

**DELAWDER COMMUNICATIONS, INC.**

P.O. Box 1095  
Ashburn, Virginia 20146-1095  
(703) 299-9222

**ENGINEERING REPORT**

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**WOYE(FM): Fajardo, PR FM Booster**

**ENGINEERING STATEMENT**

On behalf of Jose J. Arzuaga ("Applicant"), this Engineering Statement supports a new co-channel FM Booster station to WOYE(FM), Rio Grande, PR, to serve Fajardo, PR. The proposed booster will operate on channel 247 with an ERP of 250 watts using an omnidirectional antenna<sup>1</sup>.

Rule Waiver Request

As demonstrated by Figure 1, attached, the 60 dBu F50,50 service contour of the proposed booster extends beyond the 60 dBu F50,50 service contour of WOYE(FM); however, as discussed in detail below, most of the extension area is in water with the exception of very small unpopulated islands off of the eastern coast of Puerto Rico. Figure 2, attached, is a magnification of Figure 1 that shows two small islands—Piñeros Island and Palominos Island—that are located outside of the WOYE(FM) 60 dBu service contour and within the booster station's predicted 60 dBu service contour. (There is also a very tiny unpopulated island located above Palominos Island that is within the extension area.)

Figure 3, attached, is an aerial photo of Piñeros Island. This island is uninhabited and is without any roads or power. It is believed to be a bird sanctuary. Figure 3 demonstrates a complete absence of development and the remote and rugged nature of the island.

Figure 4, attached, is an aerial photo of Palominos Island. This island is only used for water sports activities of a privately-held resort. The resort housing is not located on the island—there is no known housing on Palominos Island. It is believed to not contain any Post Office or medical facility. Based on year-2000 Census Bureau data, there are no known permanent residences located on Palominos Island.

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<sup>1</sup> A previous application for 1 kW ERP omnidirectional service (FCC File No. BNPFTB-20080304ABX) was dismissed by the FCC on March 27, 2009, when the Commission determined that the Applicant's waiver request to justify contour extension was insufficient. This application provides less contour extension and includes a more detailed waiver request as support for the extension.

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If deemed necessary by the FCC, the applicant respectfully requests a rule waiver of 47 CFR Sections 74.1201(g) and 74.1232(f) (and any other rule section deemed necessary by the FCC) to permit the proposed 60 dBu service contour extension beyond the WOYE(FM) 60 dBu service contour. The public interest will be served by the grant of this booster (allowing service to points in the eastern coastal areas of Puerto Rico that are now poorly served by the WOYE(FM) main station facility due to terrain obstructions) without causing predicted interference to any other FM station.

The Commission assesses waiver requests according to the standards set forth in *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969). See also, *2002 Biennial Regulatory Review*, 18 FCC Rcd 13620 at para. 85 n. 130 (2002) (citing *WAIT Radio* as “setting out criteria for waivers of Commission Rules”). Waiver is appropriate under WAIT where the applicant furthers the public interest. In this case, a booster is being proposed that will serve the eastern coastal areas of the main island of Puerto Rico that are unserviceable by the main WOYE(FM) station due to terrain obstruction caused by the rugged nature of the terrain of Puerto Rico. The larger communities that will be served by the booster include Fajardo, Luquillo and Playa de Humacao, all of which are located in the eastern coastal areas of Puerto Rico and are now poorly served by WOYE(FM). Figure 5, attached, is a shadow map (with 10-meter AGL receive antenna heights) from WOYE(FM) showing complete shadowing to most of the area that’s being served by the booster including Fajardo, Luquillo and Playa de Humacao.

There are 130,185 persons located within the proposed booster station’s 60 dBu service contour. (Note: All population data of this report are based on year 2000 Census data.) In order to remove the extension overlap with both Palominos and Piñeros Islands, the maximum ERP would need to be reduced to 5 watts, and the population within the booster 60 dBu service contour would be reduced to only 61,503 persons (with service no longer provided to Luquillo and Playa de Humacao).

The nearest land mass to the east of WOYE(FM)’s transmitter site that is

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United States property and is located more than the co-channel or first-adjacent-channel distance away (115 and 72 kilometers separation requirement, respectively, between class A stations) is on the US Virgin Islands. The US Virgin Islands is located more than 95 miles to the south-southeast of the proposed booster site. Therefore, the booster's worst-case 34 dBu F50,10 interference contour does not overlap with any land mass that can be served by another FM station on the co-channel or first-adjacent channel to WOYE(FM). Furthermore, the 100 dBu F50,10 interference contour from the booster is less than 1 km distance in all directions and does not encompass any population. Therefore, no second or third adjacent-channel interference can result from the proposed booster.

