Column Name	SID (Mode ID in hex)	PID (Parameter ID in hex)	Expected Number of Data Bytes or ASCII Characters	Description of Data	Value Range	Expected Format of Data to Output File	Data Request Sequence
Data Source Information							
SESSION_ID	N/A	N/A	16	The unique ID of the current "Smog Check" test being performed.	16 character GUID supplied by calling function. (all chars are ASCII 48-57 and	ASCII text	N/A
VIN_INPUT	N/A	N/A	17	The VIN of the vehicle as passed to the OBDII module from the VID. This value may be blank and may not coincide with the SID $09 PID $02 value.	Variable length or blank. Shall not contain any spaces.	ASCII text	N/A
PROTOCOL	N/A	N/A	16	The protocol the vehicle uses. Determined by attempting communication with the vehicle with a SID $01 PID $00 request.	JPWM1850, JVPW1850, I9140808, I9149494, ICAN11bt, ICAN29bt, "KWPS" followed by the hex keywords (key byte 2 then key byte 1) without a space (e.g., "KWPS8FE9"), "KWPF" followed by the hex keywords (key byte 2 then key byte 1) without a space (e.g., "KWPF 8F6B")	ASCII text	N/A
BUS_VOLTAGE	N/A	N/A	3	The BUS voltage found on pin 16 of the OBDII connecter	-24 to +24 Volts	ASCII text	N/A
ADDRESS	N/A	N/A	2 or 4	The hex address value of the vehicle's computer that the data is collected from.	00-FF for one byte addresses, 07E8-07EF for two byte addresses	Hex represented as ASCII	N/A
Mode 1 (0x01)							
SID01_PID00	0x01	0x00	4	PIDs supported [01 - 20]		(hex) ## ## ## ##	1
SID01_PID01	0x01	0x01	4	Monitor status since DTCs cleared. (Includes malfunction indicator lamp (MIL) status and number of DTCs.)		(hex) ## ## ## ##	1
SID01_PID02	0x01	0x02	2	DTC that caused required freeze frame data storage		(hex) ## ##	3
SID01_PID03	0x01	0x03	2	Fuel system 1, 2 status		(hex) ## ##	3
SID01_PID04	0x01	0x04	1	Calculated LOAD value		(hex) ##	3
SID01_PID05	0x01	0x05	1	Engine Coolant Temperature		(hex) ##	2
SID01_PID06	0x01	0x06	1 or 2	Short term fuel % trim—Bank 1, Short term fuel % trim—Bank 3		(hex) ## or (hex) ## ##	3
SID01_PID07	0x01	0x07	1 or 2	Long term fuel % trim—Bank 1, Long term fuel % trim—Bank 3		(hex) ## or (hex) ## ##	3
SID01_PID08	0x01	0x08	1 or 2	Short term fuel % trim—Bank 2, Short term fuel % trim—Bank 4		(hex) ## or (hex) ## ##	3
SID01_PID09	0x01	0x09	1 or 2	Long term fuel % trim—Bank 2, Long term fuel % trim—Bank 4		(hex) ## or (hex) ## ##	3
SID01_PID0A	0x01	0x0A	1	Fuel pressure (gauge)		(hex) ##	3
SID01_PID0B	0x01	0x0B	1	Intake Manifold Absolute Pressure		(hex) ##	3
SID01_PID0C	0x01	0x0C	2	Engine RPM		(hex) ## ##	1
SID01_PID0D	0x01	0x0D	1	Vehicle Speed Sensor		(hex) ##	3
SID01_PID0E	0x01	0x0E	1	Ignition Timing Advance for #1 Cylinder		(hex) ##	3
SID01_PID0F	0x01	0x0F	1	Intake Air Temperature		(hex) ##	3
SID01_PID10	0x01	0x10	2	Air Flow Rate from Mass Air Flow Sensor		(hex) ## ##	3
SID01_PID11	0x01	0x11	1	Absolute Throttle Position		(hex) ##	3
SID01_PID12	0x01	0x12	1	Commanded Secondary Air Status		(hex) ##	3
SID01_PID13	0x01	0x13	1	Location of Oxygen Sensors		(hex) ##	2
