

**Table 1a. Data Collection Statistics  
Sites Operated by the National Park Service  
National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Parameter Code												
		O3 % valid <sup>1</sup>	SO2 % valid <sup>1</sup>	CO % valid <sup>1</sup>	NOx % valid <sup>1</sup>	PM2.5 % valid <sup>1</sup>	PM10 % valid <sup>1</sup>	VWD <sup>2</sup> % valid <sup>1</sup>	SWS <sup>3</sup> % valid <sup>1</sup>	TMP % valid <sup>1</sup>	RH % valid <sup>1</sup>	RNF % valid <sup>1</sup>	SOL % valid <sup>1</sup>	FLOW % valid <sup>1</sup>
Big Bend	K-Bar Ranch Road	98.9	—	—	—	—	—	99.0	99.0	99.4	99.4	99.0	98.2	99.4
Canyonlands	Island in the Sky	92.4	—	—	—	—	—	99.4	99.4	99.3	99.5	99.3	99.4	99.6
Chiricahua	Entrance Station	98.3	—	—	—	—	—	99.4	99.4	98.9	99.5	99.3	99.4	99.4
Craters of the Moon	Visitor Center	98.3	—	—	—	—	—	62.5	99.6	98.4	97.4	—	97.8	—
Denali	Headquarters	97.7	—	—	—	—	—	99.9	99.9	100.0	100.0	45.9	100.0	99.9
Death Valley	Park Village	97.5	—	—	—	—	—	99.1	99.1	99.1	98.9	97.8	—	—
Everglades	Beard Center	—	—	—	—	—	—	79.0	79.0	60.0	60.1	93.0	76.4	99.9
Glacier	West Glacier Horse Stables	94.2	—	—	—	—	—	97.6	97.6	99.8	50.1	99.5	99.8	99.6
Great Basin	Maintenance Yard	98.8	—	—	—	—	—	53.6	99.4	99.5	99.6	99.0	86.2	99.9
Grand Canyon	The Abyss	99.3	—	—	—	—	—	99.3	99.3	98.4	94.8	99.2	99.4	99.4
Great Smoky Mountains	Cades Cove	99.8	—	—	—	—	—	100.0	100.0	100.0	97.4	96.9	100.0	—
Great Smoky Mountains	Clingmans Dome	95.5	—	—	—	—	—	97.8	97.8	97.9	97.9	78.8	97.8	—
Great Smoky Mountains	Cove Mountain	99.9	100.0	—	—	—	—	99.5	99.5	100.0	100.0	99.6	—	—
Great Smoky Mountains	Look Rock	99.5	—	—	—	—	—	97.4	99.1	99.2	99.0	99.0	99.6	99.6
Grand Teton	Science School	99.7	—	—	—	—	—	99.5	99.5	100.0	100.0	99.5	100.0	—
Hawaii Volcanoes	Observatory	—	99.6	—	—	87.3	—	100.0	100.0	100.0	100.0	99.9	—	—
Hawaii Volcanoes	Visitor Center	—	99.8	—	—	—	—	99.9	99.9	99.9	99.5	99.8	99.9	—
Joshua Tree	Black Rock	99.5	—	—	—	—	—	0.0	99.7	99.6	99.7	99.4	99.7	99.4
Joshua Tree	Cottonwood Canyon	82.8	—	—	—	—	—	99.3	99.3	99.3	99.3	99.9	99.4	—
Lassen Volcanic	Manzanita Lake Fire Stn.	90.6	—	—	—	—	—	98.2	98.3	98.3	98.3	98.0	98.4	98.4
Mammoth Cave	Houchin Meadow	99.5	—	98.0	—	—	—	98.8	98.8	99.6	99.7	98.9	99.7	99.1
Mesa Verde	Resource Mngment Area	98.4	—	—	—	—	—	50.6	99.9	99.9	99.9	98.9	100.0	99.9
Mount Rainier	Tahoma Woods	99.6	—	—	—	—	—	98.5	99.2	99.6	99.6	92.9	58.6	98.9
Petrified Forest	South Entrance	97.3	—	—	—	—	—	60.9	99.8	100.0	98.3	99.7	100.0	99.9
Pinnacles	SW of East Entrance Stn.	97.0	—	—	—	—	—	99.6	99.6	99.6	99.1	99.4	99.7	99.7
Rocky Mountain	Long's Peak	99.4	—	—	—	—	—	36.5	99.9	98.8	98.8	99.6	99.9	99.9
Sequoia and Kings Canyon	Ash Mountain	91.2	—	—	—	77.2	—	98.7	98.7	98.8	94.6	88.8	99.0	99.8
Sequoia and Kings Canyon	Lower Kaweah	97.6	—	—	—	—	—	98.2	99.5	99.5	92.4	99.6	99.5	—
Shenandoah	Big Meadows	95.5	—	—	—	—	—	94.2	96.5	97.8	93.8	94.8	97.9	97.8
Theodore Roosevelt	Painted Cany. VC	—	—	—	—	—	—	55.2	55.2	99.9	99.5	99.9	100.0	100.0
Voyageurs	Sullivan Bay	99.5	—	—	—	—	—	95.7	95.7	99.9	99.2	99.9	100.0	100.0
Wind Cave	Visitor Center	—	—	—	—	—	—	99.8	99.8	99.9	99.9	77.6	93.6	54.9
Yellowstone	Old Faithful Snow Lodge	—	—	60.0	—	68.9	—	99.5	99.5	100.0	100.0	—	—	—
Yellowstone	Water Tank	96.0	—	—	—	—	—	98.0	98.0	87.4	98.3	80.7	98.3	99.0
Yosemite	Turtleback Dome	96.1	—	—	—	—	—	99.3	99.3	99.7	99.7	95.9	99.9	99.9

