DRAFT Technical Support Document (TSD): Preparation of Emissions Inventories for the Version 6.0, 2011 Emissions Modeling Platform - Appendices

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U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Air Quality Assessment Division
Research Triangle Park, NC

Appendix A: 2011 NEI Nonpoint Oil and Gas SCCs

Table A.1 SCCs in the 2011 NEI Version 1 Nonpoint Oil and Gas Sector (np_oilgas)*

SCC	SCC Description
2310000000	IP;OGEP;All Processes;Total: All Processes
2310000220	IP;OGEP;All Processes;Drill Rigs
2310000230	IP;OGEP;All Processes;Workover Rigs
2310000330	IP;OGEP;All Processes;Artificial Lift
2310000550	IP;OGEP;All Processes;Produced Water
2310000660	IP;OGEP;All Processes;Hydraulic Fracturing Engines
2310002000	IP;OGEP;Off-Shore Oil And Gas Production;Total: All Processes
2310002301	IP;OGEP;Off-Shore Oil And Gas Production;Flares: Continuous Pilot Light
2310002305	IP;OGEP;Off-Shore Oil And Gas Production;Flares: Flaring Operations
2310002401	IP;OGEP;Off-Shore Oil And Gas Production;Pneumatic Pumps: Gas And Oil Wells
2310002411	IP;OGEP;Off-Shore Oil And Gas Production;Pressure/Level Controllers
2310002421	IP;OGEP;Off-Shore Oil And Gas Production;Cold Vents
2310010000	IP;OGEP;Crude Petroleum;Total: All Processes
2310010100	IP;OGEP;Crude Petroleum;Oil Well Heaters
2310010200	IP;OGEP;Crude Petroleum;Oil Well Tanks - Flashing & Standing/Working/Breathing
2310010300	IP;OGEP;Crude Petroleum;Oil Well Pneumatic Devices
2310010700	IP;OGEP;Crude Petroleum;Oil Well Fugitives
2310010800	IP;OGEP;Crude Petroleum;Oil Well Truck Loading
2310011000	IP;OGEP;On-Shore Oil Production;Total: All Processes
2310011020	IP;OGEP;On-Shore Oil Production;Storage Tanks: Crude Oil
2310011100	IP;OGEP;On-Shore Oil Production;Heater Treater
2310011201	IP;OGEP;On-Shore Oil Production;Tank Truck/Railcar Loading: Crude Oil
2310011450	IP;OGEP;On-Shore Oil Production;Wellhead
2310011500	IP;OGEP;On-Shore Oil Production;Fugitives: All Processes
2310011501	IP;OGEP;On-Shore Oil Production;Fugitives: Connectors
2310011502	IP;OGEP;On-Shore Oil Production;Fugitives: Flanges
2310011503	IP;OGEP;On-Shore Oil Production;Fugitives: Open Ended Lines
2310011504	IP;OGEP;On-Shore Oil Production;Fugitives: Pumps
2310011505	IP;OGEP;On-Shore Oil Production;Fugitives: Valves
2310011506	IP;OGEP;On-Shore Oil Production;Fugitives: Other
2310012000	IP;OGEP;Off-Shore Oil Production;Total: All Processes
2310012020	IP;OGEP;Off-Shore Oil Production;Storage Tanks: Crude Oil
2310012511	IP;OGEP;Off-Shore Oil Production;Fugitives, Connectors: Oil Streams
2310012512	IP;OGEP;Off-Shore Oil Production;Fugitives, Flanges: Oil
2310012515	IP;OGEP;Off-Shore Oil Production;Fugitives, Valves: Oil
2310012516	IP;OGEP;Off-Shore Oil Production;Fugitives, Other: Oil
2310012521	IP;OGEP;Off-Shore Oil Production;Fugitives, Connectors: Oil/Water Streams
2310012522	IP;OGEP;Off-Shore Oil Production;Fugitives, Flanges: Oil/Water
2310012526	IP;OGEP;Off-Shore Oil Production;Fugitives, Other: Oil/Water
2310020000	IP;OGEP;Natural Gas;Total: All Processes
2310020600	IP;OGEP;Natural Gas;Compressor Engines
2310020800	IP;OGEP;Natural Gas;Gas Well Truck Loading

SCC	SCC Description
2310021010	IP;OGEP;On-Shore Gas Production;Storage Tanks: Condensate
2310021011	IP;OGEP;On-Shore Gas Production;Condensate Tank Flaring
2310021030	IP;OGEP;On-Shore Gas Production;Tank Truck/Railcar Loading: Condensate
2310021100	IP;OGEP;On-Shore Gas Production;Gas Well Heaters
2310021101	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 2Cycle Lean Burn Compressor Engines < 50 HP
2310021102	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 2Cycle Lean Burn Compressor Engines 50 To 499 HP
2310021103	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 2Cycle Lean Burn Compressor Engines 500+ HP
2310021201	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 4Cycle Lean Burn Compressor Engines <50 HP
2310021202	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 4Cycle Lean Burn Compressor Engines 50 To 499 HP
2310021203	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 4Cycle Lean Burn Compressor Engines 500+ HP
2310021209	IP;OGEP;On-Shore Gas Production;Total: All Natural Gas Fired 4Cycle Lean Burn Compressor Engines
2310021251	IP;OGEP;On-Shore Gas Production;Lateral Compressors 4 Cycle Lean Burn
2310021300	IP;OGEP;On-Shore Gas Production;Gas Well Pneumatic Devices
2310021301	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 4Cycle Rich Burn Compressor Engines <50 HP
2310021302	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 4Cycle Rich Burn Compressor Engines 50 To 499 HP
2310021303	IP;OGEP;On-Shore Gas Production;Natural Gas Fired 4Cycle Rich Burn Compressor Engines 500+ HP
2310021309	IP;OGEP;On-Shore Gas Production;Total: All Natural Gas Fired 4Cycle Rich Burn Compressor Engines
2310021310	IP;OGEP;On-Shore Gas Production;Gas Well Pneumatic Pumps
2310021351	IP;OGEP;On-Shore Gas Production;Lateral Compressors 4 Cycle Rich Burn
2310021400	IP;OGEP;On-Shore Gas Production;Gas Well Dehydrators
2310021401	IP;OGEP;On-Shore Gas Production;Nat Gas Fired 4Cycle Rich Burn Compressor Engines <50 HP w/NSCR
2310021402	IP;OGEP;On-Shore Gas Production;Nat Gas Fired 4Cycle Rich Burn Compressor Engines 50 To 499 HP w/NSCR
2310021403	IP;OGEP;On-Shore Gas Production;Nat Gas Fired 4Cycle Rich Burn Compressor Engines 500+ HP w/NSCR
2310021411	IP;OGEP;On-Shore Gas Production;Gas Well Dehydrators – Flaring
2310021500	IP;OGEP;On-Shore Gas Production;Gas Well Completion - Flaring And Venting
2310021501	IP;OGEP;On-Shore Gas Production;Fugitives: Connectors
2310021502	IP;OGEP;On-Shore Gas Production;Fugitives: Flanges
2310021503	IP;OGEP;On-Shore Gas Production;Fugitives: Open Ended Lines
2310021504	IP;OGEP;On-Shore Gas Production;Fugitives: Pumps
2310021505	IP;OGEP;On-Shore Gas Production;Fugitives: Valves
2310021506	IP;OGEP;On-Shore Gas Production;Fugitives: Other
2310021509	IP;OGEP;On-Shore Gas Production;Fugitives: All Processes
2310021600	IP;OGEP;On-Shore Gas Production;Gas Well Venting
2310021601	IP;OGEP;On-Shore Gas Production;Gas Well Venting - Initial Completions
2310021602	IP;OGEP;On-Shore Gas Production;Gas Well Venting – Recompletions
2310021603	IP;OGEP;On-Shore Gas Production;Gas Well Venting – Blowdowns
2310021604	IP;OGEP;On-Shore Gas Production;Gas Well Venting - Compressor Startups
2310021605	IP;OGEP;On-Shore Gas Production;Gas Well Venting - Compressor Shutdowns
2310021700	IP;OGEP;On-Shore Gas Production;Miscellaneous Engines

SCC	SCC Description
2310022000	IP;OGEP;Off-Shore Gas Production;Total: All Processes
2310022010	IP;OGEP;Off-Shore Gas Production;Storage Tanks: Condensate
2310022051	IP;OGEP;Off-Shore Gas Production;Turbines: Natural Gas
2310022090	IP;OGEP;Off-Shore Gas Production;Boilers/Heaters: Natural Gas
2310022105	IP;OGEP;Off-Shore Gas Production;Diesel Engines
2310022410	IP;OGEP;Off-Shore Gas Production;Amine Unit
2310022420	IP;OGEP;Off-Shore Gas Production;Dehydrator
2310022501	IP;OGEP;Off-Shore Gas Production;Fugitives, Connectors: Gas Streams
2310022502	IP;OGEP;Off-Shore Gas Production;Fugitives, Flanges: Gas Streams
2310022505	IP;OGEP;Off-Shore Gas Production;Fugitives, Valves: Gas
2310022506	IP;OGEP;Off-Shore Gas Production;Fugitives, Other: Gas
2310030000	IP;OGEP;Natural Gas Liquids;Total: All Processes
2310030210	IP;OGEP;Natural Gas Liquids;Gas Well Tanks - Flashing & Standing/Working/Breathing, Uncontrolled
2310030300	IP;OGEP;Natural Gas Liquids;Gas Well Water Tank Losses
2310030401	IP;OGEP;Natural Gas Liquids;Gas Plant Truck Loading
2310111100	IP;OGEP;On-Shore Oil Exploration;Mud Degassing
2310111401	IP;OGEP;On-Shore Oil Exploration;Oil Well Pneumatic Pumps
2310111700	IP;OGEP;On-Shore Oil Exploration;Oil Well Completion: All Processes
2310112401	IP;OGEP;Off-Shore Oil Exploration;Oil Well Pneumatic Pumps
2310121100	IP;OGEP;On-Shore Gas Exploration;Mud Degassing
2310121401	IP;OGEP;On-Shore Gas Exploration;Gas Well Pneumatic Pumps
2310121700	IP;OGEP;On-Shore Gas Exploration;Gas Well Completion: All Processes
2310122100	IP;OGEP;Off-Shore Gas Exploration;Mud Degassing

* IP;OGEP=Industrial Processes; Oil and gas Exploration and Production

Appendix B: Mapping of Fuel Distribution SCCs to BTP, BPS and RBT

Table B-1 provides a crosswalk between SCC and classification type for portable fuel containers (PFC), fuel distribution operations associated with the bulk-plant-to-pump (BTP), refinery to bulk terminal (RBT) and bulk plant storage (BPS).

Table B-1. Crosswalk of SCC to PFC, BTP, BPS, and RBT

SCC	Description	Type
40300201	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Deleted - Do Not Use (See 4-03-011 and 4-07);Gasoline	RBT
40300302	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Deleted - Do Not Use (See 4-03-011 and 4-07);Gasoline	RBT
40301001	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Fixed Roof Tanks (Varying Sizes);Gasoline RVP 13: Breathing Loss (67000 Bbl. Tank Size)	RBT
40301002	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Fixed Roof Tanks (Varying Sizes);Gasoline RVP 10: Breathing Loss (67000 Bbl. Tank Size)	RBT
40301003	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Fixed Roof Tanks (Varying Sizes);Gasoline RVP 7: Breathing Loss (67000 Bbl. Tank Size)	RBT
40301004	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Fixed Roof Tanks (Varying Sizes);Gasoline RVP 13: Breathing Loss (250000 Bbl. Tank Size)	RBT
40301006	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Fixed Roof Tanks (Varying Sizes);Gasoline RVP 7: Breathing Loss (250000 Bbl. Tank Size)	RBT
40301007	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Fixed Roof Tanks (Varying Sizes);Gasoline RVP 13: Working Loss (Tank Diameter Independent)	RBT
40301101	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Floating Roof Tanks (Varying Sizes);Gasoline RVP 13: Standing Loss (67000 Bbl. Tank Size)	RBT
40301102	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Floating Roof Tanks (Varying Sizes);Gasoline RVP 10: Standing Loss (67000 Bbl. Tank Size)	RBT
40301103	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Floating Roof Tanks (Varying Sizes);Gasoline RVP 7: Standing Loss (67000 Bbl. Tank Size)	RBT
40301105	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Floating Roof Tanks (Varying Sizes);Gasoline RVP 10: Standing Loss (250000 Bbl. Tank Size)	RBT
40301151	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Floating Roof Tanks (Varying Sizes);Gasoline: Standing Loss - Internal	RBT
40301202	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Variable Vapor Space;Gasoline RVP 10: Filling Loss	RBT
40301203	Petroleum and Solvent Evaporation;Petroleum Product Storage at Refineries;Variable Vapor Space;Gasoline RVP 7: Filling Loss	RBT
40400100	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;undefined	RBT
40400101	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	RBT
40400102	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	RBT
40400103	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Breathing Loss (67000 Bbl. Capacity) - Fixed Roof Tank	RBT
40400104	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Breathing Loss (250000 Bbl Capacity)-Fixed Roof Tank	RBT

SCC	Description	Type
40400105	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Breathing Loss (250000 Bbl Capacity)-Fixed Roof Tank	RBT
40400106	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Breathing Loss (250000 Bbl Capacity) - Fixed Roof Tank	RBT
40400107	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Working Loss (Diam. Independent) - Fixed Roof Tank	RBT
40400108	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Working Loss (Diameter Independent) - Fixed Roof Tank	RBT
40400109	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Working Loss (Diameter Independent) - Fixed Roof Tank	RBT
40400110	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Standing Loss (67000 Bbl Capacity)-Floating Roof Tank	RBT
40400111	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Standing Loss (67000 Bbl Capacity)-Floating Roof Tank	RBT
40400112	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Standing Loss (67000 Bbl Capacity)-Floating Roof Tank	RBT
40400113	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	RBT
40400114	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	RBT
40400115	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	RBT
40400116	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13/10/7: Withdrawal Loss (67000 Bbl Cap.) - Float Rf Tnk	RBT
40400117	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13/10/7: Withdrawal Loss (250000 Bbl Cap.) - Float Rf Tnk	RBT
40400118	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	RBT
40400119	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	RBT
40400120	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	RBT
40400130	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Specify Liquid: Standing Loss - External Floating Roof w/ Primary Seal	RBT
40400131	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Primary Seal	RBT
40400132	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Primary Seal	RBT
40400133	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Standing Loss - External Floating Roof w/ Primary Seal	RBT

SCC	Description	Type
40400140	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Specify Liquid: Standing Loss - Ext. Float Roof Tank w/ Second'y Seal	RBT
40400141	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Secondary Seal	RBT
40400142	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Secondary Seal	RBT
40400143	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Standing Loss - Ext. Floating Roof w/ Secondary Seal	RBT
40400148	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13/10/7: Withdrawal Loss - Ext. Float Roof (Pri/Sec Seal)	RBT
40400149	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Specify Liquid: External Floating Roof (Primary/Secondary Seal)	RBT
40400150	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Miscellaneous Losses/Leaks: Loading Racks	RBT
40400151	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Valves, Flanges, and Pumps	RBT
40400152	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Vapor Collection Losses	RBT
40400153	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Vapor Control Unit Losses	RBT
40400160	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Specify Liquid: Standing Loss - Internal Floating Roof w/ Primary Seal	RBT
40400161	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Primary Seal	RBT
40400162	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Primary Seal	RBT
40400163	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Standing Loss - Internal Floating Roof w/ Primary Seal	RBT
40400170	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Specify Liquid: Standing Loss - Int. Floating Roof w/ Secondary Seal	RBT
40400171	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Secondary Seal	RBT
40400172	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Secondary Seal	RBT
40400173	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 7: Standing Loss - Int. Floating Roof w/ Secondary Seal	RBT
40400178	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Gasoline RVP 13/10/7: Withdrawal Loss - Int. Float Roof (Pri/Sec Seal)	RBT
40400179	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;Specify Liquid: Internal Floating Roof (Primary/Secondary Seal)	RBT
40400199	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Terminals;See Comment **	RBT
40400201	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	BTP
40400202	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	BTP

SCC	Description	Type
40400203	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 7: Breathing Loss (67000 Bbl. Capacity) - Fixed Roof Tank	BPS
40400204	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Working Loss (67000 Bbl. Capacity) - Fixed Roof Tank	BPS
40400205	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10: Working Loss (67000 Bbl. Capacity) - Fixed Roof Tank	BPS
40400206	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 7: Working Loss (67000 Bbl. Capacity) - Fixed Roof Tank	BTP
40400207	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Standing Loss (67000 Bbl Cap.) - Floating Roof Tank	BTP
40400208	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10: Standing Loss (67000 Bbl Cap.) - Floating Roof Tank	BPS
40400210	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13/10/7: Withdrawal Loss (67000 Bbl Cap.) - Float Rf Tnk	BPS
40400211	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	BTP
40400212	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	BTP
40400213	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 7: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	BTP
40400230	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Specify Liquid: Standing Loss - External Floating Roof w/ Primary Seal	BTP
40400231	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Primary Seal	BTP
40400232	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Primary Seal	BPS
40400233	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 7: Standing Loss - External Floating Roof w/ Primary Seal	BTP
40400240	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Specify Liquid: Standing Loss - Ext. Floating Roof w/ Secondary Seal	RBT
40400241	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Secondary Seal	BPS
40400248	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10/13/7: Withdrawal Loss - Ext. Float Roof (Pri/Sec Seal)	BPS
40400249	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Specify Liquid: External Floating Roof (Primary/Secondary Seal)	RBT
40400250	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Loading Racks	BPS
40400251	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Valves, Flanges, and Pumps	BPS
40400252	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Miscellaneous Losses/Leaks: Vapor Collection Losses	BPS
40400253	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Miscellaneous Losses/Leaks: Vapor Control Unit Losses	BPS

SCC	Description	Type
40400260	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Specify Liquid: Standing Loss - Internal Floating Roof w/ Primary Seal	RBT
40400261	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Primary Seal	BTP
40400262	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Primary Seal	BTP
40400263	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 7: Standing Loss - Internal Floating Roof w/ Primary Seal	BTP
40400270	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Specify Liquid: Standing Loss - Int. Floating Roof w/ Secondary Seal	BPS
40400271	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Secondary Seal	BTP
40400272	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Secondary Seal	BPS
40400273	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 7: Standing Loss - Int. Floating Roof w/ Secondary Seal	BPS
40400278	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Gasoline RVP 10/13/7: Withdrawal Loss - Int. Float Roof (Pri/Sec Seal)	BTP
40400279	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Bulk Plants;Specify Liquid: Internal Floating Roof (Primary/Secondary Seal)	BPS
40400401	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Petroleum Products - Underground Tanks;Gasoline RVP 13: Breathing Loss	BTP
40400402	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Petroleum Products - Underground Tanks;Gasoline RVP 13: Working Loss	BTP
40400403	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Petroleum Products - Underground Tanks;Gasoline RVP 10: Breathing Loss	BTP
40400404	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Petroleum Products - Underground Tanks;Gasoline RVP 10: Working Loss	BTP
40400405	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Petroleum Products - Underground Tanks;Gasoline RVP 7: Breathing Loss	BTP
40400406	Petroleum and Solvent Evaporation;Petroleum Liquids Storage (non-Refinery);Petroleum Products - Underground Tanks;Gasoline RVP 7: Working Loss	BTP
40600100	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;undefined	BTP
40600101	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Splash Loading	BTP
40600126	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Submerged Loading	BTP
40600131	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Submerged Loading (Normal Service)	BTP
40600136	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Splash Loading (Normal Service)	BTP
40600141	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Submerged Loading (Balanced Service)	BTP

SCC	Description	Type
40600144	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Splash Loading (Balanced Service)	BTP
40600147	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Submerged Loading (Clean Tanks)	BTP
40600162	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Loaded with Fuel (Transit Losses)	BTP
40600163	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Gasoline: Return with Vapor (Transit Losses)	BTP
40600197	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Not Classified	BTP
40600198	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Not Classified	BTP
40600199	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Tank Cars and Trucks;Not Classified	BTP
40600231	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Ship Loading - Cleaned and Vapor Free Tanks	RBT
40600232	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Ocean Barges Loading	RBT
40600233	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Barge Loading - Cleaned and Vapor Free Tanks	BTP
40600234	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Ship Loading - Ballasted Tank	RBT
40600235	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Ocean Barges Loading - Ballasted Tank	BTP
40600236	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Ship Loading - Uncleaned Tanks	RBT
40600237	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Ocean Barges Loading - Uncleaned Tanks	RBT
40600238	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Barges Loading - Uncleaned Tanks	RBT
40600239	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Tanker Ship - Ballasted Tank Condition	RBT
40600240	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Barge Loading - Average Tank Condition	RBT
40600241	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Gasoline: Tanker Ship - Ballasting	BTP
40600298	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Not Classified	RBT
40600299	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Marine Vessels;Not Classified	RBT
40600301	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Gasoline Retail Operations - Stage I;Splash Filling	BTP
40600302	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Gasoline Retail Operations - Stage I;Submerged Filling w/o Controls	BTP
40600305	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Gasoline Retail Operations - Stage I;Unloading	BTP
40600306	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Gasoline Retail Operations - Stage I;Balanced Submerged Filling	BTP
40600307	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Gasoline Retail Operations - Stage I;Underground Tank Breathing and Emptying	BTP
40600399	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Gasoline Retail Operations - Stage I;Not Classified	BTP

SCC	Description	Type
40600401	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Filling Vehicle Gas Tanks - Stage II;Vapor Loss w/o Controls	BTP
40600403	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Filling Vehicle Gas Tanks - Stage II;Vapor Loss w/o Controls	BTP
40600501	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Pipeline Petroleum Transport - General - All Products;Pipeline Leaks	RBT
40600502	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Pipeline Petroleum Transport - General - All Products;Pipeline Venting	RBT
40600503	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Pipeline Petroleum Transport - General - All Products;Pump Station	RBT
40600504	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Pipeline Petroleum Transport - General - All Products;Pump Station Leaks	RBT
40600602	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Consumer (Corporate) Fleet Refueling - Stage II;Liquid Spill Loss w/o Controls	BTP
40600701	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Consumer (Corporate) Fleet Refueling - Stage I;Splash Filling	BTP
40600702	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Consumer (Corporate) Fleet Refueling - Stage I;Submerged Filling w/o Controls	BTP
40600706	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Consumer (Corporate) Fleet Refueling - Stage I;Balanced Submerged Filling	BTP
40600707	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Consumer (Corporate) Fleet Refueling - Stage I;Underground Tank Breathing and Emptying	BTP
40688801	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Fugitive Emissions;Specify in Comments Field	BTP
40688802	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Fugitive Emissions;Specify in Comments Field	BTP
40688803	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Fugitive Emissions;Specify in Comments Field	RBT
40688805	Petroleum and Solvent Evaporation;Transportation and Marketing of Petroleum Products;Fugitive Emissions;Specify in Comments Field	BTP
2501011011	Storage and Transport;Petroleum and Petroleum Product Storage;Residential Portable Gas Cans;Permeation	PFC
2501011012	Storage and Transport;Petroleum and Petroleum Product Storage;Residential Portable Gas Cans;Evaporation (includes Diurnal losses)	PFC
2501011013	Storage and Transport;Petroleum and Petroleum Product Storage;Residential Portable Gas Cans;Spillage During Transport	PFC
2501011014	Storage and Transport;Petroleum and Petroleum Product Storage;Residential Portable Gas Cans;Refilling at the Pump - Vapor Displacement	PFC
2501011015	Storage and Transport;Petroleum and Petroleum Product Storage;Residential Portable Gas Cans;Refilling at the Pump - Spillage	PFC
2501012011	Storage and Transport;Petroleum and Petroleum Product Storage;Commercial Portable Gas Cans;Permeation	PFC
2501012012	Storage and Transport;Petroleum and Petroleum Product Storage;Commercial Portable Gas Cans;Evaporation (includes Diurnal losses)	PFC
2501012013	Storage and Transport;Petroleum and Petroleum Product Storage;Commercial Portable Gas Cans;Spillage During Transport	PFC
2501012014	Storage and Transport;Petroleum and Petroleum Product Storage;Commercial Portable Gas Cans;Refilling at the Pump - Vapor Displacement	PFC
2501012015	Storage and Transport;Petroleum and Petroleum Product Storage;Commercial Portable Gas Cans;Refilling at the Pump - Spillage	PFC
2501050120	Storage and Transport;Petroleum and Petroleum Product Storage;Bulk Terminals: All Evaporative Losses;Gasoline	RBT
2501055120	Storage and Transport;Petroleum and Petroleum Product Storage;Bulk Plants: All Evaporative Losses;Gasoline	BPS
2501060051	Storage and Transport;Petroleum and Petroleum Product Storage;Gasoline Service Stations;Stage 1: Submerged Filling	BTP

SCC	Description	Type
2501060052	Storage and Transport;Petroleum and Petroleum Product Storage;Gasoline Service Stations;Stage 1: Splash Filling	BTP
2501060053	Storage and Transport;Petroleum and Petroleum Product Storage;Gasoline Service Stations;Stage 1: Balanced Submerged Filling	BTP
2501060100	Storage and Transport;Petroleum and Petroleum Product Storage;Gasoline Service Stations;Stage 2: Total	BTP
2501060201	Storage and Transport;Petroleum and Petroleum Product Storage;Gasoline Service Stations;Underground Tank: Breathing and Emptying	BTP
2501995000	Storage and Transport;Petroleum and Petroleum Product Storage;All Storage Types: Working Loss;Total: All Products	BTP
2505000120	Storage and Transport;Petroleum and Petroleum Product Transport;All Transport Types;Gasoline	RBT
2505020120	Storage and Transport;Petroleum and Petroleum Product Transport;Marine Vessel;Gasoline	RBT
2505020121	Storage and Transport;Petroleum and Petroleum Product Transport;Marine Vessel;Gasoline - Barge	RBT
2505030120	Storage and Transport;Petroleum and Petroleum Product Transport;Truck;Gasoline	BTP
2505040120	Storage and Transport;Petroleum and Petroleum Product Transport;Pipeline;Gasoline	RBT
2660000000	Waste Disposal, Treatment, and Recovery;Leaking Underground Storage Tanks;Leaking Underground Storage Tanks;Total: All Storage Types	BTP

Appendix C: Crosswalk between AE6 profile codes and SPECIATE 4.3 profile codes

Table C-1 provides a crosswalk between the $PM_{2.5}$ speciation AE6 profile codes used in the modeling platform and the equivalent profile codes in the SPECIATE 4.3 database. Although the codes themselves are different, the actual chemical profiles are equivalent.

