9434 Viscount Boulevard, Suite #200
El Paso, Texas 79925-7053

U.S. Customs and Border Protection

DATE: April 17 2009
FILE: EP-2009-XXXX: CMM

Interoffice Memorandum

TO: ACPA Ronald LeBlanc
El Paso, TX

SBPA Eduardo L. Calanche
Fabens, TX

FROM: Assistant Chief Counsel
El Paso, TX

SUBJECT: ECO Systems Fuel Enhancer evaluation

Our office has completed its evaluation of Border Patrol Headquarters' proposal that El Paso Sector adopt the use of a limited number of ECO Systems Fuel Enhancer devices in a temporary "trial run" capacity to determine their efficacy and assess the device for possible eventual broader distribution to the entire Border Patrol fleet. For the reasons outlined in detail below, we strongly recommend going forward with the proposal.

I. INTRODUCTION

A. Decision-Making Framework

Ultimately, the question presented here is simply whether, weighing their respective probabilities of occurrence, the potential benefits of pursuing this project outweigh the potential costs. "Costs", of course, encompasses everything from actual known and planned monetary disbursements to the risk of both warranty-covered and non-warranty-covered vehicle damage, liability exposure, negative public relations fallout, political risk, appearance of impropriety, etc. The proper analysis for reaching a decision on this issue can be best illustrated as a series of

questions, with each successive inquiry requiring an affirmative answer. If any question results in a negative answer, the proposal offered by Headquarters should logically be rejected:

1) Is there sufficient evidence indicating that the ECO Systems Fuel Enhancer ("ECO"), in fact, *works*? That is, does it actually reduce regulated vehicle emissions and improve fuel economy?

2) If so, does it work *well enough* to justify its expense?

3) Is it the best-performing device of its kind for the money?

4) Have all other potential ancillary issues—legal and otherwise—been resolved to the Agency's satisfaction?

This memorandum responds to each of these questions in turn, explaining why the answer is consistently 'yes', and why it is in the Office of Border Patrol's interest to seriously pursue this project.

B. Background

Dozens of vehicle aftermarket devices, modifications, and fuel additives have been touted over the past several decades as capable of significantly improving gas mileage and reducing pollutant emissions. The vast majority of these devices have been proven to be utterly worthless. Some of their inventors have even served jail time for repeated violations of consumer protection laws. Evening news and investigative journalism programs regularly run segments debunking such claims, often testing these devices themselves. Discovery Channel's popular show *Mythbusters* devoted an entire episode to such devices, finding that each one tested failed to produce any noticeable effect. Some even end up increasing emissions.

Still, these products find a market. Given the frequency with which this topic appears in the media, the general public is obviously fascinated with idea concept of a "Gas Mileage Holy Grail." People want to believe. But time and again, it seems that every device touting these claims fails to deliver. Accordingly, our office approached this issue with more than a hefty dose of skepticism.

The ECO is a device produced by Emissions Technology of Texas, LLC ("ETT" or "Company"), a company based in Floresville, Texas. The product is marketed and distributed by over a dozen business entities throughout the country, but mostly in Texas. ETT was incorporated as a business on August 3rd, 2000, and the ECO was first produced in 1991. An improved version of the ECO was recently released, the patent for which will be good for twenty-one years hence. ETT claims that the ECO will improve fuel economy an average of 10% and will significantly reduce regulated emissions.

As a Federal agency, an effort to find alternatives to provide an environmentally clean energy application that reduces reliance on foreign energy sources while simultaneously saving taxpayer money would certainly be well received in the public relations arena. Just because the overwhelming majority of these devices are scams perpetrated by snake-oil salesmen does not necessarily mean that *every* device that claims to improve fuel economy and reduce pollutant emissions is rubbish. As mentioned above, then, our first step should be to determine whether the ECO, in fact, does what ETT says it does.

II. DOES IT WORK?

An inherent problem with vehicle aftermarket devices that purport to both improve fuel economy and reduce pollutant emissions is that a definitive conclusion as to whether they "work" is rare. It's rather like asking whether a particular vitamin supplement reduces one's risk of cancer. Typically, the potential customer is left to examine the available evidence, separate facts from hype, and then come to his own decision.

