



The NASSCO Tidepool

A Collection of Environmental News from the Shipyard and Our Community

3RD QUARTER, 2005

9/02/05

Environmental Engineering Mission Statement

NASSCO Environmental Engineering is dedicated to maintaining an Environmental Management System that continually strives to go beyond regulatory compliance.

NASSCO Environmental Engineering is committed to conducting all operations in a manner that safeguards the health and safety of all employees and the public, preserves natural resources, and protects the environment. This commitment to protecting the air, water, and land is carried out through energy conservation initiatives, recycling programs, and on-going process improvements.

NASSCO Volunteers Join in the Fun of Operation Clean Sweep

NASSCO was the major sponsor for this year's 15th Annual Operation Clean Sweep conducted by the San Diego Port Tenants Association. A total of 1,200 volunteers cleaned up the shoreline and Bay along Sea Port Village, Embarcadero Marina Park, Cesar Chavez Park, Chollas Creek and the Chula Vista Marina.



Some of the more unusual items pulled from San Diego Bay and Chollas Creek were 13 bottles of unopened spirits, a rubber chicken, an umbrella hat, and a New Year's Eve noisemaker.



NASSCO President, Mr. Dick Vortmann welcomes the Operation Clean Sweep volunteers.

"I'm proud of the efforts that our entire shipyard has taken in the last 5 years to become an Environmental Leader in San Diego County and the Industrial Neighbor of Choice for Barrio Logan... A key environmental outreach is cleaning up Chollas Creek which borders NASSCO to the South. This creek winds from Lemon Grove and La Mesa before emptying into San Diego Bay. For years, Chollas Creek has been the carrier of trash, debris and contaminates that are washed down the creek during rainstorms. In recent years, NASSCO has sponsored and conducted 8 cleanup events and our volunteers have prevented over 3 tons of trash & debris from entering San Diego Bay."

- Dick Vortmann



Spirit of the Barrio

By Jennette Lawrence, Director, Government and Community Relations, Family Health Centers of San Diego



NASSCO employees Ira Ellison and Valerie Houlihan speak with Tuskegee Airman Thurman Pirtle.

Every other month there is a great celebration in Barrio Logan called the *Spirit of the Barrio*. Local businesses, community leaders and dedicated individuals gather at Logan Heights Family Health Center for an authentic tamale lunch and to listen to a prominent speaker. Thurman Pirtle of the Tuskegee Airmen spoke at the July 15th luncheon.

The Tuskegee Airmen were dedicated and determined black pilots of World War II. The triumphs of these men are a shining example of overcoming prejudice and discrimination. The legacy of the Tuskegee Airmen was the desegregation of the military and the first step toward the historic social change of achieving racial equality in America.

Amidst all the fun, the ultimate goal of the *Spirit of the Barrio* is to raise critical funding for Family Health Centers of San Diego. Family Health Centers of San Diego is a non-profit community clinic organization that provides quality, accessible healthcare to uninsured and medically underserved families in San Diego. No patient is ever turned away based on their ability to pay. However, as medical costs continue to rise and the number of uninsured families continues to grow, Family Health Centers of San Diego must rely on the generous support of local businesses and individuals to fulfill its mission.



Since 2000, NASSCO has been a Fiesta Grande Sponsor of the *Spirit of the Barrio* luncheon. At the July 15th, *Spirit of the Barrio* luncheon, NASSCO was one of the Fiesta Grande Sponsors recognized by the Family Health Centers of San Diego for its continued active support and was congratulated by the attendees for being named as a *2005 San Diego Recycler of the Year* by the City of San Diego Environmental Services Department. Members of NASSCO's Environmental Engineering Staff were on hand to set up displays to educate community members on their "Commitment to the Environment" programs.



Family Health Centers of San Diego is grateful for NASSCO's active support and looks forward to working together with America's leading commercial shipbuilder for many years to come!

