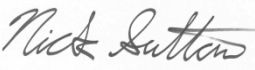


Number of pages in this package 19 [including additional pages 4]
(Fill in when using printed copy as record)

CLIENT INFORMATION	
Company Name	MIRACLE-GRE IND LTD
Address	Unit 8a One Capital Pl 18 Luard Rd Wanchai, Hong Kong

AUDIT INFORMATION:			
Description of Tests	Per Standard No.	UL 867	Edition/ Revision Date
		CSA C22.2 No. 187	Fifth/4 August, 2011
			Third/ March 2009
<input checked="" type="checkbox"/> Tests Conducted by +	Nick Sutton		
	Printed Name	Signature	
<input type="checkbox"/> UL Staff conducting or witnessing testing (WTDP, TMP, WMT only)			
<input type="checkbox"/> UL Staff supervising UL Staff in training			
<input type="checkbox"/> Authorized Signatory (CTDP, TPTDP, TCP, PPP, SMT)	Printed Name	Signature. Include date for CTDP, TPTDP, TCP, PPP, WMT, TMP, SMT	
Reviewed and accepted by qualified Project Handler	Tim Lassila/Carol Li	Tim Lassila TL on 2013-08-08, Carol Li 2013-08-12	
	Printed Name	Signature	

TESTS TO BE CONDUCTED:			
Test No.	Done +++	Test Name	<input checked="" type="checkbox"/> Comments/Parameters <input type="checkbox"/> Tests Conducted by ++
1	x	PEAK OZONE LOCATION DETERMINATION AND OZONE TEST	Passed.

Instructions -
+ - When all tests are conducted by one person, printed name and signature can be inserted here instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.
++ - When test conducted by more than one person, printed name and signature of person conducting the test can be inserted next to the test name instead of including printed name and signature on each page containing data. Test dates may be recorded here instead of entering test dates on the individual datasheet pages. Must indicate number of pages in the data package.
+++ - Use of this field is optional and may be employed differently. If used to include a date instead of entering the testing date on the individual datasheet pages, the date shall be the date the test was conducted.

Special Instructions -

[X] Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, C 25±2 C Relative Humidity, % 50±5% Barometric Pressure, mBar ±

[] No general environmental conditions are specified in the Standard(s) or have been identified that could affect the test results or measurements.

RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

<input checked="" type="checkbox"/> Electric shock	<input type="checkbox"/> Radiation
<input type="checkbox"/> Energy related hazards	<input type="checkbox"/> Chemical hazards
<input type="checkbox"/> Fire	<input type="checkbox"/> Noise
<input type="checkbox"/> Heat related hazards	<input type="checkbox"/> Vibration
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Other (Specify)___

Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 - 08/05/13
 Printed Name Signature

TEST LOCATION: (To be completed by Staff Conducting the Testing)											
<input checked="" type="checkbox"/>	UL or Affiliate	<input type="checkbox"/>	WTDP	<input type="checkbox"/>	CTDP	<input type="checkbox"/>	TPTDP	<input type="checkbox"/>	TCP	<input type="checkbox"/>	PPP
		<input type="checkbox"/>	WMT	<input type="checkbox"/>	TMP	<input type="checkbox"/>	SMT				
Company Name: <u>UL Environment</u>											
Address: <u>2211 Newmarket Parkway, Marietta, GA 30067-9399</u>											

TEST EQUIPMENT INFORMATION

UL test equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.

UL test equipment information is recorded on <<insert location and local laboratory equipment system identification.>>