Theoretically, the device works as follows: as fuel passes through the device, it is agitated. This creates a reaction that breaks up the hydrocarbon bonds in the fuel and increases its Reid Vapor Pressure while increasing the vaporization of the fuel by the injectors. This vaporization causes the fuel to combust more completely, resulting in a more uniform and even burn. Burning

the fuel more completely reduces emissions of HC and CO, while burning the fuel more evenly reduces the NOx emissions. By causing the fuel to burn more completely, there are less evaporative emissions; more power is derived from the fuel, which causes an increase in performance, and fuel economy is realized as less fuel is needed to do the same job.

Evidence regarding the ECO's efficacy falls into two categories: controlled studies and anecdotal reports. Both are available in SBPA Calanche's report, as well as on the Company's website—and both come down solidly in favor of finding that the device is, in fact, effective.

A. Controlled Studies

Included on the Company's website page devoted to "Research and Tests" (http://www.etieco.com/testresults.htm) are over a dozen links to research studies and experiments conducted on the ECO that purportedly demonstrate its efficacy. Some of these provide support for the Company's contention that fuel economy is improved. Others substantiate the Company's advertisement that the ECO reduces regulated emissions. Still others back up both claims.

The studies go back several decades, indicating that research and development on this product has been an ongoing process for some time. The challenge here is, of course, determining which of these were carried out by independent, unbiased organizations, under controlled environments, and with all other variables kept constant such that their results could be relied upon in and of themselves. I spoke with two Company representatives, Ben Talamontez and Jules Bennett for several hours on April 10th, 2009. Mr. Talamontez is the manufacturer and patent holder's representative, and is in charge of distribution and marketing of the ECO. Mr. Bennett is the President of ECO Marketing, a local distributor based out of El Paso, Texas. Both men assured me that no testing center was compensated beyond the fees required to conduct the tests and, further, that no study has been conducted whose results are not available on the website.

In all modesty, given that I possess a fairly strong background in science in addition to an exceptionally solid education in statistics and methodology in conducting such experiments, I consider myself uniquely qualified to evaluate the reliability of these studies. I found the following two particularly persuasive:

1) Wallace Environmental Testing Laboratories, Inc. (an EPA-approved facility using the EPA-approved test, 2004): http://www.etieco.com/content-files/WETLFinal.pdf

2) Texas Council on Environmental Technology (a state governmental entity that awarded a research grant to Emissions Technology of Texas, LLC to conduct testing on the ECO, 2005): http://www.etieco.com/content-files/FinalReport.pdf

Both studies conclusively demonstrated that the ECO does, in fact, improve fuel economy while simultaneously reducing regulated emissions.

B. Anecdotal Evidence

Myriad glowing testimonials from reliable sources abound for the ECO. Most are available at http://www.etieco.com/testresults.htm, http://www.etieco.com/product-reviews.htm, and http://www.etieco.com/install-mechanics.htm. Since their words carry more import than do mine, I encourage you to review what I consider to be the four best—and most reliable—field reports of the device:

1) Mark S. Macias, Equipment Maintenance Foreman, El Paso County Road & Bridge Dep't (installed the device on five government-owned vehicles at the County's direction in late 2007): http://www.etieco.com/content-files/elpasocountytestimonial2.pdf (I'm also informed by Mr. Bennett that the El Paso County Sheriff's Office recently purchased six units for its fleet and has thus far been quite satisfied.)

2) Stephen Sopko, frmr. Shuttle Program Quality Division Chief, NASA (installed the device on his POV at a NASA coworker's suggestion in early 2008): http://www.etieco.com/content-files/Sopko%20letter.pdf

3) Johnny Bernal, Logistics Management Specialist, NASA/JSC/White Sands Test Facility (installed ECOs in two Federal GOVs with approval from GSA; looking to purchase additional ECOs as budget allows): http://www.etieco.com/content-files/White-Sands-Test-Facility-saving-fuel.pdf; see also his personal e-mail to SBPA Eduardo L. Calanche, March 11, 2009 at pp. 60-61 in Agent Calanche's Assessment.