Air Pollution Control District Tests NASSCO's VOC Burners

By Daniel Dugan, Production Associate, Environmental Engineering Rotation

The San Diego Air Pollution Control District (APCD) was in the yard on May 26 & 27 to conduct annual Source Testing on NASSCO's two VOC Burners. This test measures the amount of Volatile Organic Compounds (VOCs) remaining in the air, from Primelines #1 and #2, after processing through their respective VOC oxidizers.

HOW A VOC OXIDIZER WORKS

To start, we should look at what an oxidizer is and what it does. Oxidizers are compounds that react to give off oxygen. Therefore, the VOC oxidizers in the yard produce a reaction which gives off oxygen so that when combined with a heat source, the VOCs ignite to leave clean, hot air, exhausting from the VOC oxidizer. This is accomplished through the basic principles of the "fire triangle," the VOCs act as the fuel, the heat source is the natural gas burners, and the oxygen is provided through the oxidation process.

The VOC oxidizer for Primeline #1 (Wheelabrator) is a Tellkamp Systems Roxidizer Model 10, regenerative type, thermal oxidizer. The unit is considered "regenerative" because the heat produced by the combustion of the VOCs is reused as part of the heat source that helps to ignite them in the first place. Once the air with the VOCs leaves the primer spray booth, it is exhausted through a water filter and then through a series of dry filters to remove any suspended solids and leave only VOC-laden air.



APCD Air Pollution Chemist Ian Morris takes samples of the exhaust gas from Primeline #1 oxidizer to determine water content.



APCD Air Pollution Chemist Ian Morris sets up equipment to monitor the concentration of VOCs at the Primeline #2 thermal oxidizer exhaust.

and then through a series of dry filters to remove any suspended solids and leave only VOC-laden air.

This VOC-laden air then enters the combustion chamber where it passes through two heat sinks or "beds." These beds switch back and forth to coincide with the heat levels in the chamber, but essentially the VOC-laden air passes through the first bed where oxidation takes place once the VOCs have reached temperature.

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Valentino Ibay, Maintenance Electrician, and Sergio Ascencio, Wheelabrator Foreman, at the Primeline #1 Thermal Oxidizer.

Once through the first bed, the now VOC-free air then reverses direction to flow through the second bed, which acts as a cooling median for the VOC-free air, before it exhausts into the atmosphere. While the VOC-free air is cooling as it passes through the second bed, the bed is heating up. Therefore, once the VOC-free air has passed through the second bed, the two beds reverse roles, with Bed #2 becoming the heating-medium and Bed #1 becoming the cooling-medium for the air passing through the thermal oxidizer.

A natural gas burner is installed to supplement the heat given off through the oxidation of the VOCs to ensure a chamber temperature of near 16,000F. This burner helps to raise the temperature of the two heat sinks and promote combustion of the VOCs until temperature is

reached through combustion of the VOCs, at which time the burner only cycles on to maintain the temperature of the chamber during down times of Primeline #1.

The VOC oxidizer for Primeline #2 is newer, and somewhat smaller. This unit is a Reinluft Relox, Model TV1008, thermal oxidizer. The difference is that this unit is more like a boiler, where the heat from the natural gas burner heats up a chamber which has sets of VOC-filled coils inside. As the gasses heat up the chamber, to upwards of 14,000F, the VOC-filled coils also get hot, and then once enough heat has been put into the chamber and coils, the VOCs oxidize and the process of burning off the harmful spray from the Primeline drives ahead.

THE APCD TESTING BEGINS

To measure the efficiency of the two oxidizers, three tests are performed over the course of an hour each. These tests measure the concentration of VOCs entering the oxidizer and compare that measurement to the concentration of VOCs exhausting from the oxidizer. During first shift, when the tests took place, Primeline #1 sprayed 30 gallons, while Primeline #2 sprayed 15 gallons. Knowing the total input of paint into the system, and therefore the total amount of VOCs, as well as measuring the exhaust flow rate, exhaust temperature, inlet temperature, inlet flow rate, and water content of the exhaust gasses allowed the APCD to determine the efficiency of each of the oxidizers.