**Table 1a (continued). Data Collection Statistics  
Sites Operated by the National Park Service  
National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Parameter Code												
		O3 % valid <sup>1</sup>	SO2 % valid <sup>1</sup>	CO % valid <sup>1</sup>	NOx % valid <sup>1</sup>	PM2.5 % valid <sup>1</sup>	PM10 % valid <sup>1</sup>	VWD <sup>2</sup> % valid <sup>1</sup>	SWS <sup>3</sup> % valid <sup>1</sup>	TMP % valid <sup>1</sup>	RH % valid <sup>1</sup>	RNF % valid <sup>1</sup>	SOL % valid <sup>1</sup>	FLOW % valid <sup>1</sup>
Zion	Dalton's Wash	99.4	—	—	—	80.3	—	80.0	99.3	99.9	100.0	99.7	97.1	—
<b>Average Network Data Collection</b>		<b>97.5</b>	<b>99.7</b>	<b>77.6</b>	<b>70.3</b>	<b>81.8</b>	<b>95.9</b>	<b>89.5</b>	<b>97.3</b>	<b>98.0</b>	<b>96.6</b>	<b>95.0</b>	<b>97.0</b>	<b>97.6</b>

Operating agency key:

plain text = site operated by the National Park Service

*italics* = site operated by a state agency

underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

Key:

O3 = Ozone Analyzer

SO2 = Sulfur Dioxide Analyzer

CO = Carbon Monoxide

NOx = Oxides of Nitrogen

PM2.5 = Particulate Matter 2.5

PM10 = Particulate Matter 10

VWD = Vector Wind Direction

SWS = Scalar Wind Speed

TMP = Temperature

RH = Relative Humidity

RNF = Precipitation

SOL = Solar Radiation

FLOW = Filter Pack Flow Rate

1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O<sub>3</sub> and SO<sub>2</sub>, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

**Table 1b. Data Collection Statistics  
Sites Operated by the NPS for the BLM  
National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Parameter Code												
		O3 % valid <sup>1</sup>	SO2 % valid <sup>1</sup>	CO % valid <sup>1</sup>	NOx % valid <sup>1</sup>	PM2.5 % valid <sup>1</sup>	PM10 % valid <sup>1</sup>	VWD <sup>2</sup> % valid <sup>1</sup>	SWS <sup>3</sup> % valid <sup>1</sup>	TMP % valid <sup>1</sup>	RH % valid <sup>1</sup>	RNF % valid <sup>1</sup>	SOL % valid <sup>1</sup>	FLOW % valid <sup>1</sup>
Meeker	Plant Science	97.2	—	—	99.3	75.3	—	99.1	99.1	99.9	99.9	99.7	100.0	99.9
Rangely	Golf Course	95.1	—	—	95.8	86.8	—	99.3	99.3	99.7	99.7	99.5	99.7	—
<b>Average Network Data Collection</b>		<b>96.0</b>			<b>97.6</b>	<b>81.0</b>		<b>99.2</b>	<b>99.2</b>	<b>99.8</b>	<b>99.8</b>	<b>99.6</b>	<b>99.8</b>	<b>99.9</b>

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PM2.5 = Particulate Matter 2.5

