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INVOICE COVER LETTER

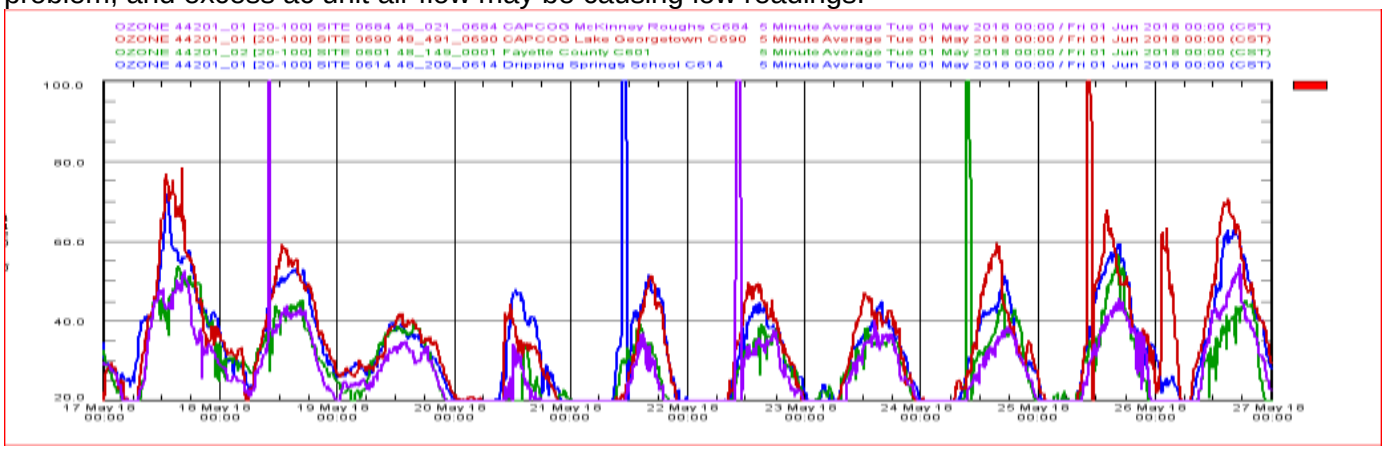
Wednesday, June 6, 2018

ATTN: Andrew Hoekzema
Director of Regional Services
Capital Area Council of Governments
6800 Burleson Road, Bldg. 310, Suite 165
Austin, TX 78744

RE: Contract #: Operation of Continuous Air Monitoring Stations 2018 / 2019
Invoice #: CAPCOG 18-011
Invoice Period of Service: 5/1/18 – 5/31/18
Total Invoice Amount: $11,276.79

This invoice is for services provided by Dios Dado Environmental Ltd. for operation and network maintenance of CAPCOG sites, as the terms set forth in the above referenced contract.
See the discussion and list of deliverables as follows:

1. May Data Return reported in attachment 1: Data Return Report for Austin -- Region 11.
   All O3 sites reporting >95% data return with no issues,
2. The low ozone readings at Mckinney Roughs are persistent, we believe the trees are growing into a problem, and excess ac unit air flow may be causing low readings.



we did replace all the tubing and the filter holder again to be sure nothing was leaking, then we discussed tree trimming with LCRA staff and they will let us know if we can clear the limbs away from the inlet area. We discovered also the addition of 2 more ac units below the inlet and we would need to move the inlet to correct for that. The photos below show the issues.

3. May Data Return Rh units were all at 100% except C6602, which was 99.7%. Individual RH reports are included for each site. TEOM data return from 601 is >95%.
4. Site activities are reported in attachment 2: CAPCOG activities log and operator's log set.
5. The TCEQ sent an auditor to C601 without telling anyone and they left the PM-2.5 in q-code we had to send an operator out to investigate and return conditions to normal, (see log entries).
6. C690 Lake Georgetown site W/D boom has been reoriented properly.
7. All units have good data that is reporting to LEADS system correctly. The data sets for March, April, and May have been validated, TCEQ access finally restored on 5-8-18.
8. A site survey of C690 is on hold until CAPCOG decides to move forward.
9. We have reached out to EPA and established our accounts with Air Now. We have found 2 software companies that could help us get the data stored and formatted for Air Now, we would like to set up webinars with CAPCOG and allow each software company to do a demonstration for your consideration.
10. The 5-point calibrations conducted in May showed some anomalies at the precision (70 ppb) level. This is usually indicative of the zero air scrubbers going out in the 49i unit, so we went back after data review and rechecked the units the following week with a different calibration system and got better numbers. We have since repaired that calibration unit. The distorted numbers do not cause the 5-pt. audit to fail, because the overall average of the errors still have the machines operating within allowed parameters.
11. St. Edwards is reported on the data return list, but no work was performed and no calibrations occurred.

