Rubber Tire Loaders	580.0	N/A	7101	N/A	N/A	0.11	0.0035	0.59	270709	0.27	8587	0.0086
nonroad	diesel	Loader	CAT		988K	65LOA11	E&I	PIT	Rubber Tire Loaders	580.0	N/A	6938	N/A	N/A	0.11	0.0035	0.59	264495	0.26	8390	0.0084
nonroad	diesel	Loader	VOLVO		L110E	65LOA13	FTIRE	PIT	Rubber Tire Loaders	231.0	N/A	1544	N/A	N/A	0.11	0.0035	0.59	23498	0.02	744	0.0007
nonroad	diesel	Haul Truck	VOLVO	39t load capacity (A40G		65HTR10	E&I	PIT	Off-highway Trucks	476.0	N/A	6344	N/A	N/A	0.11	0.0035	0.59	198957	0.20	6296	0.0063
nonroad	diesel	Haul Truck	VOLVO	39t load capacity (A40G		65HTR11	E&I	PIT	Off-highway Trucks	476.0	N/A	7181	N/A	N/A	0.11	0.0035	0.59	225196	0.23	7126	0.0071
nonroad	diesel	Haul Truck	VOLVO	39t load capacity (A40G		65HTR18	E&I	PIT	Off-highway Trucks	476.0	N/A	7845	N/A	N/A	0.11	0.0035	0.59	246008	0.25	7785	0.0078
nonroad	diesel	Haul Truck	VOLVO	39t load capacity (A40G		65HTR19	CONST	PIT	Off-highway Trucks	476.0	N/A	7836	N/A	N/A	0.11	0.0035	0.59	245732	0.25	7776	0.0078
nonroad	diesel	Haul Truck	VOLVO	39t load capacity (A40G		65HTR20	CONST	PIT	Off-highway Trucks	476.0	N/A	6210	N/A	N/A	0.11	0.0035	0.59	194739	0.19	6163	0.0062
nonroad	diesel	Container Handler	HYSTER		RS4636	65CLD01	E&I	INDUSTRIAL	Other General Industrial Eq	365.0	N/A	2496	N/A	N/A	0.11	0.0035	0.43	43603	0.04	1369	0.0014
nonroad	diesel	Container Handler	HYSTER		RS4636	65CLD02	E&I	INDUSTRIAL	Other General Industrial Eq	365.0	N/A	2879	N/A	N/A	0.11	0.0035	0.43	50294	0.05	1580	0.0016
nonroad	diesel	Dozer	CAT		D6T	65DOZ01	E&I	PIT	Crawler Tractor/Dozers	258.0	N/A	4248	N/A	N/A	0.11	0.0035	0.59	72206	0.07	2285	0.0023
nonroad	diesel	Dozer	CAT		D6K	65DOZ02	E&I	PIT	Crawler Tractor/Dozers	125.0	N/A	5113	N/A	N/A	0.17	0.0035	0.59	63650	0.06	1333	0.0013
nonroad	diesel	Compactor	CAT	Steamroller	CS56B	65CPT01	E&I	PIT	Rollers	155.7	N/A	3189	N/A	N/A	0.17	0.0035	0.59	49449	0.05	1035	0.0010
nonroad	diesel	Compactor	CAT	Steamroller	CS56B	65CPT02	E&I	PIT	Rollers	155.7	N/A	3889	N/A	N/A	0.17	0.0035	0.59	60303	0.06	1262	0.0013
nonroad	diesel	Backhoe	CAT		420E	65BAC01	E&I	PIT	Tractors/Loaders/Backhoes	93.0	N/A	1022	N/A	N/A	0.85	0.0046	0.21	17065	0.02	91	0.0001
nonroad	diesel	Backhoe	KUBOTA	Small Backhoe	BX25	65BAC02	E&I	PIT	Tractors/Loaders/Backhoes	23.0	N/A	1133	N/A	N/A	3.77	0.0064	0.21	20653	0.02	35	0.0000
nonroad	diesel	Backhoe	CAT			430 65BAC04	E&I	PIT	Tractors/Loaders/Backhoes	117.0	N/A	1244	N/A	N/A	0.17	0.0041	0.21	5141	0.01	126	0.0001
nonroad	diesel	Backhoe	CAT		330F	65BAC05	E&I	PIT	Tractors/Loaders/Backhoes	242.0	N/A	5583	N/A	N/A	0.11	0.0041	0.21	31572	0.03	1170	0.0012
onroad	diesel	Truck	KENWORTH	FUEL TRUCK	C500	65TRK01	E&I	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	FREIGHTLINE	HIAB SERVICE TR	FL80	65TRK02	E&I	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	MACK	WATER SERVICE	DM690S	65TRK03	E&I	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	FORD	VACCUUM TRUCK	F750	65TRK04	E&I	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	KENWORTH	ROLL OFF TRUCK	T800	65TRK11	E&I	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	KENWORTH	FUEL TRUCK	T800	65TRK12	E&I	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	PETERBILT	WATER TRUCK		348 65TRK13	E&I	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	KENWORTH		T800	65TRK14	CONST	PIT	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
onroad	diesel	Truck	KENWORTH	FIRE TRUCK	T400	65TRK21	H&S	INDUSTRIAL	Single Unit Long Haul Truck	N/A	10160	N/A	0.4630	0.0037	N/A	N/A	N/A	4704	0.00	38	0.0000
nonroad	diesel	Forklift	HELI		CPD30	65FKL07	PP	INDUSTRIAL	Rough Terrain Forklifts	46.3	N/A	2524	N/A	N/A	2.54	0.0039	0.59	174714	0.17	270	0.0003
nonroad	diesel	Forklift	CAT		DP25N5	65FKL09	MNT	INDUSTRIAL	Rough Terrain Forklifts	51.1	N/A	2524	N/A	N/A	2.55	0.0039	0.59	194074	0.19	298	0.0003
nonroad	diesel	Manlift	GENIE		S60	65SCI02	E&I	INDUSTRIAL	Aerial Lifts	75.0	N/A	2524	N/A	N/A	2.54	0.0046	0.21	100811	0.10	182	0.0002
nonroad	diesel	Telehandler	MANITOU		MLT625	65FKL01	WHS	INDUSTRIAL	Aerial Lifts	74.3	N/A	1875	N/A	N/A	2.54	0.0046	0.21	74191	0.07	134	0.0001
nonroad	diesel	Telehandler	MANITOU		MLT625	65FKL02	WHS	INDUSTRIAL	Aerial Lifts	74.3	N/A	3173	N/A	N/A	2.54	0.0046	0.21	125550	0.13	227	0.0002
nonroad	diesel	Telehandler	GENIE			1056 65VSE09	CONST	INDUSTRIAL	Aerial Lifts	121.0	N/A	2524	N/A	N/A	0.17	0.0041	0.21	10756	0.01	265	0.0003
nonroad	diesel	Telehandler	GENIE			1056 65VSE10	CONST	INDUSTRIAL	Aerial Lifts	121.0	N/A	2524	N/A	N/A	0.17	0.0041	0.21	10756	0.01	265	0.0003
