



MSHA
Coal Diesel-Powered
Equipment Inventory
September 19, 2017



No. of DPE by MSHA District

States Covered in District	MSHA District	No. of DPE	No. of Light Duty DPE	No. of Heavy Duty DPE	No. of Permissible DPE	No. of Other DPE *
IL and IN	8	1,309	966	265	68	10
CO, NM, WY, MT and UT	9	1,222	703	306	198	15
OK, AR and AL	11	472	301	118	50	3
PA	2	429	268	133	9	19
KY and TN	10	405	293	93	3	16
WVA, MD and OH	3	351	209	136	6	0
VA and KY	5	284	195	82	5	2
KY and TN	7	272	201	69	0	2
WVA	4	107	84	21	1	1
WVA	12	95	63	27	3	2
Total		4,946	3,283	1,250	343	70

* Other DPE includes equipment in abandoned mines or abandoned/Sealed mines, and in 1 new mine.



Top 10 Types of DPE in Underground Coal Mines

No.	Types of Equipment	Total DPE
1	Personnel Carrier (Mine Tndr, Mantrip, Rabbit, Bosbusy, Ribrnr)	2,326
2	Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unildr)	619
3	Utility Truck (Pick-Up Truck, Jeep, Land Cruiser, Flat Bed)	306
4	Locomotive	276
5	Forklift	259
6	Tractor	258
7	Rock Duster	138
8	Longwall Component Retriever/Transporter (Chk/Shld Haulr,Mule)	111
9	Shuttle Cars (Torkar, Electrical, Ramcar)	73
10	Lube Unit	66

Top 10 DPE Types represent 90% in the inventory. There are 36 Types of equipment in the inventory.



Most Common Types of **Light Duty** DPE

No.	Type of Equipment	Light Duty DPE
1	Personnel Carrier (Mine Tndr, Mantrip, Rabbit, Bosbusy, Ribrnrr)	2,271
2	Utility Truck (Pick-Up Truck, Jeep, Land Cruiser, Flat Bed)	292
3	Forklift	197
4	Rock Duster	121
5	Tractor	101

Top 5 DPE Types represent 91% of the Light Duty in the inventory



Most Common Types of **Heavy Duty** DPE

No.	Type of Equipment	Heavy Duty DPE
1	Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unilidr)	414
2	Locomotive	243
3	Tractor	152
4	Forklift	61
5	Longwall Component Retriever/Transporter (Chk/Shld Haulr, Mule)	60
6	Grader (Roadgrader)	59
7	Lube Unit	56
8	Personnel Carrier (Mine Tndr, Mantrip, Rabit, Bosbusy, Ribnr)	45
9	Roof/Floor Drills and Roof/Floor Bolters	38
10	Generator - MG Set, Stationary Generator (Not Alternator)	27

Top 10 DPE Types represent 92% of the Heavy Duty in the inventory



Most Common Types of **Permissible** DPE

No.	Type of Equipment	Permissible DPE
1	Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unilidr)	171
2	Shuttle Cars (Torkar, Electrical, Ramcar)	59
3	Longwall Component Retriever/Transporter (Chk/Shld Haulr,Mule)	51
4	Haul Truck (30 Ton Cap. or Less) (Ram-Car, Teletram, Coal-Haul)	27
5	Lube Unit	8

Top 5 DPE Types represent 92% of the Permissible in the inventory



No. of Mines, DPE, and After Treatment (AT) Filters by State

State	No. of Mines	No. of DPE	No. of DPE with AT Filters	Percent of DPE with AT Filters
Ohio	2	6	6	100%
West Virginia	33	534	525	98%
Pennsylvania	23	429	397	93%
Maryland	2	12	7	58%
Montana	1	58	27	47%
Utah	10	547	253	46%
New Mexico	2	70	31	44%
Colorado	10	474	199	42%
Alabama	4	434	159	37%
Virginia	12	268	98	37%
Arkansas	1	14	5	36%
Wyoming	1	73	25	34%
Illinois	16	879	250	28%
Indiana	10	430	114	27%
Oklahoma	1	24	5	21%
Kentucky	40	694	116	17%
Total	168	4,946	2,217	

State regulations in WV, PA, and OH require all DPE going underground to have an AT filter.

