Appendix C

Solvay USA Inc.

(Formerly known as Rhodia)

BART Determination

And Evaluation

CERTIFIED MAIL (7004 2510 0006 3853 9911)
RETURN RECEIPT REQUESTED

SOLVAY USA INC.
c/o C T Corporation System
Agent for Service of Process
5615 Corporate Boulevard, Suite 400B
Baton Rouge, LA 70808

RE: ADMINISTRATIVE ORDER ON CONSENT
ENFORCEMENT TRACKING NO. AE-AOC-14-00273
AGENCY INTEREST NO. 1314

Dear Sir/Madam:

Pursuant to the Louisiana Environmental Quality Act (La. R.S. 30:2001, et seq.), the attached **ADMINISTRATIVE ORDER ON CONSENT** is hereby served on **SOLVAY USA INC. (RESPONDENT).**

Any questions concerning this action should be directed to Maggie Turner at (225) 219-4468.

Sincerely,

Celena J. Cage
Administrator
Enforcement Division

CJC/MBT/mbt
Alt ID No. 0840-00033
Attachment

c: Solvay USA Inc.
c/o John Richardson
P.O. Box 828
Baton Rouge, LA 70821

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF ENVIRONMENTAL COMPLIANCE

IN THE MATTER OF	*	
	*	
SOLVAY USA INC.	*	**ENFORCEMENT TRACKING NO.**
EAST BATON ROUGE PARISH	*	
ALT ID NO. 0840-00033	*	**AE-AOC-14-00273**
	*	
	*	**AGENCY INTEREST NO.**
	*	
PROCEEDINGS UNDER THE LOUISIANA	*	**1314**
ENVIRONMENTAL QUALITY ACT,	*	
La. R.S. 30:2001, ET SEQ.	*	

<u>ADMINISTRATIVE ORDER ON CONSENT</u>

The following **ADMINISTRATIVE ORDER ON CONSENT** is issued this day to **SOLVAY USA INC. (RESPONDENT)** by the Louisiana Department of Environmental Quality (the Department), under the authority granted by the Louisiana Environmental Quality Act (the Act), La. R.S. 30:2001, *et seq*., and particularly by La. R.S. 30:2011(D)(6) and (D)(14). The Respondent consents to the requirements set forth below.

FINDINGS OF FACT

I.

The Respondent, formerly known as Rhodia Inc., owns and/or operates a sulfuric acid manufacturing facility (the Facility) located at 1275 Airline Highway in Baton Rouge, East Baton Rouge Parish, Louisiana. The Facility currently operates pursuant to the following Title V permits: 0840-00033-V5 and 2184-V3.

II.

Under Clean Air Act (CAA) section 110, each state must prepare and submit for the U.S. Environmental Protection Agency (EPA) approval, a State Implementation Plan (SIP) that provides for the implementation, maintenance and enforcement of the National Ambient Air Quality Standards (NAAQS) in each air quality control region within the state.

III.

· In addition to the general SIP requirements, in CAA section 169A, 42 U.S.C. §7491; Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section establishes as a national goal the "prevention of any future, and the remedying of any existing, impairment of visibility" in those national parks and wilderness areas identified as "Class I" areas under CAA section 161, 42 U.S.C. §7472(a), 42 U.S.C. §7491.

IV.

Under CAA section 169A and its associated implementing regulations, states must assure the reasonable progress toward the goal of achieving natural visibility conditions in Class I areas by preparing, and submitting for EPA approval, a Regional Haze SIP. *See generally,* 42 U.S.C. §7491; 40 C.F.R. § 51.308.

V.

To comply with the requirements set forth in CAA section 169A and the implementing regulations, the Department submitted a proposed SIP on behalf of the State of Louisiana to EPA Region VI on June 13, 2008. The SIP included a Best Available Retrofit Technology (BART) analysis for the Facility at the time owned and operated by Rhodia Inc.[1] The BART analysis was based on a submittal made by Rhodia Inc. to the Department in June 2007.

VI.

On February 28, 2012, the EPA promulgated a proposed partial limited approval and partial disapproval of Louisiana's SIP revision to address regional haze. *See,* 77 Fed. Reg. 11,839.

VII.

On July 3, 2012, the EPA promulgated a final rule, entitled "Approval and Promulgation of Implementation Plans; Louisiana; Regional Haze State Implementation Plan" pursuant to its statutory authority under the CAA, 42 U.S.C. §7401 *et seq.* *See,* 77 Fed. Reg. 39,425 (July 3, 2012). In the final rule, the EPA finalized under CAA section 110(k), 42 U.S.C. §7410(k), a partial limited approval and partial disapproval of the Regional Haze SIP submitted to EPA by the State of Louisiana, through the Department on June 13, 2008. In this final rule, the EPA requested, among other things, that the Department provide additional information to support the Department's conclusion concerning the BART determination for the Facility.

[1]Effective October 1, 2013, Rhodia Inc. changed its company name and the name of the facility from Rhodia Inc. to Solvay USA Inc. The LDEQ Office of Environmental Services acknowledged the name change in correspondence, dated November 1, 2013.

ADMINISTRATIVE ORDER

Based on the foregoing, the Department **hereby orders**, and the Respondent hereby agrees that:

I.

The Respondent shall comply with the emissions limitations set forth below:

Source ID	Source Description	Sulfur Dioxide (SO_2)	
		Limit	Citation
RLP 0014	Sulfuric Acid Unit No. 1	3.0 lbs of SO_2 emitted per ton of 100% sulfuric acid produced (3-hour average), except during periods of startup, shutdown and malfunction as defined in the consent decree	Consent Decree (CA No. 2:07CV134 WL), eff. July 23, 2007
RLP 0013	Sulfuric Acid Unit No. 2	3.0 lbs of SO_2 emitted per ton of 100% sulfuric acid produced (3-hour average), except during periods of startup, shutdown and malfunction as defined in the consent decree	Consent Decree (CA No. 2:07CV134 WL), eff. July 23, 2007

II.

The Respondent shall continue to comply with all reporting and record keeping requirements contained within all applicable permits.

III.

To the extent required by law, further proceedings relating to this **ADMINSTRATIVE ORDER** will be governed by the Administrative Procedure Act, La. R.S. 49.950, *et seq.*

IV.

Under CAA section 504(a), permits issued under this section shall include enforceable emission limitations and standards. In accordance with CAA section 504(a), the Department has issued to the Respondent Title V Permit No. 0840-00033-V5, which contains the federally enforceable limitations listed herein.

V.

This **ADMINISTRATIVE ORDER ON CONSENT** may be executed in counterparts, each of which may be executed by one (1) or more of the signatory parties hereto. Signature pages may be detached from the counterparts and attached to one or more copies of this Agreement to form multiple legally effective documents. Facsimile signatures shall be sufficient in lieu of original signatures.

VI.

For each action or event described herein, the Department reserves the right to seek compliance with its rules and regulations in any manner allowed by law, and nothing herein shall be construed to preclude the right to seek such compliance.

VII.

This **ADMINISTRATIVE ORDER ON CONSENT** may be amended by mutual consent of the Department and Respondent. Such amendments shall be in writing, shall follow proper SIP procedures and be submitted to EPA as a SIP revision, and shall be final and effective upon signature by an authorized representative of the Department and signature by the authorized representative of the Respondent.

VIII.

This **ADMINISTRATIVE ORDER ON CONSENT** shall be final and effective upon signature by an authorized representative of the Department and signature by the authorized representative of the Respondent.

Baton Rouge, Louisiana, this _____ day of ______________________________, 2014.

____

Cheryl Sonnier Nolan
Assistant Secretary
Office of Environmental Compliance

SOLVAY USA INC.

By:______________________________ **Date:**________________

Name:____________________________

Title:_____________________________

Rhodia

Baton Rouge Plant

June 14, 2007

Certified Mail Return Receipt Requested (7003 1010 0005 5151 9464)

Dr. Chuck Carr Brown, Assistant Secretary
Office of Environmental Services
Louisiana Department of Environmental Quality
P.O. Box 4314
Baton Rouge, LA 70821-4314

RE: Summary of CALPUFF BART Screening Modeling Analysis for Rhodia Sulfuric Acid Plant

Dear Dr. Brown::

Providence Engineering & Environmental Group LLC (Providence) has completed a CALPUFF screening modeling analysis for the Rhodia Sulfuric Acid plant located in Baton Rouge, Louisiana for purposes of recently promulgated regulations associated with Best Available Retrofit Technology (BART). This letter summarizes the results of the base case scenario and an abated scenario. This base case scenario is formulated using the emission data and stack parameters provided by Rhodia. The abated scenario is formulated using estimated emission data and stack parameters from Rhodia's proposal to use caustic scrubbing to reduce SO_2 emissions by 94%.