SID01_PID14	0x01	0x14	2	Bank 1 - Sensor 1: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID15	0x01	0x15	2	Bank 1 - Sensor 2: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID16	0x01	0x16	2	Bank 1 - Sensor 3: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID17	0x01	0x17	2	Bank 1 - Sensor 4: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID18	0x01	0x18	2	Bank 2 - Sensor 1: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID19	0x01	0x19	2	Bank 2 - Sensor 2: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID1A	0x01	0x1A	2	Bank 2 - Sensor 3: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID1B	0x01	0x1B	2	Bank 2 - Sensor 4: Oxygen Sensor Output Voltage, Short Term Fuel Trim		(hex) ## ##	3
SID01_PID1C	0x01	0x1C	1	OBD requirements to which the vehicle or engine is certified		(hex) ##	2
SID01_PID1D	0x01	0x1D	1	Location of oxygen sensors		(hex) ##	2
SID01_PID1E	0x01	0x1E	1	Auxiliary Input Status		(hex) ##	3
SID01_PID1F	0x01	0x1F	2	Time Since Engine Start		(hex) ## ##	3
SID01_PID20	0x01	0x20	4	PIDs supported [21 - 40]		(hex) ## ## ## ##	2
SID01_PID21	0x01	0x21	2	Distance Traveled While MIL is Activated		(hex) ## ##	2
SID01_PID22	0x01	0x22	2	Fuel Rail Pressure relative to manifold vacuum		(hex) ## ##	3
SID01_PID23	0x01	0x23	2	Fuel Rail Pressure		(hex) ## ##	3
SID01_PID24	0x01	0x24	4	Bank 1 - Sensor 1: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID25	0x01	0x25	4	Bank 1 - Sensor 2: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID26	0x01	0x26	4	Bank 1 - Sensor 3: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID27	0x01	0x27	4	Bank 1 - Sensor 4: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID28	0x01	0x28	4	Bank 2 - Sensor 1: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID29	0x01	0x29	4	Bank 2 - Sensor 2: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID2A	0x01	0x2A	4	Bank 2 - Sensor 3: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID2B	0x01	0x2B	4	Bank 2 - Sensor 4: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID2C	0x01	0x2C	1	Commanded EGR		(hex) ##	3
SID01_PID2D	0x01	0x2D	1	EGR Error		(hex) ##	3
SID01_PID2E	0x01	0x2E	1	Commanded Evaporative Purge		(hex) ##	3
SID01_PID2F	0x01	0x2F	1	Fuel Level Input		(hex) ##	3
SID01_PID30	0x01	0x30	1	Number of warm-ups since DTCs cleared		(hex) ##	2
SID01_PID31	0x01	0x31	2	Distance traveled since DTCs cleared		(hex) ## ##	2
SID01_PID32	0x01	0x32	2	Evaporative System Vapor Pressure		(hex) ## ##	3
SID01_PID33	0x01	0x33	1	Barometric Pressure		(hex) ##	3
SID01_PID34	0x01	0x34	4	Bank 1 - Sensor 1: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID35	0x01	0x35	4	Bank 1 - Sensor 2: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID36	0x01	0x36	4	Bank 1 - Sensor 3: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID37	0x01	0x37	4	Bank 1 - Sensor 4: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID38	0x01	0x38	4	Bank 2 - Sensor 1: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID39	0x01	0x39	4	Bank 2 - Sensor 2: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID3A	0x01	0x3A	4	Bank 2 - Sensor 3: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID3B	0x01	0x3B	4	Bank 2 - Sensor 4: Equivalence Ration (lambda) (Bx-Sy), Oxygen Sensor Voltage (Bx-Sy)		(hex) ## ## ## ##	3
SID01_PID3C	0x01	0x3C	2	Catalyst Temperature Bank 1, Sensor 1		(hex) ## ##	3

