

## File Names

14:44 Monday, March 21, 2005 1

File #	Original File Name
1	PAC2001_CSRT_LAG_IONS-PM25_FP-IC-CE_20010809D7_V1.csv

## Dataset Key Phrases

Data Exchange Standard Version	Principal Investigator Name--last first	Principal Investigator Affiliation	File Contents Description--short long	Sampling Interval As Reported in Main Table	Sampling Frequency Of Data in Main Table	Quality Control Level	Organization Acronym	Organization Name	Data Usage Acknowledgement	Study Or Network Acronym	Study Or Network Name
NARSTO 2001/09/27 (2.212)	Graham ; Lisa A.	Environment Canada, Emissions Research and Measurement Division	PM2.5_ions ; PM2.5 organic and inorganic ions by ion chromatography and capillary electrophoresis	3 hour	Same as sampling interval	1	ENVCAN	Environment Canada, Emissions Research and Measurement Division	Lisa A. Graham, Environment Canada, ERMD, 335 River Rd, Ottawa, Ontario, CANADA, K1A 0H3	PAC2001	Pacific 2001

Country Code	State Or Province Code	Principal Investigator Contact Information	Co-investigator Name--last first	Co-investigator Affiliation	Name And Affiliation Of Person Who Generated This File	Date Of Last Modification To Data In Main Table	Name And Version Of Software Used To Create This File	Companion File Name format And Version	Date This File Generated archive Version Number
CA (CANADA)	BC	Lisa A. Graham, Environment Canada, ERMD, 335 River Rd, Ottawa, Ontario, CANADA, K1A 0H3	Gray ; Cara-Lynn	Environment Canada, Emissions Research and Measurement Division	Lisa A. Graham, Environment Canada, ERMD, 335 River Rd, Ottawa, Ontario, CANADA, K1A 0H3	2002/05/06	MS Excel 2000	None ; Not applicable	2002/03/28 ; 1

Table Explanation Of Zero Or Negative Values	Table Explanation Of Reported Detection Limit Values	Table Explanation Of Reported Uncertainty	Table User Note	Table User Note2	Table User Note3	Table User Note4	Table Name	Table Focus
no zero or negative data values are used in this file, -999 indicates missing data value	Values below detection limit are replaced by the detection limit value for that analytical run and flagged V7 (Valid value but set equal to the detection limit (DL) because the measured value was below the DL).		None	None			PM25 organic + inorganic ions	Surface--fixed

## Site Information

Site ID	Name	State Province code	Latitude: decimal degree	Longitude: decimal degree	Sampling height above ground (m)	Ground elevation above sea level (m)	Site land use	Site location setting	Measurement start date	Measurement end date	Co-incident measurements	Study site ID	Lat lon accuracy
PC01CABCCSTN	Cassiar Tunnel (North End)	BC	49.28389	-123.03194	6.0	-99.9	Mobile	Urban and center city	2001/08/09	2001/08/15			.
PC01CABCCSTS	Cassiar Tunnel (South End)	BC	49.27889	-123.03167	6.0	-99.9	Mobile	Urban and center city	2001/08/09	2001/08/15			.

## NARSTO Standard Flags

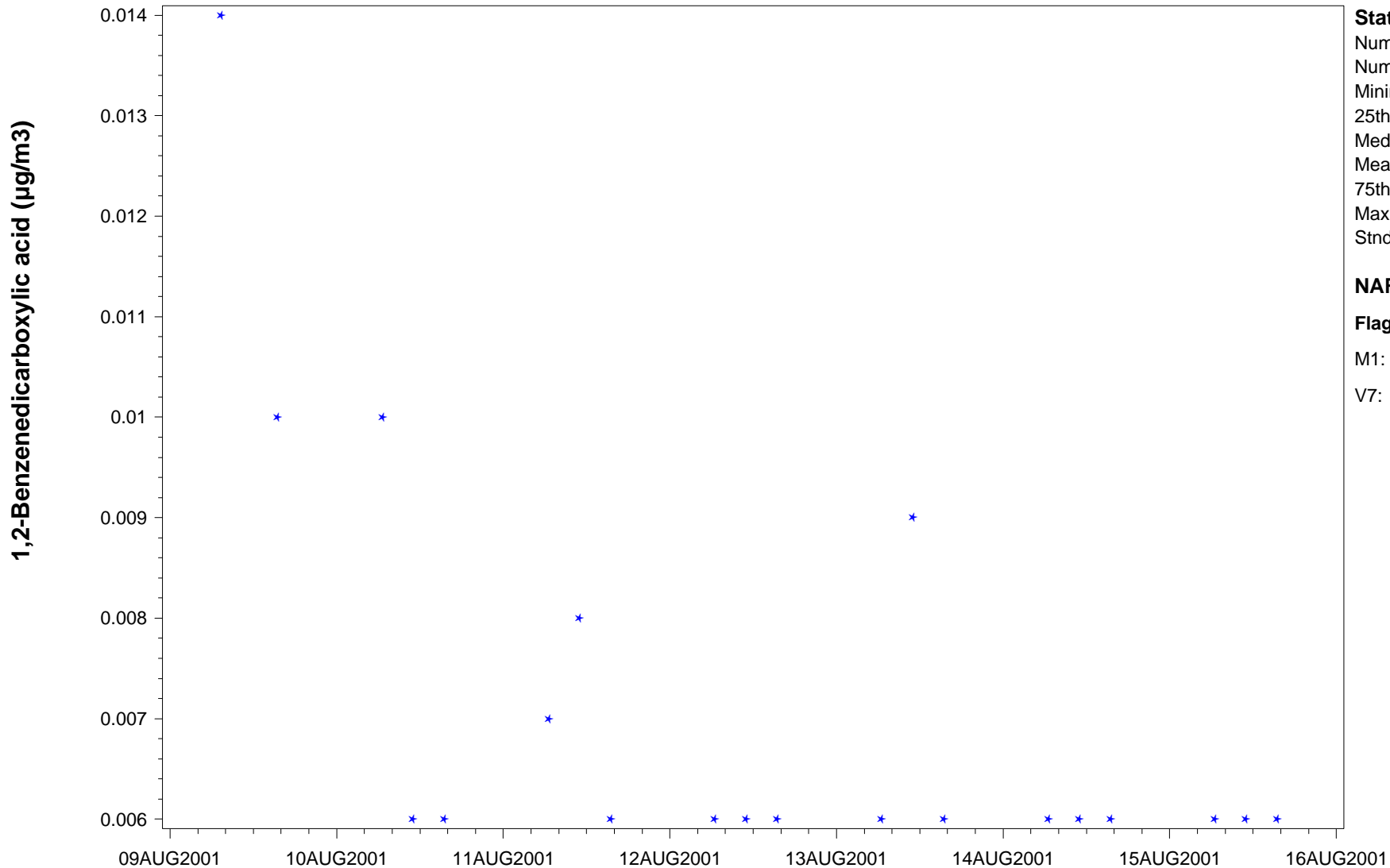
Flag: NARSTO	Description
H1	Historical data that have not been assessed or validated
M1	Missing value because no value is available
M2	Missing value because invalidated by data originator
V0	Valid value
V1	Valid value but comprised wholly or partially of below detection limit data
V2	Valid estimated value
V3	Valid interpolated value
V4	Valid value despite failing to meet some QC or statistical criteria
V5	Valid value but qualified because of possible contamination (e.g., pollution source, laboratory contamination source)
V6	Valid value but qualified due to non-standard sampling conditions (e.g., instrument malfunction, sample handling)
V7	Valid value but set equal to the detection limit (DL) because the measured value was below the DL

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **1,2-Benzenedicarboxylic acid** Common Name: **Phthalic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C88-99-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.006**  
 25th Percentile: **0.006**  
 Median: **0.006**  
 Mean: **0.007**  
 75th Percentile: **0.0075**  
 Maximum: **0.014**  
 Stnd Dev.: **0.002**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

Time Zone: PDT

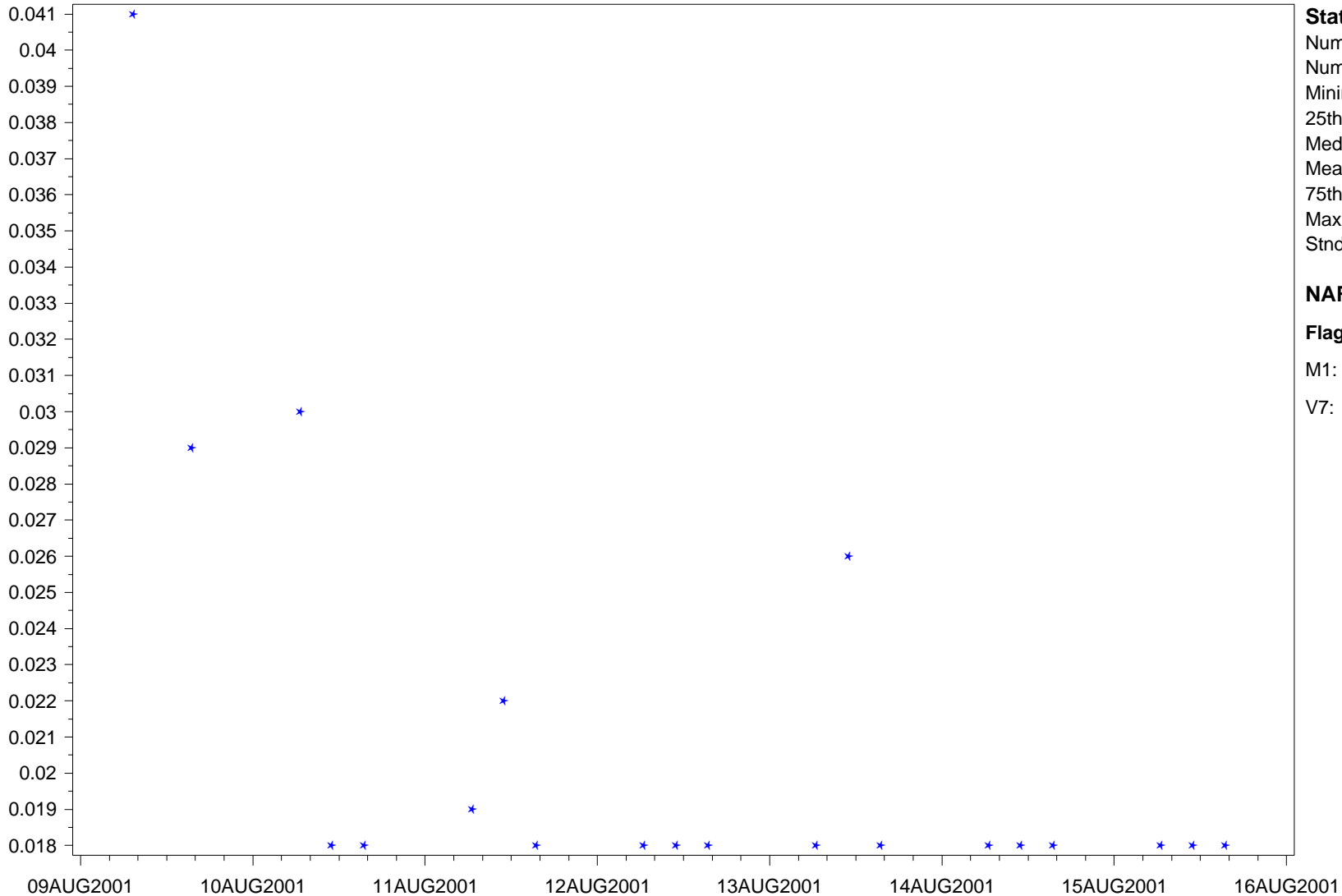
NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **1,2-Benzenedicarboxylic acid, dimethyl ester** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C131-11-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

1,2-Benzenedicarboxylic acid, dimethyl ester (µg/m3)



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.018**  
 25th Percentile: **0.018**  
 Median: **0.018**  
 Mean: **0.021**  
 75th Percentile: **0.0205**  
 Maximum: **0.041**  
 Std Dev.: **0.006**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: **\*** **20**

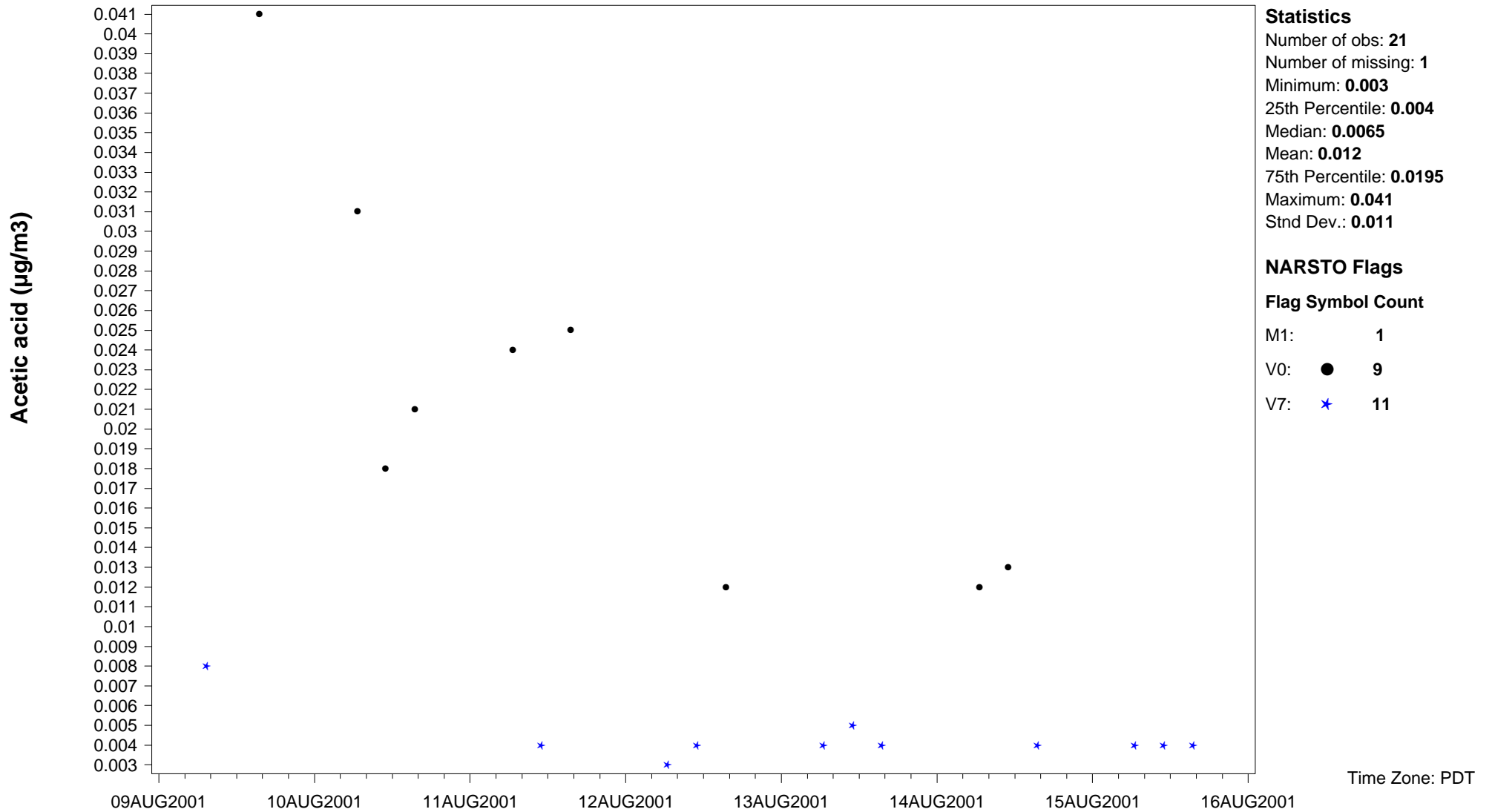
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Acetic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C64-19-7**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone**  
 Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

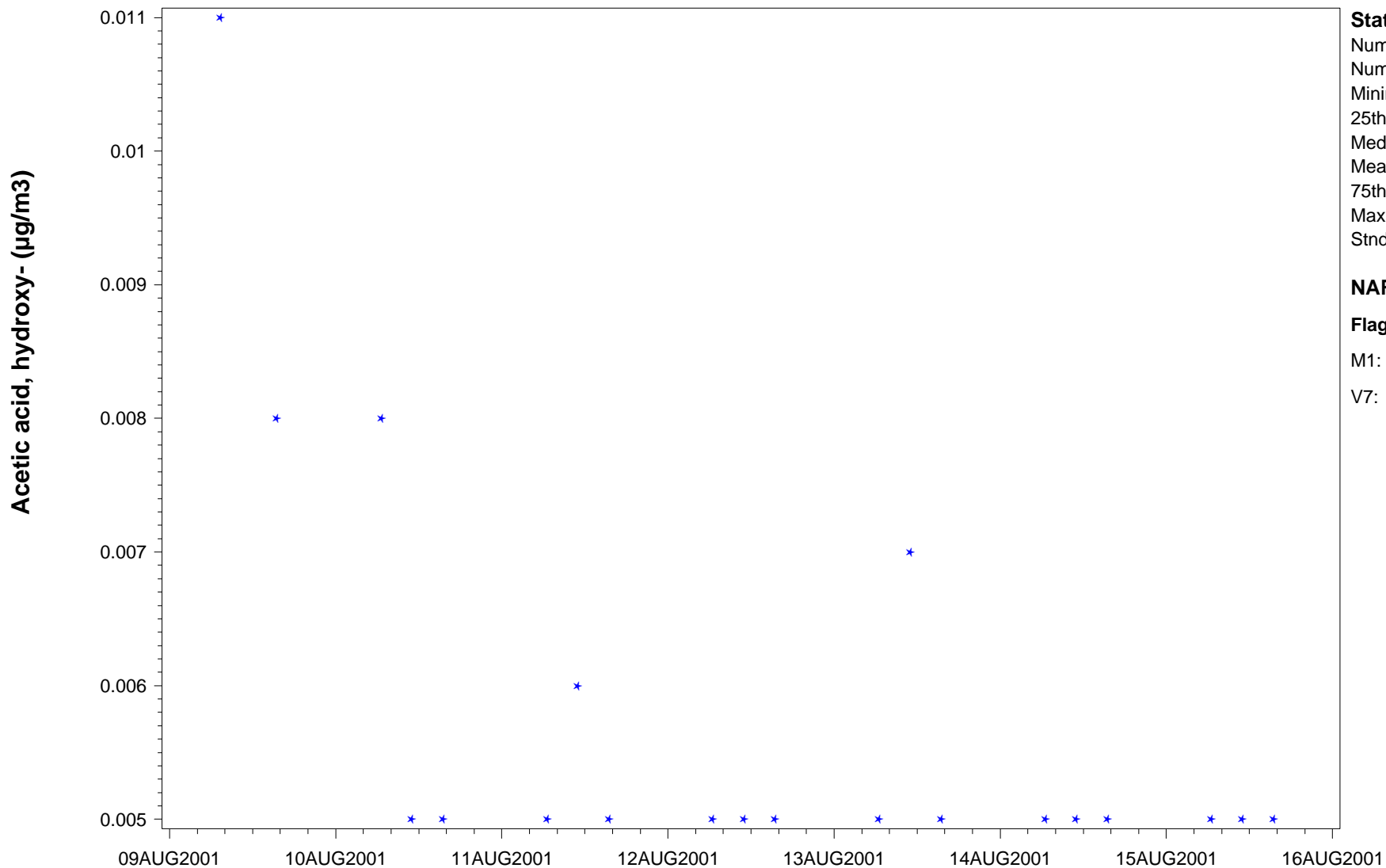


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Acetic acid, hydroxy-** Common Name: **Glycolic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C79-14-1** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.005**  
 25th Percentile: **0.005**  
 Median: **0.005**  
 Mean: **0.006**  
 75th Percentile: **0.0055**  
 Maximum: **0.011**  
 Stnd Dev.: **0.002**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

Time Zone: PDT

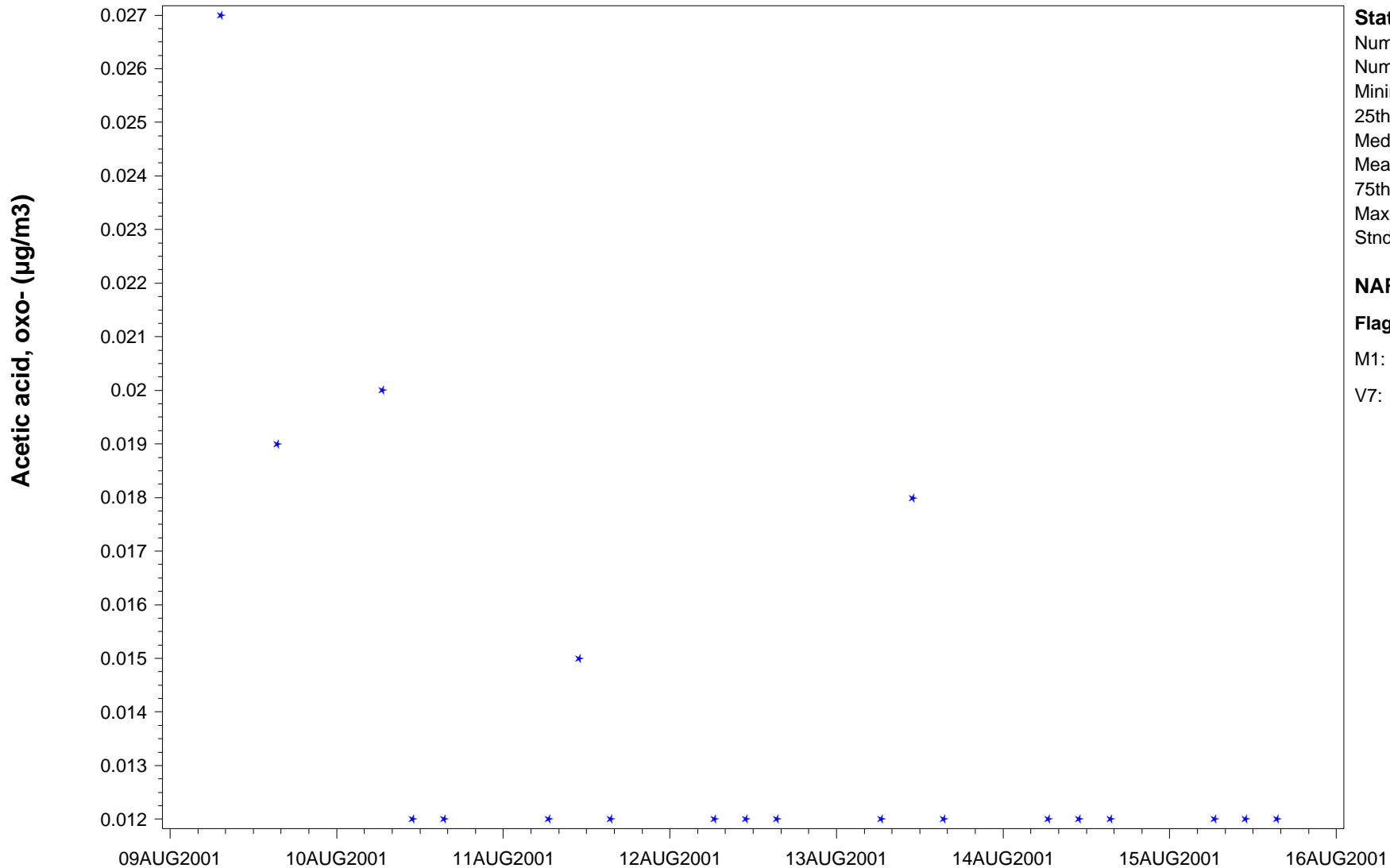


### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Acetic acid, oxo-** Common Name: **Glyoxylic** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C298-12-4** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.012**  
 25th Percentile: **0.012**  
 Median: **0.012**  
 Mean: **0.014**  
 75th Percentile: **0.0135**  
 Maximum: **0.027**  
 Std Dev.: **0.004**

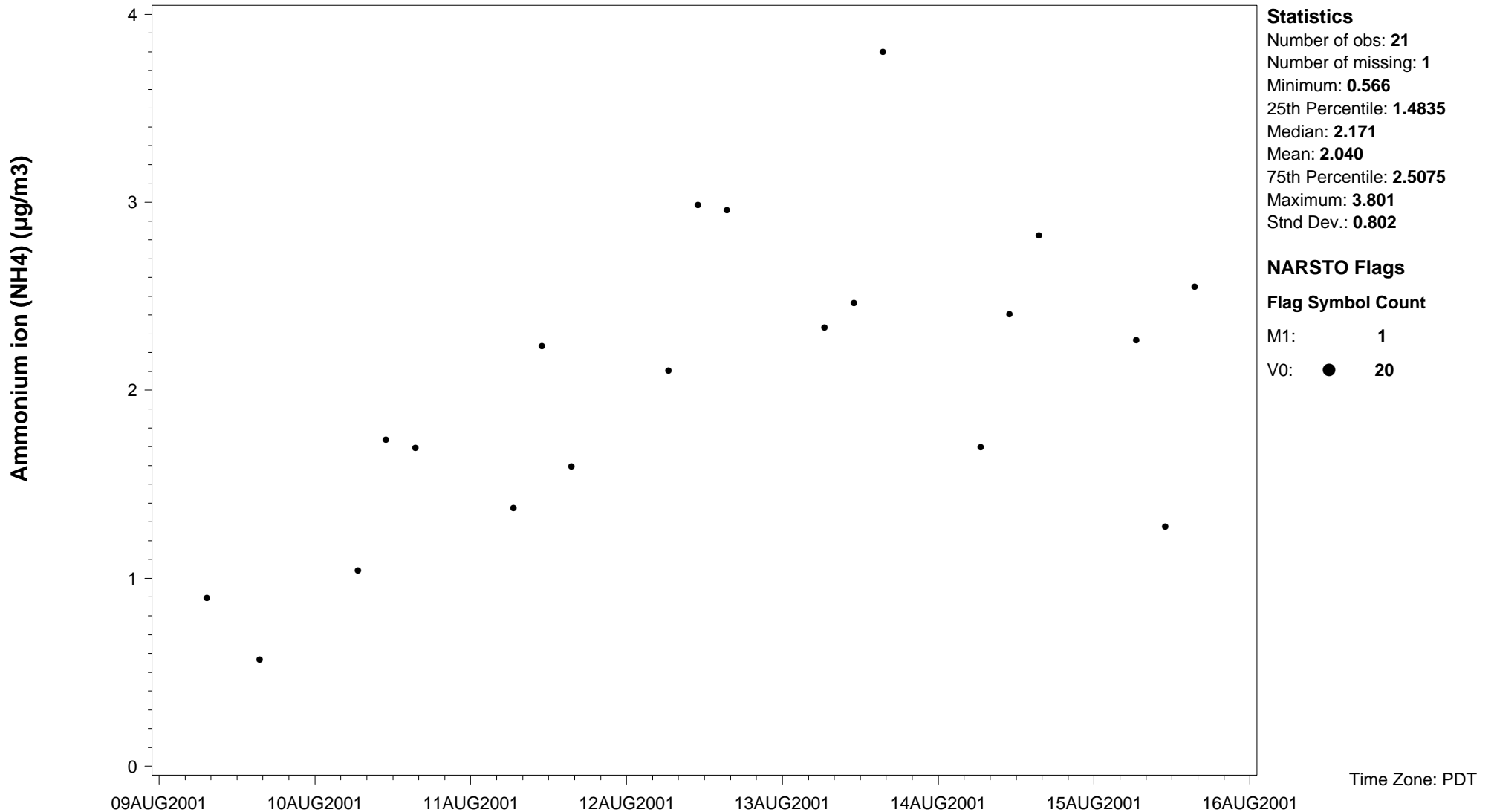
**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: **★ 20**

Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Ammonium ion (NH4)** Common Name: **NH4+** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C14798-03-9** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**  
 Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

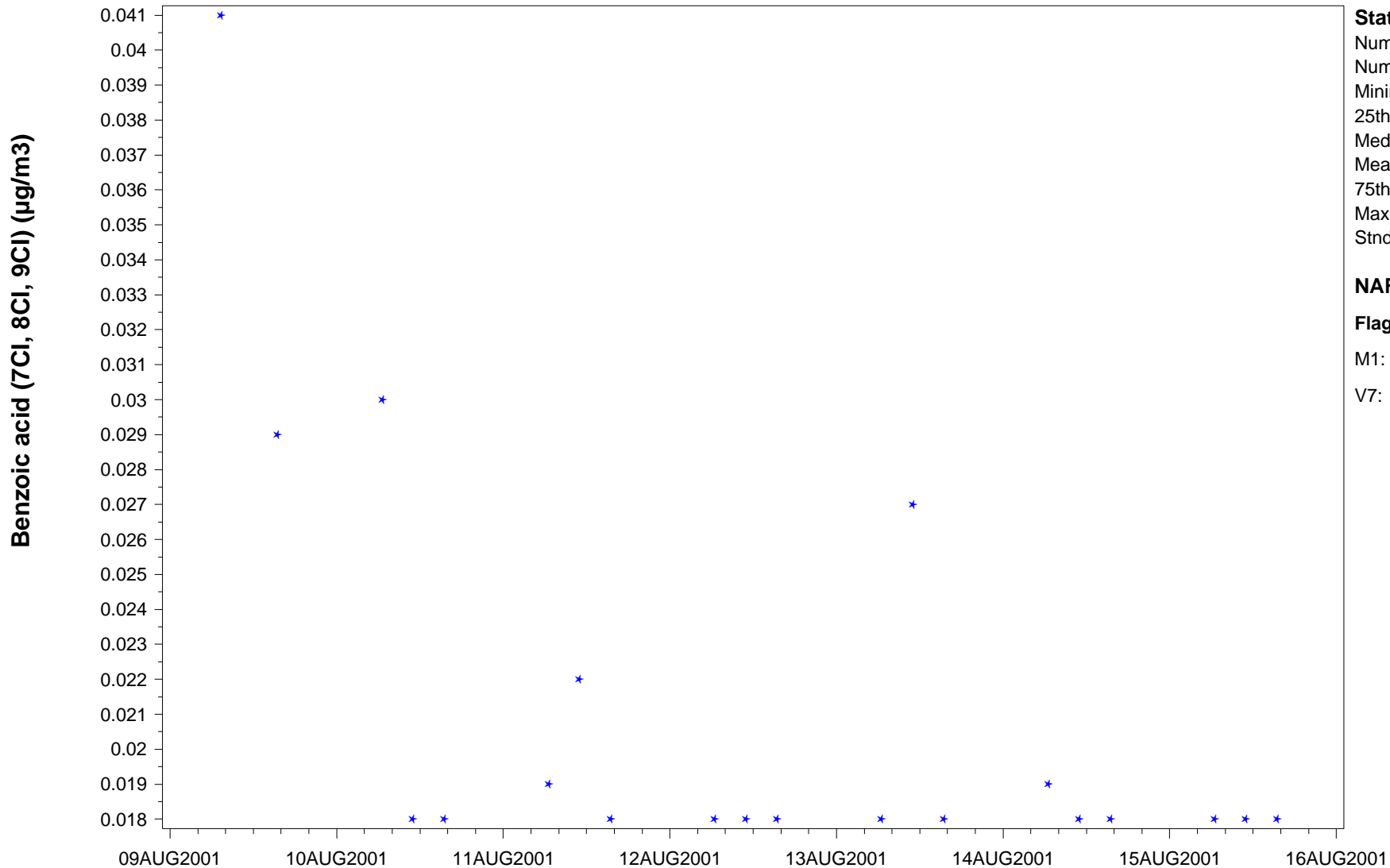


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Benzoic acid (7Cl, 8Cl, 9Cl)** Common Name: **Benzoic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C65-85-0** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.018**  
 25th Percentile: **0.018**  
 Median: **0.018**  
 Mean: **0.021**  
 75th Percentile: **0.0205**  
 Maximum: **0.041**  
 Std Dev.: **0.006**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

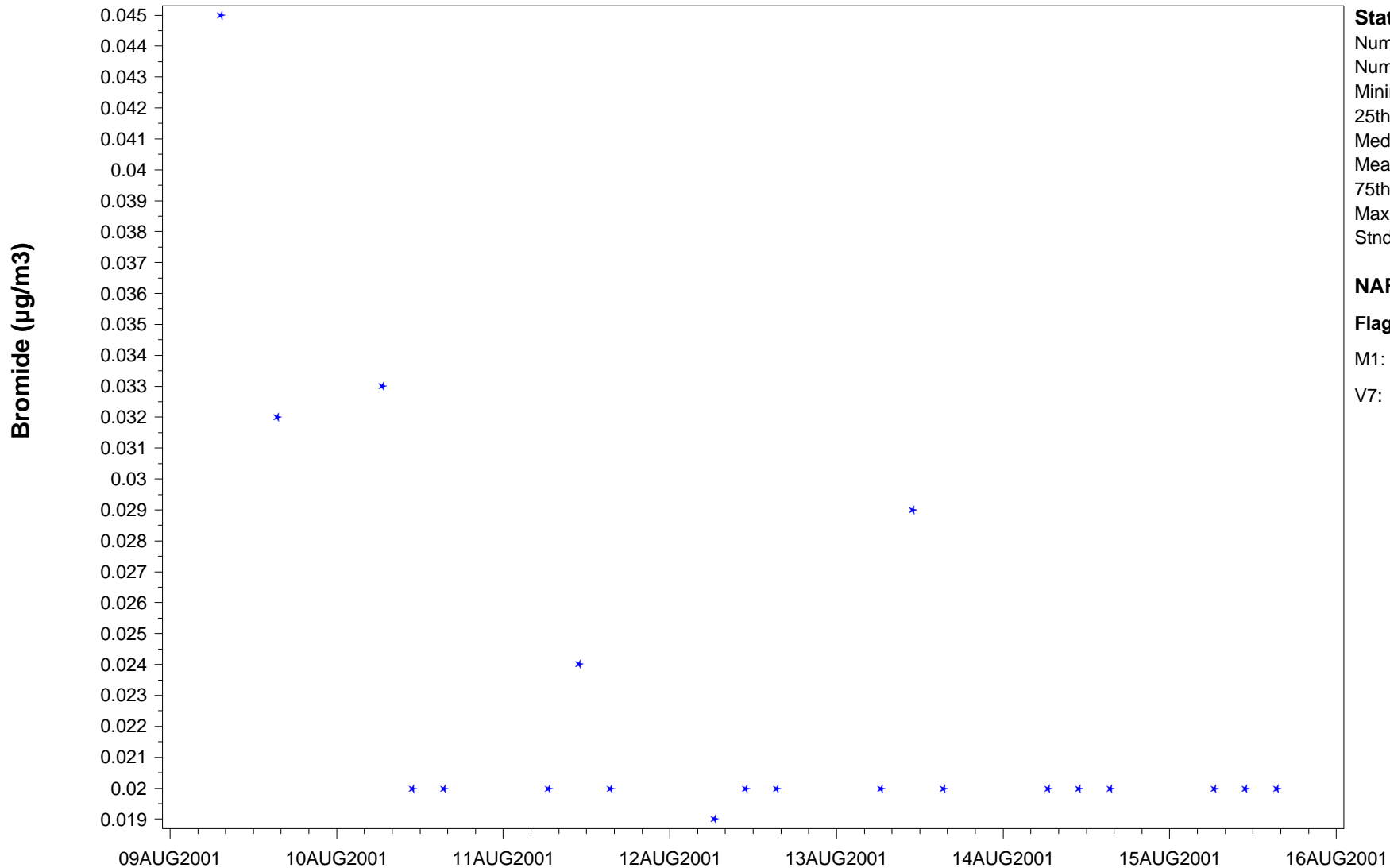
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Bromide** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C24959-67-9**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.019**  
 25th Percentile: **0.02**  
 Median: **0.02**  
 Mean: **0.023**  
 75th Percentile: **0.022**  
 Maximum: **0.045**  
 Stnd Dev.: **0.007**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