BACKGROUND

The 1990 Clean Air Act Amendments required the United States Environmental Protection Agency (USEPA) to promulgate regulations to protect against visibility impairment (regional haze) in 156 scenic areas (also referred to as Class I areas) across the United States. Regional haze regulations in 40 CFR 51.300 through 51.309 and guidelines found in Appendix Y to 40 CFR Part 51, help states identify sources that are BART eligible and determine the level of control that represents BART. Based on the Regional Haze rule, various state agencies are in the process of performing screening analyses to determine a list of potential sources that may cause visibility impairment at Class I areas. These screening analyses have been performed using screening models or emissions and distance thresholds. It is expected that the sources that are not screened out by the state agencies will be required to either perform comprehensive long-range transport modeling using the USEPA-promulgated CALPUFF model (in a screening analysis or a refined analysis) and/or submit an engineering analysis.

The Louisiana Department of Environmental Quality (LDEQ) has established screening criteria. Facilities that could not reasonably be eliminated from BART consideration by the criteria are asked to perform site-specific CALPUFF modeling analyses to evaluate if they impact Breton and Caney Creek Class 1 areas by 0.5 deciviews or more. Rhodia has received a request from the LDEQ to perform the modeling analysis. Rhodia has requested that Providence perform a screening analysis for their Baton Rouge sulfuric acid plant. This report provides the summary for the screening analysis.

MODEL SETUP

Rhodia

Baton Rouge Plant

A CALPUFF model is set up for the Rhodia sulfuric acid plant in accordance with the Central Regional Air Planning Association (CENRAP) protocol and the LDEQ protocol for BART analyses. This section summarizes the model setup for the CALPUFF screening analysis.

Site Location, Receptor Location And Model Range

The modeling domain is shown in the Lambert Conformal Conic (LCC) coordinate system in Figure 1. The grid cell size used in the models is 6 km. All the domain range, coordinate system, and spatial resolution are same to the south meteorological domain prepared by CENRAP. The blue crosses indicate the receptors at Breton Wilderness Area and Caney Creek Wilderness, and the red circle represents the Rhodia sulfuric acid facility. Figure 2 shows a more detailed map of the receptor and sources.

Figure 1 – Rhodia facility on Whole LCC Modeling Domain

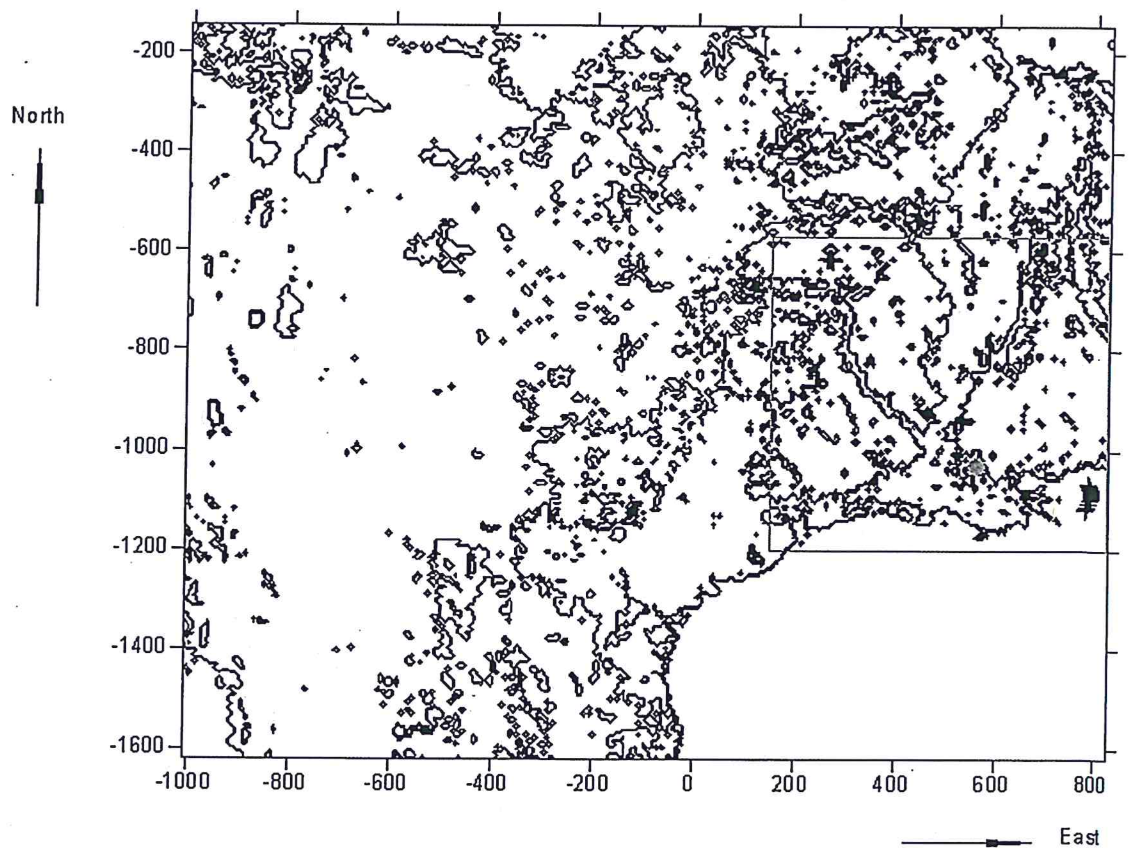
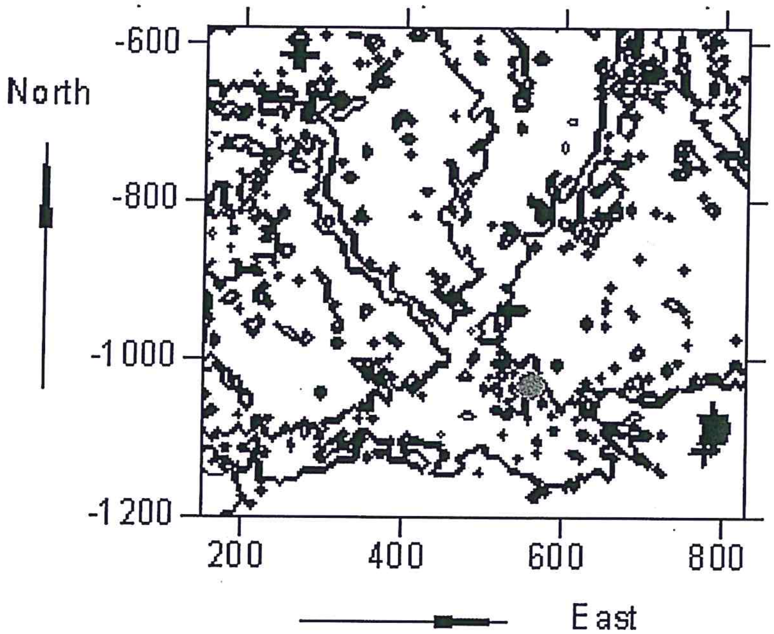


Figure 2 – Rhodia facility and Class I Areas



Meteorological data

The CALPUFF-ready meteorological data prepared by CENRAP is used directly for this screening analysis.

Emission rates and stack parameters

The emission rate and stack parameters used for the base case scenario and the abated scenario are provided in Table 1 below. A site elevation of 15.2 meters is used in the model.

Table 1 - Emission Rate and Stack Parameters

	Package Boiler	Base Case Sulfuric Acid Unit 2	Base Case Sulfuric Acid Unit 1	Abated Sulfuric Acid Unit 2	Abated Sulfuric Acid Unit 1
LCC Easting (km)	560.646	560.809	560.521	560.809	560.521
LCC Northing (km)	-1032.650	-1032.578	-1032.629	-1032.578	-1032.629
Stack Height (m)	18.288	76.2	76.2	39.0	39.0
Exit temperature (K)	517.04	338.71	335.37	305.4	305.4
Exit Velocity (m/s)	23.04	8.11	10.42	35.475	34.377
Diameter (m)	1.07	3.05	1.83	1.37	0.91
SO2 24 h max emission (g/s)	0.03	244.18	113.90	29.93	14.18
NOx 24 h max emission (g/s)	3.07	13.38	6.20	13.38	6.20
PM10 24 h max emission (g/s)	0.16	0.09	0.05	0.09	0.05

Model options

The model is set up following CENRAP's guidance on CALPUFF screening modeling. Key model options are listed below:

CALPUFF:
Dispersion: Pasquill-Gifford (PG) coefficient.
Chemical species modeled include: SO_2, SO_4, NO_x, HNO_3, NO_3, PM.