(Numbers in this presentation are from inventory data as of May 4, 2017)



Types of AT Filters on **Light Duty** DPE

Equipment Type - Light Duty	AT Manuf. Unknown	Ceramic Filter	Disposable filter	Sintered Metal Fiber Filter	Total Light Duty with AT Filters	Total Light Duty without AT Filters
Personnel Carrier (Mine Tndr, Mantrip, Rabbit, Bosbusy, Ribnr)	44	138	346		528	1,743
Forklift	7	20	3		30	167
Rock Duster	6	7	11		24	97
Tractor	3	12	5		20	81
Locomotive		16	3		19	12
Generator - MG Set, Stationary Generator (Not Alternator)		9	2	1	12	5
Spare Engine		11			11	2
Maintenance Truck (Tire Truck)	1	8			9	12
Utility Truck (Pick-Up Truck, Jeep, Land Cruiser, Flat Bed)	6	1	2		9	283
Air Compressor		4	4		8	4

These 10 DPE Types account for 95% of all Light Duty that have AT Filters



Types of AT Filters on **Heavy Duty** DPE

Equipment Type - Heavy Duty	AT Manuf. Unknown	Ceramic Filter	Disposable filter	Total Heavy Duty with AT Filters	Total Heavy Duty without AT Filters
Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unilidr)	11	232	140	383	31
Locomotive	9	67	160	236	7
Tractor	6	87	51	144	8
Longwall Component Retriever/Transporter (Chk/Shld Haulr, Mule)		22	38	60	0
Grader (Roadgrader)	2	35	16	53	6
Forklift	4	40	2	46	15
Lube Unit	3	33	8	44	12
Personnel Carrier (Mine Tndr, Mantrip, Rabbit, Bosbusy, Ribnr)		6	32	38	7
Roof/Floor Drills and Roof/Floor Bolters	1	25	10	36	2
Generator - MG Set, Stationary Generator (Not Alternator)		14	8	22	5
Maintenance Truck (Tire Truck)		13	2	15	0
Shuttle Cars (Torkar, Electrical, Ramcar)		1	13	14	0

These 12 DPE Types account for 95% of all Heavy Duty that have AT Filters. No Sintered Metal Fiber Filters on Heavy Duty equipment.



Types of AT Filters on **Permissible** DPE

Equipment Type - Permissible	AT Manuf. Unknown	Ceramic Filter	Disposable filter	Total Permissible with AT Filters	Total Permissible without AT Filters
Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unilidr)	5	15	150	170	1
Shuttle Cars (Torkar, Electrical, Ramcar)			59	59	0
Longwall Component Retriever/Transporter (Chk/Shld Haulr,Mule)		1	50	51	0
Haul Truck (30 Ton Cap. or Less) (Ram-Car, Teletram, Coal-Haul)			25	25	2
Lube Unit			8	8	0
Tractor			5	5	0

These 6 DPE Types account for 95% of all Permissible that have AT Filters. No Sintered Metal Fiber Filters on Permissible equipment. The numbers of Ceramic Filters is what has been input in to the inventory.



Engine Manufacturers

No.	Manufacturers of Engines in Diesel Machines	No. of DPE
1	DEUTZ	2,134
2	CUMMINS	1,035
3	MITSUBISHI	515
4	DAIMLERCHRYSLER	299
5	CATERPILLAR	280
6	KUBOTA	193
7	ISUZU	187
8	FPT POWERTRAIN TECH	67
9	IVECO	55
10	DETROIT DIESEL	34

These Top 10 Manufacturers account for 97% of all diesel engines in the inventory



Heavy Duty Diesel Engines and EPA Engine Standards

Heavy Duty Equipment Type	EPA Tier 0 or 1 Engines	EPA Tier 2 & 3 Engines	EPA Tier 4 Engines	Total Diesel Engines
Air Compressor			10	10
Ambulance			1	1
Crane Truck			1	1
Cutting Machines		2	1	3
Ditch Digging Machines			1	1
Face Drill (Drill Jumbo, Auger, Coal, Vertical)			1	1
Forklift		18	43	61
Generator - MG Set, Stationary Generator (Not Alternator)		6	21	27
Grader (Roadgrader)		6	53	59
Haul Truck (30 Ton Cap. or Less) (Ram-Car, Teletram, Coal-Haul)		1	7	8
Haul Truck (More than 30 tons capacity)			5	5
Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unldr)		35	379	414
Loading Machines			3	3
Locomotive		16	227	243
Longwall Component Retriever/Transporter (Chk/Shld Haulr,Mule)	1		59	60
Lube Unit	1	11	44	56
Maintenance Truck (Tire Truck)			15	15
Miscellaneous Equipment - Assigned By Branch Chief			5	5
Personnel Carrier (Mine Tndr, Mantrip, Rabbit, Bosbusy, Ribnr)		7	38	45
Rock Duster		1	2	3
Roof/Floor Drills and Roof/Floor Bolters		3	35	38
Shuttle Cars (Torkar, Electrical, Ramcar)			14	14
Spare Engine	1	2		3
Tractor	1	8	143	152
Unknown		1	10	11
Utility Truck (Pick-Up Truck, Jeep, Land Cruiser, Flat Bed)			8	8
Water Spray Unit		1	1	2
Welder			1	1
Total Heavy Duty DPE	4	118	1,128	1,250

90% of all engines in Heavy Duty DPE meet DPM levels for EPA TIER 4 Engines based upon the AT devices used.