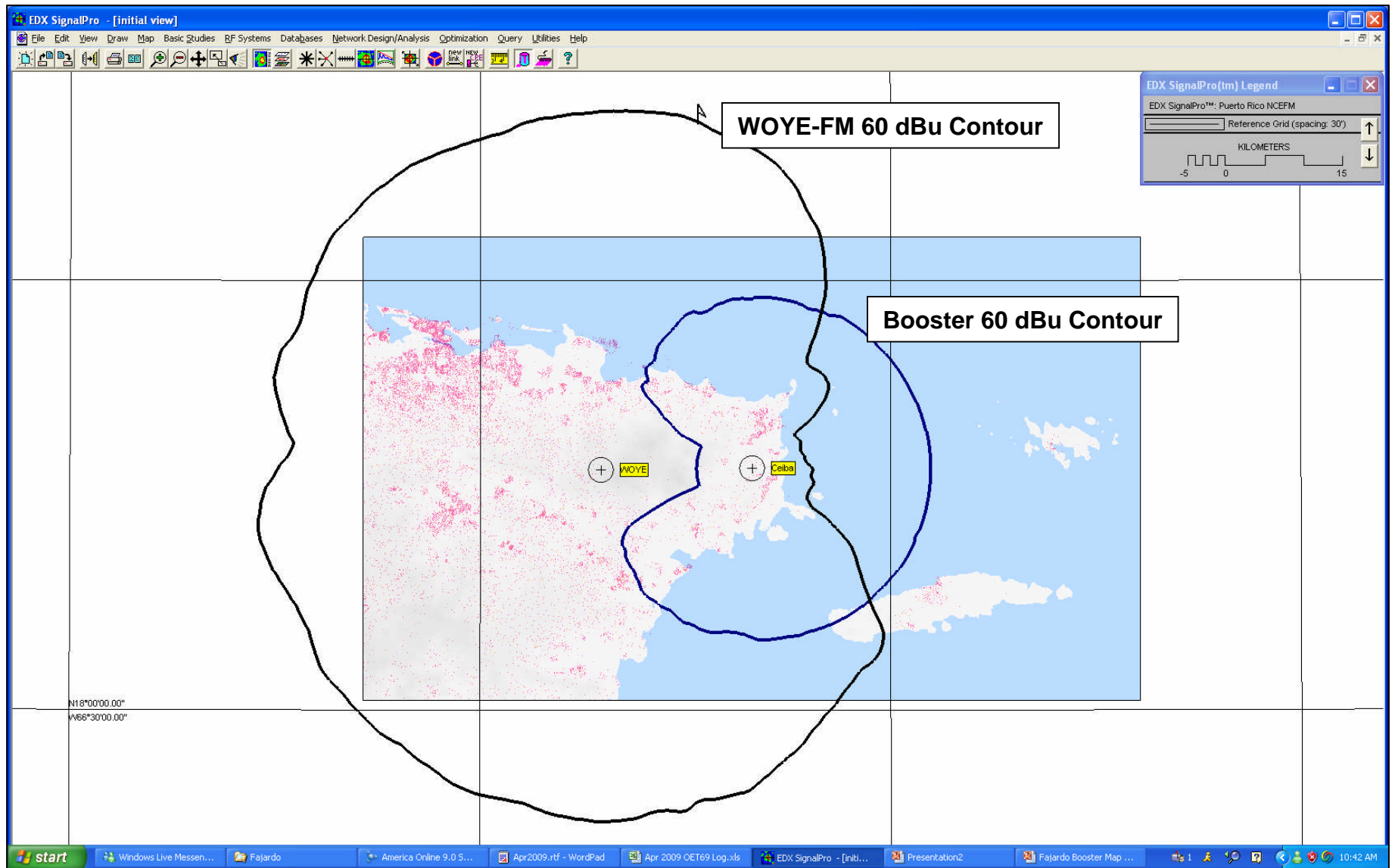
Finally (with regards to the waiver request), the FCC has recently granted at least two similar waiver requests filed for BMPFTB-20070620ADV and BPFTB-20060726APT where the proposed booster contour service extended beyond the main station's service contour onto a remotely-populated island. Both applications claimed extension onto Santa Cruz Island (off the coast of California) to a de minimis population.

Obviously, as discussed above, the public will benefit greatly from the grant of this application without unduly harming any existing FM service or restricting any future FM service.