nonroad	diesel	Telehandler	CAT		TL943D	65VSE21	E&I	INDUSTRIAL	Aerial Lifts	111.0	N/A	1373	N/A	N/A	0.17	0.0041	0.21	5368	0.01	132	0.0001
nonroad	diesel	Telehandler	CAT		TL943D	65VSE22	WHS	INDUSTRIAL	Aerial Lifts	111.0	N/A	1166	N/A	N/A	0.17	0.0041	0.21	4558	0.00	112	0.0001
nonroad	diesel	Telehandler	GENIE			1056 65VSE25	CONST	INDUSTRIAL	Aerial Lifts	121.0	N/A	2524	N/A	N/A	0.17	0.0041	0.21	10756	0.01	265	0.0003
nonroad	diesel	Telehandler	GENIE			1056 65VSE26	PP	INDUSTRIAL	Aerial Lifts	121.0	N/A	2524	N/A	N/A	0.17	0.0041	0.21	10756	0.01	265	0.0003
nonroad	diesel	Telehandler	MANITOU		MLT625	65VSE36	PP	INDUSTRIAL	Aerial Lifts	74.3	N/A	1398	N/A	N/A	2.54	0.0046	0.21	55316	0.06	100	0.0001
nonroad	diesel	Crane	FREIGHTLINER		ELLIOT 26105F	65MCR01	E&I	INDUSTRIAL	Cranes	330.0	N/A	1000	N/A	N/A	0.11	0.0035	0.43	15804	0.02	496	0.0005
nonroad	diesel	Crane	BRODERSON (18T)		IC-200-3H	65MCR02	E&I	INDUSTRIAL	Cranes	100.0	N/A	1000	N/A	N/A	0.86	0.0039	0.43	36893	0.04	167	0.0002
nonroad	diesel	Crane	BRODERSON (5T)		IC-40-2C	65MCR03	PP	INDUSTRIAL	Cranes	65.0	N/A	1000	N/A	N/A	2.55	0.0039	0.43	71338	0.07	109	0.0001
nonroad	diesel	Crane	MANITOWOC		220T	65MCR04	E&I	INDUSTRIAL	Cranes	340.0	N/A	1000	N/A	N/A	0.11	0.0035	0.43	16283	0.02	511	0.0005
nonroad	diesel	Crane	GROVE		130T	65MCR05	E&I	INDUSTRIAL	Cranes	320.0	N/A	1000	N/A	N/A	0.11	0.0035	0.43	15325	0.02	481	0.0005
nonroad	diesel	Grader	CAT		140M	65GRA02	E&I	AWAR	Cranes	237.0	N/A	3867	N/A	N/A	0.11	0.0035	0.43	44006	0.04	1378	0.0014
nonroad	diesel	Snowblower	LARUE		T85	65SBL01	E&I	INDUSTRIAL	Cranes	325.0	N/A	1500	N/A	N/A	0.11	0.0035	0.43	23346	0.02	733	0.0007
onroad	diesel	Bus	FORD		E450	65BUS01	DEV	AWAR	Light Commercial Trucks	N/A	10160	N/A	0.1687	0.0024	N/A	N/A	N/A	1714	0.00	24	0.0000
onroad	diesel	Bus	BLUE BIRD		VISION SL	65BUS04	CONST	AWAR	Light Commercial Trucks	N/A	10160	N/A	0.1687	0.0024	N/A	N/A	N/A	1714	0.00	24	0.0000
onroad	diesel	Bus	FORD	12 PAX CARRIER TRANSIT		65VSE19	CMP	AWAR	Light Commercial Trucks	N/A	10160	N/A	0.1687	0.0024	N/A	N/A	N/A	1714	0.00	24	0.0000
onroad	diesel	Bus	FORD	12 PAX CARRIER TRANSIT		65VSE20	CONST	AWAR	Light Commercial Trucks	N/A	10160	N/A	0.1687	0.0024	N/A	N/A	N/A	1714	0.00	24	0.0000
onroad	diesel	Pickup	CHEVROLET		SUBURBAN	65PCK01	MNT	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F550	65PCK02	E&I	AWAR	Pickup Trucks	N/A	7284	N/A	0.1962	0.0025	N/A	N/A	N/A	1429	0.00	19	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK03	GEO	AWAR	Pickup Trucks	N/A	9388	N/A	0.1962	0.0025	N/A	N/A	N/A	1842	0.00	24	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK04	GEO	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F350	65PCK05	DEV	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK06	E&I	AWAR	Pickup Trucks	N/A	14348	N/A	0.1962	0.0025	N/A	N/A	N/A	2815	0.00	36	0.0000

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Onroad or Nonroad?	Fuel type	Unit Type	Manufacturer	Description	Model	Mine Unit #	Mine Working	Road Type	MOVES name (assumed model year 2020 except as stated in notes in this column)	max. gross hp	rating (hp)	operating km/yr	Onroad NOx emission factor g/km	Onroad SO2 emission factor g/km	Nonroad NOx emission factor g/hp-hr	Nonroad SO2 emission factor g/hp-hr	Nonroad Load Factor	NOx emissions g/yr	NOx emissions t/yr	SO2 emissions g/yr	SO2 emissions t/yr
onroad	diesel	Pickup	CHEVROLET	AMBULANCE	EXPRESS 3500	65PCK07	H&S	AWAR	Pickup Trucks	N/A	308	N/A	0.1962	0.0025	N/A	N/A	N/A	60	0.00	1	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK11	E&I	AWAR	Pickup Trucks	N/A	8100	N/A	0.1962	0.0025	N/A	N/A	N/A	1589	0.00	21	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK12	E&I	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK13	E&I	AWAR	Pickup Trucks	N/A	11512	N/A	0.1962	0.0025	N/A	N/A	N/A	2259	0.00	29	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK14	CONST	AWAR	Pickup Trucks	N/A	4264	N/A	0.1962	0.0025	N/A	N/A	N/A	837	0.00	11	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK15	E&I	AWAR	Pickup Trucks	N/A	17804	N/A	0.1962	0.0025	N/A	N/A	N/A	3493	0.00	45	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK16	E&I	AWAR	Pickup Trucks	N/A	9300	N/A	0.1962	0.0025	N/A	N/A	N/A	1825	0.00	24	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK17	CONST	AWAR	Pickup Trucks	N/A	3700	N/A	0.1962	0.0025	N/A	N/A	N/A	726	0.00	9	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK18	DYNO	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK19	WH S	AWAR	Pickup Trucks	N/A	9724	N/A	0.1962	0.0025	N/A	N/A	N/A	1908	0.00	25	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK20	CONST	AWAR	Pickup Trucks	N/A	22752	N/A	0.1962	0.0025	N/A	N/A	N/A	4464	0.00	58	0.0001