Inst. ID No.	Instrument Type	Test Number +, Test Title or Conditioning	Function/Range	Last Cal. Date	Next Cal. Date
LCC	Environmental Chamber	<u>1,2 (80080-011AA and -012AA) Performance validation and ozone testing</u>	N/A	2013/06/10	2013/12/10
CM09350106 (49i-3)	<u>Ozone monitor</u>	<u>1,2 (80080-011AA and -012AA) Peak ozone, performance validation, and ozone testing</u>	<u>0-400 ppb</u>	2012/12/06	2013/12/06
02120237	<u>Anemometer Air Flow Meter</u>	<u>1,2 (80080-011AA and -012AA) Peak ozone and performance validation</u>	<u>0-30 m/s</u>	<u>2012/08/29</u>	<u>2013/08/29</u>
938880-P1	<u>Manometer</u>	<u>1,2 (80080-011AA and -012AA) Ozone testing</u>	<u>0-1300 mBar</u>	<u>2013/01/03</u>	<u>2014/01/03</u>
104335436	Ruler	<u>1,2 (80080-011AA and -012AA) Peak ozone and ozone testing</u>	0-24"	2011/12/10	2015/12/10
FM047	Chamber Temperature Monitor	<u>1,2 (80080-011AA and -012AA) Ozone testing</u>	0-50°C	2013/04/29	2014/04/29
122214153	Atomic Clock	<u>1,2 (80080-011AA and -012AA) Run-in</u>	N/A	2012/04/19	2014/04/19
122214222	Atomic Clock	<u>1,2 (80080-011AA, and -012AA) Ozone testing</u>	N/A	2012/04/19	2014/04/19
10249453	Temperature & RH data Logger	<u>1,2 (80080-011AA and -012AA) Ozone testing</u>	Temp: -20 to 70C° RH: 5% to 95%	2012/11/19	2013/11/19

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Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 -
08/05/13
Printed Name Signature

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.
1	Ring Stand with Ring
LCC	Large Chamber C
CM09350106 (49i-3)	Thermo Scientific 49i Ozone Analyzer
02120237	TSI VelociCalc Plus 8384 (Anemometer Air Flow Meter)
938880-P1	Meriam Instruments Manometer 355A
104335436	Product Eng. Corp. 262-024 24"/600 mm (Ruler)
FM047	Omega HX15-W Temperature/Humidity Sensor
122214153	Fisher-Scientific 06-664-12 (Atomic Clock)
122214222	Fisher-Scientific 06-664-12 (Atomic Clock)
10249453	Onset HOBO U12-001 (Temperature & RH Data Logger)

Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 -
 Printed Name Signature Date 08/05/13

TEST SAMPLE IDENTIFICATION:

The table below is provided to establish correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	[] Test No.+	Sample No.	Manufacturer, Product Identification and Ratings
1674264 Product 80080- 010AA	07-11-2013 Rec'd Date: 07/22/2013	1	1	MIRACLE-GRE IND LTD, AIR PURIFIER SK1800 24.5 VDC, 1.2 A, 29.4 W
1674265 Product 80080- 010BA	07-11-2013 Rec'd Date: 07/22/2013	2	2	MIRACLE-GRE IND LTD, AIR PURIFIER SK1800 24.5 VDC, 1.2 A, 29.4 W

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

NOTES TO LAB:

This product does not employ a fan.

This product has two removable filters. Pre and post filters.

The only control is on or off. The ION drive turns on with the product.

Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 - 08/05/13
 Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST

UL 867, Section 41

METHOD - PART A
 PRODUCT RUN-IN

The appliance was placed in a room with a maintained temperature of 25±5°C and filtered air. The appliance was operated under maximum output conductions as described in the following table:

Special Ionizer	ON
Filters	IN

This test was repeated on a second sample.

METHOD - PART B
 PEAK OZONE LOCATION DETERMINATION

While in a well-heated condition, the appliance was placed in an open space with a minimum height dimension of 8 ft. and a minimum side dimension of 10 ft. The appliance was placed in the center of the room and

- 30 inches above the floor.
- on the floor.
- attached to the ceiling or to the underside of a horizontal non-reactive surface at a minimum height of 30 inches.
- attached to a non-reactive vertical surface at a minimum height of 30 inches.

The periphery of the airstream in the plane parallel to and 2 inches from the surface of the air cleaner discharge grille was established and total area was recorded.

For bounded airstreams measuring less than 16 in², five ozone measurements were taken. One in each quadrant of the airstream and one in the center of the airstream.

For bounded airstreams measuring 16 in² or larger, ozone measurements were taken in a 4 x4 in. grid pattern up to 10 measurements. For greater than 10 grid measurements, 10 measurements were taken evenly spaced across the airstream. One additional measurement was taken in the center of the airstream.

For ozone generating ionizing sources, one additional measurement was taken in the airstream directly in line with the source.

Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 -
08/05/13
Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST
(CONT'D)

UL 867, Section 41

Ozone measurements were taken at the locations described above with the appliance operating

on both the highest and lowest fan speed and at each ozone/high voltage output level setting.

on both the highest and lowest fan speed and at the minimum, middle, and maximum ozone/high voltage output level setting.

and with independently activated ionizers operating.

Ozone measurements were monitored for a period of 2 minutes, and recorded for use during Part D - Ozone Test.

This test was repeated on a second sample.

METHOD - PART C
CHAMBER HALF-LIFE

Prior to testing of an appliance model, the chamber ozone half-life was determined using the theoretical air exchange rate, 1.07 1/h, and an initial steady state ozone concentration of 0.100 to 0.200 ppm.

* Note #1 to Technician - If the measured chamber half-life is not equal to 31 ±2 minutes, the air exchange rate shall be adjusted and the ozone half-life measurement shall be reconducted until this value is obtained.*

The air exchange rate was adjusted and the chamber half-life value was again determined using an initial steady state ozone concentration of 0.100 to 0.200 ppm.

METHOD - PART D
OZONE TEST

The appliance was placed in a chamber having a volume of 950-1100 cubic feet (26.9-31.1 m³) with a minimum side dimension of 8 feet (2.4 m) and a maximum height dimension of 10 feet (3.0 m) without openings. The test chamber walls, ceiling, and floor were surface treated stainless steel or other nonporous, non-reactive material.

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Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 -
08/05/13
Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST
(CONT'D);

UL 867, Section 41

During the test, the test room was maintained at a temperature of $25 \pm 2^{\circ}\text{C}$ ($77 \pm 4^{\circ}\text{F}$) and a relative humidity of 50 ± 5 percent. Prior to the start of this test, the ozone background level was measured with the product off. The measurement was subtracted from the maximum measurement during the test.

Note #2 to Technician - If the measured ozone background level is greater than 0.005 ppm, the chamber must be purged and the ozone background level measured again prior to inception of the test.

The appliance was placed in the center of the test chamber and

30 inches above the floor.

on the floor.

attached to the ceiling or to the underside of a horizontal non-reactive surface at a minimum height of 30 inches.

attached to a non-reactive vertical surface at a minimum height of 30 inches.

Tested by: Nick Sutton  Date 08/03/13 - 08/05/13
Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST
(CONT'D)

UL 867, Section 41

The ozone monitor sampling tube was located 2 inches (50mm) from the air outlet of the product and was pointed directly into the air stream. Ozone or high voltage output level/measurement location was as/where ozone emissions were determined highest during Part B - Peak Ozone Emissions Determination.

The emission of ozone was monitored for 24 hours on both the high and low fan speeds to determine the concentration.

* Note #3 to Technician - The monitoring of ozone can be stopped after 8 hours if the measured chamber ozone concentration has reached steady-state. For the purpose of this measurement steady state is defined as:

- a) Negative or zero slope for the plot of chamber ozone concentration vs. time ($[C(t)]$ vs. t), during hour 7 to 8 of monitoring, and fluctuation not greater than ± 10 percent or 2 ppb around the mean, whichever is greater during the same time period,
- b) Positive slope for the plot of chamber ozone concentration vs. time, during hour 7 to 8 of monitoring, mean ozone concentration less than 20 ppb, and fluctuation not greater than ± 2 ppb around the mean, during the same time period, or
- c) Positive slope for the plot of chamber ozone concentration vs. time, during hour 7 to 8 of monitoring, mean ozone concentration greater than or equal to 20 ppb and less than 38 ppb, a normalized slope for hour 7-8 less than or equal to 0.0153 (ppb/hr)/mean ppb, and fluctuation not greater than $\pm 10\%$ around the mean, during the same time period.*

[] The test was repeated with [the fan not functioning] [the particle filters removed] [ozone-monitoring circuitry bypassed].

[] The test was repeated on a second sample.

* Note #4 to Technician - Testing of a second sample is not required if the maximum measured ozone concentration of the first sample measured less than 0.030 parts per million.*

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Tested by: Nick Sutton  Date 08/03/13 - 08/05/13
Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST
(CONT'D)

UL 867, Section 41

RESULTS PART A
PRODUCT RUN-IN

Sample 1 completed the 48 hour run-in period.