Chemistry: Mesopuff.
Aqueous phase chemistry: Use relative humidity (RH) instead of real water content.
Ozone: Ozone data is provided by LDEQ.
Ammonia: Constant ammonia concentration is assumed as 3 ppb.
Wet and dry deposition: Both gaseous and particle phase are modeled.

POSTUTIL:
Species input: SO_2, SO_4, NO_x, HNO_3, NO_3, PM.
Species output: SO_2, SO_4, NO_x, HNO_3, NO_3, PM.
Background NH_3: 3 ppb.

CALPOST:
Visibility is calculated using Mehtod 6 based on IMPROVE's equation:

$$b_{ext}=3f(RH)[(NH_4)_2SO_4]+3f(RH)[NH_4NO_3]+10[PM]+b_{Ray}$$

where b_{ext} is the calculated light extinction, f(RH) is the humidity effect, b_{Ray} is the Rayleigh scattering of air. A light extinction efficiency of 10 is used for PM.
The change of haze index in deciviews is calculated by:

$$\Delta dv = 10 \ln (\{b_{background}+ b_{source}\}/ b_{background})$$

where b_{source} is the light extinction caused by the source and the $b_{background}$ is the natural background light extinction.

The natural background light extinction is provided in CENRAP's guidance. For eastern states, background extinctions are EC=0.02, SO_4=0.23, NO_3=0.1, PMC=3, SOC=1.4, Soil=0.5, Raleight scattering=10.

Monthly f(RH) values at Breton and Caney Creek are obtained from EPA's Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule. As suggested in LDEQ's model protocol, the RH factors at the centroid receptor of each Class I area are used for the 12 months.

Recompilation

The CALPUFF, CALPOST and POSTUTIL programs were recompiled with the FORTRAN source code provided in the CALPUFF BART version. The compiler used is Lahey/Fujitsu Fortran Express v7.1. The changes for the recompilation are described below:

CALPUFF: In params.puf, mxnx=320,mxny=265, mxoz=2725. The source code is in calpuff.for and the executable file is calpuffc.exe.

POSTUTIL

In params.utl, PARAMETER(mxgx=320), PARAMETER(mxgy=265). The source code is in postutilc.for and the executable file is postutilc.exe

CALPOST
In params.pst, PARAMETER(mxgx=320) , PARAMETER(mxgy=265) . The source code is in the calpost.for. The executable file is calpost.exe.

To recompile, the parameters in the parameter files are changed first as indicated in the above paragraphs. The source files are recompiled by Lahey's command. The newly generated .exe files are used for the model runs in this work.

MODEL RESULTS

This section describes the modeling results for the CALPUFF screening analysis of the base case scenario and the abated scenario.

Model runs

For 2001, 36 met files are used in three groups of CALPUFF and POSTUTIL runs. The results are then merged by APPEND, a tool of CALPUFF BART version. For 2002 and 2003, 12 met files of each year are directly used in CALPUFF and POSTUTIL.

Model results of 2001, 2002, 2003

Modeling runs were executed for 2001, 2002, and 2003. Based on these runs, the tables below provide the results for the respective years under the base case scenario and the abated scenario. CALPOST was run separately for Breton and Caney Creek receptors since different RH factors were used for the two Class I areas.

Table 2 - CALPUFF Screening Analysis Results for Rhodia Base Case Scenario

2001 Breton Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PMF	Rank
2001	191	5	2.003	4.3	99.53	0.44	0.02	1
2001	229	40	1.822	4.3	99.62	0.37	0.01	2
2001	231	40	1.315	4.3	99.72	0.26	0.02	3
2001	192	40	1.275	4.3	99.36	0.6	0.03	4
2001	202	40	1.18	4.3	99.67	0.31	0.02	5
2001	163	1	1.162	4	99.5	0.49	0.02	6
2001	190	1	1.102	4.3	99.27	0.7	0.03	7
2001	89	40	1.043	3.7	94.16	5.81	0.02	8
2001	226	1	1.034	4.3	99.77	0.22	0.02	9
2001	260	40	1.023	4.2	99.72	0.26	0.02	10
2001	53	40	0.962	3.5	93.9	6.07	0.03	11
2001	90	1	0.911	3.7	98.05	1.93	0.02	12
2001	230	40	0.897	4.3	99.16	0.81	0.02	13
2001	91	1	0.851	3.604	97.69	2.29	0.02	14
2001	187	40	0.747	4.3	99.79	0.19	0.01	15
2001	261	40	0.721	4.2	99.79	0.2	0.01	16
2001	212	40	0.571	4.3	99.8	0.18	0.02	17
2001	225	40	0.515	4.3	99.42	0.56	0.02	18
2001	232	1	0.508	4.3	99.72	0.26	0.02	19
2001	162	16	0.489	4	99.73	0.25	0.01	20

2001 Caney Creek Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PMF	Rank
2001	44	43	0.726	3.1	94.33	5.65	0.02	1
2001	186	58	0.549	3.4	99.92	0.07	0.01	2
2001	350	58	0.477	3.5	91.36	8.61	0.03	3
2001	207	58	0.472	3.4	99.69	0.3	0.01	4
2001	235	49	0.472	3.4	99.77	0.22	0.01	5
2001	178	107	0.441	3.6	99.66	0.33	0.01	6
2001	318	76	0.431	3.4	94.29	5.68	0.03	7
2001	14	49	0.408	3.4	93.66	6.32	0.02	8
2001	295	75	0.379	3.5	97.72	2.26	0.02	9
2001	187	75	0.369	3.4	99.95	0.05	0.01	10

2002 Breton Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA	F(RH)	% SO4	% NO3	% PMF	Rank

			DV					
2002	194	40	1.389	4.3	99.79	0.2	0.01	1
2002	206	40	1.075	4.3	99.8	0.19	0.01	2
2002	203	40	1.048	4.3	99.91	0.08	0.01	3
2002	186	1	0.989	4.3	99.88	0.11	0.01	4
2002	238	1	0.917	4.3	99.8	0.19	0.01	5
2002	213	40	0.844	4.3	99.74	0.24	0.02	6
2002	237	40	0.787	4.3	99.76	0.22	0.02	7
2002	204	1	0.691	4.3	99.92	0.07	0.01	8
2002	334	1	0.656	3.7	96.62	3.35	0.02	9
2002	202	40	0.578	4.3	99.9	0.09	0.01	10
2002	325	1	0.555	3.7	95.67	4.31	0.02	11
2002	363	40	0.533	3.7	95.51	4.47	0.02	12
2002	25	1	0.522	3.7	94.62	5.36	0.02	13
2002	299	40	0.51	3.7	97.19	2.79	0.01	14
2002	258	40	0.488	4.2	99.42	0.56	0.02	15

2002 Caney Creek Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2002	234	76	1.102	3.4	99.6	0.39	0.01	1
2002	177	43	0.903	3.6	98.86	1.13	0.01	2
2002	222	76	0.82	3.4	99.45	0.53	0.02	3
2002	103	75	0.81	3	99.35	0.63	0.01	4
2002	298	43	0.772	3.5	97.13	2.86	0.01	5
2002	302	43	0.772	3.5	97.94	2.06	0.01	6
2002	23	75	0.63	3.4	94.87	5.11	0.02	7
2002	178	75	0.624	3.6	99.3	0.69	0.01	8
2002	22	41	0.544	3.4	93.24	6.73	0.02	9
2002	301	58	0.478	3.5	98.02	1.97	0.01	10

2003 Breton Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2003	74	40	1.626	3.7	96.17	3.82	0.01	1
2003	310	1	1.486	3.7	99.22	0.75	0.03	2
2003	199	40	1.241	4.3	99.91	0.08	0.01	3
2003	75	40	0.987	3.7	96.42	3.57	0.01	4
2003	364	9	0.979	3.7	95.98	4	0.02	5
2003	22	1	0.851	3.7	92.7	7.28	0.03	6
2003	295	1	0.755	3.7	98.91	1.01	0.08	7
2003	81	16	0.713	3.7	97.89	2.07	0.03	8
2003	220	1	0.647	4.3	99.81	0.18	0.02	9
2003	160	1	0.643	4	99.8	0.19	0.01	10
2003	77	1	0.636	3.7	95.84	4.14	0.02	11
2003	32	40	0.59	3.508	96.35	3.63	0.01	12
2003	339	1	0.57	3.7	96.86	3.13	0.02	13
2003	147	40	0.567	3.8	99.57	0.41	0.01	14
2003	103	1	0.546	3.6	97.72	2.25	0.03	15
2003	132	40	0.537	3.8	98.79	1.19	0.02	16
2003	41	40	0.522	3.5	94.82	5.16	0.02	17
2003	161	40	0.501	4	99.8	0.19	0.01	18
2003	202	40	0.477	4.3	99.63	0.35	0.02	19

