

TO: Joe Lehrter
CC: 
FROM: Gene Taylor
DATE: September 30, 2010
RE: Opacity Testing Results

At the request of Henniges Automotive, Trinity Consultants (Trinity) performed opacity stack testing per U.S. EPA's Method 9 at the Keokuk Plant in Keokuk, Iowa.¹ Gene Taylor of Trinity conducted the Method 9 tests on September 20, 2010. The Keokuk plant manufactures automotive sealing systems. Henniges operates curing ovens on the production lines with multiple stacks per oven. A single oven stack on Lines #3, #5A, #10, and #13 representing the highest visible opacity was tested.

Henniges was issued an operating permit for the ovens at the Keokuk Plant, which included opacity limitations. Although IDNR did not require stack tests for any of the ovens to demonstrate compliance, Henniges voluntarily performed stack tests on its ovens to verify compliance with the permit limits.

Trinity tested exhaust point 303 on Line #3, 501 on Line #5A, 1001 on Line #10, and 1301 on Line #13, each for 18 minutes to complete three, 6-minute test runs. A total of 12 test runs were completed.

The test results are summarized in Table 1, and the test reports are provided in Attachment 1. Based on the monitoring results, the tested emission points on Lines #3, #5A, and #13 presented no exceedance of the 25% indicator opacity in the facility's operating permit. Line #13 experienced a short production interruption about 7.5 minutes into the test and only one valid 6-minute test was completed. Line #10 exceeded the 25% indicator opacity on one of the 6-minute test runs. However, the resulting average opacity of the three test runs was 23.6%, falling below the indicator opacity.

Please feel free to call me at (319) 758-0758 if you have any questions or need any additional information.

Attachments: Summary of Test Results
Method 9 Data Reduction
Method 9 Test Report Forms

¹ Testing performed per Method 9 of 40 CFR 60 Appendix A.

Summary of Test Results						
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Emission Point #	Run #1 Result	Run #2 Result	Run #3 Result	Average Test Opacity	Indicator Opacity	Permit Limit
303	5.0%	5.0%	5.0%	5.0%	25%	40%
1501	6.7%	9.8%	9.2%	8.5%	25%	40%
1001	25.4%	22.9%	22.5%	23.6%	25%	40%
1301	14.2%	NA	NA	14.7%	25%	40%

STACK TEST DATA

Henniges 09/20/2010 Opacity Compliance Test

EP 303, Line #3

Min	0	15	30	45	6-Min Avg
1	5	5	5	5	
2	5	5	5	5	
3	5	5	5	5	
4	5	5	5	5	
5	5	5	5	5	
6	5	5	5	5	5.0%
7	5	5	5	5	
8	5	5	5	5	
9	5	5	5	5	
10	5	5	5	5	
11	5	5	5	5	5.0%
12	5	5	5	5	
13	5	5	5	5	
14	5	5	5	5	
15	5	5	5	5	
16	5	5	5	5	
17	5	5	5	5	
18	5	5	5	5	5.0%

Test Average
6-Minute Maximum

5.0%
5.0%

EP 1501, Line #5A

Min	0	15	30	45	6-Min Avg
1	5	10	5	10	
2	5	10	5	10	
3	10	5	10	10	
4	5	10	5	5	
5	5	5	5	5	
6	5	5	5	5	6.7%
7	10	10	10	10	
8	10	10	10	10	
9	10	10	10	10	
10	10	10	10	10	
11	10	10	10	10	
12	10	10	10	10	9.8%
13	10	10	10	10	
14	10	10	10	10	
15	10	10	10	5	
16	5	5	10	5	
17	10	10	10	10	
18	10	10	10	10	9.2%

Test Average
6-Minute Maximum

8.5%
9.8%

EP 1001, Line #10

Min	0	15	30	45	6-Min Avg
1	20	25	25	25	
2	25	20	25	25	
3	30	30	35	30	
4	25	25	25	25	
5	20	20	30	25	
6	25	25	20	30	25.4%
7	25	30	25	25	
8	20	25	20	20	
9	25	20	25	20	
10	20	25	30	25	
11	25	20	20	20	
12	20	20	20	25	22.9%
13	25	25	25	20	
14	25	25	20	20	
15	20	20	20	25	
16	25	20	15	15	
17	20	20	25	25	
18	25	30	25	25	22.5%