RESULTS - PART B
PEAK OZONE LOCATION DETERMINATION

Sample 1: 80080-010AA

ION Drive	Measured Ozone, ppm	
	-011AA ON	-012AA ON
Filters	IN	OUT
Measurement Location 1	0.0035	0.0038
Measurement Location 2	0.0025	0.0039
Measurement Location 3	0.0035	0.0043
Measurement Location 4	0.0044	0.0030
Measurement Location 5	 	
Measurement Location 6	 	
Measurement Location 7	 	
Measurement Location 8	 	
Measurement Location 9	 	
Measurement Location 10	 	
Center of the Airstream	0.0038	0.0048
Measurement in Line with the Source		

The location of the peak ozone measurement was in the Center of the Airstream, Ionizer ON and Filters OUT, see Illustration 1 for visible indication of location.

TL on 2013-08-08 - locations crossed out above - not needed based on measured locations.

Tested by: Nick Sutton *Nick Sutton* 08/03/13 -
 Printed Name Signature Date 08/05/13

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST (CONT'D) UL 867, Section 41

RESULTS PART A
 PRODUCT RUN-IN

Sample 2 completed the 48 hour run-in period.

RESULTS - PART B
 PEAK OZONE LOCATION DETERMINATION

Sample 2: N/A

	Measured Ozone, ppm	
	ON	ON
ION Drive	ON	ON
Filters	IN	OUT
Measurement Location 1		
Measurement Location 2		
Measurement Location 3		
Measurement Location 4		
Measurement Location 5		
Measurement Location 6		
Measurement Location 7		
Measurement Location 8		
Measurement Location 9		
Measurement Location 10		
Center of the Airstream		
Measurement in Line with the Source		

The location of the peak ozone measurement was _____, see Illustration ___ for visible indication of location.

TL on 2013-08-08 - Testing of a second sample was not required because the maximum measured ozone concentration of the first sample measured was less than 0.030 parts per million.

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Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 - 08/05/13
Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST
(CONT'D)

UL 867, Section 41

RESULTS - PART C
CHAMBER HALF-LIFE

Theoretical Air Exchange Rate, 1/h	1.07
------------------------------------	------

Using the theoretical air exchange rate above the measured chamber ozone half-life was 0.508 hour (30.48 minutes).

The measured chamber ozone half-life was 31±2 minutes.

The measured chamber ozone half-life was not 31±2 minutes. (Continue Results Below)

Air Exchange Rate After Adjustment, 1/h	
---	--

After air exchange rate adjustment, the measured chamber ozone half-life was _____ h.

The measured chamber ozone half-life was 31±2 minutes.

The measured chamber ozone half-life was not 31±2 minutes.

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Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 -
08/05/13
Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST
(CONT'D)

UL 867, Section 41

RESULTS - PART D
OZONE TEST

Sample 1 80080-011AA - Filter in.

The test was halted after 8 hours. Data showing steady-state condition is attached.

$O_3(t)$ = Maximum ozone concentration measured: 0.013 parts per million (PPM) by volume.

$O_3(\text{Background})$ = Ozone background level before test: 0.000 parts per million.

The maximum measured ozone level = $O_3(t) - O_3(\text{Background})$ = 0.013 parts per million.

The maximum measured ozone level did not exceed 0.030 parts per million - only one sample tested.

The maximum measured ozone level was between 0.030 and 0.050 parts per million - test repeated on sample 2.

The sample produced a transitory concentration in excess of 0.050 parts per million, but less than 0.100 parts per million. The average of any five consecutive one minute average measurements was less than 0.050 parts per million - test repeated on sample 2.

The sample produced a transitory concentration in excess of 0.050 parts per million, but less than 0.100 parts per million. The average of any five consecutive one minute average measurements was not less than 0.050 parts per million - test halted.

The maximum measured ozone level exceeded 0.100 parts per million - test halted.

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Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 -
08/05/13
Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST
(CONT'D)

UL 867, Section 41

Sample ~~12~~ 80080-012AA - Filter out
TL on 2013-08-08 - correction.

The test was halted after 8 hours. Data showing steady-state condition is attached.

$O_3(t)$ = Maximum ozone concentration measured: 0.011 parts per million (PPM) by volume.

$O_3(\text{Background})$ = Ozone background level before test: -0.001 parts per million.

The maximum measured ozone level = $O_3(t) - O_3(\text{Background})$ = 0.012 parts per million.