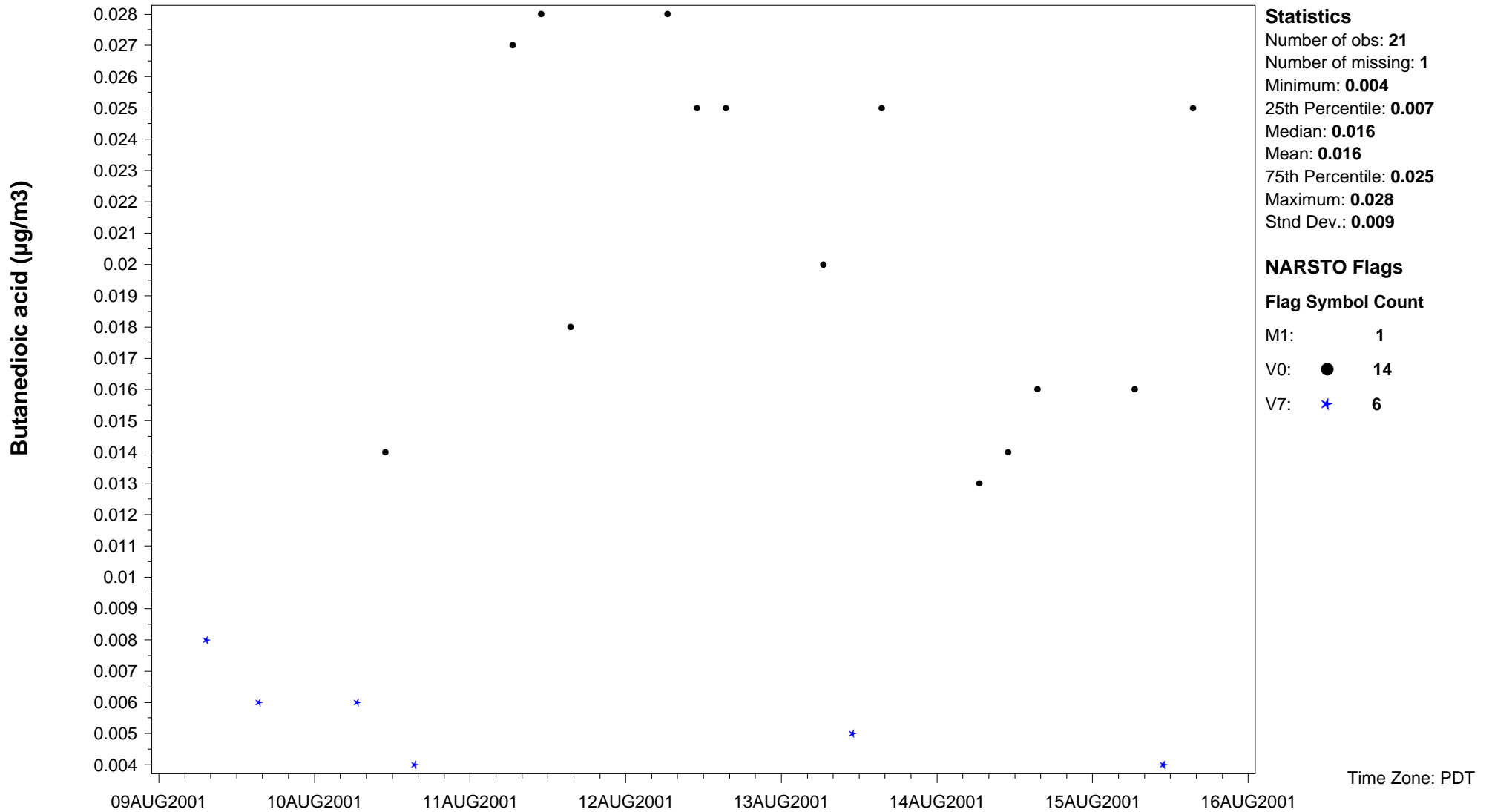
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Butanedioic acid** Common Name: **Succinic acid** Units: **µg/m<sup>3</sup>** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C110-15-6** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

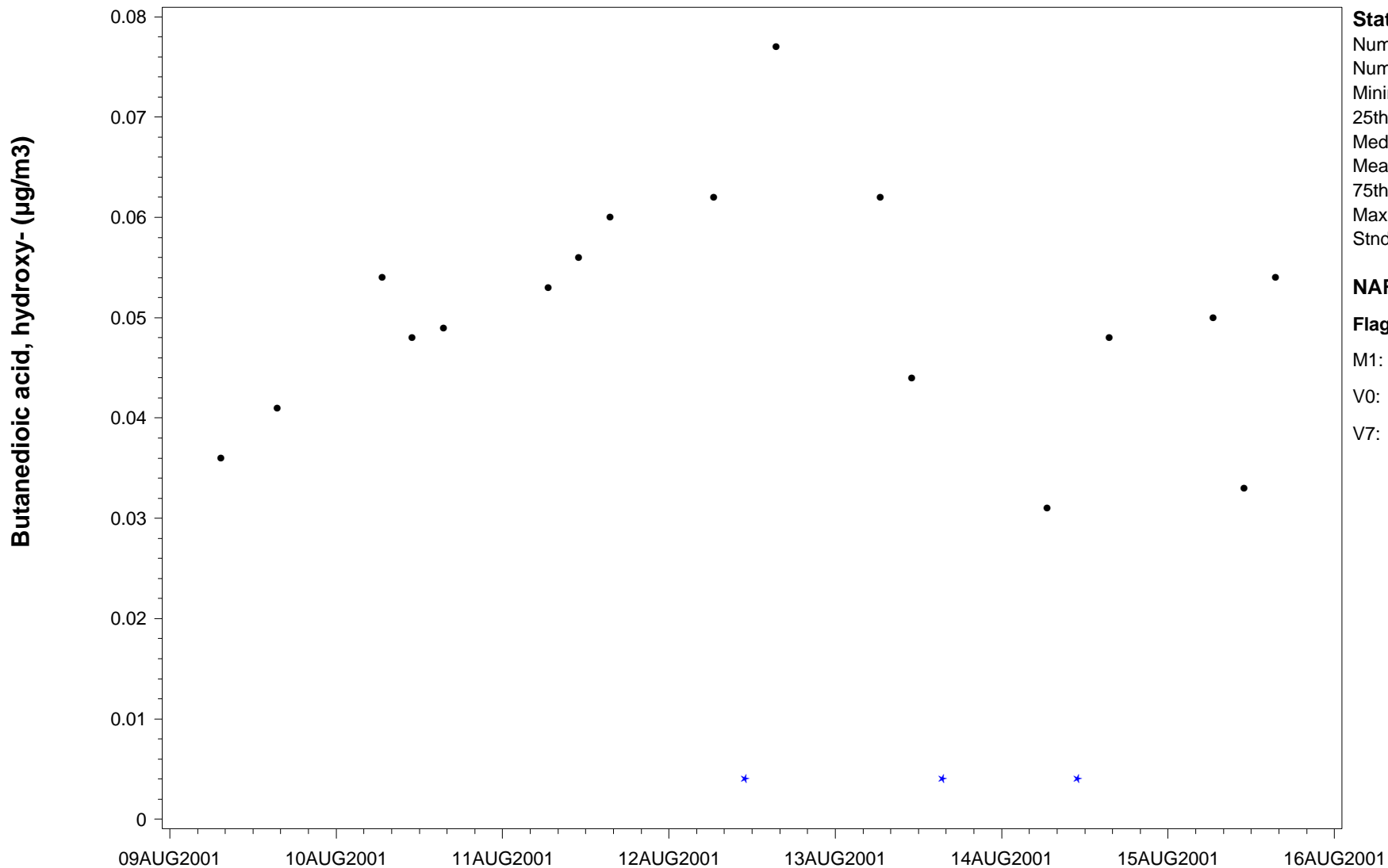


### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Butanedioic acid, hydroxy-** Common Name: **Malic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C6915-15-7** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.004**  
 25th Percentile: **0.0345**  
 Median: **0.0485**  
 Mean: **0.044**  
 75th Percentile: **0.055**  
 Maximum: **0.077**  
 Stnd Dev.: **0.020**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V0: ● **17**  
 V7: ★ **3**

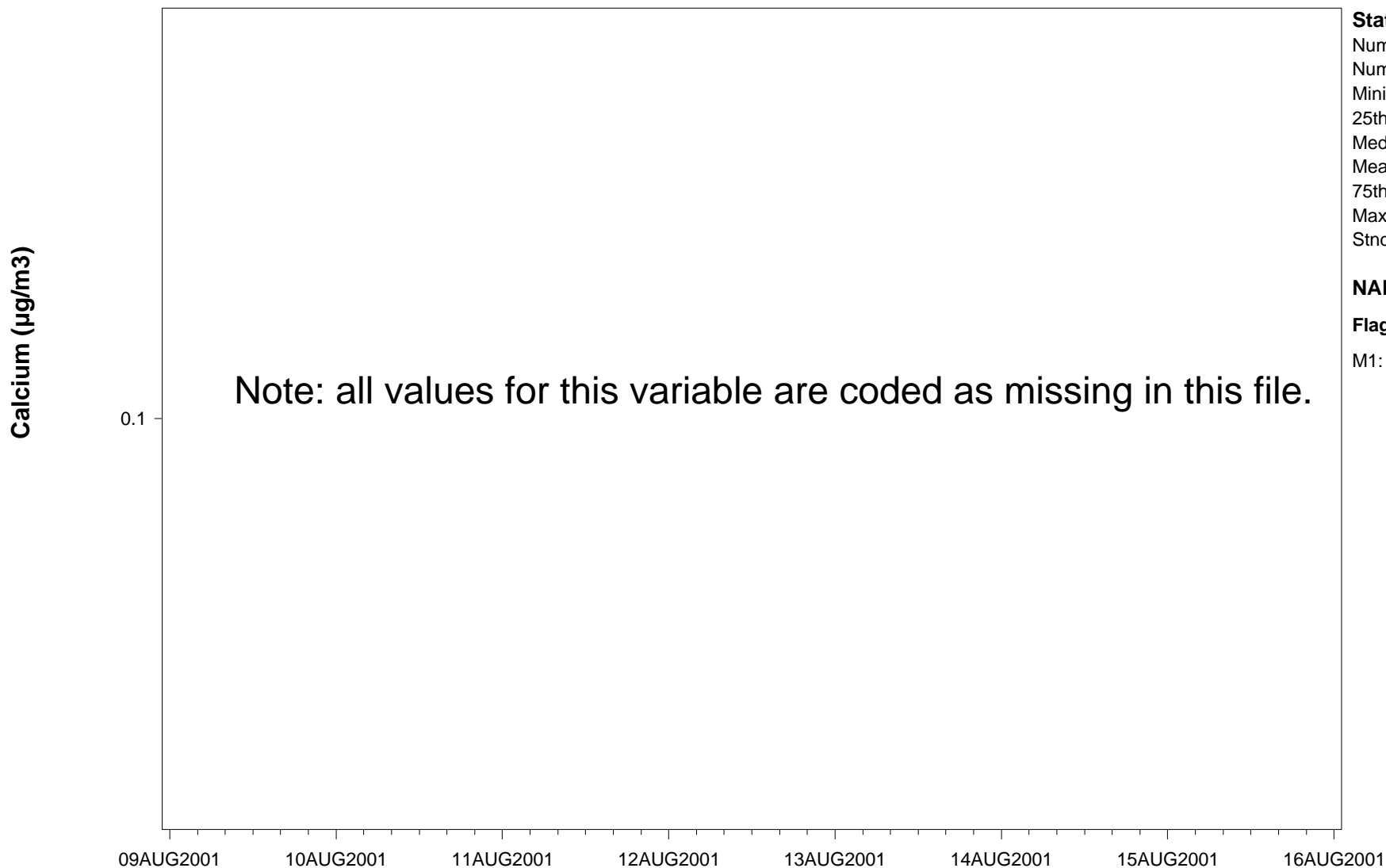
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Calcium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-70-2**  
Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
Number of missing: **21**  
Minimum: .  
25th Percentile: .  
Median: .  
Mean: .  
75th Percentile: .  
Maximum: .  
Std Dev.: .

**NARSTO Flags**

**Flag Symbol Count**

M1: **21**

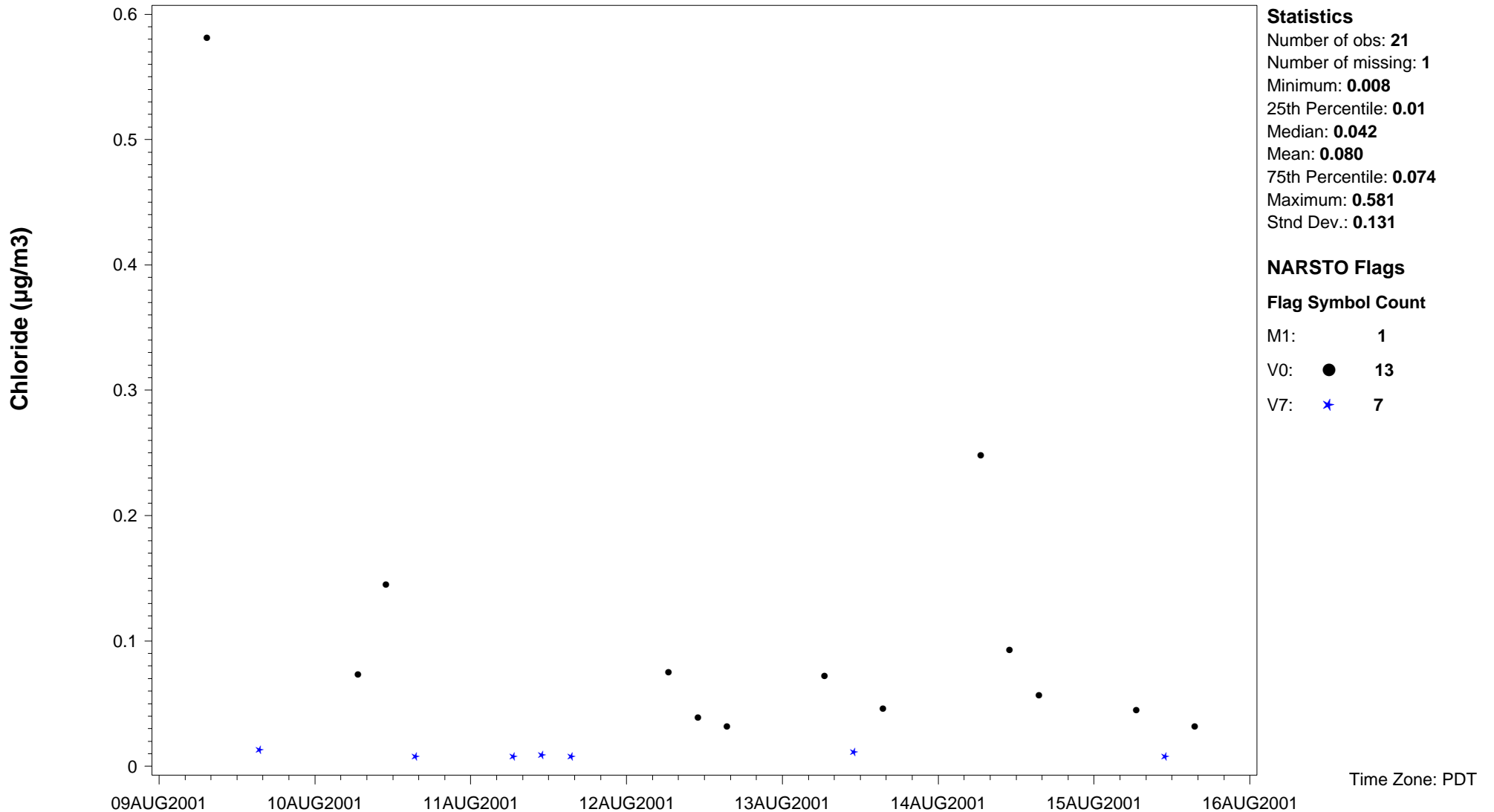
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Chloride** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C16887-00-6**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



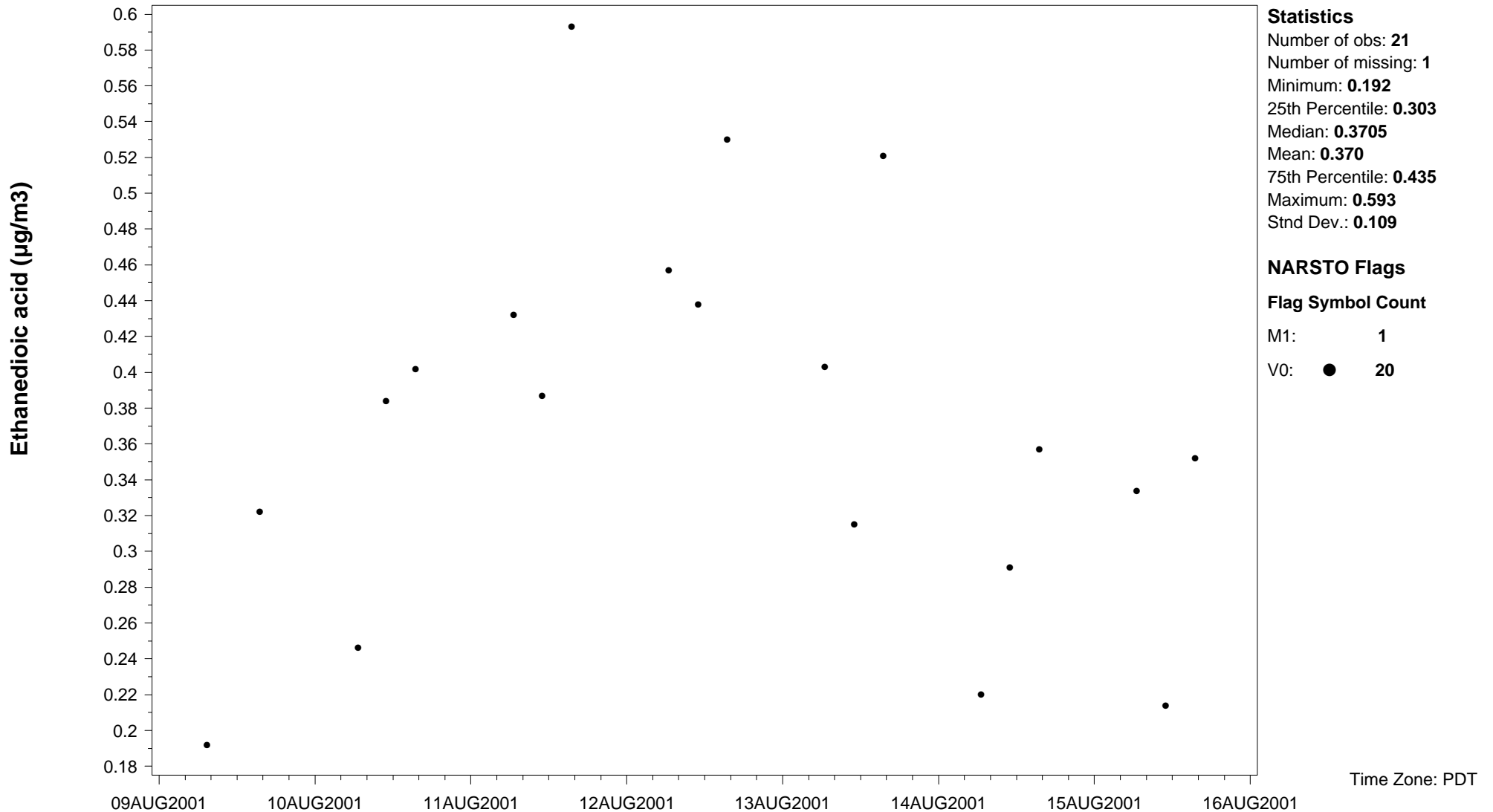


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Ethanedioic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**  
 CAS ID: **C144-62-7** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

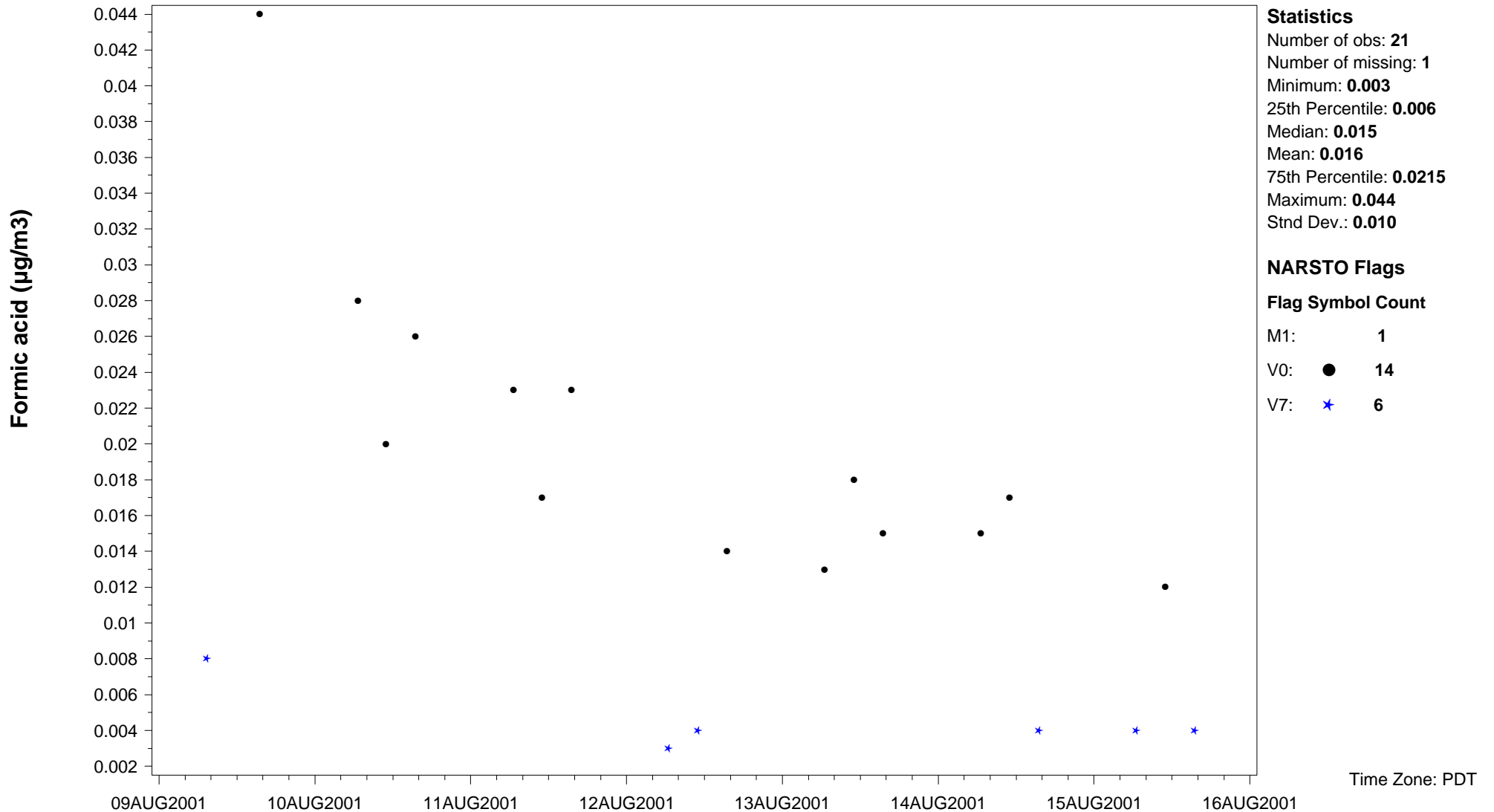


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Formic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C64-18-6**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone**  
 Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

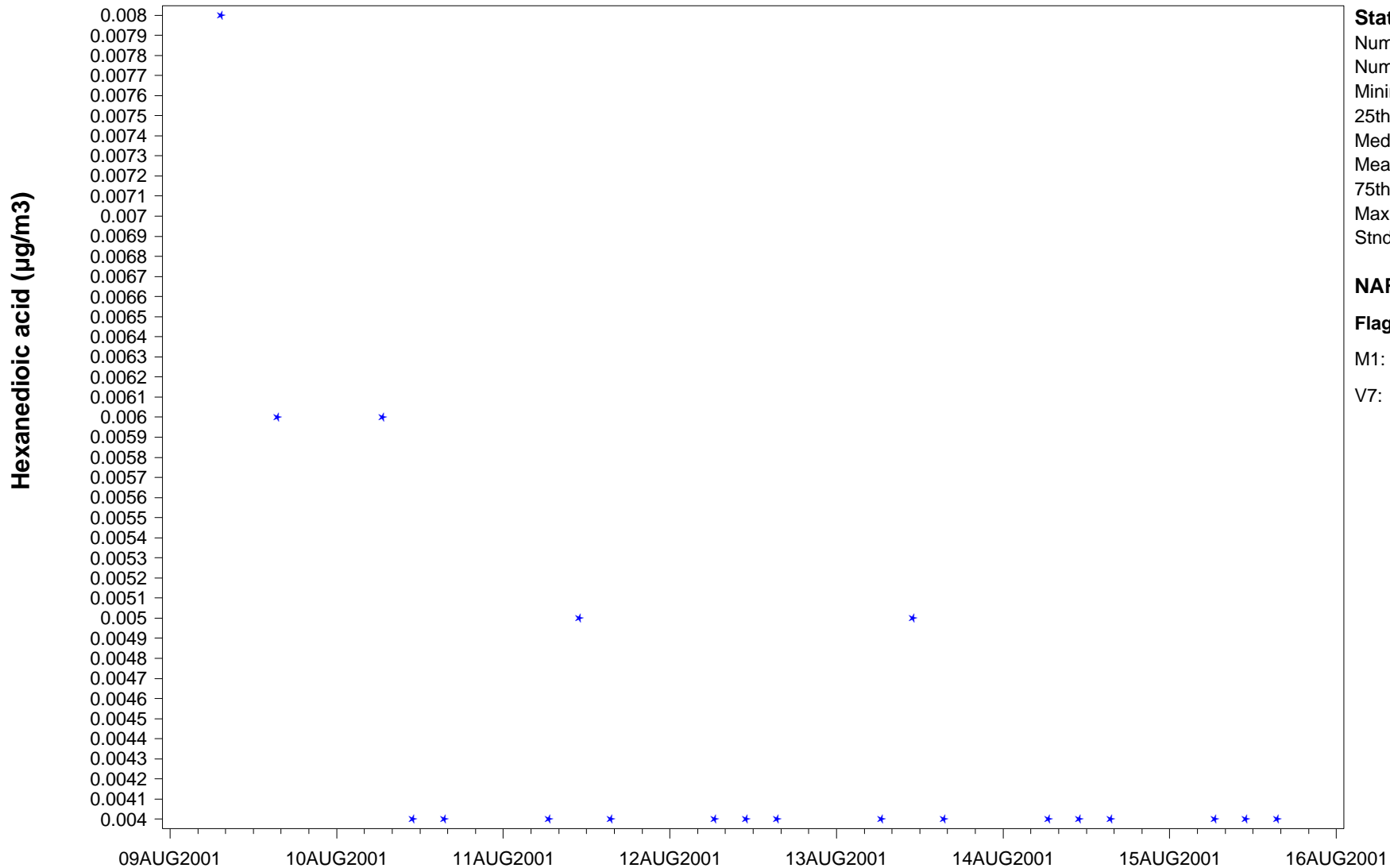


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Hexanedioic acid** Common Name: **Adipic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C124-04-9** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.004**  
 25th Percentile: **0.004**  
 Median: **0.004**  
 Mean: **0.005**  
 75th Percentile: **0.0045**  
 Maximum: **0.008**  
 Std Dev.: **0.001**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

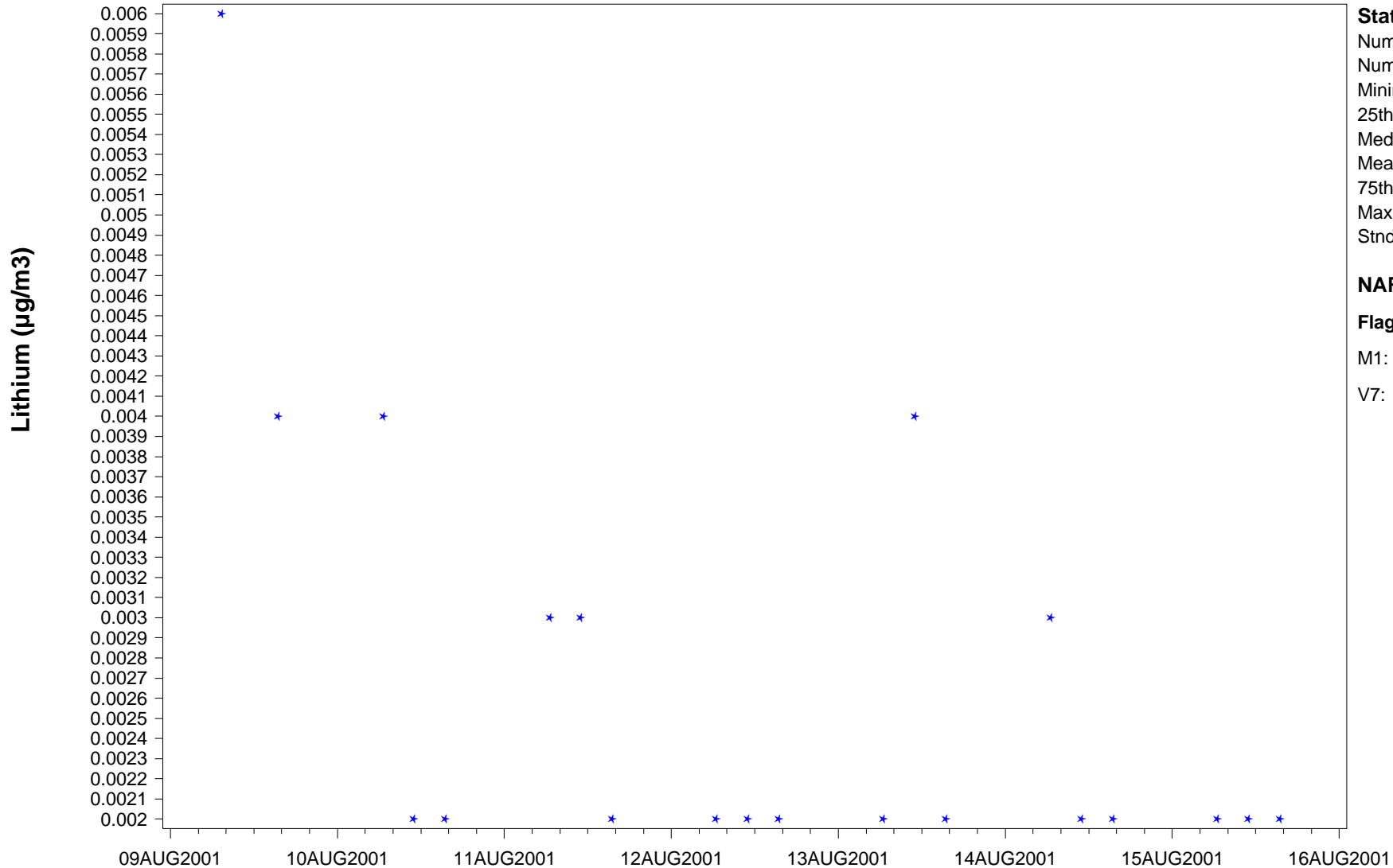
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Lithium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7439-93-2**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.002**  
 25th Percentile: **0.002**  
 Median: **0.002**  
 Mean: **0.003**  
 75th Percentile: **0.003**  
 Maximum: **0.006**  
 Stnd Dev.: **0.001**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