onroad	diesel	Pickup	FORD		F250	65PCK21	CONST	AWAR	Pickup Trucks	N/A	13512	N/A	0.1962	0.0025	N/A	N/A	N/A	2651	0.00	34	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK22	WH S	AWAR	Pickup Trucks	N/A	16500	N/A	0.1962	0.0025	N/A	N/A	N/A	3237	0.00	42	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK23	CONST	AWAR	Pickup Trucks	N/A	13500	N/A	0.1962	0.0025	N/A	N/A	N/A	2649	0.00	34	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK24	CONST	AWAR	Pickup Trucks	N/A	3836	N/A	0.1962	0.0025	N/A	N/A	N/A	753	0.00	10	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK25	MNT	AWAR	Pickup Trucks	N/A	11764	N/A	0.1962	0.0025	N/A	N/A	N/A	2308	0.00	30	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK26	DEV	AWAR	Pickup Trucks	N/A	6688	N/A	0.1962	0.0025	N/A	N/A	N/A	1312	0.00	17	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK27	E&I	AWAR	Pickup Trucks	N/A	12272	N/A	0.1962	0.0025	N/A	N/A	N/A	2408	0.00	31	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK28	E&I	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK29	CONST	AWAR	Pickup Trucks	N/A	8532	N/A	0.1962	0.0025	N/A	N/A	N/A	1674	0.00	22	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK30	E&I	AWAR	Pickup Trucks	N/A	12504	N/A	0.1962	0.0025	N/A	N/A	N/A	2453	0.00	32	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK31	PP	AWAR	Pickup Trucks	N/A	10704	N/A	0.1962	0.0025	N/A	N/A	N/A	2100	0.00	27	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK32	E&I	AWAR	Pickup Trucks	N/A	10504	N/A	0.1962	0.0025	N/A	N/A	N/A	2061	0.00	27	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK33	ENV	AWAR	Pickup Trucks	N/A	1444	N/A	0.1962	0.0025	N/A	N/A	N/A	283	0.00	4	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK34	H&S	AWAR	Pickup Trucks	N/A	9892	N/A	0.1962	0.0025	N/A	N/A	N/A	1941	0.00	25	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK35	PP	AWAR	Pickup Trucks	N/A	8068	N/A	0.1962	0.0025	N/A	N/A	N/A	1583	0.00	20	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK36	PP	AWAR	Pickup Trucks	N/A	12960	N/A	0.1962	0.0025	N/A	N/A	N/A	2543	0.00	33	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK37	ENG	AWAR	Pickup Trucks	N/A	4932	N/A	0.1962	0.0025	N/A	N/A	N/A	968	0.00	13	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK38	TRN	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK39	CMP	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK40	WH S	AWAR	Pickup Trucks	N/A	6700	N/A	0.1962	0.0025	N/A	N/A	N/A	1315	0.00	17	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK41	MNT	AWAR	Pickup Trucks	N/A	16516	N/A	0.1962	0.0025	N/A	N/A	N/A	3241	0.00	42	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK42	CONST	AWAR	Pickup Trucks	N/A	5780	N/A	0.1962	0.0025	N/A	N/A	N/A	1134	0.00	15	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK43	CONST	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK44	ENG	AWAR	Pickup Trucks	N/A	16268	N/A	0.1962	0.0025	N/A	N/A	N/A	3192	0.00	41	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK46	DYNO	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK49	DIR	AWAR	Pickup Trucks	N/A	14648	N/A	0.1962	0.0025	N/A	N/A	N/A	2874	0.00	37	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK50	FTIRE	AWAR	Pickup Trucks	N/A	1976	N/A	0.1962	0.0025	N/A	N/A	N/A	388	0.00	5	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK51	IT	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK52	WM	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK53	E&I	AWAR	Pickup Trucks	N/A	34852	N/A	0.1962	0.0025	N/A	N/A	N/A	6838	0.01	89	0.0001
onroad	diesel	Pickup	FORD		F250	65PCK54	E&I	AWAR	Pickup Trucks	N/A	4260	N/A	0.1962	0.0025	N/A	N/A	N/A	836	0.00	11	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK55	EXP	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK56	EXP	AWAR	Pickup Trucks	N/A	1320	N/A	0.1962	0.0025	N/A	N/A	N/A	259	0.00	3	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK57	MNT	AWAR	Pickup Trucks	N/A	8244	N/A	0.1962	0.0025	N/A	N/A	N/A	1618	0.00	21	0.0000
onroad	diesel	Pickup	FORD		F250	65PCK58	CONST	AWAR	Pickup Trucks	N/A	9580	N/A	0.1962	0.0025	N/A	N/A	N/A	1880	0.00	24	0.0000
onroad	diesel	Pickup	FORD	MINING RESCUE	F350	65VSE23	H&S	AWAR	Pickup Trucks	N/A	10160	N/A	0.1962	0.0025	N/A	N/A	N/A	1993	0.00	26	0.0000
nonroad	diesel	Skidsteer	CAT		297D	65LOM01	DYNO	INDUSTRIAL	Crawler Tractor/Dozers	110.0	N/A	1000	N/A	N/A	0.17	0.0035	0.59	10955	0.01	229	0.0002
