

REVISIONS TO THE STATE IMPLEMENTATION PLAN (SIP)
FOR THE CONTROL OF LEAD AIR POLLUTION

1999 COLLIN COUNTY REDESIGNATION AND MAINTENANCE PLAN FOR LEAD

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
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RULE LOG NUMBER 98023-SIP-AI

MARCH 24, 1999

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CHAPTER 1: GENERAL BACKGROUND

On November 6, 1991, the U.S. Environmental Protection Agency (EPA) published the notice of nonattainment designation in the *Federal Register*, page 56694, for the portion of Collin County (see FIGURE 1) which essentially encompasses the plant boundaries of the Gould National Battery, Incorporated (GNB, now GNB Technologies, Inc.) facility. The effective date of the nonattainment designation was January 6, 1992. Under the Federal Guidelines, the Texas Air Control Board (TACB) responded by submitting a site-specific State Implementation Plan (SIP) to EPA on June 18, 1993. Under the Federal Clean Air Act (FCAA), the Collin County nonattainment area was required to attain the National Ambient Air Quality Standards (NAAQS) by January 6, 1997.

Highlights of the 1993 SIP revision include an air quality analysis current through the fourth quarter of 1992, a 1992 emissions inventory, dispersion modeling which demonstrates NAAQS attainment for the area, Board Order Number 92-09(k), contingency measures in Board Order Number 93-12, and state new source review provisions for lead sources.

CHAPTER 2: ATTAINMENT OF THE STANDARD/AIR QUALITY ANALYSIS

2.1 LEAD MONITORING SITES

Since 1981, lead has been monitored continuously at a residential location (1020001F/480850001) in Collin County approximately ½ mile northeast of the GNB facility. One property line site (1020003F/480850003) has been monitored since 1984, and a second property line site (1020002F) was monitored continuously from 1984 until February 28, 1992, at which time it was deactivated because the fenceline of the GNB facility was moved approximately 1,000 feet to the south. A new property line site (1020006F) was activated in May 18, 1992 at the new fenceline and was operated until December 1996. Approximate locations of the GNB property line and locations of the monitoring sites from 1993 are shown in FIGURE 1. FIGURE 1a shows the approximate locations of the monitoring sites currently being operated. The property line site (1020002F) located south of the facility recorded violations of the lead NAAQS in 1985, 1989, and 1990. This monitor was operated until 1992 and recorded no violations to the lead NAAQS during the period of 1991- 1992. The north lead monitor (1020009F/480850009) has been operated since January 1995 and consistently records levels well below the lead standard.

2.2 SUMMARY OF MEASURED LEAD CONCENTRATIONS

The NAAQS for lead is a quarterly arithmetic average of 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Monitors 480850001, 480850003, and 480850009 have consistently recorded levels well below the lead NAAQS. FIGURE 2 lists the 1995-1998 quarterly monitored averages for each of the TACB lead monitors in Collin County.

FIGURE 2

AIRS No.	Calendar Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
480850001	1995	0.21	0.09	0.07	0.03
	1996	0.03	0.03	0.06	0.09
	1997	0.07	0.03	0.09	0.06
	1998	0.03	0.07		
480850003	1995	0.51	0.33	0.20	0.09
	1996	0.17	0.11	0.24	0.22
	1997	0.22	0.15	0.35	0.18
	1998	0.11	0.27		
480850009	1995	0.39	0.67	0.69	0.28
	1996	0.48	0.69	0.20	0.32
	1997	0.27	0.35	0.45	0.28
	1998	0.36	0.67		

CHAPTER 3: FULLY APPROVED §110(K) SIP FOR THE AREA

Before an area can be redesignated to attainment, the area must have a fully approved SIP under §110(k) of the FCAA and all applicable requirements must have been satisfied. The Lead SIP for Collin County was submitted to EPA for approval on June 18, 1993. On November 29, 1994, EPA published the approval of the SIP in *Federal Register* notice [TX-32-1-6057a; FRL-5093-5].

