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June 18, 2007

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BY HAND DELIVERY

Ms. LaDonna Castañuela
Chief Clerk
Texas Commission on Environmental Quality
12100 Park 35 Circle
Building F, 1st Floor, Room 1101
Austin, Texas 78753

Re: TCEQ Docket No. 2004-0049-AIR; SOAH Docket No. 582-05-0593; *Application of ASARCO, Incorporated for Renewal of Air Quality Permit No. 20345*

Dear Ms. Castañuela:

Enclosed for filing in the above-referenced and numbered proceeding please find an original and twelve (12) copies of Asarco's Comments on Executive Director's Report to the Commission on Renewal of Asarco Incorporated's Air Quality Permit No. 20345.

Please file the original and 11 copies of this pleading in the above-referenced matter and return one file-stamped copy to the messenger. A copy of the above referenced document is being served on the persons in the attached Certificate of Service.

Thank you for your attention to this matter. If you have any questions concerning this filing, please do not hesitate to contact me at the number above.

Sincerely,



Derek R. McDonald

Enclosures

cc: Attached Service List

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TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY
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CHIEF CLERK'S OFFICE

APPLICATION OF ASARCO
INCORPORATED FOR RENEWAL
OF AIR QUALITY
PERMIT NO. 20345

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BEFORE THE TEXAS
COMMISSION ON
ENVIRONMENTAL QUALITY

CHIEF CLERK'S OFFICE

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TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

**ASARCO'S COMMENTS ON
EXECUTIVE DIRECTOR'S REPORT TO THE COMMISSION ON RENEWAL OF
ASARCO INCORPORATED'S AIR QUALITY PERMIT NO. 20345**

TO THE HONORABLE COMMISSIONERS OF THE TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY:

ASARCO, L.L.C. ("Asarco") hereby files these comments on the Texas
Commission on Environmental Quality ("TCEQ") *Executive Director's Report to the
Commission on Renewal of ASARCO Incorporated's Air Quality Permit No. 20345*, and in
support thereof would respectfully show the following:

I. INTRODUCTION

For over 110 years, Asarco's El Paso Plant has been a mainstay of the El Paso
economy and proud member of that community. The Plant was modernized at a cost of over
\$100 million and converted to a continuous top feed oxygen process ("ConTop") in 1992. The
ConTop modernization achieved dramatic reductions in air emissions from the Plant, including a
reduction of over 40,000 pounds of allowable sulfur dioxide ("SO₂") emissions.¹ The Plant has

¹ With the 1992 modernization, sulfur dioxide emissions were reduced by over 90% from preexisting levels, nitrogen oxides by almost 90%, carbon monoxide by about 30%, volatile organic compounds by 35%, particulate matter by over 20%, sulfuric acid by about 65%, lead by around 30% and emissions of fluorides were completely eliminated. *See* Tex. Air Control Bd., *Board Order: Asarco Incorporated*, No. 92-07, Finding of Fact 19 (May 8, 1992). While there have been some changes to Permit No. 20345 since 1992, some of which have increased allowable emissions of some pollutants, the current allowable emission rates still represent dramatic reductions

been temporarily idled since 1999, but with U.S. demand for copper in significant excess of supply and imported copper supplying 42% of domestic consumption,² the El Paso Plant will resume its important contributions to the domestic copper supply upon restart. Asarco is looking forward to the resumption of operations at El Paso so it will contribute once again to the prosperity of the region and Texas as a whole. While the renewal of an air permit is not a popularity contest, many others in the local community are looking forward to that day as well.

Asarco has developed a comprehensive recommissioning procedure, and the company is committed to restarting the El Paso Plant in a careful and responsible manner. The *Executive Director's Report to the Commission on Renewal of ASARCO Incorporated's Air Quality Permit No. 20345* (the "Executive Director's Report" or "Report") will serve as a valuable resource to support the restart.³ The Report demonstrates that the El Paso Plant is well positioned to resume operations in a manner fully protective of health, welfare, and air quality.

Asarco appreciates the significant effort put forth by the Executive Director in studying Asarco's planned restart and drafting the Report. The Report's quality and level of detail are direct results of that rigorous effort. Asarco believes that, while the Report is the product of unique procedural circumstances, the Report and the Executive Director's investigation that produced it reflect the proper application of the Texas Clean Air Act's statutory process for renewal in § 382.055 of the Texas Health and Safety Code ("Section 382.055"). Asarco is prepared to implement the recommendations in the Report and in fact has already started working to do so. Asarco urges the Commission to renew Air Quality Permit No. 20345

compared to pre-ConTop levels. See Air Quality Permit No. 20345, Condition 32, "Contemporaneous Reductions," (Oct. 31, 1996 Alteration).

² U.S. Geological Survey, *2005 Minerals Yearbook: Copper* at 21.5 (Mar. 2007).

³ Tex. Comm'n on Env'tl Quality, *Executive Director's Report to the Commission on Renewal of ASARCO Incorporated's Air Quality Permit No. 20345* (Issued May 1, 2007) (hereinafter "Executive Director's Report").

contingent upon completing the Executive Director's recommendations, which is the result mandated by the facts before the Commission and Section 382.055 of the Texas Clean Air Act.

II. BACKGROUND AND PROCEDURAL FRAMEWORK

A. Overview of Texas Clean Air Act's Permit Renewal Process

As the Commission stated in its March 10, 2006 Interim Order, the Executive Director's investigation and resulting Report were chartered according to the statutory permit renewal procedure defined in Texas Health & Safety Code § 382.055.⁴ Generally, the § 382.055 renewal process calls for the Commission to consider two basic criteria for renewal and assess the need for additional conditions to ensure that the facility in question will meet applicable federal and state standards and will not cause or contribute to a condition of air pollution.⁵ In situations where the Commission determines that the facility will not meet these requirements, Section 382.055 requires the Commission to prepare a report setting forth the basis for its determination and establish a schedule for the applicant to meet the Commission's requirements.⁶ Thus, § 382.055 affords the permit holder an opportunity to meet any unsatisfied renewal requirements following the Commission's assessment.

Although Texas Health & Safety Code § 382.056(g) provides that in "no-increase" renewal proceedings the Commission may not hold a hearing, the Commission's assessment of Asarco's permit renewal application has been supplemented by a special hearing conducted under the Commission's plenary authority to hold a hearing on any manner in the public interest. But the addition of the hearing does not change the manner in which § 382.055

⁴ Tex. Comm'n on Env't'l Quality, *An Interim Order Concerning the Application of ASARCO Incorporated to Renew Air Quality Permit No. 20345* at 1, (Mar. 10, 2006) (hereinafter "March 2006 Interim Order").

⁵ TEX. HEALTH & SAFETY CODE § 382.055(d-e).

⁶ *Id.* § 382.055(f)(1).

governs renewal of the Asarco permit.⁷ The Executive Director's Report provides the Commission with the basis for taking the next step in the § 382.055 renewal process.

B. Application of Texas Clean Air Act Renewal Process to This Proceeding

1. Statutory Renewal Criteria

Section 382.055(d) of the Texas Clean Air Act directs the Commission to consider two aspects of a facility's performance under an existing permit when evaluating a preconstruction permit renewal:

1. The compliance history of the owner or operator of the facility;
and
2. The condition and effectiveness of existing emission control equipment and practices.⁸

Additionally, § 382.055(e) provides that the Commission may impose conditions for permit renewal that are economically reasonable and technically practicable considering the age of the facility and the effect of its emissions on the surrounding area.⁹ The Commission may not impose requirements more stringent than those of the existing permit unless the Commission determines that the requirements are necessary to avoid a condition of air pollution or to ensure compliance with otherwise applicable federal or state air quality control requirements.¹⁰

⁷ For the reasons noted in its response to protestant motions for rehearing, Asarco disagrees with the protestant position that Section 382.055(f)'s requirement for a Commission report is inapplicable because the Commission's determination will have come more than 180 days after Asarco filed its permit renewal application. Statutory deadlines such as this are enacted for the benefit of the applicant to promote the timely processing of permit applications. Of course, the passage of such deadlines does not give substantive rights to project opponents. The Commission's ongoing course of action reflects the proper application of the Section 382.055 renewal process as applied to the extraordinary circumstances of this case, where the process has been supplemented by the special public interest hearing, which is not contemplated by Section 382.055.