Please remit payment to address above, respectfully,
Jim McCraw
Founding Partner
Dios Dado Environmental Ltd.

Attachment 1: CAPCOG Data Return Report – May 2018

Austin - Region 11

00:00 LST May 1, 2018 through 00:00 LST June 1, 2018

CAMS	Location	Pollution Data			Meteorological Data			
		O3 %	PM2.5(Lcl)accpt %	Poll %	WDR %	WSR %	Out Temp %	Met %
601	Fayette County C601	99.7	97	98.4	100	100	100	100
614	Dripping Springs School C614	99.6	*	99.6	99.9	99.9	100	99.9
684	CAPCOG McKinney Roughs C684	99.3	*	99.3	99.5	99.5	100	99.6
690	CAPCOG Lake Georgetown C690	99.7	*	99.7	100	100	100	100
1603	Gorzycki Middle School C1603	99.7	*	99.7	100	100	100	100
1604	Lockhart C1604	99.7	*	99.7	100	100	100	100
1605	St. Edwards University C1605	100	*	100	99.9	99.9	98.3	99.3
1675	CAPCOG San Marcos Staples Road C1675	99.7	*	99.7	100	100	100	100
6602	CAPCOG Hutto College Street C6602	99.3	*	99.3	99.6	99.6	99.7	99.6
	Region 11 Averages	**99.7**	**97**	**99.4**	**99.9**	**99.9**	**99.8**	**99.8**

Relative Humidity – Data Return Loss for Austin -- Region 11

00:00 LST May 1, 2018 through 00:00 LST June 1, 2018
Selected date range: 31 days (744 hours)

Report includes an average of data from only these CAMS: 614 684 690 1603 1604 1605 1675 6602

Data Flag	Rel Humid 62201
Null Data Codes	
LST => AQ (Lost)	2
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	5950
Summary	
Total Monitors	8
Total Null Data Code Flags	2
Total Ambient Flags †	5950
Total Samples	5952
Invalid Percent	0
Valid Percent	100
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Relative Humidity – Data Return Loss for Austin -- Region 11
00:00 LST May 1, 2018 through 00:00 LST June 1, 2018
Selected date range: 31 days (744 hours) INDIVIDUAL SITES:

Report includes data from only these CAMS: 614

Data Flag	Rel Humid 62201
Null Data Codes	
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	744
Summary	
Total Monitors	1
Total Null Data Code Flags	0
Total Ambient Flags †	744
Total Samples	7440
Invalid Percent	0.0
Valid Percent	100.0
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Report includes data from only these CAMS: 684

Data Flag	Rel Humid 62201
Null Data Codes	
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	744
Summary	
Total Monitors	1
Total Null Data Code Flags	0
Total Ambient Flags †	744
Total Samples	7440
Invalid Percent	0.0
Valid Percent	100.0
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Report includes data from only these CAMS: 690

Data Flag	Rel Humid 62201
Null Data Codes	
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	744
Summary	
Total Monitors	1
Total Null Data Code Flags	0
Total Ambient Flags †	744
Total Samples	7440
Invalid Percent	0.0
Valid Percent	100.0
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Report includes data from only these CAMS: 1603

Data Flag	Rel Humid 62201
Null Data Codes	
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	744
Summary	
Total Monitors	1
Total Null Data Code Flags	0
Total Ambient Flags †	744
Total Samples	7440
Invalid Percent	0.0
Valid Percent	100.0
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Report includes data from only these CAMS: 1604

Data Flag	Rel Humid 62201
Null Data Codes	
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	744
Summary	
Total Monitors	1
Total Null Data Code Flags	0
Total Ambient Flags †	744
Total Samples	7440
Invalid Percent	0.0
Valid Percent	100.0
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Report includes data from only these CAMS: 1675

Data Flag	Rel Humid 62201
Null Data Codes	
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	744
Summary	
Total Monitors	1
Total Null Data Code Flags	0
Total Ambient Flags †	744
Total Samples	7440
Invalid Percent	0.0
Valid Percent	100.0
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Report includes data from only these CAMS: 6602

Data Flag	Rel Humid 62201
Null Data Codes	
LST => AQ (Lost)	2
Ambient or Ambient With Qualifier Code	
VAL (Ambient Data) †	742
Summary	
Total Monitors	1
Total Null Data Code Flags	2
Total Ambient Flags †	742
Total Samples	744
Invalid Percent	0.3
Valid Percent	99.7
	Rel Humid
† Ambient data includes all data with the following flags or qualifier codes: VAL	

Attachment 2: CAPCOG Site Activities Log and Operators Log set.

