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# INVOICE COVER LETTER

Wednesday, May 16, 2018

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

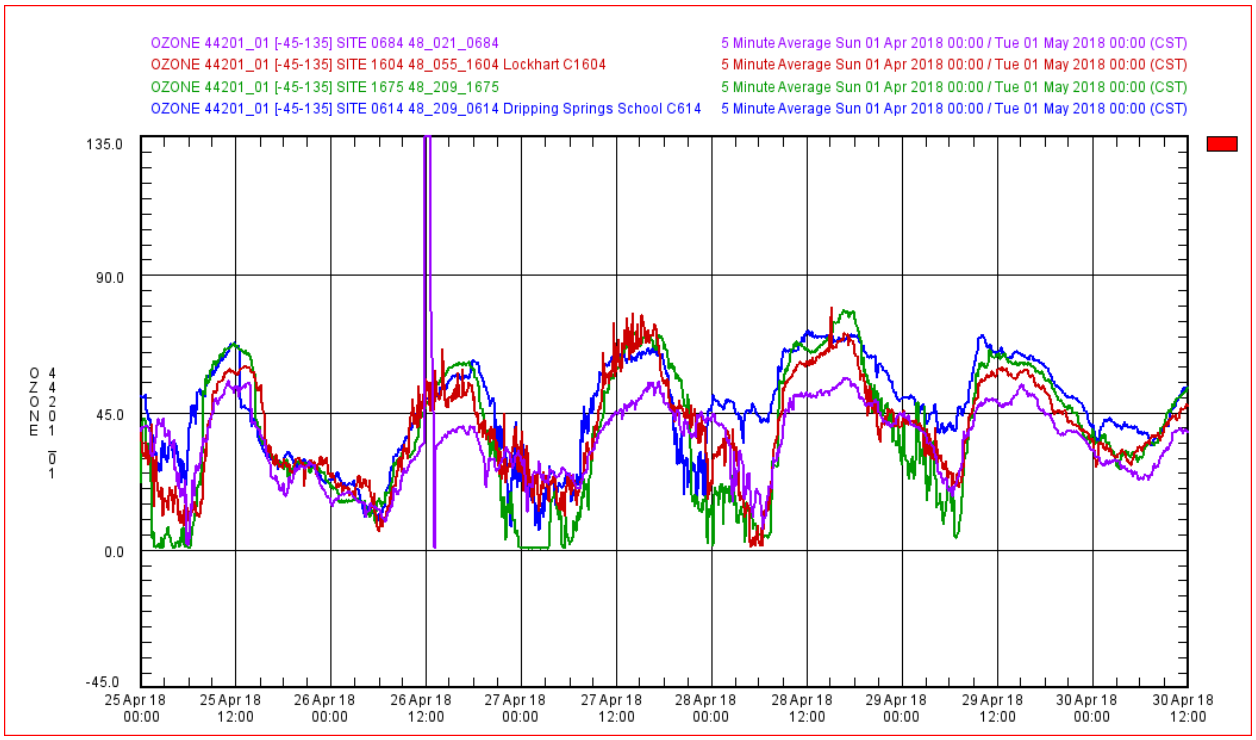
RE: Contract #: Operation of Continuous Air Monitoring Stations 2018 / 2019
Invoice #: CAPCOG 18-010
Invoice Period of Service: 4/1/18 – 4/30/18
Total Invoice Amount: $11,327.27

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. April Data Return reported in attachment 1: Data Return Report for Austin -- Region 11. All O3 sites reporting >95% data return, with the exception of C1603 Gorzycki Middle School, Explanation; TCEQ stopped our system use on the 13th and then sent an email out showing that the site was reading low at the end of the month. We then went to the site and discovered that the unit had been moved by school staff when a spill had occurred in the storage room. That activity had loosened a fitting on the water trap, when the fittings were tightened again data returned to normal. We had been to the site earlier in the day, but the spill did not happen until after we had departed the site. We did not know the unit was not working correctly when the 5-pt. was done. The data was marked as valid in the system, so I had to reject the data and the result was a lower than expected data return. This would not occur if we had not been locked out of the system. (see attached graph ) April Data Return Rh units were all at 100% except C1675, which was 99.0%. Individual RH reports are included for each site. TEOM data return from 601 is >95%.
2. Site activities are reported in attachment 2: CAPCOG activities log and operator's log set.
3. C690 Lake Georgetown site move has been completed, however the W/D boom was mounted 180 degrees out, so data is good after validation and a proper intercept was used to correct the data. We plan to correct that situation ASAP.
4. All units have good data that is reporting to LEADS system correctly. The data sets for March and April has been validated, TCEQ access finally restored on 5-8-18.
5. A site survey of C690 is on hold until CAPCOG decides to move forward.
6. We have reached out to EPA region 6 to determine the input parameters and approval process for data stream to go to Air Now. It is not a rush item for them since they are still responding to relief efforts, but some progress is being made.
7. We have obtained a loaner copy of the AIRODIS software system that we will are setting up a demonstration for you a soon as possible.
8. Our research indicates that no other contractors that were affected by the TCEQ system changeover.