nonroad	diesel	Skidsteer	BOBCAT		S770	65LOM02	MNT	INDUSTRIAL	Crawler Tractor/Dozers	92.0	N/A	1000	N/A	N/A	0.86	0.0039	0.59	46571	0.05	213	0.0002
nonroad	diesel	Skidsteer	CAT		S650	65LOM03	CONST	INDUSTRIAL	Crawler Tractor/Dozers	74.0	N/A	1000	N/A	N/A	2.55	0.0039	0.59	111435	0.11	171	0.0002
nonroad	diesel	Skidsteer	CAT		226D	65SKD01	PP	INDUSTRIAL	Crawler Tractor/Dozers	67.1	N/A	1280	N/A	N/A	2.55	0.0039	0.59	129337	0.13	199	0.0002
nonroad	diesel	Skidsteer	CAT		226D	65SKD02	PP	INDUSTRIAL	Crawler Tractor/Dozers	67.1	N/A	1122	N/A	N/A	2.55	0.0039	0.59	113372	0.11	174	0.0002
nonroad	diesel	Skidsteer	CAT		226D	65SKD03	PP	INDUSTRIAL	Crawler Tractor/Dozers	67.1	N/A	668	N/A	N/A	2.55	0.0039	0.59	67498	0.07	104	0.0001
nonroad	diesel	Skidsteer	CAT		299D	65SKD04	EXP	INDUSTRIAL	Crawler Tractor/Dozers	98.0	N/A	1023	N/A	N/A	0.86	0.0039	0.59	50749	0.05	232	0.0002
nonroad	diesel	Heater Trailer	ALLMAND		MH500IQ	65HEA19	CONST	INDUSTRIAL	Other General Industrial Eq	18.8	N/A	1000	N/A	N/A	3.77	0.0054	0.43	30509	0.03	44	0.0000
nonroad	diesel	Heater Trailer	ALLMAND		MH500IQ	65HEA20	CONST	INDUSTRIAL	Other General Industrial Eq	18.8	N/A	1000	N/A	N/A	3.77	0.0054	0.43	30509	0.03	44	0.0000
nonroad	diesel	Heater Trailer	ALLMAND		MH500IQ	65HEA21	CONST	INDUSTRIAL	Other General Industrial Eq	18.8	N/A	1000	N/A	N/A	3.77	0.0054	0.43	30509	0.03	44	0.0000
nonroad	diesel	Heater Trailer	ALLMAND		MH500IQ	65HEA22	CONST	INDUSTRIAL	Other General Industrial Eq	18.8	N/A	1000	N/A	N/A	3.77	0.0054	0.43	30509	0.03	44	0.0000
nonroad	diesel	Heater Trailer	ALLMAND		MH500IQ	65HEA24	CONST	INDUSTRIAL	Other General Industrial Eq	18.8	N/A	1000	N/A	N/A	3.77	0.0054	0.43	30509	0.03	44	0.0000
nonroad	diesel	Snowmobile	PRINOTH	TROOPER	GRAY	65SNO01	EXP	AWAR	Crawler Tractor/Dozers	142.0	N/A	700	N/A	N/A	0.17	0.0035	0.59	9899	0.01	207	0.0002
nonroad	diesel	Snowmobile	PRINOTH	TROOPER	YELLOW	65SNO02	EXP	AWAR	Crawler Tractor/Dozers	142.0	N/A	700	N/A	N/A	0.17	0.0035	0.59	9899	0.01	207	0.0002
nonroad	diesel	Mule	KUBOTA		RTV1140	65VSE01	MNT	INDUSTRIAL	Other Construction Equipment	24.8	N/A	500	N/A	N/A	3.77	0.0055	0.59	27610	0.03	40	0.0000
nonroad	diesel	Mule	KAWASAKI		MULE-3010	65VSE04	E&I	INDUSTRIAL	Other Construction Equipment	16.5	N/A	500	N/A	N/A	3.77	0.0055	0.59	18370	0.02	27	0.0000
nonroad	diesel	Mule	KAWASAKI		MULE-3010	65VSE05	E&I	INDUSTRIAL	Other Construction Equipment	16.5	N/A	500	N/A	N/A	3.77	0.0055	0.59	18370	0.02	27	0.0000

Surface Mobile																					
Onroad or Nonroad?	Fuel type	Unit Type	Manufacturer	Description	Model	Mine Unit #	Mine Working Group	Road Type Travelled	MOVES name (assumed model year 2020 except as stated in notes in this column)	max. gross hp rating (hp)	km/yr	operating hr/yr	Onroad NOx emission factor g/km	Onroad SO2 emission factor g/km	Nonroad NOx emission factor g/hp-hr	Nonroad SO2 emission factor g/hp-hr	Nonroad Load Factor	NOx emissions g/yr	NOx emissions t/yr	SO2 emissions g/yr	SO2 emissions t/yr
nonroad	diesel	Forklift	YALE	Process Plant	GP100VX	65FKL03	PP	INDUSTRIAL	Forklifts (assumed engine year 2021 because MOVES didn't produce output for this hp for 2020)	86.0	N/A	2524	N/A	N/A	0.86	0.0039	0.59	109879	0.11	503	0.0005
nonroad	diesel	Manlift	GENIE	Process Plant	Z45/25	65SCI09	PP	INDUSTRIAL	Aerial Lifts	75.0	N/A	2524	N/A	N/A	2.54	0.0046	0.21	100811	0.10	182	0.0002
nonroad	diesel	Manlift	GENIE	Process Plant	Z45/25	65SCI10	PP	INDUSTRIAL	Aerial Lifts	75.0	N/A	2524	N/A	N/A	2.54	0.0046	0.21	100811	0.10	182	0.0002
nonroad	diesel	Manlift	GENIE	Process Plant	Z45/25	65SCI11	PP	INDUSTRIAL	Aerial Lifts	75.0	N/A	2524	N/A	N/A	2.54	0.0046	0.21	100811	0.10	182	0.0002
nonroad	diesel	Manlift	GENIE	Process Plant	S-125	65SCI12	E&I	INDUSTRIAL	Aerial Lifts	74.0	N/A	2524	N/A	N/A	2.54	0.0046	0.21	99467	0.10	180	0.0002



Underground Mobile																					
Onroad or Nonroad?	Fuel type	Unit Type	Manufacturer	Description	Model	Mine Unit #	Mine Working Group	Road Type Travelled	MOVES name (assumed model year 2020)	max. gross hp rating (hp)	km/yr	operating hr/yr	Onroad NOx emission factor g/km	Onroad SO2 emission factor g/km	Nonroad NOx emission factor g/hp-hr	Nonroad SO2 emission factor g/hp-hr	Nonroad Load Factor	NOx emissions g/yr	NOx emissions t/yr	SO2 emissions g/yr	SO2 emissions t/yr
nonroad	diesel	Scoop	SANDVIK		LH514	65SCO04	PROD	UG	Excavators	343.3	N/A	2740	N/A	N/A	0.11	0.0035	0.59	61972	0.06	1961	0.0020
nonroad	diesel	Scoop	SANDVIK		LH514	65SCO05	DEV	UG	Excavators	343.3	N/A	1812	N/A	N/A	0.11	0.0035	0.59	40983	0.04	1297	0.0013
nonroad	diesel	Scoop	SANDVIK		LH514	65SCO06	DEV	UG	Excavators	343.3	N/A	2463	N/A	N/A	0.11	0.0035	0.59	55707	0.06	1763	0.0018