May 2018 CAPCOG Activity Logs:

DATE	DESCRIPTON
05/04/2018	Station visit to place TEOM in K code
05/07/2018	C601 Performed monthly TEOM audit, performed PMIs 41-030,41-030a,41-030b,PMI 4-14
	C1675 PMI 04-14
05/08/2018	C614 PMI 04-14, Replaced wind direction boom
	C684 PMI 04-14
05/10/2018	C690 PMI 04-14
	C1603 PMI 04-14
	C1604 PMI 04-14
	C6602 PMI 04-14
05/16/2018	C684 Replaced Met gear , replaced filter holder fixing the O3 leakage
05/18/2018	C601 Dialed into site to adjusted magnetic declination and WD instrument offset
	C684 Dialed into site to adjusted magnetic declination and WD instrument offset
05/21/2018	C614 - 5 pt cal, PMI 04-14
05/22/2018	C684 - 5 pt cal, PMI 04-14
	C1603 - 5 pt cal, PMI 04-14
05/23/2018	C1675 - 5 pt cal, PMI 04-14
05/24/2018	C601 - 5 pt cal, PMI 04-14
	C1604 - 5 pt cal, PMI 04-14

May 2018 CAPCOG Operator Logs:

Operator Logs for Fayette County C601

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 Fayette County C601 (48_149_0001)
Tue May 01, 2018	03:28:49			Automatic time sync
Thu May 03, 2018	14:23:30			Entered site to conduct annual CAMS performance audit on the PM 2.5 TEOM. J Dennis
Thu May 03, 2018	14:42:01			OK, mode 4, % filter 36, mass 1.8, freq 253.115, total mass 599.3, case temp 50 , air temp 50, cap temp 50, main flow 2.99, aux flow 13.63. As Found PM 2.5 data. J Dennis
Thu May 03, 2018	14:42:40			The PM 2.5 TEOM passed the audit. The instrument is not back online yet so no as left data will be recorded. The instrument will be left in q code and the data validators will be notified so that they can k code the instrument when the mass concentration reaches a positive number. These results are preliminary. J Dennis
Fri May 04, 2018	09:39:19			Status, OK; Mode, 4; % Filter Loading, 22%; Mass, 16.6; Noise, 0.077; Freq, 253.14483; Total Mass, 27.81; All Temps, 50; Main Flow, 3.00; Aux Flow, 13.63 B. Bishop x
Fri May 04, 2018	10:23:13			Entered station to investigate TEOM instrument in Q code. Looked in logs and discovered John Dennis of TCEQ was here yesterday doing an annual audit of instrument and left it in Q code. We received no notification about this audit, nor were informed instrument was left in Q code. I checked instrument and all appears good, so I placed it back in K code. Still awaiting PM 2.5 audit kits back from TCEQ recertification to be able to perform monthly audit. Departing site, all secure. L Thompson
Sat May 05, 2018	03:28:51			Automatic time sync
Mon May 07, 2018	12:12:53			Entered station to conduct monthly TEOM verification and PMIs. TEOM values pre audit: OK, 4, 23%, 10.5, 0.103, 253.11172, 50, 50, 50, 2.99, 13.62, tot mass 84.72. Performed TEOM PMI's 41-030, 41-030a and b. Also performed ozone instrument PMI 4-14.TEOM passed verification, final values= OK, 4, 23%, 3.9, 0.061, 253.58569, 50, 50, 50, 3.00, 13.62, tot mass=0.03. Placed instrument back in K code, and departed site, all secure. L Thompson
Tue May 08, 2018	03:28:49			Automatic time sync
Thu May 10, 2018	06:10:50	Ccarrasco	05/10/2018	Checked site status online
Fri May 11, 2018	06:12:22	Ccarrasco	05/11/2018	Checked site status online
Fri May 11, 2018	14:37:57			STATUS OK, 4, 27% FILTER, MASS 5.0, NOISE 0.061 FREQ 253.52445, TOTAL MASS 104.71, ALL TEMPS 50, MAIN FLOW 2.99, AUX FLOW 13.62 MARK OLSOVSKY LCRA 5/11/2018
Sat May 12, 2018	03:28:50			Automatic time sync
Mon May 14, 2018	07:16:43	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:28:51			Automatic time sync
Tue May 15, 2018	06:18:15	Ccarrasco	05/15/2018	Checked site status online