4) *Five* different news reports on the device, *all* very favorable—four are available on the Company's site at http://www.etieco.com/news.htm; the fifth was from our own Ken Molistina of El Paso's ABC affiliate, KVIA, available on the DVD included with SBPA Calanche's Assessment. See also Las Vegas NBC affiliate KVBC's hard copy report on the ECO at http://www.etieco.com/content-files/KVBC-internet-article.pdf. Given that news organizations and investigative journalists typically set out to disprove such companies' claims, the fact that each and every one found otherwise is telling.

The fact that the ECO is currently being used by dozens of police departments, county and city governments, trucking companies, car mechanics (testimonials at http://www.etieco.com/install-mechanics.htm), car dealerships, and school districts (on their busses) suggests either that there's a *lot* of very gullible people out there, or that the ECO does, in fact, work. For what it's worth, both Mssrs. Talamantez and Bennett gave me their word that no person or organization has been compensated in any manner for their endorsement of the device.

III. How Well Does it Work?

Considering all the evidence as a whole, it is my learned opinion that the ECO does, in fact, work, and that it works quite well—more than well enough to justify its expense. In fact, so

confident am I in my analysis that I am presently considering purchasing one for my own POV. Specifically, I predict that, in addition to very significant emissions reductions, a minimum 3 mpg improvement in fuel economy will be seen across the board should OBP ultimately decide to adopt the ECO's use (nearly all of the anecdotal reports cite improvements in this range). Additionally, given the numerous reports of improved vehicle performance, I predict operators of the GOVs will report on the perceived improvement in torque, response time, and acceleration.

IV. Is it the Best-Performing Device of its Kind for the Money?

Simply put, after extensive research, I have been unable to identify a similar device that has anywhere near as much widespread adoption as well as evidence suggesting its efficacy as I have the ECO. Furthermore, given GSA's approval of the ECO for NASA's use, I do not expect there would be any significant obstacles to procurement.

V. Ancillary Issues of Potential Concern

The three biggest issues that have raised concerns thus far are 1) the possible appearance of impropriety given Rep. Reyes's solicitation, 2) possible warranty voidance after installation, and 3) the fact that ETT has not submitted the ECO to the EPA for testing. I will address these issues, as well as several others that occurred to me.

A. Possible Appearance of Impropriety

My understanding is that Mr. Bennett approached Rep. Reyes in El Paso to pitch the ECO to him. Rep. Reyes asked Mr. Bennett to meet with his Deputy Chief of Staff, Mr. Salvador Payan, at his office here in El Paso. OBP Headquarters in Washington was then approached and has, in turn, asked El Paso Sector to give the ECO a "trial run."

In and of itself, this presents no ethical issue. What *would* constitute a conflict of interest would be if the company or anyone associated with it had contributed money to Rep. Reyes or his campaign, or if the Congressman had any kind of interest aligned with ETT. Both Rep. Reyes and

the Company, however, appear to be completely clean. A search of the databases on http://www.opensecrets.org revealed no contributions to Rep. Reyes—or any member of Congress, for that matter—for the Company or any of its known agents from 1990-present.

Extensive web searching did uncover several contributions, however, to Texas *state* legislators in 2002 and 2003. Additonally, Mr. Talamantez and one Theodore Wickersham (presumably a former employee of the Company) testified on July 14th, 2003 as witnesses in favor of Texas HB 78(1), a proposed law relating to energy and water conservation by state agencies. Finally, ETT contributed to the Texas Association for Pupil Transportation, an organization whose members have purchased the ECO. None of these facts presents a conflict of interest, however.

I did make a point of bringing this topic up for discussion with both Mssrs. Talamantez and Bennett, explaining the importance of independence and impartiality. Both men assured me that neither they nor—as far as they knew—any of their employees had contributed money to Rep. Reyes or his campaign and, further, that they were unaware of any potential conflicts of interest.

B. Possible Warranty Voidance after Installation

After thoroughly analyzing the law surrounding vehicle warranties, I can confidently state that a manufacturer cannot legally void a car's warranty simply for the act of installing an ECO. The only vehicle modifications that will automatically result in warranty voidance are those that tamper with or disconnect the odometer. Under the Magnuson-Moss Warranty Act of 1975 (15 U.S.C. § 2302 (2009)), a manufacturer can only refuse warranty coverage where the aftermarket device itself causes or contributes to the damage. And, obviously, the aftermarket device itself is not covered by the vehicle manufacturer's warranty.