The maximum measured ozone level did not exceed 0.030 parts per million - only one sample tested.

The maximum measured ozone level was between 0.030 and 0.050 parts per million - test repeated on sample 2.

The sample produced a transitory concentration in excess of 0.050 parts per million, but less than 0.100 parts per million. The average of any five consecutive one minute average measurements was less than 0.050 parts per million.

The sample produced a transitory concentration in excess of 0.050 parts per million, but less than 0.100 parts per million. The average of any five consecutive one minute average measurements was not less than 0.050 parts per million.

The maximum measured ozone level exceeded 0.100 parts per million - test halted.

Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 - 08/05/13
 Printed Name Signature

PEAK OZONE LOCATION DETERMINATION AND OZONE TEST (CONT'D) UL 867, Section 41

NOTE #5 TO LABORATORY TECHNICIAN: The maximum allowable ozone concentration is 0.050 ppm.

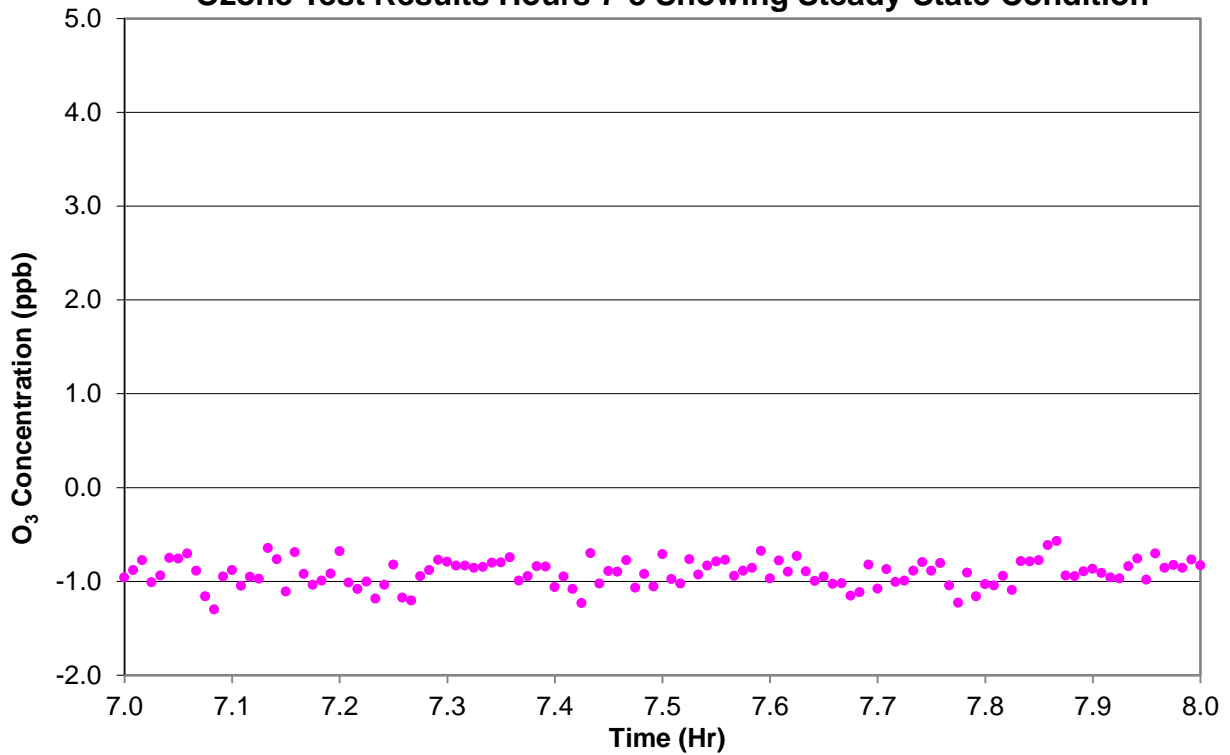
NOTE #6 TO LABORATORY TECHNICIAN: For samples with transitory concentrations in excess of 0.050 ppm, but less than 0.100 ppm, the average of any five consecutive one minute average measurements shall be used when recording the maximum ozone concentration measured.