Column Name	SID (Mode ID in hex)	PID (Parameter ID in hex)	Expected Number of Data Bytes or ASCII Characters	Description of Data	Value Range	Expected Format of Data to Output File	Data Request Sequence
SID01_PID3D	0x01	0x3D	2	Catalyst Temperature Bank 2, Sensor 1		(hex) ## ##	3
SID01_PID3E	0x01	0x3E	2	Catalyst Temperature Bank 1, Sensor 2		(hex) ## ##	3
SID01_PID3F	0x01	0x3F	2	Catalyst Temperature Bank 2, Sensor 2		(hex) ## ##	3
SID01_PID40	0x01	0x40	4	PIDs supported [41 - 60]		(hex) ## ## ## ##	2
SID01_PID41	0x01	0x41	4	Monitor status this drive cycle		(hex) ## ## ## ##	3
SID01_PID42	0x01	0x42	2	Control module voltage		(hex) ## ##	2
SID01_PID43	0x01	0x43	2	Absolute Load Value		(hex) ## ##	3
SID01_PID44	0x01	0x44	2	Fuel/Air Commanded Equivalence Ratio		(hex) ## ##	3
SID01_PID45	0x01	0x45	1	Relative Throttle Position		(hex) ##	3
SID01_PID46	0x01	0x46	1	Ambient air temperature (same scaling as IAT - $0F)		(hex) ##	3
SID01_PID47	0x01	0x47	1	Absolute Throttle Position B		(hex) ##	3
SID01_PID48	0x01	0x48	1	Absolute Throttle Position C		(hex) ##	3
SID01_PID49	0x01	0x49	1	Accelerator Pedal Position D		(hex) ##	3
SID01_PID4A	0x01	0x4A	1	Accelerator Pedal Position E		(hex) ##	3
SID01_PID4B	0x01	0x4B	1	Accelerator Pedal Position F		(hex) ##	3
SID01_PID4C	0x01	0x4C	1	Commanded Throttle Actuator Control		(hex) ##	3
SID01_PID4D	0x01	0x4D	2	Engine run time while MIL is activated		(hex) ## ##	2
SID01_PID4E	0x01	0x4E	2	Engine run time since DTCs cleared		(hex) ## ##	2
SID01_PID4F	0x01	0x4F	4	External Test Equipment Configuration Information #1		(hex) ## ## ## ##	3
SID01_PID50	0x01	0x50	4	External Test Equipment Configuration Information #2		(hex) ## ## ## ##	3
SID01_PID51	0x01	0x51	1	Type of fuel currently being utilized by the vehicle		(hex) ##	2
SID01_PID52	0x01	0x52	1	Alcohol Fuel Percentage		(hex) ##	2
SID01_PID53	0x01	0x53	2	Absolute Evaporative System Vapor Pressure		(hex) ## ##	3
SID01_PID54	0x01	0x54	2	Evaporative System Vapor Pressure		(hex) ## ##	3
SID01_PID55	0x01	0x55	1 or 2	Short Term Secondary O2 Sensor Fuel Trim - Bank 1		(hex) ## or (hex) ## ##	3
SID01_PID56	0x01	0x56	1 or 2	Long Term Secondary O2 Sensor Fuel Trim - Bank 1		(hex) ## or (hex) ## ##	3
SID01_PID57	0x01	0x57	1 or 2	Short Term Secondary O2 Sensor Fuel Trim - Bank 2		(hex) ## or (hex) ## ##	3
SID01_PID58	0x01	0x58	1 or 2	Long Term Secondary O2 Sensor Fuel Trim - Bank 2		(hex) ## or (hex) ## ##	3
SID01_PID59	0x01	0x59	2	Fuel Rail Pressure (absolute)		(hex) ## ##	3
SID01_PID5A	0x01	0x5A	1	Relative Accelerator Pedal Position		(hex) ##	3
SID01_PID5B	0x01	0x5B	1	Hybrid Battery Pack Remaining Life		(hex) ##	3
SID01_PID5C	0x01	0x5C	1	Engine Oil Temperature		(hex) ##	3
SID01_PID5D	0x01	0x5D	2	Fuel Injection Timing		(hex) ## ##	3
SID01_PID5E	0x01	0x5E	2	Engine Fuel Rate		(hex) ## ##	3
SID01_PID5F	0x01	0x5F	1	Emission requirements to which vehicle is designed		(hex) ##	3
SID01_PID60	0x01	0x60	4	PIDs supported [61 - 80]		(hex) ## ## ## ##	2
SID01_PID61	0x01	0x61	1	Driver's Demand Engine - Percent Torque		(hex) ##	3
SID01_PID62	0x01	0x62	1	Actual Engine - Percent Torque		(hex) ##	3
SID01_PID63	0x01	0x63	2	Engine Reference Torque		(hex) ## ##	3
SID01_PID64	0x01	0x64	5	Engine Percent Torque Data		(hex) ## ## ## ## ##	3
SID01_PID65	0x01	0x65	2	Auxiliary Inputs / Outputs		(hex) ## ##	3
SID01_PID66	0x01	0x66	5	Mass Air Flow Sensor		(hex) ## ## ## ## ##	3
SID01_PID67	0x01	0x67	3	Engine Coolant Temperature		(hex) ## ## ##	2
SID01_PID68	0x01	0x68	7	Intake Air Temperature Sensor		(hex) ## ## ## ## ## ## ##	3
SID01_PID69	0x01	0x69	7	Commanded EGR and EGR Error		(hex) ## ## ## ## ## ## ##	3
SID01_PID6A	0x01	0x6A	5	Commanded Diesel Intake Air Flow Control and Relative Intake Air Flow Position		(hex) ## ## ## ## ##	3
SID01_PID6B	0x01	0x6B	5	Exhaust Gas Recirculation Temperature		(hex) ## ## ## ## ##	3