Tue May 15, 2018	14:58:18			Status: OK, Mode: 4, % Filter Loading: 30%, Mass: 6.5, Noise: 0.072, Freq: 253.45349, Total Mass: 226.14, Case Temp: 50, Air Temp: 50, Cap Temp: 50, Main Flow: 2.99, Aux Flow: 13.62
Wed May 16, 2018	05:31:51	Ccarrasco	05/16/2018	Checked site status online
Thu May 17, 2018	06:05:08	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:19:42	Ccarrasco	05/18/2018	Checked site status online
Fri May 18, 2018	10:03:44			Dialed into site and adjusted magnetic declination and WD instrument offset. jmccraw
Mon May 21, 2018	06:41:49	Ccarrasco	05/21/2018	Checked site status online
Tue May 22, 2018	03:28:50			Automatic time sync
Tue May 22, 2018	06:41:40	Ccarrasco	05/22/2018	Checked site status online
Wed May 23, 2018	06:31:53	Ccarrasco	05/23/2018	Checked site status online
Thu May 24, 2018	06:39:59	Ccarrasco	05/24/2018	Checked site status online
Thu May 24, 2018	10:44:30			5-24-18 Entered station to conduct monthly 5 pt calibration with TS 165C-74465-376 cal date 9-21-18. 400 set = 800.7 mv = 400.35 ppb 300 set = 600.5 mv = 300.25 ppb 200 set = 400.9 mv = 200.47 ppb 70 set = 140.55 mv = 70.22 ppb 0 set = .065 mv = .302 ppb No adjustments were made also performed PMI 04-14. Left site safe and secure. MA
Thu May 24, 2018	15:07:25			status ok, mode 4, filter loading 35%, [D^[D/[D/[D [D:[D:[D [D1[Ds[Dt[D [D,[m[Ce[D,lti[Cte[Cl[a[Cn[[D%[DerD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[C mass 6.0, noise .054, freq 253.34D[DD[AD[CD[DD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[CD[C D[C [Cs[C6[C,[Co[Ce[C0[C,[Cr[C [C3[C4[CD[CA[CC[CD[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[CC[[[C[[Ctotal mass 414.23, case temp 50, air temp 50, cap temp 50, main flow 3.00, aux flow 13.62 CS LCRA 5-24-18
Fri May 25, 2018	07:03:02	Ccarrasco	05/25/2018	Checked site status online
Sat May 26, 2018	03:28:50			Automatic time sync
Tue May 29, 2018	03:28:49			Automatic time sync
Tue May 29, 2018	06:22:32	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:46:09	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:27:17	Ccarrasco	05/31/2018	Checked site status online

Operator Logs for Dripping Springs School C614

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 Dripping Springs School C614 (48_209_0614)
Tue May 01, 2018	03:28:44			Automatic time sync
Sat May 05, 2018	03:28:44			Automatic time sync
Tue May 08, 2018	03:28:40			Automatic time sync
Tue May 08, 2018	10:26:46			5-8-2018: Entered the station to perform PMI 4-14 and to install temp boom. Replacing with model 102324 sn 31. Placed wind direction, wind speed and temp in P code. Changed boom and placed all back in K code. Made log entry and left site secured. MA
Thu May 10, 2018	06:11:04	Ccarrasco	05/10/2018	Checked site status online
Fri May 11, 2018	06:12:36	Ccarrasco	05/11/2018	Checked site status online
Sat May 12, 2018	03:28:40			Automatic time sync
Mon May 14, 2018	07:16:58	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:28:44			Automatic time sync
Tue May 15, 2018	06:18:33	Ccarrasco	05/15/2018	Checked site status online
Wed May 16, 2018	05:32:08	Ccarrasco	05/16/2018	Checked site status online
Thu May 17, 2018	06:05:22	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:19:58	Ccarrasco	05/18/2018	Checked site status online
Sat May 19, 2018	03:28:43			Automatic time sync
Mon May 21, 2018	06:42:07	Ccarrasco	05/21/2018	Checked site status online
Mon May 21, 2018	12:18:28			5-21-2018: Entered the station to conduct monthly 5-point cal using SN 165- 46229-275, cal date 9-21-2018. 400: 787.26 mv: 393.63 ppb 300: 623.15 mv: 311.575 ppb 200: 411.17 mv: 205.58 ppb 70: 155.7 mv: 77.85 ppb 0: Also performed PMI 4-14. Placed the unit back into K code, made log entry and left site safely. MA u u q
Mon May 21, 2018	12:28:05			5-21-2018: Entered the station to conduct monthly 5-point cal using SN 165- 46229-275, cal date 9-21-2018. 400: 787.26 mv: 393.63 ppb 300: 623.15 mv: 311.575 ppb 200: 411.17 mv: 205.58 ppb 70: 155.7 mv: 77.85 ppb 0: 17.025 mv: 8.51 ppb Also performed PMI 4-14. Placed the unit back into K code., made log entry and left site safely. MA
Tue May 22, 2018	03:28:41			Automatic time sync
Tue May 22, 2018	06:41:59	Ccarrasco	05/22/2018	Checked site status online
Wed May 23, 2018	06:32:11	Ccarrasco	05/23/2018	Checked site status online
Thu May 24, 2018	06:40:14	Ccarrasco	05/24/2018	Checked site status online
Fri May 25, 2018	07:03:17	Ccarrasco	05/25/2018	Checked site status online
Sat May 26, 2018	03:28:40			Automatic time sync
Tue May 29, 2018	03:28:44			Automatic time sync
Tue May 29, 2018	06:22:50	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:46:25	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:27:35	Ccarrasco	05/31/2018	Checked site status online