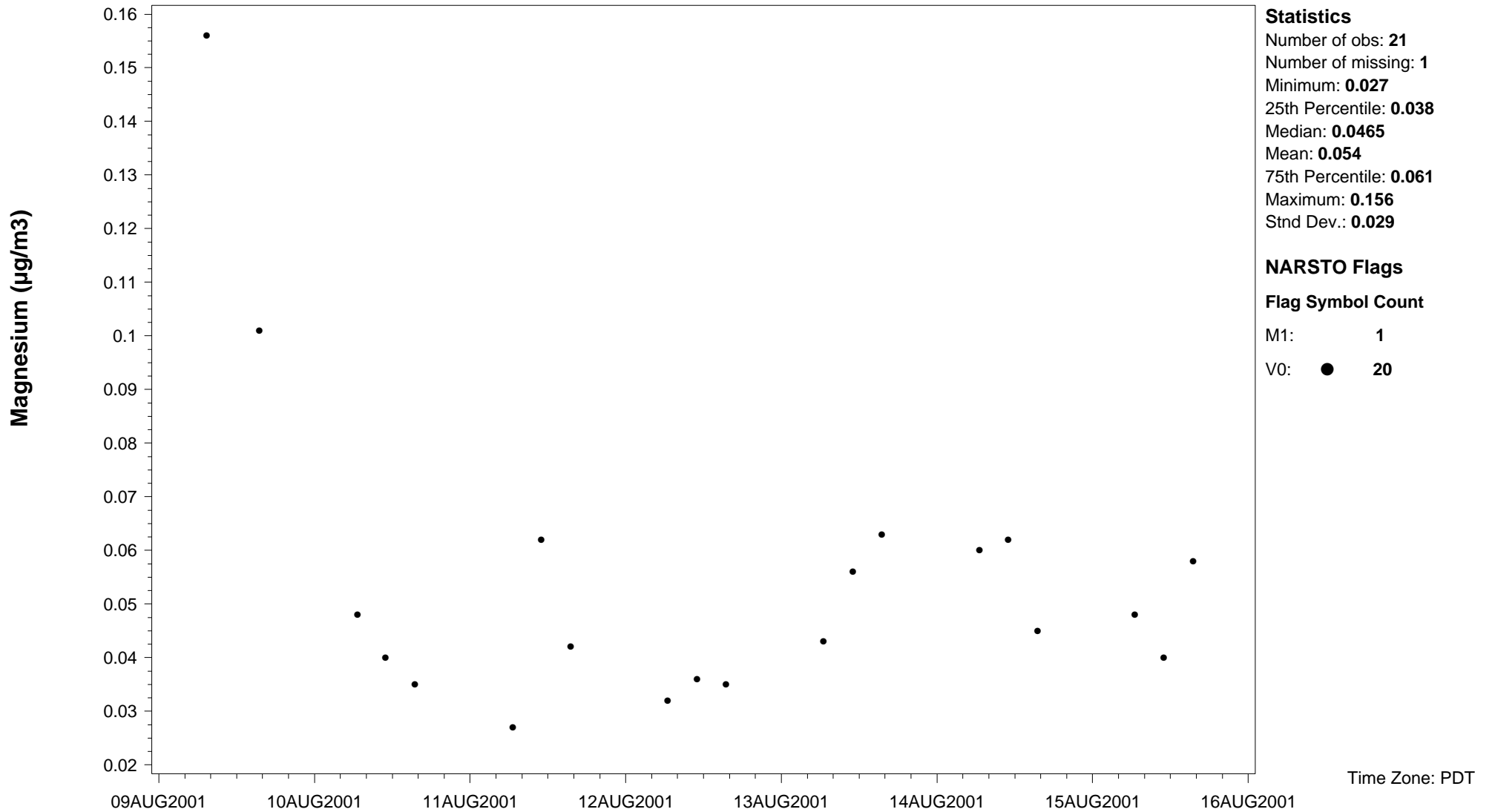
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Magnesium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7439-95-4**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

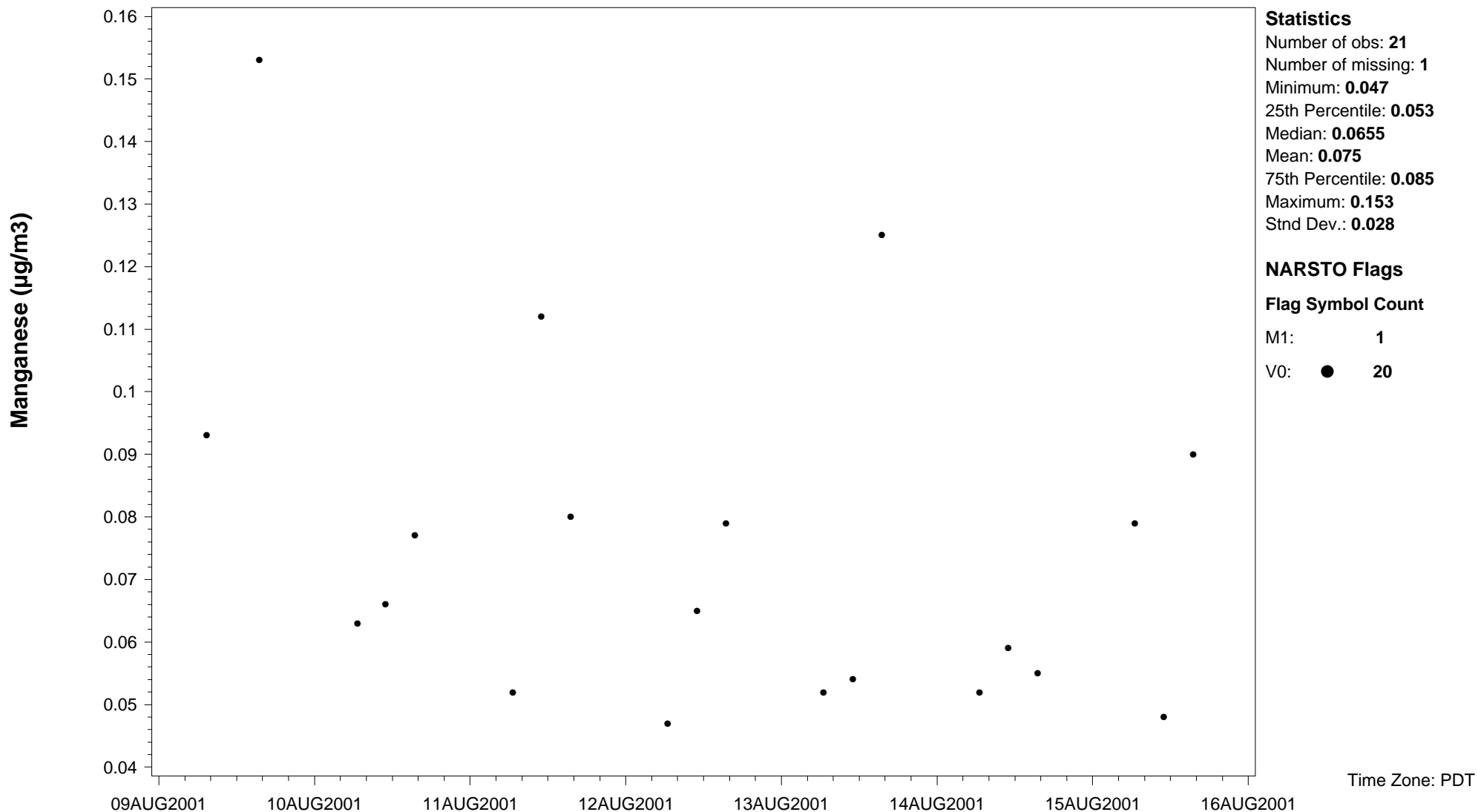


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Manganese** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7439-96-5**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

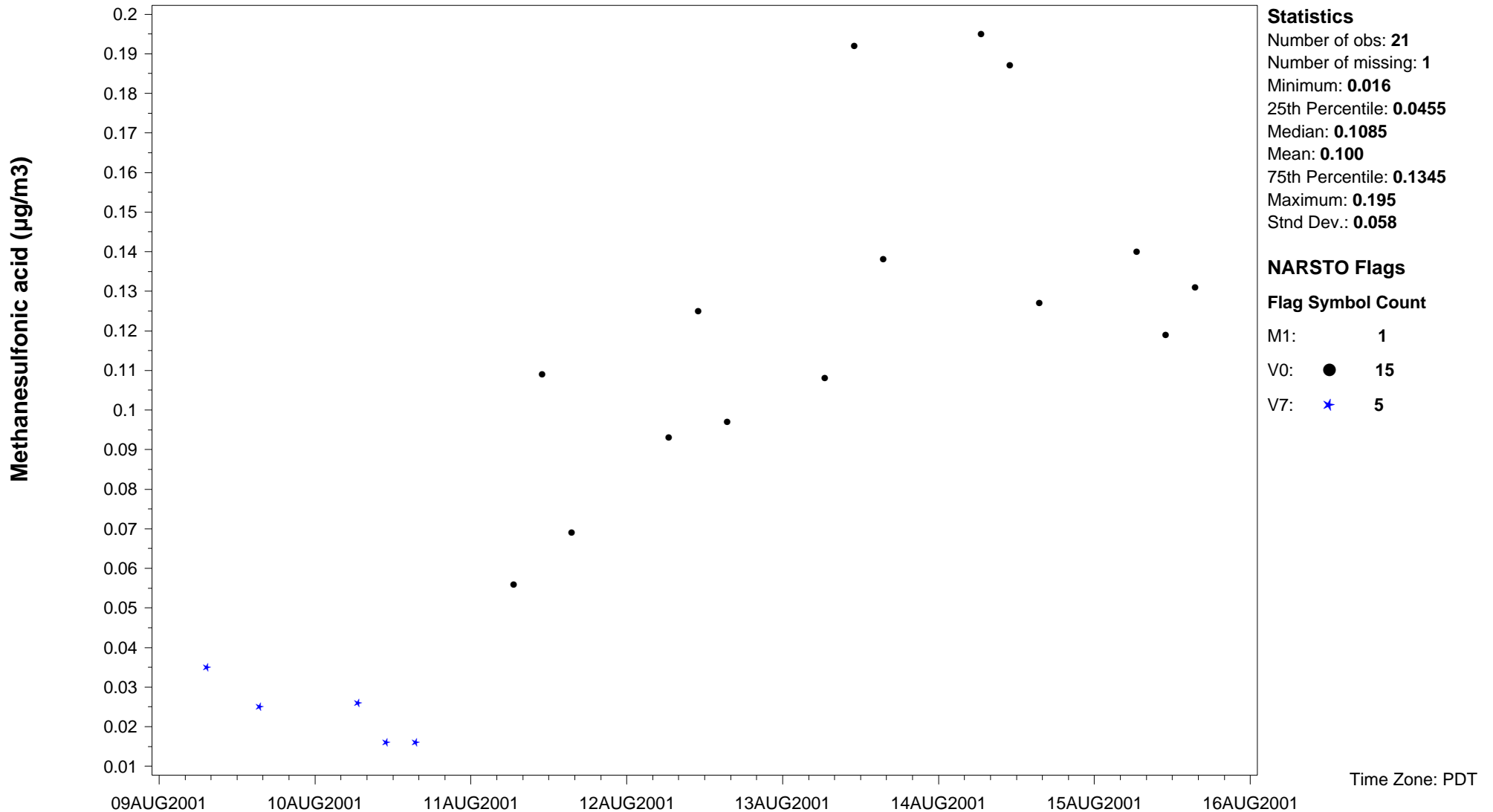


### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Methanesulfonic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**  
 CAS ID: **C75-75-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

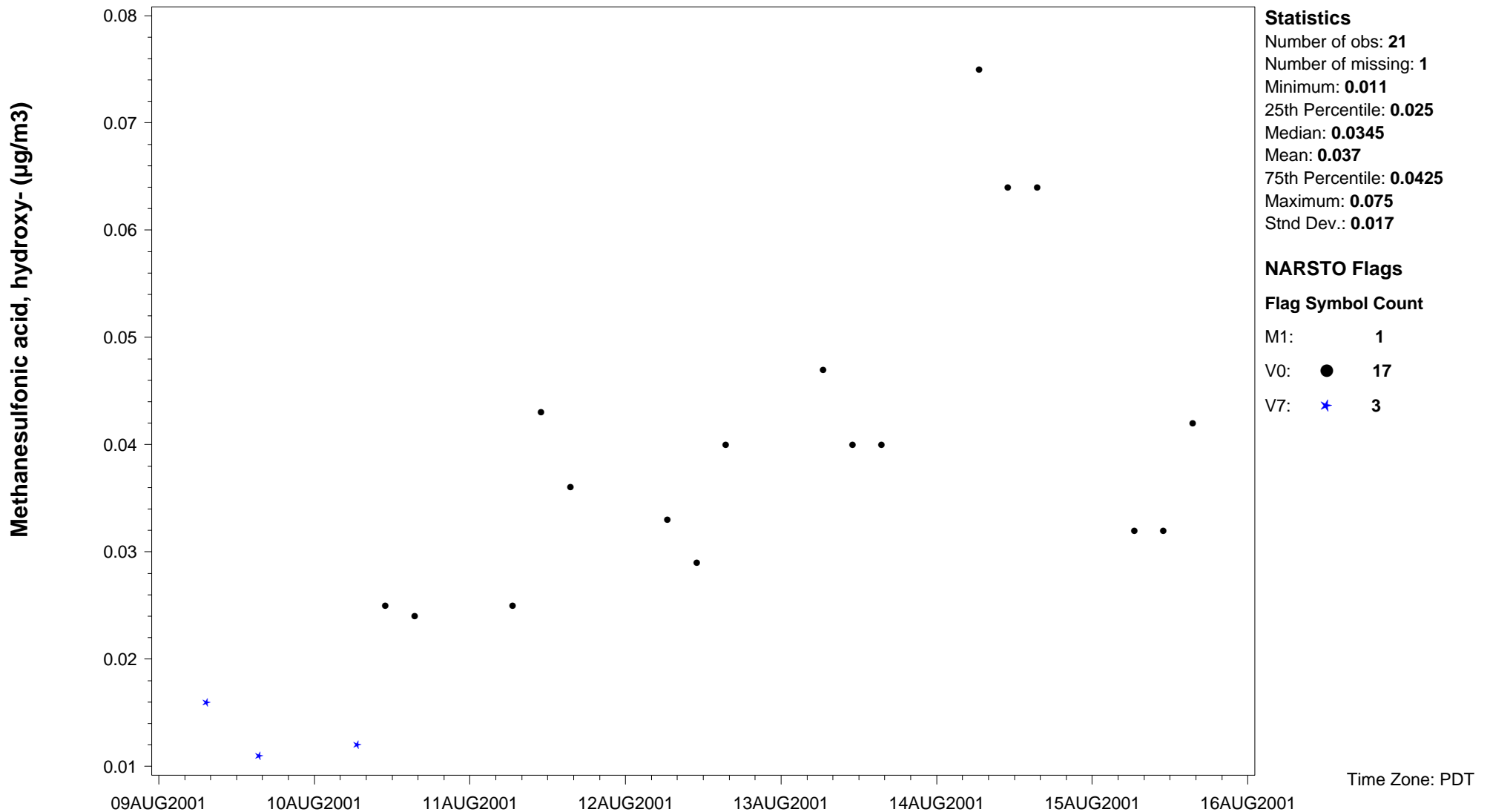


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Methanesulfonic acid, hydroxy-** Common Name: **Hydroxymethane sulphonic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C75-92-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



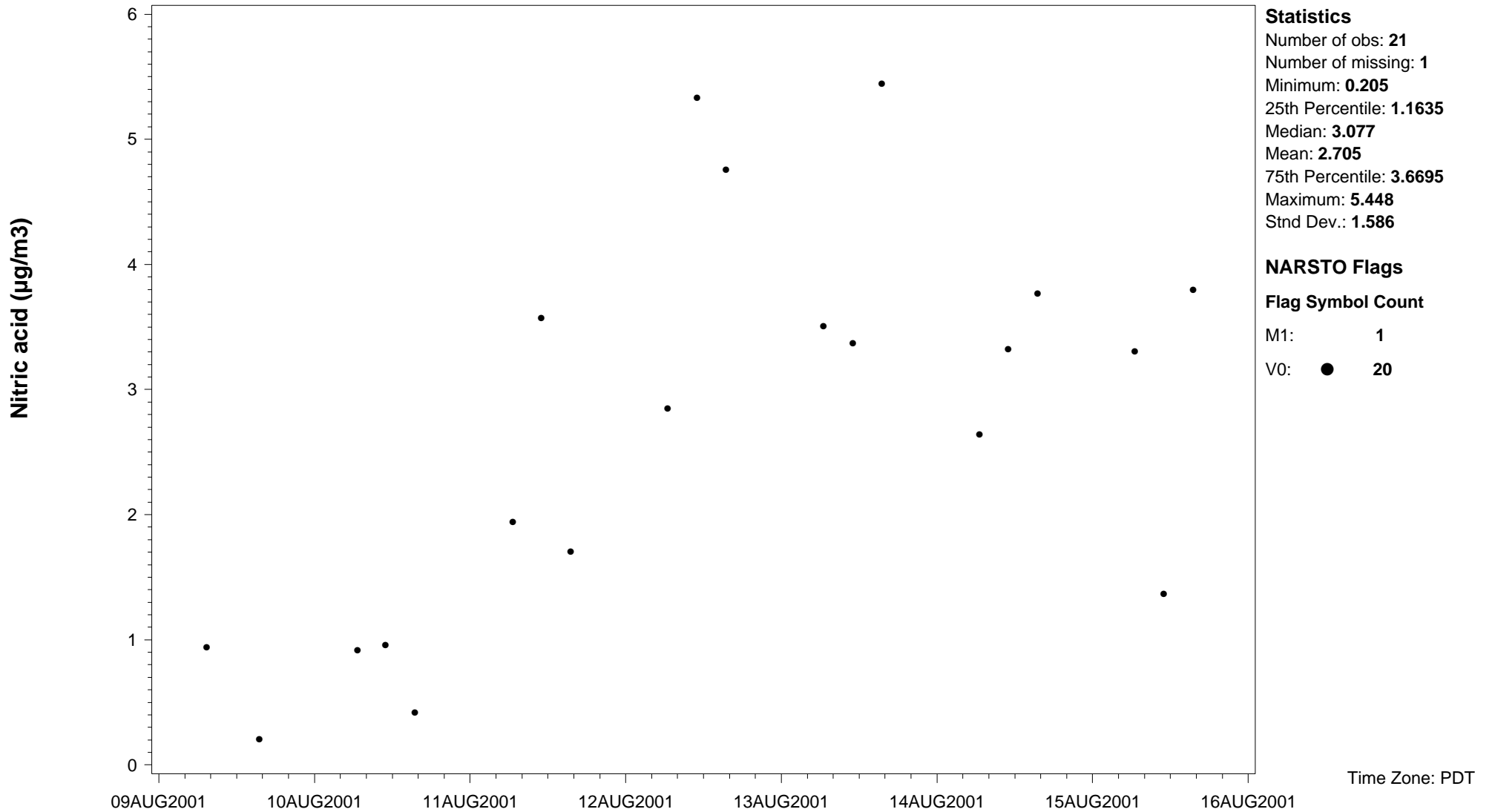


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Nitric acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**  
 CAS ID: **C7697-37-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

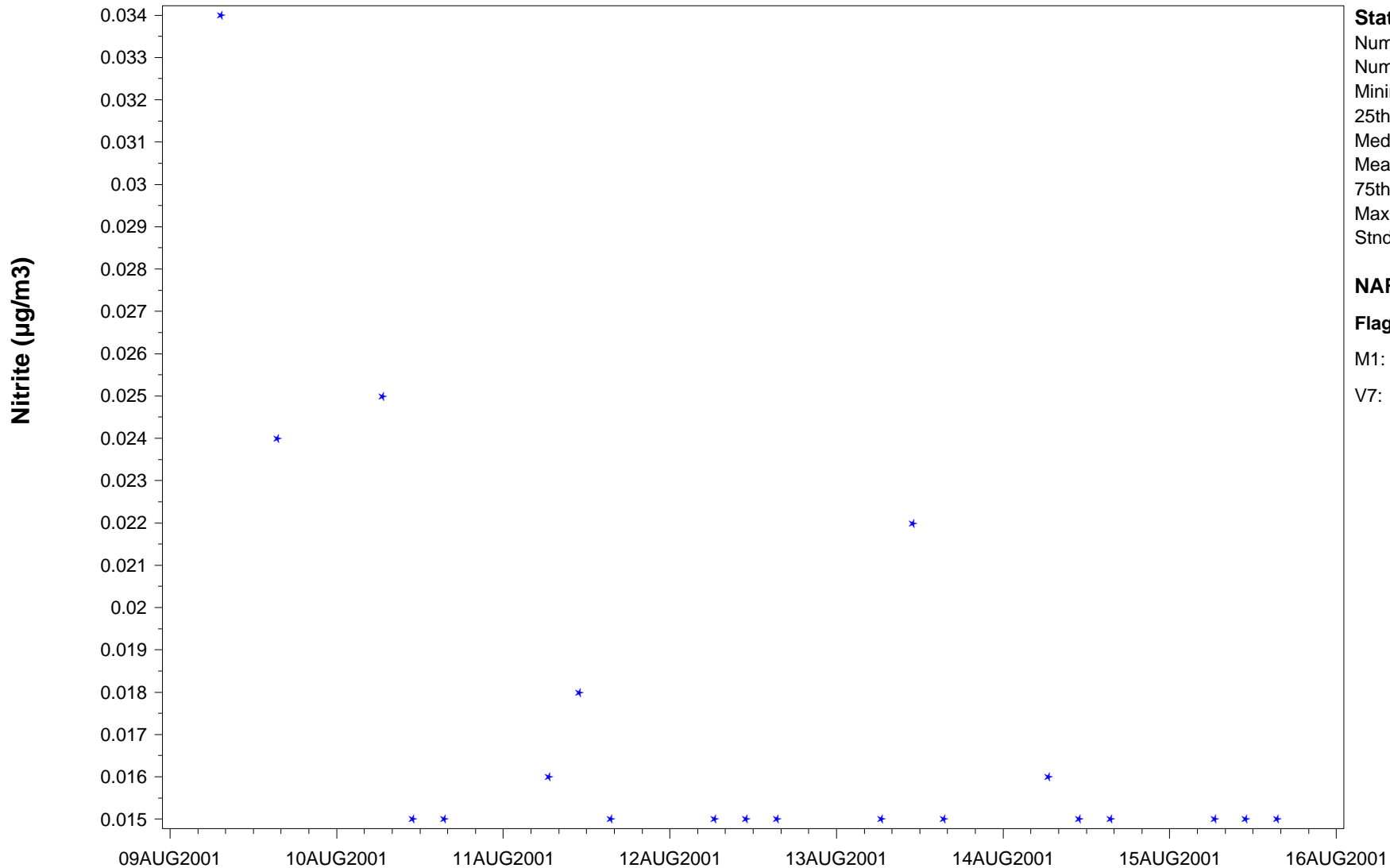


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Nitrite** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C14797-65-0**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.015**  
 25th Percentile: **0.015**  
 Median: **0.015**  
 Mean: **0.018**  
 75th Percentile: **0.017**  
 Maximum: **0.034**  
 Std Dev.: **0.005**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: **\* 20**

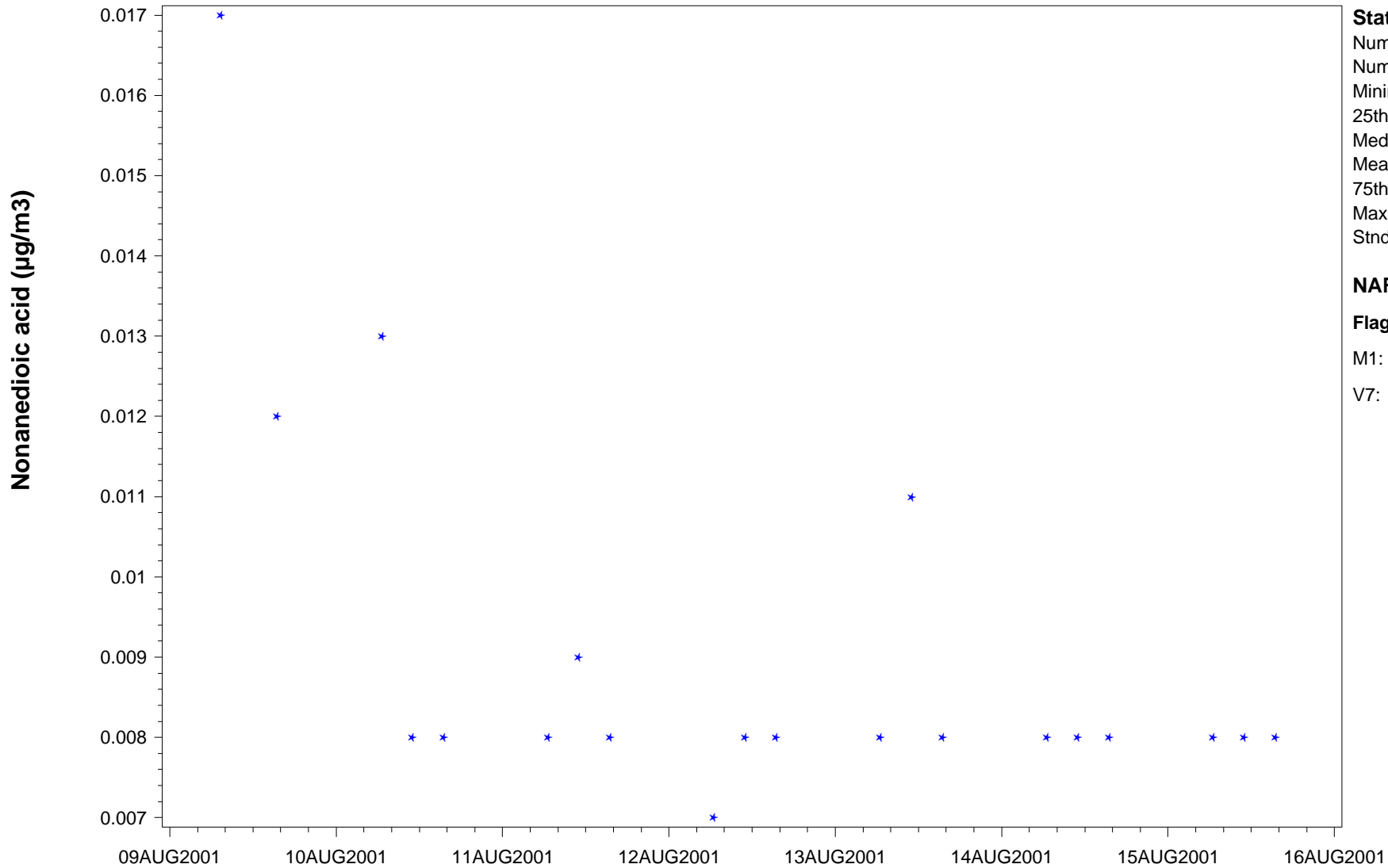
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Nonanedioic acid** Common Name: **Azelaic** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C123-99-9** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.007**  
 25th Percentile: **0.008**  
 Median: **0.008**  
 Mean: **0.009**  
 75th Percentile: **0.0085**  
 Maximum: **0.017**  
 Stnd Dev.: **0.002**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

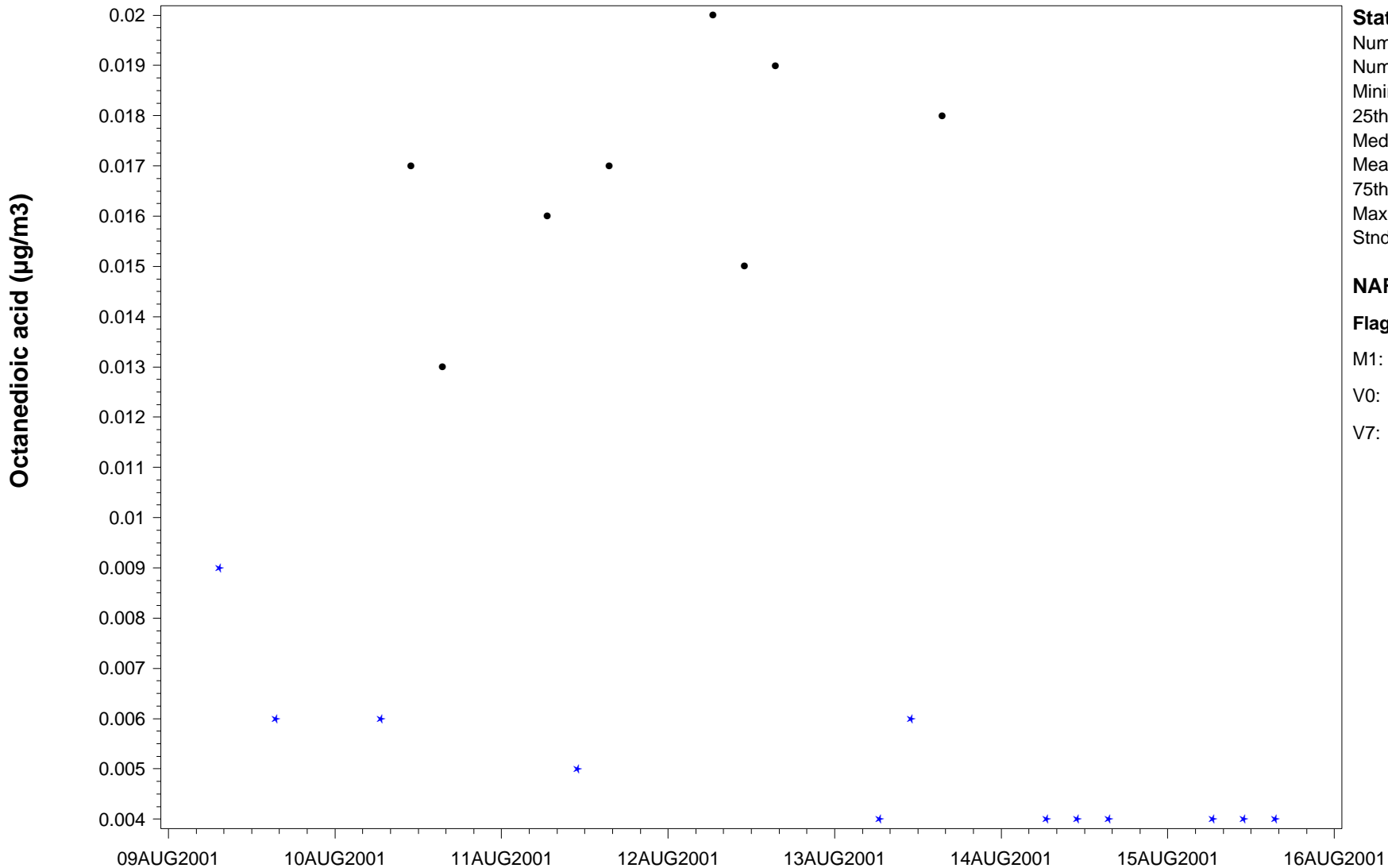
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Octanedioic acid** Common Name: **Suberic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C505-48-6** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.004**  
 25th Percentile: **0.004**  
 Median: **0.006**  
 Mean: **0.010**  
 75th Percentile: **0.0165**  
 Maximum: **0.02**  
 Stnd Dev.: **0.006**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V0: **8**  
 V7: **12**

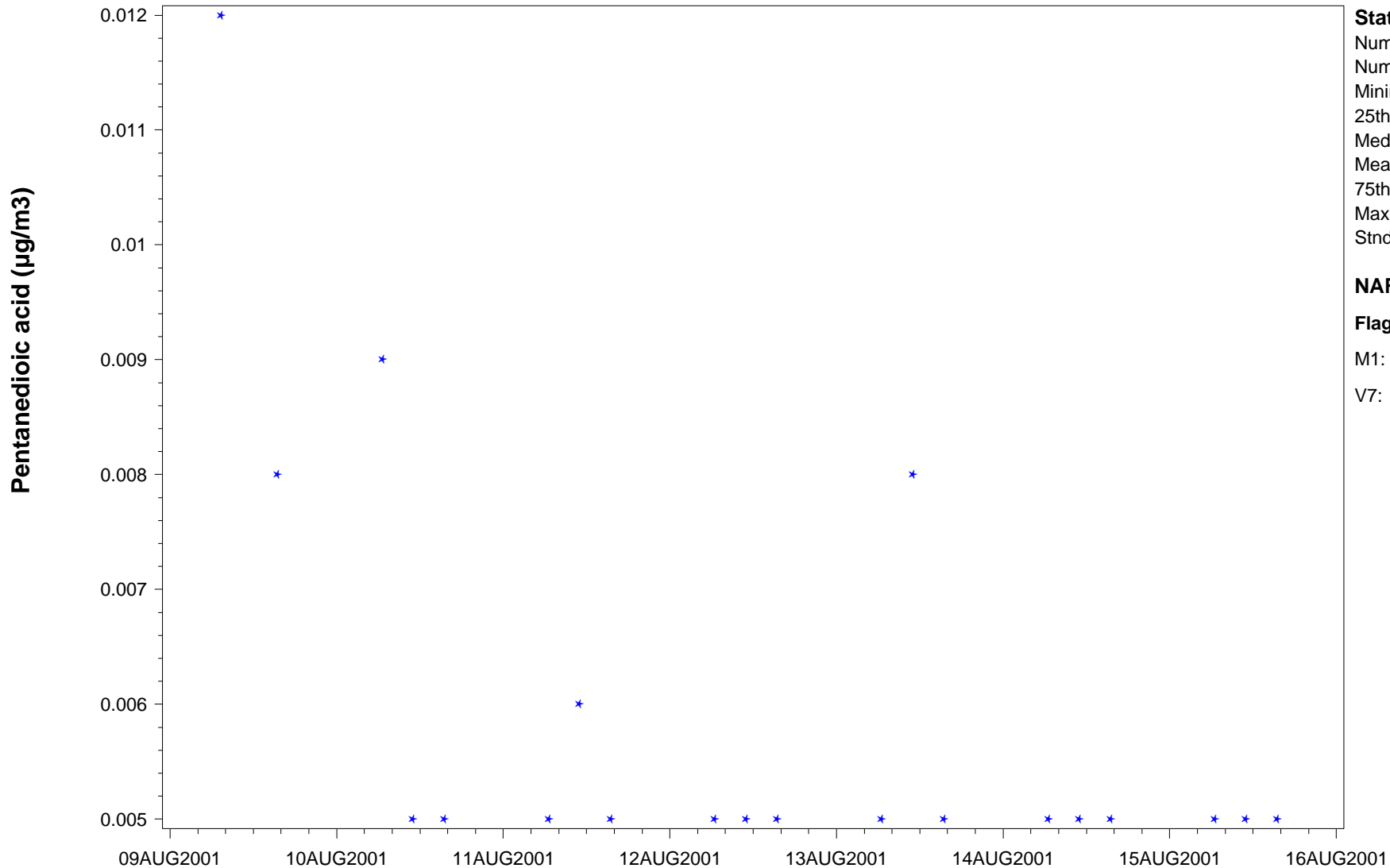
Time Zone: PDT

### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Pentanedioic acid** Common Name: **Glutaric acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C110-94-1** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



