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CARLO BERTANI

Hi, I hope everyone had a nice holiday weekend. Thank you all for joining and I would like to welcome everyone to the Biofuels Webinar on Infrastructure

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and Compatibility. My name is Carlo Bertani and I work for EPA within the Office of Compliance Enforcements Underground Storage Tank Program. The purpose of this Webinar is to present the current infrastructure and compatibility issues surrounding the widespread use of biofuels. This webinar will provide a wide array of stakeholders with perspectives surrounding the storage, dispensing, policy, and marketing of biofuels. Several mandates requiring a significant increase in biofuels production and use have spurred an increase in the number

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of retail facilities storing and dispensing biofuels. These fuels have significantly different characteristics from petroleum-based fuels and thus stakeholders should be aware of the technical and policy issues related to the storage and dispensing of biofuels. Additional topics that will be covered during the next two hours are the Blend Wall theory, ASTM and UL compatibility, and the incompatibility of many existing fuel storage systems with biofuels. Additional information on biofuels and underground storage tanks

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can be found on the EPA's and Office of Underground Storage Tank website, which is epa.gov/oust, which is spelled O-U-S-T, and then click on the biofuels link. And at this point, I'd like to hand it over to Tommie.

TOMMIE JEAN VALMASSY

Great, thanks. Welcome, everyone. Thank you for joining us today. I want to go over a few technical issues and logistics.

[00:02:30]

This is a recorded session. However, your lines are muted. If you have any technical questions, go ahead and type those into the question box on your control panel. We have three speakers set up for today, and we do encourage you to ask them questions and

participate. And the way you can do that is after each speaker we've set aside some time for questions and answers before we move to the next speaker. Go ahead and type your questions about the presentation into the question box, and those will be read aloud and the presenter will answer those

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live on the line. But for any questions you have go ahead and use the question box. There's something called a "Raise Your Hand" feature. Unfortunately, those are hard for us to respond to. So don't use that. Just go ahead and use the question box for any questions that you may have. I did email out the presentations. The slides are being moved for you today, but if you got that email, you can follow along with your own copy, or you can download the presentations. They'll be available later this afternoon at the website I sent out, and I'll send

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that out again in the chat box so that you can download those and follow along now if got that email or you can download them later for your future reference. At the end of the Webinar today, we do have a brief survey that will pop up in a little box for you. There's only about three or four questions and it gives us some feedback on the technology and on the format and content of the Webinar. And it's really helpful to us if you would just take a couple seconds to answer those questions so we can keep inputting the system. So with that, I will go ahead and hand

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it back over to Carlo to introduce our speakers today.

CARLO BERTANI

All right, so today we have three very well versed and very different angled speakers to discuss their specific area of expertise within the realm of biofuels. Speaking first today will be Andrea Barbery from EPA's headquarters office in Washington, D.C. Andrea has worked with EPA's Office of Underground Storage Tanks as an Environmental Engineer since July of 2006. Andrea works on numerous policy and technical issues, but her primary role is as the office contract

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on biofuels and the affects on UST Systems. Andrea graduated from the University of Virginia with a BS in Chemical Engineering. Speaking second today will be Tyson Keever from SeSequential Biofuels in Eugene, Oregon. And Tyson is responsible for SeSequential's sales and supply chain, and he also manages operations that include SeSequential's pump network, fuel sales, logistics, biodiesel production management with SeSequential

Pacific Biodiesel and feedstock procurement. As Sales Manager, Tyson leads SeQuential's

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efforts in support of distributors to sell and support SeQuential's brand of biofuel to fleet customers such as the City of Portland, Trimex, Oregon Department of Transportation and various other private fleets. Tyson holds a Bachelor's Degree from the University of Oregon in Public Planning, Policy, and Management with a Minor in Business Administration. Our last speaker from the Webinar is going to be Ben Thomas from Petroleum Training Solutions. Ben has been involved in Underground Storage Tank Systems since 1987. He has a long history of developing,

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interpreting and enforcing UST Regulations as a former regulator in Vermont and Alaska. Since 2002, Ben has devoted his time to train UST inspectors, operators, and technicians on the various rules and policies that govern the petroleum storage industry. Ben is the Principal of Ben Thomas Associates and is a partner with Petroleum Training Solutions. And with that, I'd like to hand it over to Andrea.

ANDREA BARBERY

Hi, thank you. Thanks for having me, everyone. Thanks for organizing.

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I'd like to talk to you today about biofuels and underground storage tanks, a bit about the federal mandates, and how that affecting the programs. Next slide, please. Well, the first thing is just a note review. We'll talk about some of the biofuel mandates and the issues that are associated with that. I'd like to give you an overview of the UST Program, how that works and for what the system is to be more familiar with that particular part

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of the infrastructure. Then we'll talk about some of the more specific biofuel issues for UST Programs include compatibility, detection, functionality, remediation and then finally the research gaps and what UST is doing to close those. Next slide, please. So as you can see from this diagram, we have pretty much come full circle. We started with ethanol with the Ford Model T back in 1910, and then as gasoline got cheaper, and

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prohibition came along, ethanol got very expensive. So we started using lead as the primary oxygenate for our fuel. We later learned that lead has dangerous neurotoxin properties, so we moved to MTBE, which we more recently learned was a chemical that was

really hard to remediate, and we found out that all of these underground storage tanks were leaking, and the MTBE was posing a problem for remediation. So

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we're back to ethanol and who knows where we're going to be 20 years from now. Next slide please. The reason that biofuels have become such a major issue is that the Energy Independence and Security Act, which I will call like in the future required 36 billion gallons of biofuel to be used in the fuel stream per year by 2022. The Program that implements this requirement was given to EPA and it's called RFS2, that's the Renewable Fuel Standard 2,

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and it's got the 2 because there is a Renewable Fuel Standard 1, which was created under the Energy Policy Act of 2005. So currently, the United States uses two main forms of biofuels, E10 and E85. E85 is a fuel that's only used for flexible fuel vehicles. There is also a biodiesel but that's too much lesser expense, and the requirements in RFS2 have a much smaller volume mandate for biodiesel. So we don't really address that in this

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presentation. So assuming that we continue to use E10 and E85 as a main way of meet RFS2 mandates, we're going to have two very big challenges facing us soon. And the first one is the fact that we just don't have the infrastructure in terms of the vehicles FFV's and also the E85 stations to really meet the target using E85. And then for E10, the problem is that most of this country is already at E10, and so

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in order to get to the target that we need to be at, we're going to have to change our strategy. And so if you go to next slide you'll see that this is what we call the E10 Blend Wall. This yellow line on the bottom illustrates the mandated volumes of ethanol that are required by EISA and RFS2. The blue line at top is a projected estimate of how much fuel like gasoline in general is going to be consumed

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in the United States up to 2022, and that green line between represents what percentage of the total fuel stream would have to be ethanol in order to meet those targets. And so if you look over on the right hand side, over the percent of the total pool is going to have to be ethanol. Currently, the legal limit is 10%. So if you carry that over, you'll see that we hit 10% right around 2013 or so. What this means is at 2013 is where we hit the E10 Blend Wall, and beyond

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that we're going to have to figure out other ways of getting an increased amount of ethanol into the fuel stream, whether that be by E85 or increasing the actual percentage of ethanol in fuel. So if you go to the next slide, we'll see that someone is already thinking about this. In March of 2009, an organization called Growth Energy which represented 54 ethanol producers in America submitted a waiver application which would allow the ...