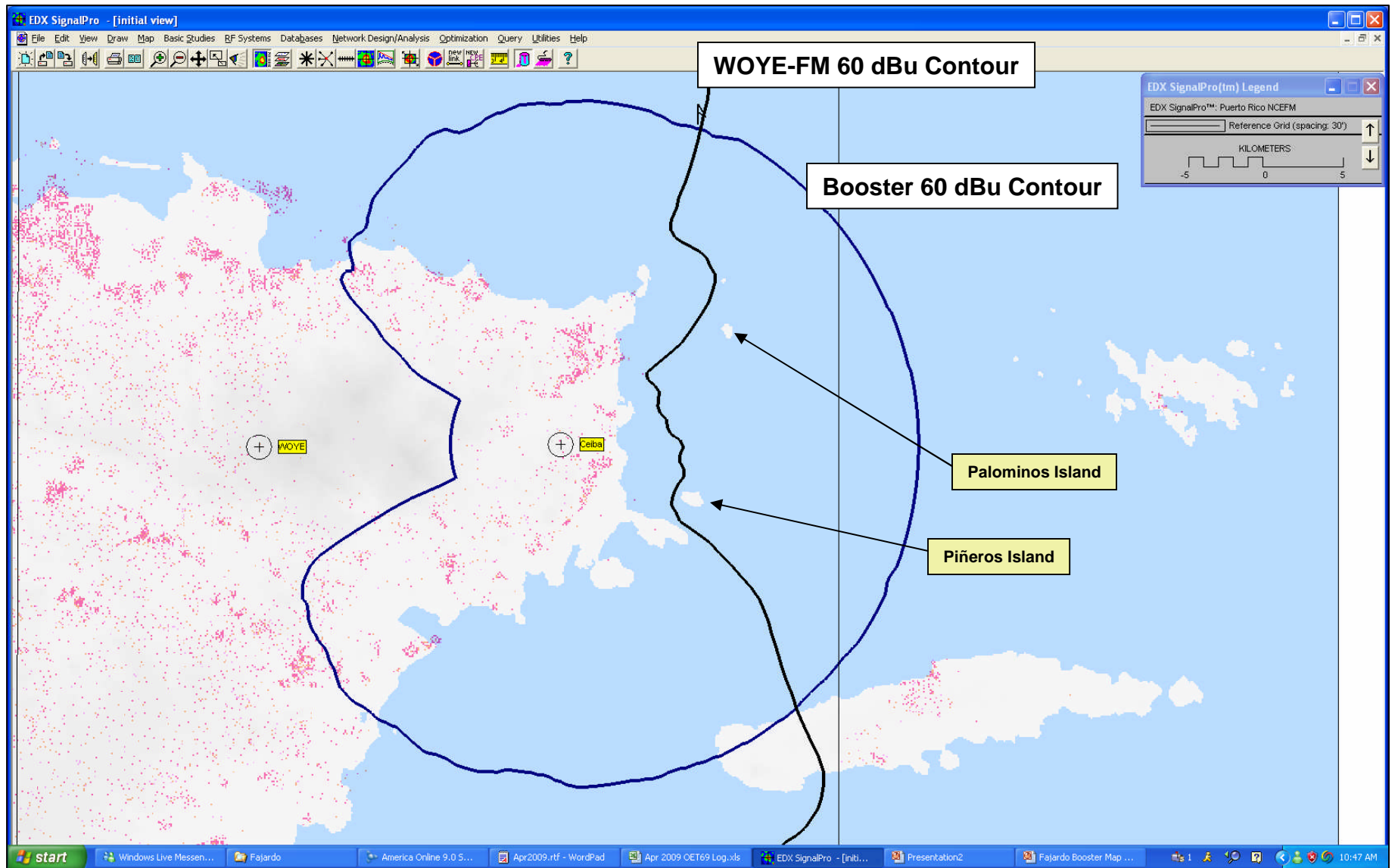
Section 73.1030 Notification

Figure 6, attached, is a copy of the e-mail that was sent to the Arecibo Observatory in accordance with 47 CFR Section 73.1030.