CHAPTER 4: PERMANENT AND ENFORCEABLE IMPROVEMENT IN AIR QUALITY

As part of the redesignation request, the state must show that the improvement in air quality can be attributed to reductions which are permanent and enforceable. The 1993 Collin County Lead SIP noted that:

Notices of violation were issued to the facility following violation of the NAAQS in 1989 and 1990 with requirements for implementing additional controls. Special provisions were included in amendments to Permits R-1147A and R-5466D (now 3048A) issued to the facility in 1990, and Board Order Number 92-09(k) was signed October 16, 1992 to assure maintenance of the lead NAAQS. The facility has completed the installation of additional emission controls and operating procedures specified in the special provisions and the Agreed Board Order with the exception of the baghouse for the raw material storage building scheduled for installation in 1993.

The provisions contained in the agreed order, which have been incorporated into the company's permit, and additional permit amendments, which have occurred since 1993, constitute permanent and enforceable reductions. The state will maintain the permanence of these reductions through GNB's permit and the company's compliance with the National Emission Standards for Hazardous Air Pollutants From Secondary Lead Smelters (lead maximum available control technology (MACT)).

CHAPTER 5: MAINTENANCE PLAN

Under §175A. Maintenance Plans of the FCAA, the state must submit a revision to the SIP to provide for the maintenance of the NAAQS.

5.1 ATTAINMENT EMISSIONS INVENTORY

As part of the program to comply with the lead NAAQS, the then TACB compiled emissions inventory data for the Collin County lead nonattainment area. The 1992 lead emissions inventory for Collin County consisted of a review of the lead stationary source emissions from the facilities located within the nonattainment area. The only facility which produces lead emissions within the nonattainment area is GNB which in 1993 emitted a total of 4.27 tons per year of lead. The 1993 Lead SIP contained an attainment demonstration using dispersion modeling simulation of quarterly lead impacts in Collin County, Texas and was based on 4.27 tons per year of lead emissions. Off-property emissions data was derived from a 50 kilometer radius search in the TACB Point Source Data Base. The modeling was performed using the latest version of Industrial Source Complex (ISC2) (ISCLT2-92273) for five years of meteorological data (1985-1989) to determine the maximum quarterly average lead impact. Therefore, based on the 1993 attainment demonstration, the attainment inventory necessary to attain and maintain the Lead NAAQS is 4.27 tons per year.

5.2 MAINTENANCE DEMONSTRATION

EPA's 1992 guidance states, a state can generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment

inventory or by modeling to show that the future mix of sources and emission rates will not cause a violation of the NAAQS.”

Because the Collin County lead nonattainment area is site-specific, that is, the SIP is a site specific SIP for the GNB facility, the maintenance demonstration method will be ambient monitoring combined with the company’s existing state new source review (NSR) permit and compliance with the lead MACT. Enforceable emissions limits established in the maximum allowable emissions rate table (MAERT) of GNB’s NSR permit will ensure that future emissions growth will not exceed the attainment inventory of 4.27 tons per year. Further, GNB’s compliance with the lead MACT will help in maintaining the 4.27 tons per year cap through the maintenance period.

5.3 CONTINGENCY PLAN

Section 175A of the FCAA requires each maintenance plan to contain contingency provisions that will promptly correct any violations of the NAAQS that occurs after an area has been redesignated to attainment. In accordance with EPA guidance addressing the purposes of §175A, contingency plans are not required to be fully adopted and take effect without further action by the state but, rather, should ensure that contingency measures are expeditiously adopted when triggered. The contingency plan must also be an enforceable part of the SIP and should identify the measures to be adopted, a schedule and procedure for adoption and implementation, and a specific time constraint on action to be taken by the state. Additionally, the plan should identify specific indicators or triggers which will be used to determine when the contingency measures are to be implemented. The intent of the indicators and triggers is to allow the state to take early action to address actual or potential violations of the lead NAAQS.

The 1993 Collin County Lead SIP contained a list of contingency measures that would take effect without further action by the state. These contingency measures were included as part of Agreed Board Order 93-12, Appendix D, which contained the list of specific contingency measures and the associated compliance schedules which were to be implemented in the case of future NAAQS exceedances. The following measures were listed in agreed order 93-12 as contingency measures. It should be noted that since the adoption of the Lead SIP, GNB has gone forward and implemented the measures contained in the agreed order as shown below:

5.3.1 “Secondary collection systems, such as baghouses, will be added to processes which only have a single collection system.” GNB has added a supplemental ventilation baghouse to its metallurgical furnace operation (e.g., the reverberatory and blast furnaces).