2003 Caney Creek Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2003	281	41	1.219	3.5	98.4	1.59	0.01	1
2003	76	43	1.137	2.9	96.81	3.17	0.02	2
2003	52	43	1.097	3.1	95.85	4.14	0.01	3
2003	283	107	1.092	3.5	98.37	1.61	0.01	4
2003	284	41	0.978	3.5	98.79	1.2	0.01	5
2003	282	119	0.858	3.5	98.08	1.91	0.01	6
2003	29	58	0.742	3.4	95.75	4.24	0.01	7
2003	227	107	0.696	3.4	99.7	0.29	0.01	8
2003	242	43	0.587	3.4	99.03	0.96	0.02	9
2003	228	119	0.581	3.4	99.92	0.07	0.01	10
2003	71	49	0.536	2.9	98.38	1.61	0.01	11
2003	285	41	0.515	3.5	99.67	0.32	0.01	12
2003	239	58	0.481	3.4	99.86	0.13	0.01	13

Table 3 - CALPUFF Screening Analysis Results for Rhodia Abated Scenario

2001 Breton Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2001	191	5	0.288	4.3	97.05	2.79	0.17	1
2001	229	40	0.207	4.3	97.08	2.8	0.12	2
2001	231	40	0.2	4.3	97.73	2.14	0.14	3
2001	53	39	0.184	3.5	66.47	33.34	0.19	4
2001	89	40	0.171	3.7	66.95	32.92	0.13	5
2001	192	40	0.164	4.3	96	3.73	0.27	6
2001	163	1	0.148	4	95.73	4.14	0.13	7
2001	190	1	0.147	4.3	94.38	5.39	0.23	8
2001	226	1	0.134	4.3	98.05	1.82	0.13	9
2001	260	40	0.134	4.2	97.74	2.13	0.13	10

2001 Caney Creek Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2001	44	43	0.13	3.1	67.15	32.74	0.11	1
2001	350	58	0.092	3.5	56.9	42.95	0.14	2
2001	14	49	0.074	3.4	64.33	35.57	0.1	3
2001	318	76	0.072	3.4	66.86	32.97	0.16	4
2001	186	58	0.07	3.4	99.36	0.56	0.07	5
2001	207	58	0.059	3.4	97.56	2.36	0.09	6
2001	235	49	0.059	3.4	98.12	1.78	0.1	7
2001	338	75	0.055	3.5	69.11	30.68	0.21	8
2001	45	75	0.054	3.1	70.84	29.05	0.11	9
2001	295	75	0.053	3.5	83.73	16.11	0.16	10

2002 Breton Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2002	194	40	0.17	4.3	98.18	1.73	0.09	1
2002	206	40	0.14	4.3	98.28	1.65	0.07	2
2002	203	40	0.12	4.3	99.24	0.67	0.1	3
2002	238	1	0.116	4.3	98.47	1.42	0.11	4
2002	186	1	0.108	4.3	98.93	0.96	0.1	5
2002	237	40	0.096	4.3	98.18	1.68	0.13	6
2002	25	1	0.088	3.7	68.15	31.73	0.12	7
2002	72	1	0.086	3.7	71.27	28.63	0.1	8
2002	363	40	0.086	3.7	72.09	27.78	0.13	9
2002	325	1	0.079	3.7	70.75	29.13	0.13	10

2002 Caney Creek Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2002	234	76	0.144	3.4	96.64	3.28	0.08	1
2002	177	43	0.12	3.6	91.22	8.71	0.08	2
2002	298	43	0.113	3.5	80.17	19.76	0.07	3
2002	302	43	0.109	3.5	85.53	14.41	0.06	4
2002	22	41	0.107	3.4	63.98	35.89	0.12	5
2002	103	75	0.106	3	94.88	5.02	0.1	6
2002	222	76	0.101	3.4	95.28	4.58	0.14	7
2002	23	75	0.09	3.4	69.18	30.72	0.1	8
2002	178	75	0.078	3.6	94.55	5.38	0.07	9
2002	5	41	0.069	3.4	50.37	49.5	0.13	10

2003 Breton Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2003	74	40	0.286	3.7	75.56	24.36	0.08	1
2003	310	4	0.201	3.7	93.06	6.7	0.25	2
2003	199	40	0.166	4.3	99.22	0.69	0.09	3
2003	364	9	0.161	3.7	74.63	25.26	0.11	4
2003	75	40	0.16	3.7	76.76	23.17	0.07	5
2003	32	40	0.107	3.508	76.67	23.24	0.09	6
2003	81	17	0.106	3.7	84.86	14.91	0.23	7
2003	77	1	0.104	3.7	73.75	26.11	0.13	8
2003	295	1	0.1	3.7	92.06	7.32	0.62	9
2003	22	1	0.093	3.7	56.9	42.91	0.19	10

2003 Caney Creek Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	% SO4	% NO3	% PMF	Rank
2003	52	43	0.173	3.1	74.09	25.82	0.09	1
2003	76	43	0.165	2.9	79.22	20.65	0.13	2
2003	281	41	0.163	3.5	88.29	11.62	0.09	3
2003	283	118	0.147	3.5	87.85	12.07	0.08	4
2003	284	58	0.13	3.5	90.72	9.2	0.08	5
2003	29	76	0.122	3.4	73.59	26.34	0.07	6
2003	282	119	0.116	3.5	86.23	13.68	0.09	7
2003	227	92	0.092	3.4	97.55	2.37	0.07	8
2003	242	43	0.08	3.4	92.55	7.32	0.13	9
2003	71	49	0.074	2.9	88.14	11.77	0.09	10

Sources with modeled maximum impacts below the 0.5 deciview threshold are exempt from the remainder of the BART process. As shown in the tables above, the visibility impacts from the base case scenario exceed the 0.5 deciview threshold for several days each year. In the abated scenario, impacts from the sources at the Rhodia facility do not exceed the 0.5 deciview threshold.

If you have any questions please call me at (225) 359-3768.

Sincerely,

John D. Richardson
Environmental Manager

cc: Yousheng Zeng, Ph D., P.E., Providence - Certified Mail Return Receipt Requested (7003 1010 0005 5151 9297)
Tim Allen, U.S. Fish and Wildlife Service- Certified Mail Return Receipt Requested (7003 1010 0005 5151 9280)
Eric Snyder, EPA Region VI - Certified Mail Return Receipt Requested (7003 1010 0005 5151 9273)

File 404.1.8

Rhodia

Baton Rouge Plant

June 14, 2007

Certified Mail Return Receipt Requested (7003 1010 0005 5151 9464)

Dr. Chuck Carr Brown, Assistant Secretary
Office of Environmental Services
Louisiana Department of Environmental Quality
P.O. Box 4314
Baton Rouge, LA 70821-4314

RE: BART Engineering Analysis for Rhodia Sulfuric Acid Plant

Dear Dr. Brown:

In 1999, EPA promulgated regulations to improve visibility in 156 national parks and wilderness areas (known as Class I Areas) across the country. The regulations are referred to as the Regional Haze rule. These regulations, included in 40 CFR 51 Subpart P, direct states to revise their State Implementation Plan (SIP) to address Class I area visibility. A major component of the regional haze program is Best Available Retrofit Technology (BART), which requires emission controls for existing stationary sources[1]. The pollutants to which BART applies are fine particulate matter (PM2.5) that cause light scattering, and compounds that contribute to PM2.5 formation, such as nitrogen oxides, sulfur dioxides, certain volatile organic compounds, and ammonia.

Once a state determines that a facility is BART-eligible, an air quality modeling analysis (such as CALPUFF) is performed. Screening and refined modeling are conducted to determine whether the facility is contributing to visibility impairment in a Class I Area; if so, the facility must then implement BART.

BART is established on a case-by-case basis, taking into consideration the technology available. Once technically infeasible options are eliminated, the facility may then consider

- the costs of compliance,
- the energy and non-air quality environmental impacts of compliance,
- any pollution control equipment in use or in existence at the source,
- the remaining useful life of the source, and
- the degree of improvement in visibility which may reasonably be anticipated

to select a best alternative which will represent BART.

The Rhodia Process and BART Eligibility

[1] An existing stationary source is defined as one that is (1) located at one of 26 specific types of facilities listed in 40 CFR 51.301, (2) began operation after August 7, 1962 and was in existence on August 7, 1977, and (3) has potential emissions of 250 tons per year or more for any visibility-impairing pollutant.