APCD Air Pollution Chemist John Schindler collects data during the Source Test of Primeline #1.

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APCD inspectors, Ian Morris and John Schindler, both Air Pollution Chemists conducted the tests. Mr. Morris took charge of the set-up of the equipment, while Mr. Schindler calibrated the test instruments. Propane was used as a base for measurement, and the median for calibration and comparison, while methane was ultimately subtracted from the concentration of gasses exhausting (it is naturally occurring and therefore not considered to be a VOC) to determine a final efficiency of each thermal oxidizer.

With the help of NASSCO employees, such as Sergio Ascencio, Wheelabrator Foreman, and Vince Marroquin, Machine Operations Foreman for Fabrication, Mr. Morris set up his equipment and Mr. Schindler started taking readings. Right away, quick calculations gave a rough estimate of whether or not each oxidizer was still in compliance. As the test instruments came online, readouts of gas concentration at the inlet and the outlet were each displayed in parts per million (ppm).

For an example, say that the Primeline 2 inlet concentration was displayed as 700 ppm and the exhaust concentration was 17 ppm. Dividing the outlet by the inlet and then subtracting from "1" gives us an approximate efficiency of 97.6%, and ultimately ends up to be fairly close to the final efficiency once all of the calculations have been complete. Since this initial approximation has not accounted for the methane in the exhaust, the actual efficiency tends to be slightly higher after the entire test factors (exhaust temp and etc.) have all been accounted for.

THE RESULTS

Environmental Engineering would like to thank those who helped in accommodating the APCD while they were conducting these tests. APCD is a familiar agency around the yard. We can expect to see them back each year for these two tests, as well as for annual source tests on the diesel-engine driven overhead cranes and every quarter for compliance inspections.

NASSCO is required by the APCD to perform Annual Source Tests to verify the efficiency of each VOC oxidizer. For Primeline #1 the VOC oxidizer is required to burn off the VOCs at an efficiency of 85%, while the final test report indicated it is actually operating at a **97.5% efficiency rate**. The VOC oxidizer for Primeline #2 is required to meet 95% efficiency, the final test report indicate it is operating at **98.6% efficiency**.

The operators of the Primelines, the area foremen, and our Maintenance Department deserve a hand, and a big Thank You, for operating and maintaining our two thermal oxidizers in their *Beyond Environmental Regulatory Compliance* condition.



Machine Operations Foreman Vince Marroquin helps Ian Morris, of the APCD, set up for the Source Test of Primeline #2.

NASSCO Family Day on August 6th Was a Huge Success!



A special thanks to all who stopped by the Environmental Engineering Booth to say hello and learn what we do.

Preventing Water Pollution: It's Not Just for Work Anymore!

By Sara Giobbi, Environmental Engineering Specialist, x8764

All NASSCO employees know the importance of protecting the San Diego Bay. Every day at work we use "Best Management Practices" such as shrouding, secondary containment, preventing spills and leaks, and good housekeeping to prevent pollution of this grand waterway. However, did you know that your opportunity to protect San Diego's beautiful waterways does not end at work? These days we recognize that more and more pollution actually comes from **urban runoff**, which is the water that runs from residential areas to the Bay, and other waterways, through the storm drain system. Because this water is not treated before it reaches our beaches, bays, and rivers, you can unknowingly cause pollution through everyday household tasks. Here are some household tips on preventing urban runoff:

Prevent oils and chemicals from entering our waterways:

- Never pour automotive fluids, such as used motor oil or antifreeze into the storm drain. These fluids can be taken to a household hazardous waste collection facility or event for proper disposal.
- Take your car to the carwash, or if washing it at home, try parking it on a landscaped surface to prevent runoff of soapy water.
- If your vehicle is leaking fluids, repair it, or use a drip pan.
- Use fertilizers, pesticides, and herbicides sparingly; do not exceed manufacturer's recommended application rates. Avoid over-watering of your lawn and garden because this water will carry these products into the storm drain.