Test Average
6-Minute Maximum

23.6%
25.4%

EP 1301, Line #13

Min	0	15	30	45	6-Min Avg
1	10	10	15	15	
2	15	10	10	10	
3	15	15	15	15	
4	15	15	15	15	
5	15	15	15	15	
6	15	15	20	15	14.2%
7	15	20	10	10	
8	5	5	5	5	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	10	10	15	15	
18	15	15	15	20	

Test Average
6-Minute Maximum

14.7%
14.2%

Indicates period of Production Interruption

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
 Method 9 203A 203B Other: _____

Company Name Henry's Automotive
 Facility Name _____
 Street Address 3200 Main St.
 City Keokuk State IA Zip 52632

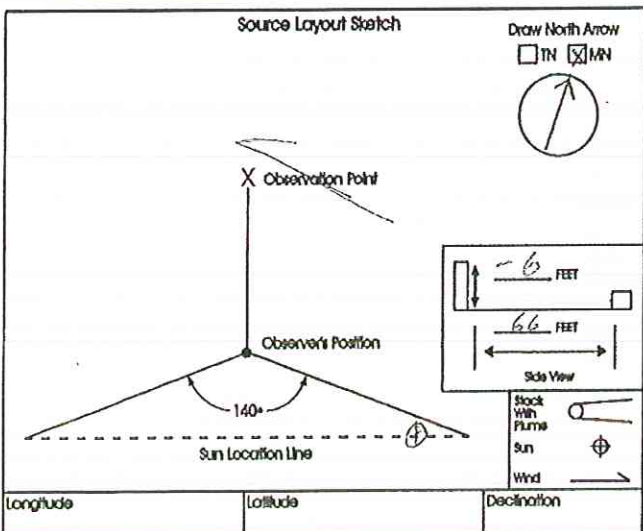
Process Line 3 Unit # _____ Operating Mode Normal
 Control Equipment NA Operating Mode _____

Describe Emission Point
303
Vertical Unobstructed
 Height of Emiss. Pt. _____ Height of Emiss. Pt. Rel. to Observer
 Start _____ End _____ Start -6 ft End -6 ft
 Distance to Emiss. Pt. _____ Direction to Emiss. Pt. (Degrees)
 Start 66 ft End 66 ft Start NNW End NNW

Vertical Angle to Obs. Pt. _____ Direction to Obs. Pt. (Degrees)
 Start _____ End _____ Start _____ End _____
 Distance and Direction to Observation Point from Emission Point
 Start Same End Same

Describe Emission
 Start _____ End _____
 Emission Color _____ Water Droplet Plume
 Start Bl-gr End Bl-gr Attached ☐ Detached ☐ None ☒

Describe Plume Background
 Start Roof End Roof
 Background Color _____ Sky Conditions
 Start white End white Start msly cly End msly cly
 Wind Speed _____ Wind Direction
 Start Calm End Calm Start ESE End ESE
 Ambient Temp. _____ Wet Bulb Temp. _____ RH Percent
 Start 77 End 77 _____ 67



Additional Information

Form Number 303A Page 1 of 1
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Observation Date	Time Zone	Start Time	End Time	
<u>9/20</u>	<u>CDT</u>	<u>0821</u>	<u>08:39</u>	
Sec	0	15	30	45
Min				
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
6	5	5	5	5
7	5	5	5	5
8	5	5	5	5
9	5	5	5	5
10	5	5	5	5
11	5	5	5	5
12	5	5	5	5
13	5	5	5	5
14	5	5	5	5
15	5	5	5	5
16	5	5	5	5
17	5	5	5	5
18	5	5	5	5
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Observer's Name (Print) Eugene Taylor
 Observer's Signature Eugene Taylor Date 9/20/10
 Organization Trinity Consultants
 Certified By Illinois IEPA Date 9/20/10

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
 Method 9 203A 203B Other _____

Company Name
 Henniges Automotive
 Facility Name
 Street Address
 3200 Main St.
 City Keokuk State IA Zip 52632