nonroad	diesel	Scoop	SANDVIK		LH514	65SCO07	DEV	UG	Excavators	343.3	N/A	2303	N/A	N/A	0.11	0.0035	0.59	52088	0.05	1648	0.0016
nonroad	diesel	Scoop	SANDVIK		EJC-210	65SCO08	DEV	UG	Excavators	250.0	N/A	238	N/A	N/A	0.11	0.0035	0.59	3920	0.00	124	0.0001
nonroad	diesel	Scoop	CAT		R1300G	65SCO09	DEV	UG	Excavators	165.0	N/A	1307	N/A	N/A	0.17	0.0035	0.59	21477	0.02	450	0.0004
nonroad	diesel	Scoop	SANDVIK		LH517	65SCO10	PROD	UG	Excavators	368.8	N/A	2707	N/A	N/A	0.11	0.0035	0.59	65770	0.07	2081	0.0021
nonroad	diesel	Scoop	SANDVIK		LH517	65SCO11	DEV	UG	Excavators	368.8	N/A	3479	N/A	N/A	0.11	0.0035	0.59	84526	0.08	2675	0.0027
nonroad	diesel	Scoop	SANDVIK		LH517	65SCO12	DEV	UG	Excavators	368.8	N/A	3095	N/A	N/A	0.11	0.0035	0.59	75197	0.08	2380	0.0024
nonroad	diesel	Scoop	SANDVIK		LH517i	65SCO13	PROD	UG	Excavators	415.7	N/A	3795	N/A	N/A	0.11	0.0035	0.59	103939	0.10	3289	0.0033
nonroad	diesel	Scoop	SANDVIK		LH517i	65SCO14	PROD	UG	Excavators	415.7	N/A	3895	N/A	N/A	0.11	0.0035	0.59	106678	0.11	3376	0.0034
nonroad	diesel	Haul Truck	CAT		AD30	65HTR04	DEV	UG+SURF	Off-highway Trucks	409.0	N/A	3506	N/A	N/A	0.11	0.0035	0.59	94472	0.09	2990	0.0030
nonroad	diesel	Haul Truck	CAT		AD30	65HTR08	DEV	UG+SURF	Off-highway Trucks	409.0	N/A	2175	N/A	N/A	0.11	0.0035	0.59	58607	0.06	1855	0.0019
nonroad	diesel	Haul Truck	CAT		AD30	65HTR09	DEV	UG+SURF	Off-highway Trucks	409.0	N/A	4101	N/A	N/A	0.11	0.0035	0.59	110505	0.11	3497	0.0035
nonroad	diesel	Haul Truck	CAT		AD30	65HTR04	DEV	UG+SURF	Off-highway Trucks	409.0	N/A	3506	N/A	N/A	0.11	0.0035	0.59	94472	0.09	2990	0.0030
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR12	DEV	UG+SURF	Off-highway Trucks	690.6	N/A	3192	N/A	N/A	0.11	0.0035	0.59	145236	0.15	4596	0.0046
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR13	DEV	UG+SURF	Off-highway Trucks	690.6	N/A	3908	N/A	N/A	0.11	0.0035	0.59	177814	0.18	5627	0.0056
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR14	DEV	UG+SURF	Off-highway Trucks	690.6	N/A	3389	N/A	N/A	0.11	0.0035	0.59	154200	0.15	4880	0.0049
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR15	DEV	UG+SURF	Off-highway Trucks	690.6	N/A	3576	N/A	N/A	0.11	0.0035	0.59	162708	0.16	5149	0.0051
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR16	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	3746	N/A	N/A	0.11	0.0035	0.59	170443	0.17	5394	0.0054
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR17	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	3559	N/A	N/A	0.11	0.0035	0.59	161935	0.16	5125	0.0051
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR21	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	4061	N/A	N/A	0.11	0.0035	0.59	184776	0.18	5847	0.0058
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR22	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	4468	N/A	N/A	0.11	0.0035	0.59	203294	0.20	6433	0.0064
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR23	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	3503	N/A	N/A	0.11	0.0035	0.59	159387	0.16	5044	0.0050
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR24	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	2675	N/A	N/A	0.11	0.0035	0.59	121713	0.12	3852	0.0039
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR25	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	2887	N/A	N/A	0.11	0.0035	0.59	131359	0.13	4157	0.0042
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR17	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	3559	N/A	N/A	0.11	0.0035	0.59	161935	0.16	5125	0.0051
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR17	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	3559	N/A	N/A	0.11	0.0035	0.59	161935	0.16	5125	0.0051
nonroad	diesel	Haul Truck	SANDVIK		TH551i	65HTR17	PROD	UG+SURF	Off-highway Trucks	690.6	N/A	3559	N/A	N/A	0.11	0.0035	0.59	161935	0.16	5125	0.0051
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI03	DEV	UG	Aerial lifts	138.0	N/A	39	N/A	N/A	0.17	0.0041	0.21	190	0.00	5	0.0000
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI05	DEV	UG	Aerial lifts	138.0	N/A	1901	N/A	N/A	0.17	0.0041	0.21	9239	0.01	227	0.0002
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI06	DEV	UG	Aerial lifts	138.0	N/A	2551	N/A	N/A	0.17	0.0041	0.21	12399	0.01	305	0.0003
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI07	DEV	UG	Aerial lifts	138.0	N/A	1875	N/A	N/A	0.17	0.0041	0.21	9113	0.01	224	0.0002
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI08	DEV	UG	Aerial lifts	138.0	N/A	1671	N/A	N/A	0.17	0.0041	0.21	8121	0.01	200	0.0002