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which would permit the limit of ethanol and fuel to be rated from 10% to 15%, and EPA has until December 1st to make the yea or nay decision, and if granted, this means that E15 could potentially replace E10, and be stored in any legacy UST System across the United States including those which may not be compatible with ethanol blends greater than 10%. Next slide, please.

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I'll give you a brief overview of the UST Program and hopefully this will make it clear why this is such a big issue for us. Currently, the federal program regulates about 617,000 underground storage tanks, and this is about 233,000 facilities. These facilities are generally convenience stores, gas stations, government facilities, pretty much any place where you can fuel up gas. We also regulate hazardous substance tanks, but those are a very small percentage.

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Those are 617,000. Now, this whole program was traded in the late '80s because of the MTBE. You have to realize that all these underground storage tanks were leaking. We have currently about 7,400 releases every year and that impacts about 50% of Americans who get their drinking water directly from groundwater, and there have been studies that show that leaking underground storage tanks are the leading source of groundwater contamination. The only other important thing that I left off of the slide was that the UST Program,

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the federal UST Program was delegated to the states and so while federally regulates this 617,000 underground storage tanks, the program is actually carried out by often these states and territories. If we go to the next slide, we can overview some of these pictures that show basic underground storage tank components. So we had briefly up there a picture of a fiberglass tank and this year is right. Thanks. And then the next slide

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shows the picture of the piping and you can see all the little nooks and crannies and bends, and all those in there, and those are all opportunities for the fuels and glues to be not compatible and

places opportunities for leaks basically. The next slide show a picture of a dispenser. The Underground Storage Program does not regulate dispensers but the system still gives us a lot of controversy in the past, I guess recently because of the Underwriters Laboratories listings

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and acceptance of fuels greater than 10%. So that's what the inside of a dispenser looks like and if you go to the next slide, you'll see perhaps you've noticed that at the facility, these are all the covers and if you ever see one of these, it means that there's an underground storage tank directly beneath. This one here is ... This picture is of the sealed pipe. That's where the tractor comes and dumps in all the fuel and the larger picture above that illustrates it's a submersible turbine pump head. This is basically

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the top part of the pump, which draws the product out of the tank and sends it to the dispenser. So that's an overview of the UST system. Moving on, I'll talk about the reason that biofuels are going to be a problem for us, and the main thing, the main challenge here is that the UST program is basically new fuels that are being stored in old tanks, and our programs are divided into the prevention

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side and the clean up side. So for prevention, we're really concerned with compatibility and functionality of our equipment making sure that basically preventing releases on the clean up side because the prevention side is never 100% on target. We need to focus on characterizing biofuel releases and looking at modified or new clean up technologies to remediate these releases. So if we go to the next slide. These picture

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illustrate some of the compatibility problems that we see in the field. The Federal Regulations require that owners and operators must use and UST system made of or lined with materials that are compatible with the substance stored. On the left, you'll see a picture of a pump head which has been totally corroded by what we think are ethanol vapors and then on the right is a picture of a hole in a steel tank, which used to store E10 and then

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one day the owner decided that they were going to change to E85, and the higher ethanol content scrubbed out the rust plug that was happily plugging up this hole, and caused a release. Basically, the entire fuel tank emptied out over night. A funny story about that picture. I guess it's not that funny, but the owner didn't understand what happened and he went back the next morning and found that

his tank was empty and so he got another delivery of E85 and dumped that into the tank, and that ended up also

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draining out into the environment before they could figure out what was going on. So we need to prevent things like this. So if you go to the next slide, you'll see what it's such a challenge for us to decide to really be able to delineate what kinds of components are compatible and what kinds are not. So these time lines here are meant to illustrate the two main fiberglass tank manufacturers from the early 80s to the present day.

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And again, this is only for tanks. This doesn't address all the manufacturers of piping or submersible turbine pumps or dispensers or any of the other components that would probably also have complicated time lines like this. But as you can see, there's no crystal clear line for when we can say after 2005 everything is compatible. So that makes it much more difficult for us. If we go to the next slide, I can

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give you an overview about the release detections challenge that we have. So I mentioned before that functionality of UST equipment in general is a big challenge for us. Specifically, we're talking about release detection equipment. Because ethanol has different chemical and physical properties and petroleum fuel, certain leak detection systems may not be able to do their jobs. In particular, leak detection has to be able to both detect and egress of products

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as well as an ingress of water, and the performance of the detection systems is testing using these old protocols that EPA developed in the early 90s, the test protocol used conventional gasoline as a test fuel and don't include ethanol. As you probably know, oil and water don't mix. So if you add water to a gas tank, it will sink straight to the bottom. Leak detection systems then are designed to look for water at the bottom of the tank. However, ethanol bonds readily to water so any water

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that is added to an ethanol gasoline will be held in suspension up to a certain point and then you get phase operations. Another issue, though. And so we would need to make sure that the leak detection systems now are looking for ethanol or water and gases throughout the tank rather than just at the bottom. Another example is that some is that some detection systems operate based on the conductivity property of gasoline. So petroleum hydrocarbons are an electrical insulator of water as a conductor.

So if the leak detection system

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detects conductivity, it is assumed that there is an ingress of water. Unfortunately, ethanol is polar so when you mix that with gasoline you already have conductivity in your tank so it may be tricked into thinking that there is water in the tank already, or it might prevent the system from detecting water when it actually does enter. We don't really know. If you go to the next slide, this is an illustration of the Leak Detection System in underground storage tanks just as an example. By the way, this would be a super souped up

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version of a tank with all the extra gadgets and protections on it. The sump sensor would detect any free product that was in the sump area, the electronic line leak detector would check for releases from the product piping to the dispenser. The in-tank leak detection measures the product level in the tank, and the interstitial sensor monitors the space between the primary as secondary wall kind of breach and either one of those walls. If you go to the next slide. A little overview of the remediation challenges

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that we face. Although ethanol is highly degradable, there are still significant hydrocarbon constituents. For example, E10 is still 90% hydrocarbon or gasoline. So for gasoline the major constituents of concern are benzene, toluene, ethylbenzene, and xylene called BTEX. And ethanol blended fuels have been shown to create longer BTEX plumes when compared to gasoline spills

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alone. Also because the bugs are so happy eating up all the ethanol in ethanol gasoline blend, the BTEX plumes will persist longer because they use up all the oxygen and the natural attenuation becomes anaerobic, which is generally slower. Then the last thing that has come to our attention from ethanol spills is that large scale spills at least that we have observed from studies, and have been shown to produce explosive levels of methane gas. So if your building is situated

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over the top of or near a large ethanol spill, you may find yourself at risk of both air quality and explosion hazards. So what are we doing about all of this? Moving on. We are working with the Department of Energy on the compatibility issues of UST materials. They've got the test program started to look at dispensers and we've asked them to consider some of the underground storage tank equipment that's maybe at high risk for compatibility problems with

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these mid level ethanol blends, specifically to address the E15 Waiver, but I think that this program if it does take off, it's going to address up to like 20 or 25% ethanol, and then to address the functionality of currently in-use leak detection systems, we're working with ORD's Environmental Technology Verification program to develop a test plan for the evaluation of this equipment to address these movable blends and also biodiesel.