Table C-1. Crosswalk of AE6 profiles between modeling platform and SPECIATE 4.3

Platform profile	SPECIATE 4.3 profile	SPECIATE profile name
92000	91103	Agricultural Burning - inventory speciation
92001	91101	Agricultural Soil - inventory speciation
92002	91137	Aluminum Production - inventory speciation
92003	91163	Ammonium Nitrate Production - inventory speciation
92004	91181	Ammonium Sulfate Production - inventory speciation
92005	91159	Asphalt Manufacturing - inventory speciation
92006	91148	Asphalt Roofing - inventory speciation
92007	91180	Auto Body Shredding - inventory speciation
92008	91183	Boric Acid Manufacturing - inventory speciation
92009	91134	Brake Lining Dust - inventory speciation
92010	91171	Brick Grinding and Screening - inventory speciation
92011	91172	Calcium Carbide Furnace - inventory speciation
92012	91157	Cast Iron Cupola - inventory speciation
92013	91141	Catalytic Cracking - inventory speciation
92014	91127	Cement Production - inventory speciation
92015	91116	Charbroiling - inventory speciation
92016	91140	Charcoal Manufacturing - inventory speciation
92017	91124	Chemical Manufacturing - Avg - inventory speciation
92018	92018	Cigarette Smoke - Simplified
92019	91173	Coke Calciner - inventory speciation
92020	91107	Construction Dust - inventory speciation
92021	91170	Copper Production - inventory speciation
92022	91169	Crustal Material - inventory speciation
92023	91118	Dairy Soil - inventory speciation
92025	91115	Distillate Oil Combustion - inventory speciation
92026	91153	Electric Arc Furnace - inventory speciation
92027	91151	Ferromanganese Furnace - inventory speciation
92028	91142	Fiberglass Manufacturing - inventory speciation
92029	91160	Fly Ash - inventory speciation
92030	91130	Food & Ag - Handling - inventory speciation
92031	91154	Food & Ag-Drying - inventory speciation
92032	92032	Geothermal Background - Simplified
92033	91143	Glass Furnace - inventory speciation
92034	91166	Gypsum Manufacturing - inventory speciation
92035	91106	HDDV Exhaust - inventory speciation
92036	91123	Heat Treating - inventory speciation
92037	91123	Heat Treating - inventory speciation
92038	91121	Industrial Manufacturing - Avg - inventory speciation

Platform profile	SPECIATE 4.3 profile	SPECIATE profile name
92039	91174	Industrial Soil - inventory speciation
92040	91149	Inorganic Chemical Manufacturing - inventory speciation
92041	91182	Inorganic Fertilizer - inventory speciation
92042	91119	Kraft Recovery Furnace - inventory speciation
92043	91162	LDDV Exhaust - inventory speciation
92044	91178	Lead Production - inventory speciation
92045	91138	Lime Kiln - inventory speciation
92046	91164	Limestone Dust - inventory speciation
92047	91120	Mineral Products - Avg - inventory speciation
92048	91112	Natural Gas Combustion - inventory speciation
92049	91113	Nonroad Gasoline Exhaust - inventory speciation
92050	91122	Onroad Gasoline Exhaust - inventory speciation
92051	91133	Open Hearth Furnace - inventory speciation
92052	91147	Misc. Sources - inventory speciation
92053	91108	Paved Road Dust - inventory speciation
92054	91145	Petroleum Industry - Avg - inventory speciation
92055	91165	Phosphate Manufacturing - inventory speciation
92057	91125	Lignite Combustion - inventory speciation
92058	91175	Potato Deep Frying - inventory speciation
92059	91109	Prescribed Burning - inventory speciation
92060	91136	Process Gas Combustion - inventory speciation
92061	91144	Pulp & Paper Mills - inventory speciation
92062	91155	Residential Coal Combustion - inventory speciation
92063	91156	Residential Natural Gas Combustion - inventory speciation
92068	91105	Residential Wood Combustion - inventory speciation
92071	92071	Residential Wood Combustion: Synthetic - Simplified
92072	91117	Residual Oil Combustion - inventory speciation
92073	91111	Sand & Gravel - inventory speciation
92074	91161	Sandblast - inventory speciation
92075	91176	Sea Salt - inventory speciation
92076	91132	Aluminum Processing - inventory speciation
92077	91158	Copper Processing - inventory speciation
92078	91168	Lead Processing - inventory speciation
92079	91139	Sintering Furnace - inventory speciation
92080	91146	Slash Burning - inventory speciation
92081	91177	Sludge Combustion - inventory speciation
92082	91126	Solid Waste Combustion - inventory speciation
92083	91179	Steel Desulfurization - inventory speciation
92084	91110	Sub-Bituminous Combustion - inventory speciation
92085	91129	Surface Coating - inventory speciation
92087	91150	Tire Dust - inventory speciation
92088	91100	Unpaved Road Dust - inventory speciation
92089	91167	Urea Fertilizer - inventory speciation
92090	91102	Wildfires - inventory speciation

Platform profile	SPECIATE 4.3 profile	SPECIATE profile name
92091	91114	Wood Fired Boiler - inventory speciation
92092	91128	Wood Products - Drying - inventory speciation
92093	91128	Wood Products - Drying - inventory speciation
92094	91131	Wood Products-Sawing - inventory speciation
92095	91104	Bituminous Combustion - inventory speciation

Appendix D: Memo Describing the Differences in MOVES speciated PM and CMAQ PM

The following memo from Madeleine Strum describes in detail the differences between MOVES speciated PM and AE5 PM species and the derivation of the equations to convert between them. The original memo was "MOVES2010 PM25 Onroad Speciation method_24feb2011.docx" and has been copied below in full:

Interim Approach to develop CMAQ PM2.5 species from Partially-speciated MOVES2010 EXHAUST PM2.5

Introduction

This document presents the interim approach developed by OTAQ and OAQPS to speciate the partially speciated $PM_{2.5}$ exhaust emissions from MOVES2010. The advantage of using this approach over the approach used for speciating total $PM_{2.5}$ is that it allows the speciated emissions from MOVES; i.e., elemental carbon and particulate sulfate to be retained and only the remainder of the $PM_{2.5}$ to rely on speciation profiles.

The table below shows the MOVES2010 EXHAUST $PM_{2.5}$-related species and how they relate to the five CMAQ 4.7 model species: PEC, POC, PSO4, PNO3, and PMFINE

MOVES2010 Pollutant Name	shortName	Variable name for Equations	Relation to CMAQ model species
Primary Exhaust PM2.5 - Total	PM2.5 Total Exh	PM25_TOTAL	
Primary PM2.5 - Organic Carbon	PM2.5 Organic C	PM25OM	Sum[1] of **POC**, **PNO3** and **PMFINE**
Primary PM2.5 - Elemental Carbon	PM2.5 Elem C	PM25EC	**PEC**
Primary PM2.5 - Sulfate Particulate	PM2.5 Sulfate	PM25SO4	**PSO4**

We need to further disaggregate the MOVES species "PM25OM" into the CMAQ model species.

MOVES species are related as follows: PM25_TOTAL = PM25EC + PM25OM + PSO4

The five CMAQ species also sum to total $PM_{2.5}$:

$$PM_{2.5} = POC+PEC+PNO3+PSO4+PMFINE$$

Section 2 discusses the procedure we used when using the draft version of MOVES prior to the MOVES2010 release. The issues with this approach and rational for the changes for MOVES2010 are presented here.

Section 3 provides the approach, data and assumptions used.

Sections 4 and 5 present the equations to be used for 2 situations: 1) when MOVES is run with actual temperatures, such as the case when MOVES is run within the SMOKE model (currently under design) and

[1] For draft MOVES, for gasoline sources (in all cases using draft MOVES for the platform including 2005ai , 2005ak, 2005ap), this MOVES pollutant also included PSO4, since it was the difference of total $PM_{2.5}$ and PEC. With MOVES2010, this species is now the difference between total $PM_{2.5}$ and the sum of PEC and PSO4.

2) when MOVES is run at 72 F, such as the case when pre-computed MOVES emissions are input into SMOKE, and are adjusted based on gridded hourly temperatures prior to be input into CMAQ.

Background: Previous Approach Using Draft MOVES

When we received output from the draft version of MOVES for gasoline vehicles (summer 2008), it did not include Primary Exhaust $PM_{2.5}$ - Total. MOVES output provided emissions for the following:

1) Primary $PM_{2.5}$ - Elemental Carbon (PEC)
2) Primary $PM_{2.5}$.- Sulfate Particulate (PSO4)
3) The difference between total $PM_{2.5}$ and PEC, which ***was*** labeled "PM25OC"

The total $PM_{2.5}$ and PEC (from which the MOVES PM25OC was derived) were based on the Kansas City Study; the MOVES PSO4 was based on the fuel sulfur content. In our previous approach, we first subtracted PSO4 from PM25OC prior to further speciating it into the necessary CMAQ inputs.

When we tried to implement the same approach for draft MOVES for diesel vehicles, the $PM_{2.5}$ Sulfate exceeded the PM25OC. Therefore we chose not to subtract $PM_{2.5}$ Sulfate. Note that the diesel results did not come from the Kansas City study and the actual relationship between $PM_{2.5}$ Total Exh , $PM_{2.5}$ Organic C and PEC is not necessarily the same as in the Kansas City study.

It should also be noted, that for the gasoline approach, the sulfates included in the gasoline-based "PM25OC" would have been specific to Kansas City and very small. It is possible that in other parts of the country or that for different years, the sulfate is much larger and would be inconsistent with the "PM25OC" of the Kansas City study. As a result, it was decided at the OTAQ/OAQPS Inventory Coordination Team meeting on 25Feb2010, that in the interim we will no longer remove PSO4 mass from MOVES "PM25OC" **for neither gasoline nor diesel vehicles.**

In addition to the above changes, there were also changes to the values used for the speciation approach. Attachment 1 provides the details.

Ultimately, the plan is for MOVES to provide the species that CMAQ requires (potentially a 6 month timeframe). In the meantime, adjustments will continue be made in a post processing step of the MOVES outputs that we describe in this document.

Previous Approach using MOVES2010 for the Version 4.1 Platform ("cr" series and pre-HD GHG "cs" series)

Partially speciated $PM_{2.5}$ emissions for diesel vehicles were first introduced into the MOVES2010 runs and used for Version 4.1 of the 2005 Platform. We used the same equations (other than computation of PMC) to obtain the pre-temperature adjusted CMAQ $PM_{2.5}$ species for diesel and gasoline (only the computation of coarse particulate matter, PMC, was different between gasoline and diesel vehicles). These equations are the equations in section 4 that apply to gasoline vehicles. Thus, equation (7) is used to compute NH4 and equation (8) is not used at all.

The approach was changed by introducing equation (8) which zeroes out ammonium (NH4) for diesel vehicles instead of computing it stoichiometrically (equation 7). This was first implemented for post

processing the MOVES partially speciated PM emissions for the HD GHG modeling effort. The change was made because the v4.1 platform equations, when applied to diesel exhaust in some counties, resulted in negative POC due to the large fraction of sulfate and ammonium (NH4) resulting from the stoichiometric equation that relates ammonium mass to the mass of sulfate and nitrate. This stoichiomentric equation assumes that the NH4 balances the anions of sulfate and nitrate in the mix. However, this is not the case – in particular for diesel exhaust which has little or no ammonia and for which the sulfate is emitted as H2SO4 acid as opposed to ammonium sulfate.

Section 4 thus provides the updated approach.

Approach

The MOVES output provides total $PM_{2.5}$ and three components of $PM_{2.5}$: two pre-speciated components of $PM_{2.5}$ which are: 1) *PEC*, and 2) *PSO4*, and a non-speciated component termed "*PM25OM*", which is defined as the difference between total $PM_{2.5}$ and PEC.

It is important to note that *PM25OM* is not solely made up of organic matter, but is defined as the following:

$$\text{MOVES total } PM_{2.5} = \text{PEC} + \text{PM25OM} + \text{PSO4} \quad (1)$$

We can compute the CMAQ $PM_{2.5}$ species from (1) the MOVES2010 output pollutants: PEC, PSO4 and PM25OM, and (2) the speciation profile for total $PM_{2.5}$ exhaust. The equations used are presented below.

MOVES total $PM_{2.5}$ is the sum of the two pre-speciated components of $PM_{2.5}$ and a remainder term, *R*.

$$\text{MOVES total } PM_{2.5} = \text{PEC} + \text{PSO4} + R \quad (2)$$

The remainder term is the provided as a MOVES output

$$R = \text{PM25OM} \quad (3)$$

The *R* term includes POM, which consists of POC and the hydrogen and oxygen atoms attached to the carbon as part of the organic matter, PNO3, soil oxides and metals (also known as "crustal" and called METAL here), ammonium, and water, and thus can be also written as:

$$R = \text{POM} + \text{PNO3} + \text{METAL} + \text{NH4} + H_20 \quad (4)$$

To correctly calculate the five $PM_{2.5}$ species needed for CMAQ, we first needed to break out the POC, PNO3, and PMFINE from *R*. We can use the proportional relationship of known species to unknown species from the speciation profile. Note that there are different speciation profiles for gasoline vehicles, light duty diesel vehicles and heavy duty diesel vehicles. They are provided along with the corresponding data used for these calculations in Table 1.

The primary nitrate is computed based on the ratio of nitrate to elemental carbon, i.e., F_{NO3} / F_{EC} and metals component from the ratio of metals to elemental carbon, F_{METAL} / F_{EC} using equations (5) and (6), respectively.

$$\text{PNO3} = \text{PEC} \times F_{NO3} / F_{EC} \quad (5)$$

$$\text{METAL} = \text{PEC} \times F_{METAL} / F_{EC} \quad (6)$$

where,

F_{EC} = Fraction of elemental carbon in the speciation profile

F_{NO3} = Fraction of nitrate in the speciation profile

F_{METAL} = Fraction of metals in the speciation profile

Table 1 shows the values for the above fractions and the profiles from which they are to be derived.

Table 1: Values and basis for fractions used to compute PNO3 and METAL

Vehicle Type	SCC list	Speciation Profile Code and Name[1]	Profile Percentages
LDDV	All SCCs that begin with: 2230001 2230002 2230003 2230004 2230005 2230006	92042 LDDV Exhaust – Simplified 91017 LDDV Exhaust - Composite See Note 2	F_{EC} = 57.48051203% F_{NO3}= 0.23% F_{METAL}=0.6513%
HDDV	All SCCs that begin with: 223007	92035 HDDV Exhaust – Simplified 3914 Diesel Exhaust See Note 3	F_{EC} = 77.1241% F_{NO3}= 0.1141% F_{METAL} = 0.2757%
LDGV and HDGV	All SCCs that begin with 2201	92050 Onroad Gasoline Exhaust – Simplified 91022 Onroad Gasoline Exhaust - Composite	F_{EC} = 20.80113619% F_{NO3} = 0.1015% F_{METAL} = 2.2256%

NOTES

1. The values of F_{EC} and F_{NO3} are the same in the simplified and non-simplified profiles. The value for F_{METAL} was computed from the non-simplified profile as the sum of percentages of all ions of the metals and metal elements in the profile.
2. Previously (Attachment 1), for LDDV in the draft MOVES approach, we used the value of F_{NO3} and F_{METAL} from the HDDV profile. We changed so that all fractions for each species come from the LDDV
3. The value of F_{METAL} for HDDV previously used (Attachment 1) was corrected since it had inadvertently excluded the chloride ion percentage in the HDDV speciation profile.

As of 2/24/11 call with OTAQ experts, for diesel AND gasoline exhaust vehicles:

$$NH4 = 0 \quad (8)$$

The final component of PMFINE is the non-carbon mass of organic carbon. To calculate the non-carbon mass, we first needed to compute organic carbon from the remainder term, *R*.

A key assumption is that POM is a factor of 1.2 greater than the mass of primary organic carbon, which is also used in the CMAQ postprocessing software at EPA.

$$POM = 1.2 \times POC \quad (9)$$

Using this assumption and assuming that the H_20 is negligible, the equation needed for the calculation of POC is shown in equation (10) below.

$$POC = 5/6 \times (R - METAL - NH4 - PNO3) \quad (10)$$

From equation (9), the non-carbon portion of the organic carbon matter is 20%, of the POC. By definition, PMFINE is the sum of the non-carbon portion of the mass, METAL and NH4.

$$PMFINE = METAL + NH4 + 0.2 \times POC \quad (11)$$

For gasoline mobile sources, the PMC is 8.6% of the $PM_{2.5}$ mass

Gasoline vehicles only: $PMC = 0.086 \times (PMFINE + PEC + POC + PSO4 + PNO3)$

For diesel mobile sources, the PMC is 3.09% of the $PM_{2.5}$ mass

Diesel vehicles only: $PMC = 0.0309 \times (PMFINE + PEC + POC + PSO4 + PNO3)$

Implementation for when MOVES is run with actual temperatures

The MOVES pollutants of interest are summarized from the below table provided by OTAQ.

Pollutants

MOVES PollutantId	Data Transfer PollutantCode
101	PM10OM
102	PM10EC
105	PM10SO4
111	PM25OM
112	PM25EC
115	PM25SO4

The purpose of the equations in Section 5 is to fully speciate the MOVES2010 partially-speciated EXHAUST $PM_{2.5}$ to create the model species needed for CMAQ. The equations apply to PM from all exhaust processes.

The equations below utilize the following MOVES 2010 outputs
PM25EC, which is identical to the elemental carbon portion of $PM_{2.5}$, or PEC
PM25SO4, which is identical to the sulfate portion of $PM_{2.5}$, or PSO4
PM25OM, which contains all components of $PM_{2.5}$ other than PEC and PSO4.

For gasoline vehicles, MOVES applies a temperature adjustment factor that accounts for the impact of cold temperatures on PM25OM and PM25EM with decreasing temperature at temperatures below 72 °F. At 72 °F or higher, there is no dependency of any component of $PM_{2.5}$ on temperature. There is also no dependency of any component of $PM_{2.5}$ on temperature for diesel vehicles. At temperatures lower than 72 °F, the temperature dependence is different for start emissions (including crankcase starts) versus running emissions (including crankcase running).

Not all components of $PM_{2.5}$ for gasoline vehicles are a function of temperature. The following table shows the components and their temperature dependence. The components shown in red font are four of the five $PM_{2.5}$ species used in CMAQ; the other species shown in black font are used to compute the fifth CMAQ species, PMFINE.

$PM_{2.5}$ components that can vary with temperature, gasoline vehicles	**$PM_{2.5}$ components that do not vary with temperature**
PEC, POC, non-carbon organic matter	PSO4, PNO3, NH4, METAL
Because PMFINE is the sum of temperature adjusted and non-temperature adjusted components, it is a function of temperature.	

For gasoline vehicles, the unadjusted PEC is needed to compute the components of $PM_{2.5}$ that are not impacted by temperature. We denote unadjusted PEC as:
PEC_72

There are two ways to determine PEC_72:

1. Run MOVES at 72 °F or higher.

2. Calculate it by "backing out" the temperature adjustment from the adjusted MOVES PEC. This is done by dividing PEC by the MOVES cold temperature adjustment factor, PEC_Tadj: **PEC_72 = PEC/ PEC_Tadj**

The approach chosen for SMOKE MOVES is to back out the adjustment factor, because it eliminates the need to specify a temperature bin for the MOVES runs that is greater than or equal to 72 °F.

MOVES uses the following for PEC_Tadj
Diesel vehicles: PEC_Tadj = 1
Gasoline vehicles: PEC_Tadj is determined based on type of exhaust and temperature (in °F) using the values the below table.

Vehicle Type	**Temperature Range, T (°F)**	**PEC_Tadj for start emissions (including crankcase start), gasoline vehicles**	**PEC_Tadj for running emissions (including crankcase running), gasoline vehicles**
Gasoline vehicles	T<72 °F	28.039*exp(-0.0463*T)	9.871*exp(-0.0318*T)
	72 °F or higher	1.0	1.0
Diesel vehicles	All Temperatures	1.0	1.0

The equations are

(1) PEC = PM25EC

(2) PEC_72 = PEC / PEC_Tadj

(3) PSO4 = PM25SO4

(4) PNO3 = PEC_72 × *FNO3 / FEC*

(5) METAL = PEC_72 × *FMETAL / FEC*

(6) Compute NH4

a. For GASOLINE Vehicles: NH4 = 0

b. For DIESEL Vehicles: NH4=0

(7) POC = 5/6 × (PM25OM – METAL – NH4 – PNO3)

(8) PMFINE = METAL + NH4 + 0.2 × POC

(9) PMC = ($R_{PM10\text{-}to\text{-}PM25}$-*1)* × (PMFINE + PEC + POC + PSO4 + PNO3)

where

<table>
<tr><td>PEC</td><td>Mass of Primary elemental carbon, a species needed for the air quality model</td></tr>
<tr><td>PEC_72</td><td>Mass of Primary elemental carbon when MOVES is run at 72 °F or higher temperature; calculated by backing out the temperature adjustment factor, PEC_Tadj</td></tr>
<tr><td>PEC_Tadj</td><td>For diesel vehicle SCCs: PEC_Tadj= 1
For gasoline vehicle SCCs:
<table>
<tr><th>Temperature Range, T (°F)</th><th>PEC_Tadj for start emissions (including crankcase start), gasoline vehicles</th><th>PEC_Tadj for running emissions (including crankcase running), gasoline vehicles</th></tr>
<tr><td>T<72 °F</td><td>28.039*exp(-0.0463*T)</td><td>9.871*exp(-0.0318*T)</td></tr>
<tr><td>72 °F or higher</td><td>1.0</td><td>1.0</td></tr>
</table></td></tr>
<tr><td>gasoline SCCs</td><td>All SCCs that begin with 2201</td></tr>
<tr><td>diesel SCCs</td><td>All SCCS that begin with 2230</td></tr>
<tr><td>PM25EC</td><td>Mass of Primary elemental carbon provided by the MOVES model</td></tr>
<tr><td>PM25SO4</td><td>Mass of Primary sulfate provided by the MOVES model</td></tr>
<tr><td>PSO4</td><td>Mass of Primary sulfate, a species needed for the air quality model</td></tr>
<tr><td>PNO3</td><td>Mass of Primary nitrate, a species needed for the air quality model</td></tr>
<tr><td>METAL</td><td>Mass of metal component of $PM_{2.5}$, which is a component of PMFINE</td></tr>
<tr><td>FNO3, FEC, FMETAL</td><td>Percentages of nitrate, elemental carbon and derived from the vehicle-type-specific speciation profile, values are provided in Table 1</td></tr>
<tr><td>NH4</td><td>Mass of ammonium component of $PM_{2.5}$, which is a component of PMFINE
Note that this is assumed 0 for both gasoline and diesel exhaust as of 2/24/11</td></tr>
<tr><td>62.0049</td><td>Molecular weight of nitrate</td></tr>
<tr><td>96.0576</td><td>Molecular weight of sulfate</td></tr>
<tr><td>18.0383</td><td>Molecular weight of ammonium</td></tr>
<tr><td>POC</td><td>Mass of Primary organic carbon, a species needed for the air quality model</td></tr>
<tr><td>PM25OM</td><td>Mass of organic material provided by the MOVES model, actually includes more than organic matter; it includes the mass of all components of $PM_{2.5}$ other than PEC and PSO4</td></tr>
<tr><td>PMFINE</td><td>Mass of other Primary $PM_{2.5}$ not accounted for in PEC, POC, PSO4 and PNO3, a species needed for the air quality model. This mass includes the ammonium, metals, water and the and the mass of the non-carbon material, i.e., hydrogen and oxygen and other atoms attached to the organic carbon</td></tr>
<tr><td>PMC</td><td>Mass of the coarse fraction of the PM10; defined as PM10 – $PM_{2.5}$, a species needed for CMAQ</td></tr>
<tr><td>$R_{PM10\text{-}to\text{-}PM25}$</td><td>Ratio of PM10-to-$PM_{2.5}$ which is a constant dependent upon fuel type
Values are provided in Table 1</td></tr>
</table>

Quality Assurance Check:
EXH_PM25 = PMFINE + PEC + POC + PSO4 + PNO3

Table 1 has the values for *FNO3*, *FEC* and *FMETAL and* $R_{PM10\text{-}to\text{-}PM25}$
They are based on the vehicle type (first 7 digits of the SCC), except that $R_{PM10\text{-}to\text{-}PM25}$ is based solely on fuel type.

Table 1: Values and basis for fractions used to compute PNO3 and METAL

Vehicle Type	**SCC list**	*FEC (%)*	*FNO3 (%)*	*FMETAL (%)*	$R_{PM10\text{-}to\text{-}PM25}$
LDDV	All SCCs that begin with: 2230001, 2230002, 2230003, 2230004, 2230005, 2230006	57.48051203	0.23	0.6513	1.0309
HDDV	All SCCs that begin with: 223007	77.1241	0.1141	0.2757	1.0309
LDGV and HDGV	All SCCs that begin with 2201	20.80113619	0.1015	2.2256	1.086

Implementation for when MOVES-based emissions at 72 Fahrenheit are Input into SMOKE

The equations below utilize the following MOVES 2010 outputs:
PM25OM
PM25EC
PM25SO4

However, EXH_PM25 can be used for QA

All red-fonted variables are fed into SMOKE
All blue-fonted varilables are from MOVES output
Table 1 (Section 4) provides the values of the constants (italics): *FNO3, FEC, FMETAL and* $R_{PM10\text{-}to\text{-}PM25}$*-1*

The equations are

(1) PEC_72 = PM25EC
(2) PSO4 = PM25SO4
(3) PNO3 = PEC_72 × *FNO3 / FEC*
(4) METAL = PEC_72× *FMETAL / FEC*
(5) Compute NH4
a. For GASOLINE Vehicles: NH4 = 0 ~~(PNO3/**62.0049** +2 × PSO4/**96.0576**) × **18.0383**~~
b. For DIESEL Vehicles
NH4=0
(6) POC_72 = 5/6 × (PM25OM – METAL – NH4 – PNO3)
(7) OTHER = METAL+NH4

Temperature adjustments are made to the SMOKE intermediate files to produce POC and PEC. That program also computes the remainder of the species that are needed prior to the final SMOKE merge using the adjusted POC and PEC and other intermediate species.. These species are shown in green font.

(8) **POC** = Look-up-table_Function (Temperature, POC_72)
(9) **PEC** = Look-up-table_Function (Temperature, PEC_72)
Note that OTHER, PNO3 and PSO4 are not temperature-adjusted and come directly from the SMOKE intermediate files
(10) **PMFINE** = OTHER + 0.2 × POC
(11) **PMC** = ($R_{PM10\text{-}to\text{-}PM25}$*-1)* × (PMFINE + PEC + POC + PSO4 + PNO3)

ATTACHMENT 1

Fractions of Utilized in Draft MOVES approach and rationale for the changes for MOVES 2010

PNO3 = PEC × *FNO3 / FEC*
METAL = PEC × *FMETAL / FEC*

Vehicle/ SCCs	**FNO3 value and basis**	**FEC value and basis**	**FMETAL value and basis**
LDDV: 2230001000 through 2230060334	0.1141% Based on **HDDV** speciation profile (92035-simplified, 3914-composite containing all species). NOTE: Agreed that it is more technically sound to use the LDDV profile for all LDDV fractions. Will change to use LDDV (92042 simplified, 91017, composite) the value is 0.23%	57.4805% Based on LDDV speciation profile (92042 simplified, 91017, composite)	0.2663% based on Value provided by Catherine Yanca and Joe Somers to OAQPS in email provided 11/6/2009. It was based on the HDDV profile (3914) NOTE: Agreed that it is more technically sound to use the LDDV profile for all LDDV fractions. Will change to 0.6513% , that Madeleine computed using LDDV profile 91017
HDDV: 2230071110 through 2230075330	0.1141% Based on HDDV speciation profile (92035-simplified, 3914-composite containing all species).	77.1241% Based on HDDV speciation profile (92035-simplified, 3914-composite containing all species).	0.2663% based on Value provided by Catherine Yanca and Joe Somers to OAQPS in email provided 11/6/2009 "Equations for diesel MOVES speciation use in CMAQ 110609.doc" NOTE: Will change to 0.2757% , that Madeleine computed using 3914. The difference is that the chloride ion percent was inadvertently left out of the 0.2663% value
LDGV and HDGV 2201001 through 220107	0.1015% based on 92050 simplified, 91022-composite	20.80113619% based on 92050 simplified, 91022-composite	2.2256% based on 91022-composite

Updates/FIXES

March 16, 2010 updated from March 11 version to use a different constant to generate PMC from $PM_{2.5}$ for gasoline versus diesel vehicles and to provide a table of variable names under section 4

March 26, 2010 Fixed Table 1, last row 2nd column. All SCCs that begin with 2201 are LDGV and HDGV. (not 2202001)

April 7, 2010. Section 4. Replaced "These equations are used only when Etype has the values RUNEXH and STARTEXH." With "**The equations apply to PM from all exhaust processes."** Per the email Michele Jiminez sent to Marc Houyoux on 4/5/2010 that indicates that n addition to **Running Exhaust** and **Start Exhaust** MOVES includes processes

Crankcase Running Exhaust
Crankcase Start Exhaust
Crankcase Extended Idle Exhaust
Extended Idle Exhaust

June 4 2010: Section 4: the equations for gasoline SCCs were changed to use non-temperature-adjusted PEC in the calculations for PNO3 and METAL. Note that diesel SCCs can use the same equations or use the temp adjusted values since for diesel, they are the same.

July 7, 2010: Section 4: Equations added to compute non-temperature adjusted PEC in terms of the MOVES adjustment factor. Also provided the formula for the temperature adjustment factor (needed to compute the non-temperature adjusted PEC). This formula is specific to MOVES2010.
Also added text explanation indicating which particular $PM_{2.5}$ components are temperature dependent and which are not.

July 15, 2010. Section 4: Changed the temperature ranges for the adjustment factor. MOVES does not have a maximum value of the temperature adjustment factor, PEC_Tadj, and will thus continue to increase at values below -20 °F. There are now just two temperature ranges for the factor for gasoline vehicles: (1) below 72 °F and (2) greater-or-equal to 72 °F.

February 23: NH4 =0 for diesel vehicles. Reason: there is very little NH3 from diesel vehicles. Likely the sulfate and nitrate anions are balanced by hydrogen ions (as opposed to NH4). We did not compute the mass of these hydrogen ions (which would be a component of PMFINE) because we believe they are very small and would not make an appreciable difference on the speciation, given the other assumptions being made with regards to relative components of metals and nitrate to elemental carbon.

February 24: NH4 = 0 for gasoline vehicles. Reason: OTAQ chemistry experts (Joe Summers, Rich Cook and Catherine Yanca) all agree that it makes no sense to include NH4 for gasoline exhaust. NH4 for gasoline exhaust was much smaller relative to its computed value for diesel exhaust so this will have little impact on increasing POC and decreasing PMFINE.