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI13	DEV	UG	Aerial lifts	138.0	N/A	348	N/A	N/A	0.17	0.0041	0.21	1691	0.00	42	0.0000
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI14	PROD	UG	Aerial lifts	138.0	N/A	1649	N/A	N/A	0.17	0.0041	0.21	8015	0.01	197	0.0002
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI15	PROD	UG	Aerial lifts	138.0	N/A	2174	N/A	N/A	0.17	0.0041	0.21	10566	0.01	260	0.0003
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI06	DEV	UG	Aerial lifts	138.0	N/A	2551	N/A	N/A	0.17	0.0041	0.21	12399	0.01	305	0.0003
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI13	DEV	UG	Aerial lifts	138.0	N/A	348	N/A	N/A	0.17	0.0041	0.21	1691	0.00	42	0.0000
nonroad	diesel	Scissor Lift	MACLEAN		SL3	65SCI08	DEV	UG	Aerial lifts	138.0	N/A	1671	N/A	N/A	0.17	0.0041	0.21	8121	0.01	200	0.0002
nonroad	diesel	Emulsion	MACLEAN	Cassette Truck	CS3	65EQM06	PROD	UG+SURF	Other General Industrial Eqp	275.0	N/A	3504	N/A	N/A	0.11	0.0035	0.43	46228	0.05	1448	0.0014
nonroad	diesel	Emulsion	MACLEAN	Cassette Truck	CS3	65EQM07	PROD	UG+SURF	Other General Industrial Eqp	275.0	N/A	3504	N/A	N/A	0.11	0.0035	0.43	46228	0.05	1448	0.0014
nonroad	diesel	Emulsion	MACLEAN	Large Utility Truck	EC3	65VSE13	DEV	UG+SURF	Off-highway Trucks	275.0	N/A	1924	N/A	N/A	0.11	0.0035	0.59	34858	0.03	1103	0.0011
nonroad	diesel	Emulsion	MACLEAN	Large Utility Truck	EC3	65VSE28	DEV	UG+SURF	Off-highway Trucks	275.0	N/A	1635	N/A	N/A	0.11	0.0035	0.59	29622	0.03	937	0.0009
nonroad	diesel	Emulsion	MACLEAN	Large Utility Truck	EC3	65VSE29	DEV	UG+SURF	Off-highway Trucks	275.0	N/A	940	N/A	N/A	0.11	0.0035	0.59	17031	0.02	539	0.0005
nonroad	diesel	Concrete	MACLEAN	CONCRETE TRUCK	AG3	65TRK19	DEV	UG+SURF	Off-highway Trucks	275.0	N/A	364	N/A	N/A	0.11	0.0035	0.59	6595	0.01	209	0.0002
nonroad	diesel	Concrete	MACLEAN	SHOTCRETE SPRAYER	SS3	65VSE27	DEV	UG+SURF	Other General Industrial Eqp	138.0	N/A	94	N/A	N/A	0.17	0.0035	0.43	941	0.00	19	0.0000
nonroad	diesel	Concrete	SWATCRETE	SHOTCRETE CARRIER	ARVA 4000	65VSE37	DEV	UG+SURF	Other General Industrial Eqp	160.0	N/A	753	N/A	N/A	0.17	0.0035	0.43	8737	0.01	181	0.0002
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE CARRIER	CS3	65TRK09	DEV	UG	Other General Industrial Eqp	275.0	N/A	3597	N/A	N/A	0.11	0.0035	0.43	47455	0.05	1487	0.0015
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE CARRIER	CS3	65TRK15	DEV	UG	Other General Industrial Eqp	275.0	N/A	372	N/A	N/A	0.11	0.0035	0.43	4908	0.00	154	0.0002
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE CARRIER	CS3	65TRK16	DEV	UG	Other General Industrial Eqp	275.0	N/A	1632	N/A	N/A	0.11	0.0035	0.43	21531	0.02	675	0.0007
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE CARRIER	CS3	65TRK17	DEV	UG	Other General Industrial Eqp	275.0	N/A	2090	N/A	N/A	0.11	0.0035	0.43	27573	0.03	864	0.0009
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE TRUCK	FL3	65TRK22	DEV	UG	Other General Industrial Eqp	147.5	N/A	2555	N/A	N/A	0.17	0.0035	0.43	27332	0.03	567	0.0006
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE TRUCK	FL3	65TRK23	DEV	UG	Other General Industrial Eqp	147.5	N/A	1796	N/A	N/A	0.17	0.0035	0.43	19213	0.02	398	0.0004
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE TRUCK	CS3	65TRK25	DEV	UG	Other General Industrial Eqp	275.0	N/A	1913	N/A	N/A	0.11	0.0035	0.43	25238	0.03	791	0.0008
nonroad	diesel	Men Carrier & Cassette Truck	MACLEAN	CASSETTE TRUCK	CS3	65TRK25	DEV	UG	Other General Industrial Eqp	275.0	N/A	1913	N/A	N/A	0.11	0.0035	0.43	25238	0.03	791	0.0008
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE15	DEV	UG+SURF	pickup truck	N/A	51,905	1483	2.0E-01	2.5E-03	N/A	N/A	N/A	10184	0.01	132	0.0001
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE17	DEV	UG+SURF	pickup truck	N/A	101,150	2890	2.0E-01	2.5E-03	N/A	N/A	N/A	19846	0.02	257	0.0003
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE18	DEV	UG+SURF	pickup truck	N/A	80,885	2311	2.0E-01	2.5E-03	N/A	N/A	N/A	15870	0.02	205	0.0002
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE30	MNT	UG+SURF	pickup truck	N/A	68,110	1946	2.0E-01	2.5E-03	N/A	N/A	N/A	13364	0.01	173	0.0002
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE31	CONST	UG+SURF	pickup truck	N/A	115,395	3297	2.0E-01	2.5E-03	N/A	N/A	N/A	22641	0.02	293	0.0003
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE32	TRN	UG+SURF	pickup truck	N/A	27,545	787	2.0E-01	2.5E-03	N/A	N/A	N/A	5404	0.01	70	0.0001