9. McKinney Roughs is showing lower than other sites on the upper ends of the day's high, We checked the system out thoroughly found no leaks so we checked backwards in the data and found that the days upper peaks started dropping off the same time all the trees started to bud and leaf out. We would like to do a co-location to see if we are seeing the same thing we did at Hutt where the flora and fauna were scrubbing the upper ends. (purple line on graph)

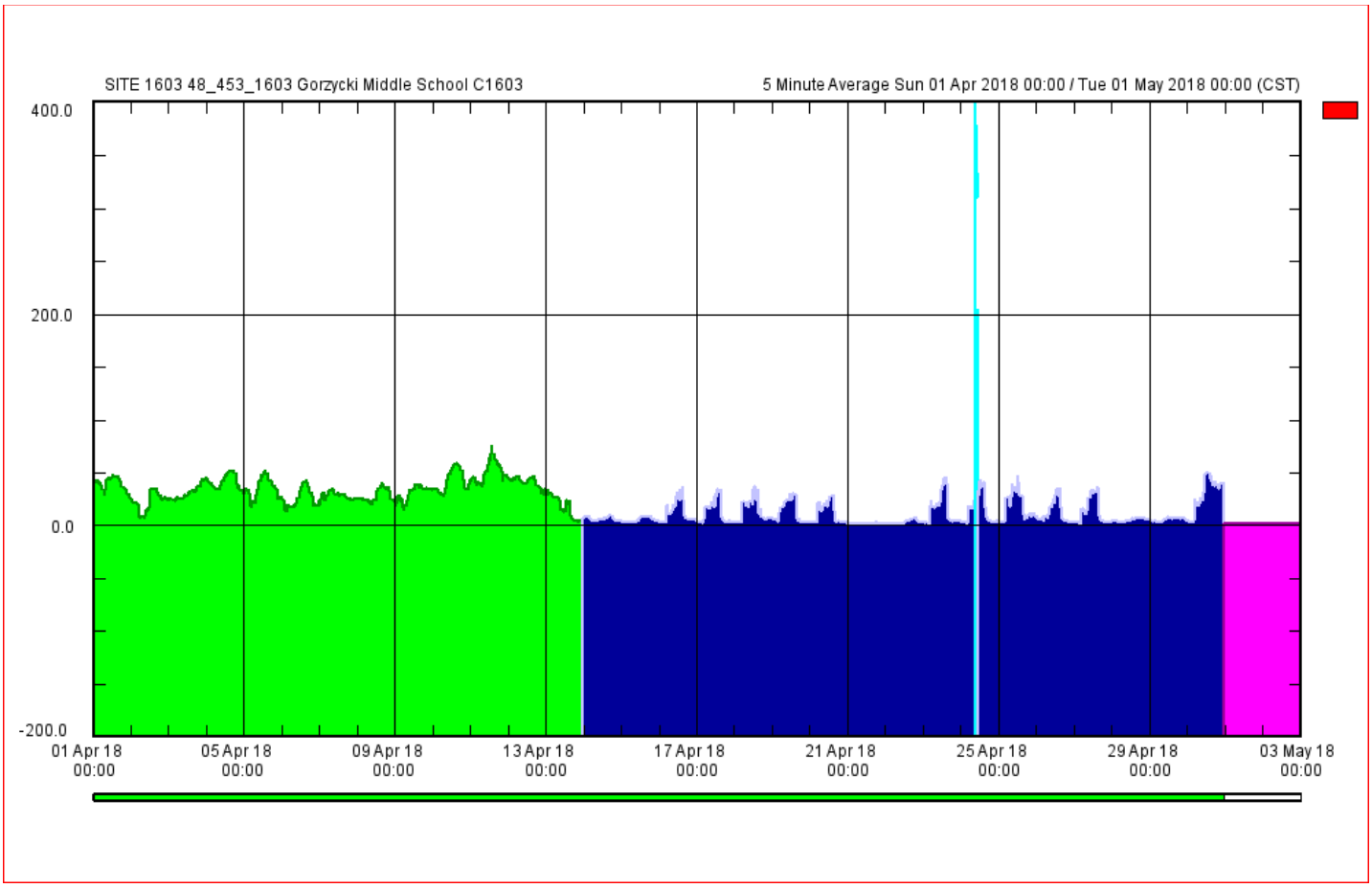



Please remit payment to address above, respectfully,
Jim McCraw
Founding Partner
Dios Dado Environmental Ltd.