⁸ TEX. HEALTH & SAFETY CODE § 382.055(d)(1-2).

⁹ *Id.* § 382.055(e).

¹⁰ *Id.*

2. Role of Special Contested Case Hearing

In this case, after TCEQ staff reviewed Asarco's application and recommended renewal in 2004, the Commission exercised its plenary authority to hold a hearing in the public interest.¹¹ While such a hearing is not contemplated by § 382.055, the Commission designed a hearing that was consistent with, and fit within, the § 382.055 renewal process. By Interim Order dated May 14, 2004, the Commission referred two issues to SOAH to inform the Commissioners' renewal deliberations:

1. Whether the operation of the El Paso Copper Smelter under the terms of the proposed permit will cause or contribute to a condition of air pollution; and
2. Whether the Applicant's compliance history for the last five years of operation of the El Paso Primary Copper Smelter warrant the renewal of Air Quality Permit No. 20345.

The evidence adduced before SOAH in response to these questions have served to inform the Commission's determinations under the § 382.055 renewal process. However, the Commission did not refer the application to SOAH to determine whether Air Quality Permit No. 20345 should be renewed. Instead, § 382.055(f) dictates that in situations where the Commission determines that the facility will not meet the requirements for renewing the permit, the Commission shall:

1. Set out in a report to the applicant the basis for the commission's determination; and
2. Establish a schedule, to which the applicant must adhere in meeting the commission's requirements, that:
 - (A) includes a final date for meeting the commission's requirements; and

¹¹ Texas Comm'n on Env't'l Quality, *An Interim Order Concerning the Application of ASARCO Incorporated to Renew Air Quality Permit No. 20345* at 1, (May 14, 2004).

(B) requires completion of that action as expeditiously as possible.¹²

The Executive Director's Report satisfies these requirements for the § 382.055 renewal process to proceed to completion as intended.

3. Use of the Executive Director's Report in the Statutory Renewal Process

The Report serves two purposes within the § 382.055 renewal process. First, the Commission determined that more comprehensive, site-wide modeling and a site investigation and were necessary for the Commission to reach the determinations required by §§ 382.055(d)(2) and 382.055(e).¹³ Asarco has completed the more comprehensive modeling, likely the most comprehensive modeling ever taken in support of a permit application, and the Executive Director has completed the requisite site investigations. The Executive Director has concluded that, upon restart, emissions from the smelter would not be expected to cause or contribute to a condition of air pollution and the emissions would not be expected to cause adverse health effects.¹⁴ Second, the Executive Director's Report should be adopted by the Commission as the report that is required by § 382.055(f). The Report ensures that the restart will occur when the condition and effectiveness of existing emission control equipment have been fully restored. This is exactly the mechanism defined in the Texas Clean Air Act's permit renewal process, and Asarco has already started preparing to respond to the Commission's requirements according to the defined schedule.

¹² TEX. HEALTH & SAFETY CODE § 382.055(f).

¹³ March 2006 Interim Order at 2.

¹⁴ Executive Director's Report at 24.

III. CONTENTS OF THE EXECUTIVE DIRECTOR'S REPORT

A. Overview of Executive Director's Report

With its March 10, 2006 Interim Order, the Commission directed the Executive Director and Asarco to complete pursuant to § 382.055(d-e):

1. An examination by the Executive Director to determine if a renewal application is appropriate, or if instead, a permit amendment application is required;
2. Updated modeling from Asarco; and
3. A site investigation by the Executive Director.¹⁵

The Executive Director's Report, which is the product of a 14-month effort by TCEQ Staff, Asarco, and independent consultants, has addressed each of these three issues. The Executive Director's investigation included (i) a review and analysis of all permitting actions related to Air Quality Permit No. 20345 since 1992; (ii) site inspections by both TCEQ staff and an independent expert with 25 years experience in metallurgical engineering; (iii) a new air dispersion modeling analysis addressing Texas, New Mexico, and Mexico, conducted by Asarco using TCEQ's defined protocol and audited by both TCEQ staff and an independent modeling expert; and (iv) a toxicology assessment by TCEQ's Toxicology Section.

In the Report, the Executive Director has concluded that, upon restart, emissions from the smelter are not be expected to cause or contribute to a condition of air pollution and the emissions are not expected to cause adverse health effects.¹⁶ The Executive Director's Report also contains six recommendations defining those measures that will ensure that the Plant's air

¹⁵ See March 2006 Interim Order at 2, 11. In its Interim Order, the Commission did not adopt the ALJ's proposed finding that Asarco had failed to demonstrate that Applicant's compliance history for the last five years of operation of the El Paso Primary Copper Smelter warrant the renewal of Air Quality Permit No. 20345.

¹⁶ Executive Director's Report at 24.

quality control equipment will be most effective upon restart.¹⁷ Asarco is prepared to implement the recommendations in the Report. Asarco appreciates the thorough and professional effort from TCEQ staff in completing the investigation and preparing the Report. Each of the investigation's three components ordered by the Commission confirms that the El Paso Plant is well positioned for restart following Asarco's planned recommissioning work and permit renewal.

B. A Renewal Application is Appropriate

To determine whether a permit renewal, rather than amendment, is appropriate for the Asarco El Paso Plant, the Executive Director reviewed and analyzed the 15 permitting actions related to Air Quality Permit No. 20345 since issuance in 1992.¹⁸ The Executive Director supplemented this analysis with observations from the Phase I site investigation described below.¹⁹ In the Report, after describing the relevant permit actions, the Executive Director concluded that "[t]he past permitting actions were processed in compliance with agency procedure at that time. Based on a review of past permitting actions, in conjunction with a detailed examination of the changes proposed to be effected through the permit renewal process, only a permit renewal, and not an amendment or other permitting action, is required at this time."²⁰ Asarco agrees with this conclusion.

¹⁷ See *id.* at 24-27.

¹⁸ See *id.* at 8-15.

¹⁹ See *id.* at 26.

²⁰ *Id.* at 15.

C. The Modeling Data Support Permit Renewal Without Additional Conditions

1. The Modeling Was Conducted Using a Rigorous TCEQ Protocol and Was Audited by TCEQ Staff and an Independent Expert

Although it is not customary for a permit holder to submit new modeling when obtaining a permit renewal, the Commission recognized that updated modeling would be useful to both its assessment of the Plant's air pollution control equipment under § 382.055(d)(2) and its consideration under § 382.055(e) of whether the El Paso Plant will upon restart cause or contribute to a condition of air pollution and whether the Plant will comply with applicable state and federal air quality standards.²¹ Pursuant to the Commission's March 2006 Interim Order, Asarco developed comprehensive modeling according to a rigorous TCEQ protocol developed especially for this permit renewal application. This modeling eliminates any uncertainty about the protectiveness of the Plant's emissions control equipment. Asarco's updated modeling examines impacts in New Mexico and Mexico as well to answer any concerns about the Plant's impacts outside Texas. As recognized in the Executive Director's Report, the updated modeling demonstrates that, following restart, the El Paso Plant will meet applicable state and federal air quality standards, the Plant will not cause or contribute to a condition of air pollution, and emissions from the Plant will not cause adverse health effects at any location in the entire region, be it El Paso, New Mexico, or Mexico.²²

The Commission's March 2006 Interim Order directed Asarco to:

[S]ubmit additional information regarding all emissions from and related to the El Paso Plant and their impacts on surrounding areas, including current modeling results within six months of issuance of this Interim Order. Prevention of significant deterioration ("PSD") area-wide modeling shall be conducted on a fifty-kilometer basis. However, with regard to the impacts of ASARCO's emissions from its El Paso Plant in

²¹ See March 2006 Interim Order at 2.