5.3.2 “Process areas, such as the furnace areas, and material storage piles, such as the wet battery breaker storage, which are not fully enclosed, will be fully enclosed and placed under negative pressure.” GNB covered its blast furnace bins and installed a water spray system over the bin area. GNB also installed a baghouse at the raw materials storage building. Additionally, GNB installed a feed dryer and baghouse to reduce the possibility of reverberatory furnace explosions due to wet feed.

5.3.3 “Operating and maintenance procedures will be improved to reduce the occurrence of malfunctions, such as bag breakthrough in baghouses.” GNB has written and implemented detailed site operation and maintenance plans for its baghouse operations. GNB also installed a Triboflow® System in all baghouse ducts to detect upset conditions such as broken bags.

Therefore, because the contingency measures contained in Agreed Order 93-12 have been implemented, a new set of contingency measures is included in this redesignation SIP.

5.4 CONTINGENCY INDICATORS

For the purposes of the Collin County Redesignation SIP there will be two contingency indicators. The quarterly lead averages measured at the three ambient air quality monitoring sites around GNB will serve as the primary contingency indicator. A second indicator will be based on GNB's annual emissions inventory submission to the Texas Natural Resource Conservation Commission (TNRCC or commission). The quarterly measured averages will be taken from the TNRCC Airs database. Estimated emissions will be determined using GNB's annual emissions inventory submittal.

5.5 TRIGGER LEVELS

Contingency measure implementation will be triggered based one of the following conditions:

5.5.1 If the $1.5 \mu\text{g}/\text{m}^3$ quarterly arithmetic average lead NAAQS is exceeded at any of the ambient air quality monitoring sites.

5.5.2 If the company's annual emissions inventory for lead exceeds the 4.27 tons per year attainment inventory.

5.6 CONTINGENCY MEASURES

If at any time during the period of the maintenance plan, should trigger level conditions (1) or (2) above occur, the following contingency measures will be evaluated:

5.6.1 A new wheel washing facility will be installed to reduce fugitive emissions by reducing tracking in the yard area.

5.6.2 A scale and improved tuyere punching method will be installed at the blast furnace to increase the feed and flux control and reduce fugitive lead emissions around the blast furnace.

5.6.3 The existing reverberatory furnace feed screw will be replaced with a three cascading screw to reduce the number of maintenance shutdowns, thereby reducing overall shutdown emissions.

5.6.4 Once a contingency indicator has been triggered, the Executive Director of the TNRCC shall notify GNB within 30 days that the contingency measures listed above must be evaluated and that at a minimum one of the measures must be implemented. Within 60 days of such notification, GNB will inform the TNRCC as to which of the measures will be implemented. The company will complete the implementation of the selected contingency measure within 180 days of the company's notification to the Executive Director of the TNRCC.

5.7 MONITORING NETWORK

The current monitoring network consists of three ambient air monitors, one off-site receptor monitor and two property line monitors. The Commission commits to keep the monitors in place until the end

of the maintenance period. The monitors will be used to determine when an exceedance of the lead NAAQS has occurred for the purpose of triggering contingency measure notification.

5.8 VERIFICATION OF CONTINUED ATTAINMENT

The State of Texas has the legal authority necessary to implement the control strategy for lead under provisions of the Texas Clean Air Act (§382.011, General Powers and Duties, §382.012, State Air Control Plan, §382.014, Emission Inventory, §382.017, Rules, §382.023, Orders, §382.024, Factors in Issuing Orders and Determinations, and §382.051, Permitting Authority of Commission; Rules).

CHAPTER 6: PETITION FOR REDESIGNATION TO ATTAINMENT

6.1 In accordance with EPA's guidance for redesignation, the area meets the following minimum requirements:

-a minimum of eight quarters of quality-assured ambient air monitoring data with no exceedances, an established attainment year emissions inventory;

-a fully approved SIP under §110(k) of the FCAA;

-permanent and enforceable improvements in air quality;

-submittal of a maintenance plan.

6.2 Therefore, the TNRCC requests that the EPA, upon approval of the maintenance plan, redesignate Collin County to attainment for the lead NAAQS.

CHAPTER 7: AGREED ORDER

In order to ensure continued enforcement of the control measures implemented in accordance with Board Order Number 92-09(k) and the contingency measures contained in Board Order Number 93-12, which the company has already implemented, and to make the new contingency measures enforceable, a new Agreed Order is included in the following pages.