SID01_PID6C	0x01	0x6C	5	Commanded Throttle Actuator Control and Relative Throttle Position		(hex) ## ## ## ## ##	3
SID01_PID6D	0x01	0x6D	11	Fuel Pressure Control System		(hex) ## ## ## ## ## ## ## ## ## ## ##	3
SID01_PID6E	0x01	0x6E	9	Injection Pressure Control System		(hex) ## ## ## ## ## ## ## ## ##	3
SID01_PID6F	0x01	0x6F	3	Turbocharger Compressor Inlet Pressure		(hex) ## ## ##	3
SID01_PID70	0x01	0x70	10	Boost Pressure Control		(hex) ## ## ## ## ## ## ## ## ## ##	3
SID01_PID71	0x01	0x71	6	Variable Geometry Turbo (VGT) Control		(hex) ## ## ## ## ## ##	3
SID01_PID72	0x01	0x72	5	Wastegate Control		(hex) ## ## ## ## ##	3
SID01_PID73	0x01	0x73	5	Exhaust Pressure		(hex) ## ## ## ## ##	3
SID01_PID74	0x01	0x74	5	Turbo RPM		(hex) ## ## ## ## ##	3
SID01_PID75	0x01	0x75	7	Turbocharger A Temperature		(hex) ## ## ## ## ## ## ##	3
SID01_PID76	0x01	0x76	7	Turbocharger B Temperature		(hex) ## ## ## ## ## ## ##	3
SID01_PID77	0x01	0x77	5	Charge Air Cooler Temperature (CACT)		(hex) ## ## ## ## ##	3
SID01_PID78	0x01	0x78	9	Exhaust Gas Temperature (EGT) Bank 1		(hex) ## ## ## ## ## ## ## ## ##	3
SID01_PID79	0x01	0x79	9	Exhaust Gas Temperature (EGT) Bank 2		(hex) ## ## ## ## ## ## ## ## ##	3
SID01_PID7A	0x01	0x7A	7	Diesel Particulate Filter (DPF) Bank 1		(hex) ## ## ## ## ## ## ##	3
SID01_PID7B	0x01	0x7B	7	Diesel Particulate Filter (DPF) Bank 2		(hex) ## ## ## ## ## ## ##	3
SID01_PID7C	0x01	0x7C	9	Diesel Particulate Filter (DPF) Temperature		(hex) ## ## ## ## ## ## ## ## ##	3
SID01_PID7D	0x01	0x7D	1	NOx NTE control area status		(hex) ##	3
SID01_PID7E	0x01	0x7E	1	PM NTE control area status		(hex) ##	3
SID01_PID7F	0x01	0x7F	13	Engine Run Time		(hex) ## ## ## ## ## ## ## ## ## ## ## ## ##	2
SID01_PID80	0x01	0x80	4	PIDs supported [81 - A0]		(hex) ## ## ## ##	2
SID01_PID81	0x01	0x81	11	Engine Run Time for AECD #1 - #5		(hex) ## ## ## ## ## ## ## ## ## ## ##	2
SID01_PID82	0x01	0x82	11	Engine Run Time for AECD #6 - #10		(hex) ## ## ## ## ## ## ## ## ## ## ##	2
SID01_PID83	0x01	0x83	9	NOx Sensor		(hex) ## ## ## ## ## ## ## ## ##	3
SID01_PID84	0x01	0x84	10	Manifold Surface Temperature		(hex) ## ## ## ## ## ## ## ## ## ##	3
SID01_PID85	0x01	0x85	4	NOx Warning Indicator Time		(hex) ## ## ## ##	3
SID01_PID86	0x01	0x86	5	Particulate Matter (PM) Sensor		(hex) ## ## ## ## ##	3
SID01_PID87	0x01	0x87	5	Intake Manifold Absolute Pressure		(hex) ## ## ## ## ##	3
SID01_PID88	0x01	0x88	13	SCR induced system actual state		(hex) ## ## ## ## ## ## ## ## ## ## ## ## ##	3
SID01_PID89	0x01	0x89	11	Engine Run Time for AECD #11 - #15		(hex) ## ## ## ## ## ## ## ## ## ## ##	3
SID01_PID8A	0x01	0x8A	11	Engine Run Time for AECD #16 - #20		(hex) ## ## ## ## ## ## ## ## ## ## ##	3
SID01_PID8B	0x01	0x8B	7	Diesel After treatment Status		(hex) ## ## ## ## ## ## ##	2
SID01_PID8C	0x01	0x8C	17	O2 Sensor (Wide Range)		(hex) ## ## ## ## ## ## ## ## ## ## ## ## ## ## ## ## ##	3
SID01_PID8D	0x01	0x8D	1	Absolute Throttle Position G		(hex) ##	3
Mode 3 (0x03)							
SID03	0x03	N/A	Variable	Request Emission-Related Diagnostic Trouble Codes		(hex) ## ## ## ….. nth	1
Mode 6 (0x06)							
SID06_MID00	0x06	0x00	4	OBD Monitor IDs supported [01 - 20]		(hex) ## ## ## ##	3
SID06_MID01	0x06	0x01	Variable	Exhaust Gas Sensor Monitor Bank 1 - Sensor 1		(hex) ## ## ## ….. nth	3
SID06_MID02	0x06	0x02	Variable	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2		(hex) ## ## ## ….. nth	3
SID06_MID03	0x06	0x03	Variable	Exhaust Gas Sensor Monitor Bank 1 - Sensor 3		(hex) ## ## ## ….. nth	3
SID06_MID04	0x06	0x04	Variable	Exhaust Gas Sensor Monitor Bank 1 - Sensor 4		(hex) ## ## ## ….. nth	3
SID06_MID05	0x06	0x05	Variable	Exhaust Gas Sensor Monitor Bank 2 - Sensor 1		(hex) ## ## ## ….. nth	3
SID06_MID06	0x06	0x06	Variable	Exhaust Gas Sensor Monitor Bank 2 - Sensor 2		(hex) ## ## ## ….. nth	3
SID06_MID07	0x06	0x07	Variable	Exhaust Gas Sensor Monitor Bank 2 - Sensor 3		(hex) ## ## ## ….. nth	3