Baton Rouge Plant

The Rhodia Baton Rouge Sulfuric Acid Plant produces sulfuric acid by using two sulfuric acid production trains, Unit No.1 and Unit No. 2. Unit No.1 was constructed in 1953, and is a 700 ton/day unit. Unit No. 2 was constructed in 1968, and is a 1500 ton/day unit. Rhodia receives spent sulfuric acid and hazardous waste fuels from off-site sources and recovers the sulfur and energy values in its industrial furnaces, forming fresh sulfuric acid.

In March 2007, the state of Louisiana identified Rhodia as a BART-eligible source and requested that it assess its contribution to regional haze. Rhodia performed a CALPUFF screening analysis, assessing impacts in the nearby Class I areas of Breton Wilderness and Caney Creek Wilderness. The following emission rates and stack parameters were used:

Table 1 – Current Emission Rates and Stack Parameters

	Sulfuric Acid Unit No. 2	Sulfuric Acid Unit No. 1	Package Boiler
LCC Easting (km)	560.809	560.521	560.646
LCC Northing (km)	-1032.578	-1032.629	-1032.650
Stack Height (m)	76.2	76.2	18.288
Exit temperature (K)	338.71	335.37	517.04
Exit Velocity (m/s)	8.11	10.42	23.04
Diameter (m)	3.05	1.83	1.07
SO_2 24 h max emission (g/s)	244.18	113.90	0.03
NO_x 24 h max emission (g/s)	13.38	6.20	3.07
PM10 24 h max emission (g/s)	0.09	0.05	0.16

Complete information on the modeling inputs, setup, and results are provided in the accompanying letter report dated June 14, 2007.

The screening modeling results indicate that the Rhodia facility does impact visibility in both the Breton and Caney Creek areas. Rhodia may choose to conduct a refined modeling analysis to confirm the impact; however, Rhodia has recently entered into a consent decree with USEPA to reduce SO_2 emissions. Therefore, it is more expeditious for Rhodia to forego the refined analysis, and proceed with an emissions abatement strategy which will satisfy both the consent decree and BART.

Analysis of Available Control Technologies

Rhodia has considered the following SO_2 control technologies that may potentially be applicable to these units:

Alkali Scrubbing. The alkali scrubbing process uses ammonia (NH_3), caustic (sodium hydroxide, NaOH), or soda ash (sodium carbonate, Na_2CO_3) to remove inorganic sulfur compounds from the sulfuric acid unit tail gas. The system removes the compounds as chemically fixed salts. This technology has been used successfully at several U.S. plants.

Amine Processes (ASARCO, UCAP, and Cansolv). Removal of SO_2 by amines has been used since the 1960's. The amine absorbs the acidic components (SO_2, sulfur trioxide, sulfuric acid mist, and carbon dioxide) from the gas. Amines differ in their selectivity for SO_2 over carbon dioxide, SO_2 loading, amount of steam required for regeneration, and the amount of amine degradation in the regeneration system. Problems with amine systems include degradation from heat in the regeneration process, degradation from sulfur trioxide and sulfuric acid (vapor, particles, and mist), corrosion of materials and equipment, high steam usage, and high capital costs. Amine processes are suitable applications in petroleum refining processes. There are no amine-based systems treating sulfuric acid plant tail gas in the Unites States.

Add-On Double Absorption Process. Conversion to integral double absorption requires access to the existing converter, or the addition of a second converter with one catalyst bed, and plot space near the existing converter area. In a few plants, the existing plant design makes conversion to integral double absorption difficult, expensive and/or not possible. In some rare cases, the conversion to double absorption equipment can be installed remote to the existing converter area. The double absorption process can be either fuel fired or not. The double absorption system includes an absorption tower system (tower, pump tank, acid cooler, and mist eliminator); a fuel-fired system also includes fuel-fired indirect gas heater with gas heat exchanger, a process gas heat exchanger, and a final converter stage before the absorption tower. The additional capital costs and higher operating cost for heater fuel has limited use of the fuel-fired process to a few special cases.

Of the alternatives listed above, amine processes are suitable for petroleum refining processes, not for the processes at the Rhodia facility.

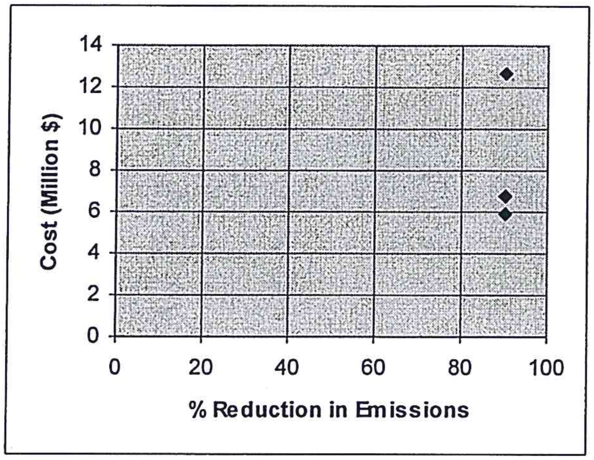
Double absorption is difficult to implement as a retrofit technology due to space constraints in the units; the physical positioning of equipment at Rhodia is such that the necessary equipment cannot easily be installed. The capital cost for double absorption for the No. 2 Unit is approximately $12.63 million.

For ammonia scrubbing, the non-air quality environmental impacts make this option prohibitive. First, ammonia storage is hazardous and undesirable. Second, the effluent cannot be disposed of due to bio-toxicity; therefore, it would have to be sold (a business undertaking the facility is not currently positioned for) or burned (requiring extra fuel and diminishing plant capacity). Third, there will be emissions of residual ammonia, a toxic air pollutant. The capital cost for ammonia scrubbing is approximately $6.73 million.

Caustic scrubbing is technically feasible and can achieve a high SO_2 control efficiency. Also, the non-air quality environmental impacts are much more favorable: first, the sodium is used twice—once for scrubbing, then again for neutralization of weak acid effluent. Second, the sodium sulfate effluent is considered safe for discharge. The capital cost for caustic scrubbing is approximately $5.94 million.

All three of these technologies (double absorption, ammonia scrubbing, and caustic scrubbing) have similar destruction efficiencies (approximately 94%), but the costs are notably dissimilar. A least-cost envelope for the three options is presented as Figure 1; however, it is obvious an incremental cost analysis is not necessary since destruction efficiencies do not vary.

Figure 1 -- Least-Cost Envelope



Selection of Proposed Technology

Based on these considerations, Rhodia proposes to use caustic scrubbing to reduce SO_2 emissions. The scrubbing will reduce emissions by ≥94% which corresponds to long-term (annual average) emission limits of 1.9 pounds of SO_2 emitted per ton of sulfuric acid produced (lb/ton) for Unit 1 and 2.2 lbs/ton for Unit 2. The short-term (3-hour average) limits for both units will be set at 3.0 lbs/ton. This compares favorably to other emission standards available, specifically:

- 40 CFR 60, Subpart H—this New Source Performance Standard limits emissions to 4 lb/ton.
- RACT/BACT/LAER Clearinghouse (RBLC)--A search of all permitted control technologies within the last 10 years for sulfuric acid plants yielded the following results:
  - 3.5 lb/ton (double absorption scrubber, Farmland Hydro, L.P., Florida)
  - 4.0 lb/ton (dual absorption catalyst, PCS Phosphate Company, North Carolina)
  - 4.0 lb/ton (Lucite, Texas)
  - 3.5 lb/ton (double absorption, Piney Point Phosphates, Florida)

The proposed control not only meets the best available retrofit technology, it surpasses the control for new facilities under NSPS and recently permitted new facilities.

Although not required by LDEQ, Rhodia has conducted CALPUFF screening modeling with the abated SO_2 emissions. The emission rates and stack parameters used are summarized in Table 2. Details of the modeling analysis are provided in the accompanying letter report.

Table 2 – Proposed Emission Rates and Stack Parameters

	Sulfuric Acid Unit No. 2	Sulfuric Acid Unit No. 1	Package Boiler
LCC Easting (km)	560.809	560.521	560.646
LCC Northing (km)	-1032.578	-1032.629	-1032.650
Stack Height (m)	39.0	39.0	18.288
Exit temperature (K)	305.4	305.4	517.04
Exit Velocity (m/s)	35.475	34.377	23.04
Diameter (m)	1.37	0.91	1.07
SO_2 24 h max emission (g/s)	29.93	14.18	0.03
NO_x 24 h max emission (g/s)	13.38	6.20	3.07
PM10 24 h max emission (g/s)	0.09	0.05	0.16

As demonstrated in the accompanying letter report, with the SO_2 abatement system, all impacts of the Rhodia facility to the Breton and the Caney Creek Wilderness Area are below 0.5 deciview.