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And then the last thing that I neglected to put on here is our ongoing work with ORD to do studies on the state and transport of biofuels include the bio-degradation of these fuel constituents, fuel composition and the development of modeling tools. So that's all I've got for you all today. If anyone has any questions, I'd be happy to answer them.

TOMMIE JEAN VALMASSY

Thanks, Andrea, and we do have some questions that came in and if you have any more questions, please go ahead and type those in. So one person

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noted that a lot of goods are shipped with diesel vehicles like trucks and locomotives. What work is OUST engaged in working with B20 in underground storage tanks.

ANDREA BARBERY

Well, that's a great question, and the only mirror of biodiesel that we hear from anyone comes from California, and they seem to have their program pretty much together to address it. We know that biodiesel is becoming more and more of an issue, but we haven't really

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heard such a push for it from the State. I think the states are scrambling to sort of address the compatibility problems that they see coming from ethanol blends and so biodiesel who's been less of a priority. So we're keeping biodiesel on the radar, but for now, this research that we're doing for compatibility at least is in a focus on ethanol blends and then when we start doing the leak detection stuff that will also include biodiesel.

TOMMIE JEAN VALMASSY

Okay.

ANDREA BARBERY

Did I answer the question?

TOMMIE JEAN VALMASSY

[00:22:30] I hope so but the person who asked it, if you have more questions go ahead and follow up with that. A question about the waiver that you were talking about. Could you just clarify and maybe you kind of covered this, but you're saying that EPA is considering a full versus partial waiver? So what is the difference?

ANDREA BARBERY

[00:23:00] Okay. Yeah, sorry, I guess I didn't really go into very much detail there. Well, a full waiver would allow E15 to be used in any vehicles, that includes today's cars that are produced today

as well as my dad's 1984 Chevy Impala, and the problem with this is that I think there are certain ... And I'm not very familiar with the air requirements, but there are these different tiers of vehicles and so the partial waiver would allow tier 2 vehicles and newer to be able to ... And they're basically the vehicles that have like certain fuel computing systems.

[00:23:30] I don't know exactly how it works but it has to do with emissions, and so they can I guess process the emissions better than older cars. And so the full waiver would allow any vehicle to fuel up on E15 versus the partial waiver that would be sort of a regulatory nightmare because you'd have to make sure that only the Tier 2 and newer vehicles were being fueled with E15, while my dad's 1984 Chevy Impala would not be allowed to fuel up on that.

TOMMIE JEAN VALMASSY

[00:24:00] Okay. Not to pick on your dad or anything.

ANDREA BARBERY

Not to pick on him. He total passed on the Cash for Clunkers. I don't know why.

TOMMIE JEAN VALMASSY

Okay, great. How can people find out about EPA's decision on December 1st? Is that going to be published somewhere?

ANDREA BARBERY

That's a great question. I assume that it will I mean, they have a statutory mandate to respond by December 1st so I think that that

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be posted on the website for the Office of Transportation and Air Quality, or if it's not published right on the first issue, it will be published very soon thereafter.

[00:25:00] TOMMIE JEAN VALMASSY
Okay, great. So the federal mandates that you were talking about that are driving this, can you tell me a little bit about that and are there other mandates involved with this that would affect USTs?

[00:25:30] ANDREA BARBERY
Well, every state has their own individual mandates that come from, you know, their political parties and whatnot. So the major ones that I'm aware of would be this latest, this Energy Independence and Security Act basically is a step up from the Energy Policy Act

[00:26:00] of 2005, which created the Renewable Fuel Standard. So these are the major mandates but there may also be other federal mandates for biodiesel and the Department of Defense has a requirement to use B20, I think, in their fleet. So again, biodiesel is going to be come more of an issue for us in terms of being stored in underground tanks. And then again, states with their individual mandates. A few states have mandated like B2 or B5,

[00:26:30] And Minnesota has its own mandate to use, something like E20, but, of course, is illegal until we can get any sort of waiver passed. So I think it depends more on the individual state, but federally those are the only ones that I'm aware of.

[00:26:30] TOMMIE JEAN VALMASSY
Okay. All right, well, if you have more questions for Andrea, go ahead, and type those in, but in the interest of time, I think we're going to move onto our second speaking, Tyson Kever. So Tyson if you'd give me a second, I'll up

[00:26:30] your presentation.

TYSON KEEVER
Great. can you hear me okay?

TOMMIE JEAN VALMASSY

Yes, you sound great.

TYSON KEEVER

All right. So, again, my name is Tyson Keever and SeSequential Pacific Biodiesel, and I appreciate the opportunity to speak to the group here today. Our point of view is from a regional producer and the market side. Our company was founded to be ... The second slide for me.

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Our company was founded in August of 2002 in Eugene. We opened a one million gallons a year biodiesel production facility in Salem in '05. We opened a biofuel dedicated retail space in Eugene in '06. We acquired a trucking company to collect feedstock for biodiesel in '08, and also at the end of '08 we opened a five million gallon a year production facility. So we're really focused on being vertically integrated, trying to go from cooking

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level collection container held behind a restaurant direct through to the end user and the customer's fuel tank. If you can go to the next slide for me, please. We like to say we are community scale in that we focus on a region within 300 miles of where we try and get all of our feedstock for our plant. We try and get all of our products into our customer's tank within a few hundred miles of our plant as well. This picture you're looking at is of our station in Eugene.

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We offer in five blends of biofuel, E10, E85 and B5, B20 and B99. The little map you see on the right is our network. We have over 30 different locations in Oregon where you can purchase high blends of biodiesel. In the State of Oregon today we have a B2 mandate, which has come into effect or an RFS for mobile fuel standard, but we're nine counties in the northwest corner of the state and around Portland.