Appendix E – CAP Emission Totals by U.S. Surrogate Code and Sector

Table E.1 CAP Emission totals by U.S. Surrogate Code and Sector

sector	Srg code	Description	NH3	NOX	PM2_5	SO2	VOC
afdust	130	Rural Population	0	0	1,102,192	0	0
afdust	140	Housing Change and Population	0	0	162,157	0	0
afdust	240	Total Road Miles	0	0	287,531	0	0
afdust	310	Total Agriculture	0	0	896,741	0	0
afdust	330	Strip Mines/Quarries	0	0	59,782	0	0
afdust	400	Rural Land Area	0	0	1	0	0
ag	310	Total Agriculture	3,524,607	0	0	0	0
c1c2rail	261	NTAD Total Railroad Density	2	13,840	319	249	861
c1c2rail	271	NTAD Class 1 2 3 Railroad Density	332	733,500	22,618	7,388	38,881
c1c2rail	280	Class 2 and 3 Railroad Miles	13	42,220	956	293	1,632
c1c2rail	802	Shipping Lanes	335	529,920	17,211	11,490	12,970
c1c2rail	808	Gulf Tug Zone Area	0	4,031	80	1,247	145
c1c2rail	820	Ports NEI2011 NOx	24	69,021	2,306	2,492	2,165
nonpt	100	Population	0	0	0	0	1,221,647
nonpt	140	Housing Change and Population	1	23,368	66,271	8	134,851
nonpt	150	Residential Heating - Natural Gas	41,132	218,591	4,235	1,441	12,721
nonpt	170	Residential Heating - Distillate Oil	2,122	42,645	4,519	91,994	1,420
nonpt	180	Residential Heating - Coal	325	1,388	796	8,658	1,624
nonpt	190	Residential Heating - LP Gas	151	39,636	195	752	1,462
nonpt	240	Total Road Miles	0	0	0	0	6,825
nonpt	250	Urban Primary plus Rural Primary	0	0	0	0	102,793
nonpt	260	Total Railroad Miles	0	0	0	0	2,195
nonpt	300	Low Intensity Residential	3,849	18,563	96,738	3,082	40,575
nonpt	310	Total Agriculture	3,435	64,432	140,559	26,212	474,539
nonpt	312	Orchards/Vineyards	27	874	1,199	2,559	1,061
nonpt	320	Forest Land	7	21	165	0	154
nonpt	400	Rural Land Area	0	1,036	43	30	79
nonpt	500	Commercial Land	2,367	1	86,448	585	26,503
nonpt	505	Industrial Land	86,938	235,940	108,508	198,909	117,339
nonpt	510	Commercial plus Industrial	5	178	27	109	224,947
nonpt	515	Commercial plus Institutional Land	1,438	188,184	21,307	62,460	21,329
nonpt	520	Commercial plus Industrial plus Institutional	0	0	0	0	11,252
nonpt	525	Golf Courses plus Institutional plus Industrial plus Commercial	0	0	0	0	0
nonpt	527	Single Family Residential	0	0	0	0	0
nonpt	535	Residential + Commercial + Industrial + Institutional + Government	23	2	145	0	334,081
nonpt	540	Retail Trade (COM1)	0	0	0	0	1,375

sector	Srg code	Description	NH3	NOX	PM2_5	SO2	VOC
nonpt	545	Personal Repair (COM3)	0	0	93	0	62,913
nonpt	555	Professional/Technical (COM4) plus General Government (GOV1)	0	0	0	0	2,872
nonpt	560	Hospital (COM6)	0	0	0	0	9
nonpt	575	Light and High Tech Industrial (IND2 + IND5)	0	0	0	0	2,554
nonpt	580	Food, Drug, Chemical Industrial (IND3)	0	610	313	171	10,532
nonpt	585	Metals and Minerals Industrial (IND4)	0	23	140	8	443
nonpt	590	Heavy Industrial (IND1)	10	4,362	5,441	1,131	145,088
nonpt	595	Light Industrial (IND2)	0	1	238	0	80,245
nonpt	600	Gas Stations	0	0	0	0	413,518
nonpt	650	Refineries and Tank Farms	0	0	0	0	130,222
nonpt	675	Refineries and Tank Farms and Gas Stations	0	0	0	0	1,203
nonpt	700	Airport Areas	0	0	0	0	32,030
nonpt	801	Port Areas	0	51	1	0	12,526
nonpt	870	Wastewater Treatment Facilities	1,015	13	1	1	4,988
nonpt	880	Drycleaners	0	0	0	0	10,026
nonroad	0	Fallback surrogates	28	15,872	2,053	88	41,099
nonroad	100	Population	40	39,475	2,824	85	5,030
nonroad	140	Housing Change and Population	554	537,249	45,058	1,255	78,526
nonroad	261	NTAD Total Railroad Density	2	2,673	310	5	568
nonroad	300	Low Intensity Residential	106	26,637	4,324	138	202,928
nonroad	310	Total Agriculture	481	488,224	39,037	910	57,473
nonroad	350	Water	213	143,196	12,397	337	614,849
nonroad	400	Rural Land Area	157	25,667	16,711	194	620,788
nonroad	505	Industrial Land	452	146,871	5,809	411	32,978
nonroad	510	Commercial plus Industrial	382	131,572	9,888	348	139,291
nonroad	520	Commercial plus Industrial plus Institutional	42	21,395	7,569	65	93,164
nonroad	525	Golf Courses plus Institutional plus Industrial plus Commercial	163	49,146	8,792	223	162,672
nonroad	850	Golf Courses	12	2,394	112	17	7,092
nonroad	860	Mines	2	2,931	341	5	594
nonroad	890	Commercial Timber	19	12,979	1,486	38	8,680
np_oilgas	680	Oil and Gas Wells	0	1,073	2	673	114,820
np_oilgas	692	Spud count	0	68,777	2,412	1,799	4,021
np_oilgas	693	Well count - all wells	0	7,870	240	79	410
np_oilgas	694	Oil production at Oil wells	0	127,918	3,773	9,917	1,100,074
np_oilgas	695	Well count - oil wells	0	0	0	0	221,759

sector	Srg code	Description	NH3	NOX	PM2_5	SO2	VOC
np_oilgas	696	Gas production at gas wells	0	409,364	7,856	455	713,114
np_oilgas	697	Oil production at gas wells	0	0	0	0	1
np_oilgas	698	Well count - gas wells	0	39,567	2,952	4,470	247,255
onroad	100	Population	0	1,217,387	20,480	1,207	1,503,878
onroad	120	Urban Population	11,021	383,680	17,175	2,820	107,083
onroad	130	Rural Population	5,614	219,432	8,260	1,289	47,988
onroad	200	Urban Primary Road Miles	59,212	1,928,303	85,642	13,115	447,741
onroad	210	Rural Primary Road Miles	26,058	1,328,031	49,969	5,770	199,185
onroad	220	Urban Secondary Road Miles	6,321	207,553	9,305	1,536	56,296
onroad	230	Rural Secondary Road Miles	9,899	382,320	14,314	2,179	83,071
onroad_rfl	600	Gas Stations	0	0	0	0	157,629
rwc	165	0.5 Residential Heating - Wood plus 0.5 Low Intensity Residential	20,415	35,818	389,655	9,010	448,753

Table E.2 CAP Emission totals by Non-US Surrogate Code and Sector

sector	srgcode	Description	NH3	NOX	PM2_5	SO2	VOC
othar	10	MEX Population	0	0	0	0	431,231
othar	12	MEX Housing	0	161,013	17,483	2,123	452,685
othar	14	MEX Residential Heating - Wood	0	20,093	211,525	2,859	380,572
othar	16	MEX Residential Heating - Distillate Oil	0	38	0	11	2
othar	20	MEX Residential Heating - LP Gas	0	25,303	787	63	614
othar	22	MEX Total Road Miles	0	0	0	0	3,513
othar	24	MEX Total Railroads Miles	0	74,969	1,669	663	2,824
othar	26	MEX Total Agriculture	679,212	164,144	72,372	2,127	43,958
othar	28	MEX Forest Land	0	16,224	67,683	660	79,018
othar	32	MEX Commercial Land	0	125,211	7,726	0	286,982
othar	34	MEX Industrial Land	0	45,831	5,684	59,201	133,440
othar	36	MEX Commercial plus Industrial Land	0	0	0	0	332,495
othar	38	MEX Commercial plus Institutional Land	0	6,400	216	84	28,293
othar	40	Residential (RES1-4)+Comercial+Industrial+Institutional+Government	0	8	20	0	241,710
othar	42	MEX Personal Repair (COM3)	0	0	0	0	33,616
othar	44	MEX Airports Area	0	14,639	0	1,149	6,857
othar	46	MEX Marine Ports	0	124,951	2,991	1,482	1,099
othar	48	Brick Kilns - Mexico	0	776	6,691	0	10,244
othar	50	Mobile sources - Border Crossing - Mexico	0	454	0	0	2,668
othar	9100	CAN Population	603	0	276	0	304

othar	9101	CAN total dwelling	643	46,256	12,783	14,698	32,944
othar	9106	CAN ALL_INDUST	133	21,526	381	3,921	2
othar	9113	CAN Forestry and logging	1,582	8,561	28,622	1,809	36,114
othar	9115	CAN Agriculture and forestry activities	160	239,553	25,318	9,092	26,526
othar	9116	CAN Total Resources	0	17	0	0	5
othar	9212	CAN Mining except oil and gas	0	0	5,391	0	0
othar	9221	CAN Total Mining	42	2,292	45,374	728	26
othar	9222	CAN Utilities	189	14,882	369	1,124	255
othar	9233	CAN Total Land Development	17	20,789	1,928	981	2,551
othar	9308	CAN Food manufacturing	0	0	0	0	4,535
othar	9323	CAN Printing and related support activities	0	0	0	0	25,203
othar	9324	CAN Petroleum and coal products manufacturing	0	0	2,402	0	0
othar	9327	CAN Non-metallic mineral product manufacturing	0	238	7,708	2,941	1,218
othar	9331	CAN Primary Metal Manufacturing	0	98	5,062	12	6
othar	9412	CAN Petroleum product wholesaler-distributors	0	0	0	0	70,125
othar	9416	CAN Building material and supplies wholesaler-distributors	2	0	1,461	3,259	560
othar	9448	CAN clothing and clothing accessories stores	0	0	0	0	328
othar	9562	CAN Waste management and remediation services	165	893	1,596	1,998	16,551
othar	9921	CAN Commercial Fuel Combustion	494	33,816	2,750	35,471	850
othar	9924	CAN Primary Industry	0	0	0	0	219,282
othar	9925	CAN Manufacturing and Assembly	0	0	0	0	139,227
othar	9931	CAN OTHERJET	9	14,388	548	1,139	7,629
othar	9932	CAN CANRAIL	109	122,694	4,093	5,737	3,304
othar	9942	CAN UNPAVED ROADS	40	3,462	3,499	48	152,674
othar	9945	CAN Commercial Marine Vessels	28	45,454	6,404	14,325	61,139
othar	9946	CAN Construction and mining	247	156,770	10,070	5,667	17,180
othar	9947	CAN Agriculture Construction and mining	19	37,452	536	26	32,683
othar	9950	CAN Intersection of Forest and Housing	1,053	11,700	120,045	1,671	173,130
othar	9960	CAN TOTBEEF	176,156	0	7,420	0	317,394
othar	9970	CAN TOTPOUL	74,204	0	2	0	264
othar	9980	CAN TOTSWIN	122,094	0	996	0	3,186
othar	9990	CAN TOTFERT	178,791	0	9,279	0	0
othar	9994	CAN ALLROADS	0	0	55,468	0	0
othar	9995	CAN 30UNPAVED_70trail	0	0	106,707	0	0
othar	9996	CAN urban_area	0	0	284	0	0
othon	22	MEX Total Road Miles	15,965	370,867	34,396	13,713	375,276
othon	9991	CAN traffic	22,294	550,896	10,888	5,548	285,104

Appendix F: SMOKE Input Data Files and Parameters Used in the 2011 Evaluation and 2018 Base Cases

Table F-1 provides a list of inventory and supporting datasets used by SMOKE for the cae cases documented in the 2011v6 emissions modeling platform TSD: 2011ed_v6_11f and 2018ed_v6_11f. The datasets are referenced by name and version number. For example, 'afdust_paved_roads_2008v17_noPRECIPadj_FF10 [v0]' means version 0 of the dataset named afdust_paved_roads_2008v17_noPRECIPadj_FF10. The files released for the modeling platform are named using the convention: dataset_name_<*changedate*>_v<*version#*>.txt where <c*hangedate*> represents the last modified date of the dataset with version integer number <*version#*>. **Note that the information in this appendix can be found in the spreadsheet 2011ed_2018ed_case_inputs.xlsx**.

The folders / subdirectories in which the files are located within the data release vary based on the type of data, although many of the inventory datasets can be found beneath a subdirectory named for the case (e.g., 2011ed_v6_11f), and then within a subdirectory for the sector (e.g., nonpt). In Table F-1, the value in the column 'Match' is T when the identical dataset and version are used for all cases and 'F' otherwise. Blank values under the "Sector(s)" column indicate a dataset that is used by all sectors *unless overridden by a sector-specific dataset.* Many of the ancillary datasets can be found beneath the ge_dat subdirectory.

The inputs that are not identical in the two cases have "FALSE" in the Match columns, while those that do not change have "TRUE" in the Match column. The contents of Table F-1 reveal that the ancillary input data in the future-year scenarios are very similar to those used in the 2011 evaluation case except for the speciation profiles and cross references used for gasoline-related sources. These changes in the future account for increased ethanol usage in gasoline. The list of sectors for the mrggrid program also changes because this dataset controls the reuse of data between runs (for example the biogenic emissions for 2011 are reused in all cases, including the 2018 base case). It is standard practice to develop a separate list of sectors for each case, as is shown here.

Table F-2 provides configuration settings for various SMOKE programs. These parameters are specific to SMOKE version 3.5.1. Some of these parameters will not work on older versions of SMOKE; for example FF10_AVEDAY_ANNINV_YN set to "Y" allows smkinven to properly read FF10 daily nonpoint data in the avefire processing. A parameter not assigned to "All sectors" will supersede (override) the value of "All sectors" for that parameter. The value "All sectors" is often the default setting when only a couple of sectors require a different value.

Table F-1. Input Inventories and Supporting Datasets Used in the 2011v6 Emissions Modeling Platform