Prevent bacteria from entering our waterways:

- Clean up after your pet.
- Prevent sewer overflows by keeping food grease out of the sewer. You can minimize the amount of grease you put in the sewer by collecting food grease in a can and placing it in the trash and by removing excess grease from pots and pans with a paper towel before washing them.
- Always use authorized dump sites for you RV or Camper holding tank waste.
- Do not allow household wastewater, like that from your washing machine, to drain on the ground.

Prevent solid waste from entering our waterways:

- Do not sweep garden waste or other litter into the gutters.
- Never throw trash or cigarette butts out your car window or onto the street.
- Keep trash cans closed to prevent spreading of trash by wind or by animals.
- Use dry clean-up techniques, such as sweeping, rather than a garden hose to clean up.



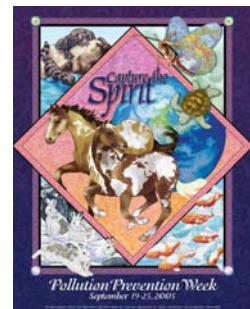
For more information, see the City of San Diego's Storm Drain Pollution Website:

www.thinkbluesd.org.

National Pollution Prevention Week (NP2W) is Coming!

- * **Monday 9/19** — P2 Slogan Contest Winner Announced
- * **Tuesday & Wednesday 9/20-21** — Annual P2 Training for Customers, Team Members, and Subcontractors
- * **Thursday 9/22** — P2 NASSCO E-Bulletin Training
- * **Friday 9/23** — 4th Annual Environmental Star Awards

Presented by Mr. Vortmann and the Compliance Assurance Committee (Dave Baker, Mike Chee, Mark Kukuchek, Lane McVey, Bob Watson, Dave Wilhelm)



California Coastal Cleanup Day

Saturday, September 17th 9:00 am - 12:00 pm

Come join NASSCO for California Coastal Cleanup Day to kick off National Pollution Prevention Week. California Coastal Cleanup Day, part of the 20th International Coastal Cleanup Day, has rid California's beaches and waterways of over **10 million pounds of trash and debris**. To become part of the effort to fight pollution, sign up today! Call Environmental Engineering x7506 and volunteer to clean up Chollas Creek.



APCD Quarterly Inspection

By Kacey Christie, Environmental Engineering Specialist, x7963

On Friday, July 22, 2005 Peter Crayne, APCD inspector, completed his **Quarterly Air Compliance Inspection of NASSCO and again found no violations!**

During the inspection, Mr. Crayne inspected and checked records on Primelines #1 & 2, and the Avenger #3.1, 3.3 and 3.5 plasma cutters.

Special thanks to all HazMat Coordinators for keeping all HazMat containers properly labeled and closed and to all Air Coordinators that maintain compliance with their APCD permitted equipment every day.

I'd also like to extend a special thank you to Production supervisors Scott LaMountain & Ron Mitchell who filled in for SOC 1 Air Coordinator, Dave Gaccione during the inspection of Primeline 2 and the plasma cutters and to Sergio Ascencio & Bobby Flores who filled in for Blast & Paint Air Coordinator, Dave Samudio during the inspection of Primeline 1.

Great Job Everyone!



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If you are interested in submitting an article of environmental interest, or would like us to address one of your questions/concerns, please contact us at Environmental Engineering, Mail Stop 22A.

Editor: Kacey Christie (619) 544-7963, kchrist1@nassco.com | Layout: Grant Gibson (619) 544-7506, ggibson@nassco.com

Contributors: Daniel Dugan, Sara Giobbi, Jennette Lawrence, Ken Wright

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