²² Executive Director's Report at 24.

New Mexico and Mexico, only the impact of the emissions from Texas shall be considered.²³

To ensure that the air dispersion modeling would serve the Commission's needs in assessing this renewal application, TCEQ staff developed a project-specific modeling protocol.²⁴ The protocol was intended to provide a reasonable worst case representation of the potential contribution to existing air quality concentrations in Texas, New Mexico, and Mexico.²⁵ The protocol ensured, among other things, that Asarco's modeling would be done with the latest EPA model and would address all primary and secondary sources of air contaminants at the Plant for all averaging periods.²⁶ TCEQ's protocol specified that all identified schools be specifically considered in the modeling.²⁷

The TCEQ protocol produced a comprehensive picture of the emissions from the El Paso Plant as they can be expected upon restart. Asarco modeled approximately 100 sources from the Plant.²⁸ The model calculated ambient concentrations for over 12,000 off-site receptors across an area extending across 3,000 square miles of Texas, New Mexico, and Mexico.²⁹ The model accounts for current air quality levels in the El Paso/Juarez region.³⁰

Asarco submitted its air dispersion modeling on September 11, 2006, the deadline stated in the Interim Order.³¹ Asarco supplemented the modeling at TCEQ's request on

²³ March 2006 Interim Order, Ordering Provision 2.

²⁴ See Executive Director's Report, Attachment D.

²⁵ Executive Director's Report at 16.

²⁶ See generally, *id.*

²⁷ *Id.*

²⁸ David Cabe, Zephyr Env'tl Corp., *Air Quality Analysis; ASARCO El Paso Plant*, Executive Summary at 1 (Nov. 22, 2007) (Executive Director's Report, Attachment H) (hereinafter "Zephyr Modeling Summary").

²⁹ *Id.*

³⁰ *Id.*

³¹ March 2006 Interim Order, Ordering Provision 2.

November 22, 2006. To add to the thoroughness of the review, an independent third party auditor confirmed that the updated modeling was conducted in accordance with the TCEQ-specified modeling protocol and that the modeling results and analysis satisfied TCEQ requirements.³² TCEQ's Air Dispersion Modeling Team ("ADMT") reviewed the modeling data and prepared a report, and the Commission's Toxicology Section used the updated air dispersion modeling for a toxicology review.³³

2. The Modeling Demonstrates that Emissions From the Plant Will Meet All Applicable Standards and Will Protect Health and Welfare

Modeling of criteria pollutants shows clearly that modeled concentrations from Asarco, even when added to representative background levels, will not exceed the federal National Ambient Air Quality Standards ("NAAQS") or state property line standards at any receptor in Texas, New Mexico, or Mexico.³⁴

Further, the modeling results show that maximum ground level concentrations ("GLCs_{max}") of only 4 of 25 modeled constituents exceed their Effects Screening Levels ("ESLs"), which are conservative criteria developed by TCEQ to evaluate the potential for effects to occur as a result of exposure to concentrations of constituents in the air.³⁵ TCEQ's

³² Arnold R. Srackangast, ASIMET Svcs., *Independent Third Party Audit of the Air Quality Analysis for ASARCO Incorporated El Paso Smelter Plant Renewal of TCEQ Permit 20345* at 2 (Apr. 23 2007) (Executive Director's Report, Attachment L).

³³ See Memorandum from Jung-Song Lee, TCEQ Toxicology Section to Dois Webb, TCEQ Air Permits Division, *Health Effects Review of Emissions from Asarco, Inc, El Paso, El Paso County, Texas* (Apr. 12, 2007) (Executive Director's Report Attachment J) (hereinafter "Toxicology Memorandum,"); Memorandum from Dan Jamison, TCEQ ADMT to Dois Webb, TCEQ Mech., Ag., Constr. Section, *Modeling Audit - ASARCO LLC* (Apr. 13, 2007) (Executive Director's Report, Attachment I) (hereinafter "ADMT Memorandum").

³⁴ Zephyr Modeling Summary at 2. The NAAQS were established by EPA to protect health, including health of "sensitive" populations such as asthmatics, children, and the elderly and to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. See 42 U.S.C. §§ 7409(b), 7602(h).

³⁵ See Toxicology Memorandum. ESLs are not ambient air standards. If predicted airborne levels of a constituent do not exceed its ESL, adverse health or welfare effects would not necessarily be expected to result, but a more in

Toxicology Section gave additional consideration to the four pollutants where the conservative modeling predicted short-term exceedances of their respective ESLs at any receptor.³⁶ None of those constituents—arsenic, manganese oxide, silver, and copper dust—exceeded their ESLs at any non-industrial receptors such as houses or schools, and long-term impacts of these constituents are predicted to remain below their ESLs at all receptors.³⁷ Jung-Song Lee of TCEQ's Toxicology Section concluded that the modeled concentrations of those four constituents, as well as the 21 constituents demonstrating no predicted ESL exceedances, are acceptable.³⁸ In sum, Mr. Lee concluded that "we do not expect adverse health effects to occur among the general public, as a result of exposure to the proposed emissions from the facility."³⁹

3. No New Controls or Changes to Current Practices are Warranted

Summarizing its review of Asarco's updated modeling in conjunction with the toxicology review, TCEQ's Air Dispersion Modeling Team concluded that:

Based on the representations made in the permit application regarding the condition and effectiveness of existing emission control equipment, reviewed by the permit reviewer, current modeling performed in accordance with applicable federal and state law, and Toxicology's review of the modeling results, *ASARCO has demonstrated air emissions from the facility would not adversely affect human health and welfare.*⁴⁰

The Executive Director adopted the findings of the Air Dispersion Modeling Team. In its Conclusions and Recommendations with regard to modeling, the Report states that:

depth review would be triggered, as was the case here. TEX. COMMN. ON ENVT'L QUALITY, GUIDELINES TO DEVELOP EFFECTS SCREENING LEVELS, REFERENCE VALUES, AND UNIT RISK FACTORS, RG-442 § 1.6 (Nov. 2006).

³⁶ See Toxicology Memorandum.

³⁷ See *id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ ADMT Memorandum at 1 (emphasis added).

The modeling demonstrated emissions would comply with applicable standards. A health effects review determined adverse health effects are not expected to occur as a result of exposure to the proposed emissions from the facility. *Emissions from the Copper Smelter are not expected to cause or contribute to a condition of air pollution. Therefore, the ED does not recommend new controls or changes to current practices.*⁴¹

Asarco absolutely supports these conclusions.

4. Impact of Modeling to the Renewal Proceeding

The March 10, 2006 Interim Order directed Asarco to develop updated modeling to aid the Commission's assessment under § 382.055(e) of the need for additional permit conditions to avoid a condition of air pollution or ensure compliance with applicable federal and state standards.⁴² Because the Executive Director concluded—based on a review of updated modeling specifically designed for this facility and this proceeding—that the existing air pollution control equipment will prevent a condition of air pollution and ensure compliance with applicable standards following recommissioning, the Executive Director's Report "does not recommend new controls or changes to current practices."⁴³

In addition to demonstrating that additional controls are not appropriate for this renewal, the new air dispersion modeling and the TECQ's associated toxicology review also confirm the effectiveness of the Plant's existing air pollution control equipment and practices, which must be considered in the permit renewal process under § 382.055(d)(2). As described earlier, the modeling was conducted according to a TCEQ-developed protocol using the latest modeling techniques. The conclusions in the Report, which represent the informed opinions of the agency's subject matter experts, show clearly that emissions from the copper smelter are not

⁴¹ Executive Director's Report at 24 (emphasis added).

⁴² See March 2006 Interim Order at 2.

⁴³ Executive Director's Report at 24 (emphasis added).

expected to cause or contribute to a condition of air pollution and that adverse health effects are not expected among the general public as a result of exposure to the proposed emissions from the facility.⁴⁴ The modeling performed by Asarco and the resulting conclusions of the Executive Director and TCEQ staff all but mandate the renewal of ASARCO's permit application conditioned upon the completion of the Executive Director's recommendations, discussed below, that are related to the physical condition of the Plant's air pollution control equipment.

