

Excerpt 7

Environmental Justice Evaluation, October
2011, AR I.A.10.b



Infrastructure Water Environment Buildings

ENVIRONMENTAL PROTECTION
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EnergyAnswers
International
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Energy Answers Arcibo, LLC

**Environmental Justice
Evaluation**

October 2011



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The revised soil, surface water, and sediment concentrations used in the SLERA are presented in Tables B.5 to B.7 in Appendix B. The estimated concentrations of COPCs associated with particulates and HF in each exposure medium are less than ecological screening benchmarks. Therefore, adverse health effects in ecological receptors from exposure to facility emissions are not expected.

4.3.2.2. Ambient Air Quality Analysis for Lead

In addition to the risk analysis described above, Energy Answers evaluated potential air quality impacts of lead from the proposed AREP for reference in consideration of the new 2008 NAAQS for lead. Although the potential emission rate of lead from the proposed AREP are below the Significant Emission Rate that triggers a PSD review and the requirement to provide an ambient air quality impact analysis, Energy Answers modeled potential lead emissions using AERMOD and the methodology presented in the revised modeling protocol (approved by EPA on July 5, 2011). Since the new lead standard is in the form of a 3-month rolling average, the AERMOD model results for lead were subsequently processed using the LEADPOST (Version 11096) program to report the maximum 3 month rolling average. Energy Answers conducted additional modeling results for lead to give an indication of how insignificant the potential is for affecting ambient air quality. Results indicate that the potential ambient air quality impacts of lead from the proposed AREP are shown to be well below the NAAQS. The revised modeling report submitted on July 18, 2011 includes further details on the impacts of lead.

Recognizing that there was a lead battery recycling operation in the vicinity of the proposed site, additional considerations were taken. Air emissions modeling was conducted for the proposed AREP lead emissions, which were not specifically required by regulation, as the facility's emissions are well below the Significant Impact Level (SIL). The modeling results showed the potential maximum emissions concentrations generated by the facility at the Project Site boundary was over **two hundred times lower than the NAAQS for lead**. Within the Barrio of Cambalache and within a few hundred yards of the battery recycling facility, the predicted concentrations of lead were nearly **3,000 times lower than the NAAQS**.

Energy Answers is also engaged in extensive community outreach efforts. These efforts are described below.

4.3.3. Additional Analysis for Tanama Barrio

The original HHRA submitted with the EIS (CSA 2010) concluded that emissions from the proposed facility are not likely to pose a concern for human health. Additional work was completed to evaluate receptors in barrios surrounding Cambalache identified as



Appendix A

Environmental Justice Study





Environmental Justice Study

*Resource Recovery and
Energy Production Plant
in Arecibo*

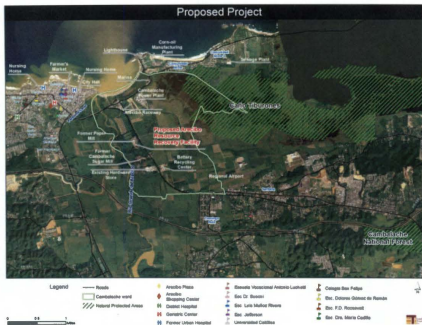
HIGHLIGHTS

The following are highlights of the study:

- The target community of the study is Cambalache, the ward with the smallest population in the Municipality of Arecibo.
- According to the 2000 Census, the Cambalache Ward had 64 residents, seven residents per square kilometer. The neighboring wards of Pueblo and Hato Abajo had the highest population densities in the municipality.
- The median age in Cambalache was 43.5, the highest among the areas studied.
- The majority of the population was found to be between the ages of 18 and 64; the proportion of those above 65 was among the highest, while the proportion of the population below the age of 17 was the lowest.
- The 2000 Census showed that Cambalache had the highest proportion of those above the age of 25 that had no academic preparation; but at the same time, Cambalache also had the highest proportion of those with some post-secondary degree.
- One in four over the age of 25 in Cambalache (26.19%) had not completed any academic degree.
- Income per capita in Cambalache was \$28,726, significantly higher than in other areas analyzed.
- Household median income in Cambalache was \$67,679, much higher than that reported for the Municipality of Arecibo, the Region, and Puerto Rico.
- Males in Cambalache work in agriculture, fishing, and related activities, while females work mostly in educational services.
- In Cambalache, no households were reported below the poverty line or receiving welfare assistance or social security payments.
- The population is Puerto Rican and 96.9% of it is white, 1.6% black or Afro-American, and 1.6% other.
- All thirteen members of the labor force were employed.
- Practically all housing in Cambalache is occupied: 70% is valued between \$100,000 and \$199,999, and the other 30% is valued between \$10,000 and \$49,999.

In conclusion, the Cambalache community is in a more favorable economic condition than the other wards in Arecibo, the Region, and Puerto Rico. However, it is necessary to carry out participation initiatives in order for the community to know about and understand the project, and be incorporated in the process from its early stages.

Map 1. Proposed Project



Geographic Limits of the Community of Concern

The EPA recommends that the first step be the identification of the community of concern and the definition of its geographic limits. The community of concern is that community which will be the object of the study because it can be impacted by a particular project.

EPA guidelines permit using various criteria for defining the community of concern, including population, geographic factors, and others. In this case, the ward definitions used in the 2000 Census were used.

The Cambalache Ward was selected because it is where the project will be located (see Map 2). The boundaries of the ward are:

- North: Atlantic Ocean and Islote Ward
- South: Domingo Ruiz Ward
- East: Santana and Islote wards
- West: Pueblo and Tanamá wards

In addition, ten of Arecibo's nineteen wards had median household incomes below the average median income of the Region (\$11,978): Pueblo, Islote, Carreras, Arrozal, Garrochales, Río Arriba, Esperanza, Domingo Ruiz, Hato Viejo, and Miraflores.

HOUSEHOLDS BELOW THE POVERTY LEVEL

As of Census 2000 data, no households fell below the poverty level in Cambalache. Arrozal has the highest proportion of households with incomes below the poverty level in Arecibo (73%). Other wards such as Carreras (69%), Miraflores (65%), Pueblo (63%), and Esperanza (60%), had a significant portion of households with incomes below the poverty level.

Table 7. Households with Incomes below Poverty Level

Households with Incomes Below Poverty Level in 1999			
Area	Total Households	Below Poverty Level	
Wards			
Arecibo-Pueblo	10,401	6,576	63%
Arenalejos	2,997	1,364	46%
Arrozal	1,132	824	73%
Cambalache	53	0	0%
Carreras	1,324	916	69%
Domingo Ruiz	3,380	1,846	55%
Dominguito	4,987	2,239	45%
Esperanza	2,118	1,280	60%
Factor	6,786	2,828	42%
Garrochales	2,386	1,182	49%
Hato Abejo	22,727	9,718	43%
Hato Arriba	7,858	3,439	44%
Hato Viejo	2,062	1,242	59%
Islote	5,925	3,455	58%
Miraflores	4,734	3,078	65%
Río Arriba	1,053	606	58%
Sabana Hoyos	10,433	5,580	53%
Santana	4,919	2,052	42%
Tanamá	3,501	2,011	57%
Arecibo	98,808	50,256	51%
Region	313,391	169,582	54%
Puerto Rico	3,769,782	1,818,667	48%

Source: U.S. Census Bureau, Population Census 2000 (Summary File 3 (SF 3) - Sample Data)