Column Name	SID (Mode ID in hex)	PID (Parameter ID in hex)	Expected Number of Data Bytes or ASCII Characters	Description of Data	Value Range	Expected Format of Data to Output File	Data Request Sequence
SID06_MID08	0x06	0x08	Variable	Exhaust Gas Sensor Monitor Bank 2 - Sensor 4		(hex) ## ## ## ..... nth	3
SID06_MID09	0x06	0x09	Variable	Exhaust Gas Sensor Monitor Bank 3 - Sensor 1		(hex) ## ## ## ..... nth	3
SID06_MID0A	0x06	0x0A	Variable	Exhaust Gas Sensor Monitor Bank 3 - Sensor 2		(hex) ## ## ## ..... nth	3
SID06_MID0B	0x06	0x0B	Variable	Exhaust Gas Sensor Monitor Bank 3 - Sensor 3		(hex) ## ## ## ..... nth	3
SID06_MID0C	0x06	0x0C	Variable	Exhaust Gas Sensor Monitor Bank 3 - Sensor 4		(hex) ## ## ## ..... nth	3
SID06_MID0D	0x06	0x0D	Variable	Exhaust Gas Sensor Monitor Bank 4 - Sensor 1		(hex) ## ## ## ..... nth	3
SID06_MID0E	0x06	0x0E	Variable	Exhaust Gas Sensor Monitor Bank 4 - Sensor 2		(hex) ## ## ## ..... nth	3
SID06_MID0F	0x06	0x0F	Variable	Exhaust Gas Sensor Monitor Bank 4 - Sensor 3		(hex) ## ## ## ..... nth	3
SID06_MID10	0x06	0x10	Variable	Exhaust Gas Sensor Monitor Bank 4 - Sensor 4		(hex) ## ## ## ..... nth	3
SID06_MID20	0x06	0x20	4	OBD Monitor IDs supported [21 - 40]		(hex) ## ## ## ##	3
SID06_MID21	0x06	0x21	Variable	Catalyst Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID22	0x06	0x22	Variable	Catalyst Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MID23	0x06	0x23	Variable	Catalyst Monitor Bank 3		(hex) ## ## ## ..... nth	3
SID06_MID24	0x06	0x24	Variable	Catalyst Monitor Bank 4		(hex) ## ## ## ..... nth	3
SID06_MID31	0x06	0x31	Variable	EGR Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID32	0x06	0x32	Variable	EGR Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MID33	0x06	0x33	Variable	EGR Monitor Bank 3		(hex) ## ## ## ..... nth	3
SID06_MID34	0x06	0x34	Variable	EGR Monitor Bank 4		(hex) ## ## ## ..... nth	3
SID06_MID35	0x06	0x35	Variable	VVT Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID36	0x06	0x36	Variable	VVT Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MID37	0x06	0x37	Variable	VVT Monitor Bank 3		(hex) ## ## ## ..... nth	3
SID06_MID38	0x06	0x38	Variable	VVT Monitor Bank 4		(hex) ## ## ## ..... nth	3
SID06_MID39	0x06	0x39	Variable	EVAP Monitor (Cap Off / 0.150")		(hex) ## ## ## ..... nth	3
SID06_MID3A	0x06	0x3A	Variable	EVAP Monitor (0.090")		(hex) ## ## ## ..... nth	3
SID06_MID3B	0x06	0x3B	Variable	EVAP Monitor (0.040")		(hex) ## ## ## ..... nth	3
SID06_MID3C	0x06	0x3C	Variable	EVAP Monitor (0.020")		(hex) ## ## ## ..... nth	3
SID06_MID3D	0x06	0x3D	Variable	Purge Flow Monitor		(hex) ## ## ## ..... nth	3
SID06_MID40	0x06	0x40	4	OBD Monitor IDs supported [41 - 60]		(hex) ## ## ## ##	3
SID06_MID41	0x06	0x41	Variable	Exhaust Gas Sensor Heater Monitor Bank 1 - Sensor 1		(hex) ## ## ## ..... nth	3
SID06_MID42	0x06	0x42	Variable	Exhaust Gas Sensor Heater Monitor Bank 1 - Sensor 2		(hex) ## ## ## ..... nth	3
SID06_MID43	0x06	0x43	Variable	Exhaust Gas Sensor Heater Monitor Bank 1 - Sensor 3		(hex) ## ## ## ..... nth	3
SID06_MID44	0x06	0x44	Variable	Exhaust Gas Sensor Heater Monitor Bank 1 - Sensor 4		(hex) ## ## ## ..... nth	3
SID06_MID45	0x06	0x45	Variable	Exhaust Gas Sensor Heater Monitor Bank 2 - Sensor 1		(hex) ## ## ## ..... nth	3
SID06_MID46	0x06	0x46	Variable	Exhaust Gas Sensor Heater Monitor Bank 2 - Sensor 2		(hex) ## ## ## ..... nth	3
SID06_MID47	0x06	0x47	Variable	Exhaust Gas Sensor Heater Monitor Bank 2 - Sensor 3		(hex) ## ## ## ..... nth	3
SID06_MID48	0x06	0x48	Variable	Exhaust Gas Sensor Heater Monitor Bank 2 - Sensor 4		(hex) ## ## ## ..... nth	3
SID06_MID49	0x06	0x49	Variable	Exhaust Gas Sensor Heater Monitor Bank 3 - Sensor 1		(hex) ## ## ## ..... nth	3
SID06_MID4A	0x06	0x4A	Variable	Exhaust Gas Sensor Heater Monitor Bank 3 - Sensor 2		(hex) ## ## ## ..... nth	3
SID06_MID4B	0x06	0x4B	Variable	Exhaust Gas Sensor Heater Monitor Bank 3 - Sensor 3		(hex) ## ## ## ..... nth	3
SID06_MID4C	0x06	0x4C	Variable	Exhaust Gas Sensor Heater Monitor Bank 3 - Sensor 4		(hex) ## ## ## ..... nth	3
SID06_MID4D	0x06	0x4D	Variable	Exhaust Gas Sensor Heater Monitor Bank 4 - Sensor 1		(hex) ## ## ## ..... nth	3
SID06_MID4E	0x06	0x4E	Variable	Exhaust Gas Sensor Heater Monitor Bank 4 - Sensor 2		(hex) ## ## ## ..... nth	3
SID06_MID4F	0x06	0x4F	Variable	Exhaust Gas Sensor Heater Monitor Bank 4 - Sensor 3		(hex) ## ## ## ..... nth	3