Thus, Mr. Talamantez is correct in his response to ACPA LeBlanc's question on pp. 54-55 of SBPA Calanche's Assessment. It's worth noting that since Mr. Talamantez joined the Company in 1998, there have been no reports of vehicle damage due to the ECO. Furthermore, it bears

repeating that the Company carries $1M in product liability insurance just in case the device is found to cause a problem. No claim has ever been filed, though. Mr. Talamantez further informed me in an April 14th, 2009 e-mail that the Company would be willing to list the Agency as an "additional insured" under its insurance policy in the event OPB elects to install the ECO on a substantial number of vehicles. Finally, in light of the beneficial effects of the ECO, it is reasonable to expect that the need for vehicle repairs would occur less frequently in vehicles using the device (see consumer reports of ECO-installed vehicles requiring less maintenance at http://www.etieco.com/product-reviews.htm).

C. The Fact that ETT has not Submitted the ECO to the EPA for Testing

The EPA conducts a program (fully described at http://www.p2pays.org/ref/07/06081.pdf) to evaluate the effects of fully developed aftermarket devices on vehicle emissions and fuel economy. Participation in this program by device manufacturers is voluntary. EPA evaluations of engines, retrofit devices, emissions control devices, and related products are conducted for the purpose of keeping policy makers, technical personnel in government and industry, and the general public abreast of developments in the field of automotive fuel economy and pollutant emissions control. Applicants must have their devices tested at an EPA-approved independent testing facility that uses the EPA-required Federal Test Procedure prior to submitting their devices to the EPA for the program.

In 2003, ETT sent the ECO off for testing to Wallace Environmental Testing Lab—an EPA-approved independent testing facility that uses the EPA-required Federal Test Procedure. Wallace found that fuel economy was marginally improved and regulated emissions were significantly reduced. Thus, I was very interested in asking the Company's representatives why, after promising results at Wallace, they would choose to not submit the ECO to the EPA so that the Agency could test the device under its Motor Vehicle Aftermarket Retrofit Device Evaluation Program.

Having carefully examined the Wallace results and compared them with the numerous anecdotal reports available at http://www.etieco.com/testresults.htm, http://www.etieco.com/product-reviews.htm, and http://www.etieco.com/install-mechanics.htm, I had my suspicions. Simply put, the Wallace data and the glowing testimonials were irreconcilable. Quite frankly, the Wallace results, while favorable, do not come close to living up to the numerous testimonials describing fuel economy improvements of upwards of 10%. For reasons more thoroughly explained in the aforementioned Texas Council on Environmental Technology test (specifically at pp. 8-9, 12; available at http://www.etieco.com/content-files/FinalReport.pdf) the testing methodology used in both the Wallace and EPA labs have several shortcomings when it comes to testing the ECO.

Specifically, the ECO doesn't really begin working as intended until after approximately 100 miles. The reasons for this are complex, but involve both a cleansing of the previously built-up carbon on the engine and spark plugs (thereby actually initially *increasing* emissions readings), as well as giving the on-board diagnostic system sufficient time to acclimate to the ECO. There are also issues involved with an excessively short "drive cycle" that does not allow the technology to fully function at its peak performance level, the potential for excess hydrocarbons from the clean-up process in the emissions gases that would impact the fuel economy negatively using the Highway Fuel Economy Test method, and the potential for error in measurement and calculations when dealing with such short drive cycles and small amounts of fuel as when using the volumetric method. Experimenters for the Texas Council on Environmental Technology felt that a more long-term test plan would result in a more accurate portrayal of the fuel economy benefit. Even after explaining how the current EPA testing methodology would fail to accurately reflect the ECO's emissions-reducing and fuel economy-enhancing capabilities, however, the EPA reportedly stated adamantly that the methodology cannot be altered in any way.