PM10 = Particulate Matter 10

VWD = Vector Wind Direction

SWS = Scalar Wind Speed

TMP = Temperature

RH = Relative Humidity

RNF = Precipitation

SOL = Solar Radiation

FLOW = Filter Pack Flow Rate

1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O<sub>3</sub> and SO<sub>2</sub>, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

**Table 1c. Data Collection Statistics  
Sites Operated by the NPS for the USFS  
National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Parameter Code												
		O3 % valid <sup>1</sup>	SO2 % valid <sup>1</sup>	CO % valid <sup>1</sup>	NOx % valid <sup>1</sup>	PM2.5 % valid <sup>1</sup>	PM10 % valid <sup>1</sup>	VWD <sup>2</sup> % valid <sup>1</sup>	SWS <sup>3</sup> % valid <sup>1</sup>	TMP % valid <sup>1</sup>	RH % valid <sup>1</sup>	RNF % valid <sup>1</sup>	SOL % valid <sup>1</sup>	FLOW % valid <sup>1</sup>
Escalante	Visitor Center	92.6	—	—	—	—	—	99.3	99.3	98.3	99.6	99.5	99.4	—
Walden - Colorado	Chandler Ranch	96.2	98.8	98.7	94.0	—	77.2	60.8	94.0	99.1	99.1	—	75.0	—
<b>Average Network Data Collection</b>		<b>94.4</b>	<b>98.8</b>	<b>98.7</b>	<b>94.0</b>		<b>77.2</b>	<b>80.0</b>	<b>96.6</b>	<b>98.7</b>	<b>99.3</b>	<b>99.5</b>	<b>87.2</b>	

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PM2.5 = Particulate Matter 2.5

PM10 = Particulate Matter 10

VWD = Vector Wind Direction

SWS = Scalar Wind Speed

TMP = Temperature

RH = Relative Humidity

RNF = Precipitation

SOL = Solar Radiation

FLOW = Filter Pack Flow Rate

1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O<sub>3</sub> and SO<sub>2</sub>, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

**Table 1d. Data Collection Statistics  
Portable Ozone Monitoring Systems (POMS)  
National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Parameter Code												
		O3 % valid <sup>1</sup>	SO2 % valid <sup>1</sup>	CO % valid <sup>1</sup>	NOx % valid <sup>1</sup>	PM2.5 % valid <sup>1</sup>	PM10 % valid <sup>1</sup>	VWD <sup>2</sup> % valid <sup>1</sup>	SWS <sup>3</sup> % valid <sup>1</sup>	TMP % valid <sup>1</sup>	RH % valid <sup>1</sup>	RNF % valid <sup>1</sup>	SOL % valid <sup>1</sup>	FLOW % valid <sup>1</sup>
<u>Carlsbad Caverns</u>	Maintenance Area	94.4	—	—	—	—	—	—	96.7	96.7	96.7	99.5	96.7	—
<u>Cumberland Gap</u>	Hensley Settlement	96.7	—	—	—	—	—	—	98.2	99.8	99.8	99.6	99.8	—
<u>Dinosaur</u>	West Entrance Housing	98.4	—	—	—	—	—	98.7	98.5	99.9	99.9	100.0	99.9	—
<u>Joshua Tree</u>	Pinto Wells	99.6	—	—	—	—	—	—	100.0	100.0	100.0	100.0	100.0	—
<u>Kings Mountain</u>	Brown's Mountain	71.2	—	—	—	—	—	—	99.9	99.9	99.9	100.0	99.9	—
<u>Mojave</u>	Kelso Mountains	64.7	—	—	—	—	—	—	99.8	99.8	99.8	99.7	99.8	—
<u>Ninety Six Historical Park</u>	Bumble Bee Hill	95.8	—	—	—	—	—	—	84.0	84.2	84.2	—	—	—
<b>Average Network Data Collection</b>		<b>86.5</b>							<b>98.7</b>	<b>97.2</b>	<b>97.7</b>	<b>97.6</b>	<b>99.8</b>	<b>99.5</b>

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TMP = Temperature  
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SOL = Solar Radiation  
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1. The percent is calculated against the number possible. Percent valid can be less than 100% due to routine maintenance, power failures, audits or other circumstances where the instrument was not available to collect data. Percent valid can also be less than 100% due to influencing factors such as instrument error, operator error, timing problems, flow issues, and other factors that affect instrument operation. When calculating percent valid for O<sub>3</sub> and SO<sub>2</sub>, calibration events were removed from the number possible.