## Attachment 1: CAPCOG Data Return Report – April 2018
**Austin - Region 11**

***00:00 LST April 1, 2018 through 00:00 LST May 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 | 99.6 | 99.7 | 100 | 100 | 100 | 100 |
| 614 | Dripping Springs School C614 | 99.7 | * | 99.7 | 100 | 100 | 100 | 100 |
| 684 | CAPCOG McKinney Roughs C684 | 99.9 | * | 99.9 | 100 | 100 | 100 | 100 |
| 690 | CAPCOG Lake Georgetown C690 | 99.7 | * | 99.7 | 100 | 100 | 100 | 100 |
| 1603 | Gorzycki Middle School C1603 | 43.2 | * | 43.2 | 100 | 100 | 100 | 100 |
| 1604 | Lockhart C1604 | 99.7 | * | 99.7 | 100 | 100 | 100 | 100 |
| 1605 | St. Edwards University C1605 | 100 | * | 100 | 100 | 100 | 100 | 100 |
| 1675 | CAPCOG San Marcos Staples Road C1675 | 99.7 | * | 99.7 | 100 | 100 | 100 | 100 |
| 6602 | CAPCOG Hutto College Street C6602 | 99.7 | * | 99.7 | 100 | 100 | 100 | 100 |
| | **Region 11 Averages** | **93.5** | **99.6** | **94.1** | **100** | **100** | **100** | **100** |



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

**00:00 LST April 1, 2018 through 00:00 LST May 1, 2018**
**Selected date range: 30 days (720 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** | |
| **Ambient or Ambient With Qualifier Code** | |
| VAL (Ambient Data) † | 5760 |
| **Summary** | |
| **Total Monitors** | 8 |
| **Total Null Data Code Flags** | 0 |
| **Total Ambient Flags †** | 5760 |
| **Total Samples** | 5760 |
| **Invalid Percent** | 0.0 |
| **Valid Percent** | 100.0 |
| | **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 April 1, 2018 through 00:00 LST May 1, 2018**
**Selected date range: 30 days (720 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) † | 720 |
| **Summary** | |
| **Total Monitors** | 1 |
| **Total Null Data Code Flags** | 0 |
| **Total Ambient Flags †** | 720 |
| **Total Samples** | 720 |
| **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) † | 720 |
| **Summary** | |
| **Total Monitors** | 1 |
| **Total Null Data Code Flags** | 0 |
| **Total Ambient Flags †** | 720 |
| **Total Samples** | 720 |
| **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) † | 720 |
| **Summary** | |
| **Total Monitors** | 1 |
| **Total Null Data Code Flags** | 0 |
| **Total Ambient Flags †** | 720 |
| **Total Samples** | 720 |
| **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) † | 720 |
| **Summary** | |
| **Total Monitors** | 1 |
| **Total Null Data Code Flags** | 1 |
| **Total Ambient Flags †** | 720 |
| **Total Samples** | 720 |
| **Invalid Percent** | 0.1 |
| **Valid Percent** | 100 |
| | **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) † | 720 |
| **Summary** | |
| **Total Monitors** | 1 |
| **Total Null Data Code Flags** | 0 |
| **Total Ambient Flags †** | 720 |
| **Total Samples** | 720 |
| **Invalid Percent** | 0.0 |
| **Valid Percent** | 100.0 |
| | **Rel Humid** |

**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) † | 720 |
| **Summary** | |
| **Total Monitors** | 1 |
| **Total Null Data Code Flags** | 0 |
| **Total Ambient Flags †** | 720 |
| **Total Samples** | 720 |
| **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** | |
| **Ambient or Ambient With Qualifier Code** | |
| VAL (Ambient Data) † | 720 |
| **Summary** | |
| **Total Monitors** | 1 |
| **Total Null Data Code Flags** | 0 |
| **Total Ambient Flags †** | 720 |
| **Total Samples** | 720 |
| **Invalid Percent** | 0.0 |
| **Valid Percent** | 100.0 |
| | **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.**