SID06_MID50	0x06	0x50	Variable	Exhaust Gas Sensor Heater Monitor Bank 4 - Sensor 4		(hex) ## ## ## ..... nth	3
SID06_MID60	0x06	0x60	4	OBD Monitor IDs supported [61 - 80]		(hex) ## ## ## ##	3
SID06_MID61	0x06	0x61	Variable	Heated Catalyst Monitor Back 1		(hex) ## ## ## ..... nth	3
SID06_MID62	0x06	0x62	Variable	Heated Catalyst Monitor Back 2		(hex) ## ## ## ..... nth	3
SID06_MID63	0x06	0x63	Variable	Heated Catalyst Monitor Back 3		(hex) ## ## ## ..... nth	3
SID06_MID64	0x06	0x64	Variable	Heated Catalyst Monitor Back 4		(hex) ## ## ## ..... nth	3
SID06_MID71	0x06	0x71	Variable	Secondary Air Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID72	0x06	0x72	Variable	Secondary Air Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MID73	0x06	0x73	Variable	Secondary Air Monitor Bank 3		(hex) ## ## ## ..... nth	3
SID06_MID74	0x06	0x74	Variable	Secondary Air Monitor Bank 4		(hex) ## ## ## ..... nth	3
SID06_MID80	0x06	0x80	4	OBD Monitor IDs supported [81 - A0]		(hex) ## ## ## ##	3
SID06_MID81	0x06	0x81	Variable	Fuel System Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID82	0x06	0x82	Variable	Fuel System Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MID83	0x06	0x83	Variable	Fuel System Monitor Bank 3		(hex) ## ## ## ..... nth	3
SID06_MID84	0x06	0x84	Variable	Fuel System Monitor Bank 4		(hex) ## ## ## ..... nth	3
SID06_MID85	0x06	0x85	Variable	Boost Pressure Control Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID86	0x06	0x86	Variable	Boost Pressure Control Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MID90	0x06	0x90	Variable	NOx Adsorber Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID91	0x06	0x91	Variable	NOx Adsorber Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MID98	0x06	0x98	Variable	NOx/SCR Catalyst Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MID99	0x06	0x99	Variable	NOx/SCR Catalyst Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MIDA0	0x06	0xA0	4	OBD Monitor IDs supported [A1 - C0]		(hex) ## ## ## ##	3
SID06_MIDA1	0x06	0xA1	Variable	Misfire Monitor General Data		(hex) ## ## ## ..... nth	3
SID06_MIDA2	0x06	0xA2	Variable	Misfire Cylinder 1 Data		(hex) ## ## ## ..... nth	3
SID06_MIDA3	0x06	0xA3	Variable	Misfire Cylinder 2 Data		(hex) ## ## ## ..... nth	3
SID06_MIDA4	0x06	0xA4	Variable	Misfire Cylinder 3 Data		(hex) ## ## ## ..... nth	3
SID06_MIDA5	0x06	0xA5	Variable	Misfire Cylinder 4 Data		(hex) ## ## ## ..... nth	3
SID06_MIDA6	0x06	0xA6	Variable	Misfire Cylinder 5 Data		(hex) ## ## ## ..... nth	3
SID06_MIDA7	0x06	0xA7	Variable	Misfire Cylinder 6 Data		(hex) ## ## ## ..... nth	3
SID06_MIDA8	0x06	0xA8	Variable	Misfire Cylinder 7 Data		(hex) ## ## ## ..... nth	3
SID06_MIDA9	0x06	0xA9	Variable	Misfire Cylinder 8 Data		(hex) ## ## ## ..... nth	3
SID06_MIDAA	0x06	0xAA	Variable	Misfire Cylinder 9 Data		(hex) ## ## ## ..... nth	3
SID06_MIDAA	0x06	0xAA	Variable	Misfire Cylinder 10 Data		(hex) ## ## ## ..... nth	3
SID06_MIDAA	0x06	0xAA	Variable	Misfire Cylinder 11 Data		(hex) ## ## ## ..... nth	3
SID06_MIDAA	0x06	0xAA	Variable	Misfire Cylinder 12 Data		(hex) ## ## ## ..... nth	3
SID06_MIDAA	0x06	0xAA	Variable	Misfire Cylinder 13 Data		(hex) ## ## ## ..... nth	3
SID06_MIDAA	0x06	0xAA	Variable	Misfire Cylinder 14 Data		(hex) ## ## ## ..... nth	3
SID06_MIDB0	0x06	0xB0	Variable	Misfire Cylinder 15 Data		(hex) ## ## ## ..... nth	3
SID06_MIDB1	0x06	0xB1	Variable	Misfire Cylinder 16 Data		(hex) ## ## ## ..... nth	3
SID06_MIDB2	0x06	0xB2	Variable	PM Filter Monitor Bank 1		(hex) ## ## ## ..... nth	3
SID06_MIDB3	0x06	0xB3	Variable	PM Filter Monitor Bank 2		(hex) ## ## ## ..... nth	3
SID06_MIDC0	0x06	0xC0	4	OBD Monitor IDs supported [C1 - E0]		(hex) ## ## ## ##	3
SID06_MIDE0	0x06	0xE0	4	OBD Monitor IDs supported [E1 - FF]		(hex) ## ## ## ##	3
SID06_MIDE1	0x06	0xE1	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE2	0x06	0xE2	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE3	0x06	0xE3	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE4	0x06	0xE4	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE5	0x06	0xE5	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE6	0x06	0xE6	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE7	0x06	0xE7	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE8	0x06	0xE8	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDE9	0x06	0xE9	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3
SID06_MIDEA	0x06	0xEA	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ..... nth	3