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Base Year				TRUE	2011	2011
Copied From				TRUE	2011ec_v6_11f	2011ec_v6_11f
Downstream Model				TRUE	CMAQ v4.7 N1c	CMAQ v4.7 N1c
End Date & Time				TRUE	12/31/2011 23:59	12/31/2011 23:59
Future Year				FALSE	2018	2011
Is Final				TRUE	FALSE	FALSE
Meteorological Year				TRUE	2011	2011
Model				TRUE	SMOKE	SMOKE
Modeling Region				TRUE	National	National
Name				FALSE	2018ed_v6_11f Ozone Transport Rule NPRM	2011ed_v6_11f Ozone Transport Rule NPRM
# of emission layers				TRUE	24	24
# of met layers				TRUE	24	24
Regions				FALSE	Continental US 12km small	Continental US 12km, Continental US 12km small, Continental US 36km
Speciation				TRUE	cmaq_cb05_soa	cmaq_cb05_soa
Start Date				TRUE	1/1/2011 0:00	1/1/2011 0:00
Version				TRUE	3.5	3.5
Afdust xportfrac	XPORTFRAC	afdust	All programs for sector	TRUE	Afdust xportfrac 12US2 [v0]	Afdust xportfrac 12US2 [v0]
Area-to-point data	ARTOPNT		smkinven	TRUE	artopnt_2002detroit [v0]	artopnt_2002detroit [v0]
BEIS3 emission factors	B3FAC	beis	Tmpbeis3	TRUE	beis3_efac_v3.14 [v0]	beis3_efac_v3.14 [v0]
Biogenic gridding surrogate for reports 12EUS1	BGPRO	beis	Smkmerge	TRUE	bgpro_12US1_USonly (/garnet/oaqps) [v0]	bgpro_12US1_USonly (/garnet/oaqps) [v0]
Biogenic land use, file A	BELD3_A	beis	Normbeis3	TRUE	LANDA_12US2 [v0]	LANDA_12US2 [v0]
Biogenic land use, file B	BELD3_B	beis	Normbeis3	TRUE	LANDB_12US2 [v0]	LANDB_12US2 [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Biogenic land use, totals	BELD3_TOT	beis	Normbeis3	TRUE	LAND_TOTALS_12US2 [v0]	LAND_TOTALS_12US2 [v0]
Bioseasons file	BIOSEASON	beis	Tmpbeis3	TRUE	bioseason_2011f_12US2 [v0]	bioseason_2011f_12US2 [v0]
Cellulosic Inventory	EMISINV_E	nonpt	smkinven	FALSE	2018_cellulosic_inventory [v0]	
CEM annually summed data	CEMSUM	ptegu_pk	smkinven	TRUE	cemsum_2011 [v0]	cemsum_2011 [v0]
CEM annually summed data	CEMSUM	ptegu	smkinven	TRUE	cemsum_2011 [v0]	cemsum_2011 [v0]
Cement Kilns	EMISINV_D	nonpt	smkinven	FALSE	cement_newkilns_year_2018_from_ISIS2013_NEI2011v1_NONPOINT [v0]	
Cement Kilns	EMISINV_D	ptnonipm	smkinven	FALSE	cement_newkilns_year_2018_from_ISIS2013_NEI2011v1 [v0]	
Combination profiles	GSPRO_COMBO	othar	Spcmat	TRUE	gspro_combo_canadamexico2005 [v1]	gspro_combo_canadamexico2005 [v1]
Combination profiles	GSPRO_COMBO	othon	Spcmat	TRUE	gspro_combo_canadamexico2005 [v1]	gspro_combo_canadamexico2005 [v1]
Combination profiles	GSPRO_COMBO	othpt	Spcmat	TRUE	gspro_combo_canadamexico2005 [v1]	gspro_combo_canadamexico2005 [v1]
Combination profiles - nonpt	GSPRO_COMBO	nonpt	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_nonpt [v8]	gspro_combo_2010cdc_2010ef_nonpt [v0]
Combination profiles - nonroad	GSPRO_COMBO	nonroad	Spcmat	FALSE		gspro_combo_2010cdc_2010ef_nonroad [v1]
Combination profiles - onroad	GSPRO_COMBO	onroad_rfl	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_onroad [v2]	gspro_combo_2010cdc_2010ef_onroad [v1]
Combination profiles - onroad	GSPRO_COMBO	onroad	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_onroad [v2]	gspro_combo_2010cdc_2010ef_onroad [v1]
Combination profiles - onroad	GSPRO_COMBO	onroad_catx	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_onroad [v2]	gspro_combo_2010cdc_2010ef_onroad [v1]
Combination profiles - onroad	GSPRO_COMBO	onroad_catx_adj	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_onroad [v2]	gspro_combo_2010cdc_2010ef_onroad [v1]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Combination profiles - ptnonipm (same as nonpt)	GSPRO_COMBO	ptegu	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_nonpt [v7]	gspro_combo_2010cdc_2010ef_nonpt [v0]
Combination profiles - ptnonipm (same as nonpt)	GSPRO_COMBO	ptnonipm	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_nonpt [v8]	gspro_combo_2010cdc_2010ef_nonpt [v0]
Combination profiles - ptnonipm (same as nonpt)	GSPRO_COMBO	ptegu_pk	Spcmat	FALSE	gspro_combo_Tier3_2018rg_ref_nonpt [v7]	gspro_combo_2010cdc_2010ef_nonpt [v0]
Country, State, County Information	COSTCY		smkinven	TRUE	costcy_for_2007platform [v8]	costcy_for_2007platform [v8]
Day specific RWC temporal	TPRO_DAY	rwc	Temporal	TRUE	Gentpro_TPRO_DAY_DAILY_RWC_2011ec_11f [v0]	Gentpro_TPRO_DAY_DAILY_RWC_2011ec_11f [v0]
Elevation Configuration File for c3marine sector	PELVCONFIG	c3marine	Laypoint	TRUE	pelvconfig_seca_c3 [v1]	pelvconfig_seca_c3 [v1]
Elevation Configuration File for othpt sector (elevate everything)	PELVCONFIG	othpt	Laypoint	TRUE	pelvconfig_seca_c3 [v1]	pelvconfig_seca_c3 [v1]
Elevation Configuration File for Point Sources	PELVCONFIG		Laypoint	TRUE	pelvconfig_inline_20m [v0]	pelvconfig_inline_20m [v0]
Elevation Configuration File for Ptfire	PELVCONFIG	ptfire	Laypoint	TRUE	pelvconfig_ptfire_inline_pf31 [v1]	pelvconfig_ptfire_inline_pf31 [v1]
emf job header	EMF_JOBHEADER		All programs	TRUE	emf_jobheader_garnet [v0]	emf_jobheader_garnet [v0]
Ethanol, transport vapor loss inventory	EMISINV_F	nonpt	smkinven	FALSE	Ethanol_transport_vapor_2018rg_ref [v2]	
Grid Description List	GRIDDESC		Grdmat	TRUE	griddesc_lambertonly [v54]	griddesc_lambertonly [v54]
Gridding surrogates CAN-MEX 12km	SRGPRO	othar	Grdmat	TRUE	CAN2006_MEX2010v3_12US1 [v0]	CAN2006_MEX2010v3_12US1 [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Gridding surrogates CAN-MEX 12km	SRGPRO	othon	Grdmat	TRUE	CAN2006_MEX2010v3_12US1 [v0]	CAN2006_MEX2010v3_12US1 [v0]
Gridding surrogates CAN-MEX 36km	SRGPRO	othon	Grdmat	FALSE		CAN2006_MEX2010v3_36US1 [v0]
Gridding surrogates CAN-MEX 36km	SRGPRO	othar	Grdmat	FALSE		CAN2006_MEX2010v3_36US1 [v0]
Gridding surrogates USA 12km	SRGPRO		Grdmat	TRUE	CONUS12_2010_v3_20130808 [v0]	CONUS12_2010_v3_20130808 [v0]
Gridding surrogates USA 36km	SRGPRO		Grdmat	FALSE		CONUS36_2010_v4_20130827 [v0]
GSCNV - pollutant to pollutant conversions	GSCNVTMP_A		Spcmat	FALSE	gscnv_cmaq_cb05_tx_pf4 [v5]	gscnv_cmaq_cb05_tx_pf4 [v3]
GSCNV - pollutant to pollutant conversions 8762/8763 toxics	GSCNVTMP_C		Spcmat	TRUE	gscnv_cmaq_cb05_hspace_toxic [v0]	gscnv_cmaq_cb05_hspace_toxic [v0]
GSCNV - pollutant to pollutant conversions ABS profiles	GSCNVTMP_D		Spcmat	FALSE	gscnv_ABS_profiles [v3]	gscnv_ABS_profiles [v1]
GSCNV - pollutant to pollutant conversions for 8762/8763 BAF	GSCNVTMP_B		Spcmat	TRUE	gscnv_cmaq_cb05_hspace_BAF [v0]	gscnv_cmaq_cb05_hspace_BAF [v0]
GSCNV - pollutant to pollutant conversions WRAP profiles	GSCNVTMP_E		Spcmat	TRUE	cnv_OG.cb05p25_PhaseIII [v0]	cnv_OG.cb05p25_PhaseIII [v0]
GSPRO speciated MOVES PM	GSPROTMP_L		Spcmat	TRUE	gspro_speciated_pm [v3]	gspro_speciated_pm [v3]
GSREF NH3_FERT	GSREFTMP_R	ag	Spcmat	TRUE	gsref_nh3_fert [v2]	gsref_nh3_fert [v2]
GSREF NH3_FERT	GSREFTMP_R	othar	Spcmat	TRUE	gsref_nh3_fert [v2]	gsref_nh3_fert [v2]
GSREF speciated EXH__PMFINE	GSREFTMP_Q	onroad_catx_adj	Spcmat	TRUE	gsref_pmfine_speciatedpmfine_abs_test [v3]	gsref_pmfine_speciatedpmfine_abs_test [v3]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
GSREF speciated EXH__PMFINE	GSREFTMP_Q	onroad	Spcmat	TRUE	gsref_pmfine_speciatedpmfine_abs_test [v3]	gsref_pmfine_speciatedpmfine_abs_test [v3]
GSREF speciated EXH__PMFINE	GSREFTMP_Q	onroad_catx	Spcmat	TRUE	gsref_pmfine_speciatedpmfine_abs_test [v3]	gsref_pmfine_speciatedpmfine_abs_test [v3]
GSREF speciated PM	GSREFTMP_L		Spcmat	TRUE	gsref_speciated_pm [v2]	gsref_speciated_pm [v2]
Holidays table	HOLIDAYS		Temporal	TRUE	holidays [v0]	holidays [v0]
Hour specific ag temporal profile	TPRO_HOUR	othar	Temporal	TRUE	Gentpro_TPRO_HOUR_BASH_agNH3_2011ea_11f [v0]	Gentpro_TPRO_HOUR_BASH_agNH3_2011ea_11f [v0]
Hour specific ag temporal profile	TPRO_HOUR	ag	Temporal	TRUE	Gentpro_TPRO_HOUR_HOURLY_BASH_NH3.agNH3_bash_2011ea_11f-newgent.ncf [v0]	Gentpro_TPRO_HOUR_HOURLY_BASH_NH3.agNH3_bash_2011ea_11f-newgent.ncf [v0]
Inventory afdust CAP	EMISINV_A	afdust	smkinven	FALSE	2018ed_from_afdust_2011NEIv1_nonpoint_20130911_noepanonprecip [v0]	afdust_2011NEIv1_nonpoint_20130911_noepanonprecip [v0]
Inventory afdust CAP noprecip	EMISINV_B	afdust	smkinven	FALSE	2018ed_from_EPA_2011_afdust_no_precip_Paved_Unpaved_noNEIstate [v0]	EPA_2011_afdust_no_precip_Paved_Unpaved_noNEIstate [v0]
Inventory agburn monthly FF10	EMISINV_B	nonpt	smkinven	TRUE	agburn_2011NEIv1_nonpoint_20130911 [v0]	agburn_2011NEIv1_nonpoint_20130911 [v0]
Inventory ag NEI	EMISINV_A	ag	smkinven	FALSE	2018ed_from_ag_NH3_2011NEIv1_nonpoint_20130911 [v0]	ag_NH3_2011NEIv1_nonpoint_20130911 [v0]
Inventory c1c2 California	EMISINV_B	c1c2rail	smkinven	FALSE	CARB_2018rg [v1]	
Inventory c1c2 California	EMISINV_E	c1c2rail	smkinven	FALSE		2011_california_c1c2rail_annual_ff10 [v1]
Inventory c1c2 CMV only, no California	EMISINV_A	c1c2rail	smkinven	FALSE		c1c2_2011NEIv1_nonpoint_20130911 [v3]
Inventory c1c2 LADCO	EMISINV_C	c1c2rail	smkinven	FALSE		2010LADCO_CMV [v1]
Inventory c1c2rail , no California	EMISINV_A	c1c2rail	smkinven	FALSE	c1c2rail_noCALIF_2018ed [v0]	
Inventory c3marine BAF HAPs Canada	EMISINV_G	othpt	smkinven	FALSE	eca_imo_CANADA_vochaps_2018 [v0]	eca_imo_CANADA_vochaps_2011 [v0]
Inventory c3marine CAP Canada	EMISINV_H	othpt	smkinven	FALSE	eca_imo_CANADA_caps_2018 [v0]	eca_imo_CANADA_caps_2011 [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory c3marine nonUS nonCanada	EMISINV_F	othpt	smkinven	FALSE	eca_imo_nonUS_nonCANADA_caps_vochaps_2018 [v0]	eca_imo_nonUS_nonCANADA_caps_vochaps_2011 [v0]
Inventory c3marine US	EMISINV_A	c3marine	smkinven	FALSE	eca_imo_USonly_caps_vochaps_2018 [v1]	eca_imo_USonly_caps_vochaps_2011 [v1]
Inventory daily fires 01 jan, CAP/HAP	EMISDAY_01A	ptfire	smkinven	TRUE	ptfire_jan_2011_FLA_Adj.txt [v0]	ptfire_jan_2011_FLA_Adj.txt [v0]
Inventory daily fires 01 jan, CAP/HAP - GA	EMISDAY_01C	ptfire	smkinven	TRUE	ptfire_jan_2011_GA_revised.csv [v0]	ptfire_jan_2011_GA_revised.csv [v0]
Inventory daily fires 01 Jan, CAP/HAP last day	EMISDAY_01B	ptfire	smkinven	TRUE	ptfire_dec_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_dec_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 01 Jan, CAP/HAP last day - GA	EMISDAY_01D	ptfire	smkinven	TRUE	ptfire_dec_2011_GA_lastdayonly_revised.csv [v1]	ptfire_dec_2011_GA_lastdayonly_revised.csv [v1]
Inventory daily fires 02 Feb, CAP/HAP	EMISDAY_02A	ptfire	smkinven	TRUE	ptfire_feb_2011_FLA_Adj.txt [v0]	ptfire_feb_2011_FLA_Adj.txt [v0]
Inventory daily fires 02 Feb, CAP/HAP - GA	EMISDAY_02C	ptfire	smkinven	TRUE	ptfire_feb_2011_GA_revised.csv [v0]	ptfire_feb_2011_GA_revised.csv [v0]
Inventory daily fires 02 Feb, CAP/HAP last day	EMISDAY_02B	ptfire	smkinven	TRUE	ptfire_jan_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_jan_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 02 Feb, CAP/HAP last day - GA	EMISDAY_02D	ptfire	smkinven	TRUE	ptfire_jan_2011_GA_lastdayonly_revised.csv [v0]	ptfire_jan_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 03 Mar, CAP/HAP	EMISDAY_03A	ptfire	smkinven	TRUE	ptfire_mar_2011_FLA_Adj.txt [v0]	ptfire_mar_2011_FLA_Adj.txt [v0]
Inventory daily fires 03 Mar, CAP/HAP-GA	EMISDAY_03C	ptfire	smkinven	TRUE	ptfire_mar_2011_GA_revised.csv [v0]	ptfire_mar_2011_GA_revised.csv [v0]
Inventory daily fires 03 Mar, CAP/HAP last day	EMISDAY_03B	ptfire	smkinven	TRUE	ptfire_feb_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_feb_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 03 Mar, CAP/HAP last day-GA	EMISDAY_03D	ptfire	smkinven	TRUE	ptfire_feb_2011_GA_lastdayonly_revised.csv [v0]	ptfire_feb_2011_GA_lastdayonly_revised.csv [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory daily fires 04 Apr, CAP/HAP	EMISDAY_04A	ptfire	smkinven	TRUE	ptfire_apr_2011_FLA_Adj.txt [v0]	ptfire_apr_2011_FLA_Adj.txt [v0]
Inventory daily fires 04 Apr, CAP/HAP-GA	EMISDAY_04C	ptfire	smkinven	TRUE	ptfire_apr_2011_GA_revised.csv [v0]	ptfire_apr_2011_GA_revised.csv [v0]
Inventory daily fires 04 Apr, CAP/HAP last day	EMISDAY_04B	ptfire	smkinven	TRUE	ptfire_mar_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_mar_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 04 Apr, CAP/HAP last day-GA	EMISDAY_04D	ptfire	smkinven	TRUE	ptfire_mar_2011_GA_lastdayonly_revised.csv [v1]	ptfire_mar_2011_GA_lastdayonly_revised.csv [v1]
Inventory daily fires 05 May, CAP/HAP	EMISDAY_05A	ptfire	smkinven	TRUE	ptfire_may_2011_FLA_Adj.txt [v0]	ptfire_may_2011_FLA_Adj.txt [v0]
Inventory daily fires 05 May, CAP/HAP-GA	EMISDAY_05C	ptfire	smkinven	TRUE	ptfire_may_2011_GA_revised.csv [v0]	ptfire_may_2011_GA_revised.csv [v0]
Inventory daily fires 05 May, CAP/HAP last day	EMISDAY_05B	ptfire	smkinven	TRUE	ptfire_apr_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_apr_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 05 May, CAP/HAP last day-GA	EMISDAY_05D	ptfire	smkinven	TRUE	ptfire_apr_2011_GA_lastdayonly_revised.csv [v0]	ptfire_apr_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 06 Jun, CAP/HAP	EMISDAY_06A	ptfire	smkinven	TRUE	ptfire_jun_2011_FLA_Adj.txt [v0]	ptfire_jun_2011_FLA_Adj.txt [v0]
Inventory daily fires 06 Jun, CAP/HAP-GA	EMISDAY_06C	ptfire	smkinven	TRUE	ptfire_jun_2011_GA_revised.csv [v0]	ptfire_jun_2011_GA_revised.csv [v0]
Inventory daily fires 06 Jun, CAP/HAP last day	EMISDAY_06B	ptfire	smkinven	TRUE	ptfire_may_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_may_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 06 Jun, CAP/HAP last day-GA	EMISDAY_06D	ptfire	smkinven	TRUE	ptfire_may_2011_GA_lastdayonly_revised.csv [v0]	ptfire_may_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 07 Jul, CAP/HAP	EMISDAY_07A	ptfire	smkinven	TRUE	ptfire_jul_2011_FLA_Adj.txt [v0]	ptfire_jul_2011_FLA_Adj.txt [v0]
Inventory daily fires 07 Jul, CAP/HAP-GA	EMISDAY_07C	ptfire	smkinven	TRUE	ptfire_jul_2011_GA_revised.csv [v0]	ptfire_jul_2011_GA_revised.csv [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory daily fires 07 Jul, CAP/HAP last day	EMISDAY_07B	ptfire	smkinven	TRUE	ptfire_jun_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_jun_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 07 Jul, CAP/HAP last day-GA	EMISDAY_07D	ptfire	smkinven	TRUE	ptfire_jun_2011_GA_lastdayonly_revised.csv [v0]	ptfire_jun_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 08 Aug, CAP/HAP	EMISDAY_08A	ptfire	smkinven	TRUE	ptfire_aug_2011_FLA_Adj.txt [v0]	ptfire_aug_2011_FLA_Adj.txt [v0]
Inventory daily fires 08 Aug, CAP/HAP-GA	EMISDAY_08C	ptfire	smkinven	TRUE	ptfire_aug_2011_GA_revised.csv [v0]	ptfire_aug_2011_GA_revised.csv [v0]
Inventory daily fires 08 Aug, CAP/HAP last day	EMISDAY_08B	ptfire	smkinven	TRUE	ptfire_jul_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_jul_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 08 Aug, CAP/HAP last day-GA	EMISDAY_08D	ptfire	smkinven	TRUE	ptfire_jul_2011_GA_lastdayonly_revised.csv [v0]	ptfire_jul_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 09 Sep, CAP/HAP	EMISDAY_09A	ptfire	smkinven	TRUE	ptfire_sep_2011_FLA_Adj.txt [v0]	ptfire_sep_2011_FLA_Adj.txt [v0]
Inventory daily fires 09 Sep, CAP/HAP-GA	EMISDAY_09C	ptfire	smkinven	TRUE	ptfire_sep_2011_GA_revised.csv [v0]	ptfire_sep_2011_GA_revised.csv [v0]
Inventory daily fires 09 Sep, CAP/HAP last day	EMISDAY_09B	ptfire	smkinven	TRUE	ptfire_aug_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_aug_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 09 Sep, CAP/HAP last day-GA	EMISDAY_09D	ptfire	smkinven	TRUE	ptfire_aug_2011_GA_lastdayonly_revised.csv [v0]	ptfire_aug_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 10 Oct, CAP/HAP	EMISDAY_10A	ptfire	smkinven	TRUE	ptfire_oct_2011_FLA_Adj.txt [v0]	ptfire_oct_2011_FLA_Adj.txt [v0]
Inventory daily fires 10 Oct, CAP/HAP-GA	EMISDAY_10C	ptfire	smkinven	TRUE	ptfire_oct_2011_GA_revised.csv [v0]	ptfire_oct_2011_GA_revised.csv [v0]
Inventory daily fires 10 Oct, CAP/HAP last day	EMISDAY_10B	ptfire	smkinven	TRUE	ptfire_sep_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_sep_2011_FLA_Adj_lastdayonly.txt [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory daily fires 10 Oct, CAP/HAP last day-GA	EMISDAY_10D	ptfire	smkinven	TRUE	ptfire_sep_2011_GA_lastdayonly_revised.csv [v0]	ptfire_sep_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 11 Nov, CAP/HAP	EMISDAY_11A	ptfire	smkinven	TRUE	ptfire_nov_2011_FLA_Adj.txt [v0]	ptfire_nov_2011_FLA_Adj.txt [v0]
Inventory daily fires 11 Nov, CAP/HAP-GA	EMISDAY_11C	ptfire	smkinven	TRUE	ptfire_nov_2011_GA_revised.csv [v0]	ptfire_nov_2011_GA_revised.csv [v0]
Inventory daily fires 11 Nov, CAP/HAP last day	EMISDAY_11B	ptfire	smkinven	TRUE	ptfire_oct_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_oct_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 11 Nov, CAP/HAP last day-GA	EMISDAY_11D	ptfire	smkinven	TRUE	ptfire_oct_2011_GA_lastdayonly_revised.csv [v0]	ptfire_oct_2011_GA_lastdayonly_revised.csv [v0]
Inventory daily fires 12 Dec, CAP/HAP	EMISDAY_12A	ptfire	smkinven	TRUE	ptfire_dec_2011_FLA_Adj.txt [v0]	ptfire_dec_2011_FLA_Adj.txt [v0]
Inventory daily fires 12 Dec, CAP/HAP-GA	EMISDAY_12C	ptfire	smkinven	TRUE	ptfire_dec_2011_GA_revised.csv [v0]	ptfire_dec_2011_GA_revised.csv [v0]
Inventory daily fires 12 Dec, CAP/HAP last day	EMISDAY_12B	ptfire	smkinven	TRUE	ptfire_nov_2011_FLA_Adj_lastdayonly.txt [v0]	ptfire_nov_2011_FLA_Adj_lastdayonly.txt [v0]
Inventory daily fires 12 Dec, CAP/HAP last day-GA	EMISDAY_12D	ptfire	smkinven	TRUE	ptfire_nov_2011_GA_lastdayonly_revised.csv [v0]	ptfire_nov_2011_GA_lastdayonly_revised.csv [v0]
Inventory FF10 Offshore	EMISINV_E	othpt	smkinven	TRUE	2008NEI_v2_POINT_20120202_for2007platform_offshore_FF10 [v0]	2008NEI_v2_POINT_20120202_for2007platform_offshore_FF10 [v0]
Inventory fire list SF2 and GA	EMISINV_A	ptfire	smkinven	TRUE	ptfire_2011_SF2_Plus_GA_Submit [v2]	ptfire_2011_SF2_Plus_GA_Submit [v2]
Inventory nonpt	EMISINV_A	nonpt	smkinven	FALSE	2018ed_from_2011NEIv1_nonpoint_20130911 [v0]	2011NEIv1_nonpoint_20130911 [v1]
Inventory nonpt	EMISINV_A	np_oilgas	smkinven	FALSE	2018ed_from_oilgas_2011NEIv1_nonpoint_20130911 [v0]	oilgas_2011NEIv1_nonpoint_20130911 [v0]
Inventory Offshore fips 8500*	EMISINV_D	c1c2rail	smkinven	FALSE		c1c2_EEZ_2011NEIv1_nonpoint_20130911 [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory onroad RPD	EMISINV_A	onroad	smkinven	TRUE	SPEED_NEI_v1_2011_from_v1_noCATX [v0]	SPEED_NEI_v1_2011_from_v1_noCATX [v0]
Inventory onroad RPD	EMISINV_B	onroad	smkinven	FALSE	VMT_TR_NPRM_2018_24027only [v0]	
Inventory onroad RPD	EMISINV_B	onroad	smkinven	FALSE	VMT_TR_NPRM_2018_from_v3_noCATX [v1]	VMT_NEI_v1_2011_from_v5_noCATX [v0]
Inventory onroad RPD	EMISINV_B	onroad	smkinven	FALSE	VMT_TR_NPRM_2018_from_v3_noCATX [v0]	VMT_NEI_v1_2011_from_v5_noCATX [v0]
Inventory onroad RPD	EMISINV_B	onroad	smkinven	FALSE	VMT_TR_NPRM_2018_from_v3_noCATX [v0]	VMT_NEI_v1_2011_from_v5_noCATX [v0]
Inventory onroad RPD	EMISINV_A	onroad_catx	smkinven	TRUE	SPEED_NEI_v1_2011_from_v1_CATX [v0]	SPEED_NEI_v1_2011_from_v1_CATX [v0]
Inventory onroad RPD	EMISINV_B	onroad_catx	smkinven	FALSE	VMT_TR_NPRM_2018_from_v3_CATX [v0]	VMT_NEI_v1_2011_from_v5_CATX [v0]
Inventory onroad RPD	EMISINV_A	onroad_catx_adj	smkinven	TRUE	SPEED_NEI_v1_2011_from_v1_CATX [v0]	SPEED_NEI_v1_2011_from_v1_CATX [v0]
Inventory onroad RPD	EMISINV_B	onroad_catx_adj	smkinven	FALSE	VMT_TR_NPRM_2018_from_v3_CATX [v0]	VMT_NEI_v1_2011_from_v5_CATX [v0]
Inventory onroad RPD	EMISINV_A	onroad_rfl	smkinven	TRUE	SPEED_NEI_v1_2011 [v1]	SPEED_NEI_v1_2011 [v1]
Inventory onroad RPD	EMISINV_B	onroad_rfl	smkinven	FALSE	VMT_TR_NPRM_2018 [v4]	VMT_NEI_v1_2011 [v5]
Inventory onroad RPD	EMISINV_B	onroad_rfl	smkinven	FALSE	VMT_TR_NPRM_2018_24027only [v0]	
Inventory onroad RPD.	EMISINV_A	onroad	smkinven	FALSE	SPEED_NEI_v1_2011_from_v1_24027 [v1]	
Inventory onroad RPD.	EMISINV_A	onroad_rfl	smkinven	FALSE	SPEED_NEI_v1_2011_from_v1_24027 [v1]	
Inventory onroad RPP	EMISINV_A	onroad_catx_adj	smkinven	FALSE	VPOP_TR_NPRM_2018_from_v2_CATX [v0]	VPOP_NEI_v1_2011_from_v7_CATX [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory onroad RPP	EMISINV_A	onroad_catx	smkinven	FALSE	VPOP_TR_NPRM_2018_from_v2_CATX [v0]	VPOP_NEI_v1_2011_from_v7_CATX [v0]
Inventory onroad RPP	EMISINV_A	onroad	smkinven	FALSE	VPOP_TR_NPRM_2018_24027only [v1]	
Inventory onroad RPP	EMISINV_A	onroad	smkinven	FALSE	VPOP_TR_NPRM_2018_from_v2_noCATX [v1]	VPOP_NEI_v1_2011_from_v7_noCATX [v0]
Inventory onroad RPV	EMISINV_A	onroad_catx_adj	smkinven	FALSE	VPOP_TR_NPRM_2018_from_v2_CATX [v0]	VPOP_NEI_v1_2011_from_v7_CATX [v0]
Inventory onroad RPV	EMISINV_A	onroad_rfl	smkinven	FALSE	VPOP_TR_NPRM_2018_24027only [v1]	
Inventory onroad RPV	EMISINV_A	onroad_rfl	smkinven	FALSE	VPOP_TR_NPRM_2018 [v3]	VPOP_NEI_v1_2011 [v7]
Inventory onroad RPV	EMISINV_A	onroad	smkinven	FALSE	VPOP_TR_NPRM_2018_from_v2_noCATX [v0]	VPOP_NEI_v1_2011_from_v7_noCATX [v0]
Inventory onroad RPV	EMISINV_A	onroad_catx	smkinven	FALSE	VPOP_TR_NPRM_2018_from_v2_CATX [v0]	VPOP_NEI_v1_2011_from_v7_CATX [v0]
Inventory onroad RPV	EMISINV_A	onroad	smkinven	FALSE	VPOP_TR_NPRM_2018_24027only [v1]	
Inventory othar nonpoint CAP Mexico	EMISINV_K	othar	smkinven	FALSE	2018_Mexico_nonpoint_FF10 [v1]	2012_Mexico_nonpoint_FF10 [v1]
Inventory othar nonroad CAP Mexico	EMISINV_J	othar	smkinven	FALSE	2018_Mexico_nonroad_FF10 [v0]	2012_Mexico_nonroad_FF10 [v0]
Inventory othon CAP onroad Canada	EMISINV_A	othon	smkinven	TRUE	canada_onroad_cap_2006_ff10 [v0]	canada_onroad_cap_2006_ff10 [v0]
Inventory othon CAP onroad Mexico	EMISINV_B	othon	smkinven	FALSE	2018_Mexico_onroad_FF10 [v0]	2012_Mexico_onroad_FF10 [v0]
Inventory othpt CAP point Mexico	EMISINV_D	othpt	smkinven	FALSE	2018_Mexico_point_FF10 [v0]	2012_Mexico_point_FF10 [v0]
Inventory PFC	EMISINV_C	nonpt	smkinven	FALSE	2018_PFC_inventory_FF10_revision2 [v0]	pfc_2011NEIv1_nonpoint_20130911 [v1]
Inventory ptipm	EMISINV_A	ptegu	smkinven	FALSE	nonpeak_PTIPM_EPA513_BC_7c_2018_20131108_To_EPA_11-11-13 [v0]	nonpeak_2011NEIv1_POINT_20130723_revised_ptipm [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory ptipm	EMISINV_A	ptegu_pk	smkinven	FALSE	peak_FlatFile_EPA513_BC_7c_2018_20131108_To_EPA_11_11_13 [v0]	peakers_2011NEIv1_POINT_20130723_revised_ptipm [v0]
Inventory ptipm daily data (nonCEM sources)	EMISDAY_A	ptegu	smkinven	FALSE	ptipm_ff10_noncem_2018ed_nopeak [v0]	ptipm_ff10_daily_noncem_2011ec [v0]
Inventory ptipm daily data (nonCEM sources)	EMISDAY_A	ptegu_pk	smkinven	FALSE	ptipm_ff10_noncem_2018ed_peak [v0]	
Inventory ptipm daily data (nonCEM sources) - previous Dec	EMISDAY_B	ptegu_pk	smkinven	FALSE	ptipm_ff10_noncem_2018ed_peak_dec_2010 [v0]	
Inventory ptipm daily data (nonCEM sources) - previous Dec	EMISDAY_B	ptegu	smkinven	FALSE	nopeak_ptipm_ff10_noncem_2018ed_nopeak_dec_2010 [v0]	ptipm_ff10_daily_noncem_2011ec_prevdec [v0]
Inventory ptipm hourly CEM (SO2 and NOX)	EMISHOUR_MULTI_A	ptegu_pk	smkinven	FALSE	ptipm_cem_2018ed_peak [v0]	ptipm_cem_hourly_2011 [v0]
Inventory ptipm hourly CEM (SO2 and NOX)	EMISHOUR_MULTI_A	Ptegu	smkinven	FALSE	ptipm_cem_2018ed_nopeak [v0]	ptipm_cem_hourly_2011 [v0]
Inventory ptnonipm Biodiesel Plants	EMISINV_E	ptnonipm	smkinven	FALSE	Biodiesel_Plants_2018_ff10 [v0]	
Inventory ptnonipm CAPHAP	EMISINV_A	Ptnonipm	smkinven	FALSE	2018ed_from_no_ethanol_2011NEIv1_POINT_20130723_revised_ptnonipm [v0]	2011NEIv1_POINT_20130723_revised_ptnonipm [v3]
Inventory ptnonipm CAPHAP	EMISINV_A	pt_oilgas	smkinven	FALSE	2018ed_from_oil_gas_2011NEIv1_POINT_20130723 [v0]	oil_gas_2011NEIv1_POINT_20130723 [v0]
Inventory ptnonipm Ethanol Plants	EMISINV_B	Ptnonipm	smkinven	FALSE		Ethanol_plants_2011_OTAQ [v0]
Inventory ptnonipm NEI Ethanol Plants	EMISINV_C	Ptnonipm	smkinven	FALSE	ethanol_plants_2018ed_NEI [v0]	
Inventory ptnonipm OTAQ Ethanol Plants	EMISINV_B	Ptnonipm	smkinven	FALSE	ethanol_plants_2018ed_OTAQ [v1]	