#### Statistics

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.005**  
 25th Percentile: **0.005**  
 Median: **0.005**  
 Mean: **0.006**  
 75th Percentile: **0.0055**  
 Maximum: **0.012**  
 Std Dev.: **0.002**

#### NARSTO Flags

##### Flag Symbol Count

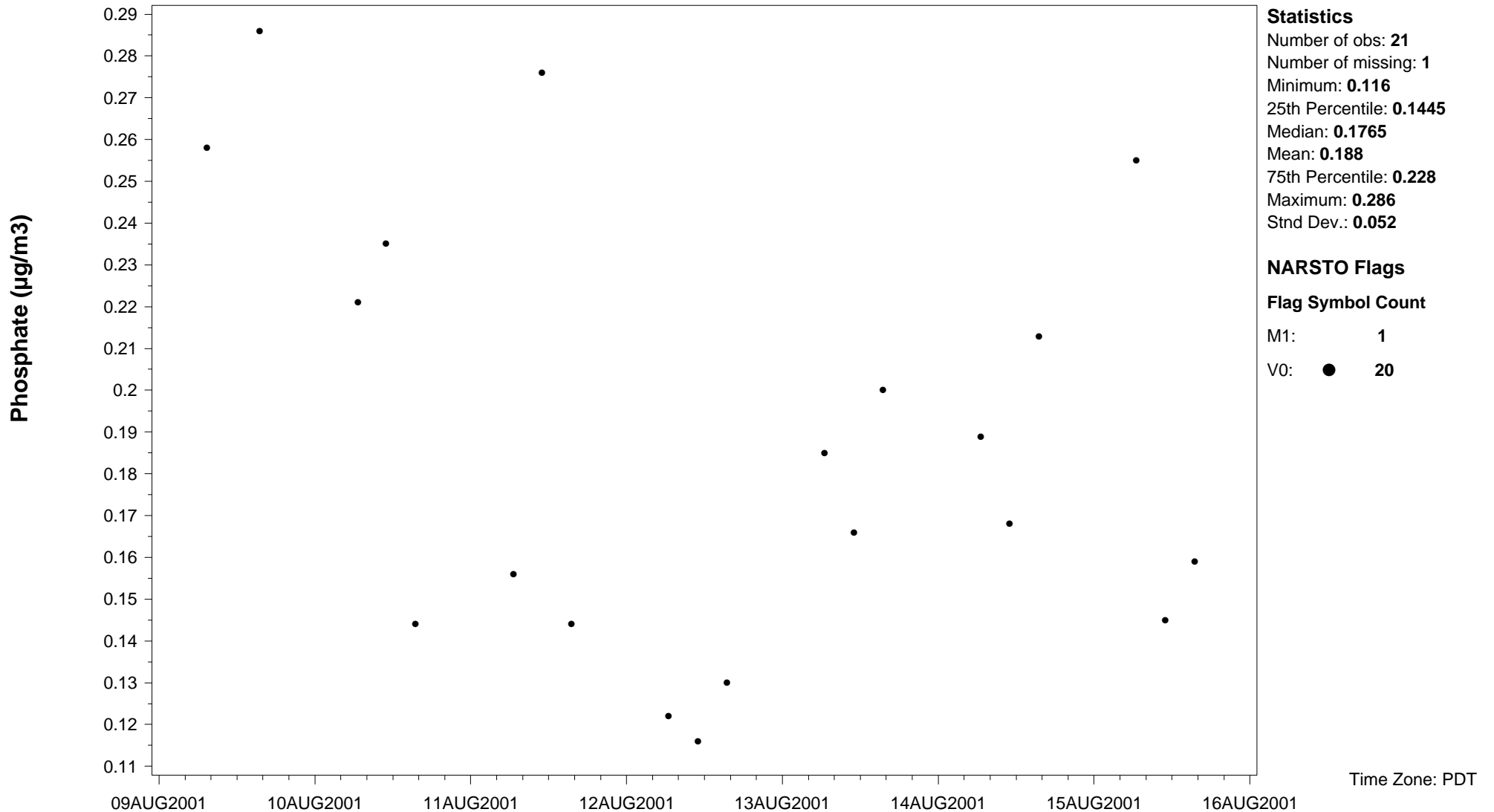
M1: **1**  
 V7: **\*** **20**

Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Phosphate** Common Name: **Phosphate** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C14265-44-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**  
 Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

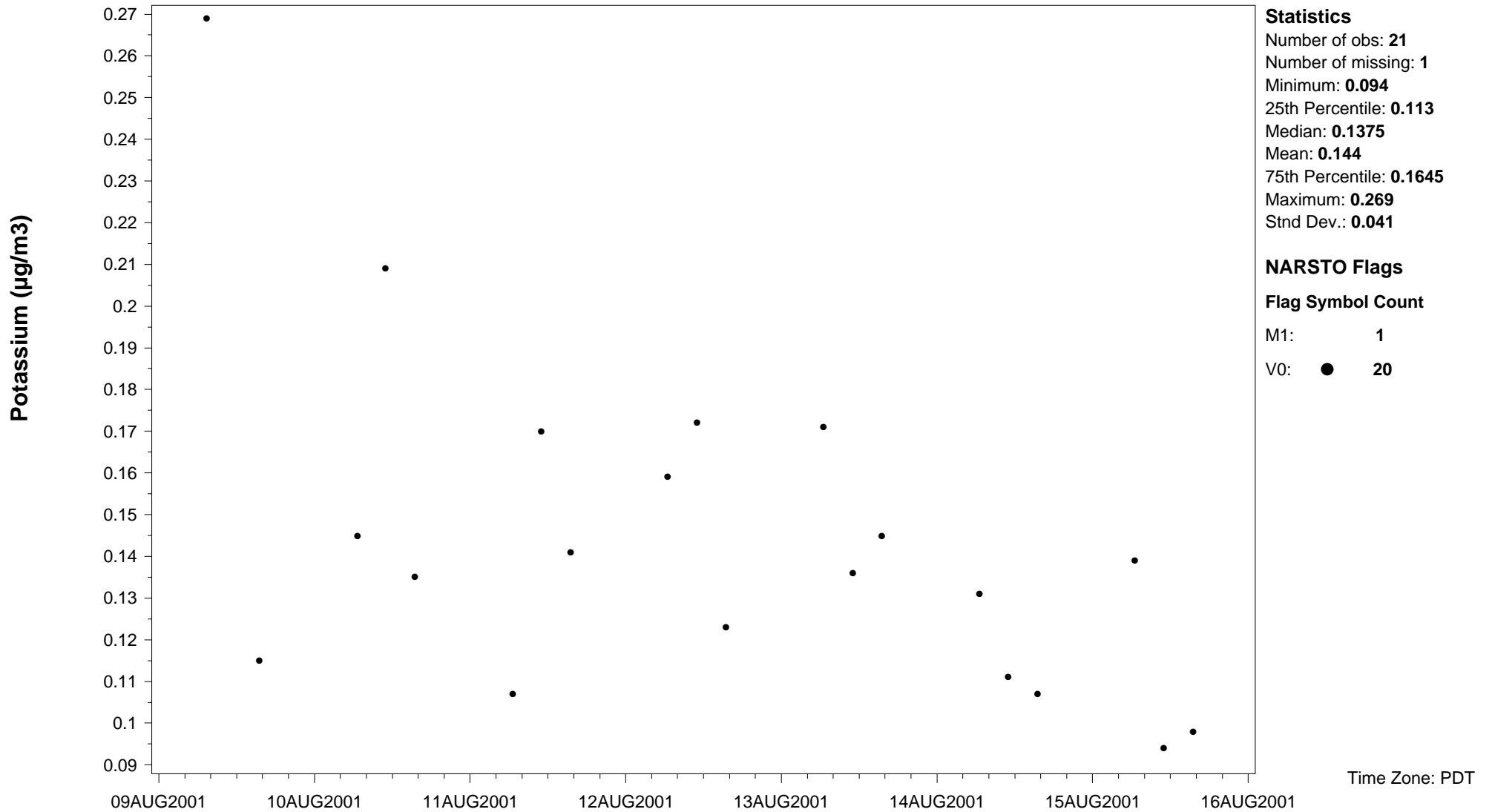


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Potassium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-09-7**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

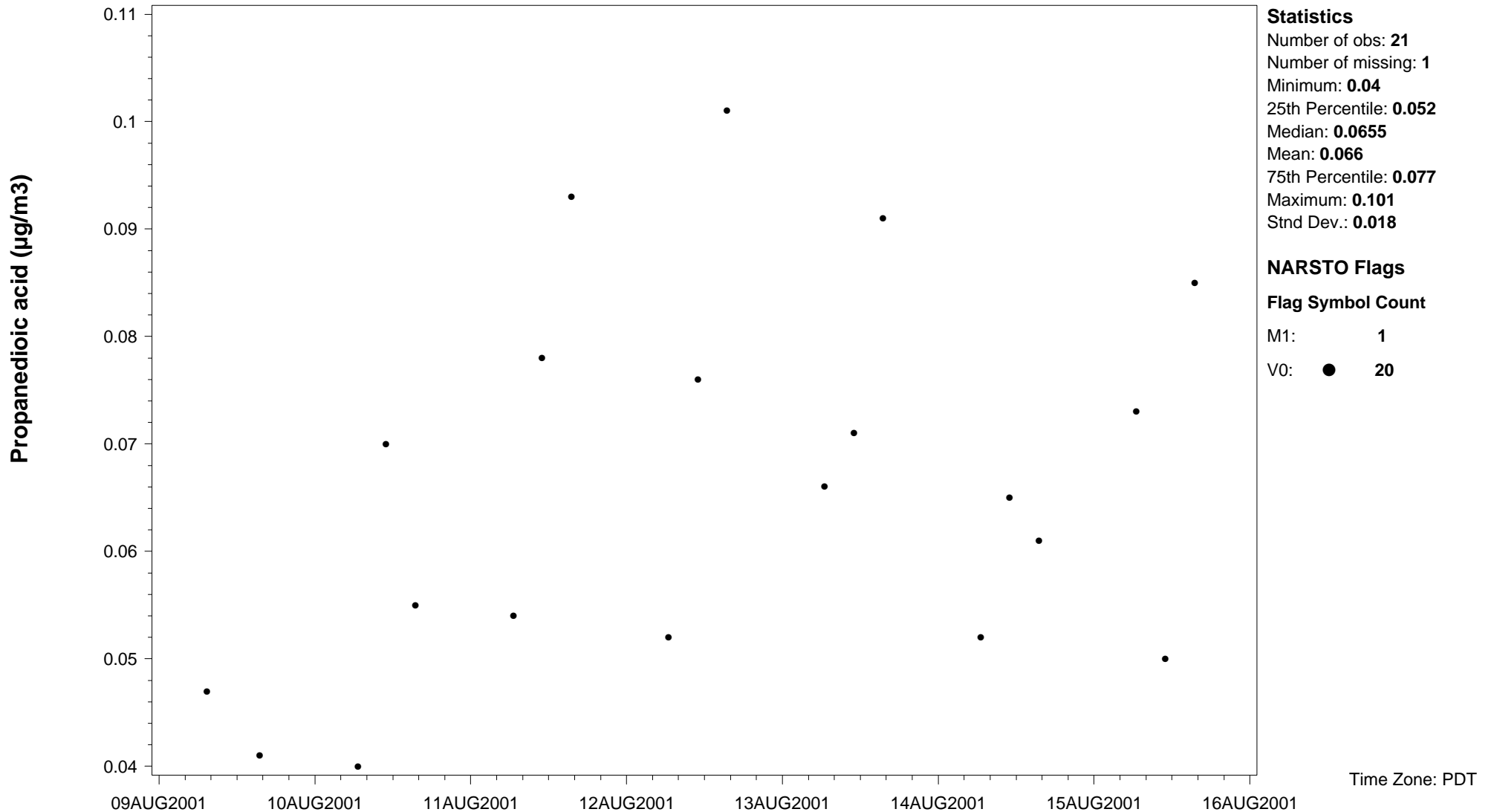


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Propanedioic acid** Common Name: **Malonic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C141-82-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



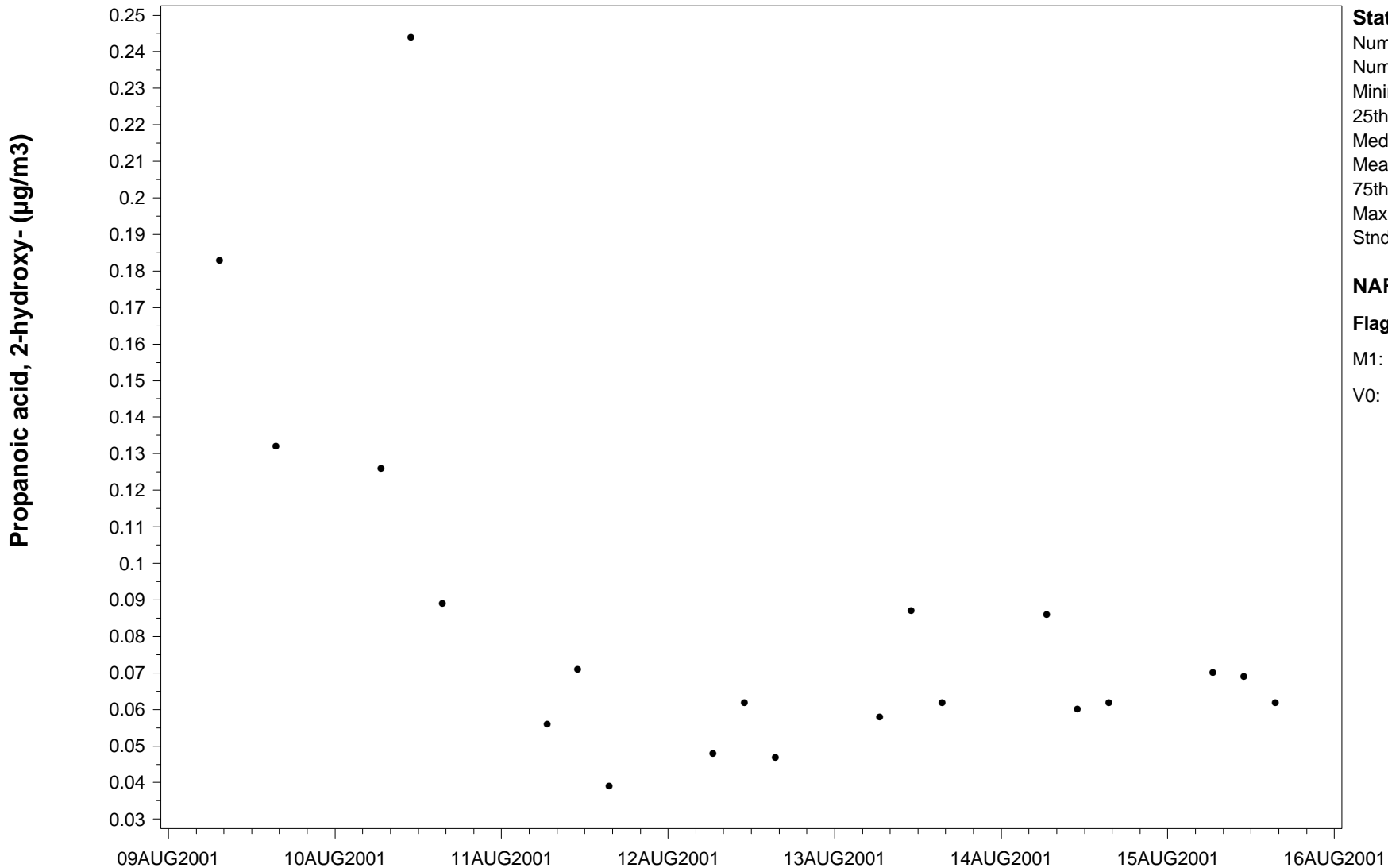


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Propanoic acid, 2-hydroxy-** Common Name: **Lactic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C50-21-5** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.039**  
 25th Percentile: **0.059**  
 Median: **0.0655**  
 Mean: **0.086**  
 75th Percentile: **0.088**  
 Maximum: **0.244**  
 Std Dev.: **0.051**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V0: ● **20**

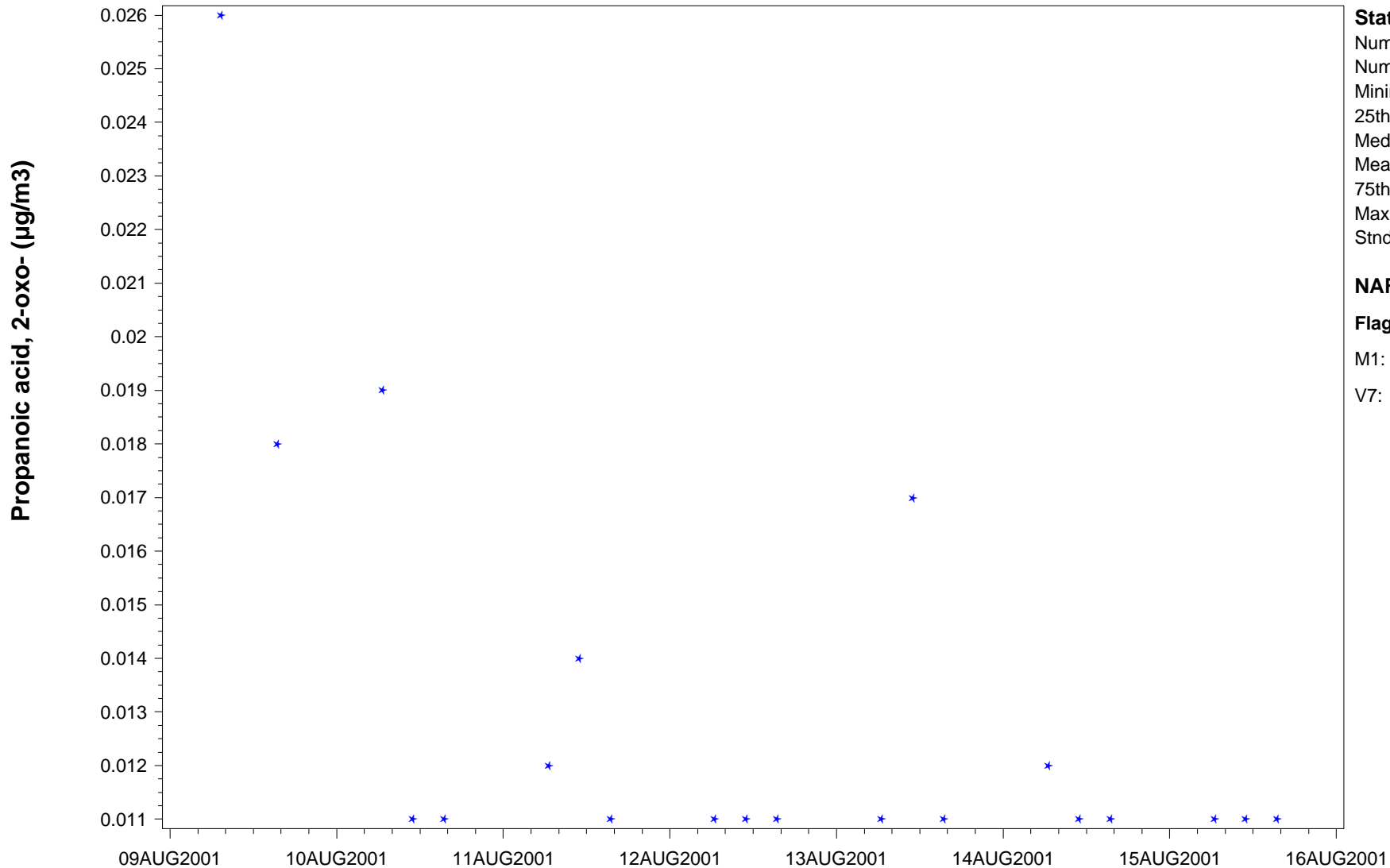
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Propanoic acid, 2-oxo-** Common Name: **Pyruvic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C127-17-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.011**  
 25th Percentile: **0.011**  
 Median: **0.011**  
 Mean: **0.013**  
 75th Percentile: **0.013**  
 Maximum: **0.026**  
 Stnd Dev.: **0.004**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

Time Zone: PDT

### NAtChem Time Series Plot

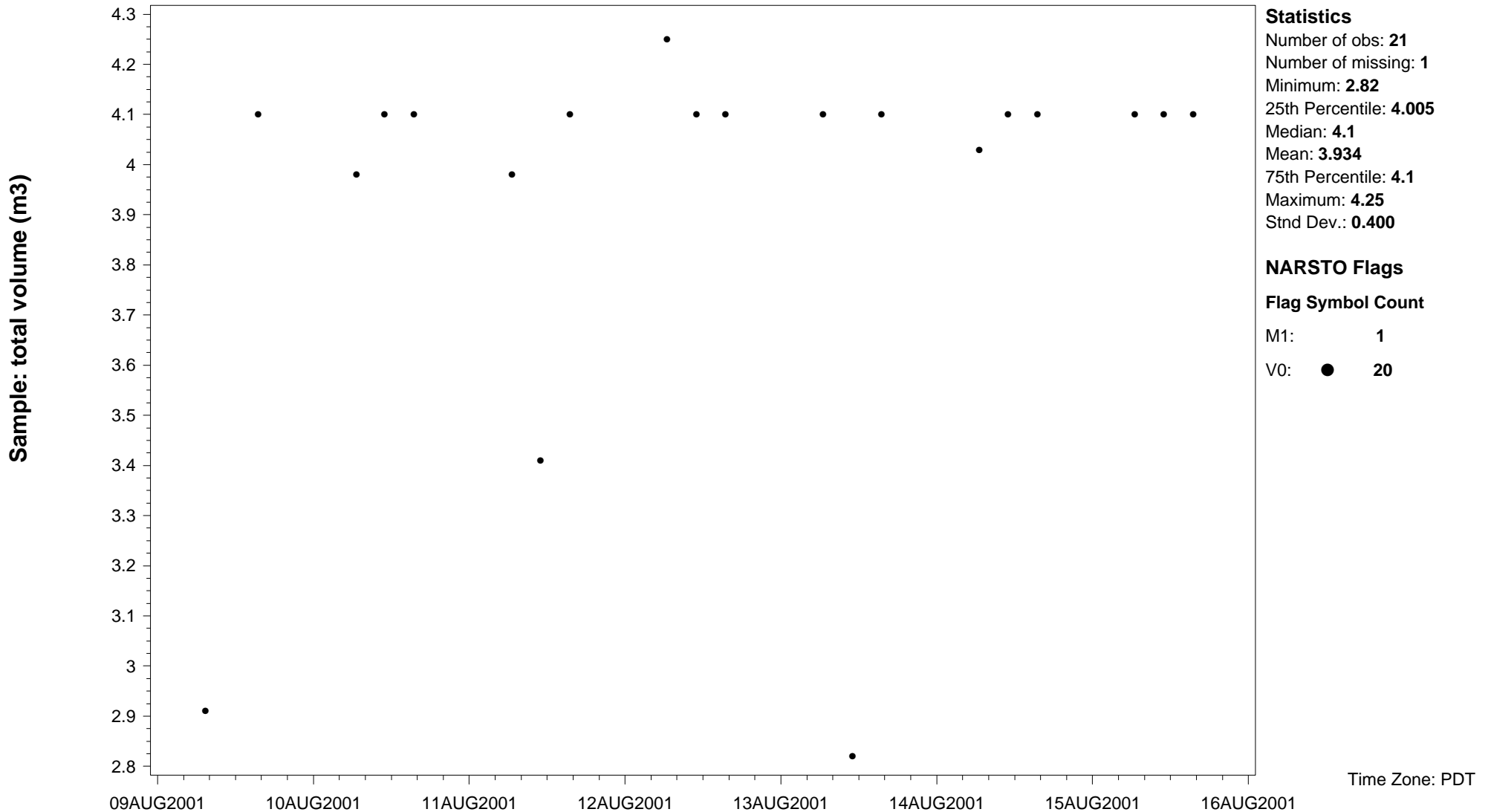
21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Sample: total volume** Units: **m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**

Observation type: **Flow** Field sampling or measurement principle: **Sample history form** Inlet type: **Cyclone**

Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **MKS mass flow controller**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

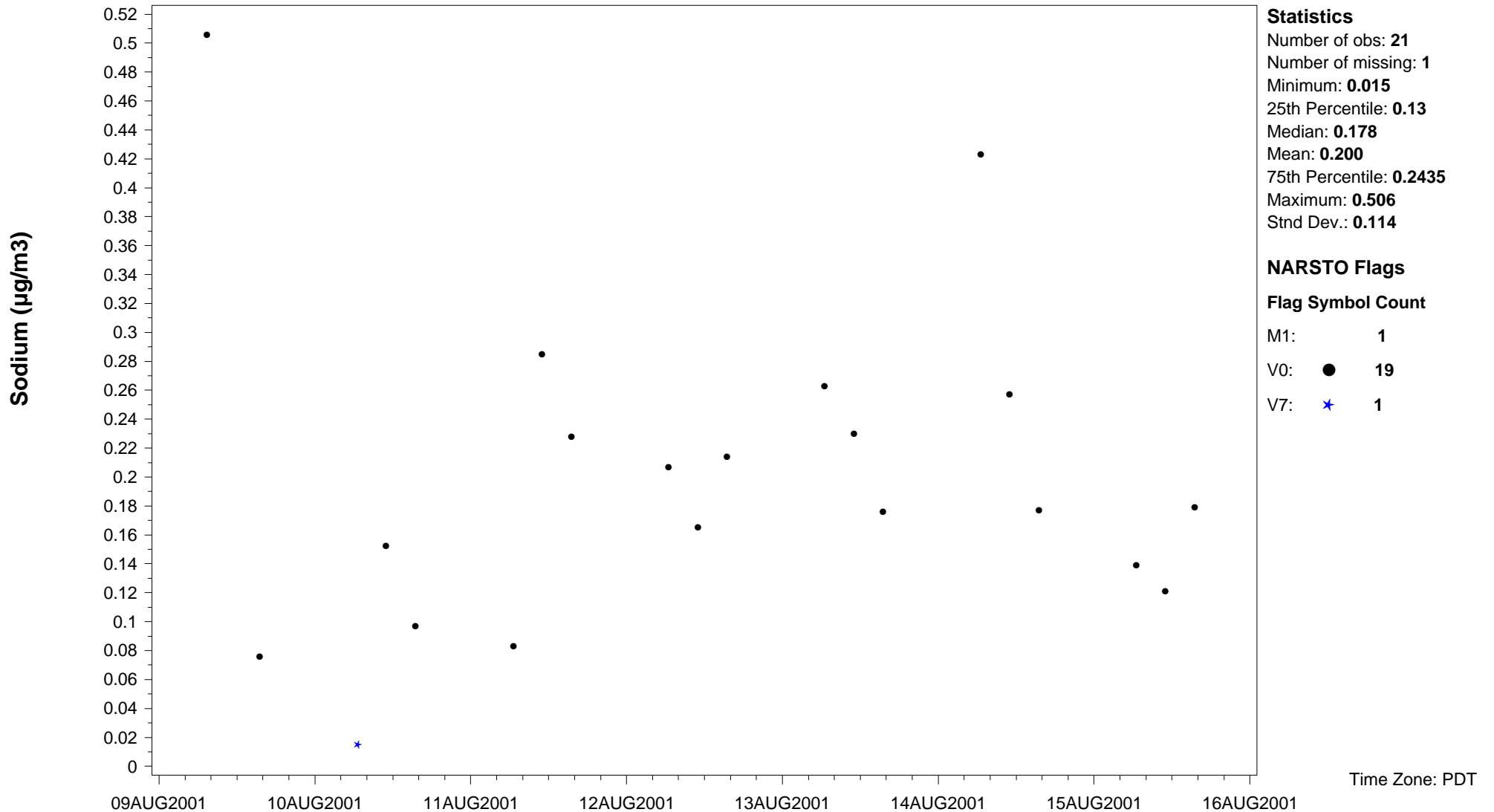


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Sodium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-23-5**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

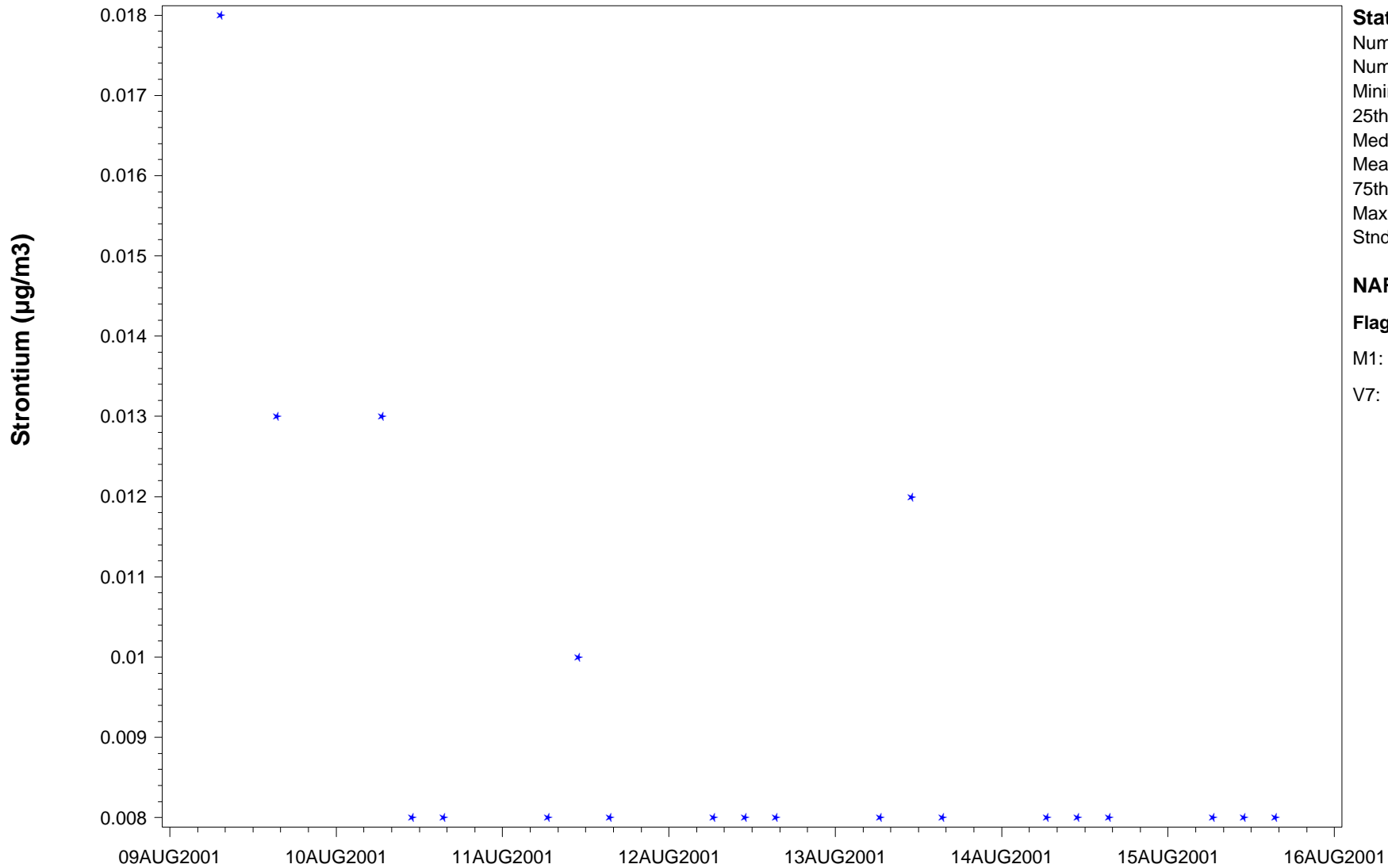


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Strontium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-24-6**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.008**  
 25th Percentile: **0.008**  
 Median: **0.008**  
 Mean: **0.009**  
 75th Percentile: **0.009**  
 Maximum: **0.018**  
 Std Dev.: **0.003**