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE33	PROD	UG+SURF	pickup truck	N/A	105,210	3006	2.0E-01	2.5E-03	N/A	N/A	N/A	20643	0.02	267	0.0003
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE34	TRN	UG+SURF	pickup truck	N/A	30,590	874	2.0E-01	2.5E-03	N/A	N/A	N/A	6002	0.01	78	0.0001
onroad	diesel	Men Carrier & Cassette Truck	TOYOTA	MENCARRIER LANDCRUISER	HZJ79	65VSE38	MNT	UG+SURF	pickup truck	N/A	55,615	1589	2.0E-01	2.5E-03	N/A	N/A	N/A	10912	0.01		

Underground Mobile																					
Onroad or Nonroad?	Fuel type	Unit Type	Manufacturer	Description	Model	Mine Unit #	Mine Working Group	Road Type Travelled	MOVES name (assumed model year 2020)	max. gross hp rating (hp)	km/yr	operating hr/yr	Onroad NOx emission factor g/km	Onroad SO2 emission factor g/km	Nonroad NOx emission factor g/hp-hr	Nonroad SO2 emission factor g/hp-hr	Nonroad Load Factor	NOx emissions g/yr	NOx emissions t/yr	SO2 emissions g/yr	SO2 emissions t/yr
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M5-111CAB	65TRA03	MNT	UG	Tractors/Loaders/Backhoes	105.6	N/A	696	N/A	N/A	0.17	0.0041	0.21	2596	0.00	64	0.0001
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M5-111CAB	65TRA04	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	1325	N/A	N/A	0.17	0.0041	0.21	4943	0.00	121	0.0001
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M8540DT	65TRA05	CONST	UG	Tractors/Loaders/Backhoes	85.5	N/A	141	N/A	N/A	0.85	0.0046	0.21	2165	0.00	12	0.0000
nonroad	diesel	Tractor	KUBOTA		M9540DT	65TRA06	PROD	UG	Tractors/Loaders/Backhoes	95.0	N/A	702	N/A	N/A	0.85	0.0046	0.21	11974	0.01	64	0.0001
nonroad	diesel	Tractor	KUBOTA		M9540DT	65TRA07	CONST	UG	Tractors/Loaders/Backhoes	95.0	N/A	253	N/A	N/A	0.85	0.0046	0.21	4315	0.00	23	0.0000
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M9540DT	65TRA08	MNT	UG	Tractors/Loaders/Backhoes	95.0	N/A	302	N/A	N/A	0.85	0.0046	0.21	5151	0.01	28	0.0000
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M8540DT	65TRA09	CONST	UG	Tractors/Loaders/Backhoes	85.5	N/A	500	N/A	N/A	0.85	0.0046	0.21	7676	0.01	41	0.0000
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M5-111CAB	65TRA10	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	2301	N/A	N/A	0.17	0.0041	0.21	8583	0.01	210	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M5-111CAB	65TRA11	MNT	UG	Tractors/Loaders/Backhoes	105.6	N/A	1781	N/A	N/A	0.17	0.0041	0.21	6643	0.01	163	0.0002
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA12	GEO	UG	Tractors/Loaders/Backhoes	105.6	N/A	788	N/A	N/A	0.17	0.0041	0.21	2939	0.00	72	0.0001
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA13	ENG	UG	Tractors/Loaders/Backhoes	105.6	N/A	618	N/A	N/A	0.17	0.0041	0.21	2305	0.00	57	0.0001
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA14	DEV	UG	Tractors/Loaders/Backhoes	105.6	N/A	853	N/A	N/A	0.17	0.0041	0.21	3182	0.00	78	0.0001
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M5-111HDC	65TRA15	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	1035.6	N/A	N/A	0.17	0.0041	0.21	3863	0.00	95	0.0001
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M9960D	65TRA16	PROD	UG	Tractors/Loaders/Backhoes	100.0	N/A	518	N/A	N/A	0.17	0.0041	0.21	1830	0.00	45	0.0000
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA17	ENG	UG	Tractors/Loaders/Backhoes	105.6	N/A	512	N/A	N/A	0.17	0.0041	0.21	1910	0.00	47	0.0000
nonroad	diesel	Tractor	KUBOTA	(SUPERVISOR)	M5-111CAB	65TRA18	ENG	UG	Tractors/Loaders/Backhoes	105.6	N/A	454	N/A	N/A	0.17	0.0041	0.21	1694	0.00	42	0.0000
nonroad	diesel	Tractor	KUBOTA	WITH FORK (MECHANIC)	M5-111CAB	65TRA20	MNT	UG	Tractors/Loaders/Backhoes	105.6	N/A	2331	N/A	N/A	0.17	0.0041	0.21	8695	0.01	213	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE +)	M5-111CAB	65TRA21	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	2048	N/A	N/A	0.17	0.0041	0.21	7639	0.01	187	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE +)	M5-111CAB	65TRA22	MNT	UG	Tractors/Loaders/Backhoes	105.6	N/A	1800	N/A	N/A	0.17	0.0041	0.21	6714	0.01	165	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE)	M5-111CAB	65TRA23	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	1446	N/A	N/A	0.17	0.0041	0.21	5394	0.01	132	0.0001
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE)	M5-111CAB	65TRA24	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	1979	N/A	N/A	0.17	0.0041	0.21	7382	0.01	181	0.0002
nonroad	diesel	Tractor	KUBOTA	(SERVICE)	M5-111CAB	65TRA25	GEO	UG	Tractors/Loaders/Backhoes	105.6	N/A	2067	N/A	N/A	0.17	0.0041	0.21	7710	0.01	189	0.0002