Operator Logs for CAPCOG McKinney Roughs C684

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 CAPCOG McKinney Roughs C684 (48_021_0684)
Tue May 01, 2018	03:43:38			Automatic time sync
Sat May 05, 2018	03:43:38			Automatic time sync
Tue May 08, 2018	03:43:39			Automatic time sync
Tue May 08, 2018	14:19:22			Entered station to perform PMI 04-14, and to investigate low O3 readings. Checked all sample line connections and found no issues, instrument appears to be working normally with no alarms, and had not been adjusted during the last 5 pt cal. Will continue monitoring data for more troubleshooting ideas. Departed site, all secure. L Thompson
Thu May 10, 2018	06:11:18	Ccarrasco	05/10/2018	Checked site status online
Fri May 11, 2018	06:12:53	Ccarrasco	05/11/2018	Checked site status online
Mon May 14, 2018	07:17:14	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:43:40			Automatic time sync
Tue May 15, 2018	06:18:51	Ccarrasco	05/15/2018	Checked site status online
Wed May 16, 2018	05:32:28	Ccarrasco	05/16/2018	Checked site status online
Wed May 16, 2018	13:46:52			Entered station and placed met gear to q code and replaced 006172 with 006173. Tested new unit satisfactory placed back in k code. placed ozone unit to p-code and checked unit for leak, none found on unit, checked filter holder and found some leakage, replaced the filter holder and all inlet tubing again, and sealed all leakage, discussed tree trimming with LCRA staff and they will let us know if we can clear the limbs away from the inlet area. Placed ozone unit back to k code, met with Christiane Alepuz, made log entry and left site safe and secure. jrm/bw/ma
Thu May 17, 2018	06:05:39	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:20:16	Ccarrasco	05/18/2018	Checked site status online
Fri May 18, 2018	10:26:41			logged into station and adjusted magnetic declination and W/D offset. jmccraw
Mon May 21, 2018	06:42:25	Ccarrasco	05/21/2018	Checked site status online
Tue May 22, 2018	06:42:16	Ccarrasco	05/22/2018	Checked site status online
Tue May 22, 2018	11:36:47			5-22-18: Entered the station to conduct monthly 5 point cal using 165 sn 165- 46229-275 cal date 9-21-18. 400:801.5 mv: 400.78 300:614.7 mv: 307.35 ppb 200:407.2 mv: 203.6 ppb 70:149.8 mv: 74.9 ppb 0:2.07 mv: 1.03 ppb No adjustments were made, made log entry , left site safe. MA
Wed May 23, 2018	06:32:28	Ccarrasco	05/23/2018	Checked site status online
Thu May 24, 2018	06:40:30	Ccarrasco	05/24/2018	Checked site status online
Fri May 25, 2018	07:03:37	Ccarrasco	05/25/2018	Checked site status online
Sat May 26, 2018	03:43:38			Automatic time sync
Tue May 29, 2018	03:43:38			Automatic time sync
Tue May 29, 2018	06:23:07	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:46:41	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:27:50	Ccarrasco	05/31/2018	Checked site status online

Operator Logs for CAPCOG Lake Georgetown C690

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 CAPCOG Lake Georgetown C690 (48_491_0690)
Tue May 01, 2018	03:13:08			Automatic time sync
Sat May 05, 2018	03:13:08			Automatic time sync
Tue May 08, 2018	03:13:07			Automatic time sync
Thu May 10, 2018	06:11:33	Ccarrasco	05/10/2018	Checked site status online
Thu May 10, 2018	10:03:55			5-10-2018: Entered station to perform the particulate filter change. Also placed the met gear in p code, realigned the wind direction 180 degrees. Placed met gear back in K code. Left site safe and secure. MA/LT
Fri May 11, 2018	06:13:10	Ccarrasco	05/11/2018	Checked site status online
Sat May 12, 2018	03:13:09			Automatic time sync
Mon May 14, 2018	07:17:30	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:13:08			Automatic time sync
Tue May 15, 2018	06:19:08	Ccarrasco	05/15/2018	Checked site status online
Wed May 16, 2018	05:32:45	Ccarrasco	05/16/2018	Checked site status online
Thu May 17, 2018	06:05:54	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:20:31	Ccarrasco	05/18/2018	Checked site status online
Sat May 19, 2018	03:13:06			Automatic time sync
Mon May 21, 2018	06:42:43	Ccarrasco	05/21/2018	Checked site status online
Tue May 22, 2018	03:13:09			Automatic time sync
Tue May 22, 2018	06:42:33	Ccarrasco	05/22/2018	Checked site status online
Wed May 23, 2018	06:32:46	Ccarrasco	05/23/2018	Checked site status online
Thu May 24, 2018	06:40:46	Ccarrasco	05/24/2018	Checked site status online
Fri May 25, 2018	07:03:54	Ccarrasco	05/25/2018	Checked site status online
Fri May 25, 2018	11:33:59			5-25-18: Entered the station to conduct monthly 5 point cal using 165 sn 165- 74465-376 cal date 9-21-18. 400:801 mv: 400.8 ppb 300:600.7 mv: 300.35 ppb 200:400.6 mv: 200.3 ppb 70:140.4 mv: 70.2 ppb 0:.2.5 mv: 1.25 ppb No adjustments were made, changed particulate filter, made log entry , left site safe. MA
Sat May 26, 2018	03:13:08			Automatic time sync
Tue May 29, 2018	03:13:09			Automatic time sync
Tue May 29, 2018	06:23:27	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:46:59	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:28:13	Ccarrasco	05/31/2018	Checked site status online