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The City of Portland has a B5 mandate, which has been in place for the past few years, and the rest of the state will go to B2, I believe, September 1st. Excuse me, October 1st. So what steps? Our models are from a low blend. We focus on high blend. We've had a really positive experience with using biodiesel and existing at the structure from the petroleum standpoint trucks to take it from our plant down to existing stations

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that put products in ground in existing tanks. Generally, we have expanded our network by targeting mid-grade gasoline tanks that have been updated in the past probably 15, 20 years. We do a pretty thorough product wash the tank clean, and then put the product in and the result is we use the same pumps that are available that were dispensing mid-grade gas and run forward. We have had some difficulty

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in getting into branded stations. We found that we couldn't normally get under the canopy. So we're independent stations or out from under the canopy at those stations that do have other pumps available. You can go to the next slide for me, please. But again, our strength has been pretty successful in spreading the word of biodiesel and being compatible in high blends. We have some experience with ethanol but our main fuel is in biodiesel today,

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and primarily cooking oil biodiesel, which I'll talk about here in a minute. I have a few primary points forward that I'd like to go over today and one is leading with our high blends and the difficulty with consumers in the market today, and conflicting sources of information, we have original engine manufacturers, Big Auto which either says no blends of biodiesel can be used in people vehicles.

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We have dealerships when people go in for service with biodiesel bumper stickers on that will avoid warranties. Basically from the use of biodiesel. We joke around at our office sometimes about cracked windshields and flat tires causing warranties to be denied at local dealerships. And so, this is a real problem that concerns poor drivers that are looking into biodiesel when they find a pretty strong message in front out there

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that you cannot use biodiesel in anything over a B5 blend and in some instances a B20 blend. But we do have thousands of drivers out there across Oregon today using biodiesel and high blends including myself and most of our team for the past seven years without any conversion or much concern. So it is really important to seek out ASTM spec fuel but kind of the void comes in. This is the second point aside from the conflicting credible sources, you know, where does

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a consumer turns to, to feel confident they can use the high blend, and that's the vehicle is going to be okay, and that the dealer is going to look after it. The second comes in, the void between

equipment failure when the fuel is good. So if you are driving your 2005 Volkswagen Jetta and you do have an injected that fails, you take it into the dealership and the dealership wants to honor your warranty, but you have been using

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biodiesel. Technically, they get in a difficult legal battle potentially with the customer saying that biodiesel caused the issue. If the biodiesel does meet the spec but it is a fuel related potential vehicle failure, where does the responsibility lie in that voided area? We haven't come across many warranty related issues we felt were justifiable from the fuels. We've seen fuel from non-spec fuel that

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that didn't come from our distribution outlet that was a legitimate fuel related issue. But moreover, we found pretty strong credit it's from those dealers and mechanics out there. We took some time in 2006 with the Northwest Auto Dealers Association and the Northwest Biofuels Association, and crafted a letter that is posted on the Northwest Biofuels' website, which is steps to follow when a consumer does have a warranty related issue

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or a mechanical problem that is being blamed on biodiesel whether related or not, the steps to walk through to mitigate the problem, to try to get to the root cause. If we could go to the next slide, please. So, again, that second point is about the interface with Big Auto and them not really being interested in looking at high blends and that void between if you do have spec fuel but a fuel-related issue with a vehicle,

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where does that responsibility lie? But we have the high blends now. Again, we have now multiple thousands of drivers in Oregon that use high blend, and we try and take our fuel as direct as possible to the market. This is a picture of our production facility in Salem you're looking at. The main issues that we coach our customers through when they're looking to initiate the use of biodiesel are the three Cs, which is compatibility,

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cleaning effect and cold weather. The higher blend the customer is using the more complicated or compound issues can become. In the Pacific Northwest, we do have issues with cold weather and seasonality for high blends. There are users out there who do retrofit their vehicle to use high blends year round, but we generally take our pump network from B99 down to B50 for those winter months. But high blends again

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pretty widely sought after by our customers, but we don't have a really good interface with big auto or dealers about approving the use of it or even running successful trials on it. With high blends, it does come, as there is a complication with network availability and existing stations. We had a situation back in '05 where we found a mid-grade tank that was available, but the station also offered diesel and we put B100 in the ground back

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in the days when we people sold you B100 and B99. And the mid-grade pump looked just fine to dial a blend to offer B20 so the station owner could keep the diesel off of B100 and dial a blend to B20. But INTEC service measures certify the safety ratings on dispensers and they ended up shutting down that pump not because it mechanically wasn't possible, but because INTEC hadn't approved it. Today, it's my understanding that INTEC does approve

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or certify some dispenser manufacturers out there, and vending of high blend, but not blending the high blends, which makes it difficult for station owners to offer custom blends to drivers. So that's the third point about blending pumps and looking how to dial a blend, looking to prove my intent. And the third ... Excuse me, the fourth and final large point that I have today or for market issues that we face is prejudice from Big Oil with yellow grease biodiesel.

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We understand the majority of the industry in the U.S. is soy-based biodiesel. Within the Pacific Northwest we don't really grow soy, so we have a tremendous amount of yellow grease that is in a biodiesel infrastructure, and we see spec sheets from Big Oil, which they are looking for ASTM 6751 fuel, but they won't ... They call that the yellow grease and the distribution infrastructure. We feel that EPA is pushing for next generation biofuel

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and putting an emphasis on recycled cooking oil that's not having any negative and impact issues and high energy balance, but yet this push back is making it difficult for us to access the market up here especially in the low blend market through the traditional outlets. And the final slide here is my contact information and I'll turn it back over for questions.

TOMMIE JEAN VALMASSY

Okay, great. Thank you.

[00:37:00]

And could you just define for us exactly what yellow grease

biodiesel covers?

TYSON KEEVER

Yeah. Well again, the majority of industry of biodiesel in the U.S. comes from soybean oil. Yellow grease is post restaurant cooking oil based biodiesel.

TOMMIE JEAN VALMASSY

Okay, well great. A couple other questions. One person asks have you had any, or are you aware of any reported issues with

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biodiesel and NY 2009 light duty diesel vehicles?

TYSON KEEVER

Great question. It's a frustrating point for us and it's a frustrating question because for the past seven years we've gotten questions from our customers out there, "Can you use this in your vehicle?" We've been able to point to our own cars and say, "Nope. We've had no problems. There's no compatibility issue. Despite the engine manufacturers saying, "Absolutely do not use it." But I believe with some of the new

[00:38:00]

diesel systems out there, we haven't had enough exposure to them to be able to give it a strong endorsement for a go or no go. We'd love to have the interface of big auto but right now it's the same party line we've had since day one, but I do have some serious concerns with high blends in the new diesel technology or how high a blend one could be used. We're not comfortable endorsing anything over what the manufacturer is laying forward today, which is generally B5.

[00:38:30]

You'd probably get more road miles tested.

TOMMIE JEAN VALMASSY

Okay. So that would be maybe your recommendation to people to use the B5 and that would be it?

TYSON KEEVER

In the new diesel engines, they say what the manufacturer is putting forward until at least SeQuential is comfortable with endorsing the higher blend based on our own road miles and our own consumers participating in our own test program.