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory rail 2011NEI	EMISINV_B	c1c2rail	smkinven	FALSE		rail_2011NEIv1_nonpoint_20130911 [v1]
Inventory RWC	EMISINV_A	Rwc	smkinven	FALSE	2018ed_from_rwc_2011NEIv1_nonpoint_20130911 [v0]	rwc_2011NEIv1_nonpoint_20130911 [v0]
Inventory Table - HAPCAP EBAFM integration CMAQ-lite v4.7 N1e HDGHG	INVTABLE	onroad_catx	smkinven	TRUE	invtable_hapcap_cb05soa [v20]	invtable_hapcap_cb05soa [v20]
Inventory Table - HAPCAP EBAFM integration CMAQ-lite v4.7 N1e HDGHG	INVTABLE	Onroad	smkinven	TRUE	invtable_hapcap_cb05soa [v20]	invtable_hapcap_cb05soa [v20]
Inventory Table - HAPCAP EBAFM integration CMAQ-lite v4.7 N1e HDGHG	INVTABLE	onroad_rfl	smkinven	TRUE	invtable_hapcap_cb05soa [v20]	invtable_hapcap_cb05soa [v20]
Inventory Table - HAPCAP EBAFM integration CMAQ-lite v4.7 N1e HDGHG	INVTABLE	onroad_catx_adj	smkinven	TRUE	invtable_hapcap_cb05soa [v20]	invtable_hapcap_cb05soa [v20]
Inventory Table - HAPCAP integration but no toxics	INVTABLE		smkinven	TRUE	invtable_hapcapintegate_cb05soa_nomp_nohg [v11]	invtable_hapcapintegate_cb05soa_nomp_nohg [v11]
Inventory Table - HAPs for NATA	INVTABLE	ptfire	smkinven	FALSE		invtable_fire_HAPS_for_NATA [v0]
Inventory Table - noHAPuse sectors, no toxics	INVTABLE	ptegu	smkinven	TRUE	invtable_hapcap_cb05_no_bafm [v7]	invtable_hapcap_cb05_no_bafm [v7]
Inventory Table - noHAPuse sectors, no toxics	INVTABLE	ptegu_pk	smkinven	TRUE	invtable_hapcap_cb05_no_bafm [v7]	invtable_hapcap_cb05_no_bafm [v7]
Inventory Table - noHAPuse sectors, no toxics	INVTABLE	ptfire	smkinven	TRUE	invtable_hapcapnohapuse_cb05soa_nomp_nohg [v9]	invtable_hapcapnohapuse_cb05soa_nomp_nohg [v9]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Inventory Table - noHAPuse sectors, no toxics	INVTABLE	ptfire	smkinven	FALSE		invtable_hapcapnohapuse_cb05soa_nomp_nohg [v9]
Inventory Table - noHAPuse sectors, no toxics	INVTABLE	ptfire	smkinven	FALSE		invtable_fire_HAPS_for_NATA [v0]
Inventory Table - noHAPuse sectors, no toxics	INVTABLE	ptnonipm	smkinven	TRUE	invtable_hapcapintegate_cb05soa_nomp_nohg [v11]	invtable_hapcapintegate_cb05soa_nomp_nohg [v11]
List of sectors for mrggrid	SECTORLIST		Mrggrid	FALSE	sectorlist_2018ed [v2]	sectorlist_2011ed [v0]
MACT Description	MACTDESC		Smkreport	TRUE	mactdesc_2002v3 [v1]	mactdesc_2002v3 [v1]
Meteorology temperature profiles	METMOVES	onroad_catx_adj	Movesmrg	TRUE	SMOKE_DAILY_12US2_2011 [v0]	SMOKE_DAILY_12US2_2011 [v0]
Meteorology temperature profiles	METMOVES	onroad_catx	movesmrg	TRUE	SMOKE_DAILY_12US2_2011 [v0]	SMOKE_DAILY_12US2_2011 [v0]
Meteorology temperature profiles	METMOVES	onroad	movesmrg	TRUE	SMOKE_DAILY_12US2_2011 [v0]	SMOKE_DAILY_12US2_2011 [v0]
Mobile codes file default	MCODES		smkinven	TRUE	mcodes [v4]	mcodes [v4]
MOVES county cross-reference	MCXREF	onroad	movesmrg	TRUE	MCXREF_2011ec [v1]	MCXREF_2011ec [v1]
MOVES county cross-reference	MCXREF	onroad_catx	movesmrg	TRUE	MCXREF_2011ec [v1]	MCXREF_2011ec [v1]
MOVES county cross-reference	MCXREF	onroad_catx_adj	movesmrg	TRUE	MCXREF_2011ec [v1]	MCXREF_2011ec [v1]
MOVES county cross-reference	MCXREF	onroad_rfl	movesmrg	TRUE	MCXREF_2011ec [v1]	MCXREF_2011ec [v1]
MOVES Emission Factor Table list	MRCLIST	onroad_catx_adj	movesmrg	FALSE	mrclist_RPV_2018ec_NPRM_04nov2013 [v0]	mrclist_RPV_26aug2013_nei2011v1_nprm_AQ [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
MOVES Emission Factor Table list	MRCLIST	onroad	movesmrg	FALSE	mrclist_RPD_2018ec_NPRM_04nov2013 [v0]	mrclist_RPD_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad	movesmrg	FALSE	mrclist_RPP_2018ec_NPRM_04nov2013 [v0]	mrclist_RPP_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad	movesmrg	FALSE	mrclist_RPV_2018ec_NPRM_04nov2013 [v0]	mrclist_RPV_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad_catx	movesmrg	FALSE	mrclist_RPD_2018ec_NPRM_04nov2013 [v0]	mrclist_RPD_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad_catx	movesmrg	FALSE	mrclist_RPP_2018ec_NPRM_04nov2013 [v0]	mrclist_RPP_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad_catx	movesmrg	FALSE	mrclist_RPV_2018ec_NPRM_04nov2013 [v0]	mrclist_RPV_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad_catx_adj	movesmrg	FALSE	mrclist_RPP_2018ec_NPRM_04nov2013 [v0]	mrclist_RPP_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad_rfl	movesmrg	FALSE	mrclist_RPD_rfl_2018ec_2010b_04nov2013 [v0]	mrclist_RPD_rfl_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Table list	MRCLIST	onroad_rfl	movesmrg	FALSE	mrclist_RPV_rfl_2018ec_2010b_04nov2013 [v0]	
MOVES Emission Factor Table list	MRCLIST	onroad_rfl	movesmrg	FALSE	mrclist_RPV_rfl_2018ec_2010b_04nov2013 [v0]	mrclist_RPV_rfl_26aug2013_nei2011v1_nprm_AQ [v0]
MOVES Emission Factor Tables	EFTABLES		movesmrg	FALSE	EFtables_Tier3NPRM_2018ec_04nov2013 [v0]	EFtables_NEI2011v1_AQ_26aug2013_nprm [v0]
MOVES Hourly Speed Profiles	SPDPRO	onroad_rfl	movesmrg	TRUE	spdpro_NEI_v1_2011 [v1]	spdpro_NEI_v1_2011 [v1]
MOVES Hourly Speed Profiles	SPDPRO	onroad	movesmrg	TRUE	spdpro_NEI_v1_2011 [v1]	spdpro_NEI_v1_2011 [v1]
MOVES Hourly Speed Profiles	SPDPRO	onroad_catx_adj	movesmrg	TRUE	spdpro_NEI_v1_2011 [v1]	spdpro_NEI_v1_2011 [v1]
MOVES Hourly Speed Profiles	SPDPRO	onroad_catx	movesmrg	TRUE	spdpro_NEI_v1_2011 [v1]	spdpro_NEI_v1_2011 [v1]
MOVES processes and pollutants	MEPROC	onroad_catx	movesmrg	TRUE	meproc_RPP_mplite_or_caponly [v2]	meproc_RPP_mplite_or_caponly [v2]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
MOVES processes and pollutants	MEPROC	onroad_catx	movesmrg	TRUE	meproc_RPD_mplite [v4]	meproc_RPD_mplite [v4]
MOVES processes and pollutants	MEPROC	onroad	movesmrg	FALSE	meproc_RPV_mplite_ext_apu [v2]	
MOVES processes and pollutants	MEPROC	onroad_rfl	movesmrg	FALSE	meproc_RPV_mplite_or_caponly_refueling_only [v1]	
MOVES processes and pollutants	MEPROC	onroad	movesmrg	FALSE	meproc_RPP_mplite_or_caponly [v2]	
MOVES processes and pollutants	MEPROC	onroad	movesmrg	TRUE	meproc_RPP_mplite_or_caponly [v2]	meproc_RPP_mplite_or_caponly [v2]
MOVES processes and pollutants	MEPROC	onroad	movesmrg	TRUE	meproc_RPD_mplite [v4]	meproc_RPD_mplite [v4]
MOVES processes and pollutants	MEPROC	onroad	movesmrg	TRUE	meproc_RPV_mplite_ext_apu [v2]	meproc_RPV_mplite_ext_apu [v2]
MOVES processes and pollutants	MEPROC	onroad_rfl	movesmrg	TRUE	meproc_RPV_mplite_or_caponly_refueling_only [v1]	meproc_RPV_mplite_or_caponly_refueling_only [v1]
MOVES processes and pollutants	MEPROC	onroad_rfl	movesmrg	TRUE	meproc_RPD_mplite_or_caponly_refueling_only [v1]	meproc_RPD_mplite_or_caponly_refueling_only [v1]
MOVES processes and pollutants	MEPROC	onroad_catx_adj	movesmrg	TRUE	meproc_RPV_mplite_ext_apu [v2]	meproc_RPV_mplite_ext_apu [v2]
MOVES processes and pollutants	MEPROC	onroad_catx_adj	movesmrg	TRUE	meproc_RPP_mplite_or_caponly [v2]	meproc_RPP_mplite_or_caponly [v2]
MOVES processes and pollutants	MEPROC	onroad_catx	movesmrg	TRUE	meproc_RPV_mplite_ext_apu [v2]	meproc_RPV_mplite_ext_apu [v2]
MOVES reference county fuel month	MFMREF	onroad_catx_adj	movesmrg	TRUE	MFMREF_2011 [v0]	MFMREF_2011 [v0]
MOVES reference county fuel month	MFMREF	onroad	movesmrg	TRUE	MFMREF_2011 [v0]	MFMREF_2011 [v0]
MOVES reference county fuel month	MFMREF	onroad_catx	movesmrg	TRUE	MFMREF_2011 [v0]	MFMREF_2011 [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
MOVES reference county fuel month	MFMREF	onroad_rfl	movesmrg	TRUE	MFMREF_2011 [v0]	MFMREF_2011 [v0]
NAICS descriptions	NAICSDESC		Smkreport	TRUE	naicsdesc [v0]	naicsdesc [v0]
NHAPEXCLUDE c1c2rail	NHAPEXCLUDE	c1c2rail	smkinven	FALSE	nhapexclude_2018_c1c2rail [v0]	nhapexclude_2011ec_c1c2rail [v1]
NHAPEXCLUDE nonpt	NHAPEXCLUDE	nonpt	smkinven	FALSE	nhapexclude_2018_nonpt [v0]	nhapexclude_2011ec_nonpt.csv [v0]
NHAPEXCLUDE NONROAD	NHAPEXCLUDE	nonroad	smkinven	FALSE	nhapexclude_nonroad_2018ed [v0]	nhapexclude_nonroad_2011ec [v2]
NHAPEXCLUDE oilgas	NHAPEXCLUDE	pt_oilgas	smkinven	TRUE	nhapexclude_2011ec_oilgas [v1]	nhapexclude_2011ec_oilgas [v1]
NHAPEXCLUDE oilgas	NHAPEXCLUDE	np_oilgas	smkinven	TRUE	nhapexclude_2011ec_np_oilgas.csv [v0]	nhapexclude_2011ec_np_oilgas.csv [v0]
NHAPEXCLUDE othpt with non-US c3	NHAPEXCLUDE	othpt	smkinven	TRUE	nhapexclude_othpt_with_nonUS_c3 [v0]	nhapexclude_othpt_with_nonUS_c3 [v0]
NHAPEXCLUDE rwc	NHAPEXCLUDE	rwc	smkinven	TRUE	nhapexclude_2011eb_rwc [v0]	nhapexclude_2011eb_rwc [v0]
nonpoint & nonroad surrogate xref	AGREF		Grdmat	FALSE	amgref_us_2011platform [v4]	amgref_us_2011platform [v3]
nonpoint & nonroad surrogate xref	AGREF	othar	Grdmat	TRUE	amgref_can2006_mex2010v3_12US1 [v2]	amgref_can2006_mex2010v3_12US1 [v2]
Nonroad Monthly FF10 California	EMISINV_B	nonroad	All programs for sector	FALSE	2017_california_nonroad_monthly_ff10 [v2]	nonroad_ff10_california_2011neidraft_augmented_VOC [v7]
Nonroad Monthly FF10 non-California, non-Texas	EMISINV_A	nonroad	All programs for sector	FALSE	2018_nonroad_20130829 [v2]	2011NEIv1_nonroad_20130621 [v4]
Nonroad Monthly FF10 Texas	EMISINV_C	nonroad	All programs for sector	FALSE	2018_projection_SLT_nonroad_01feb2013_Texas_monthly_ff10 [v0]	2011_SLT_nonroad_01feb2013_Texas_monthly_ff10 [v1]
onroad surrogate xref default	MGREF		Grdmat	TRUE	amgref_us_can_mex_revised [v20]	amgref_us_can_mex_revised [v20]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
onroad surrogate xref refueling	MGREF	onroad_rfl	Grdmat	TRUE	mgref_smoke_moves_onroad_rfl [v0]	mgref_smoke_moves_onroad_rfl [v0]
ORIS Description	ORISDESC		smkinven	TRUE	orisdesc [v0]	orisdesc [v0]
ORL Nonpoint Inventory - Afdust Canada 2006	EMISINV_A	othar	smkinven	TRUE	canada_afdust_xportfrac_cap_2006 [v0]	canada_afdust_xportfrac_cap_2006 [v0]
ORL Nonpoint Inventory - Ag Canada 2006	EMISINV_B	othar	smkinven	TRUE	canada_ag_cap_2006 [v0]	canada_ag_cap_2006 [v0]
ORL Nonpoint Inventory - Aircraft Canada 2006	EMISINV_H	othar	smkinven	TRUE	canada_aircraft_cap_2006 [v0]	canada_aircraft_cap_2006 [v0]
ORL Nonpoint Inventory - Commercial Marine Canada 2006	EMISINV_F	othar	smkinven	TRUE	canada_marine_cap_2006 [v0]	canada_marine_cap_2006 [v0]
ORL Nonpoint Inventory - Nonroad Canada 2006	EMISINV_I	othar	smkinven	TRUE	canada_offroad_cap_2006 [v0]	canada_offroad_cap_2006 [v0]
ORL Nonpoint Inventory - Oarea Canada 2006	EMISINV_C	othar	smkinven	TRUE	canada_oarea_cap_2006 [v3]	canada_oarea_cap_2006 [v3]
ORL Nonpoint Inventory - Rail Canada 2006	EMISINV_G	othar	smkinven	TRUE	canada_rail_cap_2006 [v0]	canada_rail_cap_2006 [v0]
ORL Point Inventory - Point 2006	EMISINV_A	othpt	smkinven	TRUE	canada_point_2006_orl [v3]	canada_point_2006_orl [v3]
ORL Point Inventory - Point CB5 2006	EMISINV_B	othpt	smkinven	TRUE	canada_point_cb5_2006_orl [v1]	canada_point_cb5_2006_orl [v1]
ORL Point Inventory - Upstream Oil & Gas 2006	EMISINV_C	othpt	smkinven	TRUE	canada_point_uog_2006_orl [v0]	canada_point_uog_2006_orl [v0]
othon griddingg xref	AGREF	othon	Grdmat	TRUE	amgref_can2006_mex2010v3_12US1 [v2]	amgref_can2006_mex2010v3_12US1 [v2]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Report configuration, ag inventory	REPCONFIG_INV	ag	Smkreport	TRUE	repconfig_ag_inv [v4]	repconfig_ag_inv [v4]
Report configuration, c1c2rail temporal	REPCONFIG_TEMP	c1c2rail	Smkreport	TRUE	repconfig_area_temporal_2007platform [v0]	repconfig_area_temporal_2007platform [v0]
Report configuration, area temporal	REPCONFIG_TEMP	Ag	Smkreport	TRUE	repconfig_area_temporal_2007platform [v0]	repconfig_area_temporal_2007platform [v0]
Report configuration, avefire inventory	REPCONFIG_INV	nonpt	Smkreport	FALSE	repconfig_alm_inv_caphap [v0]	
Report configuration, avefire inventory	REPCONFIG_INV	np_oilgas	Smkreport	TRUE	repconfig_alm_inv_caphap [v0]	repconfig_alm_inv_caphap [v0]
Report configuration, avefire inventory	REPCONFIG_INV	rwc	Smkreport	TRUE	repconfig_alm_inv_caphap [v0]	repconfig_alm_inv_caphap [v0]
Report configuration, c1c2rail inventory	REPCONFIG_INV	c1c2rail	Smkreport	TRUE	repconfig_alm_inv_caphap [v0]	repconfig_alm_inv_caphap [v0]
Report configuration, c1c2rail inventory	REPCONFIG_INV	afdust	Smkreport	TRUE	repconfig_alm_inv_caphap [v0]	repconfig_alm_inv_caphap [v0]
Report configuration, c3marine gridded	REPCONFIG_GRID	c3marine	Smkreport	TRUE	repconfig_pt_noplant_invgrid_caphap [v1]	repconfig_pt_noplant_invgrid_caphap [v1]
Report configuration, c3marine inventory	REPCONFIG_INV	c3marine	Smkreport	TRUE	repconfig_seca_c3_inv_caphap [v0]	repconfig_seca_c3_inv_caphap [v0]
Report configuration, c3marine VOCprof	REPCONFIG_INV2	c3marine	Smkreport	TRUE	repconfig_point_inv2 [v0]	repconfig_point_inv2 [v0]
Report configuration, for onroad SMOKE-MOVES	REPCONFIG_INV	onroad_rfl	Smkreport	TRUE	repconfig_onroad_MOVES_inv_caphap [v0]	repconfig_onroad_MOVES_inv_caphap [v0]
Report configuration, for onroad SMOKE-MOVES	REPCONFIG_INV	onroad_catx_adj	Smkreport	TRUE	repconfig_onroad_MOVES_inv_caphap [v0]	repconfig_onroad_MOVES_inv_caphap [v0]
Report configuration, for onroad SMOKE-MOVES	REPCONFIG_INV	onroad_catx	Smkreport	TRUE	repconfig_onroad_MOVES_inv_caphap [v0]	repconfig_onroad_MOVES_inv_caphap [v0]
Report configuration, for onroad SMOKE-MOVES	REPCONFIG_INV	onroad	Smkreport	TRUE	repconfig_onroad_MOVES_inv_caphap [v0]	repconfig_onroad_MOVES_inv_caphap [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Report configuration, for onroad SMOKE-MOVES, gridded	REPCONFIG_INV	onroad_rfl	Smkreport	TRUE	repconfig_onroad_MOVES_invgrid_caphap [v0]	repconfig_onroad_MOVES_invgrid_caphap [v0]
Report configuration, for onroad SMOKE-MOVES, gridded	REPCONFIG_INV	onroad	Smkreport	TRUE	repconfig_onroad_MOVES_invgrid_caphap [v0]	repconfig_onroad_MOVES_invgrid_caphap [v0]
Report configuration, for onroad SMOKE-MOVES, gridded	REPCONFIG_INV	onroad_catx_adj	Smkreport	TRUE	repconfig_onroad_MOVES_invgrid_caphap [v0]	repconfig_onroad_MOVES_invgrid_caphap [v0]
Report configuration, for onroad SMOKE-MOVES, gridded	REPCONFIG_INV	onroad_catx	Smkreport	TRUE	repconfig_onroad_MOVES_invgrid_caphap [v0]	repconfig_onroad_MOVES_invgrid_caphap [v0]
Report configuration, nonpoint default inventory	REPCONFIG_INV		Smkreport	TRUE	repconfig_area_inv_caphap [v0]	repconfig_area_inv_caphap [v0]
Report configuration, nonpt inventory	REPCONFIG_INV	nonpt	Smkreport	FALSE		repconfig_alm_inv_caphap [v2]
Report configuration, nonroad gridded	REPCONFIG_GRID	Nonroad	Smkreport	TRUE	repconfig_nonroad_invgrid_caphap_12US1 [v1]	repconfig_nonroad_invgrid_caphap_12US1 [v1]
Report configuration, nonroad inventory	REPCONFIG_INV	nonroad	Smkreport	TRUE	repconfig_nonroad_inv_caphap [v0]	repconfig_nonroad_inv_caphap [v0]
Report configuration, othar inventory	REPCONFIG_INV	othar	Smkreport	TRUE	repconfig_othar_inv [v0]	repconfig_othar_inv [v0]
Report configuration, othon inventory	REPCONFIG_INV	othon	Smkreport	TRUE	repconfig_othar_inv [v0]	repconfig_othar_inv [v0]
Report configuration, othpt inventory	REPCONFIG_INV	othpt	Smkreport	TRUE	repconfig_othpt_inv [v0]	repconfig_othpt_inv [v0]
Report configuration, ptipm inventory	REPCONFIG_INV	ptegu	Smkreport	TRUE	repconfig_point_inv_caphap [v0]	repconfig_point_inv_caphap [v0]
Report configuration, ptipm inventory	REPCONFIG_INV	ptegu_pk	Smkreport	TRUE	repconfig_point_inv_caphap [v0]	repconfig_point_inv_caphap [v0]
Report configuration, ptnonipm inventory	REPCONFIG_INV	ptnonipm	Smkreport	TRUE	repconfig_point_inv_caphap [v0]	repconfig_point_inv_caphap [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Report configuration, ptnonipm inventory	REPCONFIG_INV	pt_oilgas	Smkreport	TRUE	repconfig_point_inv_caphap [v0]	repconfig_point_inv_caphap [v0]
SCC descriptions	SCCDESC		smkinven	TRUE	sccdesc_pf31 [v19]	sccdesc_pf31 [v19]
SIC descriptions	SICDESC		Smkreport	TRUE	sic_desc [v0]	sic_desc [v0]
Smkmerge representative dates files	MRGDATE_FILES		Run script	TRUE	merge_dates_2011 (garnet) [v0]	merge_dates_2011 (garnet) [v0]
SMOKE-MOVES control packet	CFPRO	onroad	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPD [v0]	
SMOKE-MOVES control packet	CFPRO	onroad	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPD [v0]	
SMOKE-MOVES control packet	CFPRO	onroad	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPD [v0]	
SMOKE-MOVES control packet	CFPRO	Onroad	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPD [v0]	
SMOKE-MOVES control packet	CFPRO	Onroad	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_plus_EXT_RPV_noCATX [v1]	cfpro_EXT_adjfactors_2011_NEIv1_noCATX [v0]
SMOKE-MOVES control packet	CFPRO	Onroad	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_plus_EXT_RPV_noCATX [v2]	
SMOKE-MOVES control packet	CFPRO	onroad_catx	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_plus_EXT_RPV_CATX [v0]	cfpro_EXT_adjfactors_2011_NEIv1_CATX [v0]
SMOKE-MOVES control packet	CFPRO	onroad_catx	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPD [v0]	
SMOKE-MOVES control packet	CFPRO	onroad_catx_adj	movesmrg	FALSE	cfpro_2018ed_CATX_plus_NPRM_national_adjfactors_RPD [v0]	
SMOKE-MOVES control packet	CFPRO	onroad_catx_adj	movesmrg	FALSE	cfpro_2018ed_CATX_RPP [v0]	
SMOKE-MOVES control packet	CFPRO	onroad_rfl	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPV_rfl [v0]	
SMOKE-MOVES control packet	CFPRO	onroad_rfl	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPD_rfl [v0]	

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
SMOKE-MOVES control packet	CFPRO	onroad_catx_adj	movesmrg	FALSE	cfpro_2018ed_CATX_plus_NPRM_national_adjfactors_and_EXT_RPV [v0]	
SMOKE-MOVES control packet	CFPRO	onroad_rfl	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPD_rfl [v0]	
SMOKE-MOVES control packet	CFPRO	onroad_rfl	movesmrg	FALSE	cfpro_2018ed_NPRM_national_adjfactors_RPV_rfl [v0]	
Speciation profiles additional for SMOKE-MOVES	GSPROTMP_O	onroad_catx	Spcmat	TRUE	gspro_pm25brake_pm25tire_speciate_4_3_for_smoke_moves [v0]	gspro_pm25brake_pm25tire_speciate_4_3_for_smoke_moves [v0]
Speciation profiles additional for SMOKE-MOVES	GSPROTMP_O	onroad	Spcmat	TRUE	gspro_pm25brake_pm25tire_speciate_4_3_for_smoke_moves [v0]	gspro_pm25brake_pm25tire_speciate_4_3_for_smoke_moves [v0]
Speciation profiles additional for SMOKE-MOVES	GSPROTMP_O	onroad_rfl	Spcmat	TRUE	gspro_pm25brake_pm25tire_speciate_4_3_for_smoke_moves [v0]	gspro_pm25brake_pm25tire_speciate_4_3_for_smoke_moves [v0]
Speciation profiles Canada PM	GSPROTMP_J	othpt	Spcmat	TRUE	gspro_pm25_canada_2006_point [v0]	gspro_pm25_canada_2006_point [v0]
Speciation profiles for additional MP lite pollutants	GSPROTMP_M		Spcmat	TRUE	gspro_other_hapvoc_for_mplite [v1]	gspro_other_hapvoc_for_mplite [v1]
Speciation profiles for biogenics	GSPROTMP_K	beis	Spcmat	TRUE	gspro_biogenics [v0]	gspro_biogenics [v0]
Speciation profiles for INTEGRATE HAPS	GSPROTMP_F		Spcmat	TRUE	gspro_integratehaps_cb05_tx_pf4 [v3]	gspro_integratehaps_cb05_tx_pf4 [v3]
Speciation profiles for NONHAPTOG	GSPROTMP_E		Spcmat	FALSE	gspro_nonhaptog_cb05_eprofiles_2020re_pmnaaqsfinal_notonroad [v2]	gspro_nonhaptog_cb05_eprofiles_2020re_pmnaaqsfinal_notonroad [v1]
Speciation profiles for NONHAPTOG w/ETOH integration	GSPROTMP_E	onroad_rfl	Spcmat	FALSE	gspro_nonhaptog_cb05_eprofiles_onroad_ext_apu [v4]	gspro_nonhaptog_cb05_eprofiles_onroad_ext_apu [v2]
Speciation profiles for NONHAPTOG w/ETOH integration	GSPROTMP_E	onroad	Spcmat	FALSE	gspro_nonhaptog_cb05_eprofiles_onroad_ext_apu [v4]	gspro_nonhaptog_cb05_eprofiles_onroad_ext_apu [v2]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Speciation profiles for NONHAPTOG w/ETOH integration	GSPROTMP_E	onroad_catx	Spcmat	FALSE	gspro_nonhaptog_cb05_eprofiles_onroad_ext_apu [v4]	gspro_nonhaptog_cb05_eprofiles_onroad_ext_apu [v2]
Speciation profiles for NOX	GSPROTMP_G		Spcmat	TRUE	gspro_nox_hono_pf4 [v0]	gspro_nox_hono_pf4 [v0]
Speciation profiles for PM2.5	GSPROTMP_C		Spcmat	TRUE	gspro_PM2_5_AE6_speciate_4_3 [v3]	gspro_PM2_5_AE6_speciate_4_3 [v3]
Speciation profiles for SO2-SULF	GSPROTMP_B		Spcmat	TRUE	gspro_sulf [v1]	gspro_sulf [v1]
Speciation profiles for TOG	GSPROTMP_D		Spcmat	FALSE	gspro_tog_cb05_soa_2010ef [v2]	gspro_tog_cb05_soa_2010ef [v1]
Speciation profiles PMFINE to AE6	GSPROTMP_T	onroad	Spcmat	TRUE	gspro_2007rg_tier3_speciatedpmfine [v2]	gspro_2007rg_tier3_speciatedpmfine [v2]
Speciation profiles PMFINE to AE6	GSPROTMP_T	onroad_catx	Spcmat	TRUE	gspro_2007rg_tier3_speciatedpmfine [v2]	gspro_2007rg_tier3_speciatedpmfine [v2]
Speciation profiles PMFINE to AE6	GSPROTMP_T	onroad_rfl	Spcmat	TRUE	gspro_2007rg_tier3_speciatedpmfine [v2]	gspro_2007rg_tier3_speciatedpmfine [v2]
Speciation profiles speciated VOC	GSPROTMP_I		Spcmat	TRUE	gspro_speciated_voc [v2]	gspro_speciated_voc [v2]
Speciation profiles static	GSPROTMP_A		Spcmat	TRUE	gspro_static_cmaq [v13]	gspro_static_cmaq [v13]
Speciation profiles TOG - WRAP Phase III Oil and Gas	GSPROTMP_U		Spcmat	TRUE	gspro_2008_WRAP_revised [v0]	gspro_2008_WRAP_revised [v0]
Speciation xref CAP static	GSREFTMP_A		Spcmat	TRUE	gsref_static_cap_pf4 [v2]	gsref_static_cap_pf4 [v2]
Speciation xref for Canada PM	GSREFTMP_N	othpt	Spcmat	TRUE	gsref_pm25_canada_2006_point [v5]	gsref_pm25_canada_2006_point [v5]
Speciation xref for Integrate-HAPs static	GSREFTMP_J		Spcmat	TRUE	gsref_static_integratehap_emv4 [v2]	gsref_static_integratehap_emv4 [v2]
Speciation xref for NONHAPVOC	GSREFTMP_H		Spcmat	FALSE	gsref_nonhapvoc_2018ec_TR [v0]	gsref_nonhapvoc_2009ef_cdc [v7]
Speciation xref for PM2.5	GSREFTMP_E		Spcmat	TRUE	gsref_pm25_ae6_speciate_4_3 [v10]	gsref_pm25_ae6_speciate_4_3 [v10]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
Speciation xref for SMOKE-MOVES not TOG	GSREFTMP_P	onroad	Spcmat	TRUE	gsref_new_for_smoke-moves_otherthantog [v1]	gsref_new_for_smoke-moves_otherthantog [v1]
Speciation xref for SMOKE-MOVES not TOG	GSREFTMP_P	onroad_catx	Spcmat	TRUE	gsref_new_for_smoke-moves_otherthantog [v1]	gsref_new_for_smoke-moves_otherthantog [v1]
Speciation xref for SMOKE-MOVES not TOG	GSREFTMP_P	onroad_rfl	Spcmat	TRUE	gsref_new_for_smoke-moves_otherthantog [v1]	gsref_new_for_smoke-moves_otherthantog [v1]
Speciation xref for SMOKE-MOVES TOG	GSREFTMP_O	onroad_catx	Spcmat	FALSE	gsref_2018rg_ref_tier3_smoke_moves_tog [v1]	gsref_new_for_smoke-moves_tog [v8]
Speciation xref for SMOKE-MOVES TOG	GSREFTMP_O	onroad_rfl	Spcmat	FALSE	gsref_2018rg_ref_tier3_smoke_moves_tog [v1]	gsref_new_for_smoke-moves_tog [v8]
Speciation xref for SMOKE-MOVES TOG	GSREFTMP_O	onroad	Spcmat	FALSE	gsref_2018rg_ref_tier3_smoke_moves_tog [v1]	gsref_new_for_smoke-moves_tog [v8]
Speciation xref for SO2-SULF	GSREFTMP_B		Spcmat	TRUE	gsref_sulf [v0]	gsref_sulf [v0]
Speciation xref for speciated VOC	GSREFTMP_M	onroad	Spcmat	TRUE	gsref_speciated_voc [v2]	gsref_speciated_voc [v2]
Speciation xref for speciated VOC	GSREFTMP_M	othpt	Spcmat	TRUE	gsref_speciated_voc [v2]	gsref_speciated_voc [v2]
Speciation xref for speciated VOC	GSREFTMP_M	onroad_rfl	Spcmat	TRUE	gsref_speciated_voc [v2]	gsref_speciated_voc [v2]
Speciation xref for speciated VOC	GSREFTMP_M	onroad_catx	Spcmat	TRUE	gsref_speciated_voc [v2]	gsref_speciated_voc [v2]
Speciation xref for VOC	GSREFTMP_F		Spcmat	FALSE	gsref_voc_2018ec_TR [v0]	gsref_voc_2009ef_cdc [v6]
Speciation xref for VOC - WRAP oil and gas	GSREFTMP_G		Spcmat	TRUE	gsref_WRAP_oil_gas_2011_platform [v0]	gsref_WRAP_oil_gas_2011_platform [v0]
Speciation xref static NOX -- HONO for mobile sources	GSREFTMP_C		Spcmat	TRUE	gsref_static_nox_hono_pf4 [v11]	gsref_static_nox_hono_pf4 [v11]
Stack replacement	PSTK		smkinven	TRUE	pstk [v0]	pstk [v0]

Name	SMOKE env_var	sector	program	match	2018ed_v6_11f	2011ed_v6_11f
surrogate descriptions (works for all grids)	SRGDESC		Grdmat	TRUE	srgdesc_CONUS12_2010_v3_20121012 [v6]	srgdesc_CONUS12_2010_v3_20121012 [v6]
surrogate descriptions (works for all grids)	SRGDESC	othon	Grdmat	TRUE	srgdesc_can2006_mex2010v3_12US1 [v0]	srgdesc_can2006_mex2010v3_12US1 [v0]
surrogate descriptions (works for all grids)	SRGDESC	othar	Grdmat	TRUE	srgdesc_can2006_mex2010v3_12US1 [v0]	srgdesc_can2006_mex2010v3_12US1 [v0]
Temporal profiles, all nonpoint and nonroad	ATPRO		Temporal	TRUE	amptpro_for_2011_platform_with_carb_mobile_update [v0]	amptpro_for_2011_platform_with_carb_mobile_update [v0]
Temporal profiles, all point	PTPRO	ptegu_pk	Temporal	FALSE	ptpro_2011ec_ptegu [v0]	
Temporal profiles, all point	PTPRO	ptegu	Temporal	TRUE	ptpro_2011ec_ptegu [v0]	ptpro_2011ec_ptegu [v0]
Temporal profiles, all point	PTPRO		Temporal	TRUE	amptpro_for_2011_platform_with_carb_mobile_2011CEM [v0]	amptpro_for_2011_platform_with_carb_mobile_2011CEM [v0]
Temporal profiles, onroad default	MTPRO		Temporal	TRUE	amptpro_for_2011_platform_with_carb_mobile_2011CEM_moves [v0]	amptpro_for_2011_platform_with_carb_mobile_2011CEM_moves [v0]
Temporal xref, all nonpoint and nonroad	ATREF		Temporal	TRUE	Gentpro_TREF_HOURLY_BASH_NH3.agNH3_bash_2011ea_11f-newgent_emf.txt [v4]	Gentpro_TREF_HOURLY_BASH_NH3.agNH3_bash_2011ea_11f-newgent_emf.txt [v4]
Temporal xref, nonpt	ATREF	nonpt	Temporal	TRUE	Gentpro_TREF_DAILY_RWC.RWC_2011 [v1]	Gentpro_TREF_DAILY_RWC.RWC_2011 [v1]
Temporal xref, onroad mobile default	MTREF		Temporal	TRUE	mtref_2011ec_onroad_moves [v0]	mtref_2011ec_onroad_moves [v0]
Temporal xref, othpt	PTREF	othpt	Temporal	TRUE	ptref_othpt [v6]	ptref_othpt [v6]
Temporal xref, point default	PTREF		Temporal	TRUE	Gentpro_TREF_HOURLY_BASH_NH3.agNH3_bash_2011ea_11f-newgent_emf.txt [v4]	Gentpro_TREF_HOURLY_BASH_NH3.agNH3_bash_2011ea_11f-newgent_emf.txt [v4]
Temporal xref, ptipm only	PTREF	ptegu_pk	Temporal	FALSE	ipm_tref_2018 [v0]	
Temporal xref, ptipm only	PTREF	ptegu	Temporal	FALSE	ipm_tref_2018 [v1]	2011ec_ipm_tref_revised.csv [v0]

Table G-2. Parameter Settings for 2011 Platform Emissions Modeling Cases

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Archive sectors from older cases	ARCHIVE_ALL_SECTORS	asm_backup	Run script	FALSE	Y	N
ASM backup template	ASM_TEMPLATE	asm_backup	Run script	TRUE	romo:bigcost	romo:bigcost
Assigns File	ASSIGNS_FILE		All programs	TRUE	$SMK_HOME/smoke3.5/assigns/ASSIGNS.emf	$SMK_HOME/smoke3.5/assigns/ASSIGNS.emf
Basis for hourly MET temporal profiles	HOURLY_TPROF_BASE	ag	Temporal	TRUE	MONTH	MONTH
Basis for hourly MET temporal profiles	HOURLY_TPROF_BASE	nonpt	Temporal	TRUE	MONTH	MONTH
Basis for hourly MET temporal profiles	HOURLY_TPROF_BASE	othar	Temporal	TRUE	MONTH	MONTH
BEIS3 version	BEIS3_VERSION	beis	Run script	TRUE	3.14	3.14
Biogenics land area surrogate	AREA_SURROGATE_NUM	beis	Smkmerge	TRUE	340	340
Biogenics speciation profile code	BIOG_SPRO	beis	Tmpbeis3	TRUE	B10C5	B10C5
Check for duplicate sources	RAW_DUP_CHECK	c1c2rail	smkinven	FALSE	Y	
Check for duplicate sources	RAW_DUP_CHECK	rwc	smkinven	FALSE	N	
Check for duplicate sources	RAW_DUP_CHECK	pt_oilgas	smkinven	TRUE	N	N
Check for duplicate sources	RAW_DUP_CHECK	ptnonipm	smkinven	TRUE	N	N
Check for duplicate sources	RAW_DUP_CHECK	ptfire	smkinven	TRUE	N	N
Check for duplicate sources	RAW_DUP_CHECK	ptegu_pk	smkinven	FALSE	N	
Check for duplicate sources	RAW_DUP_CHECK	ptegu	smkinven	FALSE	N	
Check for duplicate sources	RAW_DUP_CHECK	othpt	smkinven	TRUE	N	N
Check for duplicate sources	RAW_DUP_CHECK	othon	smkinven	TRUE	N	N