**April 2018 CAPCOG Activity Logs:**

| DATE | DESCRIPTON |
|---|---|
| 04/02/2018 | C601 – Monthly and quarterly TEOM audits, replaced TEOM pump and met sensors |
| 04/10/2018 | C1603 – PMI 4-14 attempted, no access due to Star testing |
| | C684 – PMI 4-14 |
| | C614 – PMI 4-14, adjusted heater |
| | C1604 – PMI 4-14, adjusted heater |
| 04/11/2018 | C690 – PMI 4-14 |
| | C6602 – PMI 4-14 |
| 04/12/2018 | C601 – PMI 4-14 |
| | C1675 – PMI 4-14 |
| | C1604 – Adjust heater |
| 04/13/2018 | C1603 – PMI 4-14 |
| | C6602 – Comms issue |
| 04/23/2018 | C1675 – Monthly 5 pt cal, PMI 4-14 |
| | C614 – Monthly 5 pt cal, PMI 4-14, checked WS sensor and changed temp boom |
| 04/24/2018 | C1603 – Monthly 5 pt cal, PMI 4-14 |
| | C1604 – Monthly 5 pt cal, PMI 4-14 |
| 04/25/2018 | C690 – Monthly 5 pt cal, PMI 4-14 |
| | C6602 – Monthly 5 pt cal, PMI 4-14 |
| 04/26/2018 | C601 – Monthly 5 pt cal, PMI 4-14 |
| | C684 – Monthly 5 pt cal, PMI 4-14 |
| 04/30/2018 | C1603 – Check low O3 readings, found and tightened loose fitting on sample line. |

## April 2018 CAPCOG Operator Logs:

### Operator Logs for Fayette County C601

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 Fayette County C601 (48_149_0001) |
| Mon Apr 02, 2018 | 09:26:44 | MAguilar | 04/02/2018 | Checked site status online |
| Mon Apr 02, 2018 | 11:29:47 | | | Entered station to conduct monthly and quarterly TEOM verifications. TEOM values pre audit: OK, 4, 41%, 7.3, 0.070, 253.02804, 50,50,50, 3.00, 13.63, tot mass 858.74. TEOM pump would not restart during the leak check porck in K code. Departing site, all secure. L Thompson |
| Mon Apr 02, 2018 | 11:31:22 | | | Entered station to conduct monthly and quarterly TEOM verifications. TEOM values pre audit: OK, 4, 41%, 7.3, 0.070, 253.02804, 50,50,50, 3.00, 13.63, t s/n T17409, and Model 102139, s/n R 10911. Placed all instruments back in K code. Departing site, all secure. L Thompson |
| Mon Apr 02, 2018 | 11:32:46 | | | Entered station to conduct monthly and quarterly TEOM verifications. TEOM values pre audit: OK, 4, 41%, 7.3, 0.070, 253.02804, 50,50,50, 3.00, 13.63, tot mass 858.74. TEOM pump would not restart during the leak check portion of the audits so I replaced pump. This pump was just replaced in January this year, only lasted 3 months. Performed TEOM PMI's 41-030,41-030a and b. TEOM passed both verifications, final values= OK, 4, 20%, 2.2, 0.048, 253.46448, 50, 50, 50, 3.00, 13.62, tot mass=0.02(Changed filter). Mark Olsavsky with LCRA was onsite to do weekly TEOM check and assist with changing met sensors (PMI 26-360). New sensors are Model 100075S, s/n T17409, and Model 102139, s/n R 10911. Placed all instruments back in K code. Departing site, all secure. L Thompson |
| Tue Apr 03, 2018 | 03:28:48 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:26:18 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:34:45 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:32:03 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:33:38 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:28:50 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:50:30 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 03:28:49 | | | Automatic time sync |
| Tue Apr 10, 2018 | 05:51:34 | Ccarrasco | 04/10/2018 | Checked site status online |
| Wed Apr 11, 2018 | 06:32:32 | Ccarrasco | 04/11/2018 | Checked site status online |
| Thu Apr 12, 2018 | 06:29:35 | Ccarrasco | 04/12/2018 | Checked site status online |
| Thu Apr 12, 2018 | 10:03:21 | | | Entered station to perform PMI 4-14. Departed site, all secure. L Thompson |
| Fri Apr 13, 2018 | 05:22:14 | Ccarrasco | 04/13/2018 | Checked site status online |
| Sat Apr 14, 2018 | 13:42:22 | | | status ok, mode 4, % filter 32, mass 3.2, noise .084, Freq 253.26589, total mass 340.38, case temp 50, air temp 49.99, cap temp 50, main flow 2.99, aux flow 13.63, Ross Rother LCRA 4/14/18 |

| | | | | |
|---|---|---|---|---|
| Mon Apr 16, 2018 | 10:24:49 | Ccarrasco | 04/16/2018 | Checked site status online |
| Tue Apr 17, 2018 | 03:28:51 | | | Automatic time sync |
| Sat Apr 21, 2018 | 03:28:49 | | | Automatic time sync |
| Sat Apr 21, 2018 | 07:18:20 | | | OK, 4, 36%, 13.5 mass,0.057 noise, 253.17372 freq, 498.31 total mass, all temps 50, 3.0 main flow, 13.62 aux flow Billy Bishop LCRA |
| Tue Apr 24, 2018 | 03:28:49 | | | Automatic time sync |
| Thu Apr 26, 2018 | 10:37:21 | | | Entered station to conduct 5 pt calibration with transfer standard S/N 165-45140-273, cal date 02/16/18. 400 set = 806.65 mv = 403.325 ppb 300 set = 602.35 mv = 301.175 ppb 200 set = 403.7 mv = 201.85 ppb 70 set = 142.4mv = 71.2 ppb 0 set = 3.2 mv = 1.6 ppb Instrument passed cal, no adjustments made. Placed instrument back in K code. Departing site, all secure. L Thompson/ M Aguilar |
| Fri Apr 27, 2018 | 10:15:31 | | | 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 |
| Sat Apr 28, 2018 | 03:28:50 | | | Automatic time sync |