Date	Time	Test Instance	Ambient Temperature, C	Relative Humidity, %	Barometric Pressure, mBar
08/03/13 -	11:15 -	Ionizer ON Filters IN	26.1 - 26.7	52.4 - 53.6	737.1
08/04/13 -	08:07 -	Ionizer ON Filters OUT	25.3 - 26.5	53.1 - 54.8	737.1
08/05/13	09:09				

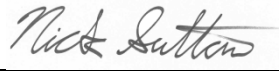
NOTE #7 TO LABORATORY TECHNICIAN: Environmental conditions shall be monitored and recorded for the duration of the Ozone Test.

Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 - 08/05/13
Printed Name Signature

**80080-011AA Ionizer ON with Filters
Ozone Test Results Hours 7-8 Showing Steady-State Condition**



Tested by: Nick Sutton



08/03/13 -
Date 08/05/13

Printed Name

Signature

80080-012AA Ionizer ON without Filters Ozone Test Results Hours 7-8 Showing Steady-State Condition

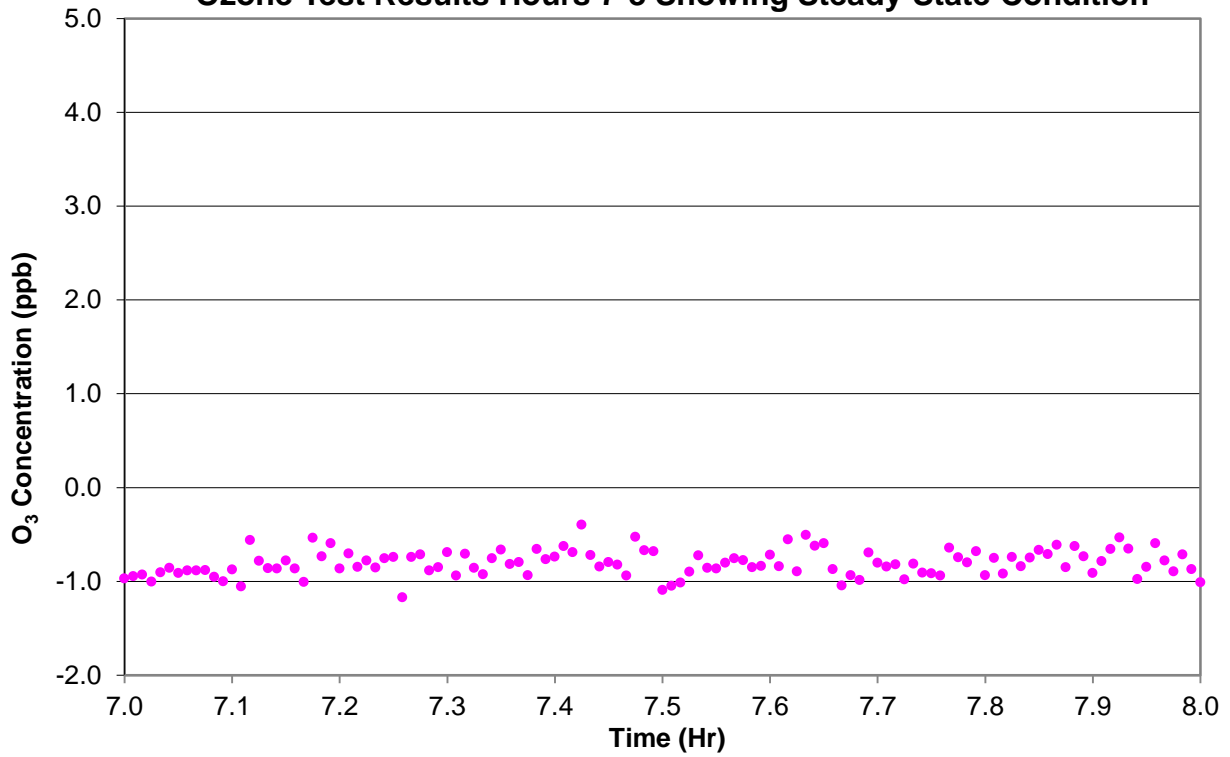


Illustration 1



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Tested by: Nick Sutton *Nick Sutton* Date 08/03/13 -
Printed Name Signature 08/05/13

END OF DATASHEET PACKAGE. THIS PAGE INTENTIONALLY LEFT BLANK