Column Name	SID (Mode ID in hex)	PID (Parameter ID in hex)	Expected Number of Data Bytes or ASCII Characters	Description of Data	Value Range	Expected Format of Data to Output File	Data Request Sequence
SID06_MIDEB	0x06	0xEB	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDEC	0x06	0xEC	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDED	0x06	0xED	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDEE	0x06	0xEE	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDEF	0x06	0xEF	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF0	0x06	0xF0	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF1	0x06	0xF1	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF2	0x06	0xF2	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF3	0x06	0xF3	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF4	0x06	0xF4	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF5	0x06	0xF5	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF6	0x06	0xF6	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF7	0x06	0xF7	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF8	0x06	0xF8	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDF9	0x06	0xF9	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDFA	0x06	0xFA	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDFB	0x06	0xFB	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDFC	0x06	0xFC	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDFD	0x06	0xFD	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDFE	0x06	0xFE	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
SID06_MIDFF	0x06	0xFF	Variable	Vehicle manufacturer defined OBDMIDs		(hex) ## ## ## ….. nth	3
Mode 7 (0x07)							
SID07	0x07	N/A	Variable	Request Emission-Related Diagnostic Trouble Codes Detected During Current or Last Completed Driving Cycle		(hex) ## ## ## ….. nth	2
Mode 9 (0x09)							
SID09_INFO00	0x09	0x00	4	INFOTYPE IDs supported [01 - 20]		(hex) ## ## ## ##	1
SID09_INFO01	0x09	0x01	1	MessageCount VIN		(hex) ##	1
SID09_INFO02	0x09	0x02	17	Vehicle identification number (VIN)		ASCII Text	1
SID09_INFO03	0x09	0x03	1	MessageCount CALID		(hex) ##	2
SID09_INFO04	0x09	0x04	16	Calibration Identifications		ASCII Text	2
SID09_INFO05	0x09	0x05	1	MessageCount CVN		(hex) ##	2
SID09_INFO06	0x09	0x06	4	Calibration Verification Numbers		(hex) ## ## ## ##	2
SID09_INFO07	0x09	0x07	1	MessageCount IPT		(hex) ##	3
SID09_INFO08	0x09	0x08	32 or 40	In-use Performance Tracking: 16 or 20 counters		(hex) ## ## ## ## …. ## ##	3
SID09_INFO09	0x09	0x09	1	MessageCount ECUNAME		(hex) ##	2
SID09_INFO0A	0x09	0x0A	20	ECUNAME		ASCII Text	2
SID09_INFO0B	0x09	0x0B	32 or 36	In-use Performance Tracking: 16 to 18 counters		(hex) ## ## ## ## …. ## ##	3
SID09_INFO0C	0x09	0x0C	1	MessageCountESN		(hex) ##	3
SID09_INFO0D	0x09	0x0D	17	Engine Serial Number		ASCII Text	3
SID09_INFO0E	0x09	0x0E	1	MessageCount EROTAN		(hex) ##	3
SID09_INFO0F	0x09	0x0F	17	Exhaust Regulation Or Type Approval Number		ASCII Text	3
SID09_INFO20	0x09	0x20	4	INFOTYPE IDs supported [21 - 40]		(hex) ## ## ## ##	3
SID09_INFO40	0x09	0x40	4	INFOTYPE IDs supported [41 - 60]		(hex) ## ## ## ##	3
SID09_INFO60	0x09	0x60	4	INFOTYPE IDs supported [61 - 80]		(hex) ## ## ## ##	3
SID09_INFO80	0x09	0x80	4	INFOTYPE IDs supported [81 - A0]		(hex) ## ## ## ##	3
SID09_INFOA0	0x09	0xA0	4	INFOTYPE IDs supported [A1 - C0]		(hex) ## ## ## ##	3
SID09_INFOC0	0x09	0xC0	4	INFOTYPE IDs supported [C1 - E0]		(hex) ## ## ## ##	3
SID09_INFOE0	0x09	0xE0	4	INFOTYPE IDs supported [E1 - FF]		(hex) ## ## ## ##	3
Mode 10 (0x0A)							
SID0A	0x0A	N/A	Variable	Request Emission-Related Diagnostic Trouble Codes with Permanent Status		(hex) ## ## ## ….. nth	2