**Operator Logs for Dripping Springs School C614**

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 Dripping Springs School C614 (48_209_0614) |
| Mon Apr 02, 2018 | 09:26:57 | MAguilar | 04/02/2018 | Checked site status online |
| Tue Apr 03, 2018 | 03:28:44 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:26:34 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:35:00 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:32:22 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:33:54 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:28:43 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:50:45 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 03:28:40 | | | Automatic time sync |
| Tue Apr 10, 2018 | 05:51:46 | Ccarrasco | 04/10/2018 | Checked site status online |
| Tue Apr 10, 2018 | 10:24:08 | | | Entered station to perform PMI 04-14 and to again adjust heater temperature. Departed site, all secure. L Thompson |
| Wed Apr 11, 2018 | 06:32:45 | Ccarrasco | 04/11/2018 | Checked site status online |
| Thu Apr 12, 2018 | 06:29:48 | Ccarrasco | 04/12/2018 | Checked site status online |
| Fri Apr 13, 2018 | 05:22:29 | Ccarrasco | 04/13/2018 | Checked site status online |
| Mon Apr 16, 2018 | 10:25:03 | Ccarrasco | 04/16/2018 | Checked site status online |
| Tue Apr 17, 2018 | 03:28:43 | | | Automatic time sync |
| Sat Apr 21, 2018 | 03:28:44 | | | Automatic time sync |
| Mon Apr 23, 2018 | 13:19:02 | | | Entered station to conduct 5-pt calibration with Transfer standard sn 165-45140-273 cal date 2/16/2018, completed successfully, no adjustments made. 400 set = 799.7mv = 399.85 ppb, 300 set = 600.mv = 300.45 ppb, 200 set = 403.15mv = 201.575 ppb, 70 set = 140.1mv = 70.5 ppb, zero set = 2.65mv = 1.325 ppb, Checked on LIM condition reported on wind speed sensor, found no problems with sensor, and it came back online before arriving onsite, but found aspirator fan not working on temperature boom, so replaced it with a spare that was onsite, CAPCOG s/n 006217. Also performed PMI 4-14. Placed instrument back in K code. Departing site all secure.L Thompson/ M Aguilar |
| Tue Apr 24, 2018 | 03:28:40 | | | Automatic time sync |
| Sat Apr 28, 2018 | 03:28:40 | | | Automatic time sync |

**Operator Logs for CAPCOG McKinney Roughs C684**

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 CAPCOG McKinney Roughs C684 (48_021_0684) |
| Mon Apr 02, 2018 | 09:27:16 | MAguilar | 04/02/2018 | Checked site status online |
| Tue Apr 03, 2018 | 03:43:40 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:26:51 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:35:16 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:32:42 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:34:10 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:43:45 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:51:02 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 05:52:00 | Ccarrasco | 04/10/2018 | Checked site status online |
| Tue Apr 10, 2018 | 09:08:26 | | | Entered station to perform PMI 04-14. Departed site, all secure. L Thompson |
| Wed Apr 11, 2018 | 06:33:01 | Ccarrasco | 04/11/2018 | Checked site status online |
| Thu Apr 12, 2018 | 06:30:03 | Ccarrasco | 04/12/2018 | Checked site status online |
| Fri Apr 13, 2018 | 05:22:46 | Ccarrasco | 04/13/2018 | Checked site status online |
| Mon Apr 16, 2018 | 10:25:19 | Ccarrasco | 04/16/2018 | Checked site status online |
| Sat Apr 21, 2018 | 03:43:46 | | | Automatic time sync |
| Tue Apr 24, 2018 | 03:43:39 | | | Automatic time sync |
| Thu Apr 26, 2018 | 13:12:39 | | | Entered station to conduct 5-pt calibration with Transfer standard sn 165-45140-273 cal date 2/16/2018. 400 set = 801.45mv = 400.725 ppb, 300 set = 602.05mv = 301.025 ppb, 200 set = 402.85mv = 201.425 ppb, 70 set = 141.65mv = 70.825 ppb, zero set = 0.55 mv = 0.275 ppb, Instrument passed cal, no adjustments. Also performed PMI 4-14. Placed unit back in k-code and departed station all secure. L Thompson/M Aguilar |
| Sat Apr 28, 2018 | 03:43:39 | | | Automatic time sync |