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Check for duplicate sources	RAW_DUP_CHECK	othar	smkinven	TRUE	N	N
Check for duplicate sources	RAW_DUP_CHECK	np_oilgas	smkinven	TRUE	N	N
Check for duplicate sources	RAW_DUP_CHECK	nonpt	smkinven	TRUE	N	N
Check for duplicate sources	RAW_DUP_CHECK		smkinven	TRUE	Y	Y
Check stack parameters for missing	CHECK_STACKS_YN	ptfire	smkinven	TRUE	N	N
Convective rainfall variable for Pleim-Xiu	RC_VAR	beis	Tmpbeis3	TRUE	RC	RC
Count of underscores for Daily data prefix	NAMEBREAK_DAILY	ptegu	Run script	TRUE	8	8
Count of underscores for Hourly data prefix	NAMEBREAK_HOURLY	ptegu_pk	Run script	FALSE	6	3
Count of underscores for Hourly data prefix	NAMEBREAK_HOURLY	ptegu	Run script	FALSE		3
Custom merge output	SMKMERGE_CUSTOM_OUTPUT		Smkmerge	TRUE	Y	Y
Custom merge output - MOVES	MOVESMRG_CUSTOM_OUTPUT	onroad_catx_adj	movesmrg	TRUE	Y	Y
Custom merge output - MOVES	MOVESMRG_CUSTOM_OUTPUT	onroad_catx	movesmrg	TRUE	Y	Y
Custom merge output - MOVES	MOVESMRG_CUSTOM_OUTPUT	onroad	movesmrg	TRUE	Y	Y
Custom merge output - MOVES	MOVESMRG_CUSTOM_OUTPUT	onroad_rfl	movesmrg	TRUE	Y	Y
Days per Movesmrg instance	DAYS_PER_RUN	onroad_catx_adj	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad_rfl	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad_rfl	movesmrg	FALSE	7	

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Days per Movesmrg instance	DAYS_PER_RUN	onroad_catx	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad_catx	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad	movesmrg	FALSE	7	
Days per Movesmrg instance	DAYS_PER_RUN	onroad	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad	movesmrg	TRUE	7	7
Days per Movesmrg instance	DAYS_PER_RUN	onroad	movesmrg	FALSE	7	
Days per Movesmrg instance	DAYS_PER_RUN	onroad_catx_adj	movesmrg	TRUE	7	7
Default surrogate code	SMK_DEFAULT_SRGID	afdust	Grdmat	TRUE	340	340
Default surrogate code	SMK_DEFAULT_SRGID	othon	Grdmat	TRUE	10	10
Default surrogate code	SMK_DEFAULT_SRGID		Grdmat	TRUE	100	100
Default surrogate code	SMK_DEFAULT_SRGID	othar	Grdmat	TRUE	10	10
Don't need spinup for most sectors	SPINUP_DURATION	ptegu	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	c3marine	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	nonpt	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	nonroad	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	np_oilgas	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	othpt	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	ptegu_pk	All programs	TRUE	0	0

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Don't need spinup for most sectors	SPINUP_DURATION	ptnonipm	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	pt_oilgas	All programs	TRUE	0	0
Don't need spinup for most sectors	SPINUP_DURATION	rwc	All programs	TRUE	0	0
Don't speciate by road/vehicle type only	USE_MCODES_SCC_YN	onroad	Spcmat	TRUE	N	N
Don't speciate by road/vehicle type only	USE_MCODES_SCC_YN	onroad_rfl	Spcmat	TRUE	N	N
Don't speciate by road/vehicle type only	USE_MCODES_SCC_YN	onroad_catx_adj	Spcmat	TRUE	N	N
Don't speciate by road/vehicle type only	USE_MCODES_SCC_YN	onroad_catx	Spcmat	TRUE	N	N
Don't speciate by road/vehicle type only (see notes)	USE_MCODE_SCC_YN	onroad_catx	Spcmat	TRUE	N	N
Don't speciate by road/vehicle type only (see notes)	USE_MCODE_SCC_YN	onroad_rfl	Spcmat	TRUE	N	N
Don't speciate by road/vehicle type only (see notes)	USE_MCODE_SCC_YN	onroad_catx_adj	Spcmat	TRUE	N	N
Don't speciate by road/vehicle type only (see notes)	USE_MCODE_SCC_YN	onroad	Spcmat	TRUE	N	N
Don't speciate zero emission SCCs	NO_SPC_ZERO_EMIS	rwc	Spcmat	TRUE	Y	Y
Don't speciate zero emission SCCs	NO_SPC_ZERO_EMIS	nonpt	Spcmat	TRUE	Y	Y
Don't speciate zero emission SCCs	NO_SPC_ZERO_EMIS	np_oilgas	Spcmat	TRUE	Y	Y
Don't speciate zero emission SCCs	NO_SPC_ZERO_EMIS	othpt	Spcmat	TRUE	Y	Y
Don't speciate zero emission SCCs	NO_SPC_ZERO_EMIS	ptnonipm	Spcmat	TRUE	Y	Y
Don't speciate zero emission SCCs	NO_SPC_ZERO_EMIS	pt_oilgas	Spcmat	TRUE	Y	Y
Don't speciate zero emission SCCs	NO_SPC_ZERO_EMIS	ag	Spcmat	TRUE	Y	Y

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Don't use memory optimization	MEMORY_OPTIMIZE_YN	onroad	movesmrg	TRUE	N	N
Don't use memory optimization	MEMORY_OPTIMIZE_YN	onroad_catx	movesmrg	TRUE	N	N
Don't use memory optimization	MEMORY_OPTIMIZE_YN	onroad_catx_adj	movesmrg	TRUE	N	N
Don't use memory optimization	MEMORY_OPTIMIZE_YN	onroad_rfl	movesmrg	TRUE	N	N
Don't use pollutant conversion	POLLUTANT_CONVERSION	onroad	Spcmat	TRUE	N	N
Don't use pollutant conversion	POLLUTANT_CONVERSION	onroad_catx	Spcmat	TRUE	N	N
Don't use pollutant conversion	POLLUTANT_CONVERSION	onroad_catx_adj	Spcmat	TRUE	N	N
Don't use pollutant conversion	POLLUTANT_CONVERSION	onroad_rfl	Spcmat	TRUE	N	N
EMF log directory	EMF_LOGGERPYTHONDIR		Run script	TRUE	$EMF_SCRIPTDIR/case_logs_python	$EMF_SCRIPTDIR/case_logs_python
EMF queue options	EMF_QUEUE_OPTIONS		All programs	TRUE	#NAME?	#NAME?
Emission rate model	SMK_EF_MODEL	onroad	movesmrg	TRUE	MOVES	MOVES
Emission rate model	SMK_EF_MODEL	onroad_catx	movesmrg	TRUE	MOVES	MOVES
Emission rate model	SMK_EF_MODEL	onroad_catx_adj	movesmrg	TRUE	MOVES	MOVES
Emission rate model	SMK_EF_MODEL	onroad_rfl	movesmrg	TRUE	MOVES	MOVES
Fill annual values	FILL_ANNUAL	nonpt	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL	onroad_rfl	smkinven	FALSE	Y	
Fill annual values	FILL_ANNUAL	onroad_rfl	smkinven	TRUE	Y	Y

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Fill annual values	FILL_ANNUAL	onroad_catx_adj	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL	onroad_catx	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL	onroad	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL	onroad	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL	onroad	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL	onroad	smkinven	FALSE	Y	
Fill annual values	FILL_ANNUAL	nonroad	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL	ag	smkinven	TRUE	Y	Y
Fill annual values	FILL_ANNUAL		smkinven	TRUE	N	N
Fire-specific plume rise calculations	FIRE_PLUME_YN	ptfire	Laypoint	TRUE	Y	Y
Formula for Smkinven	SMKINVEN_FORMULA		smkinven	TRUE	PMC=PM10-PM2_5	PMC=PM10-PM2_5
Formula for Smkinven	SMKINVEN_FORMULA	ag	smkinven	TRUE		
Formula for Smkinven	SMKINVEN_FORMULA	nonroad	smkinven	TRUE	EXH__PMC=EXH__PM10-EXH__PM2_5	EXH__PMC=EXH__PM10-EXH__PM2_5
Formula for Smkinven	SMKINVEN_FORMULA	onroad	smkinven	FALSE		
Formula for Smkinven	SMKINVEN_FORMULA	onroad_catx	smkinven	TRUE		
Formula for Smkinven	SMKINVEN_FORMULA	onroad_catx_adj	smkinven	TRUE		
Formula for Smkinven	SMKINVEN_FORMULA	onroad_rfl	smkinven	TRUE		
Formula for Smkinven	SMKINVEN_FORMULA	ptfire	smkinven	FALSE		
Formula for Smkinven	SMKINVEN_FORMULA	ptfire	smkinven	FALSE		
Generate MTMP_INV files	MTMP_OUTPUT_YN		movesmrg	TRUE	N	N

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Include market penetration	MRG_MARKETPEN_YN		Smkmerge	TRUE	N	N
I/O API Sphere type	IOAPI_ISPH		Grdmat	TRUE	20	20
Layers	SMK_EMLAYS	ptfire	All programs for sector	FALSE		25
Laypoint uses Elevpoint to set sources for plume rise calc	SMK_SPECELEV_YN		Laypoint	TRUE	Y	Y
Laypoint uses Elevpoint to set sources for plume rise calc	SMK_SPECELEV_YN		Laypoint	FALSE		N
Laypoint uses Elevpoint to set sources for plume rise calc	SMK_SPECELEV_YN	ptfire	Laypoint	FALSE		N
Laypoint uses Elevpoint to set sources for plume rise calc	SMK_SPECELEV_YN	ptfire	Laypoint	FALSE		N
Laypoint uses Elevpoint to set sources for plume rise calc	SMK_SPECELEV_YN	ptfire	Laypoint	FALSE		N
Match full SCCs	FULLSCC_ONLY		All programs	TRUE	Y	Y
Maximum errors printed	SMK_MAXERROR		All programs	TRUE	10000	10000
Maximum warnings printed	SMK_MAXWARNING	onroad	All programs	TRUE	200	200
Maximum warnings printed	SMK_MAXWARNING		All programs	TRUE	10	10
Maximum warnings printed	SMK_MAXWARNING	onroad_catx	All programs	TRUE	200	200
Maximum warnings printed	SMK_MAXWARNING	onroad_catx_adj	All programs	TRUE	200	200
Maximum warnings printed	SMK_MAXWARNING	onroad_rfl	All programs	TRUE	200	200
Merge by day	MRG_BYDAY	othpt	Smkmerge	TRUE	P	P
Merge by day	MRG_BYDAY	c3marine	Smkmerge	TRUE	P	P

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Merge by day	MRG_BYDAY	pt_oilgas	Smkmerge	TRUE	P	P
Merge by day	MRG_BYDAY	ptnonipm	Smkmerge	TRUE	P	P
Merge type	M_TYPE	onroad_catx_adj	Run script	TRUE	all	all
Merge type	M_TYPE	onroad_catx	Run script	TRUE	all	all
Merge type	M_TYPE	othar	Run script	TRUE	week	week
Merge type	M_TYPE	onroad	Run script	TRUE	all	all
Merge type	M_TYPE	rwc	Run script	TRUE	all	all
Merge type	M_TYPE	beis	Run script	TRUE	all	all
Merge type	M_TYPE	afdust	Run script	TRUE	week	week
Merge type	M_TYPE		Run script	TRUE	mwdss	mwdss
Merge type	M_TYPE	onroad_rfl	Run script	TRUE	all	all
Merge type	M_TYPE	ag	Run script	TRUE	all	all
Merge type	M_TYPE	othon	Run script	TRUE	week	week
Merge type	M_TYPE	othpt	Run script	TRUE	mwdss	mwdss
Merge type	M_TYPE	pt_oilgas	Run script	TRUE	mwdss	mwdss
Merge type	M_TYPE	ptegu	Run script	TRUE	all	all
Merge type	M_TYPE	ptegu_pk	Run script	TRUE	all	all
Merge type	M_TYPE	ptfire	Run script	TRUE	all	all
Merge type	M_TYPE	ptnonipm	Run script	TRUE	mwdss	mwdss
Merge type	M_TYPE	np_oilgas	Run script	TRUE	week	week
Merge type	M_TYPE	nonpt	Run script	TRUE	week	week
Merge type	M_TYPE	c3marine	Run script	TRUE	aveday	aveday
Model output format	OUTPUT_FORMAT		Run script	TRUE	$EMF_AQM	$EMF_AQM
Nonhap Type	NONHAP_TYPE	onroad	All programs for sector	TRUE	TOG	TOG
Nonhap Type	NONHAP_TYPE	c1c2rail	All programs for sector	TRUE	VOC	VOC
Nonhap Type	NONHAP_TYPE	c3marine	All programs for sector	TRUE	VOC	VOC
Nonhap Type	NONHAP_TYPE	nonpt	All programs for sector	TRUE	VOC	VOC

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Nonhap Type	NONHAP_TYPE	nonroad	All programs for sector	TRUE	VOC	VOC
Nonhap Type	NONHAP_TYPE	np_oilgas	All programs for sector	TRUE	VOC	VOC
Nonhap Type	NONHAP_TYPE	onroad_catx	All programs for sector	TRUE	TOG	TOG
Nonhap Type	NONHAP_TYPE	onroad_catx_adj	All programs for sector	TRUE	TOG	TOG
Nonhap Type	NONHAP_TYPE	onroad_rfl	All programs for sector	TRUE	TOG	TOG
Nonhap Type	NONHAP_TYPE	othpt	All programs for sector	TRUE	VOC	VOC
Nonhap Type	NONHAP_TYPE	pt_oilgas	All programs for sector	TRUE	VOC	VOC
Nonhap Type	NONHAP_TYPE	rwc	All programs for sector	TRUE	VOC	VOC
Number of emissions layers	SMK_EMLAYS		All programs	FALSE		25
Number of emissions layers	SMK_EMLAYS		All programs	FALSE		25
Ocean Chlorine filename extension	EXT	mrggrid	Run script	TRUE	.ncf	.ncf
Ocean Chlorine filename root	OCL2ROOT	mrggrid	Run script	TRUE	/garnet/oaqps/em_v4/intermed/2005ag_tox_05a/ocean_cl2/cl2_	/garnet/oaqps/em_v4/intermed/2005ag_tox_05a/ocean_cl2/cl2_
Output county biogenic totals	BIO_COUNTY_SUMS	beis	Run script	TRUE	Y	Y
Output county/SCC totals	MRG_REPSRC_YN	onroad	Smkmerge	TRUE	Y	Y
Output county/SCC totals	MRG_REPSRC_YN	onroad_rfl	Smkmerge	TRUE	Y	Y
Output county/SCC totals	MRG_REPSRC_YN	onroad_catx	Smkmerge	TRUE	Y	Y

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Output county/SCC totals	MRG_REPSRC_YN	onroad_catx_adj	Smkmerge	TRUE	Y	Y
Output county totals	MRG_REPCNY_YN	onroad_catx	Smkmerge	TRUE	Y	Y
Output county totals	MRG_REPCNY_YN	onroad_rfl	Smkmerge	TRUE	Y	Y
Output county totals	MRG_REPCNY_YN		Smkmerge	TRUE	Y	Y
Output county totals	MRG_REPCNY_YN	onroad	Smkmerge	TRUE	Y	Y
Output county totals	MRG_REPCNY_YN	onroad_catx_adj	Smkmerge	TRUE	Y	Y
Output SCC totals	MRG_REPSCC_YN	onroad_rfl	Smkmerge	TRUE	Y	Y
Output SCC totals	MRG_REPSCC_YN	onroad	Smkmerge	TRUE	Y	Y
Output SCC totals	MRG_REPSCC_YN	onroad_catx	Smkmerge	TRUE	Y	Y
Output SCC totals	MRG_REPSCC_YN	onroad_catx_adj	Smkmerge	TRUE	Y	Y
Output state biogenic totals	BIO_STATE_SUMS	beis	Run script	TRUE	Y	Y
Output state totals	MRG_REPSTA_YN	onroad	Smkmerge	TRUE	N	N
Output state totals	MRG_REPSTA_YN	onroad_rfl	Smkmerge	TRUE	N	N
Output state totals	MRG_REPSTA_YN	onroad_catx_adj	Smkmerge	TRUE	N	N
Output state totals	MRG_REPSTA_YN	onroad_catx	Smkmerge	TRUE	N	N
Output state totals	MRG_REPSTA_YN		Smkmerge	TRUE	N	N
Output time zone	OUTZONE		All programs	TRUE	0	0
"Path	data root"		All programs	TRUE	/garnet/oaqps/em_$PLATFORM	/garnet/oaqps/em_$PLATFORM
"Path	intermediate root"		All programs	TRUE	$PROJECT_ROOT/$CASE/intermed	$PROJECT_ROOT/$CASE/intermed
"Path	Met data root"		All programs	FALSE		/garnet.old/oaqps/met/MCIP_v4.1.3/WRF_2011_25aL

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
"Path	Met data root"		All programs	TRUE	/garnet/oaqps/met/MCIP_v4.1.3/WRF_2011_25aL	/garnet/oaqps/met/MCIP_v4.1.3/WRF_2011_25aL
"Path	Met data root"		All programs	TRUE	/garnet.old/oaqps/met/MCIP_v4.1.3/WRF_2011_25aL	/garnet.old/oaqps/met/MCIP_v4.1.3/WRF_2011_25aL
"Path	Met data root"		All programs	FALSE		/garnet.old/oaqps/met/MCIP_v4.1.3/WRF_2011_25aL
"Path	Met data root"		All programs	FALSE		/garnet.old/oaqps/met/MCIP_v4.1.2/WRF_2011_25aL
"Path	Output data root"		All programs	TRUE	/terra/work/ROMO	/terra/work/ROMO
"Path	SMOKE home"		All programs	TRUE	/garnet/oaqps/smoke	/garnet/oaqps/smoke
Platform name	PLATFORM		All programs	TRUE	v6	v6
Pleim-Xiu land surface used?	PX_VERSION	beis	Tmpbeis3	TRUE	Y	Y
Plume-in-grid method	SMK_PING_METHOD		All programs for sector	TRUE	0	0
Pressure variable name	PRES_VAR	beis	Tmpbeis3	TRUE	PRSFC	PRSFC
Project root directory	PROJECT_ROOT		All programs	TRUE	/garnet/oaqps/em_v6/tr_o3	/garnet/oaqps/em_v6/tr_o3
Project short name	PROJECT		All programs	TRUE	tr_o3	tr_o3
Ptfire Inline	ELEVPOINT_DAILY	ptfire	All programs for sector	FALSE		
Ptfire Inline	ELEVPOINT_DAILY	ptfire	All programs for sector	FALSE		
Ptfire Inline	ELEVPOINT_DAILY	ptfire	All programs for sector	TRUE	Y	Y
Ptfire Inline	ELEVPOINT_DAILY	ptfire	All programs for sector	FALSE		
Radiation/cloud variable name	RAD_VAR	beis	Tmpbeis3	TRUE	RGRND	RGRND
Renormalize temporal profiles	RENORM_TPROF		Temporal	TRUE	Y	Y

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Report default profiles used	REPORT_DEFAULTS		All programs	TRUE	Y	Y
Run holidays	RUN_HOLIDAYS	c1c2rail	Run script	TRUE	N	N
Run holidays	RUN_HOLIDAYS		Run script	TRUE	Y	Y
Run holidays	RUN_HOLIDAYS	afdust	Run script	TRUE	Y	Y
Run holidays	RUN_HOLIDAYS	ag	Run script	TRUE	Y	Y
Run holidays	RUN_HOLIDAYS	c3marine	Run script	TRUE	N	N
Run holidays	RUN_HOLIDAYS	othar	Run script	TRUE	N	N
Run holidays	RUN_HOLIDAYS	othon	Run script	TRUE	N	N
Run holidays	RUN_HOLIDAYS	othpt	Run script	TRUE	N	N
Run in inline mode	INLINE_MODE		Run script	TRUE	both	both
Run in inline mode c3marine	INLINE_MODE	c3marine	Run script	TRUE	only	only
Run in inline mode othpt (elevate everything)	INLINE_MODE	othpt	Run script	TRUE	only	only
Run in inline mode ptfire	INLINE_MODE	ptfire	Run script	FALSE		off
Run in inline mode ptfire	INLINE_MODE	ptfire	Run script	TRUE	only	only
Run in inline mode ptfire	INLINE_MODE	ptfire	Run script	FALSE		off
Run in inline mode ptfire	INLINE_MODE	ptfire	Run script	FALSE		off
Run script for Smkmerge annual totals	RUN_PYTHON_ANNUAL		Run script	TRUE	Y	Y
Run settings file	RUNSET		All programs	TRUE	$EMF_SCRIPTDIR/run_settings.txt	$EMF_SCRIPTDIR/run_settings.txt
Sector name override	SECTOR	onroad	Run script	FALSE	onroad_24027	
Sector name override	SECTOR	ptfire	All programs	FALSE		ptfire3D_haps

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Sector name override	SECTOR	ptfire	All programs	FALSE		ptfire3D
Sector name override	SECTOR	ptfire	All programs	FALSE		ptfire3D
Sector name override	SECTOR	onroad_rfl	Run script	FALSE	onroad_rfl_24027	
Sector name override	SECTOR	onroad_rfl	Run script	FALSE	onroad_rfl_24027	
Sector name override	SECTOR	onroad_rfl	Run script	FALSE	onroad_rfl_24027	
Sector name override	SECTOR	onroad	Run script	FALSE	onroad_24027	
Sector name override	SECTOR	onroad	Run script	FALSE	onroad_24027	
Sector name override	SECTOR	onroad	Run script	FALSE	onroad_24027	
Sector name override 3D	SECTOR	ptfire	All programs	FALSE		ptfire3D
Sector name override 3D	SECTOR	ptfire	All programs	FALSE		ptfire3D_haps
Separate refueling sectors for onroad?	KEEP_RFL_SEPARATE	onroad_catx	Mrggrid	TRUE		
Separate refueling sectors for onroad?	KEEP_RFL_SEPARATE	onroad_rfl	Mrggrid	TRUE	Y	Y
Separate refueling sectors for onroad?	KEEP_RFL_SEPARATE	onroad_catx_adj	Mrggrid	TRUE		
Separate refueling sectors for onroad?	KEEP_RFL_SEPARATE	onroad	Mrggrid	TRUE		
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	TRUE	RPD	RPD
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	TRUE	RPP	RPP
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	TRUE	RPD	RPD
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_rfl	All programs	TRUE	RPD	RPD
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_catx_adj	All programs	TRUE	RPV	RPV
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	TRUE	RPD	RPD
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	FALSE	RPD	
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	FALSE	RPV	
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	TRUE	RPV	RPV

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
SMOKE-MOVES processing mode	MOVES_TYPE	onroad	All programs	FALSE	RPP	
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_rfl	All programs	FALSE	RPV	
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_rfl	All programs	TRUE	RPV	RPV
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_rfl	All programs	FALSE	RPD	
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_catx_adj	All programs	TRUE	RPD	RPD
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_catx	All programs	TRUE	RPV	RPV
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_catx_adj	All programs	TRUE	RPP	RPP
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_catx	All programs	TRUE	RPP	RPP
SMOKE-MOVES processing mode	MOVES_TYPE	onroad_catx	All programs	TRUE	RPD	RPD
Soil moisture variable for Pleim-Xiu	SOIM1_VAR	beis	Tmpbeis3	TRUE	SOIM1	SOIM1
Soil temperature variable for Pleim-Xiu	SOILT_VAR	beis	Tmpbeis3	TRUE	SOIT1	SOIT1
Soil type variable for Pleim-Xiu	ISLTYP_VAR	beis	Tmpbeis3	TRUE	SLTYP	SLTYP
Sort inventory EVs by letter	SORT_LIST_EVS	ptegu	Run script	TRUE	Y	Y
Sort inventory EVs by letter	SORT_LIST_EVS	othpt	Run script	TRUE	Y	Y
Sort inventory EVs by letter	SORT_LIST_EVS	ptegu_pk	Run script	TRUE	Y	Y
Speciation type name	SPC		All programs	TRUE	$EMF_SPC	$EMF_SPC
Spinup Duration	SPINUP_DURATION		All programs	TRUE	10	10
Temperature bin buffer	TEMP_BUFFER_BIN	onroad	movesmrg	TRUE	0	0
Temperature bin buffer	TEMP_BUFFER_BIN	onroad_rfl	movesmrg	TRUE	0	0
Temperature bin buffer	TEMP_BUFFER_BIN	onroad_catx	movesmrg	TRUE	0	0

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Temperature bin buffer	TEMP_BUFFER_BIN	onroad_catx_adj	movesmrg	TRUE	0	0
Temperature variable name	TMPR_VAR	beis	Tmpbeis3	TRUE	TEMP2	TEMP2
Temperature variable name - MOVES	TVARNAME	onroad_catx_adj	movesmrg	TRUE	TEMP2	TEMP2
Temperature variable name - MOVES	TVARNAME	onroad	movesmrg	TRUE	TEMP2	TEMP2
Temperature variable name - MOVES	TVARNAME	onroad_catx	movesmrg	TRUE	TEMP2	TEMP2
Temperature variable name - MOVES	TVARNAME	onroad_rfl	movesmrg	TRUE	TEMP2	TEMP2
Temporal type	L_TYPE	onroad	Run script	TRUE	all	all
Temporal type	L_TYPE	rwc	Run script	TRUE	all	all
Temporal type	L_TYPE	ptfire	Run script	TRUE	all	all
Temporal type	L_TYPE	ptegu_pk	Run script	TRUE	all	all
Temporal type	L_TYPE	ptegu	Run script	TRUE	all	all
Temporal type	L_TYPE	othon	Run script	TRUE	week	week
Temporal type	L_TYPE	othar	Run script	TRUE	week	week
Temporal type	L_TYPE	onroad_rfl	Run script	TRUE	all	all
Temporal type	L_TYPE	onroad_catx_adj	Run script	TRUE	all	all
Temporal type	L_TYPE	onroad_catx	Run script	TRUE	all	all
Temporal type	L_TYPE	np_oilgas	Run script	TRUE	week	week
Temporal type	L_TYPE	nonpt	Run script	TRUE	week	week
Temporal type	L_TYPE	c3marine	Run script	TRUE	aveday	aveday
Temporal type	L_TYPE	beis	Run script	TRUE	all	all
Temporal type	L_TYPE	ag	Run script	TRUE	all	all
Temporal type	L_TYPE	afdust	Run script	TRUE	week	week
Temporal type	L_TYPE		Run script	TRUE	mwdss	mwdss
Use area-to-point	SMK_ARTOPNT_YN	nonpt	smkinven	TRUE	Y	Y
Use area-to-point	SMK_ARTOPNT_YN	c1c2rail	smkinven	TRUE	N	N
Use area-to-point	SMK_ARTOPNT_YN	nonroad	smkinven	TRUE	Y	Y
Use average day emissions	SMK_AVEDAY_YN		smkinven	TRUE	N	N
Use day-specific emission	DAY_SPECIFIC_YN	ptfire	smkinven	FALSE		N

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Use day-specific emission	DAY_SPECIFIC_YN	ptfire	smkinven	TRUE	Y	Y
Use day-specific emission	DAY_SPECIFIC_YN	ptegu_pk	smkinven	FALSE	Y	N
Use day-specific emission	DAY_SPECIFIC_YN	ptegu	smkinven	TRUE	Y	Y
Use day-specific emission	DAY_SPECIFIC_YN	ptfire	smkinven	FALSE		N
Use hourly plume rise data	HOURLY_FIRE_YN	ptfire	Laypoint	TRUE	Y	Y
Use hourly SPEED profiles	USE_HOURLY_SPEEDS	onroad_catx_adj	movesmrg	TRUE	Y	Y
Use hourly SPEED profiles	USE_HOURLY_SPEEDS	onroad_rfl	movesmrg	TRUE	Y	Y
Use hourly SPEED profiles	USE_HOURLY_SPEEDS	onroad_catx	movesmrg	TRUE	Y	Y
Use hourly SPEED profiles	USE_HOURLY_SPEEDS	onroad	movesmrg	TRUE	Y	Y
Use hour-specific emission	HOUR_SPECIFIC_YN	ptegu_pk	smkinven	TRUE	Y	Y
Use hour-specific emission	HOUR_SPECIFIC_YN	ptegu	smkinven	TRUE	Y	Y
Use Linux2_ ... execs	USE_LINUX2	onroad_catx	Run script	TRUE	Y	Y
Use Linux2_ ... execs	USE_LINUX2	onroad	Run script	TRUE	Y	Y
Use Linux2_... execs	USE_LINUX2	onroad_catx_adj	Run script	TRUE	Y	Y
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	onroad_catx_adj	All programs for sector	TRUE	ALL	ALL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	c1c2rail	All programs for sector	TRUE	PARTIAL	PARTIAL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	c3marine	All programs for sector	TRUE	ALL	ALL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	nonpt	All programs for sector	TRUE	PARTIAL	PARTIAL

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	nonroad	All programs for sector	TRUE	PARTIAL	PARTIAL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	np_oilgas	All programs for sector	TRUE	PARTIAL	PARTIAL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	onroad	All programs for sector	TRUE	ALL	ALL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	onroad_catx	All programs for sector	TRUE	ALL	ALL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	onroad_rfl	All programs for sector	TRUE	ALL	ALL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	othpt	All programs for sector	TRUE	PARTIAL	PARTIAL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	pt_oilgas	All programs for sector	TRUE	PARTIAL	PARTIAL
Use NHAPEXCLUDE file	SMK_PROCESS_HAPS	rwc	All programs for sector	TRUE	PARTIAL	PARTIAL
Use pollutant conversion	POLLUTANT_CONVERSION		Spcmat	TRUE	Y	Y
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad	movesmrg	FALSE	Y	
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad	movesmrg	TRUE	Y	Y
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad	movesmrg	FALSE	Y	
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad_catx	movesmrg	FALSE	Y	

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad_catx	movesmrg	FALSE	N	
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad_catx	movesmrg	TRUE	Y	Y
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad_catx_adj	movesmrg	TRUE	Y	Y
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad_rfl	movesmrg	FALSE	Y	
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad	movesmrg	FALSE	N	
Use SMOKE-MOVES control packet	USE_CONTROL_FACTORS	onroad	movesmrg	FALSE	N	
Using FF10 Daily Point inventory?	USE_FF10_DAILY_POINT	ptegu_pk	Run script	FALSE	Y	
Using FF10 Daily Point inventory?	USE_FF10_DAILY_POINT	ptegu	Run script	TRUE	Y	Y
Western hemisphere?	WEST_HSPHERE		smkinven	TRUE	Y	Y
Write zero emissions	WRITE_ANN_ZERO	ptegu	smkinven	TRUE	Y	Y
Write zero emissions	WRITE_ANN_ZERO	ptegu_pk	smkinven	TRUE	Y	Y
Write zero emissions	WRITE_ANN_ZERO	ptfire	smkinven	TRUE	Y	Y
Zip merged model-ready files	GZIP_OUTPUTS	mrggrid	Run script	TRUE	Y	Y
Zip POUT and INLN output files	ZIPOUT	ptegu_pk	Run script	TRUE	Y	Y
Zip POUT and INLN output files	ZIPOUT	ptfire	Run script	TRUE	Y	Y
Zip POUT and INLN output files	ZIPOUT	c3marine	Run script	TRUE	Y	Y
Zip POUT and INLN output files	ZIPOUT	othpt	Run script	TRUE	N	N

Name	SMOKE env_var	Sector	Program	Match	2018ed_v6_11f	2011ed_v6_11f
Zip POUT and INLN output files	ZIPOUT	ptegu	Run script	TRUE	Y	Y

Appendix G: Future Animal Population Projection Methodology, Updated 07/24/12

In the EPA's ammonia inventory for animal agricultural operations (National Emission Inventory - Ammonia Emissions from Animal Agricultural Operations; Revised Draft Report; April 22, 2005), population projections for the beef, dairy, swine, and poultry animal sectors were developed and used to estimate future ammonia emissions from these animal sectors. To develop the 2005 population projections, EPA used inventory data from the U.S. Department of Agriculture (USDA) and the Food and Agriculture Policy and Research Institute (FAPRI).