DAD Static Raw Data File Requirements

File Name

The file name of the raw data file shall contain the 16 character GUID supplied by calling function. (all chars are ASCII 48-57 and 97-122) and have the text "_RAW" appended at the end of the GUID. The files extension shall be three characters only.

Examples:
c7a93487b68d6d10_RAW.csv
4018204dbd519d20_RAW.csv

File structure

Data header (First line of file):

The first line of the file shall contain the column names as specified in "DAD Static Data Format Spec Draft 1_0.xls" column A "Column Name". The line shall NOT contain any spaces or commas in the field names. The line shall be comma delimited between column names.

Data lines of the file:

The remaining lines of the file shall be complete data records as received from the vehicles OBDII system and shall be formatted as outlined in "DAD Static Data Format Spec Draft 1_0.xls" columns B through G. Each line of data will be from a specific ECU of the vehicle. The lines of data shall be in descending order of PIDs supported by the ECUs on the vehicle.

Data Request Sequence:

The file "DAD Static Data Format Spec Draft 1_0.xls" specifies in column H "Data Request Sequence" the order in which data shall be requested from the vehicle's OBDII system.
Within each level, the data shall be requested in ascending order of modes and then within that mode, the PID, MID, or INFOTYPE.

Example:
Request in this order for level 1:

1. Mode 1 PID $00
2. Mode 1 PID $01
3. Mode 1 PID $0C
4. Mode 3
5. Mode 9 INFOTYPE $00
6. Mode 9 INFOTYPE $02
7. Go to level 2 items.

In the event that a request to the vehicle causes a "crash" of the vehicle system, the DAD device, or other software/hardware failure, the DLL shall write the data file with whatever data has been collect up to that point.

General File Requirements

The file shall be a standard "CSV" file that is compatible with Microsoft Excel 2003/2007/2010.

No data within the file may contain commas (","). Commas must only be used as delimiters at the file level.

No data shall contain a “space” (ASCII char 32) unless that data is a string value per the SAE J1979 SEP2010 specification and that data contains a space character. i.e. a VIN with a space in it. A space or comma may NOT be used to delimit DTCs in mode $03, $07, and $0A. There shall be no delimiter.

Mode $06 data shall only be collected for CAN protocols.

Data fields that do not contain values should contain the appropriate code such as “NS”, “NR”, as per this specification.