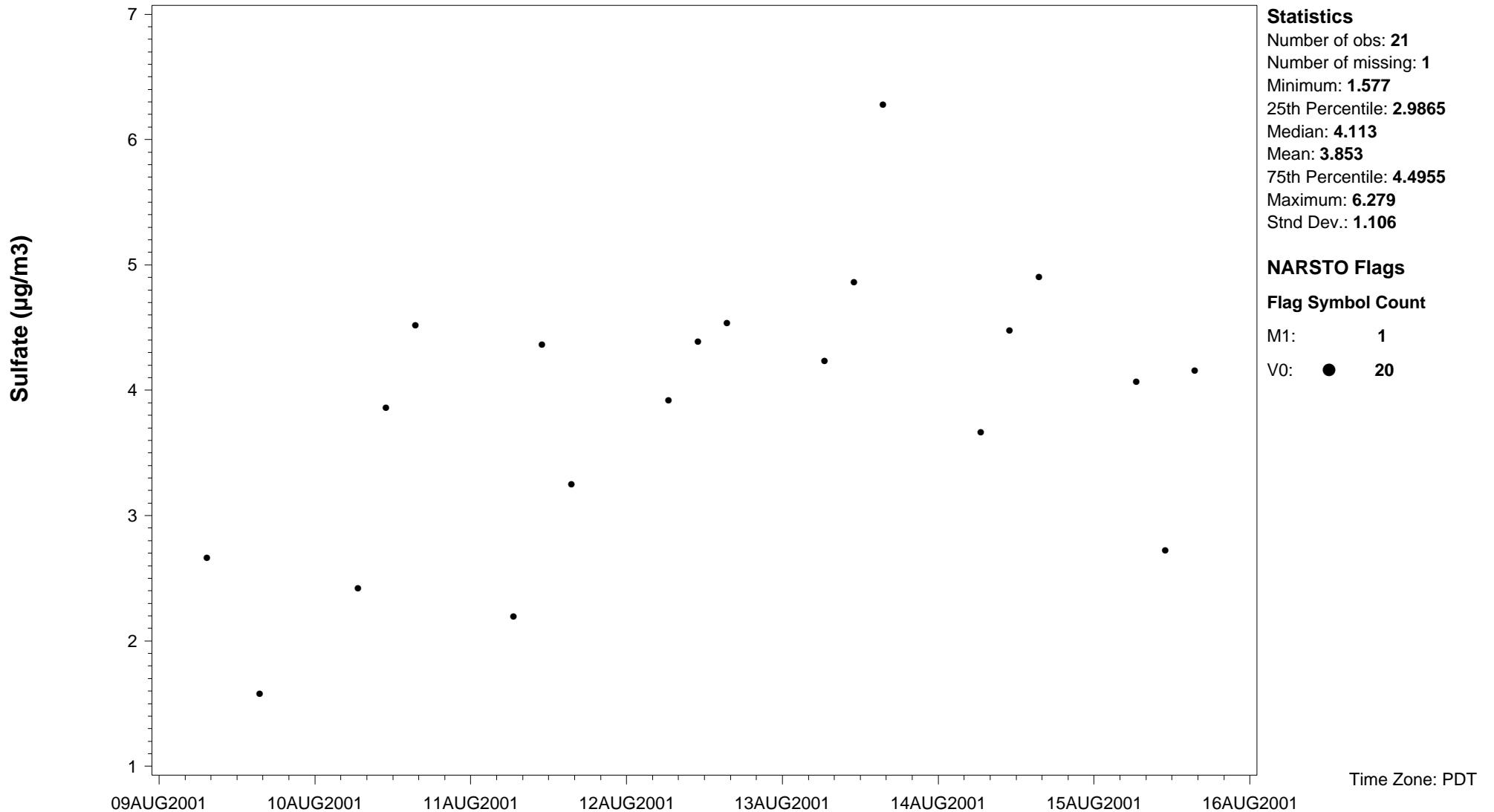
**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: **★ 20**

Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTN** Variable name: **Sulfate** Common Name: **Sulphate** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C14808-79-8** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**  
 Site Name: **Cassiar Tunnel (North End), British Columbia** Latitude: **49.28389 deg.** Longitude: **-123.03194 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



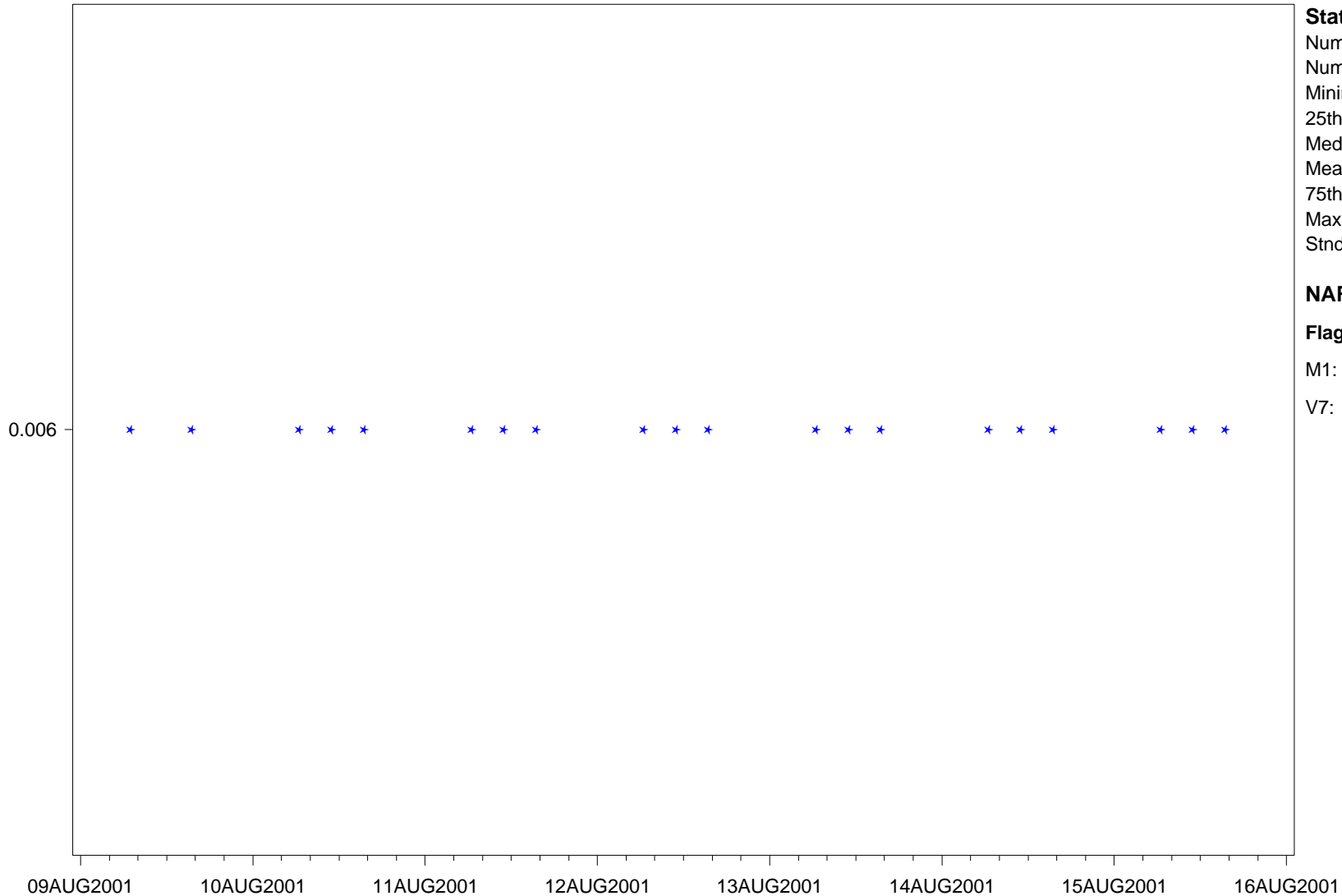
NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **1,2-Benzenedicarboxylic acid** Common Name: **Phthalic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C88-99-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

1,2-Benzenedicarboxylic acid (µg/m3)



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.006**  
 25th Percentile: **0.006**  
 Median: **0.006**  
 Mean: **0.006**  
 75th Percentile: **0.006**  
 Maximum: **0.006**  
 Stnd Dev.: **0.000**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

Time Zone: PDT

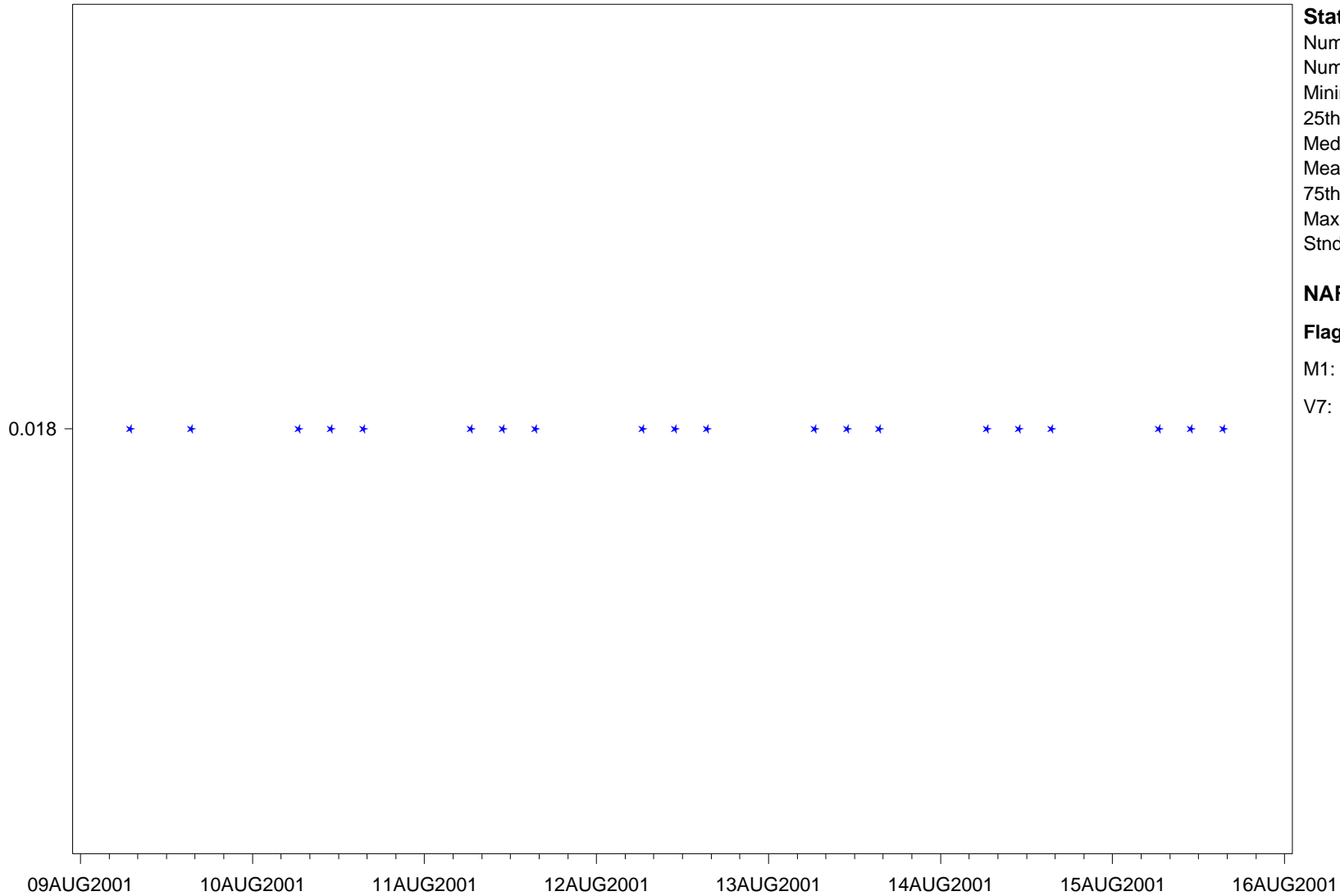
NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **1,2-Benzenedicarboxylic acid, dimethyl ester** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C131-11-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

1,2-Benzenedicarboxylic acid, dimethyl ester (µg/m3)



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.018**  
 25th Percentile: **0.018**  
 Median: **0.018**  
 Mean: **0.018**  
 75th Percentile: **0.018**  
 Maximum: **0.018**  
 Std Dev.: **0.000**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: **20**

Time Zone: PDT

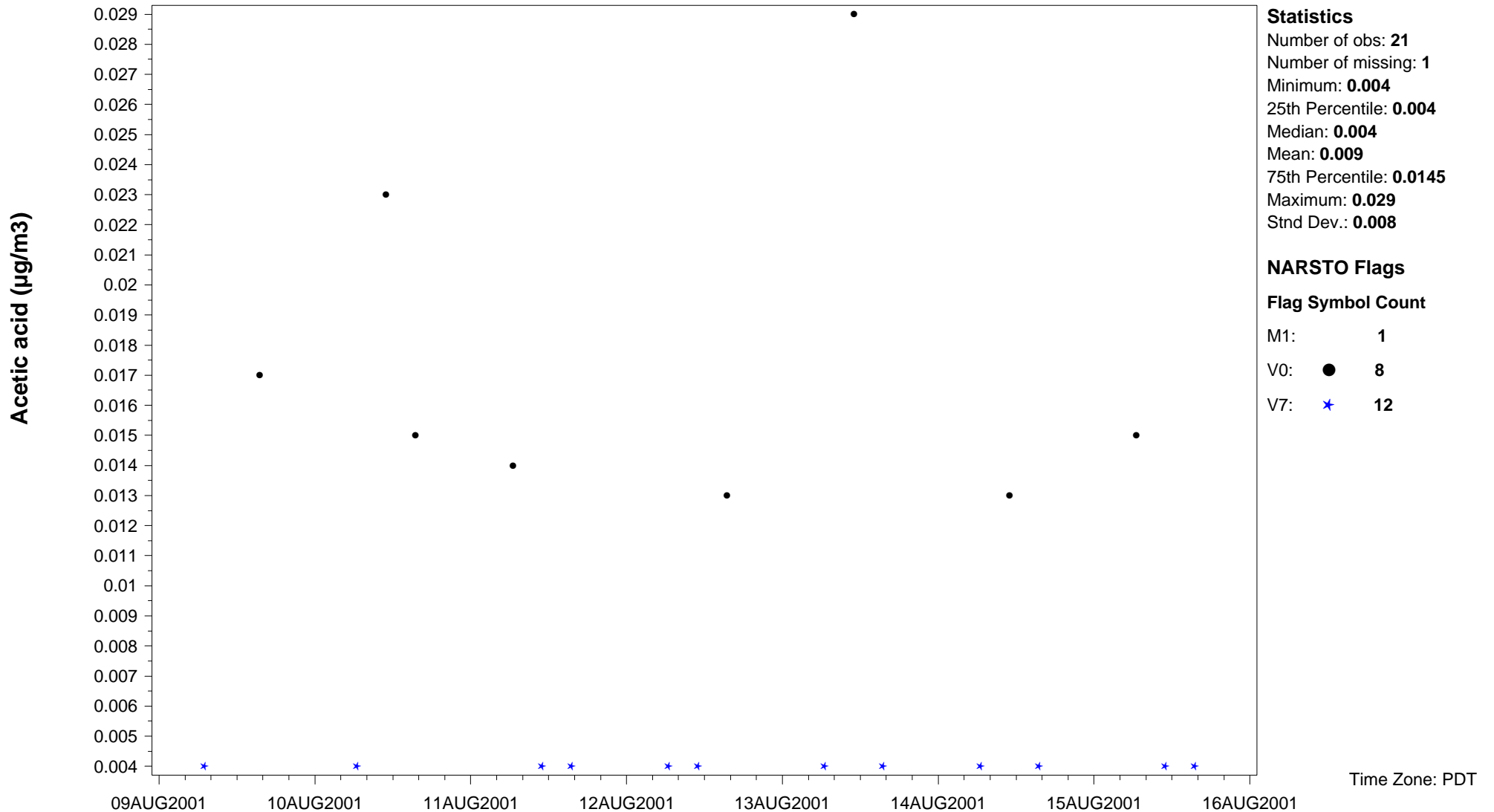


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Acetic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C64-19-7**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone**  
 Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

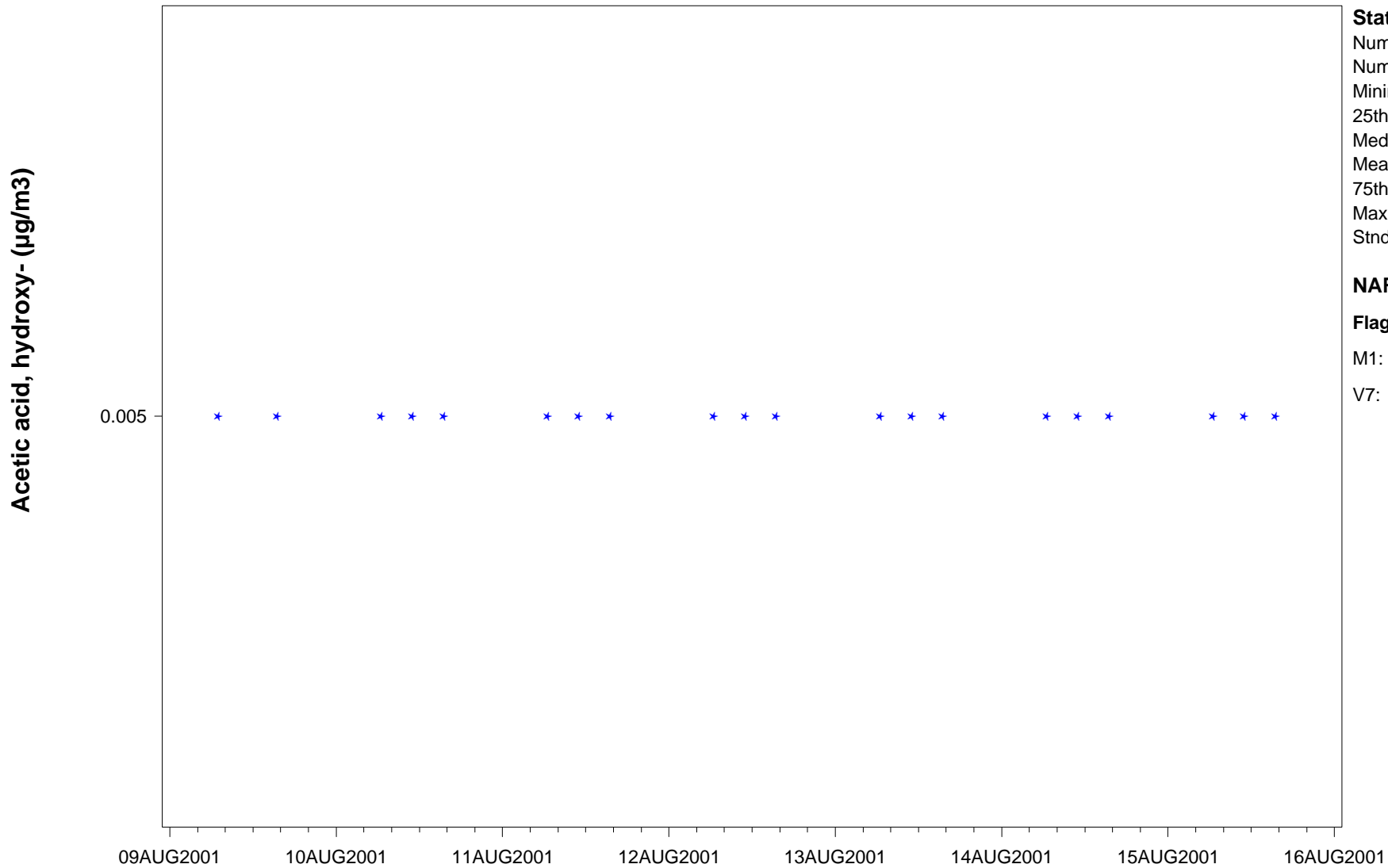


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Acetic acid, hydroxy-** Common Name: **Glycolic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C79-14-1** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.005**  
 25th Percentile: **0.005**  
 Median: **0.005**  
 Mean: **0.005**  
 75th Percentile: **0.005**  
 Maximum: **0.005**  
 Std Dev.: **0.000**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

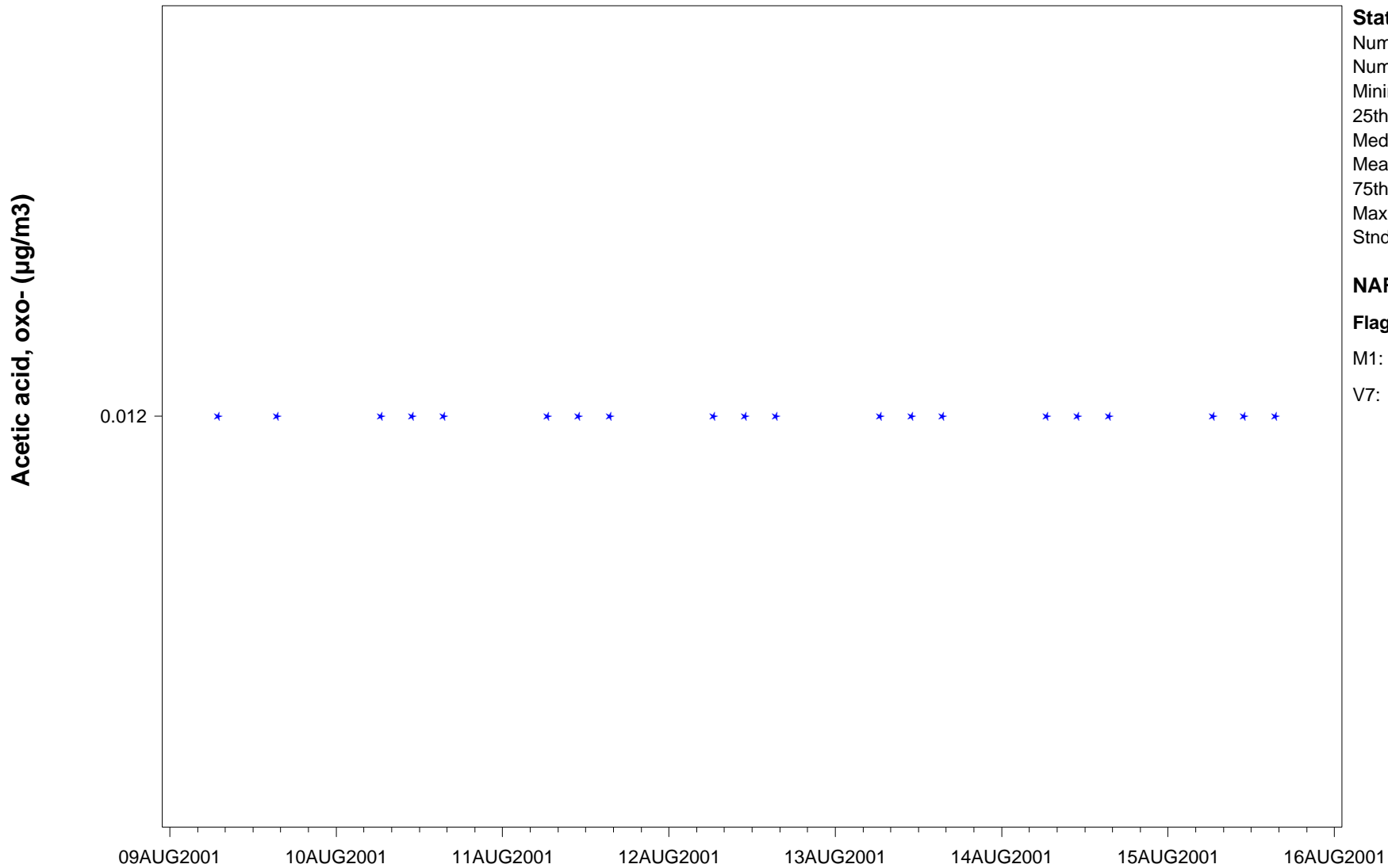
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Acetic acid, oxo-** Common Name: **Glyoxylic** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C298-12-4** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.012**  
 25th Percentile: **0.012**  
 Median: **0.012**  
 Mean: **0.012**  
 75th Percentile: **0.012**  
 Maximum: **0.012**  
 Std Dev.: **0.000**

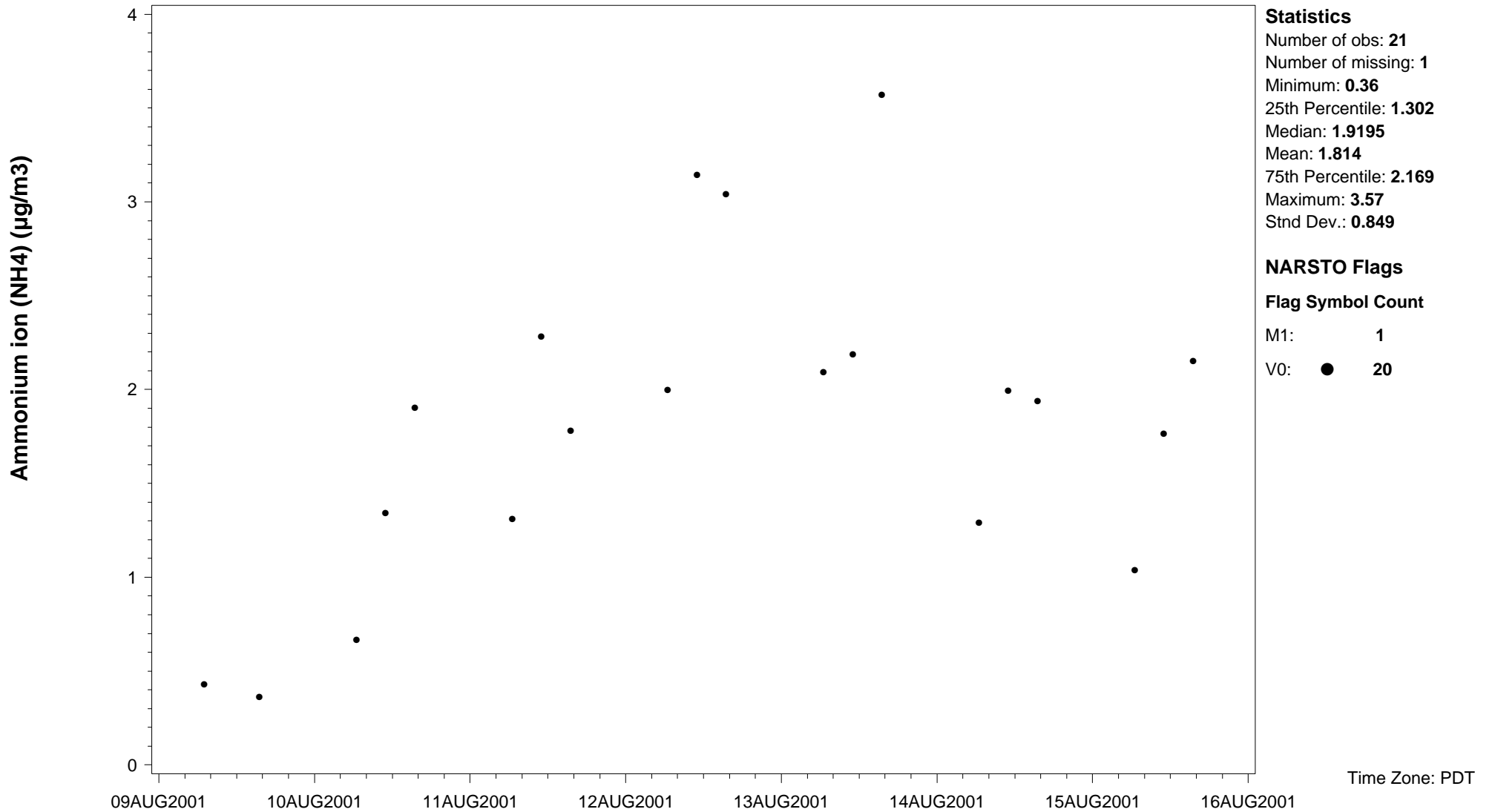
**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Ammonium ion (NH4)** Common Name: **NH4+** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C14798-03-9** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**  
 Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



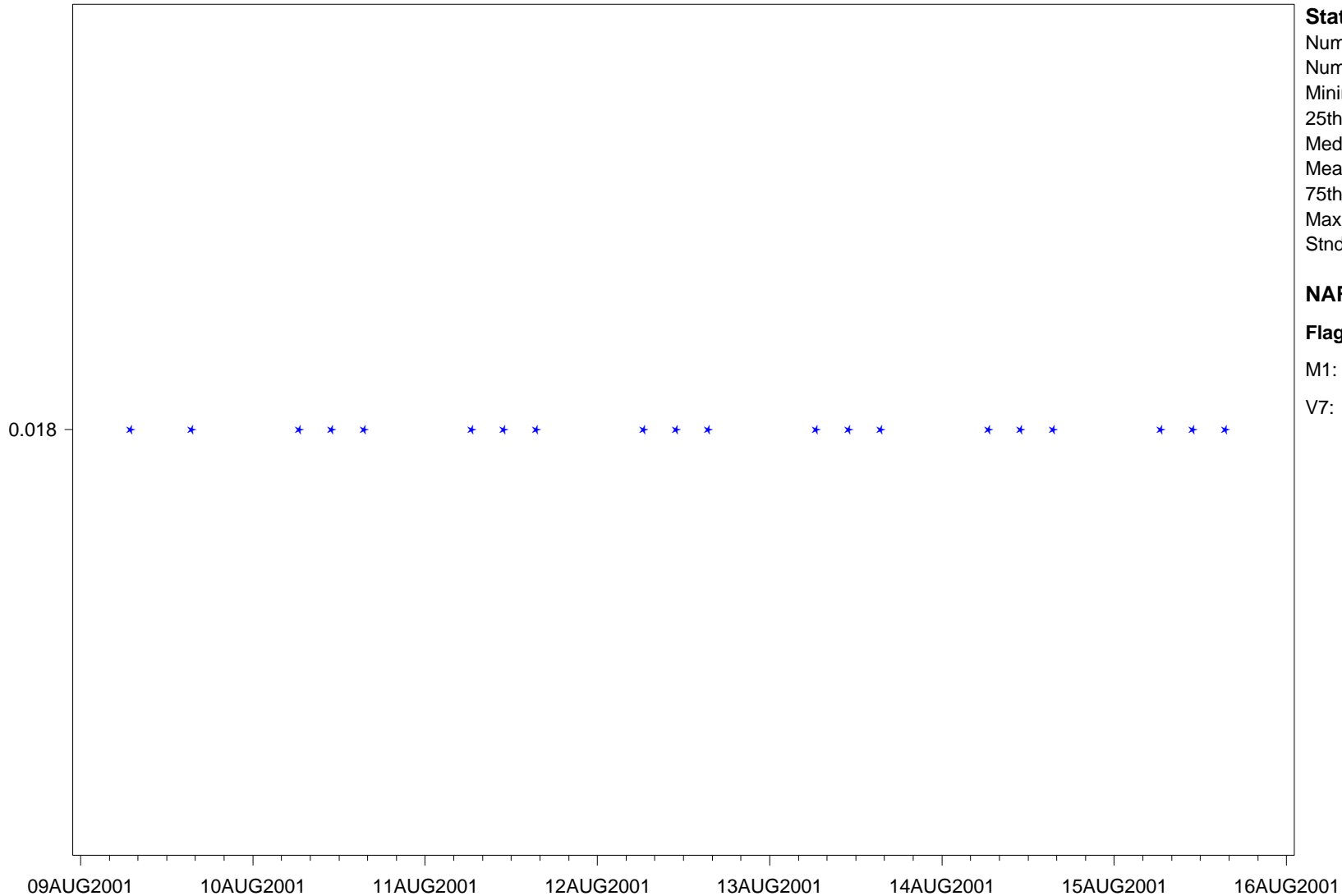
NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Benzoic acid (7CI, 8CI, 9CI)** Common Name: **Benzoic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C65-85-0** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

Benzoic acid (7CI, 8CI, 9CI) (µg/m3)



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.018**  
 25th Percentile: **0.018**  
 Median: **0.018**  
 Mean: **0.018**  
 75th Percentile: **0.018**  
 Maximum: **0.018**  
 Std Dev.: **0.000**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

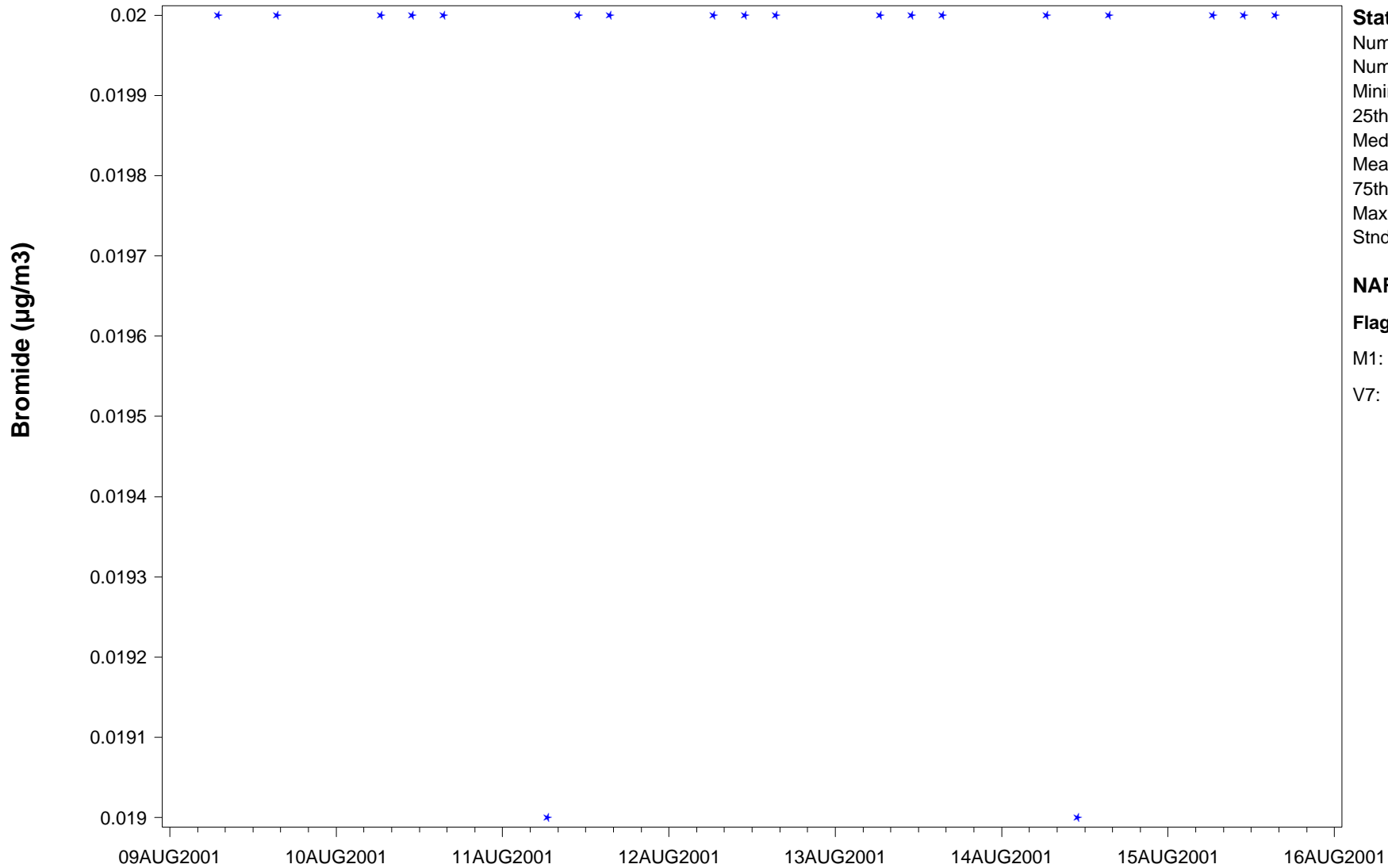
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Bromide** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C24959-67-9**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.019**  
 25th Percentile: **0.02**  
 Median: **0.02**  
 Mean: **0.020**  
 75th Percentile: **0.02**  
 Maximum: **0.02**  
 Std Dev.: **0.000**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