Furthermore, submitting the ECO to the EPA isn't cheap. Mr. Talamantez informed me that doing so at the present time would be cost-prohibitive for the Company and would result in the ECO's retail price being raised substantially. Even in light of all of this, however, Mr. Talamantez informed me that the Company does plan to submit the device for testing at some point. In light of all of this, I believe that as far as the ECO is concerned, the Agency should not place undue emphasis on EPA validation, and can safely and prudently proceed to field-test the device without the EPA's blessing—as dozens of other organizations, both governmental and private—have chosen to do.

D. Risk of Liability Exposure

One of SBPA Calanche's concerns was that installing the ECO could result in a possible violation of Federal anti-tampering laws, specifically Section 203 (a)(3) of the Clean Air Act, 42 U.S.C. § 7522(a)(3). That statute prohibits any person from removing or rendering inoperative any device or element of design installed on or in any motor vehicle in compliance with regulations under Title II of the Act (i.e., regulations requiring certification that vehicles meet Federal emissions standards). Theoretically, installing any device that affects the fuel delivery rate or combustion process would be expected to affect elements of design of the emissions control system. Accordingly, any change from the original certified configuration of a vehicle such as adding a system or parts that affect the fuel delivery rate or the combustion process could be considered a violation of section 203 (a)(3) of the Act.

However, the EPA has established an enforcement policy, Mobile Source Enforcement Memorandum No. 1A ("Memorandum 1A"), to provide guidance to the public to alleviate the uncertainty regarding potential liability under section 203 (a)(3) of the Act for using or selling aftermarket parts or systems, or making adjustments or alterations to parts or system parameters. Memorandum 1A essentially states that EPA will not consider any modification to a certified

emissions control configuration to be a violation of the tampering prohibition *if there is a reasonable basis for knowing that emissions are not adversely affected*. In many cases, durability aging and emissions testing according to the Federal Test Procedure (FTP) would be necessary to make this determination.

There are two different methods for establishing a reasonable basis for knowing that emissions are not adversely affected by the installation of a retrofit device: 1) the installer knows of, or the manufacturer of the device represents in writing, that FTP emission tests have been performed as prescribed in the Code of Federal Regulations showing that the device does not cause similar vehicles to fail to meet applicable emission standards for their useful life; or 2) a federal, state or local environmental control agency expressly represents that a reasonable basis exists. Such an agency determination is limited to the geographic area over which that agency has jurisdiction. The results of EPA vehicle emission testing which is done under the authority of Section 511 of the Motor Vehicle Information and Cost Savings Act can be applied to similar vehicles throughout the country.

In this case, the Agency is fully shielded from liability under the Act because the first condition is satisfied: ETT has, in fact, conducted the FTP at an EPA-approved independent testing facility with favorable results. In addition to the FTP results, there are myriad additional reasonable bases from which a reasonable person could conclude that emissions are not adversely affected—quite the contrary, in fact.

E. Negative or Potentially Harmful Information Available Regarding ETT

Simple web searches on Google revealed no damaging information whatsoever about the Company or any of its known agents. Additionally, searches of the databases on both PACER and LexisNexis showed that there is no record of any lawsuit having been filed against the Company or

any of its known agents. Searches of past news stories on LexisNexis returned only positive accounts of various cities and counties that have adopted the ECO's use for their fleets.

F. Efficacy of the Device while Idling

Page 17 of SBPA Calanche's Assessment has a bullet point all the way at the bottom that suggests that the ECO would not be effective on an idling car. Obviously, for those stations whose vehicles operate primarily in a forward-deployed position (i.e., stationary line watch), if this were true, the device would be practically useless for stations like El Paso and Fabens. Logically, however, this didn't add up to me. After all, a car uses gasoline and expels emissions whether it's idling or constantly running. This was another point I needed to clear up with Mssrs. Talamantez and Bennett.

During our conversations, Mr. Bennett denied ever having made any comment of the sort. On the contrary, it was his belief that the ECO ought to in fact work even *more* effectively on a car that was simply idling. Mr. Bennett theorizes that the misunderstanding may have arisen as an inference from another, unrelated comment he had made (the specifics of which I don't presently recall). Mr. Talamantez likewise stated that the ECO would work at least as well as an idling car as one constantly running.