TOMMIE JEAN VALMASSY

Okay. Great. Well, this is more of a statement from the Chairman

[00:39:00]

of the ASTM Biodiesel Task Force, Steve Howell, and Steve just asked me to say that ASTM passed specs for B6 to B20 blends in October 2008, and the reference is ASTM D7467, and B5 and lower blends are now covered by the normal diesel specs, D975 as a fungible component to the 5% biodiesel. Biodiesel has to meet D6751

[00:39:30]

prior to blending. So he asked me to share that with everyone.

TYSON KEEVER

I really appreciate him sharing them and that's incredibly important especially in the dealership interface, and we have a warranty claim to be able to take a fuel sample and to show when it meets those specifications especially if the engine manufacturer is saying their vehicle will run on back-to-back fuel.

TOMMIE JEAN VALMASSY

Great. Well, thank you. And so you mentioned a Northwest biofuel website.

[00:40:00]

Can you tell us what that website is?

TYSON KEEVER

Yes, I can. Let me pull it up here . The Northwest Biofuels Association has kind of been absorbed by the Northwest Environmental Business Council, I believe, and I will pull up a link right now and I can email it to you to share afterwards.

TOMMIE JEAN VALMASSY

[00:40:30]

That would be great. Okay, and so when I get that, I can either

send that in the chat box or I can email that to people. I'm just getting that.

TYSON KEEVER

It's northwestbiofuels.org.

TOMMIE JEAN VALMASSY

Dot org. Okay, so all one word northwestbiofuels.org?

TYSON KEEVER

Correct.

TOMMIE JEAN VALMASSY

Great. Thank you. Okay, well, Tyson, what is kind of the take

home message, the one thing that you really want people to get out of your presentation today? Is there anything you really want to emphasize to us?

TYSON KEEVER

There were four points. One was just the difficulties in the market that we face with

[00:41:00]

good collection sources from engine manufacturers to big oil to what actual consumers spends with them to more independent credible sources about can we use guidelines or not? Will this hurt my vehicle or not? Can it go on an underground source or not? The second point is the concern we have for engine manufacturers with warrants and that is when fuel falls into that void, when it actually hits the facts that there's a fuel-related issue, whose responsibility does it lie on? The third is that we'd really like

[00:41:30]

to see a blending pump out there that can blend biodiesel and petroleum diesel and diesel blends, so a dial-a-blend pump that has been tech approved. And the fourth and final one is yellow grease is a great quality product biodiesel and we're trying to get it on par with virgin oil biodiesel.

TOMMIE JEAN VALMASSY

Okay, great. Thank you for that. Well, if you have more questions for Tyson or for our first speaker, Andrea, you can go ahead and type those in,

[00:42:00]

but we're going to onto our third speaker Ben Thomas. So Ben, give me a moment, I'll pull up your presentation here.

BEN THOMAS

Thank you, Tommy Jean. Can you see the screen, Tommie Jean?

TOMMIE JEAN VALMASSY

Actually, I need just a second here. I forgot I was handing it over to you.

[00:42:30]

Yes, we see your screen now.

BEN THOMAS

Let me reduce my control panel here.

TOMMIE JEAN VALMASSY

Perfect.

[00:43:00]

BEN THOMAS

Good to go, Tommie Jean?

TOMMIE JEAN VALMASSY

Yeah, we're good. Thanks.

BEN THOMAS

Great. Well, I want to welcome everyone and thanks for attending this Webinar. My presentation is going to be a little bit of a recap of what Andrea talked about, and a little bit about what our biofuels, the SeQUential fellow talked about, but I'm going to be focusing a little bit more on the ethanol side of things. I'm going to be talking about biofuels and the actual storage tank system. I'm going to go a little bit further in and talk about some of the

[00:43:30]

issues and the challenges facing ... I like the word "legacy UST Systems." There are an awful lot of underground fuel tanks out there. There are new ones being put in. We want to make sure the existing infrastructure can handle new fuels going in. So I'm going to start off with some basic differences between petroleum and biofuels. There are some fundamental properties that are different. So you can't necessarily assume, especially managing ethanol fuels, that you can simply change out fuels and the tank system will work without problems. We're going to talk about

[00:44:00]

ethanol and storage concerns a bit, the inter-relationship. My background is going to be coming from having people understand their underground storage tanks system, the parts and pieces and also the management strategy to make sure that they are managing their system in a way that is prudent and also in compliance with the rules. And then, kind of like what we've done before, we'll also end up with a little bit of a recap and talk about how to proceed from here. So in general, petroleum fuels are not electrically conductive,

[00:44:30]

and therefore not necessarily corrosive. That's good for both steel and fiberglass tanks. Petroleum does not significantly swell or permeate a fiberglass reinforced plastic tanks, piping and sumps. You've got a fundamental compatibility here mostly with fiberglass reinforced plastic tanks. As you'll see in some pictures soon, petroleum fuel does swell and permeate some thermal plastic and elastomeric materials, and so there are some compatibility issues

even with petroleum-based fuels.

[00:45:00]

And like Andrea said earlier, oil and water do not mix and so that's a fundamental benefit. We know where the water is going to exist in an underground petroleum storage tank system. Alcohol based fuels are kind of a different set of variables here. Alcohol fuels are electrically conductive and, therefore, are potentially more corrosive. They are capable of permeating some thermoset, thermoplastic and elastomeric materials as well. And so there is some compatibility issues going on with these, especially

[00:45:30]

ethanol, alcohol based fuels and the tank systems that contain the fuels. They do contain chemical groups that increase chemical activity, reactivity, and bioavailability. We'll come back to that later at the end of the show. It does significantly increase the rate of biodegradation, and it does mix with water but phase separation occurs and I'll come back and talk about that in a little bit. So really, the issues that we're going to talk about today are going to be based on ethanol blends. We're going to be looking at conductivity

[00:46:00]

or corrosivity. We're going to be looking at compatibility and permeability. We'll be looking at solvent action and we'll finally be looking at phase separation as well. Let's take a moment and I'll roll things back for a little bit. There are an awful lot of tanks up there containing E10 fuel, ethanol 10% blend gasoline type fuels, and we're finding that there is a general compatibility with existing storage systems, aluminum, brass and lead. So in addition to the parts and pieces that make up the physical tank and the piping,

[00:46:30]

there's lots of fitting. And we're finding general compatibility. There seems to be a minimal recommendation for using zinc. But otherwise what we're mostly going to be talking about are the more highly concentrated blends of ethanol 85, E85 blends. So again, let's look at conductivity. That's one of the first properties of concern with ethanol or alcohol based fuels. First off, we know from experience over the years, and Andrea, you might recognize this picture as well here.