Rhodia believes that this report demonstrates BART for its facility. Per proposed federal consent decree (D.J. Ref. 90-5-2-1-08500) to which LDEQ is a signatory, the facility will be operating under its abated scenario in mid-2012 for Unit 1, and early 2011 for Unit 2. These dates are well in advance of the expected deadline for BART controls.

Since Rhodia is already conducting preliminary engineering on the project, we would like your concurrence on our selection of the proposed technology and reduction efficiency at your earliest convenience. Please contact me at (225) 359-3768 with any questions or to schedule a meeting to discuss further.

Sincerely,

John D. Richardson
Environmental Manager

cc: Yousheng Zeng, Ph D., P.E., Providence - Certified Mail Return Receipt Requested (7003 1010 0005 5151 9297)
Tim Allen, U.S. Fish and Wildlife Service- Certified Mail Return Receipt Requested (7003 1010 0005 5151 9280)
Eric Snyder, EPA Region VI - Certified Mail Return Receipt Requested (7003 1010 0005 5151 9273)

File 404.1.8

Rhodia

Baton Rouge Plant

June 14, 2007

Certified Mail Return Receipt Requested (7003 1010 0005 5151 9464)

Dr. Chuck Carr Brown, Assistant Secretary
Office of Environmental Services
Louisiana Department of Environmental Quality
P.O. Box 4314
Baton Rouge, LA 70821-4314

RE: Summary of CALPUFF BART Screening Modeling Analysis for Rhodia Sulfuric Acid Plant

Dear Dr. Brown::

Providence Engineering & Environmental Group LLC (Providence) has completed a CALPUFF screening modeling analysis for the Rhodia Sulfuric Acid plant located in Baton Rouge, Louisiana for purposes of recently promulgated regulations associated with Best Available Retrofit Technology (BART). This letter summarizes the results of the base case scenario and an abated scenario. This base case scenario is formulated using the emission data and stack parameters provided by Rhodia. The abated scenario is formulated using estimated emission data and stack parameters from Rhodia's proposal to use caustic scrubbing to reduce SO_2 emissions by 94%.

BACKGROUND

The 1990 Clean Air Act Amendments required the United States Environmental Protection Agency (USEPA) to promulgate regulations to protect against visibility impairment (regional haze) in 156 scenic areas (also referred to as Class I areas) across the United States. Regional haze regulations in 40 CFR 51.300 through 51.309 and guidelines found in Appendix Y to 40 CFR Part 51, help states identify sources that are BART eligible and determine the level of control that represents BART. Based on the Regional Haze rule, various state agencies are in the process of performing screening analyses to determine a list of potential sources that may cause visibility impairment at Class I areas. These screening analyses have been performed using screening models or emissions and distance thresholds. It is expected that the sources that are not screened out by the state agencies will be required to either perform comprehensive long-range transport modeling using the USEPA-promulgated CALPUFF model (in a screening analysis or a refined analysis) and/or submit an engineering analysis.

The Louisiana Department of Environmental Quality (LDEQ) has established screening criteria. Facilities that could not reasonably be eliminated from BART consideration by the criteria are asked to perform site-specific CALPUFF modeling analyses to evaluate if they impact Breton and Caney Creek Class 1 areas by 0.5 deciviews or more. Rhodia has received a request from the LDEQ to perform the modeling analysis. Rhodia has requested that Providence perform a screening analysis for their Baton Rouge sulfuric acid plant. This report provides the summary for the screening analysis.

MODEL SETUP

Rhodia

Baton Rouge Plant

A CALPUFF model is set up for the Rhodia sulfuric acid plant in accordance with the Central Regional Air Planning Association (CENRAP) protocol and the LDEQ protocol for BART analyses. This section summarizes the model setup for the CALPUFF screening analysis.

Site Location, Receptor Location And Model Range

The modeling domain is shown in the Lambert Conformal Conic (LCC) coordinate system in Figure 1. The grid cell size used in the models is 6 km. All the domain range, coordinate system, and spatial resolution are same to the south meteorological domain prepared by CENRAP. The blue crosses indicate the receptors at Breton Wilderness Area and Caney Creek Wilderness, and the red circle represents the Rhodia sulfuric acid facility. Figure 2 shows a more detailed map of the receptor and sources.

Figure 1 – Rhodia facility on Whole LCC Modeling Domain

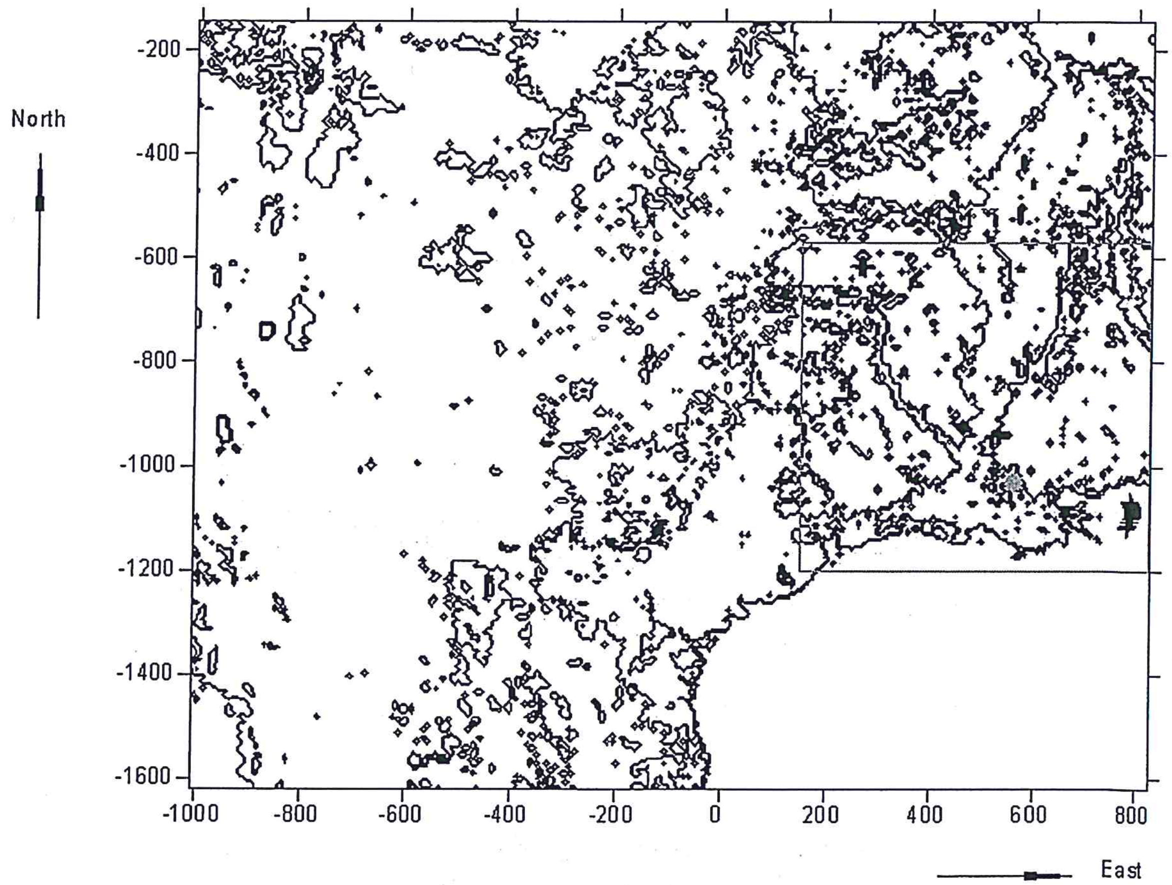
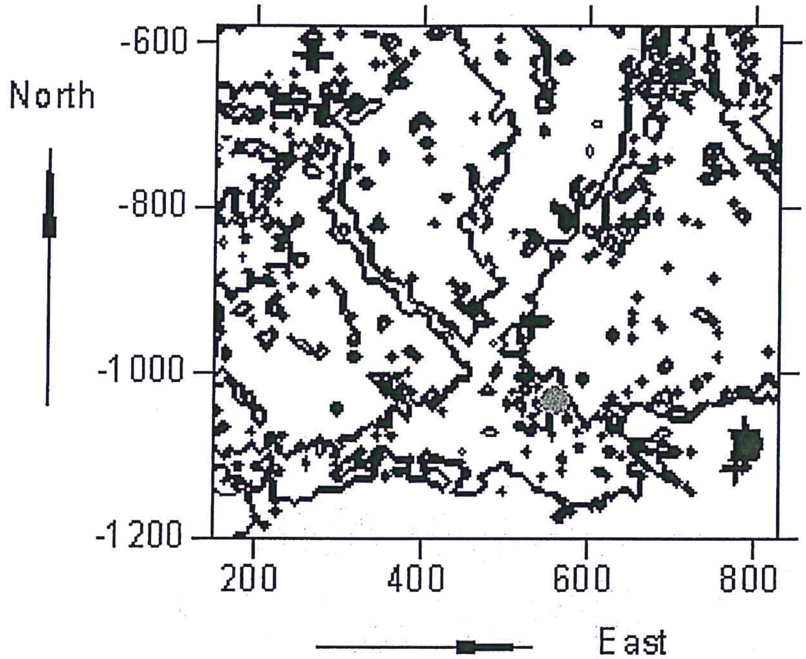


Figure 2 – Rhodia facility and Class I Areas



Meteorological data

The CALPUFF-ready meteorological data prepared by CENRAP is used directly for this screening analysis.