**Operator Logs for CAPCOG Lake Georgetown C690**

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 CAPCOG Lake Georgetown C690 (48_491_0690) |
| Mon Apr 02, 2018 | 09:27:28 | MAguilar | 04/02/2018 | Checked site status online |
| Tue Apr 03, 2018 | 03:13:09 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:27:09 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:35:35 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:33:02 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:34:25 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:13:07 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:51:18 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 03:13:09 | | | Automatic time sync |
| Tue Apr 10, 2018 | 05:52:15 | Ccarrasco | 04/10/2018 | Checked site status online |
| Wed Apr 11, 2018 | 06:33:15 | Ccarrasco | 04/11/2018 | Checked site status online |
| Wed Apr 11, 2018 | 09:10:28 | | | Entered station to perform PMI 4-14, also adjusted heater temperature again. Departing site, all secure. L Thompson |
| Thu Apr 12, 2018 | 06:30:18 | Ccarrasco | 04/12/2018 | Checked site status online |
| Fri Apr 13, 2018 | 05:23:02 | Ccarrasco | 04/13/2018 | Checked site status online |
| Mon Apr 16, 2018 | 10:25:34 | Ccarrasco | 04/16/2018 | Checked site status online |
| Tue Apr 17, 2018 | 03:13:10 | | | Automatic time sync |
| Sat Apr 21, 2018 | 03:13:10 | | | Automatic time sync |
| Tue Apr 24, 2018 | 03:13:10 | | | Automatic time sync |
| Wed Apr 25, 2018 | 10:42:10 | | | Entered station to conduct 5-pt calibration with Transfer standard sn 165-45140-273 cal date 2/16/2018. 400 set = 802.5mv = 401.25 ppb, 300 set = 601.45mv = 300.725 ppb, 200 set = 403.65mv = 201.825 ppb, 70 set = 141.65mv = 70.825 ppb, zero set = 3.65 mv = 1.825 ppb, Instrument passed cal, no adjustments made. Also performed PMI 04-14. Placed unit back in k-code and departed station all secure. L Thompson /M Aguilar |
| Sat Apr 28, 2018 | 03:13:10 | | | Automatic time sync |

**Operator Logs for Gorzycki Middle School C1603**

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 Gorzycki Middle School C1603 (48_453_1603) |
| Mon Apr 02, 2018 | 09:28:37 | MAguilar | 04/02/2018 | Checked site status online |
| Tue Apr 03, 2018 | 03:13:08 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:28:17 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:36:42 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:34:20 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:35:27 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:13:07 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:52:25 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 03:13:11 | | | Automatic time sync |
| Tue Apr 10, 2018 | 05:53:19 | Ccarrasco | 04/10/2018 | Checked site status online |
| Wed Apr 11, 2018 | 06:34:13 | Ccarrasco | 04/11/2018 | Checked site status online |
| Thu Apr 12, 2018 | 06:31:17 | Ccarrasco | 04/12/2018 | Checked site status online |
| Fri Apr 13, 2018 | 05:24:10 | Ccarrasco | 04/13/2018 | Checked site status online |
| Fri Apr 13, 2018 | 09:56:11 | | | Entered station to perform PMI 4-14. Departed site, all secure. L Thompson |
| Mon Apr 16, 2018 | 10:26:37 | Ccarrasco | 04/16/2018 | Checked site status online |
| Tue Apr 17, 2018 | 03:13:09 | | | Automatic time sync |
| Sat Apr 21, 2018 | 03:13:10 | | | Automatic time sync |
| Tue Apr 24, 2018 | 03:13:08 | | | Automatic time sync |
| Tue Apr 24, 2018 | 10:56:36 | | | Entered station to conduct 5-pt calibration with Transfer standard sn 165-45140-273 cal date 2/16/2018 and completed successfully, no adjustments made 400 set = 802.65mv = 401.325 ppb, 300 set = 602.6mv = 301.3 ppb, 200 set = 404.4mv = 202.2 ppb, 70 set = 140.65mv = 70.325 ppb, zero set = 1.8 mv = 0.9 ppb, Also performed PMI 4-14. Placed unit back in k-code and departed station all secure.L Thompson/M.Aguilar |
| Sat Apr 28, 2018 | 03:13:10 | | | Automatic time sync |
| Mon Apr 30, 2018 | 10:58:08 | | | Entered station to investigate low O3 readings, checked sample line and found a loose fitting near filter holder, tightened fitting and instrument readings instantly increased, so tightening fitting fixed the problem. Departing site, all secure. L Thompson |