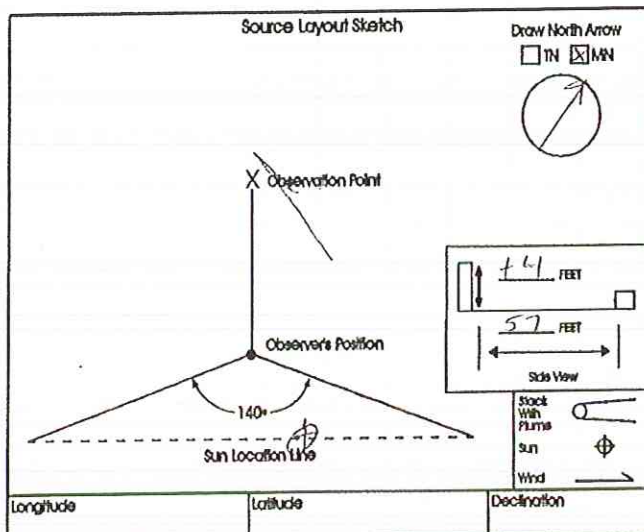
Process Unit # Operating Mode
 Line 5A _____ Normal
 Control Equipment Operating Mode
 NA _____

Describe Emission Point
 1501
 vertical unobstructed
 Height of Emiss. Pt. Start _____ End _____
 Distance to Emiss. Pt. Start 57 ft End 57 ft
 Direction to Emiss. Pt. (Degrees) Start NW End NW

Vertical Angle to Obs. Pt. Start _____ End _____
 Direction to Obs. Pt. (Degrees) Start _____ End _____
 Distance and Direction to Observation Point from Emission Point
 Start Same End Same

Describe Emissions
 Start _____ End _____
 Emission Color Water Droplet Plume
 Start white-grey End white-grey Attached ☐ Detached ☐ None ☒

Describe Plume Background
 Start _____ End _____
 Background Color Sky Conditions
 Start Silver/Blk End Silver/Blk Start overcast End _____
 Wind Speed i Wind Direction
 Start calm End 7 mph Start SE End S
 Ambient Temp. Wet Bulb Temp. RH Percent
 Start 75 End 75 Start _____ End 71



Additional Information

Form Number 1501A Page 1 of 1
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Observation Date	Time Zone	Start Time	End Time	
7/20/10	CDT	08:51	09:09	
Sec	0	15	30	45
Min				
1	5	10	5	10
2	5	10	10	10
3	10	5	10	10
4	5	10	5	5
5	5	5	5	5
6	5	5	5	5
7	10	10	10	5
8	10	10	10	10
9	10	10	10	10
10	10	10	10	10
11	10	10	10	10
12	10	10	10	10
13	10	10	10	10
14	10	10	10	10
15	10	10	10	5
16	5	5	10	5
17	10	10	10	10
18	10	10	10	10
19				
20				
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23				
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26				
27				
28				
29				
30				

Observer's Name (Print)
 Eugene Taylor
 Observer's Signature
 [Signature]
 Date 7/20/10
 Organization
 Trinity Consultants
 Certified By
 Illinois EPA
 Date 7/20/10

EP. VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
(Method 9) 203A 203B Other: _____

Company Name
Henniger Automotive
Facility Name

Street Address
3200 Main St
City
Krookuk State
IA Zip
52632

Process
Line 13 Unit #

Operating Mode
Normal
Control Equipment
NA Operating Mode

Describe Emission Point
1301
Vertical Unobstructed
Height of Emis. Pt.
Start _____ End _____
Height of Emis. Pt. Rel. to Observer
Start -3 ft End -3 ft
Distance to Emis. Pt.
Start 270 ft End 270 ft
Direction to Emis. Pt. (Degrees)
Start NW End NW

Vertical Angle to Obs. Pt.
Start _____ End _____
Direction to Obs. Pt. (Degrees)
Start NW End NW
Distance and Direction to Observation Point from Emission Point
Start Same End Same

Describe Emissions
Start _____ End _____
Emission Color
Start white End white
Water Droplet Plume
Attached ☐ Detached ☐ None ☒

Describe Plume Background
Start trees End Trees
Background Color
Start green End green
Sky Conditions
Start partly cly End mostly cly
Wind Speed
Start 7 mph End 9 mph
Wind Direction
Start WSW End WSW
Ambient Temp.
Start 78 End 78
Wet Bulb Temp.

