

Air and Why We Care: SFPUC Southeast Wastewater Treatment Facility

| VIDEO | AUDIO |
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| <p>CHARACTERS:</p> | <p><u>CHARLES JOHNSON</u> <u>STEVE ARDREY</u> <u>LOLITA WILKINS</u></p> |
| <p>SCENE 1: INTRODUCTION WITH THE ENTIRE CAST:</p> <p>scene detail: In the DOC - in front of the DCS screen at the plant - Steve, Charles and Lolita are standing in front of the DCS screen.</p> | <p><u>STEVE ARDREY</u> "Hello my name is Steve Ardrey; I am the Field Supervisor for the Instrumentation and Controls Department at the wastewater treatment plant in San Francisco.</p> <p>This display is an overview of our wastewater treatment process.</p> <p>The treatment of wastewater is critical for public health and the health of the environment. You might not realize it but I use a lot of chemistry and math in my work as you'll see in this video.</p> <p><u>CHARLES JOHNSON</u> "Hello my name is Charles Johnson. I am an Instrumentation and Controls Technician at the Southeast Wastewater Treatment Plant in San Francisco. I'm going to talk with you about how I monitor and control the oxygen used in the treatment process.</p> <p><u>LOLITA WILKINS</u> "Hello, I am Lolita Wilkins. I am a Wastewater Treatment Plant Operator at the Southeast Treatment Plant in</p> |

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| <p>(b-roll of display screen)</p> | <p>San Francisco. The microorganisms we use in the treatment process require oxygen just as humans do to live. Sewage is low in oxygen, so part of our process is to increase the amount of oxygen in the waste water that's being processed in the aeration tanks.</p> <p>"The display that is shown on the screen now is the one we use to both monitor and control the wastewater treatment process.</p> <p>"Now, let's look more closely at the role of oxygen in the treatment process."</p> |
| <p>SCENE 2: VIEW FROM TOP OF THE PRIMARY SEDIMENTATION TANKS:</p> <p>Scene Detail: Steve is standing on top of the sedimentation tanks, facing camera with his back to the oxygen generation plant and the aeration tanks.</p> | <p><u>STEVE ARDREY</u></p> <p>"On my left are the aeration tanks. On my right is the oxygen generation plant. Pure oxygen is piped from the oxygen plant to the aeration tanks. You can see the green pipe carries oxygen between the two plants."</p> <p>"Now let's look at how oxygen is used in the aeration tanks."</p> |

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| <p>SCENE 3: ON TOP OF THE AERATION TANKS:</p> <p>Scene Detail: Lolita standing on top of the aeration tanks.</p> | <p><u>LOLITA WILKINS</u> "I'm currently standing on top of the aeration tanks. Below me are separate tanks containing thousands of gallons of wastewater. The wastewater is being infused with oxygen from our oxygen generation plant which allows the microbes in the tanks to digest wastewater more efficiently." "Let's think for a minute about the air microbes use at the wastewater plant."</p> |
| <p>SCENE 4: OXYGEN PLANT:</p> <p>Scene Detail: Charles standing in front of the oxygen generation plant with Steve and Lolita on either side of him.</p> | <p><u>CHARLES JOHNSON</u> "As you may know, there are many gases that compose the air we breathe - oxygen is only one of them. In normal air, the percentage of oxygen is about 20.9% at sea level. The three other primary components of air are 78.1 % nitrogen, .93 % argon and .04 % carbon dioxide. "The enriched oxygen we make at the plant is produced by removing Nitrogen from air and produces a concentration of about 95% pure oxygen. "So, how do we monitor the oxygen levels?"</p> |

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| <p>SCENE 4C: ANALYZER AT THE O2 PLANT:</p> <p>Scene Detail: Charles standing in front of the O2 analyzer</p> <p>SCENE 4D: O2 PLANT FLOW METER:</p> <p>Scene Detail: Charles standing in front of one of the flow meters (may be a noisy spot)</p> | <p><u>CHARLES JOHNSON</u></p> <p>"This instrument is an oxygen purity analyzer. The measurements from this analyzer are used to ensure the purity of the oxygen being produced. It is an Instrumentation Technician's job to calibrate this analyzer to ensure its accuracy. Algebraic formulas involving ratios and percentages are used for these calibrations."</p> <p><u>CHARLES JOHNSON</u></p> <p>"This particular device is used to measure the rate of flow of oxygen in the system. It is important to include temperature and pressure measurements when monitoring the behavior of gases. For example, the temperature and pressure affect the volume, density, and resulting flow of a gas."</p> |
| <p>SCENE 5: WRAP IT UP:</p> <p>Scene Detail: LOCATION- Maybe in the DOC? Panning of the oxygen plant or panning of the clarifiers before ending in the DOC</p> | <p><u>CHARLES JOHNSON</u></p> <p>"I find my job as an Instrumentation and Controls Technician to be very challenging but also extremely gratifying. As an "Instrumentation and Controls Technician" I use electronics, mathematics, and chemistry on a daily basis to monitor and control our treatment process.</p> <p>"Because technology is always evolving, a well-rounded education and technical background- which includes the study of mathematics, electronics, and chemistry is essential.</p> |

VIDEO

AUDIO

STEVE ARDREY

"Over the years, I too have found the field of Instrumentation to be very challenging and rewarding.

Working in the wastewater industry has given me a great deal of pride, because I know the results of my work are helping to improve the environment. Also, having a stable job with a good salary and benefits is a big plus."

LOLITA WILKINS

"For more information about a career in the wastewater industry, please check out the Baywork website at baywork.org where you can watch and listen to our personal stories as well as review career information about water/wastewater industry.