**Operator Logs for Lockhart C1604**

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 Lockhart C1604 (48_055_1604) |
| Mon Apr 02, 2018 | 09:28:26 | MAguilar | 04/02/2018 | Checked site status online |
| Tue Apr 03, 2018 | 03:13:09 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:28:01 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:36:23 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:34:04 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:35:12 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:13:06 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:52:08 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 03:13:09 | | | Automatic time sync |
| Tue Apr 10, 2018 | 05:53:04 | Ccarrasco | 04/10/2018 | Checked site status online |
| Tue Apr 10, 2018 | 11:38:18 | | | Entered station to perform PMI 04-14 and to again adjust heater temperature. Departed site, all secure. L Thompson |
| Wed Apr 11, 2018 | 06:34:00 | Ccarrasco | 04/11/2018 | Checked site status online |
| Thu Apr 12, 2018 | 06:31:03 | Ccarrasco | 04/12/2018 | Checked site status online |
| Thu Apr 12, 2018 | 12:43:03 | | | Entered station to adjust temperature again. Departed site, all secure. L Thompson |
| Fri Apr 13, 2018 | 05:23:54 | Ccarrasco | 04/13/2018 | Checked site status online |
| Mon Apr 16, 2018 | 10:26:22 | Ccarrasco | 04/16/2018 | Checked site status online |
| Tue Apr 17, 2018 | 03:13:10 | | | Automatic time sync |
| Sat Apr 21, 2018 | 03:13:10 | | | Automatic time sync |
| Tue Apr 24, 2018 | 03:13:10 | | | Automatic time sync |
| Tue Apr 24, 2018 | 13:31:56 | | | Entered station to conduct 5-pt calibration with Transfer standard sn 165-45140-273 cal date 2/16/2018 and completed successfully. 400 set = 801.35mv = 400.675 ppb, 300 set = 602.45mv = 301.225 ppb, 200 set = 402.15mv = 201.075 ppb, 70 set = 141.75mv = 70.875 ppb, zero set = 0.1 mv = 0.05 ppb, Instrument passed cal, no adjustments made. Also performed PMI 4-14. Placed unit in k-code and departed station, all secure. L Thompson /M Aguilar |
| Sat Apr 28, 2018 | 03:13:10 | | | Automatic time sync |

**Operator Logs for CAPCOG San Marcos Staples Road C1675**

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 CAPCOG San Marcos Staples Road C1675 (48_209_1675) |
| Mon Apr 02, 2018 | 09:27:45 | MAguilar | 04/02/2018 | Checked site status online |
| Tue Apr 03, 2018 | 03:43:42 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:27:27 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:35:51 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:33:24 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:34:41 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:43:37 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:51:38 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 03:43:39 | | | Automatic time sync |
| Tue Apr 10, 2018 | 05:52:32 | Ccarrasco | 04/10/2018 | Checked site status online |
| Wed Apr 11, 2018 | 06:33:31 | Ccarrasco | 04/11/2018 | Checked site status online |
| Thu Apr 12, 2018 | 06:30:35 | Ccarrasco | 04/12/2018 | Checked site status online |
| Thu Apr 12, 2018 | 12:00:47 | | | Entered station to perform PMI 4-14 and to install a new UPS. Placed O3 unit in P code while it was powered off, and returned O3 to K code after UPS was installed. Departed site, all secure. L Thompson |
| Fri Apr 13, 2018 | 05:23:21 | Ccarrasco | 04/13/2018 | Checked site status online |
| Mon Apr 16, 2018 | 10:25:51 | Ccarrasco | 04/16/2018 | Checked site status online |
| Sat Apr 21, 2018 | 03:43:38 | | | Automatic time sync |
| Mon Apr 23, 2018 | 10:43:52 | | | Entered station to conduct 5-pt calibration with Transfer standard sn 165-45140-273 cal date 2/16/2018. 400 set = 800.85mv = 400.425 ppb, 300 set = 601.8mv = 300.9 ppb, 200 set = 402.55mv = 201.275 ppb, 70 set = 139.6mv = 69.8 ppb, zero set = 0.55 mv = 0.275 ppb, Instrument passed cal, no adjustments made. Also performed PMI 4-14. Placed unit back in k-code and departed station all secure.L Thompson/M Aguilar |
| Sat Apr 28, 2018 | 03:43:39 | | | Automatic time sync |