2. Cape Cod reports wind direction as scalar wind direction rather than vector wind direction.

3. Saguaro reports wind speed as vector wind speed rather than scalar wind speed.

Note: Portable ozone monitoring systems typically operate during the summer ozone season only.

**Table 2 Ozone Analyzer Precision and Verification Summary**  
**Sites Operated by the National Park Service**  
**National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Calendar Quarter	Precision				As-found Verification Multi-Point		
			Required No. of Precision Checks Met? <sup>1</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Lower 95% Probability Limit <sup>6</sup>	Upper 95% Probability Limit <sup>6</sup>	Accuracy Check Performed During the Quarter? <sup>2</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Max. Absolute Percent Difference <sup>5</sup>
Big Bend	K-Bar Ranch Road	1	Y	1.5	0.0	3.0	Y	0.9	2.4
		2	Y	1.2	-3.7	1.4	N	—	—
		3	Y	1.4	-4.2	1.3	Y	0.7	1.3
		4	Y	0.7	-1.5	0.2	N	—	—
Canyonlands	Island in the Sky	1	Y	2.4	-4.5	-0.3	Y	0.8	2.3
		2	Y	3.0	-5.3	-0.7	N	—	—
		3	Y	2.9	-10.6	4.8	Y	4.6	5.2
		4	Y	0.0	-3.9	3.9	N	—	—
Chiricahua	Entrance Station	1	Y	2.0	-2.8	-1.1	N	—	—
		2	Y	2.7	-4.0	-1.4	Y	5.0	6.1
		3	Y	4.5	-5.5	-3.5	N	—	—
		4	Y	1.4	-5.2	2.4	Y	2.2	4.1
Craters of the Moon	Visitor Center	1	Y	3.4	3.0	3.9	N	—	—
		2	Y	2.1	-1.0	5.1	Y	1.1	2.5
		3	Y	1.4	0.5	2.2	N	—	—
		4	Y	0.4	-3.5	4.3	Y	6.5	7.3
Denali	Headquarters	1	Y	0.5	-1.3	0.2	N	—	—
		2	Y	0.7	-4.1	2.6	Y	33.3	37.5
		3	Y	1.3	-0.4	3.0	N	—	—
		4	Y	0.8	-1.8	3.4	Y	2.4	2.6
Death Valley	Park Village	1	Y	0.3	-2.8	2.3	N	—	—
		2	Y	0.2	-2.3	2.0	Y	0.8	2.0
		3	Y	0.0	-3.4	3.4	N	—	—
		4	Y	0.0	-4.7	4.7	Y	4.4	4.9
Glacier	West Glacier Horse Stables	1	Y	0.1	-1.0	0.8	N	—	—
		2	Y	2.2	-7.2	2.8	Y	3.4	4.6
		3	Y	2.5	-5.4	0.3	N	—	—
		4	Y	1.0	-3.8	1.8	Y	1.2	1.7
Great Basin	Maintenance Yard	1	Y	1.2	0.1	2.4	N	—	—
		2	Y	1.8	-0.4	3.9	Y	5.3	5.9
		3	Y	0.8	-2.1	0.6	N	—	—
		4	Y	0.7	-2.1	0.6	Y	1.8	2.5
Grand Canyon	The Abyss	1	Y	3.7	-4.4	-3.0	N	—	—
		2	Y	2.7	-5.9	0.5	Y	5.0	6.1
		3	Y	2.0	-4.0	0.1	N	—	—
		4	Y	1.2	-3.0	0.6	Y	0.8	2.4
Great Smoky Mountains	Clingmans Dome	1	—	—	—	—	—	—	
		2	N	0.1	-0.9	0.8	Y	1.1	2.3
		3	Y	1.4	-4.4	1.5	N	—	—
		4	Y	1.7	-4.1	0.7	Y	3.9	4.3