D. A Two-Phase Site Investigation Showed that the Plant's Air Quality Control Equipment Will Function Effectively Upon Recommissioning

1. Overview of Executive Director's Site Investigation

The Commission's investigation has taken two complementary approaches to assessing the condition and effectiveness of the air quality control equipment at the El Paso Plant. As described above, the new air dispersion modeling demonstrates that the Plant's existing air quality control equipment will be sufficiently effective to ensure that emissions from the El Paso Plant do not cause or contribute to a condition of air pollution and will maintain compliance with federal and state standards.⁴⁵ The second component of the Executive Director's investigation, a vigorous on-site investigation, complements the modeling data with empirical information about the current condition of the Plant's air quality control equipment. The Executive Director's on-site investigation has identified those maintenance and refurbishment tasks that are necessary to ensure that the Plant's air quality control equipment will be operating effectively upon restart. Asarco will complete a comprehensive maintenance program before restarting the El Paso Plant, and the Executive Director's recommendations will be implemented as part of this effort.

⁴⁴ *Id.*

⁴⁵ *See id.*

The Executive Director's on-site investigation was conducted in two phases. In Phase I, TCEQ staff conducted a site investigation in April 2006.⁴⁶ In Phase II, an independent process engineer followed with a second inspection in January 2007.⁴⁷ The Phase I report, prepared by TCEQ staff, and the Phase II report, prepared by the independent process engineer, are consistent in that they both describe a facility that remains equipped with its air pollution control equipment but will require refurbishment following a relatively longer idling of the Plant. The Phase I report states that "all major process and abatement equipment and components, including operational controls and infrastructure required by the air permit, were present, intact, and in generally satisfactory condition."⁴⁸ The independent process engineer added in the Phase II report that, with some noted exceptions, "minor repairs and refurbishments will suffice to prepare the equipment for a smelter startup and operation in accordance with industry standards and practices. These repairs and refurbishments are typical of what is expected following a long shutdown."⁴⁹

Asarco recognizes that the Phase I and Phase II investigators have identified a number of maintenance needs that have developed—as might be anticipated—during the Plant's recent idling period. Asarco does not discount the level of detailed planning and execution that will be necessary to complete the Plant's refurbishment. However, there is nothing in the Phase I, Phase II, or Executive Director's reports to indicate that the El Paso Plant in its current state lacks the capability of operating in compliance with federal and state emissions standards without causing adverse health effects. To the contrary, the independent process engineer noted

⁴⁶ See TCEQ Investigation Team, *Phase I Regional Investigation Report; American Smelting and Refining Company* (April 28, 2006) (Executive Director's Report Attachment G) (hereinafter "Phase I Investigation Report").

⁴⁷ See EHP Consulting, Inc., *Asarco El Paso Smelter Review and Comments* (Apr. 9, 2007) (Executive Director's Report Attachment K) (hereinafter "Process Engineer's Report").

⁴⁸ Phase I Investigation Report at 15.

⁴⁹ Process Engineer's Report at 6.

that emission data from 1998, just prior to shutdown, confirms that the Plant's acid plant and main baghouses are capable of performing to the level required by the permit.⁵⁰ Asarco's recommissioning work will restore the Plant's air quality control equipment to its operational state, and the Executive Director's Report and recommendations are consistent with that objective.

2. The Executive Director's Recommendations Are Reasonable and Supported by the Results of the Site Investigation

Relying on the TCEQ Staff's Phase I report and the independent process engineer's Phase II report, the Executive Director has offered recommendations addressing maintenance needs within three major components of the Plant's air quality control equipment: baghouses; acid plants; electrostatic precipitators.⁵¹ The Executive Director has also issued three recommendations related to general housekeeping needs that have developed during the temporary shutdown.⁵² Asarco believes that the Executive Director's recommendations, which generally call for a program of inspection, repair, and final verification to the Executive Director, are sensible and consistent with the company's own plans for restarting the Plant in top working condition. Should the Commission adopt the six recommendations in the Executive Director's Report, Asarco would make a priority of completing the six recommendations and reporting their completion to the Executive Director as expeditiously as possible.

⁵⁰ *Id.*

⁵¹ See Executive Director's Report at 24-27.

⁵² See *id.*

IV. ASARCO IS ALREADY WORKING TO MEET THE EXECUTIVE DIRECTOR'S RECOMMENDATIONS

A. Initial Inspections and Progress

Asarco has already started work to address the Executive Director's six recommendations. Asarco has retained a consultant to assist the company with assessment, preparation, and planning for the refurbishment and restart. Addressing the Executive Director's recommendations is a top priority of Asarco's technical consultant. Each of the recommendations begins with an inspection element, either in the specific text of the recommendation or in the supporting comments. Accordingly, the consultant has inspected the entire facility, paying special attention to housekeeping, corrosion, and major air quality control equipment that is the subject of Executive Director's recommendations. The consultant is assembling specialized manufacturers' teams to support his work to identify and address any specific needs of the acid plant and other air quality control equipment at the El Paso Plant. Asarco's consultant, with the support of these manufacturer teams when assembled, will complete more extensive inspections of significant Plant equipment in the coming months.

In addition to conducting his initial plant inspection and assembling specialized manufacturers' teams, Asarco's consultant has also reviewed technical documents related to the Plant's operation and assessed the company's existing procedures for restart. Asarco's consultant has developed cost estimates and schedules for completion of the Executive Director's recommendations, and the consultant is developing plans and cost estimates for the restart as a whole to supplement Asarco's existing restart procedures.

B. Potential Timing Considerations

Asarco's immediate response reflects the company's commitment to completing the Executive Director's recommendations as expeditiously as possible. The 365-day period

recommended in the Executive Director's Report represents a very ambitious timetable for completing the Executive Director's recommendations, especially when Asarco seeks to return the Plant to the highest levels of readiness before restarting the Plant. Having completed his initial inspection of the El Paso Plant, Asarco's consultant believes that a 365-day timetable represents an aggressive, achievable estimate of the time required to complete the recommendations as expeditiously as possible, subject to two potentially unavoidable sources of delay. Asarco is eager to undertake an ambitious plan for completing the recommendations, but the company requests that the Executive Director and the Commissioners consider two complicating factors that are not addressed in the Executive Director's Report.

First, initial inspections combined with supporting research by Asarco's consultant indicate that certain custom-manufactured Plant components may be more easily replaced than repaired if the recommendations are to be properly satisfied. If replacements are deemed to be the best course of action, the time required for custom manufacturing may limit Asarco's ability to complete the Executive Director's recommendations within 365 days. Asarco will have a more complete assessment of any need to replace custom-manufactured components in 2-3 months following additional inspection. Second, Asarco's current bankruptcy status will require the company to obtain bankruptcy court approval for expenditures necessary to complete the Executive Director's recommendations following clear direction from the TCEQ regarding the permit renewal. Asarco is confident that the business potential of the restart will lead to consensus support from bankruptcy stakeholders and ultimate court approval. The company requests that the Commission consider these legitimate uncertainties when adopting the Executive Director's recommendations.

V. PERMIT RENEWAL IS THE NEXT STEP UNDER THE STATUTORY PERMIT RENEWAL PROCEDURE

Asarco urges the Commission to renew Air Quality Permit No. 20345, with the conditions that Asarco complete the Executive Director's recommendations. Proceeding in that manner would be consistent with the renewal scheme defined in Texas Health and Safety Code § 382.055(g), which states that "if the applicant meets the commission's requirements in accordance with the schedule, then the commission *shall* renew the permit."⁵³ A conditional renewal is best matched to the Executive Director's recommendations for the Plant's air quality control equipment, which call for Asarco to complete the necessary repairs to each major component of the air quality control equipment and verify completion no later than 90 days prior to startup with a report to the Executive Director. The Executive Director's staff is well qualified to evaluate Asarco's completion of the Executive Director's recommendations and report to the Commission following their completion.