[00:47:00]

Biofuels and certain metals are compatible. We have reason to believe that they work well together. Stainless steel, carbon black steel, black iron, nickel, bronze. These are some of the metals that seem to not have a compatibility issue with alcohol based fuels. Once you start looking at different types of metals that are not necessarily the tank and piping, we start running into some

concerns here. Aluminum, copper, brass, lead, and zinc. These are all materials whose properties can get compromised in the presence

[00:47:30]

of alcohol blended fuels, and aluminum is particularly important because aluminum, as we'll see, is important in some of the properties of some of the underground storage tank systems. And Andrea, I appreciate you kind of laying the groundwork here looking at the ground level down. Once you start looking at an underground petroleum storage tank, you realize it's not just a matter of a dispenser and maybe some piping and a tank and in this place a giant ear of corn. If you look at all the numbers here

[00:48:00]

you'll see that there are many, many, many parts and pieces and these are all working together to allow delivery, to monitor, to transfer, to vent. All these parts and pieces are working together and if this entire system is not ethanol compatible, you may have trouble on your hands. This is an ad for OPW and they make the claim all OPW components are designed, built, and tested to work together as a unified solution for ethanol 85 and E100 tanks. So for a newer system that kind of makes sense. For an older system, we have to be careful and make sure that all these parts

[00:48:30]

and pieces have been verified. Compatibility is really where I want to spend a bit more time on today because if a storage tank system cannot be compatible with the fuel that it stores, it's going to fail and it is in conflict with the state and federal regulations. Let's take a look at those issues here. First off, what is compatibility to begin with? And so for non-metal tanks it generally means it does not produce a change in the properties of materials. In other words, the

[00:49:00]

liquid doesn't have a physical affect on the containment solution. And you can see here, some of these pictures here we've already got some problems on our hands. These are older flexible plastic early generation flexible plastic piping. This piping is not supposed to be squishy. Likewise, this piping is not supposed to be cracked. And so if you are getting things like discolorations, swelling, degradation, elongation, creep, softening, jelling, embrittlement, delamination, these are all measurable physical properties

[00:49:30]

that we've experienced in the underground storage tank world of certain parts of the piping system coming in contact with petroleum. Likewise, your piping should not be growing like this

blue one is here on the right or cracking like this blue one here on the left. And so these are the bona fide compatibility issues you want to be very, very careful about. So this compatibility issue is actually already a concern prior to the introduction of these biofuels that are out there. Let's take a look at the physical tank itself.

[00:50:00]

Concern about steel tanks and you want to make sure that we're keeping water out of the tank. Water in any sort of ethanol or really even any biofuels application is not going to be good. If you have fiberglass reinforced plastic, you want to make sure your underground tank is UL listed, Underwriters Laboratory listed for alcohol. Like Andrea pointed out early on, there was some really early generations that were not compatible with alcohol fuels and we're seeing physical degradation of the tank which eventually led to a

[00:50:30]

leak and a problem and so on. Certain underground tanks are steel but they have a material on the outside that is not-metallic and those non-metallic coatings must be UL listed as well. Otherwise, we can get degradation and failure of the outer wall of the underground tank. EPA in the states drove a large campaign, which resulted in the closure of many hundreds of thousands of underground tanks in America. It also allowed the interior

[00:51:00]

lining of older steel tanks, and so there are still a number of internally sprayed on lined underground tanks out there. Those lined tanks should be UL listed for alcohol although that is not very common to do. This is probably an application I would more or less discourage operators from doing. Then there are all these parts and pieces that make the tank systems work. The physical drop tube inside the tank is made of aluminum. We want to make sure that there is not a compatibility issue with the tube that allows

[00:51:30]

product to go into the tank. There are these automatic shut-off devices. Again, there's aluminum parts and pieces in here and if this flapper valve gets compromised because of compatibility concerns then the ability to prevent an overfill may be stopped. We want to make sure that all the parts of the pump, the portion of the system that pushes fuel out of the tank or sucks fuel into the dispenser are in fact petroleum compatible. So they will not fail. tank top sumps, like you saw

[00:52:00]

the green piping earlier or the blue piping earlier, these containment sumps may or may not be compatible with petroleum,

and we want to make sure that any alcohol based fuels do not acceleratedly corrode this containment sump and wreck the equipment. Concerns of piping include making sure that you're not using galvanized steel piping which is not that common any more but there's going to be a compatibility issue there with alcohol. And kind of just like with tanks, we want to make sure that the fiberglass reinforced plastic must be

[00:52:30]

Underwriters Laboratory listed. Andrea pointed out there are lots and lots of elbows and points here and all these things have to be carefully put together, and on top of it all the piping should be compatible. Flexible plastic piping, like we said, we want to make sure we're not in some sort of a degradation environment, and there are some alcohol based pipe dopes out there whereby you're connecting fittings, and if those aren't alcohol based then you will get fairly immediate failure and leakage at those points. Leak detection is kind of a an interesting

[00:53:00]

thing because all underground tanks in the U.S. have to be monitored for leaks and releases. The ATG, which stands for Automatic Tank Gauge or the Veeder Root or your tank monitor, it is going to be the device out there that is most commonly used. However, we want to make sure that any sort of probes and floats are, in fact, compatible with ethanol based fuel so that there's not a compatibility problem. We want to make sure that any sort of sensors are able to monitor for ethanol, and many lines have

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what are called LLDs, Line Leak Detector, pressure sensors that are there to look for catastrophic failure in the lines, and if there is a compatibility problem and the parts wear out because of it, a number of line leak detectors are coming out now with stamps on them saying that they are ethanol compatible. But if this device isn't working, then your entire system is at great jeopardy should there be a release and you may miss the opportunity to discover it. And water paste, it's an interesting thing as well. I mean, traditionally, the

[00:54:00]

tank operators of the past would take a stick and they would wet the bottom of the stick with a little bit of water finding paste to be able to physically measure for water in the tanks. The problem with that is that paste is no longer relevant for ethanol blended fuels and we have to get a specially formulated paste to make sure you can physically find it. In fact, it's interesting. Most tank monitors today for ethanol blended fuels, E85 fuels or higher or E85 fuels do not have a

[00:54:30]

water float in them, and so water is going to be a critical thing we'll talk about in a moment but it's also going to be important to know that the traditional means of even finding water are not necessarily reliable. Dispensers, we want to make sure that our dispensers are UL listed. We want to make sure we're using appropriate metals and we have to be careful that we're using all the appropriate seals and gaskets because this may not apply to the Northwest. I think we've got maybe a better, a more modernized fueling infrastructure that's out there, but we want to make sure that the seals

[00:55:00]

within the dispensers are compatible with ethanol blended fuels. Filters, we want to make sure that filters do not contain aluminum parts and that they are highly sensitive. They use a one micron filter to filter out any gunk for reasons that we'll talk about in a moment. Again, your hoses and whip hoses over here, your breakaway couplings should the driver drive off leaving the nozzle in the car. And the nozzles, we want to make sure that all parts of the above ground storage tanks system, not

[00:55:30]

directly regulated by state and federal underground tank regulations but again the entire start to finish infrastructure from when the fuel first goes into the tank to when it is dispensed down to the customer's that the entire portion of that is compatible with petroleum. That's a big discussion about compatibility and permeability. Let's talk about solvent action. Just kind of briefly here for a second but ethanol blended fuels have the capacity to like Andrea said loosen rust plugs and then accelerate leaks and

[00:56:00]

mobilize sludge and so older underground tanks have traditionally accumulated gunk and debris over time. And if you're not careful and if you don't clean out the tank prior to the introduction of an E85 blend, you could be losing a lot of materials. And so this is going to be a two-pronged approach here of both making sure that the tank is clean prior to the addition of alcohol fuels and making sure again that your filters have the capacity to filter out debris so you don't wreck your customers' cars.