RH Percent
65

Source Layout Sketch
Draw North Arrow
☐ TN ☒ IN

Longitude _____ Latitude _____ Directional _____

Additional Information

Form Number 1301A Page 1 of 1
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Observation Date		Time Zone		Start Time	End Time
9/20/10		COT		09:21	09:39
Sec Min	0	15	30	45	Comments
1	10	10	15	15	
2	15	10	10	10	
3	15	15	15	15	
4	15	15	15	15	
5	15	15	15	15	
6	15	15	20	15	
7	15	20	10	10	Line shutdown
8	5	5	5	5	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	5	↓
17	10	10	15	15	line restart
18	15	15	15	20	
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Observer's Name (Print)
Eugene Taylor
Observer's Signature
Eugene Taylor Date
9/20/10
Organization
Trinity Consultants
Certified By
Illinois EPA Date
9/20/10

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One) Method 9 203A 203B Other _____

Company Name Henniges Automotive
 Facility Name _____
 Street Address 3200 Main St.
 City Keokuk State IA Zip 52632

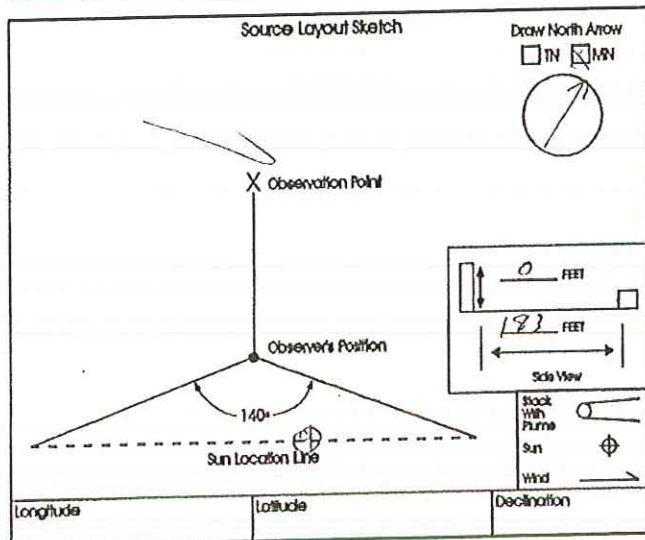
Process Line 10 Unit # _____ Operating Mode Normal
 Control Equipment N/A Operating Mode _____

Describe Emission Point 1001
Vertical Unobstructed
 Height of Emiss. Pt. _____
 Start _____ End _____ Height of Emiss. Pt. Rel. to Observer Start 0 End 0
 Distance to Emiss. Pt. _____ Direction to Emiss. Pt. (Degrees) Start NW End NW

Vertical Angle to Obs. Pt. _____ Direction to Obs. Pt. (Degrees) Start _____ End _____
 Distance and Direction to Observation Point from Emission Point Start Same End Same

Describe Emissions
 Start _____ End _____
 Emission Color Start white End white Water Droplet Plume Attached ☐ Detached ☐ None ☒

Describe Plume Background
 Start Trees End Trees
 Background Color Start Green End Green Sky Conditions Start pty cldy End mslly cldy
 Wind Speed Start 7 mph End 9 mph Wind Direction Start WSW End WSW
 Ambient Temp. Start 78 End 78 Wet Bulb Temp. _____ RH Percent 65



Additional Information _____

Form Number 1001A Page 1 of 1
 Continued on VEO Form Number _____

Observation Date		Time Zone				Start Time	End Time
<u>9/20/10</u>		<u>CDT</u>				<u>09:21</u>	<u>09:39</u>
Sec	Min	0	15	30	45	Comments	
1	20	25	25	25			
2	25	20	25	25			
3	30	30	35	30			
4	25	25	25	25			
5	20	20	30	25			
6	25	25	20	30			
7	25	30	25	25			
8	20	25	20	20			
9	25	20	25	20			
10	20	25	30	25			
11	25	20	20	20			
12	20	20	20	25			
13	25	25	25	20			
14	25	25	20	20			
15	20	20	20	25			
16	25	20	15	15			
17	20	20	25	25			
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29							
30							

Observer's Name (Print) Eugene Taylor
 Observer's Signature Eugene Taylor Date 9/20/10
 Organization Trinity Consultants
 Certified By Illinois EPA Date 9/20/10