Asarco disagrees with protestant positions that Asarco's permit renewal application should be denied solely because the Executive Director's Report was not completed by November 10, 2006. The Commission did not act on a motion urging this position in December, 2006⁵⁴ and such a position is even less justifiable now that the 14-month investigation has been fully completed and the comprehensive Report has been issued. Asarco submitted the comprehensive modeling work within six months as directed by the Interim Order. However, the unprecedented scale of the investigation and especially the need for the Executive Director and Asarco to identify and retain two specialized independent consultants justified the additional time necessary to complete the Report. In requiring Asarco to obtain and fund the

⁵³ TEX. HEALTH & SAFETY CODE § 382.055(g) (emphasis added).

⁵⁴ *Protestant's, the City of El Paso's Reply to the Executive Director Interim Report and Request for Extension and the City of El Paso's Request for Immediate Denial of the Application* (Dec. 22, 2006).

services of these consultants, the Executive Director noted that "[t]he investigation required to comply with the [Interim] Order exceeds the scope of the normal permit renewal process and will require resources beyond those appropriated to the Agency for the permit renewal process."⁵⁵ Asarco believes that the Report, as supplemented by the expertise of a specialized process engineer and the objectivity of an independent modeling auditor, contains a depth, quality, and level of independent oversight that would not have been possible without the additional time.

In briefs contending that Asarco's permit should be denied as a result of the extension, Protestants have attempted to characterize the need for the extension as the result of Asarco's "foot-dragging" or lack of cooperation.⁵⁶ Asarco notes the absence of these terms or any other suggestion of bad faith in the Executive Director's Interim Report and Request for Extension.⁵⁷ The Executive Director is the party most affected by the "policy goals" asserted by Protestants⁵⁸ of avoiding delay in complex investigations that exceed the scope of the normal permit renewal process and will require resources beyond those appropriated to the Agency for the permit renewal process. Presumably, if the Executive Director was of the opinion that Asarco's conduct warranted it, he would have recommended denial at the November 10, 2006 deadline rather than requesting an extension. Instead, the Executive Director stated that "the considerations and requirements . . . to ensure objectivity (specifically, identifying independent

⁵⁵ Letter from Glenn Shankle, Executive Director, Tex. Comm'n. on Env't'l Quality to Lairy Johnson, ASARCO Incorporated (May 5, 2006).

⁵⁶ See *Protestant's, the City of El Paso's Reply to the Executive Director Interim Report and Request for Extension and the City of El Paso's Request for Immediate Denial of the Application* at 8 (Dec. 22, 2006); *Protestant's, the City of El Paso's, Motion to Re-Urge Immediate Denial of ASARCO's Application* at 6 (May 23, 2007).

⁵⁷ See Tex. Comm'n on Env'tl. Quality, *Executive Director Interim Report and Request for Extension*, (Nov. 10, 2006).

⁵⁸ *Protestant's, the City of El Paso's, Motion to Re-Urge Immediate Denial of ASARCO's Application* at 7 (May 23, 2007).

third-party experts, securing contracts for services, the performance of those services, and the completion of any reports) have extended the amount of time necessary for the Executive Director to complete his Report, as required by TEX. HEALTH & SAFETY CODE § 382.055(f)."⁵⁹

VI. BENEFITS OF THE EL PASO PLANT

The Executive Director's Report confirms that, given Asarco's efforts to prepare the El Paso Plant for restart and report to the Executive Director's upon completion, Air Quality Permit No. 20345 should be renewed. The Report shows that the Plant is positioned to resume its contributions to the El Paso economy without causing adverse health effects or causing or contributing to a condition of air pollution.⁶⁰

The benefits to the El Paso Community of restarting the Plant are well documented. A three-part study (attached) conducted by the Institute for Policy and Economic Development at the University of Texas at El Paso showed that the restart will directly contribute \$73 million per year to El Paso in new labor income, the result of 291 new direct jobs and over 1,800 new indirect jobs.⁶¹ The benefits of the restart will not be limited to El Paso, as the El Paso Plant will allow for expansion of Asarco's Amarillo Precious Metals Refinery. The restart will contribute 44 new direct jobs and 286 new indirect jobs to Amarillo, resulting in \$11 million

⁵⁹ Tex. Comm'n on Envtl. Quality Executive Dir., *Executive Director Interim Report and Request for Extension*, ¶ 12 (Nov. 10, 2006).

⁶⁰ Executive Director's Report at 24.

⁶¹ Matthew S. McElroy et. al., *Economic Impact of Asarco on the El Paso Economy 1* (Apr. 2007) (Special Report of the University of Texas at El Paso Institute for Policy and Economic Development) (Attachment A).

in new labor income in that city.⁶² In total, restarting the El Paso Plant will generate \$1.35 billion in regional economic output for the state of Texas.⁶³

The economic benefits of the restart will extend beyond job creation. The El Paso Plant contributes to diversity in the composition and geographic distribution of the state's manufacturing base. With just four copper smelters operating in the United States, restart of the El Paso Plant will significantly enhance domestic copper production capacity and relieve pressure on the nation's demand for copper.

VII. COMMUNITY SUPPORT FOR RESTARTING THE EL PASO PLANT

The community has recognized the benefits of the El Paso Plant, and Asarco has received more than 1,000 positive inquiries via Plant visits, email, or telephone calls from community members who have become aware of Asarco's plans to reopen the Plant. Former employees, many of whom want to come back to work and have recall rights, asked Asarco to take a more proactive role countering misinformation that was out in the community.

Following a series of community meetings to discuss the planned restart and the Executive Director's Report, Asarco has gained much support in Buena Vista, La Calaveras, and Sunset Heights, the El Paso neighborhoods closest to Asarco. Asarco representatives also visited other West Side, Central, South Side, Central, Eastside, and Far East Side neighborhoods. Asarco's records show that well over 1,000 individual support letters have been sent to the Commission from our community since after the Executive Director's Report was released on May 1, 2007.

⁶² Matthew S. McElroy et. al., Economic Impact of Asarco on the Amarillo Economy 1 (Apr. 2007) (Special Report of the University of Texas at El Paso Institute for Policy and Economic Development) (Attachment B).

⁶³ Matthew S. McElroy et. al., Economic Impact of Asarco on the Texas Economy 1 (Apr. 2007) (Special Report of the University of Texas at El Paso Institute for Policy and Economic Development) (Attachment C).

VIII. CONCLUSION

Asarco is grateful for the privilege of holding a Texas Air Quality Permit, and the company urges the Commission to remain faithful to the statutory procedure for assessing a permit renewal under the Texas Clean Air Act. Renewal of Air Permit No. 20345, conditioned upon completion of the Executive Director's recommendations represents the next step in that process. The modeling, the on-site investigations and additional supporting work ultimately leading to the Executive Director's conclusions and recommendations have addressed all regulatory issues. Asarco looks forward to completing the Executive Director's recommendations and restarting the El Paso Plant following permit renewal.

As a member of the El Paso community for over 110 years, Asarco's ongoing commitment to operating the El Paso plant in a manner that is beneficial to the community is evidenced by its \$100 million ConTop modernization, which reduced the Plant's SO₂ emissions by almost 90%. Upon restart, the Plant will resume its contributions to the El Paso community. The Executive Director's Report shows that TCEQ's process to permit the 1992 ConTop modernization achieved the correct result, and the Texas Clean Air Act's statutory renewal process is ensuring that the objectives of the Texas Clean Air Act continue to be satisfied upon renewal.

For the foregoing reasons, Asarco respectfully requests that the Commission to renew Air Quality Permit No. 20345, with the conditions that Asarco complete the Executive Director's recommendations.

Respectfully submitted,

BAKER BOTTS L.L.P.

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CERTIFICATE OF SERVICE

I hereby certify that I have served a true and correct copy of the foregoing on the following parties on this 18th day of June, 2007.