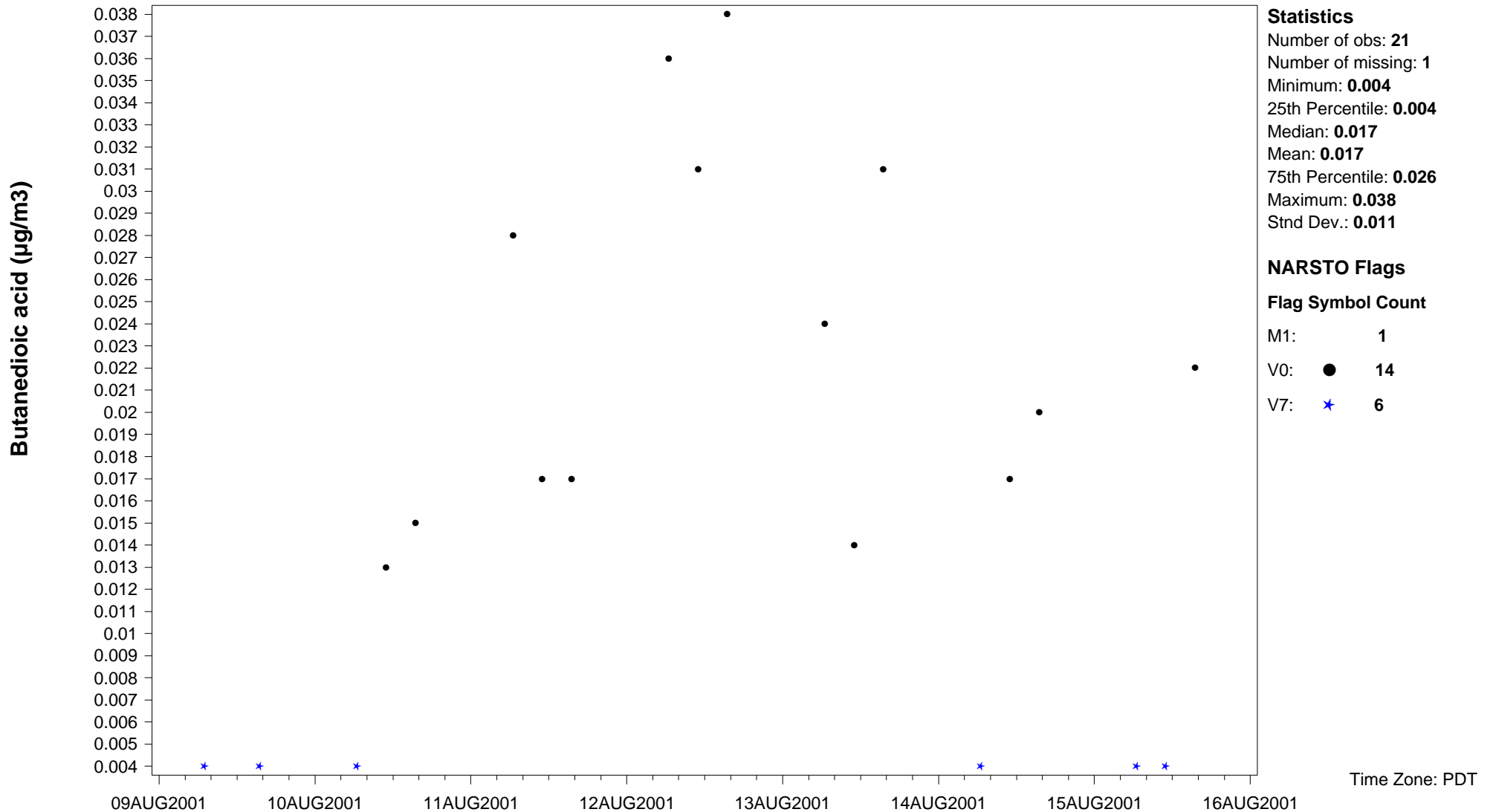
Time Zone: PDT

### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Butanedioic acid** Common Name: **Succinic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C110-15-6** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

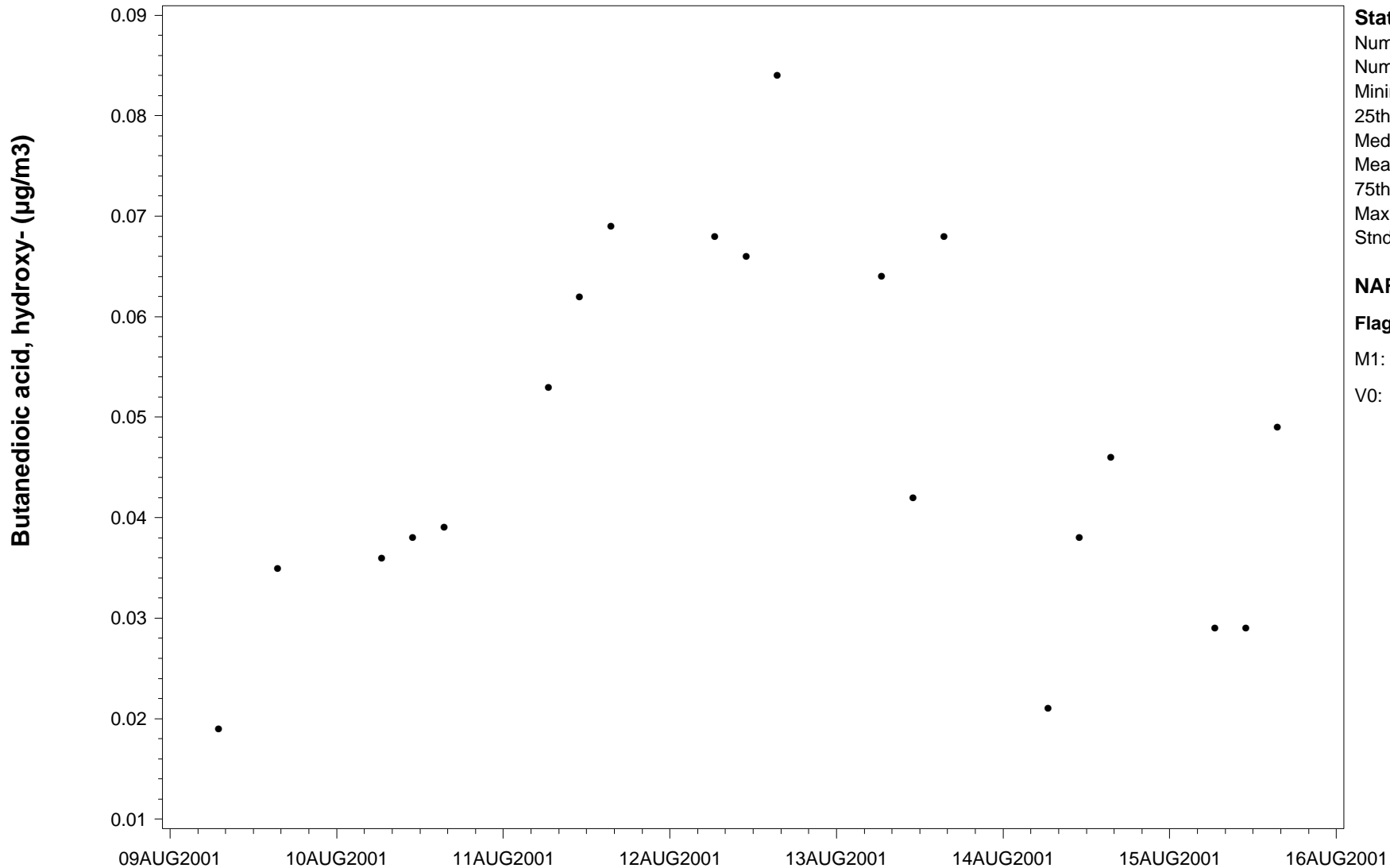


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Butanedioic acid, hydroxy-** Common Name: **Malic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C6915-15-7** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.019**  
 25th Percentile: **0.0355**  
 Median: **0.044**  
 Mean: **0.048**  
 75th Percentile: **0.065**  
 Maximum: **0.084**  
 Stnd Dev.: **0.018**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V0: ● **20**

Time Zone: PDT

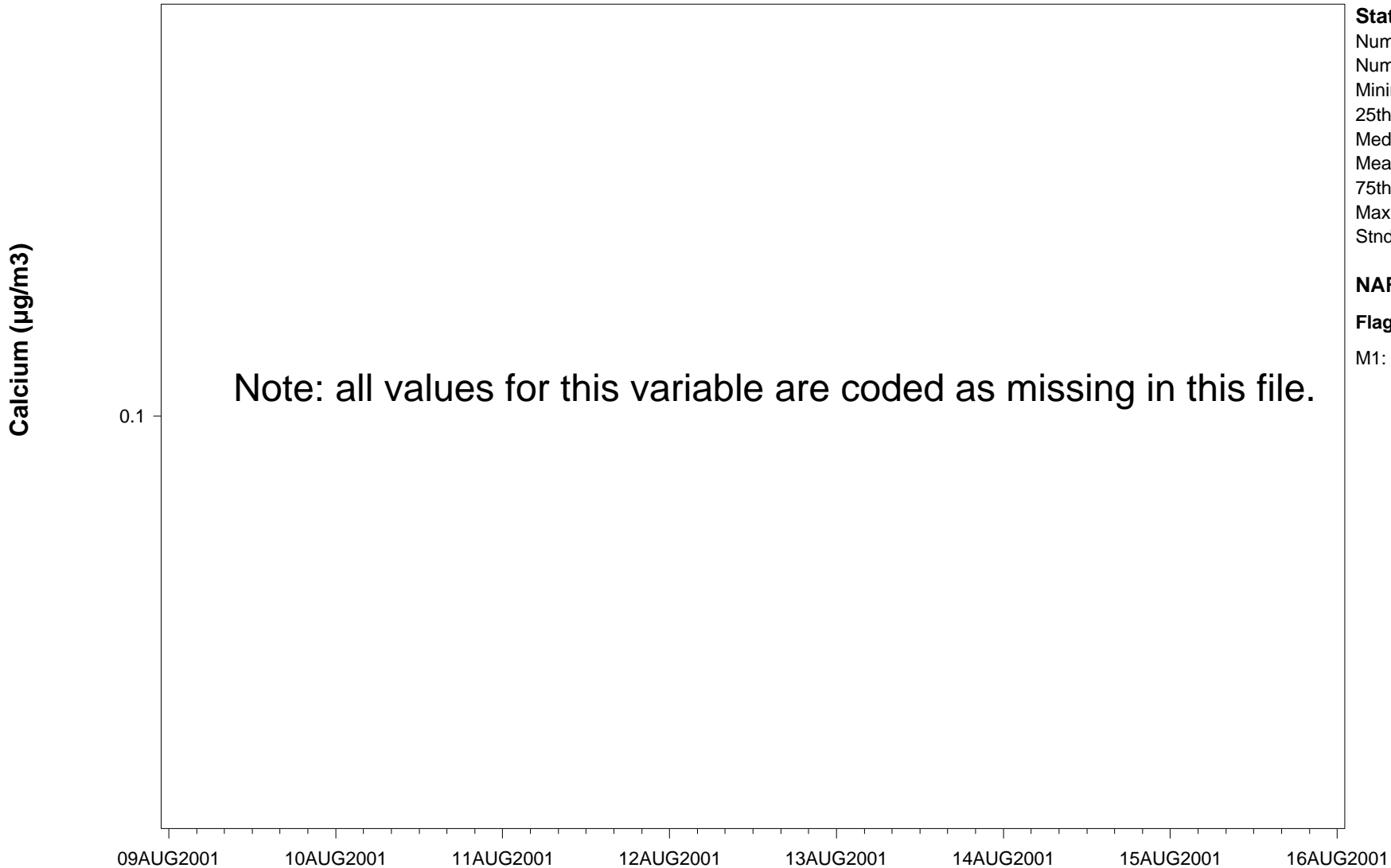


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Calcium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-70-2**  
Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
Number of missing: **21**  
Minimum: .  
25th Percentile: .  
Median: .  
Mean: .  
75th Percentile: .  
Maximum: .  
Std Dev.: .

**NARSTO Flags**

**Flag Symbol Count**  
M1: **21**

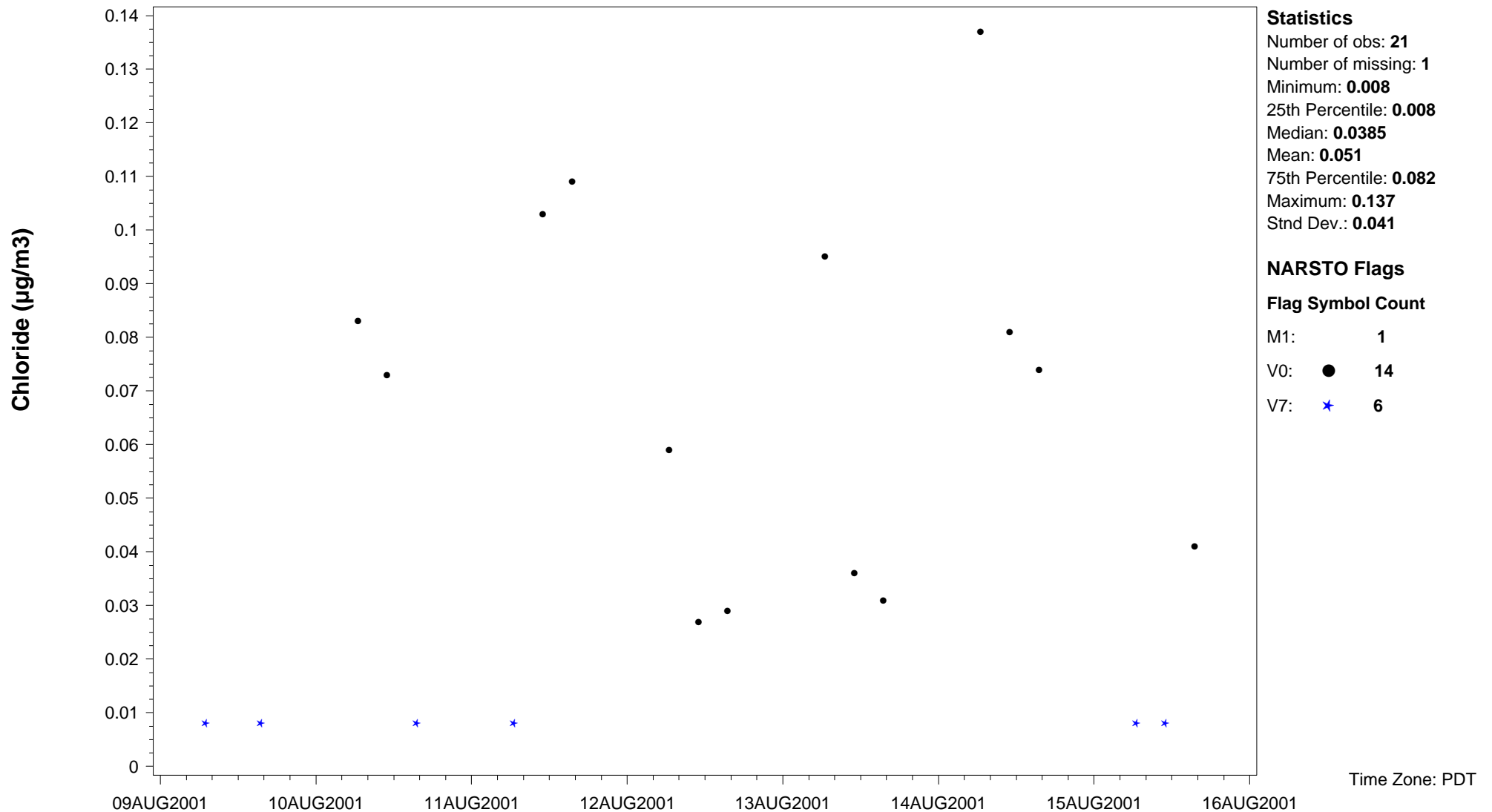
Time Zone: PDT

### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Chloride** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C16887-00-6**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

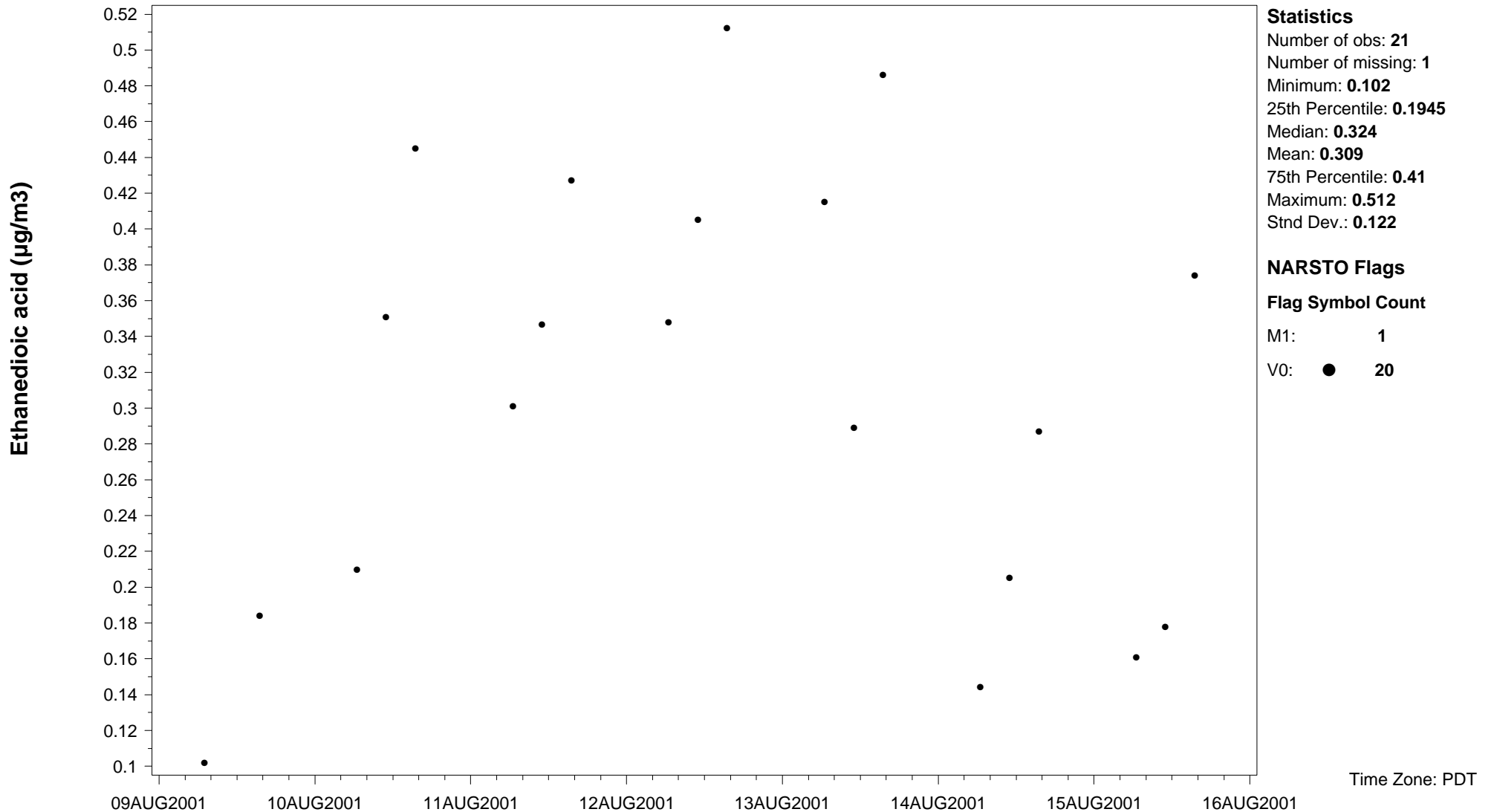


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Ethanedioic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**  
 CAS ID: **C144-62-7** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

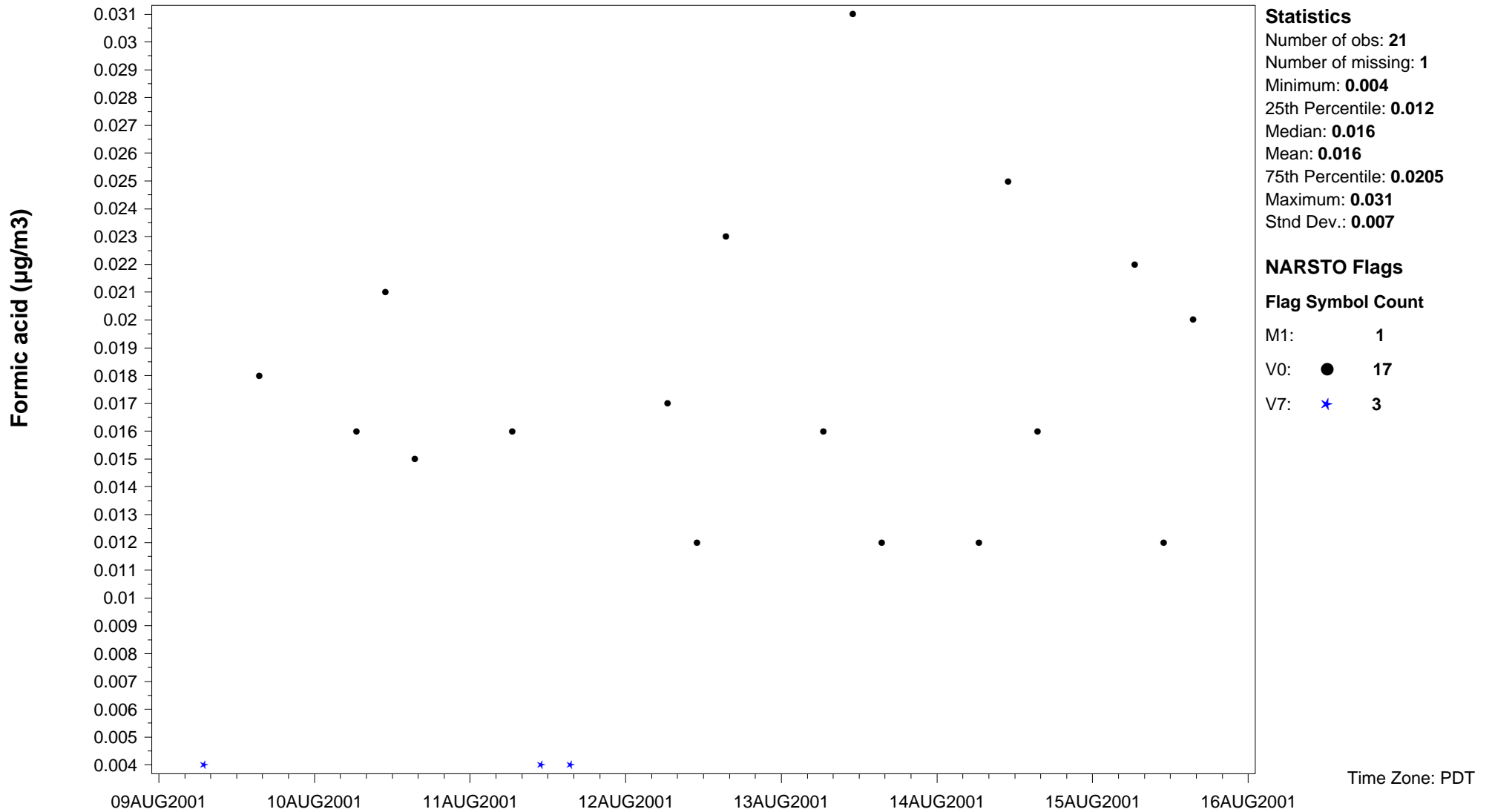


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Formic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C64-18-6**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone**  
 Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

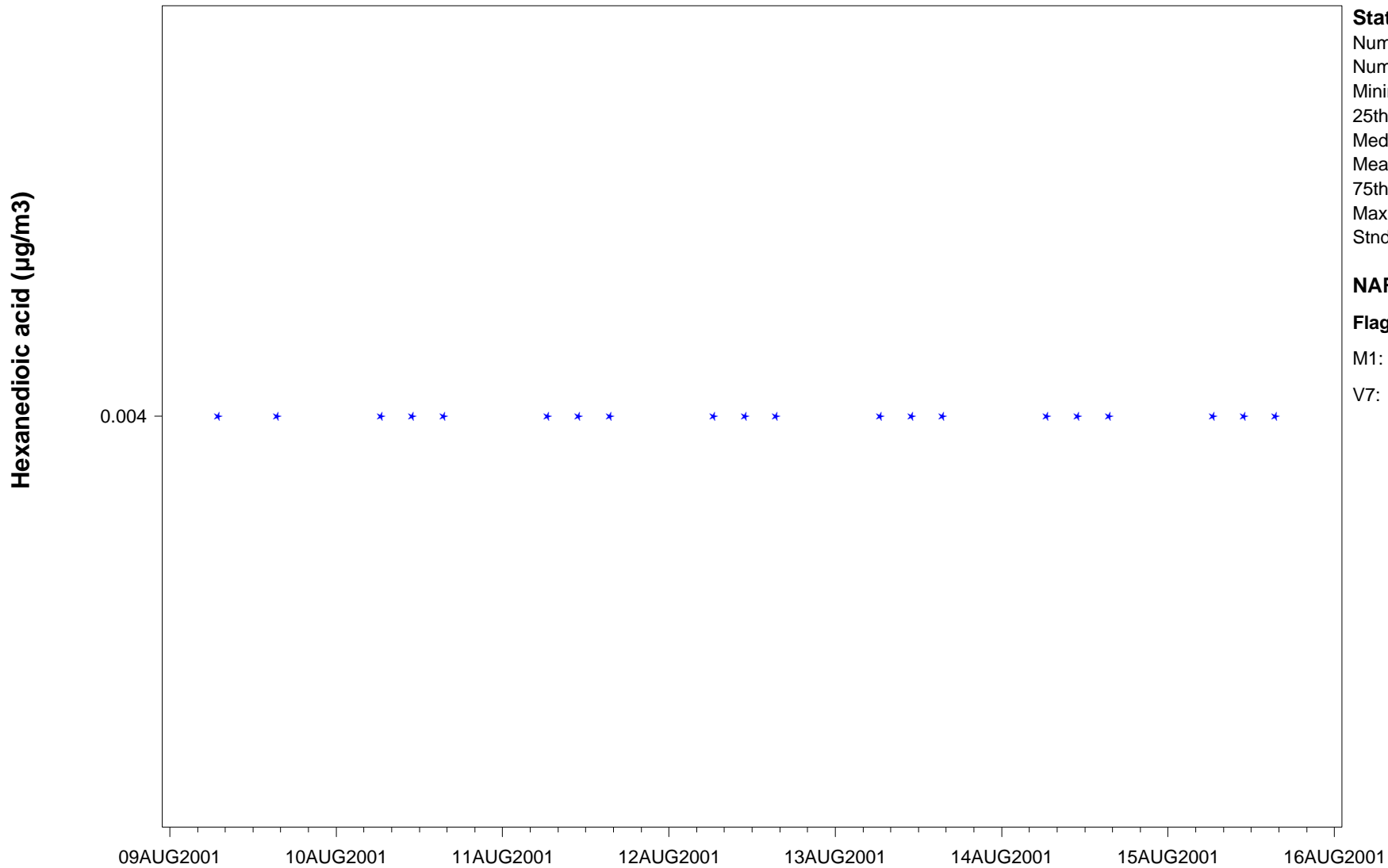


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Hexanedioic acid** Common Name: **Adipic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C124-04-9** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.004**  
 25th Percentile: **0.004**  
 Median: **0.004**  
 Mean: **0.004**  
 75th Percentile: **0.004**  
 Maximum: **0.004**  
 Std Dev.: **0.000**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

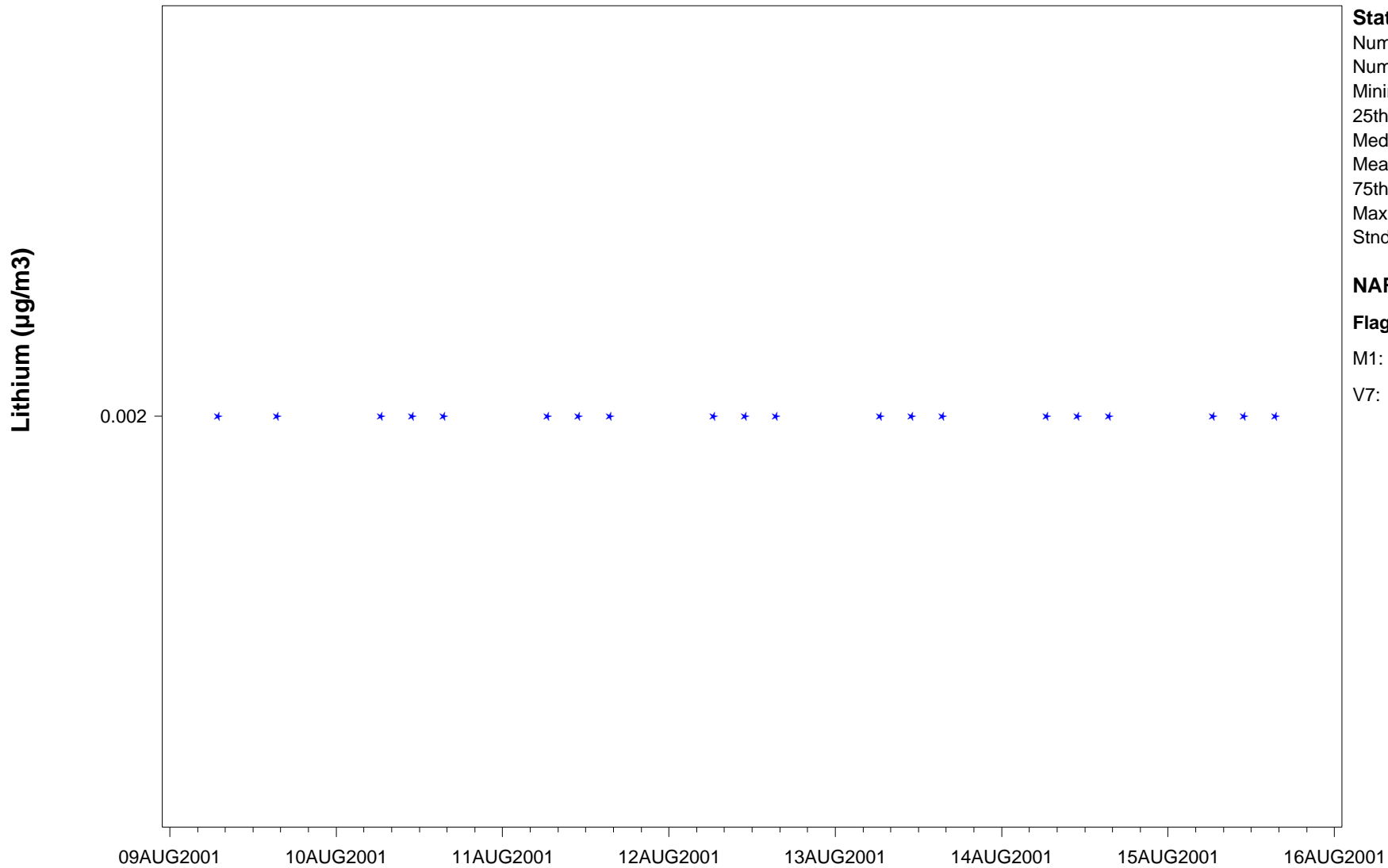
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Lithium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7439-93-2**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.002**  
 25th Percentile: **0.002**  
 Median: **0.002**  
 Mean: **0.002**  
 75th Percentile: **0.002**  
 Maximum: **0.002**  
 Std Dev.: **0.000**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: \* **20**