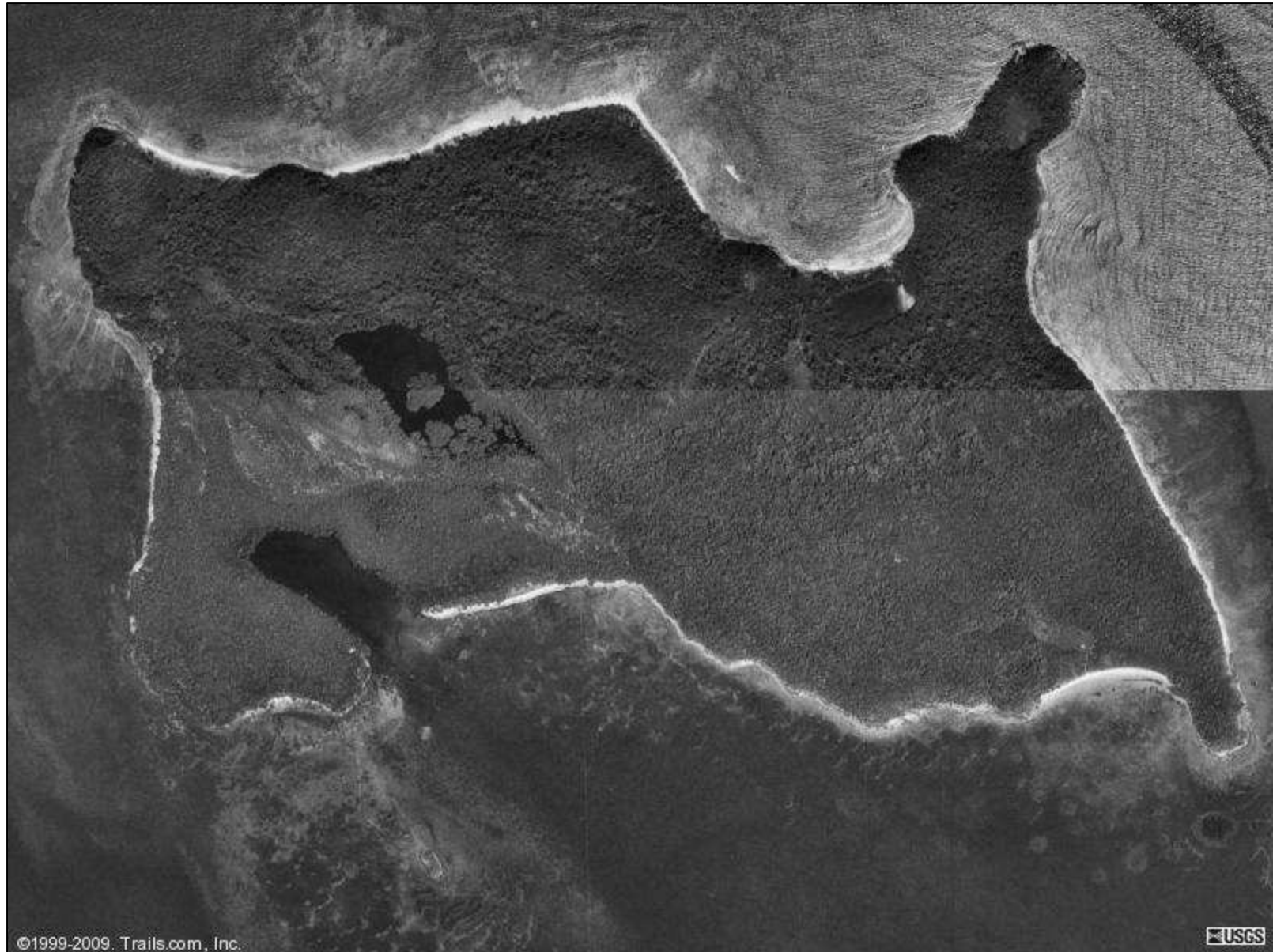
**FIGURE 1– FAJARDO BOOSTER FOR WOYE(FM)**



