

Draft

**SANTA ROSA COUNTY PD&E STUDY: WOODBINE
ROAD / CHUMUCKLA HIGHWAY**

Air Quality Memorandum

Prepared for:
Santa Rosa County

December 2006

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SANTA ROSA COUNTY PD&E STUDY: WOODBINE ROAD / CHUMUCKLA HIGHWAY

Air Quality Memorandum

Prepared for:
Santa Rosa County
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December 2006

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206408





memorandum

date December 6, 2006
 to Project File / 206408
 from Michael Mulbarger
 subject Santa Rosa County PD&E Study – Woodbine Road / Chumuckla Highway
 Air Quality Screening

An air quality review of the subject project was conducted following procedures documented in Chapter 16 of the Project Development and Environment Manual (September 2006). This project is located in Santa Rosa County, which has been designated as attainment for all the air quality standards under the criteria provided in the Clean Air Act Amendments of 1990, and as such, conformity does not apply.

To ensure that no violation of the National Ambient Air Quality Standards (NAAQS) established by the United States Environmental Protection Agency (USEPA) will result from the construction and operation of this project, the FDOT Air Quality Screening Model, CO Florida 2004, was used. The CO Florida 2004 model uses information from the EPA MOBILE6 emissions model and the CALINE3 model to produce an estimate of the carbon monoxide (CO) levels that might result from the operation of the project. For traffic conditions provided in Table 1, 10 worst-case receptor points adjacent to the intersection of Woodbine Road/Chumuckla Highway, Berryhill Road, and Quintette Road (Figure 1). This intersection is predicted to experience the highest volume of traffic in the future.

**Table 1:
 CO Florida 2004 Input Data ***

Year	Scenario	Peak Hour Approach Traffic Volumes				Approach Speed (mph)
		Northbound	Southbound	Eastbound	Westbound	
2010	No-Build	1250	550	500	300	30
	Build	1250	550	500	300	40
2025	No-Build	1920	1170	1175	580	25
	Build	1920	1170	1175	580	40

* Source: Baskerville-Donovan, Inc.

Using a suburban setting and standard default values for background concentrations and temperatures, the resultant maximum one and eight hour CO concentrations were predicted for each of the evaluated scenarios. Table 2 summarizes results for the receptor point with the highest predicted concentrations.

**Table 2:
Predicted Maximum One- and Eight-Hour CO Concentrations**

Year	Scenario	Maximum CO Concentration (ppm)*	
		1-Hour	8-Hour
2010	No-Build	7.8	4.7
	Build	7.9	4.8
2025	No-Build	7.6	4.6
	Build	7.7	4.6

* Parts per Million

As shown in Table 2, the maximum one-hour CO concentrations are predicted to range from 7.6 to 7.9 ppm at the 10 receptors adjacent to the intersection of US 17 and SR 66. As also shown, the maximum eight-hour CO concentrations are predicted to range from 4.6 to 4.8 ppm. Since these values do not exceed the NAAQS established by the USEPA of 35 ppm for a one-hour concentration and 9 ppm for an eight-hour concentration, no adverse air quality impact will result from the operation of this project. The CO Florida 2004 model output files are attached below.

Construction activities may cause minor short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts can be minimized by adherence to the Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction.

12-06-2006

CO Florida 2004

Project: Santa Rosa County PD&E Study
Facility: Woodbine Road / Chumuckla Highway 2010 No Build
Analyst: MSM

Environmental Data:

Temperature: 41 F
Reid Vapor Pressure: 11.5 psi
Land Use: Suburban
Stability Class: D
Surface Roughness: 108
Background Concentration: 1-hr = 3.3 ppm 8-hr = 2.0 ppm

Project Data:

Region: 1: North Florida
Year: 2010
Intersection Type: 4 x 4 Intersection
Max Approach Traffic Volume: 1250 veh/hour
Speed: 30

Receptor Data (all distances are in feet):

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
Default Rec 1	10	150	6
Default Rec 2	10	50	6
Default Rec 3	50	10	6
Default Rec 4	150	10	6
Default Rec 5	50	50	6
Default Rec 6	10	-150	6
Default Rec 7	10	-50	6
Default Rec 8	50	-10	6
Default Rec 9	150	-10	6
Default Rec 10	50	-50	6

RESULTS (including background CO):

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
Default Rec 1	7.0	4.2
Default Rec 2	7.3	4.4
Default Rec 3	7.7	4.6
Default Rec 4	7.8	4.7
Default Rec 5	6.6	4.0
Default Rec 6	7.8	4.7
Default Rec 7	7.7	4.6
Default Rec 8	7.3	4.4
Default Rec 9	7.0	4.2
Default Rec 10	6.6	4.0

PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED

12-06-2006

CO Florida 2004

Project: Santa Rosa County PD&E Study
Facility: Woodbine Road / Chumuckla Highway 2010 Build
Analyst: MSM

Environmental Data:

Temperature: 41 F
Reid Vapor Pressure: 11.5 psi
Land Use: Suburban
Stability Class: D
Surface Roughness: 108
Background Concentration: 1-hr = 3.3 ppm 8-hr = 2.0 ppm

Project Data:

Region: 1: North Florida
Year: 2010
Intersection Type: 4 x 4 Intersection
Max Approach Traffic Volume: 1250 veh/hour
Speed: 40

Receptor Data (all distances are in feet):

Table with 4 columns: Receptor Name, East-West Distance from Intersection, North-South Distance from Intersection, Receptor Height. Lists 10 default receptors with their respective distances and heights.

RESULTS (including background CO):

Table with 3 columns: Receptor Name, Max 1-Hr Conc (ppm), Max 8-Hr Conc (ppm). Shows predicted CO concentrations for each of the 10 receptors.

PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED

12-06-2006

CO Florida 2004

Project: Santa Rosa County PD&E Study
Facility: Woodbine Road / Chumuckla Highway 2025 No Build
Analyst: MSM

Environmental Data:

Temperature: 41 F
Reid Vapor Pressure: 11.5 psi
Land Use: Suburban
Stability Class: D
Surface Roughness: 108
Background Concentration: 1-hr = 3.3 ppm 8-hr = 2.0 ppm

Project Data:

Region: 1: North Florida
Year: 2025
Intersection Type: 4 x 4 Intersection
Max Approach Traffic Volume: 1920 veh/hour
Speed: 25

Receptor Data (all distances are in feet):

Table with 4 columns: Receptor Name, East-West Distance from Intersection, North-South Distance from Intersection, Receptor Height. Lists 10 default receptors with their respective distances and heights.

RESULTS (including background CO):

Table with 3 columns: Receptor Name, Max 1-Hr Conc (ppm), Max 8-Hr Conc (ppm). Shows predicted CO concentrations for each of the 10 receptors.

PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED

12-06-2006

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PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED