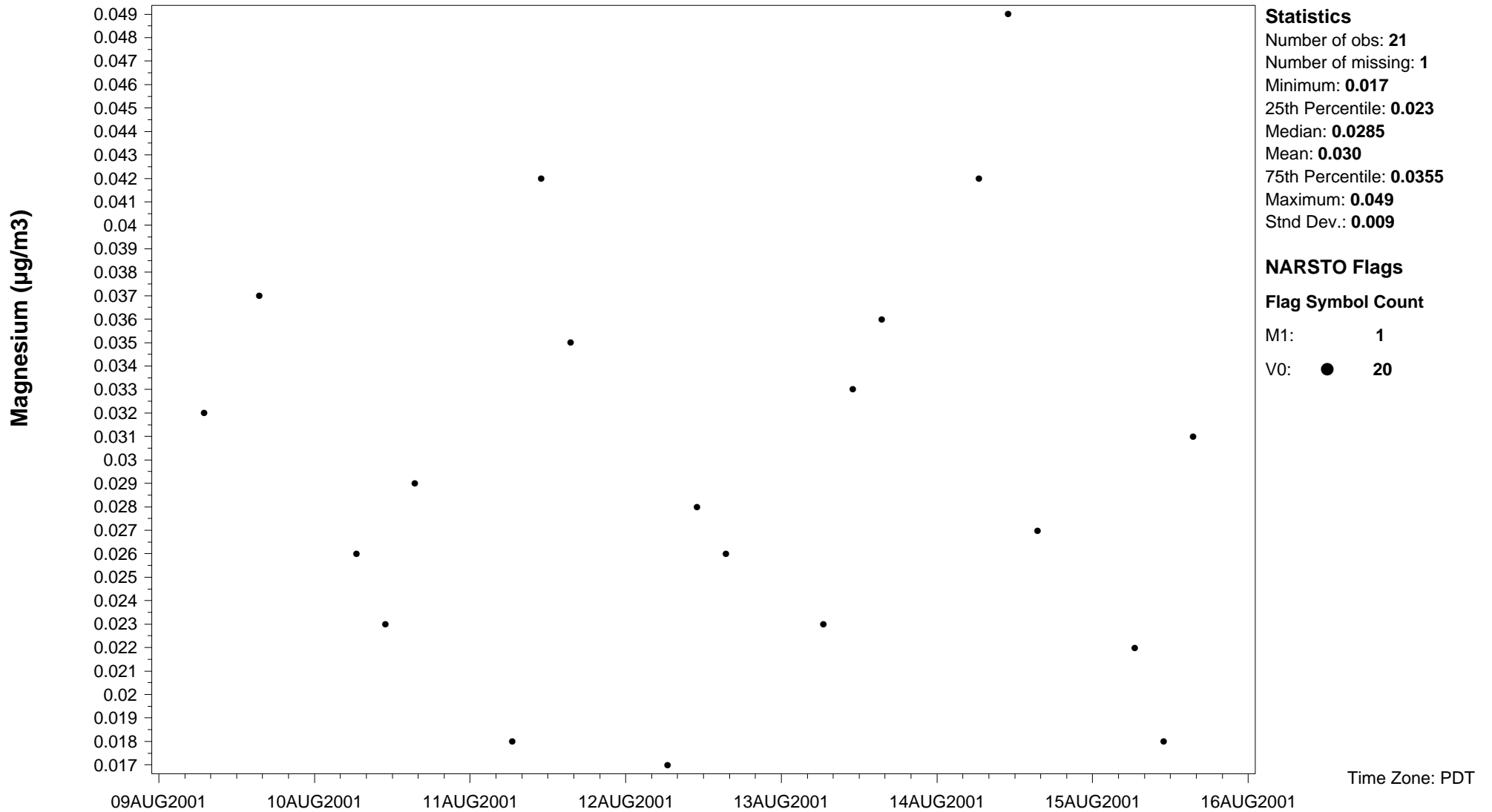
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Magnesium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7439-95-4**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

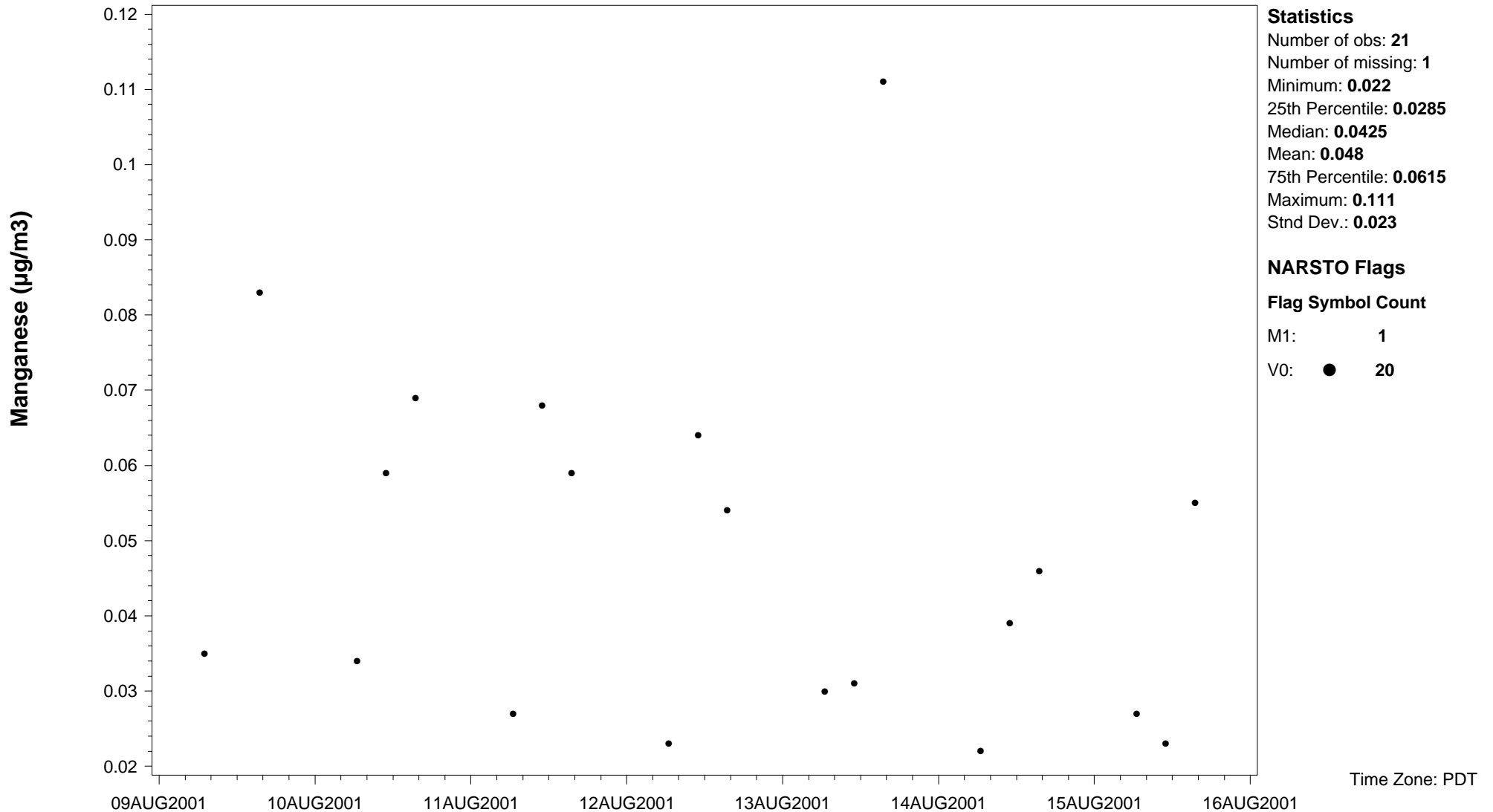


### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Manganese** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7439-96-5**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



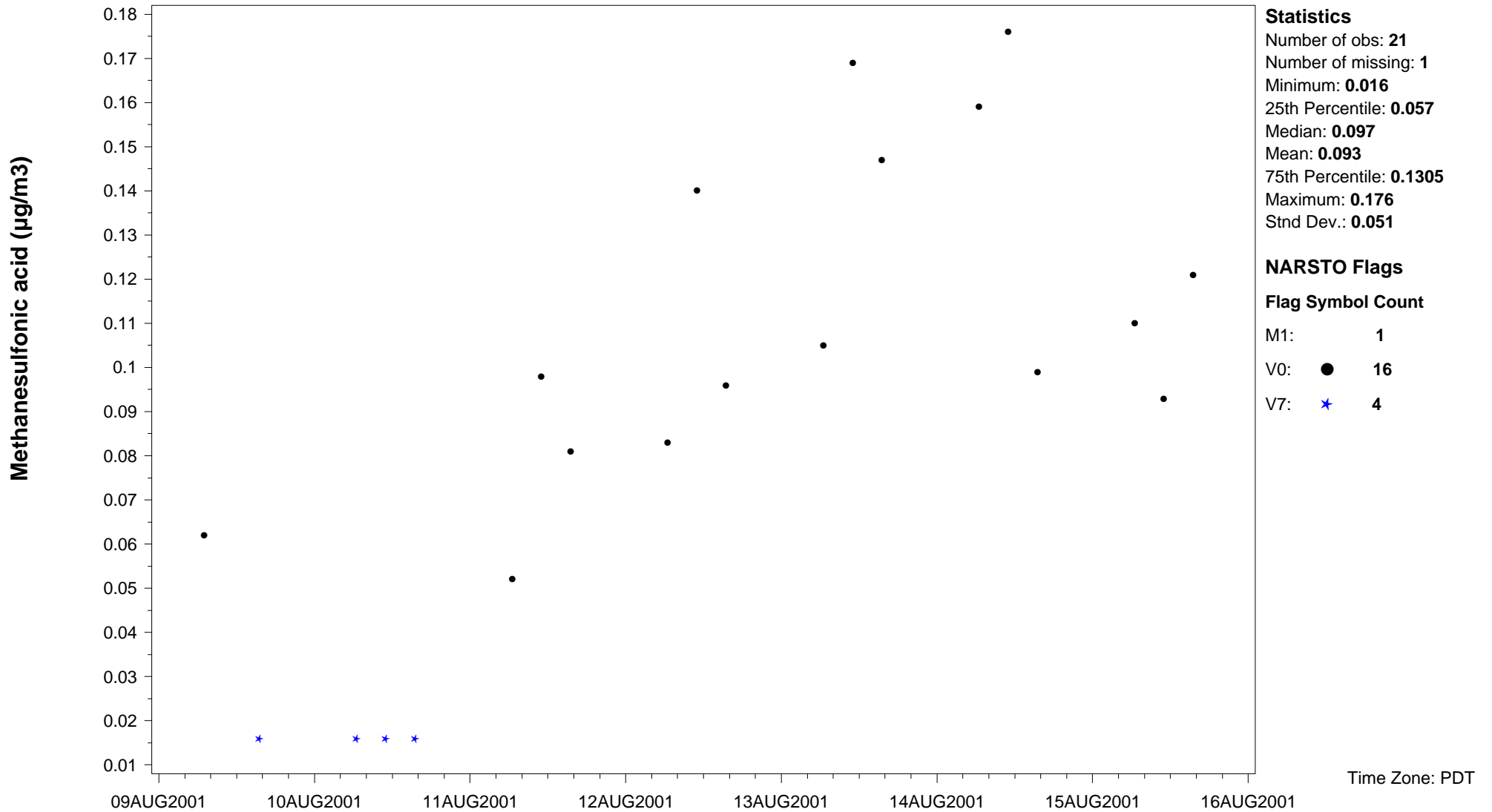


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Methanesulfonic acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**  
 CAS ID: **C75-75-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

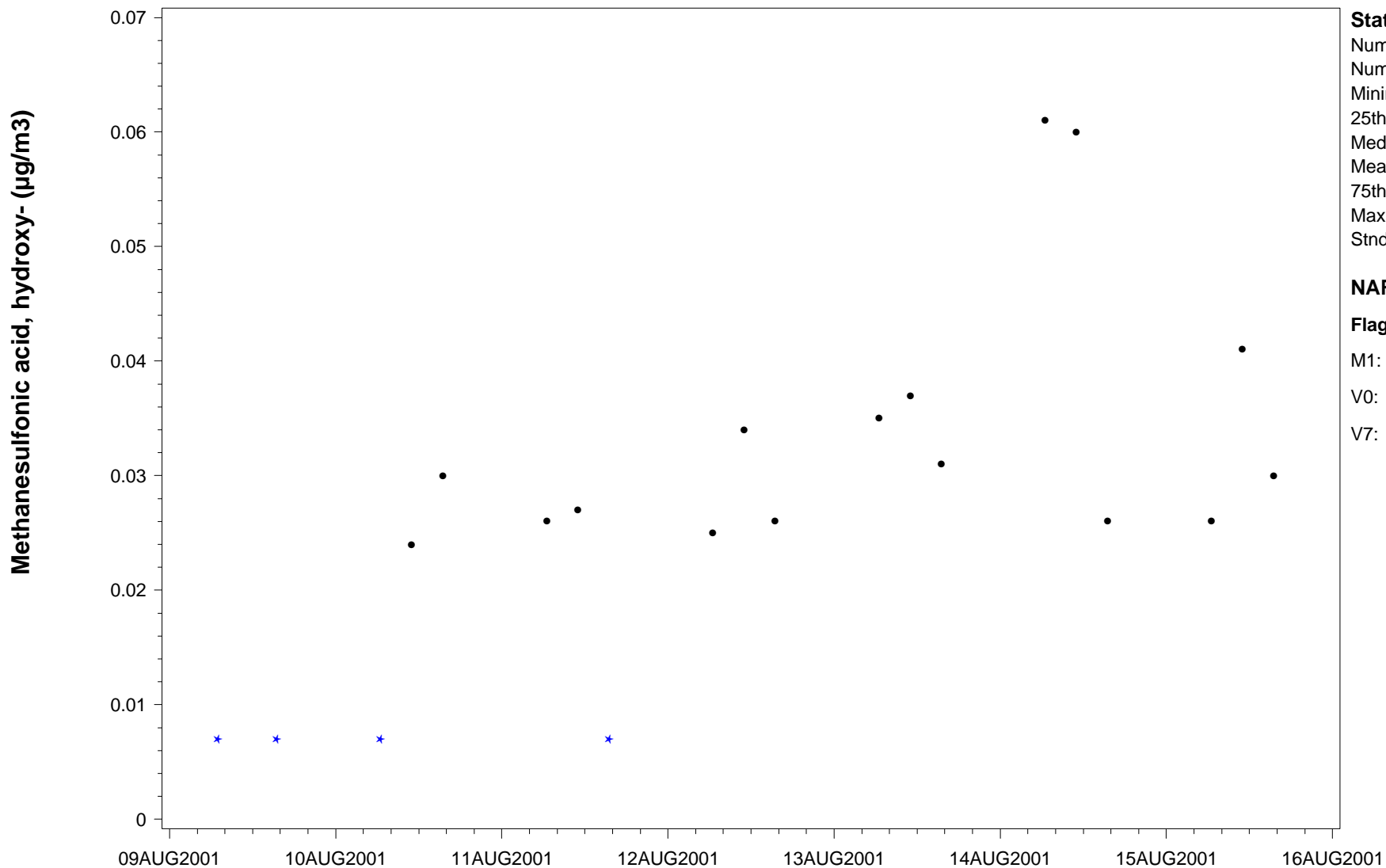


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Methanesulfonic acid, hydroxy-** Common Name: **Hydroxymethane sulphonic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C75-92-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



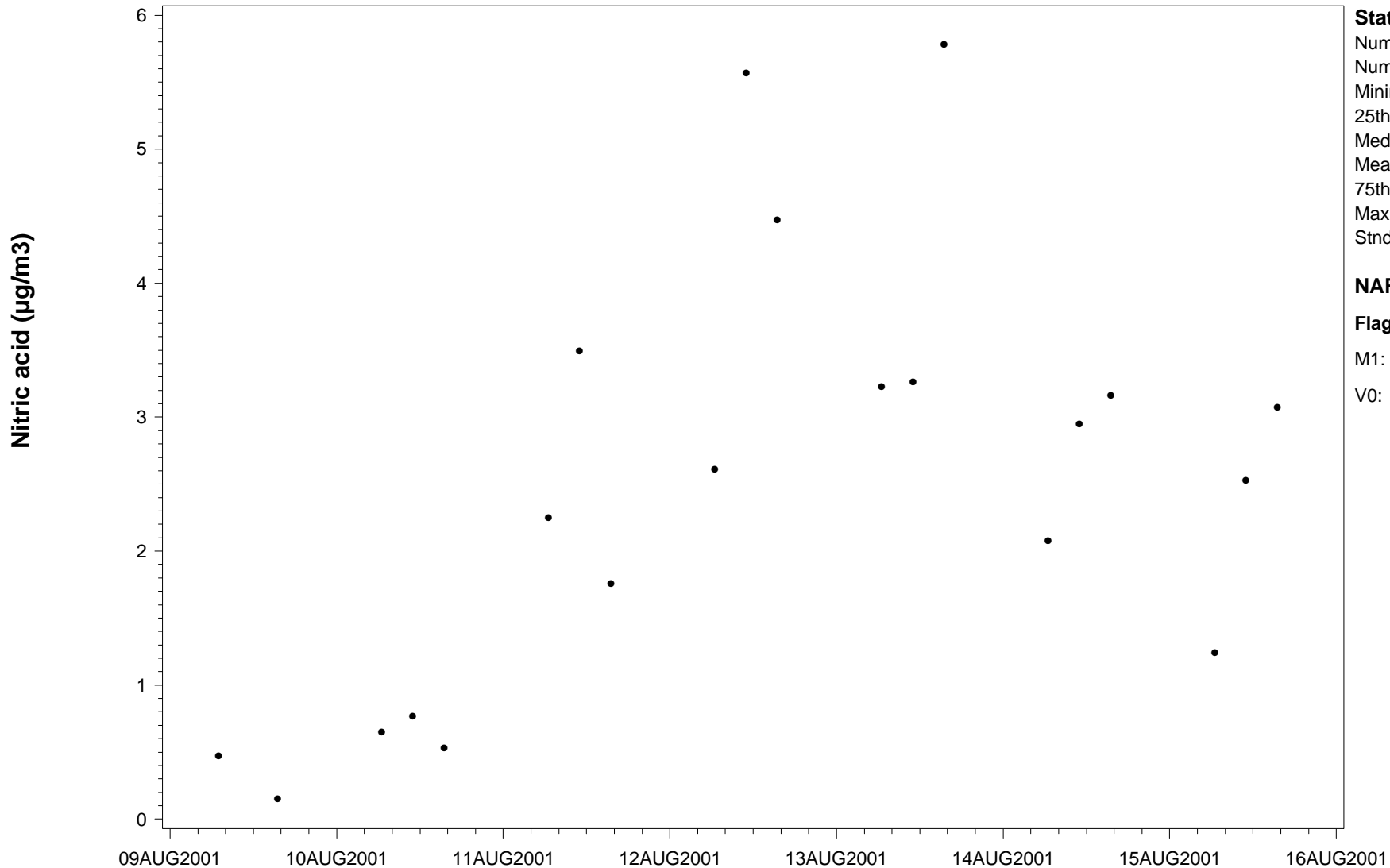
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Nitric acid** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**  
 CAS ID: **C7697-37-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.153**  
 25th Percentile: **1.0065**  
 Median: **2.5685**  
 Mean: **2.501**  
 75th Percentile: **3.2455**  
 Maximum: **5.781**  
 Std Dev.: **1.613**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V0: ● **20**

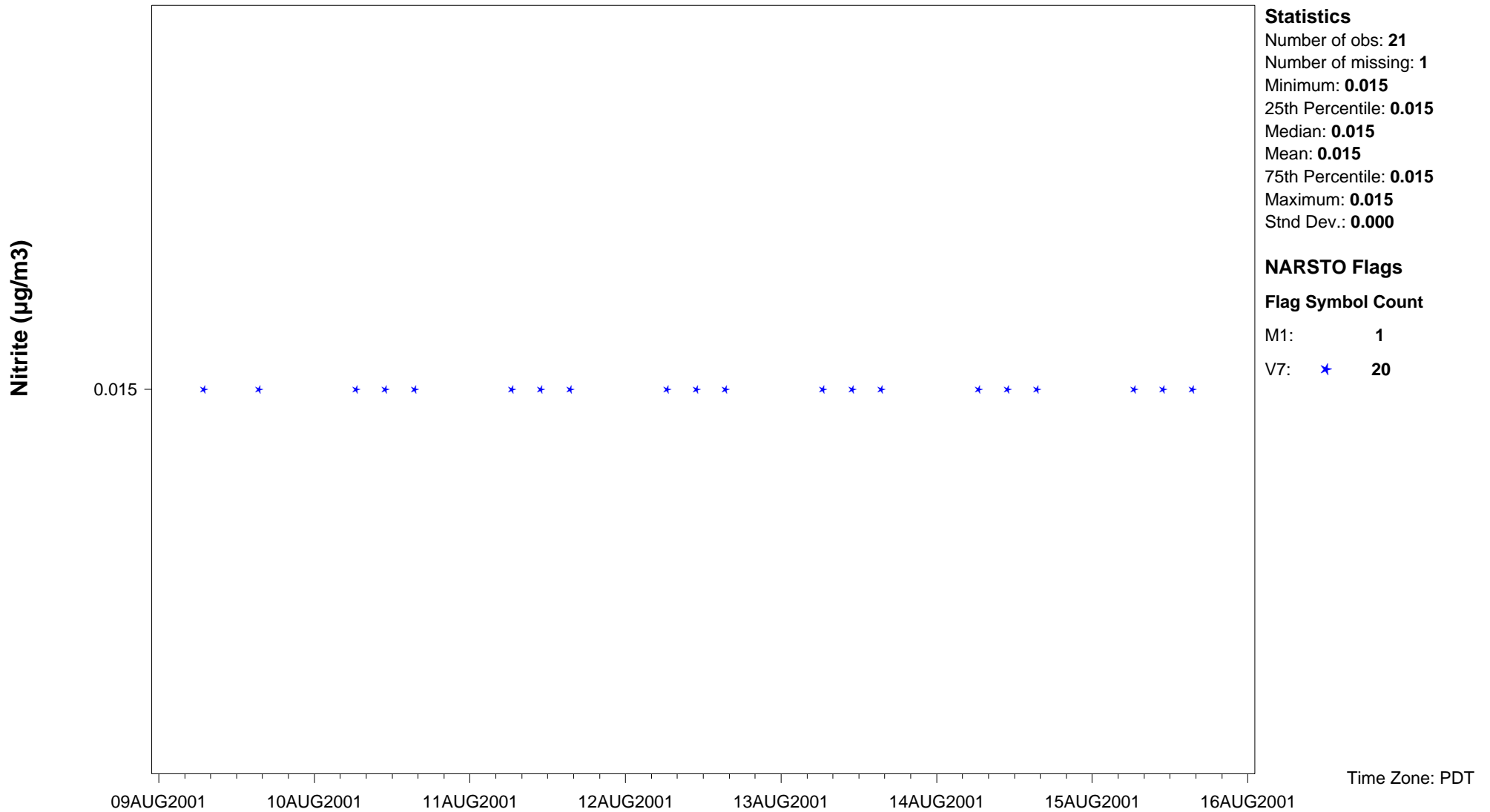
Time Zone: PDT

### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Nitrite** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C14797-65-0**  
Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

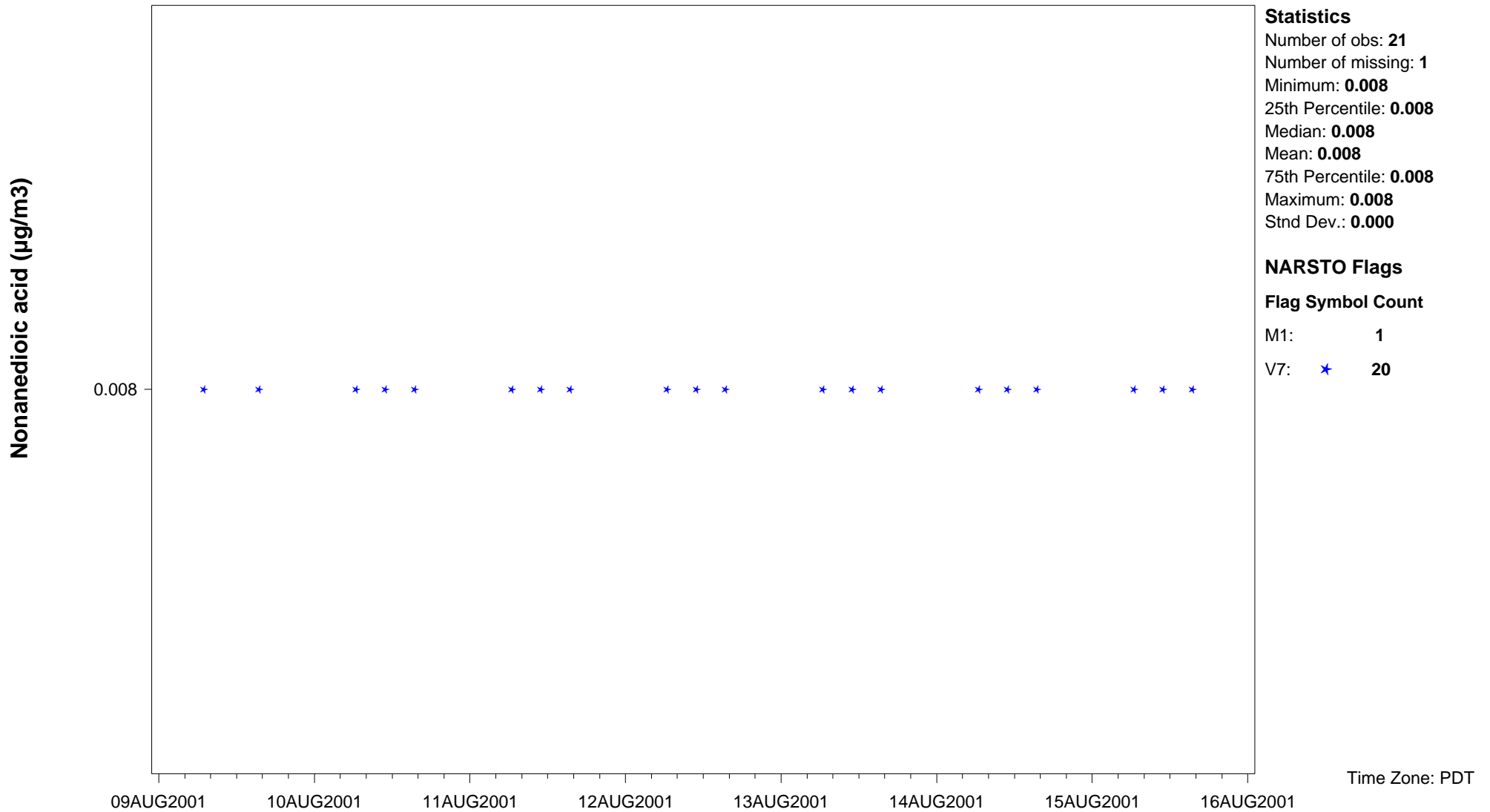


### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Nonanedioic acid** Common Name: **Azelaic** Units: **µg/m3** Sampling interval: **3 hour**  
Sampling frequency: **Same as sampling interval** CAS ID: **C123-99-9** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

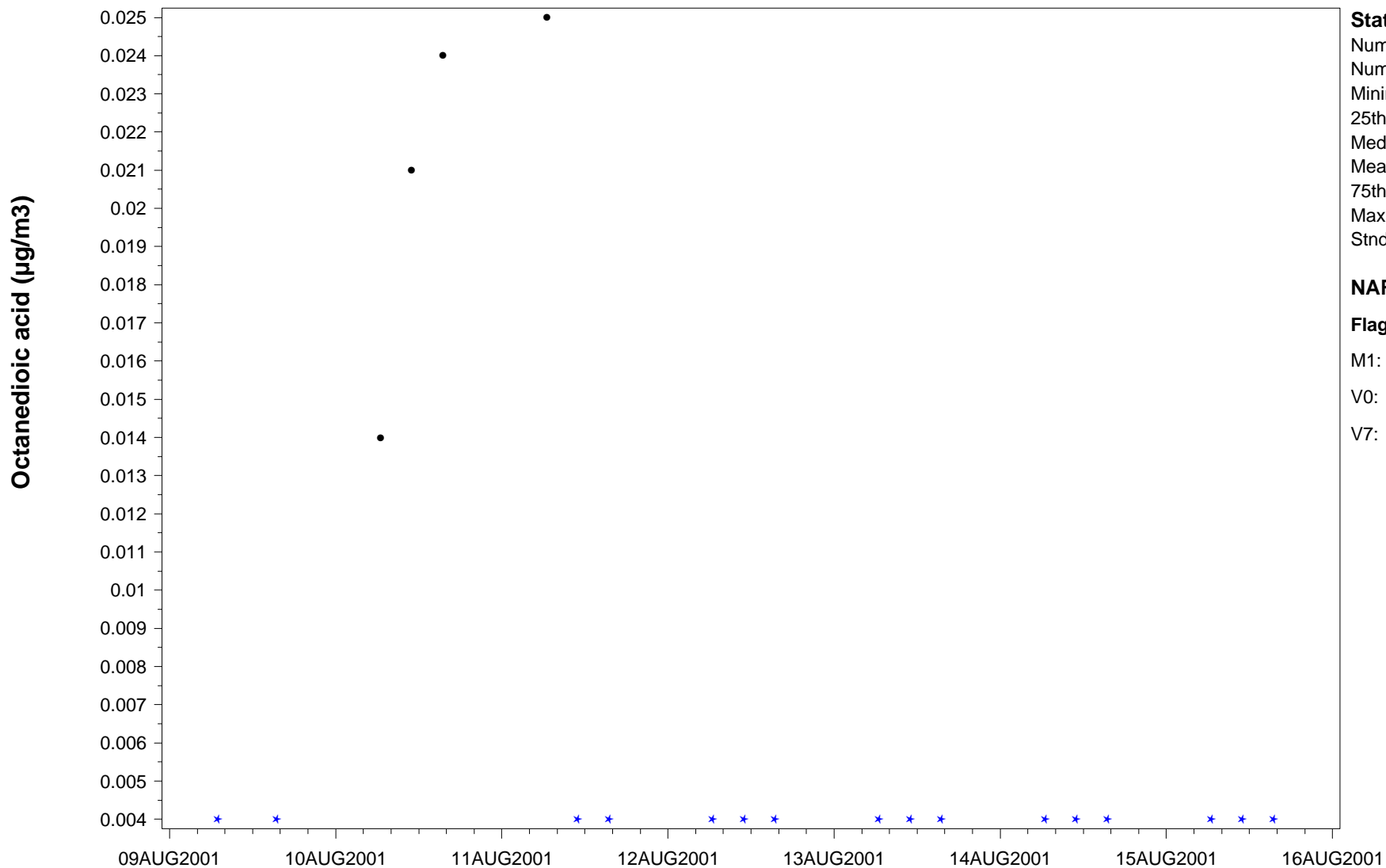


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Octanedioic acid** Common Name: **Suberic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C505-48-6** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

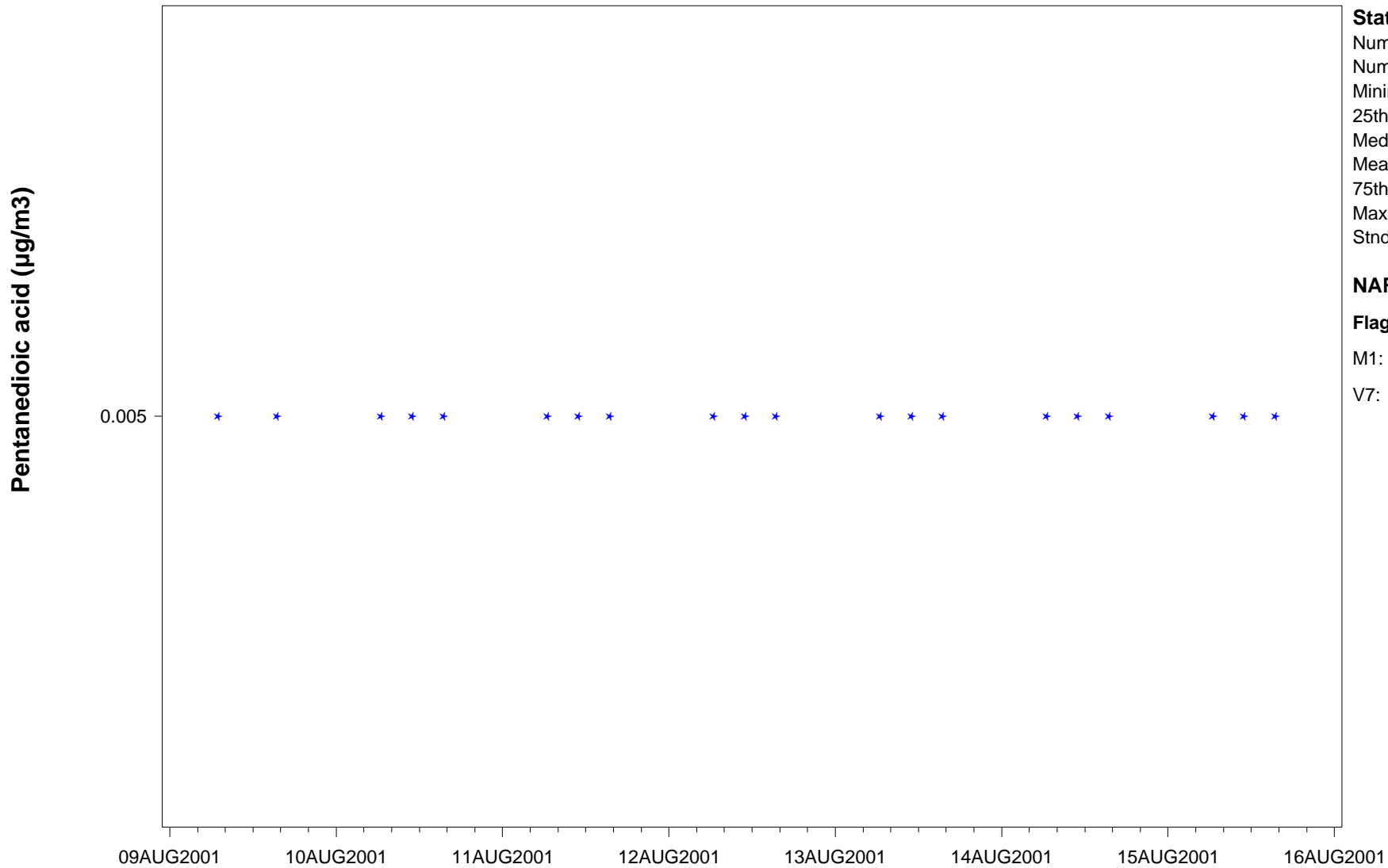


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Pentanedioic acid** Common Name: **Glutaric acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C110-94-1** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.005**  
 25th Percentile: **0.005**  
 Median: **0.005**  
 Mean: **0.005**  
 75th Percentile: **0.005**  
 Maximum: **0.005**  
 Std Dev.: **0.000**