**FIGURE 2– FAJARDO BOOSTER FOR WOYE(FM) (MAGNIFIED)**

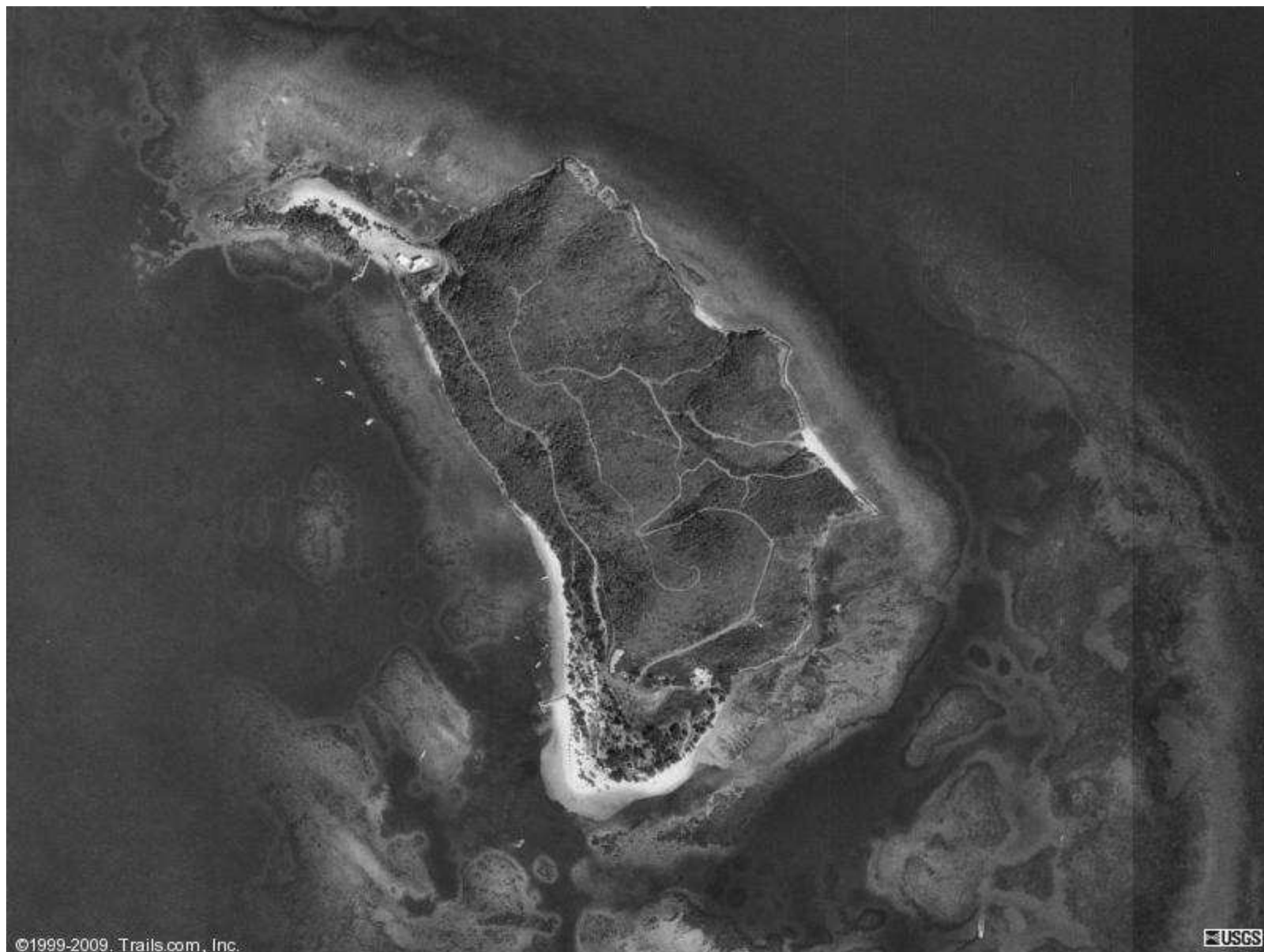


**FIGURE 3: MAP OF PIÑEROS ISLAND**

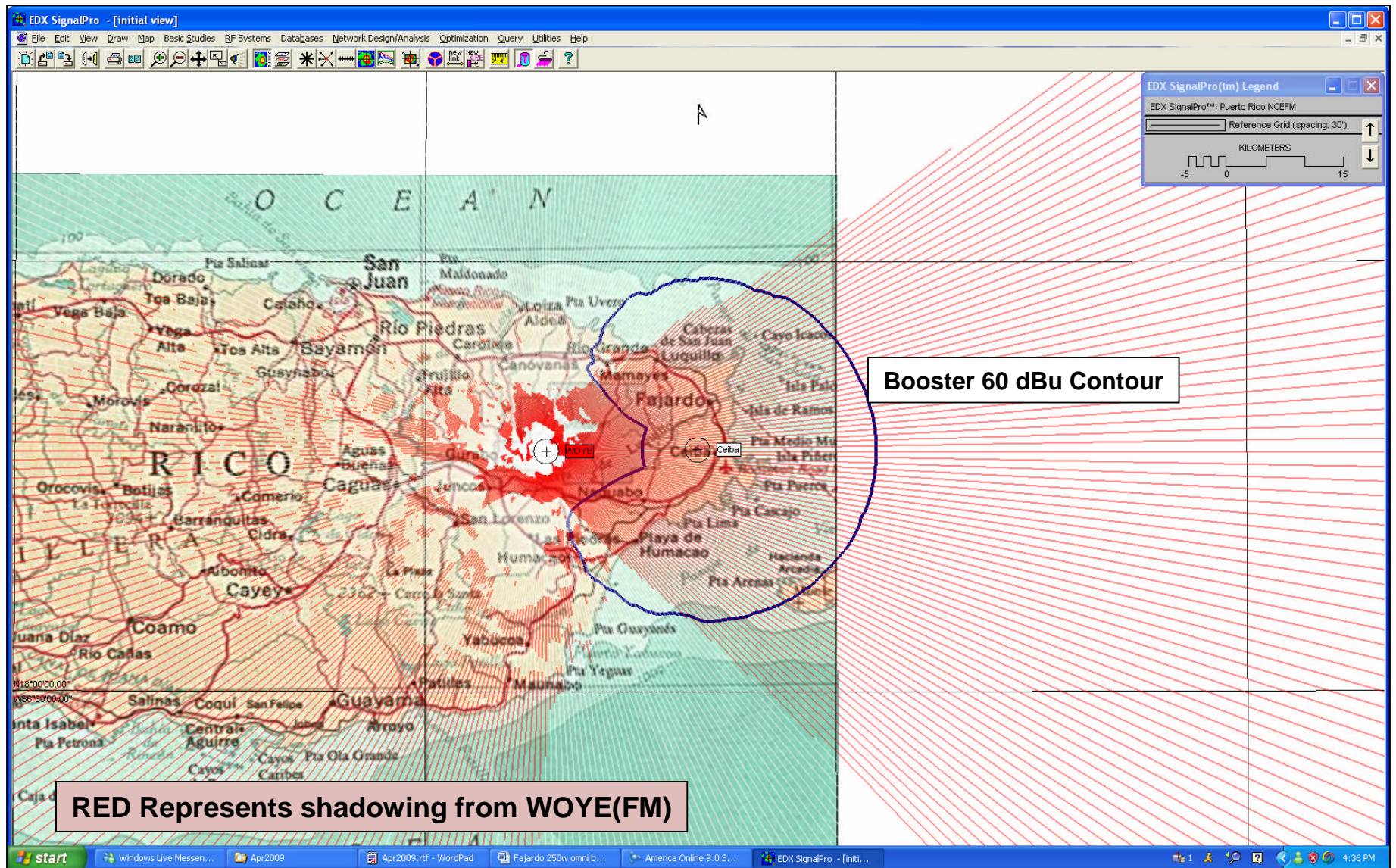




**FIGURE 4: MAP OF PALOMINOS ISLAND**



# FIGURE 5– SHADOW MAP FOR FAJARDO BOOSTER





## **FIGURE 6: E-mail Notification to Arecibo Observatory**

Subj:	<b>Arecibo Observatory Notification: New FM Booster for WOYE</b>
Date:	5/8/2009 11:28:08 A.M. Eastern Daylight Time
From:	<a href="#">DELAWDER</a>
To:	<a href="mailto:prcz@naic.edu">prcz@naic.edu</a>

May 8, 2009

Interference Office  
Arecibo Observatory  
HC3 Box 53995  
Arecibo, Puerto Rico 00612

Dear Sir/Madam:

On behalf of our client, Jose J. Arzuaga, applicant for a new **FM booster station at Fajardo, Puerto Rico (for WOYE and using FM channel 247)**, in accordance with Section 73.1030 of the FCC Rules, we hereby notify you of the following proposed new facilities:

NAD 83 Coordinates: N18-16-45; W65-40-08 (d,m,s rounded to nearest second)

Antenna Height Above Ground: 30 meters AGL

Ground Elevation at Antenna Site: 283 meters AMSL

Antenna Directivity: None (omnidirectional)

Antenna Gain: 0 dB front-to-back (actual antenna gain to be determined)

Proposed Frequency: 97.3 MHz (FM channel 247)

FCC Rule Part: 73.200s and 74.1200s

Type of emission: F3E

Effective Radiated Power: 0.250 kW maximum (vertical polarization only)

{End of facility parameter list}

This notification is being made by e-mail to [prcz@naic.edu](mailto:prcz@naic.edu) as permitted under Section 74.1030(a)(2).

Please review this proposal and let me know if anything further is required. It would be greatly appreciated if you would also let me know of your findings.

Thank You.

Very Truly Yours,

Darryl DeLawder, President  
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