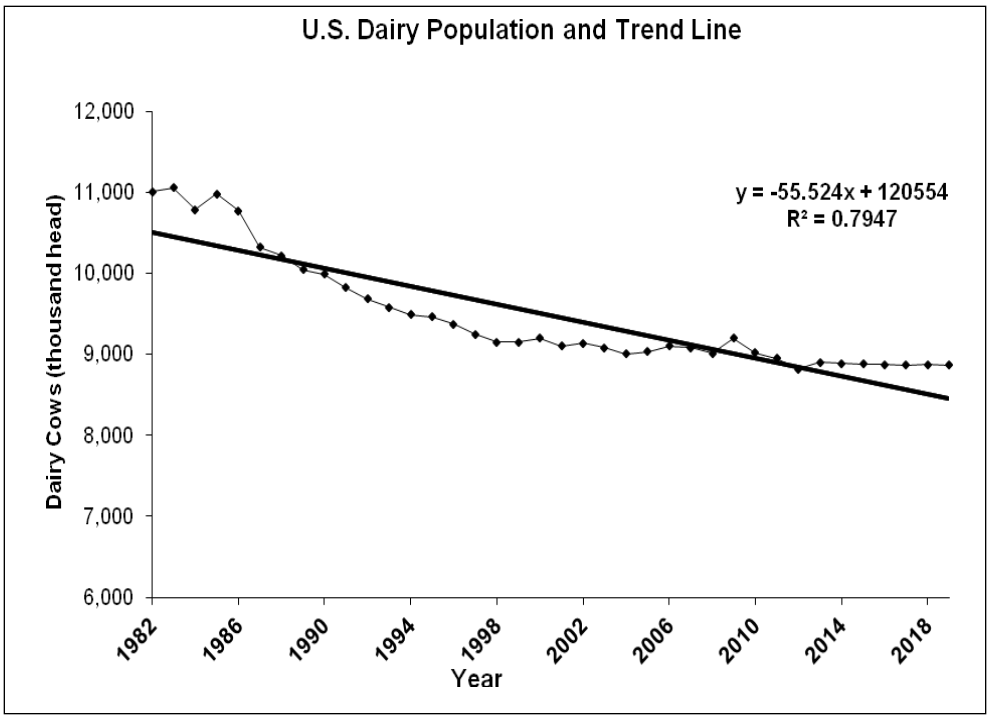
Since completion of the 2005 ammonia emissions inventory, USDA and FAPRI have released updated reports that contain animal population data and projections. These data were used to update the 2005 animal inventory projections.

The data sources and the methodology used to develop the population projections for each animal type are discussed below. These future projections do not account for any changes in animal populations or regional dislocations associated with EPA's revised effluent limitations guidelines and standards for concentrated animal feeding operations promulgated in December 2002 (68 FR 7176, February 12, 2003). Due to insufficient data, animal population projections and future emission estimates were not developed for sheep, goats, and horses.

Dairy Cattle. The 2010 FAPRI *U.S. and World Agricultural Outlook* (FAPRI 2010) report provides estimated national milk cow inventory data and projections from 2009 through 2019 and shows an overall decline in U.S. dairy cow populations. The FAPRI projections depict an essentially linear relationship between 2001 milk cow populations and subsequent years. The EPA estimated future dairy cattle populations using a linear regression analysis of the national population data available from the FAPRI report, covering 1982 through 2019. Figure G-1 illustrates the linear projection of the U.S. dairy cow population and trend line.

Beef Cattle. The USDA *Agricultural Projections to 2021* (USDAa) provides estimated national cattle inventory data and projections from 2010 through 2021. Beef production has a clear cycle generated by producers' expectations about future prices, grain market cycles, and other economic conditions. The pace of the cycle is limited by the reproductive capacity of the animal. Cattle inventories can expand only as fast as cows can reproduce. This has historically resulted in a 7- to 12-year cycle, from peak to peak (Kohls, 1998). Peaks and troughs of the cycle are 5 to 6 percent higher or lower than the general trend in cattle populations so the stage of the cycle can make a significant difference in population at any given future date.

Figure G-1. Dairy Cow Inventory Projections

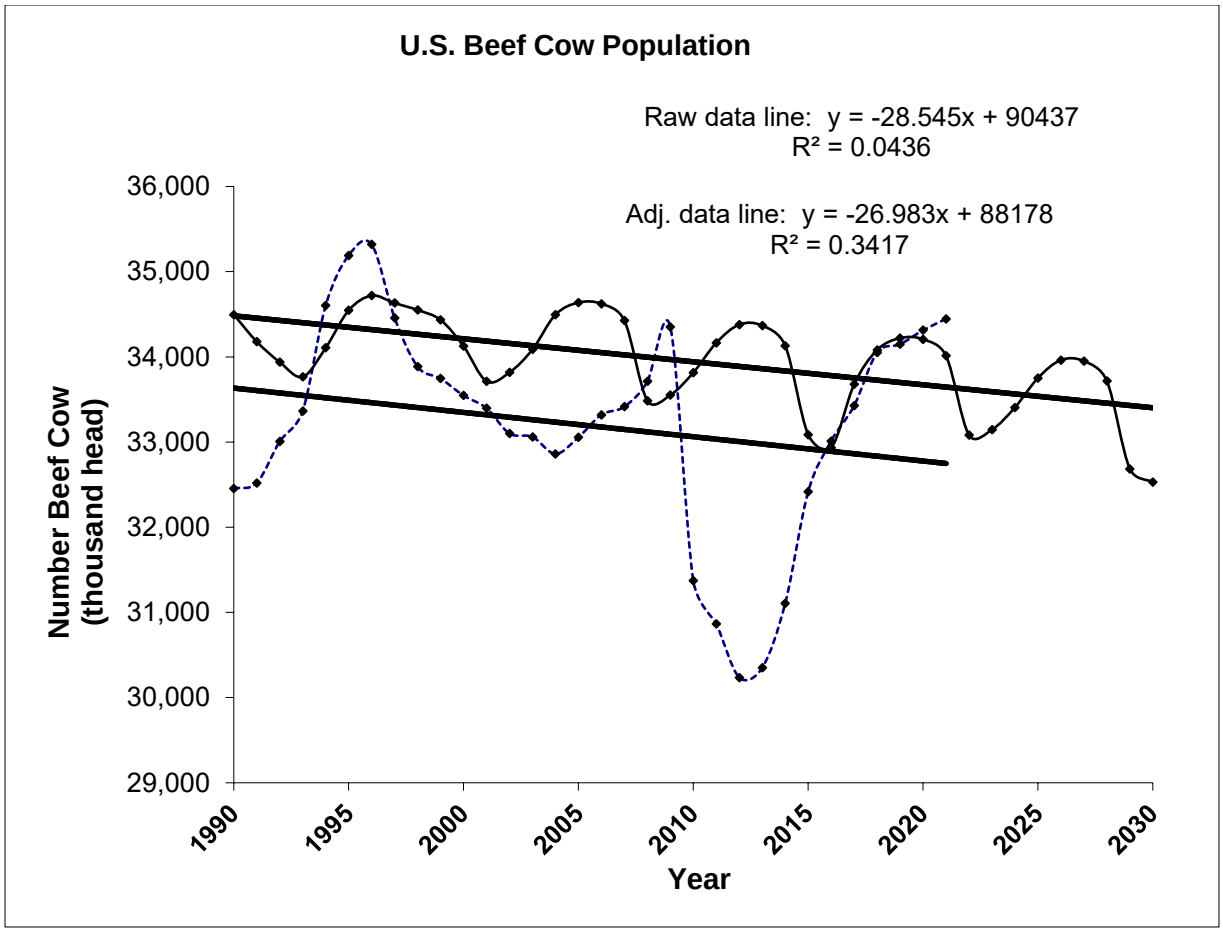


The EPA decomposed the beef cow inventory time series into a trend line, a cyclical component, and a random error component (Bowerman, 1987). The trend line was estimated by linear regression of the inventory data from 1990 to 2015 on a time variable. The cyclical component was then estimated as the percentage deviation from the trend line in the historical data. A graph of that information appeared to show a cyclic trend (trough to peak). The robust U.S. economy of the 1990s may explain the longer than average cycle. With so little data, EPA assumed the down side of the cycle was symmetrical with the up side, so the data set would contain three values for each stage of the cycle. The average of the absolute value of the three observations represents the cyclical component. The EPA forecasted the trend line out to 2030 and adjusted it by the average percentage deviation from the trend for that stage of the cycle, as illustrated in Figure G-2.

The projection data for the beef cattle inventory show some difference in growth cycle of beef cows versus other beef cattle (e.g., steers, bulls). The EPA conducted a separate analysis of these animal populations. Other beef cattle populations appear to follow similar cycles and were forecasted using the same technique as beef cows (see Figure G-3).

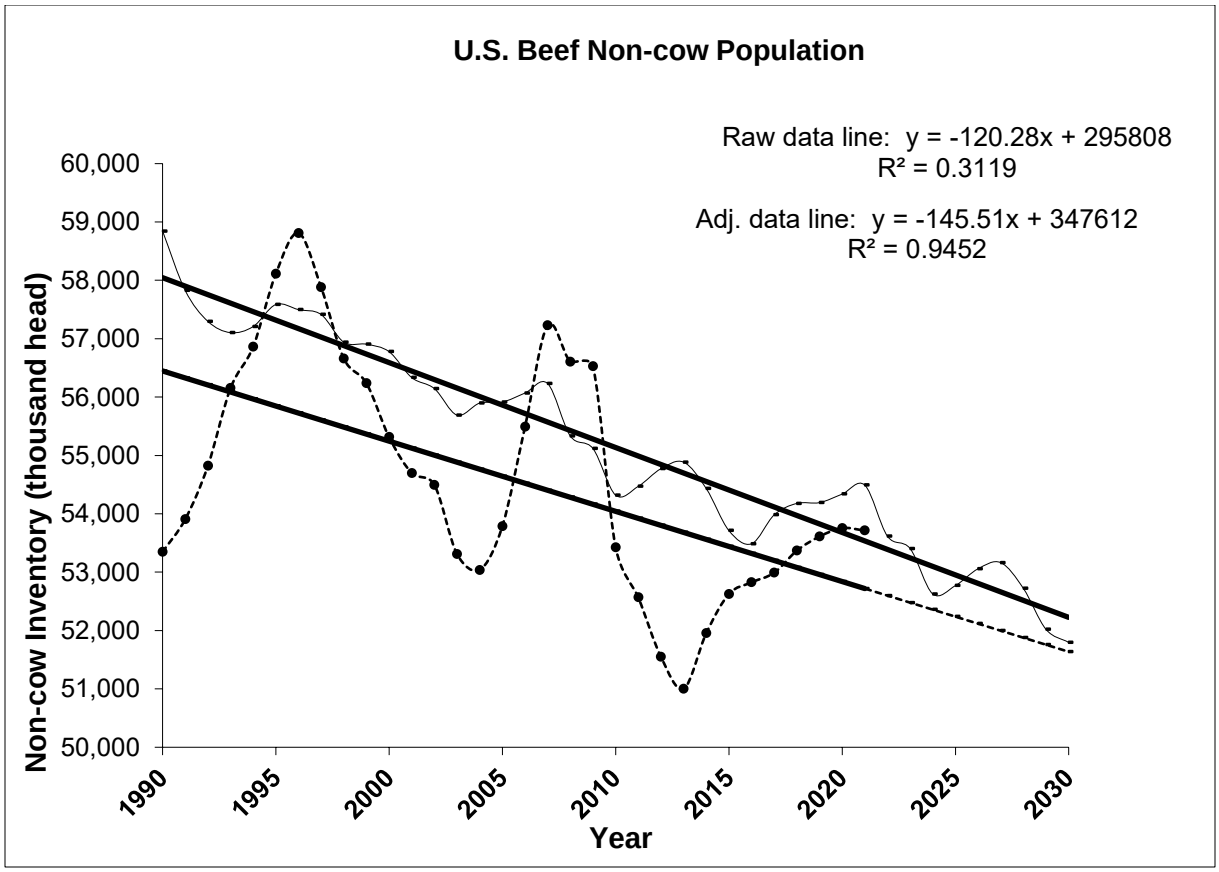
Swine. Annual swine populations are categorized by breeding and market swine. The 2010 FAPRI *U.S. and World Agricultural Outlook* (FAPRI 2010) report presents annual inventory data and projections from 2009 through 2019 for breeding swine and market swine inventories (rather than a combined total). The FAPRI data show an overall increase in swine production over time. Due to increasing productivity (i.e., increased number of pigs per litter), the population of breeding swine is expected to decline over the long term.

Figure G-2. Beef Cow Inventory Projections



The EPA estimated future swine populations using a cycle and trend decomposition analysis. Breeding and market swine population projections and inventory data from the FAPRI report capture the variability of the swine production cycle. Changes in the pork industry in the 1990's have made recent data atypical and inconsistent. For example, EPA replaced the 1996 market hog cyclical deviation with the average of all of the other data because it was so far out of line with the hog cycle.

Figure G-3. Non-cow Beef Inventory Projections



The EPA estimated the trend and deviations from the trend as in the beef cattle analysis. However, it was not possible to apply the identical technique from the beef cattle industry to the hog industry because a well-defined periodic cycle was not evident in the annual data. The EPA evaluated a 3-year moving average of the deviation to further reduce the random component. As the smoothed cycle continued to appear irregular, EPA assumed that the 2010's will repeat the pattern of the 1990's. Breeding hog populations were estimated using a similar approach. See Figures G-4 and G-5 for an illustration of the swine projections for the market hog and breeding hog inventories, respectively.

Poultry. Annual poultry populations in the EPA's ammonia emissions inventory for animal agriculture are presented for broilers, turkeys, and layers. To project poultry populations, EPA used population and projection data from the annual summary of the USDA/NASS *Poultry – Production and Value* reports (USDAb) for broilers and turkeys, and the *Chickens and Eggs* reports (USDAc). With these data, EPA used a linear regression analysis to predict the number of birds produced in the U.S. for years beyond 2011. Figures G-6 and G-7 present the population projections for broilers and turkeys, respectively. Figure G-8 shows the population projections for egg layers.

Figure G-4. Market Hog Inventory Projections

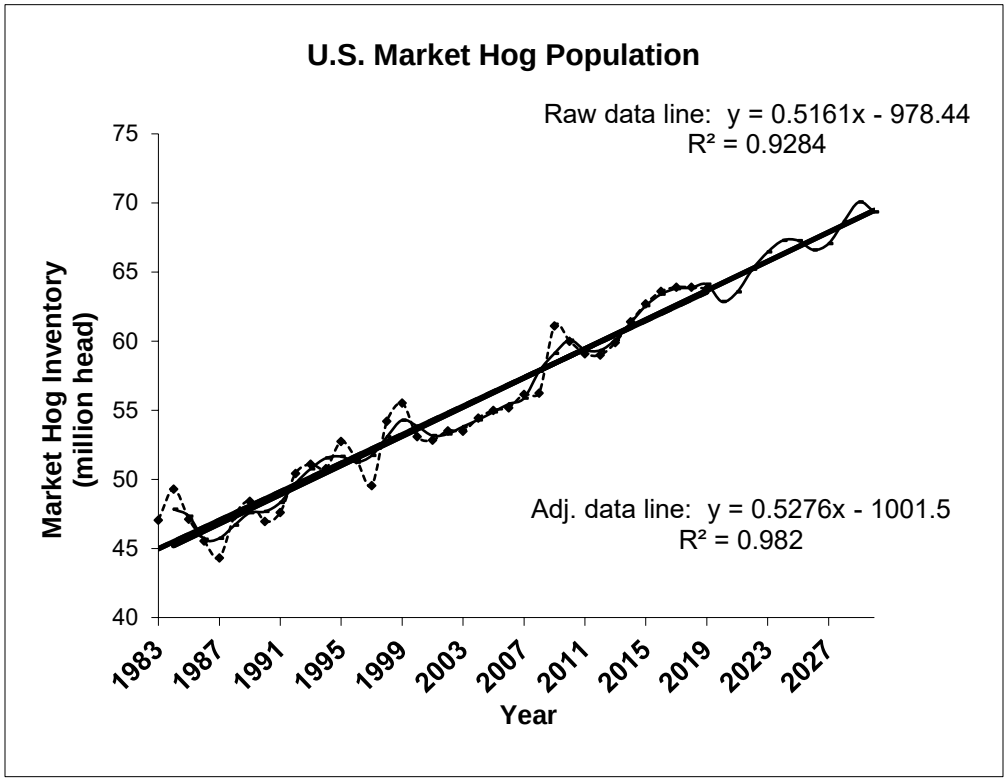


Figure G-5. Breeding Hog Inventory Projections

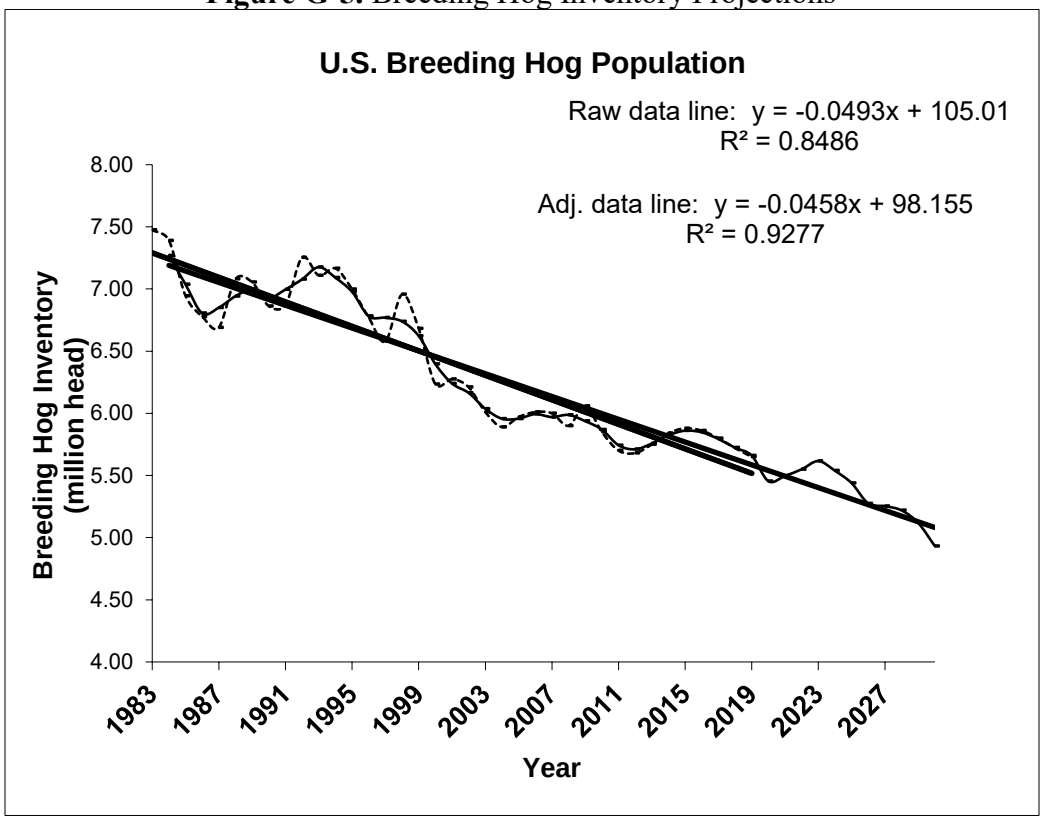


Figure G-6. Broiler Inventory Projection

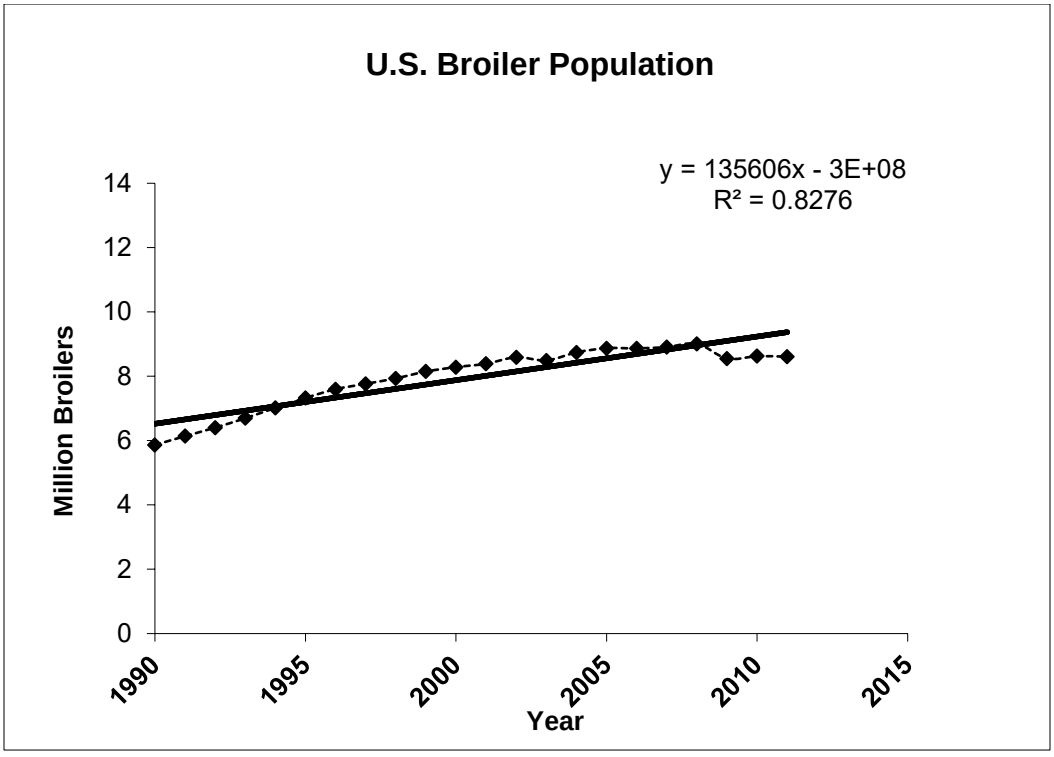


Figure G-7. Turkey Inventory Projection

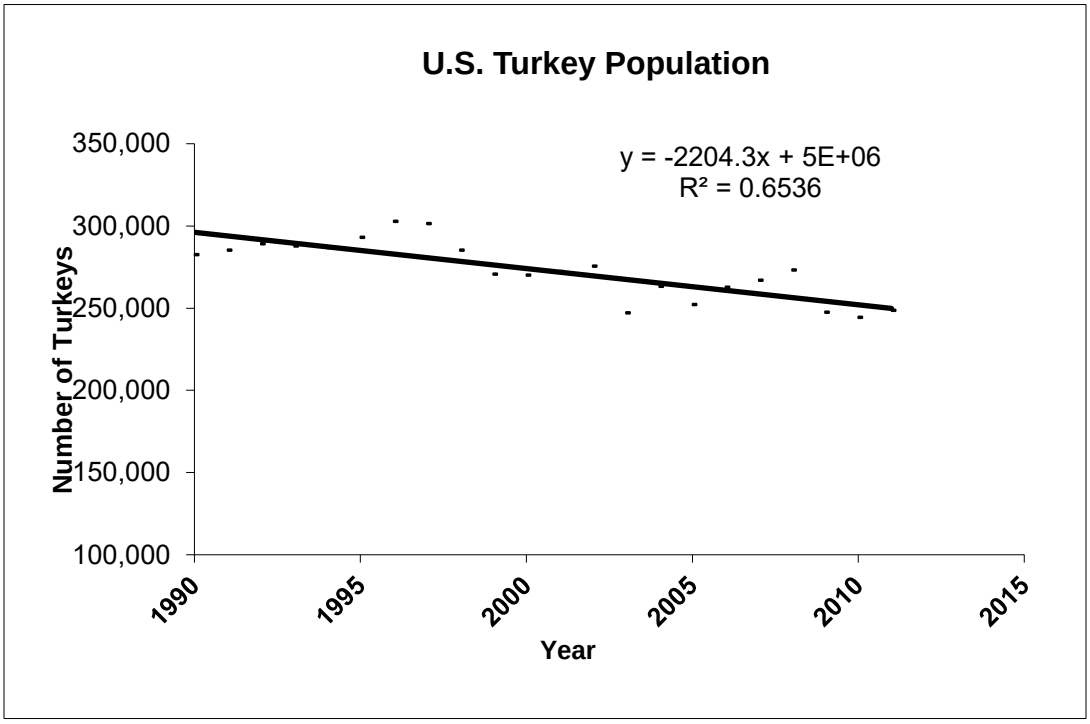
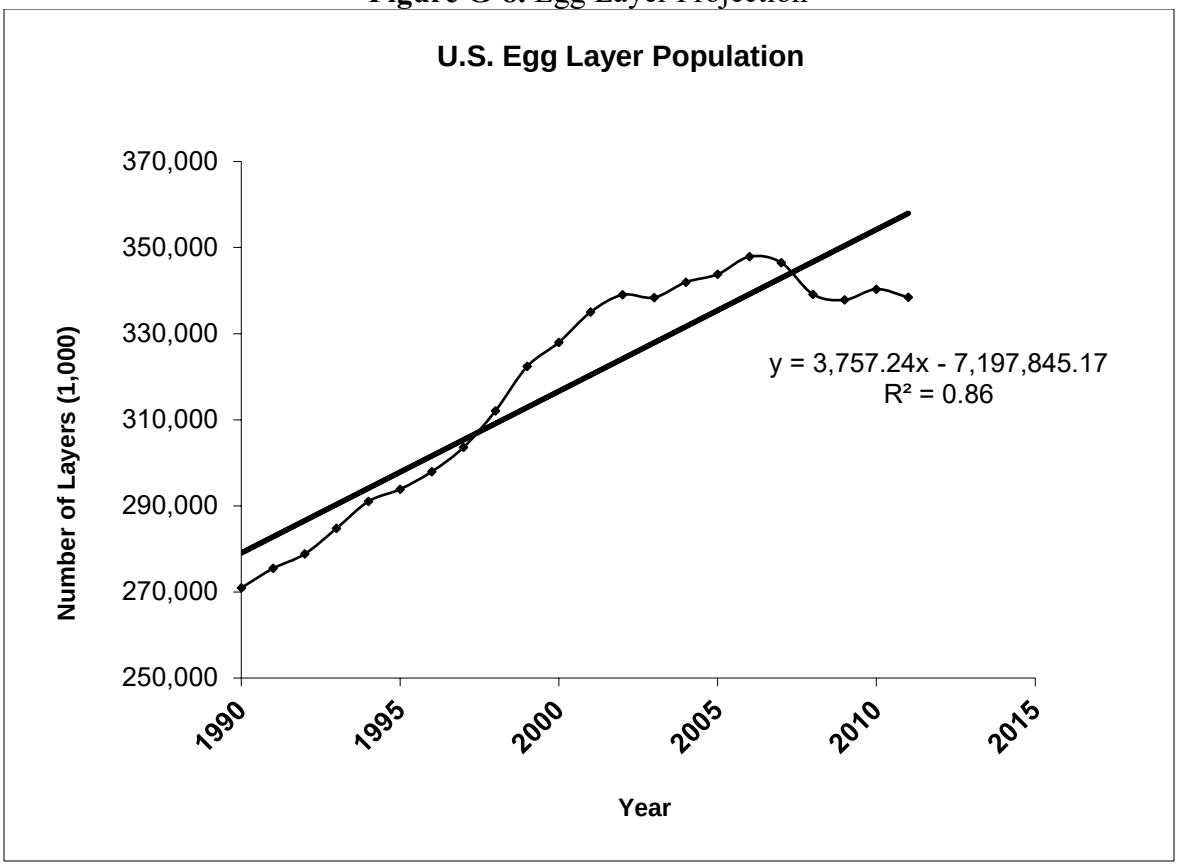


Figure G-8. Egg Layer Projection



References

Bowerman, Bruce L. and Richard T. O'Connell (1987) *Time Series Forecasting: Unified Concepts and Computer Implementation*. Second Edition. Boston, MA. Duxbury Press.