**Table 2 (continued). Ozone Analyzer Precision and Verification Summary  
Sites Operated by the National Park Service  
National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Calendar Quarter	Precision				As-found Verification Multi-Point		
			Required No. of Precision Checks Met? <sup>1</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Lower 95% Probability Limit <sup>6</sup>	Upper 95% Probability Limit <sup>6</sup>	Accuracy Check Performed During the Quarter? <sup>2</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Max. Absolute Percent Difference <sup>5</sup>
Great Smoky Mountains	Cove Mountain	1	Y	1.2	-2.2	-0.2	N	—	—
		2	Y	1.8	-2.9	-0.7	Y	1.3	2.3
		3	Y	1.4	-2.1	-0.7	N	—	—
		4	Y	0.4	-1.9	1.1	Y	1.1	1.6
Great Smoky Mountains	Look Rock	1	Y	2.0	1.1	2.9	N	—	—
		2	Y	2.4	1.3	3.5	Y	4.5	5.0
		3	Y	2.3	1.6	3.0	N	—	—
		4	Y	1.8	-0.1	3.8	Y	0.5	0.7
Grand Teton	Science School	1	Y	0.4	-0.3	1.1	N	—	—
		2	Y	0.1	-1.4	1.2	Y	1.5	2.5
		3	Y	0.4	-1.2	0.5	Y	2.2	2.4
		4	Y	0.9	-1.3	-0.5	N	—	—
Joshua Tree	Black Rock	1	Y	2.6	-4.3	-1.0	Y	0.9	1.7
		2	Y	2.0	-3.1	-0.9	N	—	—
		3	Y	2.7	-4.4	-1.0	Y	1.2	1.3
		4	Y	3.1	-4.1	-2.1	N	—	—
Joshua Tree	Cottonwood Canyon	1	—	—	—	—	—	—	—
		2	N	0.9	-3.5	5.4	N	—	—
		3	Y	1.9	-5.8	9.6	Y	2.3	2.6
		4	N	0.4	-9.5	10.2	N	—	—
Lassen Volcanic	Manzanita Lake Fire Stn.	1	N	0.6	-2.2	1.0	N	—	—
		2	Y	0.5	-1.5	0.5	Y	0.7	0.8
		3	Y	0.0	-0.8	0.7	N	—	—
		4	Y	0.4	-1.4	0.6	Y	0.8	1.4
Mammoth Cave	Houchin Meadow	1	Y	1.5	-3.3	0.4	N	—	—
		2	Y	2.5	-5.4	0.4	Y	1.2	2.1
		3	Y	3.3	-5.9	-0.8	N	—	—
		4	Y	1.3	-4.0	1.3	Y	2.5	4.2
Mesa Verde	Resource Mngment Area	1	Y	1.9	0.7	3.0	Y	3.2	3.4
		2	Y	2.6	0.9	4.3	N	—	—
		3	Y	2.3	1.0	3.5	Y	1.1	1.3
		4	Y	2.5	1.6	3.3	N	—	—

**Table 2 (continued). Ozone Analyzer Precision and Verification Summary  
Sites Operated by the National Park Service  
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National Park Unit	Site Name	Calendar Quarter	Precision				As-found Verification Multi-Point		
			Required No. of Precision Checks Met? <sup>1</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Lower 95% Probability Limit <sup>6</sup>	Upper 95% Probability Limit <sup>6</sup>	Accuracy Check Performed During the Quarter? <sup>2</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Max. Absolute Percent Difference <sup>5</sup>
Mount Rainier	Tahoma Woods	1	Y	0.8	-4.1	2.5	N	—	—
		2	Y	0.3	-3.0	2.4	Y	1.7	2.1
		3	Y	0.6	-5.6	4.5	N	—	—
		4	—	—	—	—	—	—	—
Petrified Forest	South Entrance	1	Y	0.4	-2.5	1.8	N	—	—
		2	Y	0.8	-2.6	1.0	Y	6.6	7.6
		3	Y	0.5	-0.6	1.5	N	—	—
		4	Y	0.4	-1.5	2.2	Y	5.5	6.3
Pinnacles	SW of East Entrance Stn.	1	Y	1.7	-2.5	-0.9	N	—	—
		2	Y	0.3	-2.2	1.5	Y	0.4	1.4
		3	Y	0.4	-0.5	1.2	N	—	—
		4	Y	1.5	-1.5	4.5	Y	2.2	2.9
Rocky Mountain	Long's Peak	1	Y	4.3	-8.9	0.3	Y	2.4	3.4
		2	Y	2.0	-3.2	-0.8	N	—	—
		3	Y	2.4	-4.5	-0.2	Y	2.4	3.7
		4	Y	0.5	-1.8	0.8	N	—	—
Sequoia and Kings Canyon	Ash Mountain	1	Y	2.1	-2.8	-1.4	N	—	—
		2	Y	2.6	-3.3	-1.9	Y	1.2	1.4
		3	Y	3.0	-3.4	-2.6	N	—	—
		4	N	1.1	-2.6	0.4	Y	2.5	2.8
Sequoia and Kings Canyon	Lower Kaweah	1	Y	1.5	-2.2	5.3	N	—	—
		2	Y	0.7	-1.4	2.8	Y	2.9	3.1
		3	Y	0.4	-0.2	1.0	N	—	—
		4	Y	0.7	0.2	1.3	Y	0.8	1.6
Shenandoah	Big Meadows	1	Y	2.1	-4.3	0.1	N	—	—
		2	Y	4.1	-7.1	-1.2	Y	1.2	1.9
		3	Y	3.8	-10.8	3.2	N	—	—
		4	Y	0.2	-5.9	6.3	N	—	—
Voyageurs	Sullivan Bay	1	Y	0.5	0.1	0.9	N	—	—
		2	Y	1.0	-0.5	2.4	Y	1.8	2.6
		3	Y	0.4	-1.5	2.4	N	—	—
		4	Y	0.1	-0.3	0.5	N	—	—