[00:56:30]

Phase separation is the last portion I want to talk about here, and unlike permeability and compatibility, this is something you kind of manage after the tank system is in operation. Now, it's important to note that the petroleum holds only about 100 parts per million water. In other words, there are little microscopic amounts of water in the fuel, but beyond that water simply settles out, as a

separated phase and water will always end up in the bottom of the tank under traditional fuels.

[00:57:00]

Alcohol fuels on the other hand retain a lot more water. So between 4,000 for E10 and 40,000 parts per million for E85. You've got a lot of water that's caught in the suspension of the ethanol fuels. And once it reaches a certain point, then an alcohol and water mixture settles out as a separate phase. And so the problem here is that we want to make sure that any water in there doesn't hit that critical point where you start getting that phase separation.

[00:57:30]

And so with phase separation, the points are pretty clear. You've got to really have clean and water-free tanks. Get water out. Keep water out and monitor for water. Again, unlike the tank monitors of yesterday, you really can't rely on the Veeter Root tank monitor to determine whether or not you have water. And so any good ethanol storage tank operator realizes the wisdom of keeping absolutely every drop of water

[00:58:00]

out of the tank as possible. So whether you're monitoring for water, you're keeping your tank containment opens tight, whether you check after a big rain to make sure water is really going to be the enemy of ethanol blended fuels, and it's a challenge. I mean, I used to live in Juno, Alaska where it rains a lot and water got into fuel tank systems all the time up there. In the Seattle/Portland areas we get some pretty good seasonal rains and the best operators can do is really make sure that the tank tops are absolutely

[00:58:30]

tight and that you're constantly monitoring for water and any water is taken care of immediately. So you can use the existing infrastructure. I'm kind of somewhere in the middle between Andrea and our SeQuential guy here. I want to make sure that you guys know that it's not just a matter of switching out of fuel tanks here ... I'm sorry. It's not just a matter of switching out fuels in a tank system. You want to make sure that the tank is empty, has been cleaned prior to transfer. You want to be

[00:59:00]

continuously checking for water. You want to make sure that there's proper signage so that the driver knows what type of fuel you've got. And you really want to keep the tank as full as possible and reduce the likelihood of water getting into the system. And you want to also be able to shut down pumps during delivery. This is kind of an interesting point here because if you actually have

water in the bottom of the tank, and you get an E85 delivery, you can actually get an increased measurable amount of water. So you want to shut down the system to reduce the turbulence during the deliveries.

[00:59:30]

One day you'll purge the lines prior to starting and you want to keep the tanks full for seven to ten days. You also want to make sure your tank is not leaking and so doing an additional tank tightness test is not a bad idea. And also think about checking for water on a daily basis especially in the E85 blend. You want to make sure your dispenser is not having any problems. You want to make sure that your meter calibration is good and solid. So if there is a release, and Andrea talked about this a little bit here, BTEX are the toxic

[01:00:00]

and carcinogenic volatile compounds in gasoline and you need to know that you can actually increase BTEX concentrations because BTEX is more soluble in an ethanol water mixture. Basically, plumes can grow larger if you're not careful. You can mobilize free product more because the ethanol blends reduce the surface tension. Again, it basically makes it for contaminant plumes to move further and it can also inhibit

[01:00:30]

biodegradation of the BTEX compounds by depleting oxygen. That oxygen is being consumed by the alcohol blends and therefore making the BTEX compounds more persistent. So all this being said, what do we think about how to proceed from here? It is not to say that biofuels are incompatible. We do have to be careful. If you're building a new underground storage tank system out there today, you should be able to design it to meet the issues of compatibility.

[01:01:00]

In other words, if you're starting from scratch you can make sure all the parts and pieces are certified compatible. If you're upgrading an existing underground storage tank system, you just simply can't change the fuels. You want to work with your vendor, your tank installer, and your local regulators. Certain states are now wanting a lot of upfront information about if you were to change to an E85 blend. Check with them, check with your contractor doing the work that they can certify the parts are compatible. And basically for new and existing systems the trick here is going to be to manage for water

[01:01:30]

solubility and space separation. If you're keeping water out, if you start with a sludge-free tank and you know that the issue of phase

separation is possible, from a management perspective, you should be able to get through this okay. So I'm going to steal a line from a friend of mine, which I think is a great line, which is, "Are you putting 21st Century fuels in a 20th Century underground storage system?" And the point here is just to proceed with caution. It is doable. You want to proceed with caution and know that from stem to stern all the parts

[01:02:00]

have to be compatible and that you are, in fact managing for water. Hope I'm doing okay on time here, Tommie Jean. You can go to our web page for additional information. We provide information for inspectors and UST operators around the United States. Probably your best kind of equipment compatibility resource is going to be the petroleum equipment. There are tons and tons and tons of great resources that are out there for manufacturers, distributors, and owners of petroleum storage tanks systems they have.

[01:02:30]

If you want to keep a list of who self certifies for ethanol compatibility that's a good resource there. And I do believe the American Petroleum Institute down here, the more I think about it, these guys will kind of give you the petroleum angle on things but there are a couple of good installation practices, documents that are there to help and make sure that tank systems are compatible going in. But these are three pretty good resources. That's all I've got, Tommie Jean.

[01:03:00]

TOMMIE JEAN VALMASSY

Okay, great. Well, we did have some questions come in if you want to see a couple of those.

BEN THOMAS

Okay, shall I ...

TOMMIE JEAN VALMASSY

And do you mind actually leaving the resources slide up there so people can see those websites. I just want to clarify for everyone I did email these presentations out earlier today, but I apologize. I sent a different draft so it didn't have this resources page. So I sent a link earlier and I can send that again where later this afternoon, they're not there yet, but these presentations will be posted in PDF

[01:03:30]

format so you can download those and we'll make sure that we try to get this slide up there as well so that you can have those

resources link that will [OVERLAPPING]

BEN THOMAS

And I think there's a little type here, but Petroleum on the first links supposed to be spelled like it's supposed to be spelled, petroleum.

TOMMIE JEAN VALMASSY

Oh, okay. Great. Thanks.

BEN THOMAS

Thank you.

TOMMIE JEAN VALMASSY

Okay, so a couple questions here and you can go ahead and keep typing in your questions both for Ben Thomas who we're talking to now or Tyson Keever who was our second presenter

[01:04:00]

or Andrea Barbery. And so Ben, are you familiar with the issues around E10 and marine fiberglass fuel tanks?