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Economic Impact of Asarco on the El Paso Economy

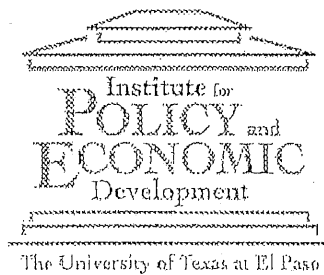
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Special Report 2007-05

April 2007

Overview

The Institute for Policy and Economic Development at the University of Texas at El Paso was contracted by Asarco to conduct an economic impact analysis limited solely to its activities in the region should they renew copper smelting operations. The copper smelter is currently in the process of renewing its operating permits by the Texas Commission on Environmental Quality and has been on temporary shutdown status since 1999.

Asarco's economic presence in the region during operation was substantial, having invested nearly \$100 million in the copper smelter to build and implement new technology in 1992, earning it recognition as EPA's maximum available control technology for copper smelters in the United States. The technology, known as ConTop, increased production to 150,000 pounds of copper annually while reducing air emissions by more than 90%. Contop is the only copper smelter of its kind in the United States.

The current analysis requested by Asarco finds that if Asarco were to reopen and employ the 291 individuals regional economic output would increase by \$1.159 billion, 1,819 new jobs would be created, and 73 million dollars in new labor income would be generated.¹

What is an Impact Study Based on Input-Output Tables?

Input-output (I-O) analysis, in its simplest form, is made possible by two models—one descriptive and one predictive. Input-output tables are, simply, tabular representations of the inner workings of a given economy. The tables provide a means of tracking what one industry buys from another to produce its goods. These transactions are based on the idea of economic interdependence, that industries rely upon one another through purchases from and sales to other industries.² An auto manufacturer, for example, must purchase x units of steel to produce y engine blocks; and, the steel producer must in turn buy w units of fuel to heat the ovens that help produce x units of steel.

The extent to which industries rely upon one another is captured by the descriptive model. The tables within the descriptive model provide detailed information by industry and commodity on everything from employment and earnings (value added) to business volume (output). The predictive model comes into play when some change (typically in final demand or consumption) is applied to an economy. The "ripple effects" of one industry purchasing from another to meet the new demand are captured as "rounds" until the amounts purchased

become so small that they are considered insignificant. The sum of the rounds is then added to the original change for a total economic impact.

The multipliers are also provided by the predictive model, and depending on the application, several types of regional multipliers are available. Although they differ in how data are regionalized, most impact studies dealing with a project such as this choose one of three commercially available impact programs. These include; REMI, an acronym for Regional Economic Models, Inc; RIMS II, the Bureau of Economic Analysis' (BEA) Regional Industrial Modeling System, version two; and, IMPLAN, produced by the Minnesota IMPLAN Group (MIG). While any of the three could have been used for this study, IMPLAN was selected because its multipliers more accurately depict local economies than RIMS II (and are generally more conservative)³ due to a more efficient regionalization process.

How to Interpret an Impact Study

The impact of any change in final demand to an economy of interest is divided into three components by IMPLAN. These are termed direct, indirect, and induced effects. Direct effects refer to the initial and more observable change in final demand; a one million dollar construction project entered into the appropriate I-O industry would show a direct impact of one million dollars. The indirect effect can be best thought of as the ripple effect of increased production by businesses that supply goods to the construction project. Induced effects are household effects, which generally mean that due to the initial shock households will have more (or less) income to spend on things like eating out or medical care.

In addition to changes in output/final demand, tabular impacts are also provided for employment, and labor income. Employment impacts are the total number of jobs created, while labor income includes employee compensation and proprietors' income. Property and sales taxes can also be measured and these results are provided in the Appendix.

It should also be noted that all impact estimates are in 2004 dollars and are deflated from the current year or the year of the expected impact if different from the model year. Detailed industry tables for each of the impacts, including detailed tax impacts, are can be obtained from Asarco representatives.

Findings

Data for this economic impact analysis were obtained from Asarco and were based solely on projected expenses associated with a startup plan. Information in the startup plan included detailed expenditures for wages, labor representation, fringe benefits, fuel, utilities, and a variety of technical services necessary for ongoing operation. In impact analysis, however, many of the necessary inputs are captured by the model. As such, the anticipated 291 employees with an adjusted average wage matched to Asarco's planned spending were the only direct input to the model.

Despite this, Asarco's economic impact in the region is still substantial, as the 291 employees would create a total of 1,819 jobs regionwide--or over 6.25 additional jobs per direct Asarco job, increase regional economic output by \$1.159 billion, and increase labor income in the region by over \$73.9 million. Labor income, in addition to jobs, is among the more important measures of an economic impact as it includes wages earned by individuals working for others and for themselves (sole proprietors/personal business owners).

El Paso	Direct	Indirect	Induced	Total
Output	\$917,448,512	\$202,110,982	\$40,390,284	\$1,159,949,788
Employment	291	1,091.70	436.6	1,819.30
Labor Income	\$20,544,832	\$41,204,197	\$12,187,713	\$73,936,742
All values in 2004 dollars				

The Texas Commission on Environmental Quality's Executive Director has concluded, according to Asarco, that when operating according to its permit, the copper smelter will not cause or contribute to a condition of air pollution or pose a health threat to the community. However, the existing set of research on pollution and air quality also suggests that potential economic growth should be balanced against quality of life concerns,⁴ where quality of life includes, among other things, air quality, health,⁵ and a vast set of other amenities that may be influenced by heavy manufacturing operations. Even if the case is assumed where no health impacts arise, quality of life amenities also include the clarity of a skyline, smell, all of which have economic value.⁶ Measuring these impacts goes well beyond the scope of this report and the analysis requested by Asarco.

Conclusions

The impacts to the El Paso region should Asarco reopen are substantial. Clearly, the employment impact of over 6 new jobs for every one job created by Asarco is in itself attractive. Add to this large increases in regional economic output and the increase in labor income and many would argue that the net benefit of Asarco in the region could only be a net benefit. However, public sentiment is likely to ask that the total economic impact gains be balanced against the amenity loss from renewed operations. In time, Asarco should be aware that a complete analysis should be conducted that weighs these costs against what are clearly strong economic impacts otherwise.

¹ The impacts reported do not incorporate any potential environmental costs arising from renewed operations.

² Leontief, Wassily. (1936). "Quantitative Input-Output Relations in the Economic System of the United States." *The Review of Economics and Statistics*. 21, 105-125.

Miller, Ronald E. and Peter Blair. (1985). *Input-Output Analysis: Foundations and Extensions*. New Jersey: Prentice Hall.

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Lindall, Scot and Doug Olson. (2000). *IMPLAN Pro Version 2.0 Analysis Guide*. Stillwater MN, MIG. pp. 169-172.

⁴ Abel, F. H. (1975), 'Balancing Environmental Quality, Energy Use, and Growth: Difficult Decisions', *American Journal of Agricultural Economics* 57(5), 815--818.

Johnson, M. H. & Bennett, J. T. (1979), 'An Input-Output Model of Regional Environmental and Economic Impacts of Nuclear Power Plants', *Land Economics* 55(2), 236--252.

Ryan, D. R. (1983), 'Transferable Discharge Permits and the Control of Stationary Source Air Pollution: Reply', *Land Economics* 59(1), 126--127.

⁵ Bates, D. V. (1995), 'The Effects of Air Pollution on Children', *Environmental Health Perspectives* 103, 49--53.

Bell, M. L.; Davis, D.; Cifuentes, L.; Cohen, A.; Gouveia, N.; Grant, L.; Green, C.; Johnson, T.; Rogat, J.; Spengler, J. & Thurston, G. (2002), 'International Expert Workshop on the Analysis of the Economic and Public Health Impacts of Air Pollution: Workshop Summary', *Environmental Health Perspectives* 110(11), 1163--1168.

⁶ Hanemann, W. M. (1994), 'Valuing the Environment Through Contingent Valuation', *The Journal of Economic Perspectives* 8(4), 19--43.