Emission rates and stack parameters

The emission rate and stack parameters used for the base case scenario and the abated scenario are provided in Table 1 below. A site elevation of 15.2 meters is used in the model.

Table 1 - Emission Rate and Stack Parameters

	Package Boiler	Base Case Sulfuric Acid Unit 2	Base Case Sulfuric Acid Unit 1	Abated Sulfuric Acid Unit 2	Abated Sulfuric Acid Unit 1
LCC Easting (km)	560.646	560.809	560.521	560.809	560.521
LCC Northing (km)	-1032.650	-1032.578	-1032.629	-1032.578	-1032.629
Stack Height (m)	18.288	76.2	76.2	39.0	39.0
Exit temperature (K)	517.04	338.71	335.37	305.4	305.4
Exit Velocity (m/s)	23.04	8.11	10.42	35.475	34.377
Diameter (m)	1.07	3.05	1.83	1.37	0.91
SO2 24 h max emission (g/s)	0.03	244.18	113.90	29.93	14.18
NOx 24 h max emission (g/s)	3.07	13.38	6.20	13.38	6.20
PM10 24 h max emission (g/s)	0.16	0.09	0.05	0.09	0.05

Model options

The model is set up following CENRAP's guidance on CALPUFF screening modeling. Key model options are listed below:

CALPUFF:
Dispersion: Pasquill-Gifford (PG) coefficient.
Chemical species modeled include: SO_2, SO_4, NO_x, HNO_3, NO_3, PM.

Chemistry: Mesopuff.
Aqueous phase chemistry: Use relative humidity (RH) instead of real water content.
Ozone: Ozone data is provided by LDEQ.
Ammonia: Constant ammonia concentration is assumed as 3 ppb.
Wet and dry deposition: Both gaseous and particle phase are modeled.

POSTUTIL:
Species input: SO_2, SO_4, NO_x, HNO_3, NO_3, PM.
Species output: SO_2, SO_4, NO_x, HNO_3, NO_3, PM.
Background NH_3: 3 ppb.

CALPOST:
Visibility is calculated using Mehtod 6 based on IMPROVE's equation:

$$b_{ext}=3f(RH)[(NH_4)_2SO_4]+3f(RH)[NH_4NO_3]+10[PM]+b_{Ray}$$

where b_{ext} is the calculated light extinction, f(RH) is the humidity effect, b_{Ray} is the Rayleigh scattering of air. A light extinction efficiency of 10 is used for PM.
The change of haze index in deciviews is calculated by:

$$\Delta dv = 10 \ln (\{b_{background}+ b_{source}\}/ b_{background})$$

where b_{source} is the light extinction caused by the source and the $b_{background}$ is the natural background light extinction.

The natural background light extinction is provided in CENRAP's guidance. For eastern states, background extinctions are EC=0.02, SO_4=0.23, NO_3=0.1, PMC=3, SOC=1.4, Soil=0.5, Raleight scattering=10.

Monthly f(RH) values at Breton and Caney Creek are obtained from EPA's Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule. As suggested in LDEQ's model protocol, the RH factors at the centroid receptor of each Class I area are used for the 12 months.

Recompilation

The CALPUFF, CALPOST and POSTUTIL programs were recompiled with the FORTRAN source code provided in the CALPUFF BART version. The compiler used is Lahey/Fujitsu Fortran Express v7.1. The changes for the recompilation are described below:

CALPUFF: In params.puf, mxnx=320,mxny=265, mxoz=2725. The source code is in calpuff.for and the executable file is calpuffc.exe.

POSTUTIL
In params.utl, PARAMETER(mxgx=320), PARAMETER(mxgy=265). The source code is in postutilc.for and the executable file is postutilc.exe

CALPOST
In params.pst, PARAMETER(mxgx=320) , PARAMETER(mxgy=265) . The source code is in the calpost.for. The executable file is calpost.exe.

To recompile, the parameters in the parameter files are changed first as indicated in the above paragraphs. The source files are recompiled by Lahey's command. The newly generated .exe files are used for the model runs in this work.

MODEL RESULTS

This section describes the modeling results for the CALPUFF screening analysis of the base case scenario and the abated scenario.

Model runs

For 2001, 36 met files are used in three groups of CALPUFF and POSTUTIL runs. The results are then merged by APPEND, a tool of CALPUFF BART version. For 2002 and 2003, 12 met files of each year are directly used in CALPUFF and POSTUTIL.

Model results of 2001, 2002, 2003

Modeling runs were executed for 2001, 2002, and 2003. Based on these runs, the tables below provide the results for the respective years under the base case scenario and the abated scenario. CALPOST was run separately for Breton and Caney Creek receptors since different RH factors were used for the two Class I areas.

Table 2 - CALPUFF Screening Analysis Results for Rhodia Base Case Scenario

2001 Breton Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2001	191	5	2.003	4.3	99.53	0.44	0.02	1
2001	229	40	1.822	4.3	99.62	0.37	0.01	2
2001	231	40	1.315	4.3	99.72	0.26	0.02	3
2001	192	40	1.275	4.3	99.36	0.6	0.03	4
2001	202	40	1.18	4.3	99.67	0.31	0.02	5
2001	163	1	1.162	4	99.5	0.49	0.02	6
2001	190	1	1.102	4.3	99.27	0.7	0.03	7
2001	89	40	1.043	3.7	94.16	5.81	0.02	8
2001	226	1	1.034	4.3	99.77	0.22	0.02	9
2001	260	40	1.023	4.2	99.72	0.26	0.02	10
2001	53	40	0.962	3.5	93.9	6.07	0.03	11
2001	90	1	0.911	3.7	98.05	1.93	0.02	12
2001	230	40	0.897	4.3	99.16	0.81	0.02	13
2001	91	1	0.851	3.604	97.69	2.29	0.02	14
2001	187	40	0.747	4.3	99.79	0.19	0.01	15
2001	261	40	0.721	4.2	99.79	0.2	0.01	16
2001	212	40	0.571	4.3	99.8	0.18	0.02	17
2001	225	40	0.515	4.3	99.42	0.56	0.02	18
2001	232	1	0.508	4.3	99.72	0.26	0.02	19
2001	162	16	0.489	4	99.73	0.25	0.01	20

2001 Caney Creek Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2001	44	43	0.726	3.1	94.33	5.65	0.02	1
2001	186	58	0.549	3.4	99.92	0.07	0.01	2
2001	350	58	0.477	3.5	91.36	8.61	0.03	3
2001	207	58	0.472	3.4	99.69	0.3	0.01	4
2001	235	49	0.472	3.4	99.77	0.22	0.01	5
2001	178	107	0.441	3.6	99.66	0.33	0.01	6
2001	318	76	0.431	3.4	94.29	5.68	0.03	7
2001	14	49	0.408	3.4	93.66	6.32	0.02	8
2001	295	75	0.379	3.5	97.72	2.26	0.02	9
2001	187	75	0.369	3.4	99.95	0.05	0.01	10

2002 Breton Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2002	194	40	1.389	4.3	99.79	0.2	0.01	1
2002	206	40	1.075	4.3	99.8	0.19	0.01	2
2002	203	40	1.048	4.3	99.91	0.08	0.01	3
2002	186	1	0.989	4.3	99.88	0.11	0.01	4
2002	238	1	0.917	4.3	99.8	0.19	0.01	5
2002	213	40	0.844	4.3	99.74	0.24	0.02	6
2002	237	40	0.787	4.3	99.76	0.22	0.02	7
2002	204	1	0.691	4.3	99.92	0.07	0.01	8
2002	334	1	0.656	3.7	96.62	3.35	0.02	9
2002	202	40	0.578	4.3	99.9	0.09	0.01	10
2002	325	1	0.555	3.7	95.67	4.31	0.02	11
2002	363	40	0.533	3.7	95.51	4.47	0.02	12
2002	25	1	0.522	3.7	94.62	5.36	0.02	13
2002	299	40	0.51	3.7	97.19	2.79	0.01	14
2002	258	40	0.488	4.2	99.42	0.56	0.02	15