nonroad	diesel	Tractor	JOHN DEERE	WITH FORK	6110M	65TRA26	MNT	UG	Tractors/Loaders/Backhoes	67.7	N/A	662	N/A	N/A	2.54	0.0046	0.21	23938	0.02	43	0.0000
nonroad	diesel	Tractor	JOHN DEERE	WITH FORK	6110M	65TRA27	MNT	UG	Tractors/Loaders/Backhoes	67.7	N/A	1547	N/A	N/A	2.54	0.0046	0.21	55940	0.06	101	0.0001
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M5-111CAB	65TRA28	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	2097	N/A	N/A	0.17	0.0041	0.21	7822	0.01	192	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK	M5-111CAB	65TRA29	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	2553	N/A	N/A	0.17	0.0041	0.21	9523	0.01	234	0.0002
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA30	TRN	UG	Tractors/Loaders/Backhoes	105.6	N/A	294	N/A	N/A	0.17	0.0041	0.21	1097	0.00	27	0.0000
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA31	MNT	UG	Tractors/Loaders/Backhoes	105.6	N/A	1705	N/A	N/A	0.17	0.0041	0.21	6360	0.01	156	0.0002
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA32	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	962	N/A	N/A	0.17	0.0041	0.21	3588	0.00	88	0.0001
nonroad	diesel	Tractor	KUBOTA		M5-111CAB	65TRA33	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	147	N/A	N/A	0.17	0.0041	0.21	548	0.00	13	0.0000
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE +)	M5-111CAB	65TRA21	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	2048	N/A	N/A	0.17	0.0041	0.21	7639	0.01	187	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE +)	M5-111CAB	65TRA21	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	2048	N/A	N/A	0.17	0.0041	0.21	7639	0.01	187	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE +)	M5-111CAB	65TRA21	CONST	UG	Tractors/Loaders/Backhoes	105.6	N/A	2048	N/A	N/A	0.17	0.0041	0.21	7639	0.01	187	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE)	M5-111CAB	65TRA24	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	1979	N/A	N/A	0.17	0.0041	0.21	7382	0.01	181	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE)	M5-111CAB	65TRA24	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	1979	N/A	N/A	0.17	0.0041	0.21	7382	0.01	181	0.0002
nonroad	diesel	Tractor	KUBOTA	WITH FORK (SERVICE)	M5-111CAB	65TRA24	PROD	UG	Tractors/Loaders/Backhoes	105.6	N/A	1979	N/A	N/A	0.17	0.0041	0.21	7382	0.01	181	0.0002
nonroad	diesel	Service Vehicle	CAT		303.5	65BAC03	DEV	UG	Tractors/Loaders/Backhoes	24.8	N/A	550	N/A	N/A	3.77	0.0064	0.21	10810	0.01	18	0.0000
nonroad	diesel	Service Vehicle	CAT	Grader	12M2	65GRA01	DEV	UG	Graders	246.0	N/A	754	N/A	N/A	0.11	0.0035	0.59	12220	0.01	387	0.0004
nonroad	diesel	Service Vehicle	CAT	GRADER	12M	65GRA03	DEV	UG	Graders	216.0	N/A	3622	N/A	N/A	0.11	0.0035	0.59	51543	0.05	1631	0.0016
nonroad	diesel	Service Vehicle	CAT	GRADER	12M	65GRA03	DEV	UG	Graders	216.0	N/A	3622	N/A	N/A	0.11	0.0035	0.59	51543	0.05	1631	0.0016
nonroad	diesel	Service Vehicle	CAT	Wheel Loader	908M	65LOA05	DEV	UG	Rubber Tire Loaders	74.0	N/A	1488	N/A	N/A	2.55	0.0039	0.59	165815	0.17	255	0.0003
nonroad	diesel	Service Vehicle	CAT	Wheel Loader	914M	65LOA12	PROD	UG	Rubber Tire Loaders	102.0	N/A	1484	N/A	N/A	0.17	0.0035	0.59	15075	0.02	316	0.0003
nonroad	diesel	Service Vehicle	MACLEAN	BOOM TRUCK	BT3	65TRK08	DEV	UG	Other General Industrial Eqp	128.0	N/A	2044	N/A	N/A	0.17	0.0035	0.43	18973	0.02	393	0.0004
nonroad	diesel	Service Vehicle	MACLEAN	BOOM TRUCK	BT3	65TRK20	DEV	UG	Other General Industrial Eqp	128.0	N/A	3331	N/A	N/A	0.17	0.0035	0.43	30920	0.03	641	0.0006
nonroad	diesel	Service Vehicle	MACLEAN	BOOM TRUCK	BT3	65TRK20	DEV	UG	Other General Industrial Eqp	128.0	N/A	3331	N/A	N/A	0.17	0.0035	0.43	30920	0.03	641	0.0006
onroad	diesel	Service Vehicle	TOYOTA	AMBULANCE - LANDCRUISER	HZJ79	65VSE14	H&S	UG+SURF	pickup truck	N/A	<b>2,415</b>	69	0.1962	0.0025	N/A	N/A	N/A	474	0.00	6	0.0000
nonroad	diesel	Telehandler	GRADALL	ZOOM BOOM	544D	65VSE08	DEV	UG+SURF	Aerial Lifts	124.8	N/A	974	N/A	N/A	0.17	0.0041	0.21	4281	0.00	105	0.0001
nonroad	diesel	Telehandler	CAT	ZOOM BOOM	TL1055D	65VSE16	DEV	UG+SURF	Aerial Lifts	142.1	N/A	678	N/A	N/A	0.17	0.0041	0.21	3393	0.00	83	0.0001
nonroad	diesel	Telehandler	CAT	ZOOM BOOM	TL1055	65VSE35	DEV	UG+SURF	Aerial Lifts	125.0	N/A	1270	N/A	N/A	0.17	0.0041	0.21	5591	0.01	137	0.0001
nonroad	diesel	Telehandler	GRADALL	ZOOM BOOM	544D	65VSE08	DEV	UG+SURF	Aerial Lifts	124.8	N/A	974	N/A	N/A	0.17	0.0041	0.21	4281	0.00	105	0.0001

Note: Bold values in Column L are calculated based on 35 km/hr = the speed of a landcruiser in 3rd gear  
Note: Bold values in Column M based on 80% mechanical availability X 50% utilization