**Table 2 (continued). Ozone Analyzer Precision and Verification Summary  
Sites Operated by the National Park Service  
National Park Service Gaseous Pollutant Monitoring Program, 2013**

National Park Unit	Site Name	Calendar Quarter	Precision				As-found Verification Multi-Point		
			Required No. of Precision Checks Met? <sup>1</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Lower 95% Probability Limit <sup>6</sup>	Upper 95% Probability Limit <sup>6</sup>	Accuracy Check Performed During the Quarter? <sup>2</sup>	Avg. Absolute Percent Difference <sup>3,4</sup>	Max. Absolute Percent Difference <sup>5</sup>
Yellowstone	Water Tank	1	Y	1.0	-1.8	-0.2	N	—	—
		2	Y	0.4	-2.3	1.6	Y	1.4	2.4
		3	Y	0.6	-0.5	1.6	Y	2.7	3.9
		4	Y	1.2	-1.9	-0.6	N	—	—
Yosemite	Turtleback Dome	1	N	1.4	-2.3	-0.5	N	—	—
		2	Y	1.0	-1.7	-0.3	Y	1.1	1.4
		3	Y	0.2	-1.1	0.6	N	—	—
		4	Y	0.3	-0.9	0.4	Y	0.9	1.4
Zion	Dalton's Wash	1	Y	0.1	-1.7	1.9	Y	2.4	4.6
		2	Y	0.7	-2.9	1.5	N	—	—
		3	Y	1.1	-5.0	2.8	Y	0.6	1.2
		4	Y	1.1	-0.9	3.0	N	—	—

Operating agency key:

plain text = site operated by the National Park Service

*italics* = site operated by a state agency

underline = site operated by the National Park Service, but consisting of non-EPA certified portable instrumentation

Color shading key:

Ideal: indicates a percent difference within +/-5% or a probability limit within +/-10%

Acceptable: indicates a percent difference between +/-5.1-10% or a probability limit between +/-10.1-15%

Unacceptable: indicates a percent difference greater than +/-10% or a probability limit greater than +/-15%

1. Precision checks are required by the Environmental Protection Agency (EPA) of all pollutant analyzers collecting data which are to be submitted to the EPA Air Quality System (AQS). A precision check is performed by challenging the pollutant analyzer with a known concentration of gas from the pollutant transfer standard. This precision check must be performed at least every 14 days of monitoring operation. The percent difference between the analyzer and the transfer standard is then calculated.<sup>3</sup> According to NPS Standard Operating Procedures, the pollutant analyzer must respond within 10% of the

2. Accuracy checks are required by the Environmental Protection Agency (EPA) of all pollutant analyzers collecting data which are to be submitted to the EPA Air Quality System (AQS). An accuracy check is performed by challenging the pollutant analyzer with a known concentration of gas from the pollutant transfer standard at several different points. The percent difference between the analyzer and the transfer standard is then calculated.<sup>3</sup> According to NPS Standard Operating Procedures, the pollutant analyzer must respond within 10% of the transfer standard. All accuracy checks reported here were performed by the reporting organization and not by an outside auditor.

3. Percent Difference = ((analyzer - transfer std)/transfer std)x100

4. Average Absolute Percent Difference is the mean of the absolute value of all individual precision check percent differences during the quarter, or the mean of the absolute value of all the percent differences from each point challenged during an accuracy check.

5. Maximum Absolute Percent Difference is the highest percent difference from the points of a multipoint (or accuracy) calibration.

6. Upper/Lower 95% Probability Limits = (Average Percent Difference)+/-(1.96)(Standard Deviation of precision check percent differences in the quarter). The probability limits represent the interval having a 95% chance of containing the true average percent difference. Probability limits must be within +/-15%.