Operator Logs for Gorzycki Middle School C1603

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 Gorzycki Middle School C1603 (48_453_1603)
Tue May 01, 2018	03:13:08			Automatic time sync
Sat May 05, 2018	03:13:09			Automatic time sync
Tue May 08, 2018	03:13:07			Automatic time sync
Thu May 10, 2018	06:12:35	Ccarrasco	05/10/2018	Checked site status online
Thu May 10, 2018	12:43:47			5-10-2018: Entered station Temp Ok, to perform bi-monthly checks and particulate filter change. Checked instrument flows, temp and pressure. All Ok, changed particulate filter. Made log entry and left site safe and secure. MA
Fri May 11, 2018	06:14:13	Ccarrasco	05/11/2018	Checked site status online
Sat May 12, 2018	03:13:12			Automatic time sync
Mon May 14, 2018	07:18:43	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:13:08			Automatic time sync
Tue May 15, 2018	06:20:22	Ccarrasco	05/15/2018	Checked site status online
Wed May 16, 2018	05:33:51	Ccarrasco	05/16/2018	Checked site status online
Thu May 17, 2018	06:07:21	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:21:37	Ccarrasco	05/18/2018	Checked site status online
Sat May 19, 2018	03:13:07			Automatic time sync
Mon May 21, 2018	06:43:55	Ccarrasco	05/21/2018	Checked site status online
Tue May 22, 2018	03:13:10			Automatic time sync
Tue May 22, 2018	06:43:39	Ccarrasco	05/22/2018	Checked site status online
Tue May 22, 2018	15:12:50			5-22-18: Entered the station to conduct monthly 5 point cal using 165 sn 165-46229-275 cal date 9-21-18. 400:801.3 mv: 400.65 300:618 mv: 309 ppb 200:411.7 mv: 205.8 ppb 70:152.4 mv: 76.2 ppb 0:2.33 mv: 1.16 ppb No adjustments were made, also performed pmi 04-14 made log entry , left site safe. MA
Wed May 23, 2018	06:33:55	Ccarrasco	05/23/2018	Checked site status online
Thu May 24, 2018	06:41:49	Ccarrasco	05/24/2018	Checked site status online
Fri May 25, 2018	07:05:01	Ccarrasco	05/25/2018	Checked site status online
Sat May 26, 2018	03:13:09			Automatic time sync
Tue May 29, 2018	03:13:08			Automatic time sync
Tue May 29, 2018	06:24:51	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:48:10	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:29:39	Ccarrasco	05/31/2018	Checked site status online

Operator Logs for Lockhart C1604

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 Lockhart C1604 (48_055_1604)
Tue May 01, 2018	03:13:09			Automatic time sync
Sat May 05, 2018	03:13:09			Automatic time sync
Tue May 08, 2018	03:13:07			Automatic time sync
Thu May 10, 2018	06:12:21	Ccarrasco	05/10/2018	Checked site status online
Thu May 10, 2018	13:47:38			5-10-2018: Entered the station to perform PMI 4-14. Left site safe and secure. MA
Fri May 11, 2018	06:13:58	Ccarrasco	05/11/2018	Checked site status online
Sat May 12, 2018	03:13:10			Automatic time sync
Mon May 14, 2018	07:18:28	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:13:09			Automatic time sync
Tue May 15, 2018	06:20:03	Ccarrasco	05/15/2018	Checked site status online
Wed May 16, 2018	05:33:36	Ccarrasco	05/16/2018	Checked site status online
Thu May 17, 2018	06:07:05	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:21:22	Ccarrasco	05/18/2018	Checked site status online
Sat May 19, 2018	03:13:06			Automatic time sync
Mon May 21, 2018	06:43:41	Ccarrasco	05/21/2018	Checked site status online
Tue May 22, 2018	03:13:12			Automatic time sync
Tue May 22, 2018	06:43:23	Ccarrasco	05/22/2018	Checked site status online
Wed May 23, 2018	06:33:39	Ccarrasco	05/23/2018	Checked site status online
Thu May 24, 2018	06:41:34	Ccarrasco	05/24/2018	Checked site status online
Thu May 24, 2018	13:56:01			5-24-18: Entered the station to conduct monthly 5 point cal using 165 sn 165-74465-376 cal date 9-21-18. 400:795.0 mv: 397.5 ppb 300:601.7 mv: 300.85ppb 200:400.05 mv: 200.02 ppb 70:140.5 mv: 70.25 ppb 0:.09 mv: 0.45 ppb No adjustments were made, changed particulate filter, made log entry , left site safe. MA
Fri May 25, 2018	07:04:45	Ccarrasco	05/25/2018	Checked site status online
Sat May 26, 2018	03:13:09			Automatic time sync
Tue May 29, 2018	03:13:09			Automatic time sync
Tue May 29, 2018	06:24:27	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:47:54	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:29:22	Ccarrasco	05/31/2018	Checked site status online