Tier 0 would represent equipment that predates the EPA designation.



Light Duty Diesel Engines and EPA Engine Standards

Light Duty Equipment Type	EPA Tier 0 or 1 Engines	EPA Tier 2 & 3 Engines	EPA Tier 4 Engines	Total Diesel Engines
Air Compressor		4	8	12
Ambulance	1	15		16
Continuous Miner (Auger, Boom, Roadleader, Helimer)		2		2
Crane Truck		3	3	6
Fire Fighting Machine (Foam Machine)	1	1	1	3
Forklift		170	27	197
Generator - MG Set, Stationary Generator (Not Alternator)	1	4	12	17
Haul Truck (30 Ton Cap. or Less) (Ram-Car, Teletram, Coal-Haul)		1	6	7
Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unilidr)		30	3	33
Locomotive		11	20	31
Lube Unit		1		1
Maintenance Truck (Tire Truck)		13	8	21
Man Lift (Cherry Picker, Scissor Lift)		4		4
Mine Selant Machine			1	1
Miscellaneous Equipment - Assigned By Branch Chief		10	4	14
Mobile Roof Support Unit		2		2
Panic Bars		1		1
Personnel Carrier (Mine Tndr, Mantrip, Rabbit, Bosbusy, Ribnr)	34	1,728	509	2,271
Pumps and Hydraulic Power Unit		12	10	22
Rock Duster	1	93	27	121
Roof/Floor Drills and Roof/Floor Bolters		3	1	4
Spare Engine	1	1	11	13
Timbering Machine		1		1
Tractor	1	74	26	101
Unknown		19	5	24
Utility Truck (Pick-Up Truck, Jeep, Land Cruiser, Flat Bed)	7	271	14	292
Water Spray Unit	1	6	6	13
Welder	3	43	7	53
Total Light Duty DPE	51	2,523	709	3,283

22% of all engines in Light Duty DPE meet DPM levels for EPA TIER 4 Engines based upon the AT devices used.

77% of all engines in Light Duty DPE meet DPM levels for EPA TIER 2/3 Engines.



Permissible Diesel Engines and EPA Engine Standards

Permissible Equipment Type	EPA Tier 2 & 3 Engines	EPA Tier 4 Engines	Total Diesel Engines
Crane Truck		2	2
Face Drill (Drill Jumbo, Auger, Coal, Vertical)		1	1
Forklift		1	1
Haul Truck (30 Ton Cap. or Less) (Ram-Car, Teletram, Coal-Haul)	2	25	27
Load-Haul-Dump (Scoop/Tram, Frnt End Ld, Bobcat, Lhd, Unldr)	1	170	171
Longwall Component Retriever/Transporter (Chk/Shld Haulr,Mule)		51	51
Lube Unit		8	8
Man Lift (Cherry Picker, Scissor Lift)		1	1
Personnel Carrier (Mine Tndr, Mantrip, Rabit, Bosbusy, Ribnr)	2	1	3
Rock Duster	2	4	6
Roof/Floor Drills and Roof/Floor Bolters		3	3
Shuttle Cars (Torkar, Electrical, Ramcar)		59	59
Tractor		5	5
Utility Truck (Pick-Up Truck, Jeep, Land Cruiser, Flat Bed)		2	2
Water Spray Unit		3	3
Total Permissible DPE	7	336	343

About 98% of all engines in Permissible DPE meet DPM levels for EPA TIER 4 Engines based upon the AT devices used.



DPE and Horsepower

DPE	DPE with HP 0 to 49	DPE with HP 50 to 100	DPE with HP 101 to 150	DPE with HP 151 to 197	DPE with HP 198 to 250	DPE with HP 251 to 300	DPE with HP 301 to 400	DPE with HP 401 to 575	Total
No. of DPE	575	2,285	525	629	783	40	86	23	4,946
Percentage	12%	46%	11%	13%	16%	1%	2%	0%	100%
Cumulative Percentage	12%	58%	68%	81%	97%	98%	99.5%	100%	