The available data bears this out. Examining the following charts, it's clear that emissions are naturally higher when a car is idling (low engine RPMs); however, the ECO works quite well at significantly reducing the pollutant emissions whether the car is idling or whether it's running:

- http://www.etieco.com/content-files/1994ChevyGraph.pdf
- http://www.etieco.com/content-files/1995ChevyGraph.pdf
- http://www.etieco.com/content-files/InternationalDieselSchoolBusTest.pdf
- http://www.etieco.com/content-files/Laredo-Tests.pdf
- http://www.etieco.com/content-files/HogAlleyDynotestresults.pdf

Thus, I have no doubt that the ECO would work just as effectively at the El Paso and Fabens stations as it would at Lordsburg.

G. Company Awards and Recognitions

ETT has been the recipient of several awards and recognitions in the area of environmental cleanliness (http://www.etieco.com/awards.htm). For example, the Company has repeatedly been recognized by the U.S. Department of Energy for "improving air quality, strengthening the local economy, and enhancing public awareness of alternative fuels through its commitment to and participation in the United States Department of Energy's Clean Cities Program." The DOE's Clean Cities Program "strives to advance the nation's economic, environmental, and energy security by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption." (http://www1.eere.energy.gov/cleancities) Additionally, ETT has been recognized by Victoria Clean Cities, an organization that aims to improve "air quality through a community based coalition that supports public/private partnerships to increase the use of alternative fuels and improve availability of alternative fuel infrastructure." (http://www.victoriacleancities.org)

H. Warranty and Money-Back Guarantee

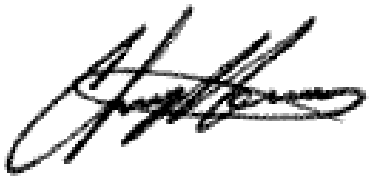
All ECOs are sold with a five-year limited warranty from the manufacturer. If, within that term, any defect occurs with the unit due to manufacturing, ETT will replace the unit purchased. Every ECO also customarily comes with a 90-day money-back customer satisfaction guarantee beginning with the date of purchase. However, Mr. Talamantez informed me he is willing to extend the money-back customer satisfaction guarantee to an entire year. In addition to this being a generous offer, it's also a strong indication of Mr. Talamantez's confidence in his Company's product.

VI. CONCLUSION

Especially in light of the recent—and likely continuing—rebound in oil prices, OPB would be well advised to explore measures to reduce its fuel expenditures. From all available evidence, the ECO does just that, and does it well. In the final analysis, weighing their respective probabilities of occurrence, the potential benefits of pursuing this project end up far outweighing the potential costs. In light of the potentially massive cost-savings available to the Agency, as well as the ability to significantly reduce pollutant emissions and improve vehicles' performance, this is most certainly worth investigating further.

First, there is strong evidence to suggest that the device works, and that it works well. Second, after extensive research, the ECO appears to be the best-performing device of its kind for the money, and there would likely be few obstacles to procurement. Finally, analysis of all the ancillary issues I was able to anticipate fall in favor of giving the ECO a test-run. These issues included an absence of the appearance of impropriety, confidence that OPB vehicles' warranties would not be voided as a result of ECO installation, a minimization of the importance of EPA approval, a very low risk of liability exposure, the absence of any harmful or derogatory information available regarding the Company or its agents, strong evidence that the device is effective in idling vehicles, the fact the Company has received widespread recognition and approval from both governmental and private environmental organizations, and the benefit of a five-year warranty and a one-year customer satisfaction money-back guarantee.

Accordingly, our office strongly recommends that El Paso Sector adopt the use of a limited number of ECOs—perhaps six—and have them installed on a variety of vehicles, then beginning testing after each one has been driven a minimum of 100 miles. Should you have any questions, please contact me at (915) 599-0275, ext. 243, or by e-mail at christopher.meissner@dhs.gov.



Christopher M. Meissner
General Attorney
U.S. Customs and Border Protection
Office of Assistant Chief Counsel
9434 Viscount Blvd., Suite #200
El Paso, Texas 79925-7053
Office: (915) 599-0275, ext. 243
Cell: (216) 502-1260
Fax: (915) 599-0227
christopher.meissner@dhs.gov