Portney, P. R. (1994), 'The Contingent Valuation Debate: Why Economists Should Care', *The Journal of Economic Perspectives* 8(4), 3--17.

Appendix

El Paso State/Local Government Non-Education Tax Impact						
	Employee Compensation	Proprietary Income	Household Expenditures	Enterprises (Corporations)	Indirect Business Taxes	Total
Dividends	-	-	-	1,202,905	-	1,202,905
Indirect Bus Tax: Motor Vehicle Lic	-	-	-	-	165,731	165,731
Indirect Bus Tax: Other Taxes	-	-	-	-	1,053,316	1,053,316
Indirect Bus Tax: Property Tax	-	-	-	-	8,579,915	8,579,915
Indirect Bus Tax: S/L NonTaxes	-	-	-	-	693,032	693,032
Indirect Bus Tax: Sales Tax	-	-	-	-	8,225,194	8,225,194
Indirect Bus Tax: Severance Tax	-	-	-	-	594,631	594,631
Personal Tax: Estate and Gift Tax	-	-	-	-	-	0
Personal Tax: Income Tax	-	-	-	-	-	0
Personal Tax: Motor Vehicle License	-	-	99,277	-	-	99,277
Personal Tax: NonTaxes (Fines- Fees	-	-	337,167	-	-	337,167
Personal Tax: Other Tax (Fish/Hunt)	-	-	23,822	-	-	23,822
Personal Tax: Property Taxes	-	-	52,701	-	-	52,701
Social Ins Tax- Employee Contribution	57,782	-	-	-	-	57,782
Social Ins Tax- Employer Contribution	191,920	-	-	-	-	191,920
Total	249,703	0	512,968	1,202,905	19,311,820	21,277,395

Economic Impact of Asarco on the Amarillo Economy

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Special Report 2007-06

April 2007

Overview

The Institute for Policy and Economic Development at the University of Texas at El Paso was contracted by Asarco to conduct an economic impact analysis of its activities limited solely to its activities in the region related to copper smelting operations.

The 250-acre Amarillo Plant began operations in 1922 as a zinc plant. In 1975, the plant began producing refined copper cathode, rod, and cake. In 2006, the plant refined 139,781 tons of copper. The Amarillo Plant also has a precious metals refinery. In 2006, Amarillo refined 2,501,012 troy ounces of silver.

The current analysis finds that if Asarco were to reopen and employ 44 individuals regional economic output would increase by \$134 million, 286 new jobs would be created, and 11 million dollars in new labor income would be generated.¹

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Despite this, Asarco's economic impact in the region is still substantial, as the 44 employees would create a total of 286 jobs regionwide--or over 6.5 additional jobs per direct Asarco job, increase regional economic output by \$176.4 million, and increase labor income in the region by over \$11.4 million. Labor income, in addition to jobs, is among the more important measures of an economic impact as it includes wages earned by individuals working for others and for themselves (sole proprietors/personal business owners).

Amarillo	Direct	Indirect	Induced	Total
Output	\$134,004,992	\$35,940,737	\$6,464,637	\$176,410,368
Employment	44	174.5	68.3	286.8
Labor Income	\$2,284,895	\$7,089,228	\$2,027,598	\$11,401,722

All values in 2004 dollars

The Texas Commission on Environmental Quality's Executive Director has concluded, according to Asarco, that when operating according to its permit, the copper smelter will not cause or contribute to a condition of air pollution or pose a health threat to the community. However, the existing set of research on pollution and air quality also suggests that potential economic growth should be balanced against quality of life concerns,⁴ where quality of life includes, among other things, air quality, health,⁵ and a vast set of other amenities that may be influenced by heavy manufacturing operations. Even if the case is assumed where no health impacts arise, quality of life amenities also include the clarity of a skyline, smell, all of which have economic value.⁶ Measuring these impacts goes well beyond the scope of this report and the analysis requested by Asarco.

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⁴ Abel, F. H. (1975), 'Balancing Environmental Quality, Energy Use, and Growth: Difficult Decisions', *American Journal of Agricultural Economics* 57(5), 815--818.

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Ryan, D. R. (1983), 'Transferable Discharge Permits and the Control of Stationary Source Air Pollution: Reply', *Land Economics* 59(1), 126--127.

⁵ Bates, D. V. (1995), 'The Effects of Air Pollution on Children', *Environmental Health Perspectives* 103, 49--53.

Bell, M. L.; Davis, D.; Cifuentes, L.; Cohen, A.; Gouveia, N.; Grant, L.; Green, C.; Johnson, T.; Rogat, J.; Spengler, J. & Thurston, G. (2002), 'International Expert Workshop on the Analysis of the Economic and Public Health Impacts of Air Pollution: Workshop Summary', *Environmental Health Perspectives* 110(11), 1163--1168.

⁶ Hanemann, W. M. (1994), 'Valuing the Environment Through Contingent Valuation', *The Journal of Economic Perspectives* 8(4), 19--43.

Portney, P. R. (1994), 'The Contingent Valuation Debate: Why Economists Should Care', *The Journal of Economic Perspectives* 8(4), 3--17.

Appendix

Amarillo State/Local Government Non-Education Tax Impact						
	Employee Compensation	Proprietary Income	Household Expenditures	Enterprises (Corporations)	Indirect Business Taxes	Total
Dividends	-	-	-	171,600	-	171,600
Indirect Bus Tax: Motor Vehicle Lic	-	-	-	-	24,075	24,075
Indirect Bus Tax: Other Taxes	-	-	-	-	153,013	153,013
Indirect Bus Tax: Property Tax	-	-	-	-	1,246,385	1,246,385
Indirect Bus Tax: S/L NonTaxes	-	-	-	-	100,675	100,675
Indirect Bus Tax: Sales Tax	-	-	-	-	1,194,856	1,194,856
Indirect Bus Tax: Severance Tax	-	-	-	-	86,381	86,381
Personal Tax: Estate and Gift Tax	-	-	-	-	-	0
Personal Tax: Income Tax	-	-	-	-	-	0
Personal Tax: Motor Vehicle License	-	-	15,728	-	-	15,728
Personal Tax: NonTaxes (Fines- Fees	-	-	53,405	-	-	53,405
Personal Tax: Other Tax (Fish/Hunt)	-	-	3,853	-	-	3,853
Personal Tax: Property Taxes	-	-	8,288	-	-	8,288
Social Ins Tax- Employee Contribution	8,997	-	-	-	-	8,997
Social Ins Tax- Employer Contribution	29,884	-	-	-	-	29,884
Total	38,881	0	81,274	171,600	2,805,385	3,097,141

Economic Impact of Asarco on the Texas Economy

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Overview

The Institute for Policy and Economic Development at the University of Texas at El Paso was contracted by Asarco to conduct an economic impact analysis of its activities in the region limited solely to its activities in the region related to copper smelting operations. If the Asarco El Paso Plant is permitted to open, it will have the capacity to increase production at the Amarillo Plant and company-wide by thirty percent. Asarco would once again become a major enterprise in both Arizona and Texas.

The current analysis finds that if Asarco were to expand operations in El Paso and Amarillo and employ 335 individuals regional economic output would increase by \$1.351 billion, 2,264 new jobs would be created, and 92.7 million dollars in new labor income would be generated.¹

What is an Impact Study Based on Input-Output Tables?

Input-output (I-O) analysis, in its simplest form, is made possible by two models—one descriptive and one predictive. Input-output tables are, simply, tabular representations of the inner workings of a given economy. The tables provide a means of tracking what one industry buys from another to produce its goods. These transactions are based on the idea of economic interdependence, that industries rely upon one another through purchases from and sales to other industries.² An auto manufacturer, for example, must purchase x units of steel to produce y engine blocks; and, the steel producer must in turn buy w units of fuel to heat the ovens that help produce x units of steel.