**Operator Logs for CAPCOG Hutto College Street C6602**

| Date | Time (CST) | Operator | Visit Date | Log Entry |
|---|---|---|---|---|
| | | | | 04/01/2018 -- 05/01/2018 CAPCOG Hutto College Street C6602 (48_491_6602) |
| Mon Apr 02, 2018 | 09:28:04 | MAguilar | 04/02/2018 | Checked site status online |
| Tue Apr 03, 2018 | 03:13:08 | | | Automatic time sync |
| Tue Apr 03, 2018 | 05:27:46 | Ccarrasco | 04/03/2018 | Checked site status online |
| Wed Apr 04, 2018 | 06:36:08 | Ccarrasco | 04/04/2018 | Checked site status online |
| Thu Apr 05, 2018 | 06:33:46 | Ccarrasco | 04/05/2018 | Checked site status online |
| Fri Apr 06, 2018 | 06:34:58 | Ccarrasco | 04/06/2018 | Checked site status online |
| Sat Apr 07, 2018 | 03:13:06 | | | Automatic time sync |
| Mon Apr 09, 2018 | 05:51:52 | Ccarrasco | 04/09/2018 | Checked site status online |
| Tue Apr 10, 2018 | 03:13:09 | | | Automatic time sync |
| Tue Apr 10, 2018 | 05:52:49 | Ccarrasco | 04/10/2018 | Checked site status online |
| Wed Apr 11, 2018 | 06:33:47 | Ccarrasco | 04/11/2018 | Checked site status online |
| Wed Apr 11, 2018 | 09:49:17 | | | Entered station to perform PMI 04-14. Departed site, all secure. L Thompson |
| Thu Apr 12, 2018 | 06:30:50 | Ccarrasco | 04/12/2018 | Checked site status online |
| Fri Apr 13, 2018 | 05:23:38 | Ccarrasco | 04/13/2018 | Checked site status online |
| Fri Apr 13, 2018 | 12:32:15 | | | Entered station to check comms issue, found the UPS powered off but O3 unit plugged into it was still running, modem and possibly Zeno had no power. Turned UPS back on, everything powered back up and UPS appers to be functioning normally, shows good battery level and no alarms. All other eqipment appears to be functioning correctly. Departing site, all secure. L Thompson |
| Mon Apr 16, 2018 | 10:26:06 | Ccarrasco | 04/16/2018 | Checked site status online |
| Tue Apr 17, 2018 | 03:13:09 | | | Automatic time sync |
| Sat Apr 21, 2018 | 03:13:09 | | | Automatic time sync |
| Tue Apr 24, 2018 | 03:13:09 | | | Automatic time sync |
| Wed Apr 25, 2018 | 12:56:33 | | | Entered station to conduct 5-pt calibration with Transfer standard sn 165-45140-273 cal date 02/16/2018. 400 set = 802.85mv = 401.425 ppb, 300 set = 601.3mv = 300.65 ppb, 200 set = 400.9mv = 200.45 ppb, 70 set = 141.3mv = 70.65 ppb, zero set = 1.55 mv = 0.775 ppb, Instrument passed cal, no adjustments made. Also performed PMI 4-14. Placed unit back in k-code and departed site, all secure.L Thompson/ M. Aguilar |
| Sat Apr 28, 2018 | 03:13:09 | | | Automatic time sync |

## Attachment 3: CAPCOG 5 pt calibration results*.

| CAPCOG April 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 | 4/26/2018 | 3.2 | 0.6 | yes | 71.2 | 1.7 | yes | 201.9 | 0.9 | yes | 301.2 | 0.4 | yes | 403.3 | 0.8 | yes |
| C614 | 4/23/2018 | 1.3 | 0.3 | yes | 70.5 | 0.7 | yes | 201.6 | 0.8 | yes | 300.5 | 0.2 | yes | 399.9 | 0.0 | yes |
| C684 | 4/26/2018 | 0.3 | 0.1 | yes | 70.8 | 1.1 | yes | 201.4 | 0.7 | yes | 301.0 | 0.3 | yes | 400.7 | 0.2 | yes |
| C690 | 4/25/2018 | 1.8 | 0.4 | yes | 70.8 | 1.1 | yes | 201.8 | 0.9 | yes | 300.7 | 0.2 | yes | 401.2 | 0.3 | yes |
| C1603 | 4/24/2018 | 0.9 | 0.2 | yes | 70.3 | 0.4 | yes | 202.2 | 1.1 | yes | 301.3 | 0.4 | yes | 401.3 | 0.3 | yes |
| C1604 | 4/24/2018 | 0.1 | 0.0 | yes | 70.9 | 1.3 | yes | 201.1 | 0.5 | yes | 301.2 | 0.4 | yes | 400.7 | 0.2 | yes |
| C1675 | 4/23/2018 | 0.3 | 0.1 | yes | 70.0 | 0.0 | yes | 201.2 | 0.6 | yes | 300.9 | 0.3 | yes | 400.4 | 0.1 | yes |
| C6602 | 4/25/2018 | 0.8 | 0.2 | yes | 70.7 | 1.0 | yes | 200.5 | 0.2 | yes | 300.7 | 0.2 | yes | 401.4 | 0.3 | 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.