FAPRI (2010). FAPRI 2010 U.S. and World Agricultural Outlook. January 2010. Food and Agricultural Policy Research Institute. Iowa State University and University of Missouri-Columbia.

Kohls, Richard L. and Joseph N. Uhl. (1998) Marketing Edition. Upper Saddle River, NJ Prentice Hall.

USDA (2012a). *USDA Agricultural Projections to 2021*. *Interagency Agricultural Projections Committee*. February 2021.

USDA (2012b). National Agricultural Statistics Service (NASS). *Poultry - Production and Value* Reports.

USDA (2012c). NASS. *Chickens and Eggs Annual Summary*.

Appendix H: SCC mapping to ICR Fuel types for Boiler MACT Reconsideration Control Packet

Fuel	ICR Category	SCC	Description
coal	Coal	10100101	External Combustion Boilers;Electric Generation;Anthracite Coal;Pulverized Coal
coal	Coal	10100201	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Pulverized Coal: Wet Bottom (Bituminous Coal)
coal	Coal	10100202	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Bituminous Coal)
coal	Coal	10100203	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Cyclone Furnace (Bituminous Coal)
coal	Coal	10100204	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Spreader Stoker (Bituminous Coal)
coal	Coal	10100205	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Traveling Grate (Overfeed) Stoker (Bituminous Coal)
coal	Coal	10100212	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Tangential) (Bituminous Coal)
coal	Coal	10100217	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Atmospheric Fluidized Bed Combustion: Bubbling Bed (Bituminous Coal)
coal	Coal	10100218	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Atmospheric Fluidized Bed Combustion: Circulating Bed (Bitum. Coal)
coal	Coal	10100222	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Subbituminous Coal)
coal	Coal	10100224	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Spreader Stoker (Subbituminous Coal)
coal	Coal	10100226	External Combustion Boilers;Electric Generation;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom Tangential (Subbituminous Coal)
coal	Coal	10100303	External Combustion Boilers;Electric Generation;Lignite;Cyclone Furnace
Residual Oil	Heavy Liquid	10100401	External Combustion Boilers;Electric Generation;Residual Oil;Grade 6 Oil: Normal Firing
Residual Oil	Heavy Liquid	10100404	External Combustion Boilers;Electric Generation;Residual Oil;Grade 6 Oil: Tangential Firing
Distillate Oil	Light Liquid	10100501	External Combustion Boilers;Electric Generation;Distillate Oil;Grades 1 and 2 Oil
Distillate Oil	Light Liquid	10100504	External Combustion Boilers;Electric Generation;Distillate Oil;Grade 4 Oil: Normal Firing
Natural Gas	Gas 1 (NG Only)	10100601	External Combustion Boilers;Electric Generation;Natural Gas;Boilers : 100 Million Btu/hr except Tangential
Natural Gas	Gas 1 (NG Only)	10100602	External Combustion Boilers;Electric Generation;Natural Gas;Boilers < 100 Million Btu/hr except Tangential
Natural Gas	Gas 1 (NG Only)	10100604	External Combustion Boilers;Electric Generation;Natural Gas;Tangentially Fired Units
Process Gas	Gas 2	10100701	External Combustion Boilers;Electric Generation;Process Gas;Boilers : 100 Million Btu/hr
Process Gas	Gas 2	10100702	External Combustion Boilers;Electric Generation;Process Gas;Boilers < 100 Million Btu/hr
Process Gas	Gas 2	10100703	External Combustion Boilers;Electric Generation;Process Gas;Petroleum Refinery Gas
Process Gas	Gas 2	10100712	External Combustion Boilers;Electric Generation;Process Gas;Digester Gas
Petroleum Coke	Coal	10100801	External Combustion Boilers;Electric Generation;Petroleum Coke;All Boiler Sizes
Wood/Bark Waste	Wet Biomass	10100901	External Combustion Boilers;Electric Generation;Wood/Bark Waste;Bark-fired Boiler
Wood/Bark Waste	Wet Biomass	10100902	External Combustion Boilers;Electric Generation;Wood/Bark Waste;Wood/Bark Fired Boiler
Wood/Bark Waste	Wet Biomass	10100903	External Combustion Boilers;Electric Generation;Wood/Bark Waste;Wood-fired Boiler - Wet Wood (:=20% moisture)
Wood/Bark Waste	Wet Biomass	10100908	External Combustion Boilers;Electric Generation;Wood/Bark Waste;Wood-fired Boiler - Dry Wood (<20% moisture)
Wood/Bark Waste	Wet Biomass	10100910	External Combustion Boilers;Electric Generation;Wood/Bark Waste;Fuel cell/Dutch oven boilers **
Wood/Bark Waste	Wet Biomass	10100911	External Combustion Boilers;Electric Generation;Wood/Bark Waste;Stoker boilers **
Liquified Petroleum Gas (LPG)	Gas 1 (Other)	10101001	External Combustion Boilers;Electric Generation;Liquified Petroleum Gas (LPG);Butane
Liquified Petroleum Gas (LPG)	Gas 1 (Other)	10101002	External Combustion Boilers;Electric Generation;Liquified Petroleum Gas (LPG);Propane
Bagasse	Bagasse	10101101	External Combustion Boilers;Electric Generation;Bagasse;All Boiler Sizes
Solid Waste	Wet Biomass	10101201	External Combustion Boilers;Electric Generation;Solid Waste;Specify Waste Material in Comments
Solid Waste	Wet Biomass	10101202	External Combustion Boilers;Electric Generation;Solid Waste;Refuse Derived Fuel
Solid Waste	Wet Biomass	10101204	External Combustion Boilers;Electric Generation;Solid Waste;Tire Derived Fuel : Shredded

Fuel	ICR Category	SCC	Description
Solid Waste	Wet Biomass	10101206	External Combustion Boilers;Electric Generation;Solid Waste;Agricultural Byproducts (rice or peanut hulls, shells, cow manure, etc
Solid Waste	Wet Biomass	10101207	External Combustion Boilers;Electric Generation;Solid Waste;Other Biomass Solids
Liquid Waste	Heavy Liquid	10101301	External Combustion Boilers;Electric Generation;Liquid Waste;Specify Waste Material in Comments
Liquid Waste	Heavy Liquid	10101302	External Combustion Boilers;Electric Generation;Liquid Waste;Waste Oil
Methanol	Heavy Liquid	10101601	External Combustion Boilers;Electric Generation;Methanol;All
Other Oil	Light Liquid	10102101	External Combustion Boilers;Electric Generation;Other Oil;All
coal	Coal	10200101	External Combustion Boilers;Industrial;Anthracite Coal;Pulverized Coal
coal	Coal	10200104	External Combustion Boilers;Industrial;Anthracite Coal;Traveling Grate (Overfeed) Stoker
coal	Coal	10200201	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Pulverized Coal: Wet Bottom
coal	Coal	10200202	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom
coal	Coal	10200203	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Cyclone Furnace
coal	Coal	10200204	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Spreader Stoker
coal	Coal	10200205	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Overfeed Stoker
coal	Coal	10200206	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Underfeed Stoker
coal	Coal	10200212	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Tangential)
coal	Coal	10200217	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Atmospheric Fluidized Bed Combustion: Bubbling Bed (Bituminous Coal)
coal	Coal	10200218	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Atmospheric Fluidized Bed Combustion: Circulating Bed (Bitum. Coal)
coal	Coal	10200219	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Cogeneration (Bituminous Coal)
coal	Coal	10200221	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Pulverized Coal: Wet Bottom (Subbituminous Coal)
coal	Coal	10200222	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Subbituminous Coal)
coal	Coal	10200224	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Spreader Stoker (Subbituminous Coal)
coal	Coal	10200225	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Traveling Grate (Overfeed) Stoker (Subbituminous Coal)
coal	Coal	10200229	External Combustion Boilers;Industrial;Bituminous/Subbituminous Coal;Cogeneration (Subbituminous Coal)
coal	Coal	10200306	External Combustion Boilers;Industrial;Lignite;Spreader Stoker
Residual Oil	Heavy Liquid	10200401	External Combustion Boilers;Industrial;Residual Oil;Grade 6 Oil
Residual Oil	Heavy Liquid	10200402	External Combustion Boilers;Industrial;Residual Oil;10-100 Million Btu/hr **
Residual Oil	Heavy Liquid	10200403	External Combustion Boilers;Industrial;Residual Oil;< 10 Million Btu/hr **
Residual Oil	Heavy Liquid	10200404	External Combustion Boilers;Industrial;Residual Oil;Grade 5 Oil
Residual Oil	Heavy Liquid	10200405	External Combustion Boilers;Industrial;Residual Oil;Cogeneration
Distillate Oil	Light Liquid	10200501	External Combustion Boilers;Industrial;Distillate Oil;Grades 1 and 2 Oil
Distillate Oil	Light Liquid	10200502	External Combustion Boilers;Industrial;Distillate Oil;10-100 Million Btu/hr **
Distillate Oil	Light Liquid	10200503	External Combustion Boilers;Industrial;Distillate Oil;< 10 Million Btu/hr **
Distillate Oil	Light Liquid	10200504	External Combustion Boilers;Industrial;Distillate Oil;Grade 4 Oil
Distillate Oil	Light Liquid	10200505	External Combustion Boilers;Industrial;Distillate Oil;Cogeneration
Natural Gas	Gas 1 (NG Only)	10200601	External Combustion Boilers;Industrial;Natural Gas;> 100 Million Btu/hr
Natural Gas	Gas 1 (NG Only)	10200602	External Combustion Boilers;Industrial;Natural Gas;10-100 Million Btu/hr
Natural Gas	Gas 1 (NG Only)	10200603	External Combustion Boilers;Industrial;Natural Gas;< 10 Million Btu/hr
Natural Gas	Gas 1 (NG Only)	10200604	External Combustion Boilers;Industrial;Natural Gas;Cogeneration
Process Gas	Gas 2	10200701	External Combustion Boilers;Industrial;Process Gas;Petroleum Refinery Gas
Process Gas	Gas 2	10200704	External Combustion Boilers;Industrial;Process Gas;Blast Furnace Gas
Process Gas	Gas 2	10200707	External Combustion Boilers;Industrial;Process Gas;Coke Oven Gas

Fuel	ICR Category	SCC	Description
Process Gas	Gas 2	10200710	External Combustion Boilers;Industrial;Process Gas;Cogeneration
Process Gas	Gas 2	10200711	External Combustion Boilers;Industrial;Process Gas;Landfill Gas
Process Gas	Gas 2	10200799	External Combustion Boilers;Industrial;Process Gas;Other: Specify in Comments
Petroleum Coke	Coal	10200802	External Combustion Boilers;Industrial;Petroleum Coke;All Boiler Sizes
Petroleum Coke	Coal	10200804	External Combustion Boilers;Industrial;Petroleum Coke;Cogeneration
Wood/Bark Waste	Wet Biomass	10200902	External Combustion Boilers;Industrial;Wood/Bark Waste;Wood/Bark-fired Boiler
Wood/Bark Waste	Wet Biomass	10200903	External Combustion Boilers;Industrial;Wood/Bark Waste;Wood-fired Boiler - Wet Wood (:=20% moisture)
Wood/Bark Waste	Wet Biomass	10200904	External Combustion Boilers;Industrial;Wood/Bark Waste;Bark-fired Boiler (< 50,000 Lb Steam) **
Wood/Bark Waste	Wet Biomass	10200905	External Combustion Boilers;Industrial;Wood/Bark Waste;Wood/Bark-fired Boiler (< 50,000 Lb Steam) **
Wood/Bark Waste	Wet Biomass	10200906	External Combustion Boilers;Industrial;Wood/Bark Waste;Wood-fired Boiler (< 50,000 Lb Steam) **
Wood/Bark Waste	Wet Biomass	10200907	External Combustion Boilers;Industrial;Wood/Bark Waste;Wood Cogeneration
Wood/Bark Waste	Wet Biomass	10200908	External Combustion Boilers;Industrial;Wood/Bark Waste;Wood-fired Boiler - Dry Wood (<20% moisture)
Wood/Bark Waste	Wet Biomass	10200910	External Combustion Boilers;Industrial;Wood/Bark Waste;Fuel cell/Dutch oven boilers **
Wood/Bark Waste	Wet Biomass	10200911	External Combustion Boilers;Industrial;Wood/Bark Waste;Stoker boilers **
Wood/Bark Waste	Wet Biomass	10200912	External Combustion Boilers;Industrial;Wood/Bark Waste;Fluidized bed combustion boiler
LPG	Gas 1 (Other)	10201001	External Combustion Boilers;Industrial;Liquified Petroleum Gas (LPG);Butane
LPG	Gas 1 (Other)	10201002	External Combustion Boilers;Industrial;Liquified Petroleum Gas (LPG);Propane
LPG	Gas 1 (Other)	10201003	External Combustion Boilers;Industrial;Liquified Petroleum Gas (LPG);Butane/Propane Mixture: Specify Percent Butane in Comments
Bagasse	Bagasse	10201101	External Combustion Boilers;Industrial;Bagasse;All Boiler Sizes
Solid Waste	Wet Biomass	10201201	External Combustion Boilers;Industrial;Solid Waste;Specify Waste Material in Comments
Solid Waste	Wet Biomass	10201202	External Combustion Boilers;Industrial;Solid Waste;Refuse Derived Fuel
Liquid Waste	Heavy Liquid	10201301	External Combustion Boilers;Industrial;Liquid Waste;Specify Waste Material in Comments
Liquid Waste	Heavy Liquid	10201302	External Combustion Boilers;Industrial;Liquid Waste;Waste Oil
Liquid Waste	Heavy Liquid	10201303	External Combustion Boilers;Industrial;Liquid Waste;Salable Animal Fat
Methanol	Heavy Liquid	10201601	External Combustion Boilers;Industrial;Methanol;Industrial Boiler
coal	Coal	10300102	External Combustion Boilers;Commercial/Institutional;Anthracite Coal;Traveling Grate (Overfeed) Stoker
coal	Coal	10300203	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Cyclone Furnace (Bituminous Coal)
coal	Coal	10300206	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Bituminous Coal)
coal	Coal	10300207	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Overfeed Stoker (Bituminous Coal)
coal	Coal	10300208	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Underfeed Stoker (Bituminous Coal)
coal	Coal	10300209	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Spreader Stoker (Bituminous Coal)
coal	Coal	10300216	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Tangential) (Bituminous Coal)
coal	Coal	10300217	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Atmospheric Fluidized Bed Combustion: Bubbling Bed (Bituminous Coal)
coal	Coal	10300218	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Atmospheric Fluidized Bed Combustion: Circulating Bed (Bitum. Coal)
coal	Coal	10300221	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Pulverized Coal: Wet Bottom (Subbituminous Coal)
coal	Coal	10300222	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Pulverized Coal: Dry Bottom (Subbituminous Coal)
coal	Coal	10300224	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Spreader Stoker (Subbituminous Coal)
coal	Coal	10300225	External Combustion Boilers;Commercial/Institutional;Bituminous/Subbituminous Coal;Traveling Grate (Overfeed) Stoker (Subbituminous Coal)
Residual Oil	Heavy Liquid	10300401	External Combustion Boilers;Commercial/Institutional;Residual Oil;Grade 6 Oil

Fuel	ICR Category	SCC	Description
Residual Oil	Heavy Liquid	10300402	External Combustion Boilers;Commercial/Institutional;Residual Oil;10-100 Million Btu/hr **
Residual Oil	Heavy Liquid	10300403	External Combustion Boilers;Commercial/Institutional;Residual Oil;< 10 Million Btu/hr **
Residual Oil	Heavy Liquid	10300404	External Combustion Boilers;Commercial/Institutional;Residual Oil;Grade 5 Oil
Distillate Oil	Light Liquid	10300501	External Combustion Boilers;Commercial/Institutional;Distillate Oil;Grades 1 and 2 Oil
Distillate Oil	Light Liquid	10300502	External Combustion Boilers;Commercial/Institutional;Distillate Oil;10-100 Million Btu/hr **
Distillate Oil	Light Liquid	10300503	External Combustion Boilers;Commercial/Institutional;Distillate Oil;< 10 Million Btu/hr **
Distillate Oil	Light Liquid	10300504	External Combustion Boilers;Commercial/Institutional;Distillate Oil;Grade 4 Oil
Natural Gas	Gas 1 (NG Only)	10300601	External Combustion Boilers;Commercial/Institutional;Natural Gas;> 100 Million Btu/hr
Natural Gas	Gas 1 (NG Only)	10300602	External Combustion Boilers;Commercial/Institutional;Natural Gas;10-100 Million Btu/hr
Natural Gas	Gas 1 (NG Only)	10300603	External Combustion Boilers;Commercial/Institutional;Natural Gas;< 10 Million Btu/hr
Process Gas	Gas 2	10300701	External Combustion Boilers;Commercial/Institutional;Process Gas;POTW Digester Gas-fired Boiler
Process Gas	Gas 2	10300799	External Combustion Boilers;Commercial/Institutional;Process Gas;Other Not Classified
Landfill Gas	Gas 2	10300811	External Combustion Boilers;Commercial/Institutional;Landfill Gas;Landfill Gas
Wood/Bark Waste	Wet Biomass	10300902	External Combustion Boilers;Commercial/Institutional;Wood/Bark Waste;Wood/Bark-fired Boiler
Wood/Bark Waste	Wet Biomass	10300903	External Combustion Boilers;Commercial/Institutional;Wood/Bark Waste;Wood-fired Boiler - Wet Wood (:=20% moisture)
Wood/Bark Waste	Wet Biomass	10300908	External Combustion Boilers;Commercial/Institutional;Wood/Bark Waste;Wood-fired Boiler - Dry Wood (<20% moisture)
Wood/Bark Waste	Wet Biomass	10300910	External Combustion Boilers;Commercial/Institutional;Wood/Bark Waste;Fuel cell/Dutch oven boilers **
LPG	Gas 1 (Other)	10301001	External Combustion Boilers;Commercial/Institutional;Liquified Petroleum Gas (LPG);Butane
LPG	Gas 1 (Other)	10301002	External Combustion Boilers;Commercial/Institutional;Liquified Petroleum Gas (LPG);Propane
LPG	Gas 1 (Other)	10301003	External Combustion Boilers;Commercial/Institutional;Liquified Petroleum Gas (LPG);Butane/Propane Mixture: Specify Percent Butane in Comments
Solid Waste	Wet Biomass	10301201	External Combustion Boilers;Commercial/Institutional;Solid Waste;Specify Waste Material in Comments
Liquid Waste	Heavy Liquid	10301301	External Combustion Boilers;Commercial/Institutional;Liquid Waste;Specify Waste Material in Comments
Liquid Waste	Heavy Liquid	10301302	External Combustion Boilers;Commercial/Institutional;Liquid Waste;Waste Oil
coal	Coal	10500102	External Combustion Boilers;Space Heaters;Industrial;Coal **
Distillate Oil	Light Liquid	10500105	External Combustion Boilers;Space Heaters;Industrial;Distillate Oil
Natural Gas	Gas 1 (NG Only)	10500106	External Combustion Boilers;Space Heaters;Industrial;Natural Gas
LPG	Gas 1 (Other)	10500110	External Combustion Boilers;Space Heaters;Industrial;Liquified Petroleum Gas (LPG)
Waste oil	Heavy Liquid	10500113	External Combustion Boilers;Space Heaters;Industrial;Waste Oil: Air Atomized Burner
Waste oil	Heavy Liquid	10500114	External Combustion Boilers;Space Heaters;Industrial;Waste Oil: Vaporizing Burner
coal	Coal	10500202	External Combustion Boilers;Space Heaters;Commercial/Institutional;Coal **
Distillate Oil	Light Liquid	10500205	External Combustion Boilers;Space Heaters;Commercial/Institutional;Distillate Oil
Natural Gas	Gas 1 (NG Only)	10500206	External Combustion Boilers;Space Heaters;Commercial/Institutional;Natural Gas
Wood	Dry Biomass	10500209	External Combustion Boilers;Space Heaters;Commercial/Institutional;Wood
LPG	Gas 1 (Other)	10500210	External Combustion Boilers;Space Heaters;Commercial/Institutional;Liquified Petroleum Gas (LPG)
Waste oil	Heavy Liquid	10500213	External Combustion Boilers;Space Heaters;Commercial/Institutional;Waste Oil: Air Atomized Burner
Waste oil	Heavy Liquid	10500214	External Combustion Boilers;Space Heaters;Commercial/Institutional;Waste Oil: Vaporizing Burner
Distillate Oil	Light Liquid	30190001	Industrial Processes;Chemical Manufacturing;Fuel Fired Equipment;Distillate Oil (No. 2): Process Heaters
Residual Oil	Heavy Liquid	30190002	Industrial Processes;Chemical Manufacturing;Fuel Fired Equipment;Residual Oil: Process Heaters
natural gas	Gas 1 (NG Only)	30190003	Industrial Processes;Chemical Manufacturing;Fuel Fired Equipment;Natural Gas: Process Heaters
Process Gas	Gas 2	30190004	Industrial Processes;Chemical Manufacturing;Fuel Fired Equipment;Process Gas: Process Heaters
Distillate Oil	Light Liquid	30290001	Industrial Processes;Food and Agriculture;Fuel Fired Equipment;Distillate Oil (No. 2): Process Heaters
Residual Oil	Heavy Liquid	30290002	Industrial Processes;Food and Agriculture;Fuel Fired Equipment;Residual Oil: Process Heaters

Fuel	ICR Category	SCC	Description
natural gas	Gas 1 (NG Only)	30290003	Industrial Processes;Food and Agriculture;Fuel Fired Equipment;Natural Gas: Process Heaters
LPG	Gas 1 (Other)	30290005	Industrial Processes;Food and Agriculture;Fuel Fired Equipment;Liquified Petroleum Gas (LPG): Process Heaters
Distillate Oil	Light Liquid	30390001	Industrial Processes;Primary Metal Production;Fuel Fired Equipment;Distillate Oil (No. 2): Process Heaters
natural gas	Gas 1 (NG Only)	30390003	Industrial Processes;Primary Metal Production;Fuel Fired Equipment;Natural Gas: Process Heaters
Process Gas	Gas 2	30390004	Industrial Processes;Primary Metal Production;Fuel Fired Equipment;Process Gas: Process Heaters
Distillate Oil	Light Liquid	30490001	Industrial Processes;Secondary Metal Production;Fuel Fired Equipment;Distillate Oil (No. 2): Process Heaters
natural gas	Gas 1 (NG Only)	30490003	Industrial Processes;Secondary Metal Production;Fuel Fired Equipment;Natural Gas: Process Heaters
Process Gas	Gas 2	30490004	Industrial Processes;Secondary Metal Production;Fuel Fired Equipment;Process Gas: Process Heaters
Distillate Oil	Light Liquid	30590001	Industrial Processes;Mineral Products;Fuel Fired Equipment;Distillate Oil (No. 2): Process Heaters
Residual Oil	Heavy Liquid	30590002	Industrial Processes;Mineral Products;Fuel Fired Equipment;Residual Oil: Process Heaters
natural gas	Gas 1 (NG Only)	30590003	Industrial Processes;Mineral Products;Fuel Fired Equipment;Natural Gas: Process Heaters
LPG	Gas 1 (Other)	30590005	Industrial Processes;Mineral Products;Fuel Fired Equipment;Liquified Petroleum Gas (LPG): Process Heaters
oil	Light Liquid	30600101	Industrial Processes;Petroleum Industry;Process Heaters;Oil-fired **
gas	Gas 2	30600102	Industrial Processes;Petroleum Industry;Process Heaters;Gas-fired **
oil	Light Liquid	30600103	Industrial Processes;Petroleum Industry;Process Heaters;Oil-fired
gas	Gas 2	30600104	Industrial Processes;Petroleum Industry;Process Heaters;Gas-fired
natural gas	Gas 1 (NG Only)	30600105	Industrial Processes;Petroleum Industry;Process Heaters;Natural Gas-fired
Process Gas	Gas 2	30600106	Industrial Processes;Petroleum Industry;Process Heaters;Process Gas-fired
LPG	Gas 1 (Other)	30600107	Industrial Processes;Petroleum Industry;Process Heaters;LPG-fired
Landfill Gas	Gas 2	30600108	Industrial Processes;Petroleum Industry;Process Heaters;Landfill Gas-fired
oil	Light Liquid	30600111	Industrial Processes;Petroleum Industry;Process Heaters;Oil-fired (No. 6 Oil) : 100 Million Btu Capacity
unknown	Gas 1 (NG Only)	30600199	Industrial Processes;Petroleum Industry;Process Heaters;Other Not Classified
Distillate Oil	Light Liquid	30890001	Industrial Processes;Rubber and Miscellaneous Plastics Products;Fuel Fired Equipment;Distillate Oil (No. 2): Process Heaters
Residual Oil	Heavy Liquid	30890002	Industrial Processes;Rubber and Miscellaneous Plastics Products;Fuel Fired Equipment;Residual Oil: Process Heaters
natural gas	Gas 1 (NG Only)	30890003	Industrial Processes;Rubber and Miscellaneous Plastics Products;Fuel Fired Equipment;Natural Gas: Process Heaters
LPG	Gas 1 (Other)	30890004	Industrial Processes;Rubber and Miscellaneous Plastics Products;Fuel Fired Equipment;Liquified Petroleum Gas (LPG): Process Heaters
Distillate Oil	Light Liquid	30990001	Industrial Processes;Fabricated Metal Products;Fuel Fired Equipment;Distillate Oil (No. 2): Process Heaters
Natural Gas	Gas 1 (NG Only)	30990003	Industrial Processes;Fabricated Metal Products;Fuel Fired Equipment;Natural Gas: Process Heaters
Distillate Oil	Light Liquid	31390001	Industrial Processes;Electrical Equipment;Process Heaters;Distillate Oil (No. 2)
Residual Oil	Heavy Liquid	31390002	Industrial Processes;Electrical Equipment;Process Heaters;Residual Oil
Natural Gas	Gas 1 (NG Only)	31390003	Industrial Processes;Electrical Equipment;Process Heaters;Natural Gas
Distillate Oil	Light Liquid	39900501	Industrial Processes;Miscellaneous Manufacturing Industries;Process Heater/Furnace;Distillate Oil
Natural Gas	Gas 1 (NG Only)	39900601	Industrial Processes;Miscellaneous Manufacturing Industries;Process Heater/Furnace;Natural Gas
Process Gas	Gas 2	39900701	Industrial Processes;Miscellaneous Manufacturing Industries;Process Heater/Furnace;Process Gas
Landfill Gas	Gas 2	39900801	Industrial Processes;Miscellaneous Manufacturing Industries;Process Heater/Furnace;Landfill Gas
LPG	Gas 1 (Other)	39901001	Industrial Processes;Miscellaneous Manufacturing Industries;Process Heater/Furnace;LPG
Distillate Oil	Light Liquid	39990001	Industrial Processes;Miscellaneous Manufacturing Industries;Miscellaneous Manufacturing Industries;Distillate Oil (No. 2): Process Heaters
natural gas	Gas 1 (NG Only)	39990003	Industrial Processes;Miscellaneous Manufacturing Industries;Miscellaneous Manufacturing Industries;Natural Gas: Process Heaters
Process Gas	Gas 2	39990004	Industrial Processes;Miscellaneous Manufacturing Industries;Miscellaneous Manufacturing Industries;Process Gas: Process Heaters

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