The extent to which industries rely upon one another is captured by the descriptive model. The tables within the descriptive model provide detailed information by industry and commodity on everything from employment and earnings (value added) to business volume (output). The predictive model comes into play when some change (typically in final demand or consumption) is applied to an economy. The "ripple effects" of one industry purchasing from another to meet the new demand are captured as "rounds" until the amounts purchased become so small that they are considered insignificant. The sum of the rounds is then added to the original change for a total economic impact.

The multipliers are also provided by the predictive model, and depending on the application, several types of regional multipliers are available. Although they differ in how data are regionalized, most impact studies dealing with a project such as this choose one of three

commercially available impact programs. These include; REMI, an acronym for Regional Economic Models, Inc; RIMS II, the Bureau of Economic Analysis' (BEA) Regional Industrial Modeling System, version two; and, IMPLAN, produced by the Minnesota IMPLAN Group (MIG). While any of the three could have been used for this study, IMPLAN was selected because its multipliers more accurately depict local economies than RIMS II (and are generally more conservative)³ due to a more efficient regionalization process.

How to Interpret an Impact Study

The impact of any change in final demand to an economy of interest is divided into three components by IMPLAN. These are termed direct, indirect, and induced effects. Direct effects refer to the initial and more observable change in final demand; a one million dollar construction project entered into the appropriate I-O industry would show a direct impact of one million dollars. The indirect effect can be best thought of as the ripple effect of increased production by businesses that supply goods to the construction project. Induced effects are household effects, which generally mean that due to the initial shock households will have more (or less) income to spend on things like eating out or medical care.

In addition to changes in output/final demand, tabular impacts are also available for employment and labor income. Employment impacts are the total number of jobs created, while labor income includes employee compensation and proprietors' income. Property and sales taxes can also be measured and these results are provided in the Appendix.

It should also be noted that all impact estimates are in 2004 dollars and are deflated from the current year or the year of the expected impact if different from the model year. Detailed industry tables for each of the impacts, including detailed tax impacts, can be obtained from Asarco representatives.

Findings

Data for this economic impact analysis were obtained from Asarco and were based on projected expenses associated with a startup plan. Information in the startup plan included detailed expenditures for wages, labor representation, fringe benefits, fuel, utilities, and a variety of technical services necessary for ongoing operation. In impact analysis, however, many of the necessary inputs are captured by the model. As such, the anticipated 335 employees with an adjusted average wage matched to Asarco's planned spending were the only direct input to the model.

Despite this, Asarco's economic impact in the region is still substantial, as the 335 employees would create a total of 2,264 jobs regionwide--or over 6.75 additional jobs per direct Asarco job, increase regional economic output by \$1.351 billion, and increase labor income in the region by over \$92.7 million. Labor income, in addition to jobs, is among the more important measures of an economic impact as it includes wages earned by individuals working for others and for themselves (sole proprietors/personal business owners).

Texas	Direct	Indirect	Induced	Total
Output	\$1,029,291,840	\$266,861,962	\$55,768,690	\$1,351,922,487
Employment	335	1,347.70	581.3	2,264.00
Labor Income	\$22,830,446	\$53,115,472	\$16,771,040	\$92,716,960
All values in 2004 dollars				

The Texas Commission on Environmental Quality's Executive Director has concluded, according to Asarco, that when operating according to its permit, the copper smelter will not cause or contribute to a condition of air pollution or pose a health threat to the community. However, the existing set of research on pollution and air quality also suggests that potential economic growth should be balanced against quality of life concerns,⁴ where quality of life includes, among other things, air quality, health,⁵ and a vast set of other amenities that may be influenced by heavy manufacturing operations. Even if the case is assumed where no health impacts arise, quality of life amenities also include the clarity of a skyline, smell, all of which have economic value.⁶ Measuring these impacts goes well beyond the scope of this report and the analysis requested by Asarco.

Conclusions

The impacts to Texas should Asarco expand operations are substantial. Clearly, the employment impact of over 6 new jobs for every one job created by Asarco is in itself attractive. Add to this large increases in regional economic output and the increase in labor income and many would argue that the net benefit of Asarco in the region could only be a net benefit. However, public sentiment is likely to ask that the total economic impact gains be balanced against the amenity loss from renewed operations. In time, Asarco should be aware that a complete analysis should be conducted that weighs these costs against what are clearly strong economic impacts otherwise.

¹ The impacts reported do not incorporate any potential environmental costs arising from renewed operations.

² Leontief, Wassily. (1936). "Quantitative Input-Output Relations in the Economic System of the United States." *The Review of Economics and Statistics*. 21, 105-125.

Miller, Ronald E. and Peter Blair. (1985). *Input-Output Analysis: Foundations and Extensions*. New Jersey: Prentice Hall.

Miernyk, William. (1965). *The Elements of Input-Output Analysis*. New York: Random House.

³ Rickman, Dan S. and Keith Schwer. (1995). "A comparison of the multipliers of IMPLAN, REMI, and RIMS II: Benchmarking ready-made models for comparison." *The Annals of Regional Science*. 29, 363-374.

Lindall, Scot and Doug Olson. (2000). *IMPLAN Pro Version 2.0 Analysis Guide*. Stillwater MN, MiG. pp. 169-172.

⁴ Abel, F. H. (1975), 'Balancing Environmental Quality, Energy Use, and Growth: Difficult Decisions', *American Journal of Agricultural Economics* 57(5), 815--818.

Johnson, M. H. & Bennett, J. T. (1979), 'An Input-Output Model of Regional Environmental and Economic Impacts of Nuclear Power Plants', *Land Economics* 55(2), 236--252.

Ryan, D. R. (1983), 'Transferable Discharge Permits and the Control of Stationary Source Air Pollution: Reply', *Land Economics* 59(1), 126--127.

⁵ Bates, D. V. (1995), 'The Effects of Air Pollution on Children', *Environmental Health Perspectives* 103, 49--53.

Bell, M. L.; Davis, D.; Cifuentes, L.; Cohen, A.; Gouveia, N.; Grant, L.; Green, C.; Johnson, T.; Rogat, J.; Spengler, J. & Thurston, G. (2002), 'International Expert Workshop on the Analysis of the Economic and Public Health Impacts of Air Pollution: Workshop Summary', *Environmental Health Perspectives* 110(11), 1163--1168.

⁶ Hanemann, W. M. (1994), 'Valuing the Environment Through Contingent Valuation', *The Journal of Economic Perspectives* 8(4), 19--43.

Portney, P. R. (1994), 'The Contingent Valuation Debate: Why Economists Should Care', *The Journal of Economic Perspectives* 8(4), 3--17.

Appendix

Texas State/Local Government Non-Education Tax Impact						
	Employee Compensation	Proprietary Income	Household Expenditures	Enterprises (Corporations)	Indirect Business Taxes	Total
Dividends	-	-	-	1,335,511	-	1,335,511
Indirect Bus Tax: Motor Vehicle Lic	-	-	-	-	184,796	184,796
Indirect Bus Tax: Other Taxes	-	-	-	-	1,174,483	1,174,483
Indirect Bus Tax: Property Tax	-	-	-	-	9,566,889	9,566,889
Indirect Bus Tax: S/L NonTaxes	-	-	-	-	772,754	772,754
Indirect Bus Tax: Sales Tax	-	-	-	-	9,171,364	9,171,364
Indirect Bus Tax: Severance Tax	-	-	-	-	663,033	663,033
Personal Tax: Estate and Gift Tax	-	-	-	-	-	0
Personal Tax: Income Tax	-	-	-	-	-	0
Personal Tax: Motor Vehicle License	-	-	125,752	-	-	125,752
Personal Tax: NonTaxes (Fines- Fees	-	-	427,037	-	-	427,037
Personal Tax: Other Tax (Fish/Hunt)	-	-	30,357	-	-	30,357
Personal Tax: Property Taxes	-	-	66,621	-	-	66,621
Social Ins Tax- Employee Contribution	78,503	-	-	-	-	78,503
Social Ins Tax- Employer Contribution	260,741	-	-	-	-	260,741
Total	339,243	0	649,767	1,335,511	21,533,319	23,857,840