Operator Logs for CAPCOG San Marcos Staples Road C1675

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 CAPCOG San Marcos Staples Road C1675 (48_209_1675)
Tue May 01, 2018	03:43:38			Automatic time sync
Mon May 07, 2018	09:21:19			Entered station to perform PMI 04-14. Departed site, all secure. L Thompson
Tue May 08, 2018	03:43:40			Automatic time sync
Thu May 10, 2018	06:11:49	Ccarrasco	05/10/2018	Checked site status online
Fri May 11, 2018	06:13:27	Ccarrasco	05/11/2018	Checked site status online
Mon May 14, 2018	07:17:49	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:43:38			Automatic time sync
Tue May 15, 2018	06:19:26	Ccarrasco	05/15/2018	Checked site status online
Wed May 16, 2018	05:33:04	Ccarrasco	05/16/2018	Checked site status online
Thu May 17, 2018	06:06:13	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:20:47	Ccarrasco	05/18/2018	Checked site status online
Sat May 19, 2018	03:43:39			Automatic time sync
Mon May 21, 2018	06:43:03	Ccarrasco	05/21/2018	Checked site status online
Tue May 22, 2018	03:43:38			Automatic time sync
Tue May 22, 2018	06:42:50	Ccarrasco	05/22/2018	Checked site status online
Wed May 23, 2018	06:33:02	Ccarrasco	05/23/2018	Checked site status online
Wed May 23, 2018	15:29:38			5-23-18: Entered the station to conduct monthly 5 point cal using 165 sn 165-46229-275 cal date 9-21-18. 400:800.1 mv: 400.8 300:632. mv: 316.2 ppb 200:410.0 mv: 205.03 ppb 70:19.1 mv: 79. ppb 0:1.23 mv: 0.61 ppb No adjustments were made, changed particulate filter, made log entry , left site safe. MA
Thu May 24, 2018	06:41:02	Ccarrasco	05/24/2018	Checked site status online
Fri May 25, 2018	07:04:11	Ccarrasco	05/25/2018	Checked site status online
Sat May 26, 2018	03:43:40			Automatic time sync
Tue May 29, 2018	03:43:38			Automatic time sync
Tue May 29, 2018	06:23:47	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:47:19	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:28:33	Ccarrasco	05/31/2018	Checked site status online