BEN THOMAS

I know that there are marine fiberglass systems out there. I haven't heard of any compatibility issues with E10, with any fiberglass tanks really, much less a subset of marine grade tanks. No. I'd be happy to do a little bit of research

[01:04:30]

on that, but I've heard nothing to the effect that there is maybe a compatibility issue.

TOMMIE JEAN VALMASSY

Okay. How can one guarantee ethanol compatibility in an older storage system?

BEN THOMAS

I would work really closely with the service provider. I mean, I'm assuming we're seeing a number of different states represented as listeners here and so to the degree you can work with the contractor who is going to be doing the tank work and have

[01:05:00]

them or their equipment manufacturer certify that in fact ... I mean, to the degree you can, the best you can do at this point is to have the manufacturer certify that all the parts they have are ethanol compatible. I'm assuming the tank contractors today have to have or should be putting together some sort of disclaimer that says that to the best of our ability everything from the fill pipe to the tip of the

[01:05:30] nozzle is, in fact, compatible with the fuels designed for. So I'd put a lot of stock into making sure that your local contractors and their equipment manufacturers are self-certifying. There was an Underwriters Laboratory certification list for dispensing equipment only. That got pulled a couple years ago, and the only ... PEI, this new link here pei.org also has a catalog of self-certified manufacturers and distributors of petroleum parts and pieces, but either you had to kind of cobble this together yourself or rely on the service

[01:06:00] provider doing the work to have them certify that it is all ethanol blend compatible.

TOMMIE JEAN VALMASSY

Okay, great. Well here's another question and I hope I'm asking it, right. You mentioned it earlier on one of your slides, capacitance probe? Is that how it's pronounced?

BEN THOMAS

Oh, capacitance probe.

TOMMIE JEAN VALMASSY

Capacitance. All right. So what makes a capacitance probe incompatible with ethanol based fuels?

BEN THOMAS

[01:06:30] You know, those were out a long time ago. I believe the capacitance ... Most of the probes we have today are in little floats, and the capacitance probe is more of a solid rod that goes down. I believe it's the way the fuel kind of adheres to the walls that makes the measurements unreliable. I'm kind of digging off an old memory of that, but they are not that common any more. If someone wanted to particularly talk to me on the

[01:07:00] side line, I'd be happy to follow up on that sooner, but I understand that capacitance probes are not rated for ethanol blended fuels, the specifics of which I'd have to dig a little further for. But whoever asked the question is welcome to talk to me directly afterwards.

TOMMIE JEAN VALMASSY

Okay, great. Well, is Tyson and Andrea if you guys are still live on the line we also have some other questions for you we didn't get to so if that's all right, Tyson?

TYSON

Here.

TOMMIE JEAN VALMASSY

[01:07:30]

One person asks,

have you quantified the greenhouse gas emission reductions from the yellow grease biodiesel produced by SeQuential?

TYSON

No, we have not. We've looked into a few different ways to quantify the green model and there's a couple other companies that are looking at it for us, but we have not.

TOMMIE JEAN VALMASSY

[01:08:00]

All right, and Andrea, I have one for you here.

Does EPA have any regulatory authority over incompatible materials with biofuels? For example, can a UST inspector issue a citation for a UST systems that is dispensing a biofuel that is incompatible with their existing UST system?

ANDREA BARBERY

[01:08:30]

Sure, absolutely and as I mentioned, our underground storage tank program is delegated to the state inspector, which the state head person would be able to enforce that to whatever

[01:09:00]

state enforcement actions they can take. Now, the crux of the issue is that it's difficult for inspectors to go out on the site and determine compatibility. I mean, a lot of these ... Obviously, everything is buried so you'd have to rely mostly on records and really what we understand is that the records at these facilities is kind of not there generally. So it is really difficult for us to go out to a particular site and figure out all those components,

and then show the picture of all the many components that make up the underground storage tank system to see if all of those things are, in fact, compatible.

TOMMIE JEAN VALMASSY

Okay. All right, well I just kind of wanted to do a quick roundtable with all three of you with any kind of take home messages that you want to have today, and if you've got other questions, they can type those in but we don't have any outstanding that we need to

[01:09:30] answer. So Andrea, did you want to leave us any key messages that you want us to take away today?

ANDREA BARBERY

Gosh, I guess ...

TOMMIE JEAN VALMASSY

I'm sorry. I put you on the spot first.

ANDREA BARBERY

[01:10:00] No, that's fine. I appreciate the opportunity to say one last little bit, and that I guess is if you are an owner-operator who is going to be moving towards an ethanol of biodiesel blend, it's really critical to work with your installer to make sure that everything, get all the components, or even your state

regulatory agency to make sure that all the components that you plan on putting in are compatible.

TOMMIE JEAN VALMASSY

Okay, great. And Tyson, I know you went over your key points with us, but is there anything else that you wanted to add in wrap up.

TYSON

I just appreciate your having me and my contact information was in my last slide if anyone wants to get in touch with me.

TOMMIE JEAN VALMASSY

Okay, great. And Ben, how about you?

BEN THOMAS

[01:10:30] I always like to put in a plug for operator training. EPA has passed Operator Training Grant Guidelines and Oregon was actually the first state to adopt that way back in 2005, and one thing that operator training doesn't necessarily go into in great detail kind of legally is to make sure that underground tank operators really know the parts and pieces of their system, and a well informed and well trained operator is one who really understands what their tank systems are made out of, what the components they have, the compatibility issues

[01:11:00] and also to have a good operation and maintenance plan. Any

fueling system company that has a good operation maintenance plan should be able to address this issue easily. Again, by knowing what they've got and knowing what procedures they have to do to keep them out of trouble. So to the degree you can include that into your Operator Training Initiative that should be coming up in the next couple of years.

TOMMIE JEAN VALMASSY

Okay, great. Well, thank you all very much. I'm going to hand it back over to Carlo to wrap us up here. Carlo.

[01:11:30]

CARLO BERTANI

Yes. So I would just like to thank all of our presenters Andrea, Tyson, and Ben and also like to thank everyone for participating in today's Webinar on biofuels and infrastructure and compatibility. As I mentioned at the very beginning when I was giving an introduction, you can find a lot of additional federal regulatory information biofuels at epa.gov/oust. That's spelled O-U-S-T and there's a link in the top box there that will take you to whole plethora of different links that you can

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go on line and just discover whatever information that you're looking for. So, yeah, I'd just like to thank everyone for participating and everyone had their information as far as their email address and everything. So if you do have any additional questions, you can contact any of us, and we'd love to hear from you. So thank you.

TOMMIE JEAN VALMASSY

Great, and just a reminder. We will have a little pop up with some survey questions. So if you would give us your feedback on the content and format today, we would really appreciate that.

[01:12:30]

And that is going to end our Webinar.

[01:12:38]

END VIDEO