2021

Stockton CA Data Summary

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Publication Statement

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Table 1. Stockton Validity Summary.

	CO	HC	NO	NH_3	NO_2
Attempted Measurements	35,462				
Valid Measurements	33,120	32,759	33,110	33,057	27,610
Percent of Attempts	93.4%	92.4%	93.4%	93.2%	77.9%
Submitted Plates	29,946	29,635	29,936	29,892	25,040
Percent of Attempts	84.4%	83.6%	84.4%	84.3%	70.6%
Percent of Valid Measurements	90.4%	90.5%	90.4%	90.4%	90.7%
Matched Plates	29,149	28,852	29,140	29,097	24,385
Percent of Attempts	82.2%	81.4%	82.2%	82.1%	68.8%
Percent of Valid Measurements	88.0%	88.1%	88.0%	88.0%	88.3%
Percent of Submitted Plates	97.3%	97.4%	97.3%	97.3%	97.4%

Table 2. Number of measurements of repeat vehicles.

Number of Times Measured	Number of Vehicles
1	17,673
2	2,485
3	904
4	452
5	213
6	70
7	34
>7	29

104 Electric Cars (This includes Chevy Volts we did not measure any exhaust). These vehicles are only in the Stockton_2021_org.dbf file with the license number of ‘E’.

There were an additional 33 Volts that we measured exhaust. These vehicles are identified in the Stockton_2021.dbf file.

Measurements for medium and heavy-duty vehicles in the Stockton_2021.dbf file.

GVW_Class	Measurements
6	226
7	57
8	563

Explanation of the Stockton_2021.dbf and the Stockton_2021_org.dbf databases.

These are Microsoft FoxPro database file, and can be opened by any version of MS FoxPro. The files can also be read by a number of other programs such as Excel. The following is an explanation of the data fields found in this database:

License	California license plate.
Date	Date of measurement, in standard format.
Time	Time of measurement, in standard format.
Percent_CO	Carbon monoxide concentration, in percent.
CO_err	Standard error of the carbon monoxide measurement.
Percent_HC	Hydrocarbon concentration (propane equivalents), in percent.
HC_err	Standard error of the hydrocarbon measurement.
Percent_NO	Nitric oxide concentration, in percent.
NO_err	Standard error of the nitric oxide measurement.
PercentSO2	Sulfur dioxide concentration, in percent.
SO2_err	Standard error of the sulfur dioxide measurement.
PercentNH3	Ammonia concentration, in percent.
NH3_err	Standard error of the ammonia measurement.
PercentNO2	Nitrogen dioxide concentration, in percent.
NO2_err	Standard error of the nitrogen dioxide measurement.
PercentCO2	Carbon dioxide concentration, in percent.
CO2_err	Standard error of the carbon dioxide measurement.
Opacity	Opacity measurement, in percent.
Opac_err	Standard error of the opacity measurement.
Restart	Number of times data collection is interrupted and restarted by a close-following vehicle, or the rear wheels of tractor trailer.
HC_flag	Indicates a valid hydrocarbon measurement by a “V”, invalid by an “X”.
NO_flag	Indicates a valid nitric oxide measurement by a “V”, invalid by an “X”.
SO2_flag	Indicates a valid sulfur dioxide measurement by a “V”, invalid by an “X”.
NH3_flag	Indicates a valid ammonia measurement by a “V”, invalid by an “X”.
NO2_flag	Indicates a valid nitrogen dioxide measurement by a “V”, invalid by an “X”.
Opac_flag	Indicates a valid opacity measurement by a “V”, invalid by an “X”.

CO2_max	Reports the highest absolute concentration of carbon dioxide measured by the remote sensor over an 8 cm path; indicates plume strength.
Speed_flag	Indicates a valid speed measurement by a “V”, an invalid by an “X”, and slow speed (excluded from the data analysis) by an “S”.
Speed	Measured speed of the vehicle, in mph.
Accel	Measured acceleration of the vehicle, in mph/s.
Tag_name	File name for the digital picture of the rear of the vehicle.
Front_name	File name for the digital picture of the front of the vehicle.
Tow	Marked with a Y if a light-duty vehicle is towing something.

The Stockton_2021_org.dbf ends at this field while the Stockton_2021.dbf files also includes the fields below the line.

Vin	Vehicle identification number truncated by the State of California.
Make	Manufacturer of the vehicle.
Year	Model year.
Series	Vehicle series.
Model	Vehicle model within a particular series
Fuel	Fuel type G (gasoline), D (diesel), N (natural gas) and B (hybrid).
Disp_ci	DMV engine displacement cubic inches.
Gvw	DMV unladen vehicle weight in pounds.
Gvw_code	DMV gross vehicle weight class code.
V_body	VIN decoded body description.
V_cyl	VIN decoded number of engine cylinders.
V_drive	VIN decoded vehicle drive configuration.
V_engine	VIN decoded engine model.
V_fuel	VIN decoded fuel type.
V_gwvr	VIN decoded vehicle weight class.
V_make	VIN decoded make.
V_model	VIN decoded model.
V_year	VIN decoded model year.
V_series	VIN decoded series.
V_trans	VIN decoded transmission.

V_trim	VIN decoded vehicle trim.
V_type	VIN decoded vehicle classification (BUS, INC, MPV, PAS, TRK)
CO_gkg	Grams of CO per kilogram of fuel using 860 gC/kg of fuel.
HC_gkg	Grams of HC per kilogram of fuel using 860 gC/kg of fuel and the molecular weight of propane which is our calibration gas.
NO_gkg	Grams of NO per kilogram of fuel using 860 gC/kg of fuel.
Nh3_gkg	Grams of NH_3 per kilogram of fuel using 860 gC/kg of fuel.
NO2_gkg	Grams of NO_2 per kilogram of fuel using 860 gC/kg of fuel.
NOx_gkg	Grams of NO_x per kilogram of fuel using 860 gC/kg of fuel.
HC_offset	Hydrocarbon concentrations after offset adjustment.
Hcgkg_off	Grams of HC per kilogram of fuel using 860 gC/kg of fuel and using the HC_offset value for this calculation.
VSP	Vehicles specific power

Data from the Stockton Airport (3.75 miles southeast of the site)

2021 Stockton Temperature and Humidity Data								
Time	6/13 °F	6/13 %RH	6/14 °F	6/14 %RH	6/15 °F	6/15 %RH	6/16 °F	6/16 %RH
7:55	70	66	70	71	66	47	76	31
8:55	73	59	73	62	72	38	80	27
9:55	77	52	75	55	74	36	84	27
10:55	79	49	77	52	78	27	86	23
11:55	83	41	80	49	81	27	90	18
12:55	85	40	83	44	84	24	91	14
13:55	85	39	83	41	87	17	94	13
14:55	87	34	84	38	87	16	95	13
15:55	86	32	83	36	87	14	94	14
16:55	85	32	79	31	87	15	94	13
17:55	80	39	76	32	86	12	93	14

2021 Stockton Temperature and Humidity Data								
Time	6/17 °F	6/17 %RH	6/18 °F	6/18 %RH	6/19 °F	6/19 %RH		
7:55	78	43	85	31	78	43		
8:55	83	34	89	26	83	37		
9:55	89	24	94	23	87	30		
10:55	93	18	97	18	92	24		
11:55	96	17	100	17	96	19		
12:55	100	16	102	15	99	16		
13:55	103	14	106	14	100	16		
14:55	104	13	107	10	101	13		
15:55	104	11	107	13	101	17		
16:55	104	12	105	13	99	18		
17:55	98	16	102	16	95	19		