Operator Logs for CAPCOG Hutto College Street C6602

Date	Time (CST)	Operator	Visit Date	Log Entry
				05/01/2018 -- 06/01/2018 CAPCOG Hutto College Street C6602 (48_491_6602)
Tue May 01, 2018	03:13:08			Automatic time sync
Sat May 05, 2018	03:13:10			Automatic time sync
Tue May 08, 2018	03:13:07			Automatic time sync
Thu May 10, 2018	06:12:06	Ccarrasco	05/10/2018	Checked site status online
Thu May 10, 2018	09:12:54			5-10-2018: Entered station to perform the particulate filter change. Left site safe and secure. MA/LT
Fri May 11, 2018	06:13:43	Ccarrasco	05/11/2018	Checked site status online
Sat May 12, 2018	03:13:09			Automatic time sync
Mon May 14, 2018	07:18:13	Ccarrasco	05/14/2018	Checked site status online
Tue May 15, 2018	03:13:09			Automatic time sync
Tue May 15, 2018	06:19:46	Ccarrasco	05/15/2018	Checked site status online
Wed May 16, 2018	05:33:21	Ccarrasco	05/16/2018	Checked site status online
Thu May 17, 2018	06:06:34	Ccarrasco	05/17/2018	Checked site status online
Fri May 18, 2018	06:21:04	Ccarrasco	05/18/2018	Checked site status online
Sat May 19, 2018	03:13:07			Automatic time sync
Mon May 21, 2018	06:43:24	Ccarrasco	05/21/2018	Checked site status online
Tue May 22, 2018	03:13:08			Automatic time sync
Tue May 22, 2018	06:43:07	Ccarrasco	05/22/2018	Checked site status online
Wed May 23, 2018	06:33:21	Ccarrasco	05/23/2018	Checked site status online
Thu May 24, 2018	06:41:20	Ccarrasco	05/24/2018	Checked site status online
Fri May 25, 2018	07:04:30	Ccarrasco	05/25/2018	Checked site status online
Fri May 25, 2018	14:45:14			5-25-18: Entered the station to conduct monthly 5 point cal using 165 sn 165- 74465-376 cal date 9-21-18. 400:799.7 mv: 399.85 ppb 300:599.5 mv: 299.75 ppb 200:401.45 mv: 200.725 ppb 70:139.3 mv: 69.65 ppb 0: 1 mv: .5 ppb No adjustments were made, changed particulate filter, made log entry, left site safe. MA
Sat May 26, 2018	03:13:12			Automatic time sync
Tue May 29, 2018	03:13:09			Automatic time sync
Tue May 29, 2018	06:24:07	Ccarrasco	05/29/2018	Checked site status online
Wed May 30, 2018	05:47:39	Ccarrasco	05/30/2018	Checked site status online
Thu May 31, 2018	06:29:05	Ccarrasco	05/31/2018	Could not check site status online

Attachment 3: CAPCOG 5 pt. calibration results*.

CAPCOG May 2018 – 5 point calibration results																
5pt. Monthly Calibrations **Site**	**Calibration Date**	**0 ppb check**	**% out**	**DQO met**	**70 ppb check**	**% out**	**DQO met**	**200 ppb check**	**% out**	**DQO met**	**300 ppb check**	**% out**	**DQO met**	**400 ppb check**	**% out**	**DQO met**
C601	5/24/2018	0.0	0.0	yes	70.2	0.3	yes	200.5	0.2	yes	300.3	0.1	yes	400.4	0.1	yes
C614	5/21/2018	8.5	1.7	yes	77.9	10.1	yes	205.6	2.7	yes	311.6	3.7	yes	393.6	-1.6	yes
C684	5/22/2018	1.0	0.2	yes	74.9	6.5	yes	203.6	1.8	yes	307.4	2.4	yes	400.8	0.2	yes
C690	5/25/2018	1.3	0.3	yes	70.2	0.3	yes	200.3	0.1	yes	300.4	0.1	yes	400.8	0.2	yes
C1603	5/22/2018	1.2	0.2	yes	76.2	8.1	yes	205.8	2.8	yes	309.0	2.9	yes	400.7	0.2	yes
C1604	5/24/2018	0.5	0.1	yes	70.3	0.4	yes	200.0	0.0	yes	300.9	0.3	yes	397.5	-0.6	yes
C1675	5/23/2018	0.6	0.1	yes	79.0	11.4	yes	205.0	2.5	yes	316.2	5.1	yes	400.8	0.2	yes
C6602	5/25/2018	0.5	0.1	yes	69.7	-0.5	yes	200.7	0.4	yes	299.8	-0.1	yes	399.9	0.0	yes

This table shows the percentage of error of the machine from the known source.
<3% outstanding; <5% excellent; <7% good; >7% DQO not met.*

In many cases we are able to maintain < 1% error for the most accurate data possible. None of the data was more than 5% out, and that is due to normal machine linearity imperfections.

Redone - CAPCOG May 2018 – 5 point calibration results																
5pt. Monthly Calibrations **Site**	**Calibration Date**	**0 ppb check**	**% out**	**DQO met**	**70 ppb check**	**% out**	**DQO met**	**200 ppb check**	**% out**	**DQO met**	**300 ppb check**	**% out**	**DQO met**	**400 ppb check**	**% out**	**DQO met**
C614*	6/5/2018	0.9	0.2	yes	69.9	-0.1	yes	199.2	-0.4	yes	300.4	0.1	yes	400.8	0.2	yes
C684*	6/4/2018	0.0	0.0	yes	70.1	0.1	yes	200.2	0.1	yes	300.4	0.1	yes	400.4	0.1	yes
C1603*	6/5/2018	1.0	0.2	yes	70.7	0.9	yes	200.8	0.4	yes	299.8	-0.1	yes	402.8	0.7	yes
C1675*	6/5/2018	0.1	0.0	yes	70.6	0.8	yes	200.3	0.1	yes	299.9	0.0	yes	401.6	0.4	yes

***The 5-point calibrations were completed again on the ozone analyzers at CAMS 614, 684, 1603 and 1675 with a different calibrator due to the original calibrations showing high percentage of errors.**
The standard that was used at these sites for the May calibrations started having pump issues, and was then repaired and recertified.