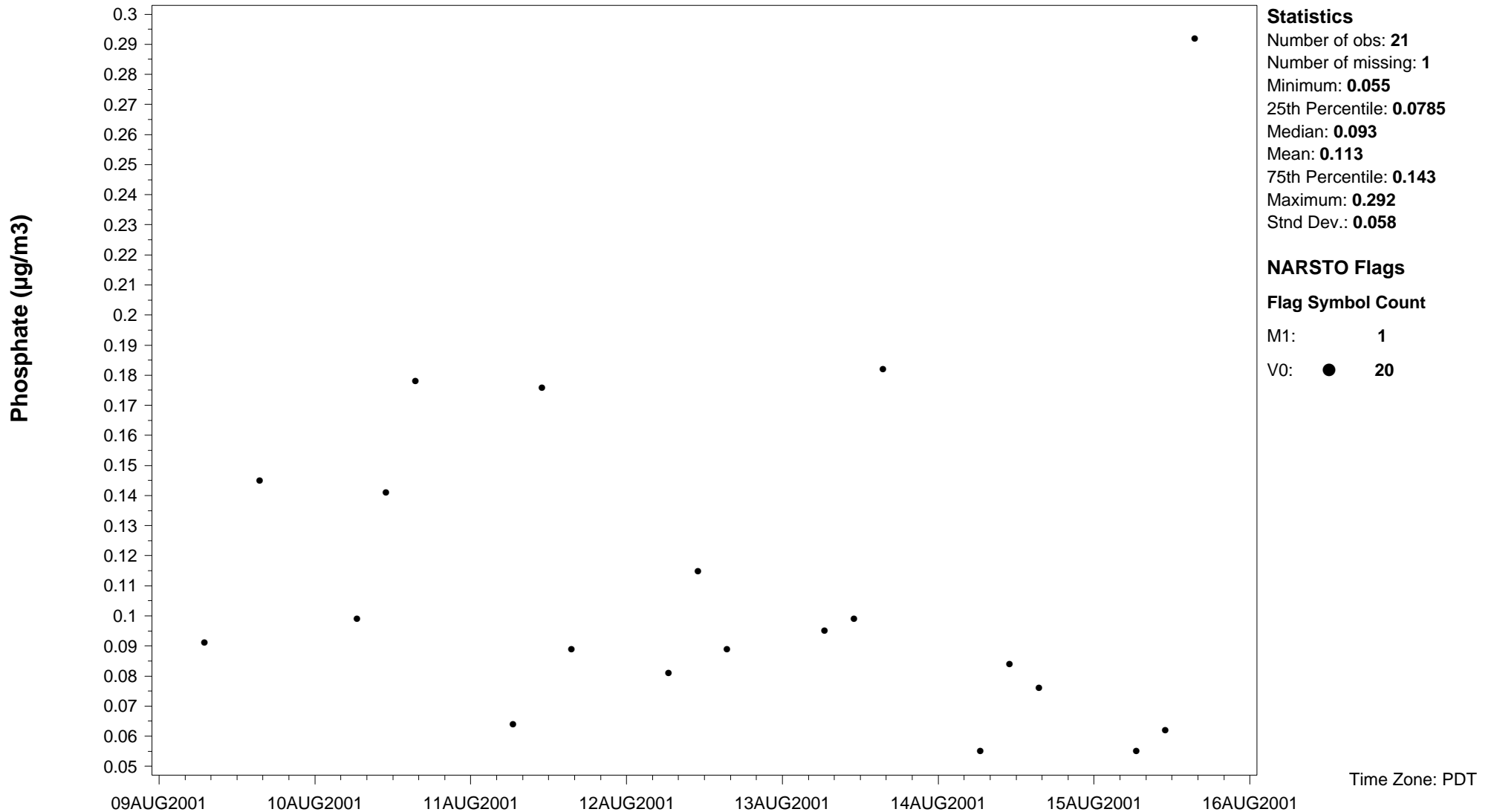
**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V7: **20**

Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Phosphate** Common Name: **Phosphate** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C14265-44-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**  
 Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



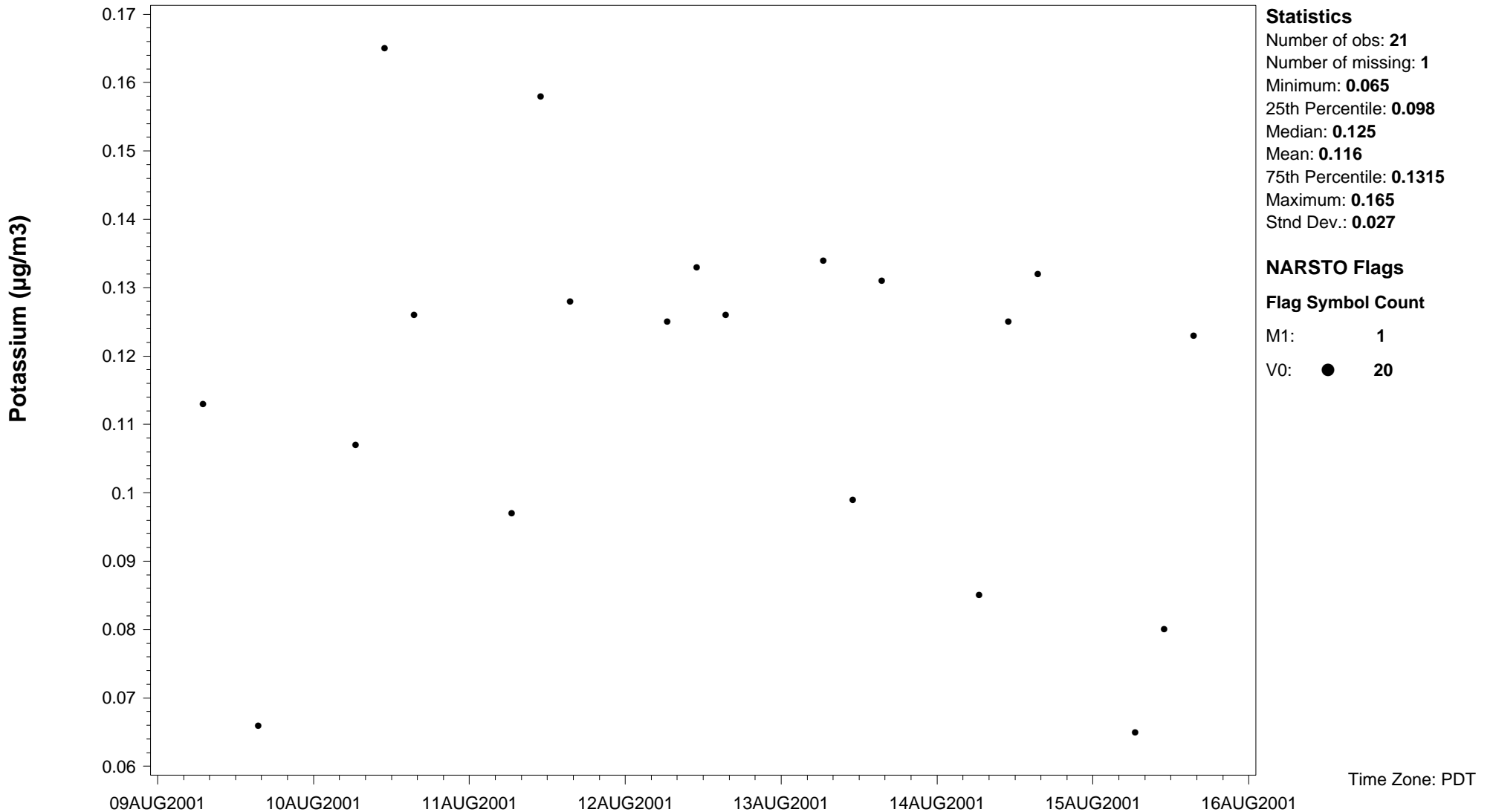


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Potassium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-09-7**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

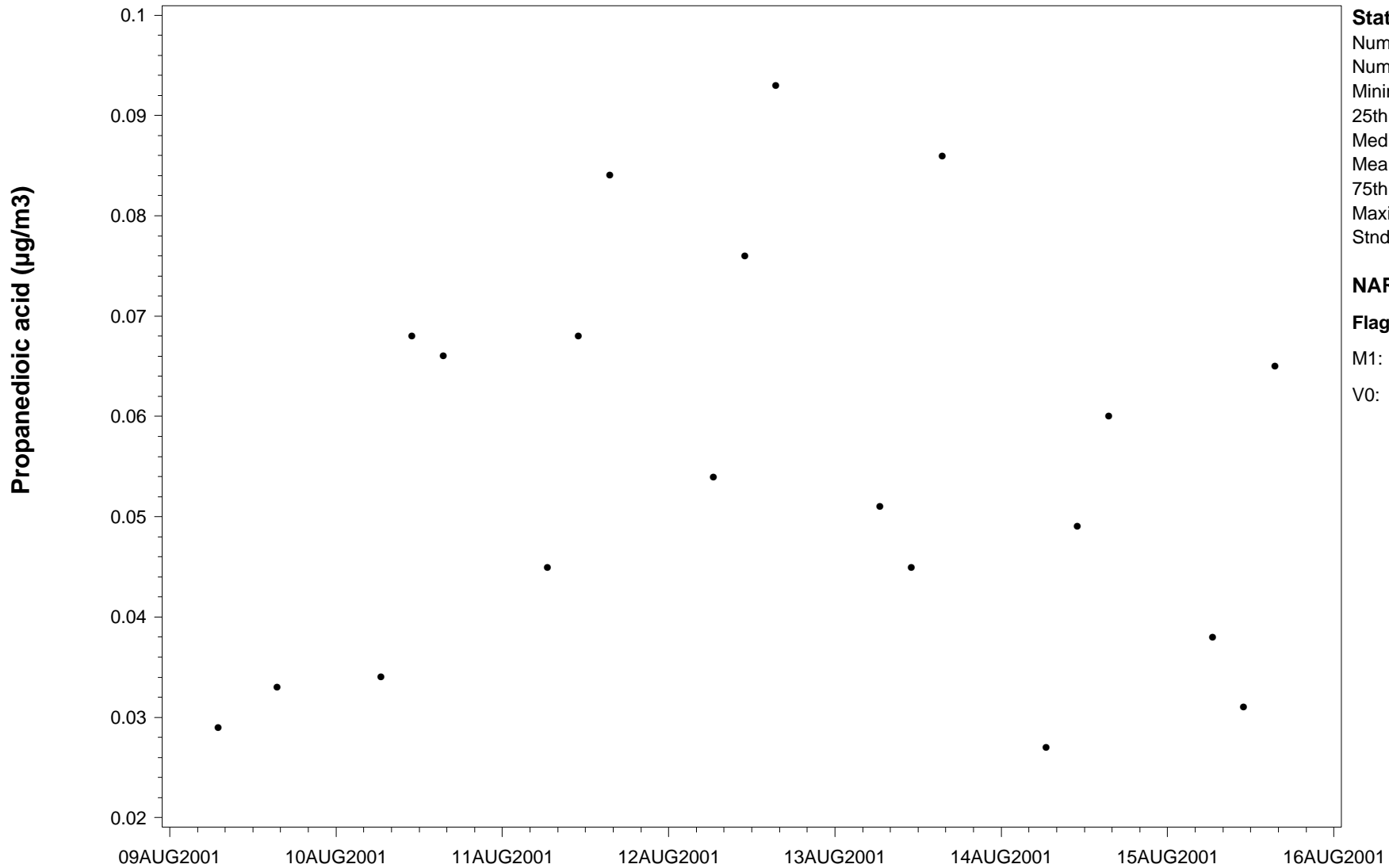


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Propanedioic acid** Common Name: **Malonic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C141-82-2** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**  
 Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.027**  
 25th Percentile: **0.036**  
 Median: **0.0525**  
 Mean: **0.055**  
 75th Percentile: **0.068**  
 Maximum: **0.093**  
 Stnd Dev.: **0.020**

**NARSTO Flags**  
**Flag Symbol Count**  
 M1: **1**  
 V0: ● **20**

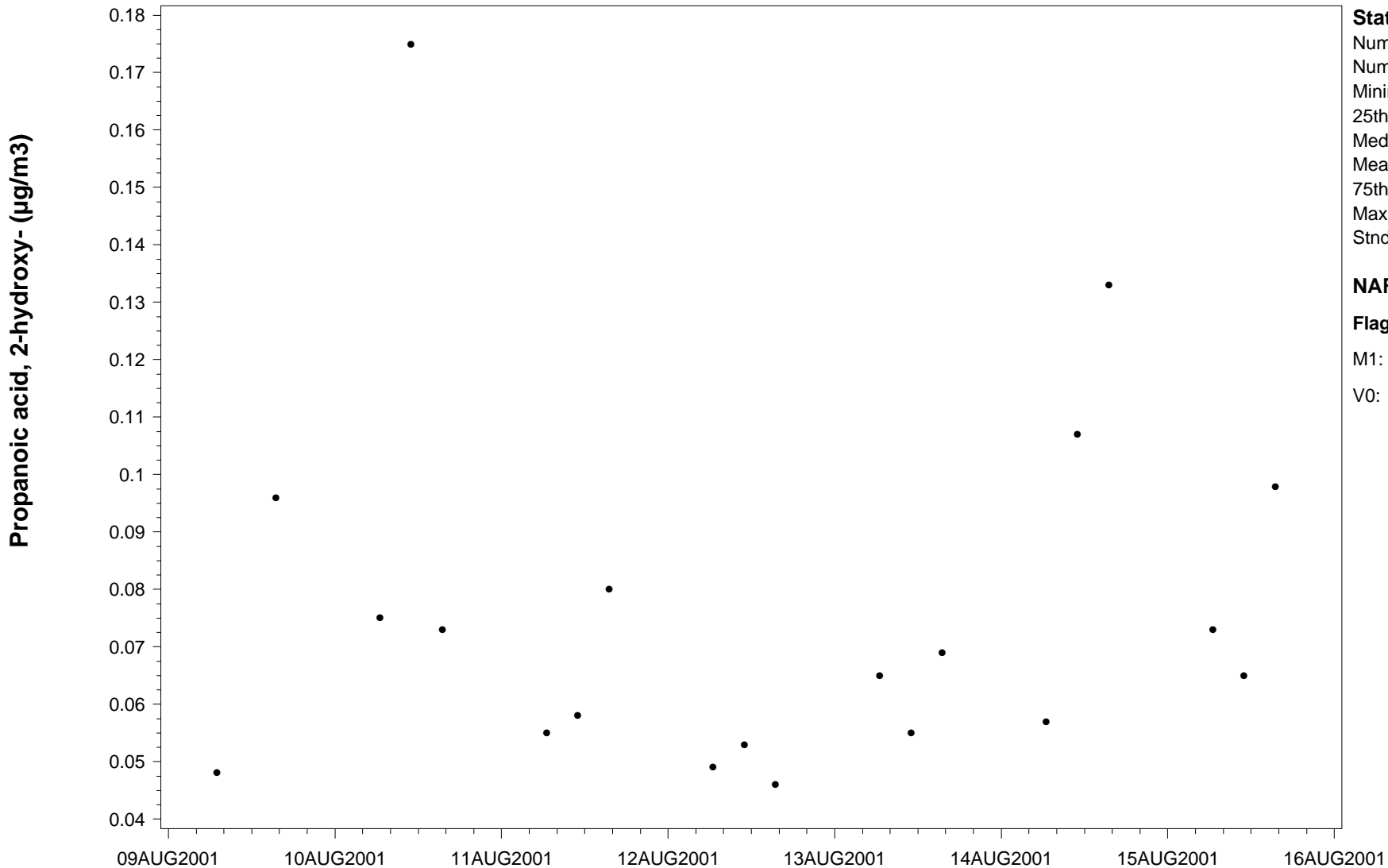
Time Zone: PDT

NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Propanoic acid, 2-hydroxy-** Common Name: **Lactic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C50-21-5** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **Capillary electrophoresis** Sample preparation: **Water extraction**  
 Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6**  
 Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.046**  
 25th Percentile: **0.055**  
 Median: **0.067**  
 Mean: **0.077**  
 75th Percentile: **0.088**  
 Maximum: **0.175**  
 Stnd Dev.: **0.032**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V0: ● **20**

Time Zone: PDT

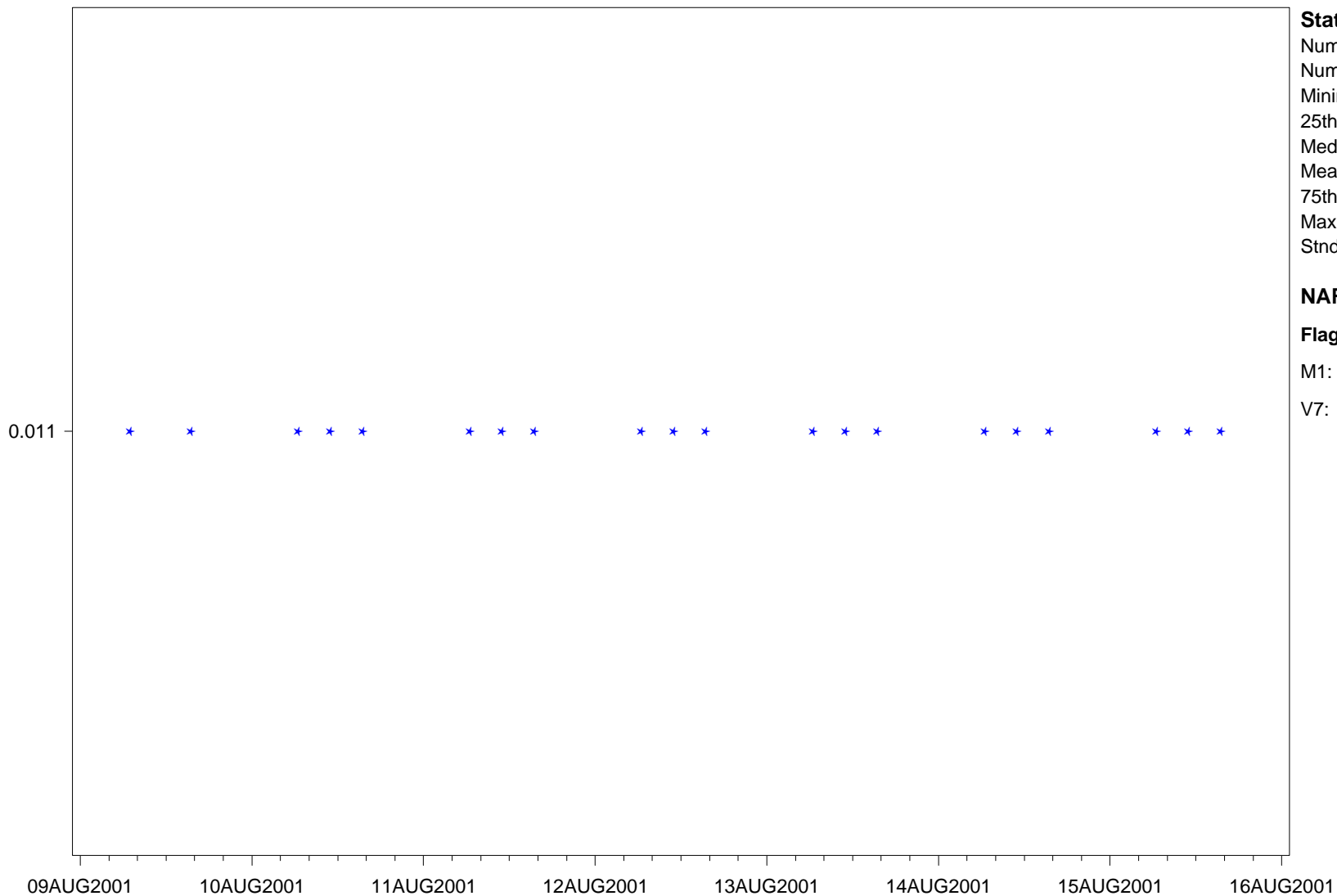
NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Propanoic acid, 2-oxo-** Common Name: **Pyruvic acid** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C127-17-3** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

Propanoic acid, 2-oxo- (µg/m3)



**Statistics**

Number of obs: **21**  
 Number of missing: **1**  
 Minimum: **0.011**  
 25th Percentile: **0.011**  
 Median: **0.011**  
 Mean: **0.011**  
 75th Percentile: **0.011**  
 Maximum: **0.011**  
 Std Dev.: **0.000**

**NARSTO Flags**

**Flag Symbol Count**

M1: **1**  
 V7: \* **20**

Time Zone: PDT

NAtChem Time Series Plot

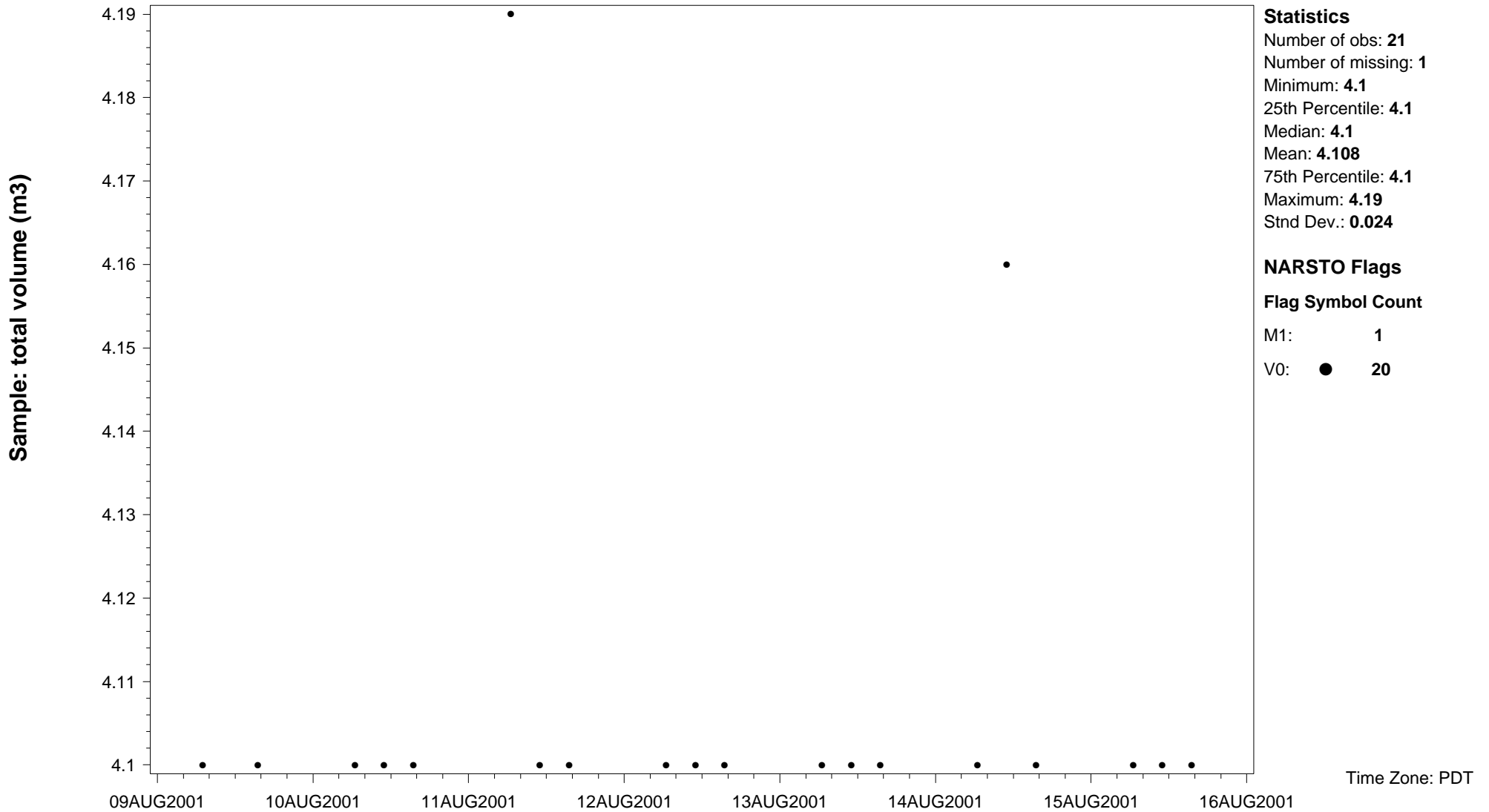
21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Sample: total volume** Units: **m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval**

Observation type: **Flow** Field sampling or measurement principle: **Sample history form** Inlet type: **Cyclone**

Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **MKS mass flow controller**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

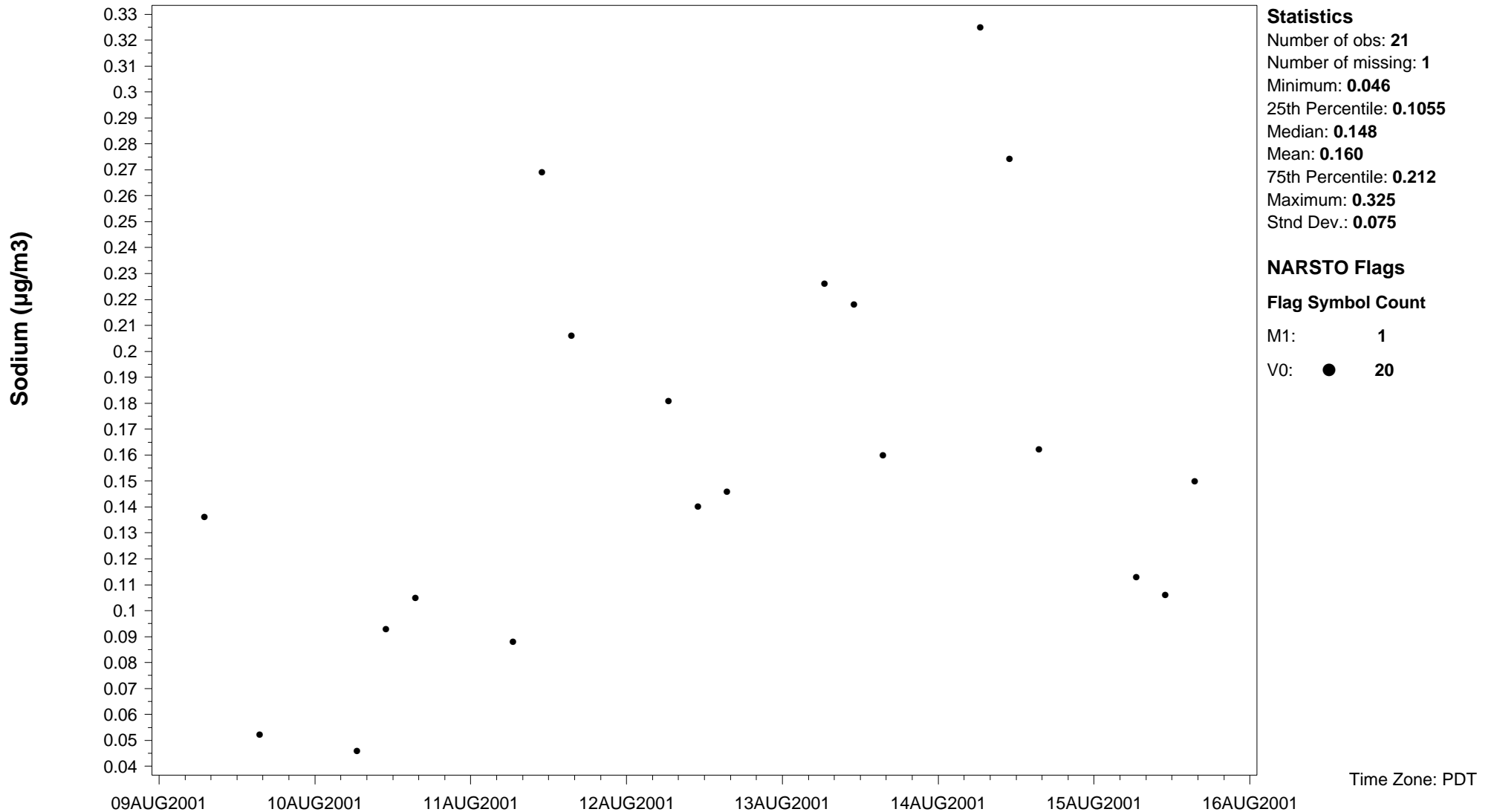


NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Sodium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-23-5**  
 Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
 Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
 Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
 Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

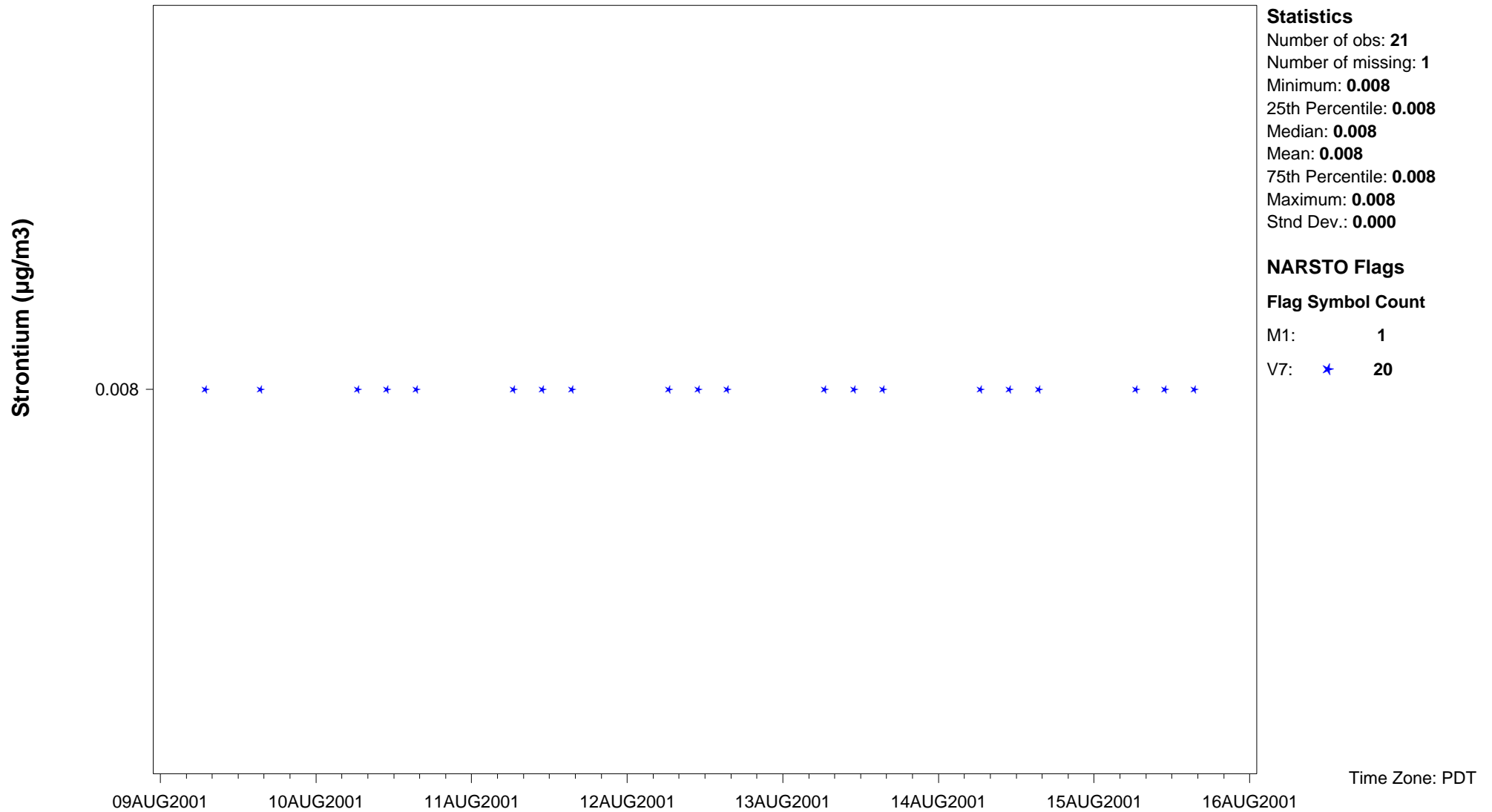


### NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Strontium** Units: **µg/m3** Sampling interval: **3 hour** Sampling frequency: **Same as sampling interval** CAS ID: **C7440-24-6**  
Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined** Particle diameter--upper bound (UM): **2.5**  
Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane** Inlet type: **Cyclone** Laboratory analytical method: **IC**  
Sample preparation: **Water extraction** Blank Correction: **Not blank corrected** Volume standardization: **0 deg. C; 1 atmosphere**  
Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**

Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**



NAtChem Time Series Plot

21MAR2005

Site ID: **PC01CABCCSTS** Variable name: **Sulfate** Common Name: **Sulphate** Units: **µg/m3** Sampling interval: **3 hour**  
 Sampling frequency: **Same as sampling interval** CAS ID: **C14808-79-8** Observation type: **Particles** Particle diameter--lower bound (UM): **Undetermined**  
 Particle diameter--upper bound (UM): **2.5** Field sampling or measurement principle: **Filter pack--multiple filters** Medium: **Teflon membrane**  
 Inlet type: **Cyclone** Laboratory analytical method: **IC** Sample preparation: **Water extraction** Blank Correction: **Not blank corrected**  
 Volume standardization: **0 deg. C; 1 atmosphere** Sampling Height above ground (m): **6** Instrument name and model number: **URG 2000**  
 Site Name: **Cassiar Tunnel (South End), British Columbia** Latitude: **49.27889 deg.** Longitude: **-123.03167 deg.** Start Date: **2001-08-09** End Date: **2001-08-15**