2002 Caney Creek Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2002	234	76	1.102	3.4	99.6	0.39	0.01	1
2002	177	43	0.903	3.6	98.86	1.13	0.01	2
2002	222	76	0.82	3.4	99.45	0.53	0.02	3
2002	103	75	0.81	3	99.35	0.63	0.01	4
2002	298	43	0.772	3.5	97.13	2.86	0.01	5
2002	302	43	0.772	3.5	97.94	2.06	0.01	6
2002	23	75	0.63	3.4	94.87	5.11	0.02	7
2002	178	75	0.624	3.6	99.3	0.69	0.01	8
2002	22	41	0.544	3.4	93.24	6.73	0.02	9
2002	301	58	0.478	3.5	98.02	1.97	0.01	10

2003 Breton Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2003	74	40	1.626	3.7	96.17	3.82	0.01	1
2003	310	1	1.486	3.7	99.22	0.75	0.03	2
2003	199	40	1.241	4.3	99.91	0.08	0.01	3
2003	75	40	0.987	3.7	96.42	3.57	0.01	4
2003	364	9	0.979	3.7	95.98	4	0.02	5
2003	22	1	0.851	3.7	92.7	7.28	0.03	6
2003	295	1	0.755	3.7	98.91	1.01	0.08	7
2003	81	16	0.713	3.7	97.89	2.07	0.03	8
2003	220	1	0.647	4.3	99.81	0.18	0.02	9
2003	160	1	0.643	4	99.8	0.19	0.01	10
2003	77	1	0.636	3.7	95.84	4.14	0.02	11
2003	32	40	0.59	3.508	96.35	3.63	0.01	12
2003	339	1	0.57	3.7	96.86	3.13	0.02	13
2003	147	40	0.567	3.8	99.57	0.41	0.01	14
2003	103	1	0.546	3.6	97.72	2.25	0.03	15
2003	132	40	0.537	3.8	98.79	1.19	0.02	16
2003	41	40	0.522	3.5	94.82	5.16	0.02	17
2003	161	40	0.501	4	99.8	0.19	0.01	18
2003	202	40	0.477	4.3	99.63	0.35	0.02	19

2003 Caney Creek Base Case Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2003	281	41	1.219	3.5	98.4	1.59	0.01	1
2003	76	43	1.137	2.9	96.81	3.17	0.02	2
2003	52	43	1.097	3.1	95.85	4.14	0.01	3
2003	283	107	1.092	3.5	98.37	1.61	0.01	4
2003	284	41	0.978	3.5	98.79	1.2	0.01	5
2003	282	119	0.858	3.5	98.08	1.91	0.01	6
2003	29	58	0.742	3.4	95.75	4.24	0.01	7
2003	227	107	0.696	3.4	99.7	0.29	0.01	8
2003	242	43	0.587	3.4	99.03	0.96	0.02	9
2003	228	119	0.581	3.4	99.92	0.07	0.01	10
2003	71	49	0.536	2.9	98.38	1.61	0.01	11
2003	285	41	0.515	3.5	99.67	0.32	0.01	12
2003	239	58	0.481	3.4	99.86	0.13	0.01	13

Table 3 - CALPUFF Screening Analysis Results for Rhodia Abated Scenario

2001 Breton Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2001	191	5	0.288	4.3	97.05	2.79	0.17	1
2001	229	40	0.207	4.3	97.08	2.8	0.12	2
2001	231	40	0.2	4.3	97.73	2.14	0.14	3
2001	53	39	0.184	3.5	66.47	33.34	0.19	4
2001	89	40	0.171	3.7	66.95	32.92	0.13	5
2001	192	40	0.164	4.3	96	3.73	0.27	6
2001	163	1	0.148	4	95.73	4.14	0.13	7
2001	190	1	0.147	4.3	94.38	5.39	0.23	8
2001	226	1	0.134	4.3	98.05	1.82	0.13	9
2001	260	40	0.134	4.2	97.74	2.13	0.13	10

2001 Caney Creek Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2001	44	43	0.13	3.1	67.15	32.74	0.11	1
2001	350	58	0.092	3.5	56.9	42.95	0.14	2
2001	14	49	0.074	3.4	64.33	35.57	0.1	3
2001	318	76	0.072	3.4	66.86	32.97	0.16	4
2001	186	58	0.07	3.4	99.36	0.56	0.07	5
2001	207	58	0.059	3.4	97.56	2.36	0.09	6
2001	235	49	0.059	3.4	98.12	1.78	0.1	7
2001	338	75	0.055	3.5	69.11	30.68	0.21	8
2001	45	75	0.054	3.1	70.84	29.05	0.11	9
2001	295	75	0.053	3.5	83.73	16.11	0.16	10

2002 Breton Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2002	194	40	0.17	4.3	98.18	1.73	0.09	1
2002	206	40	0.14	4.3	98.28	1.65	0.07	2
2002	203	40	0.12	4.3	99.24	0.67	0.1	3
2002	238	1	0.116	4.3	98.47	1.42	0.11	4
2002	186	1	0.108	4.3	98.93	0.96	0.1	5
2002	237	40	0.096	4.3	98.18	1.68	0.13	6
2002	25	1	0.088	3.7	68.15	31.73	0.12	7
2002	72	1	0.086	3.7	71.27	28.63	0.1	8
2002	363	40	0.086	3.7	72.09	27.78	0.13	9
2002	325	1	0.079	3.7	70.75	29.13	0.13	10

2002 Caney Creek Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2002	234	76	0.144	3.4	96.64	3.28	0.08	1
2002	177	43	0.12	3.6	91.22	8.71	0.08	2
2002	298	43	0.113	3.5	80.17	19.76	0.07	3
2002	302	43	0.109	3.5	85.53	14.41	0.06	4
2002	22	41	0.107	3.4	63.98	35.89	0.12	5
2002	103	75	0.106	3	94.88	5.02	0.1	6
2002	222	76	0.101	3.4	95.28	4.58	0.14	7
2002	23	75	0.09	3.4	69.18	30.72	0.1	8
2002	178	75	0.078	3.6	94.55	5.38	0.07	9
2002	5	41	0.069	3.4	50.37	49.5	0.13	10

2003 Breton Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2003	74	40	0.286	3.7	75.56	24.36	0.08	1
2003	310	4	0.201	3.7	93.06	6.7	0.25	2
2003	199	40	0.166	4.3	99.22	0.69	0.09	3
2003	364	9	0.161	3.7	74.63	25.26	0.11	4
2003	75	40	0.16	3.7	76.76	23.17	0.07	5
2003	32	40	0.107	3.508	76.67	23.24	0.09	6
2003	81	17	0.106	3.7	84.86	14.91	0.23	7
2003	77	1	0.104	3.7	73.75	26.11	0.13	8
2003	295	1	0.1	3.7	92.06	7.32	0.62	9
2003	22	1	0.093	3.7	56.9	42.91	0.19	10

2003 Caney Creek Abated Scenario

YEAR	DAY	RECEPTOR	DELTA DV	F(RH)	%_SO4	%_NO3	%_PM F	Rank
2003	52	43	0.173	3.1	74.09	25.82	0.09	1
2003	76	43	0.165	2.9	79.22	20.65	0.13	2
2003	281	41	0.163	3.5	88.29	11.62	0.09	3
2003	283	118	0.147	3.5	87.85	12.07	0.08	4
2003	284	58	0.13	3.5	90.72	9.2	0.08	5
2003	29	76	0.122	3.4	73.59	26.34	0.07	6
2003	282	119	0.116	3.5	86.23	13.68	0.09	7
2003	227	92	0.092	3.4	97.55	2.37	0.07	8
2003	242	43	0.08	3.4	92.55	7.32	0.13	9
2003	71	49	0.074	2.9	88.14	11.77	0.09	10

Rhodia

Baton Rouge Plant

Sources with modeled maximum impacts below the 0.5 deciview threshold are exempt from the remainder of the BART process. As shown in the tables above, the visibility impacts from the base case scenario exceed the 0.5 deciview threshold for several days each year. In the abated scenario, impacts from the sources at the Rhodia facility do not exceed the 0.5 deciview threshold.

If you have any questions please call me at (225) 359-3768.

Sincerely,

John D. Richardson
Environmental Manager

cc: Yousheng Zeng, Ph D., P.E., Providence - Certified Mail Return Receipt Requested (7003 1010 0005 5151 9297)
Tim Allen, U.S. Fish and Wildlife Service- Certified Mail Return Receipt Requested (7003 1010 0005 5151 9280)
Eric Snyder, EPA Region VI - Certified Mail Return Receipt Requested (7003 1010 0005 5151 9273)

File 404.1.8