

Jessica Torry: [0:07] Good morning, everybody, this is Jessica Torry in Denver. I have just 10 o'clock, so I think we're going to give, maybe, one or two minutes for everyone to join the call. Then, we'll get started with our intro to hazardous materials webinar this morning. Thanks for joining us.

[0:29] Can everyone just give a confirmation that you can hear me and you can see Lisa's slides?

Audience Member: [0:32] [inaudible] here.

Jessica: [0:32] OK. Sounds good.

Audience Member: [0:42] Can you see? Just checking.

[0:47] [background sounds only]

Jessica: [2:02] Ready?

Lisa Pederson: [2:02] Mm-hmm.

[2:02] [background sounds only]

Jessica: [2:02] OK, everybody, thanks for joining this morning. I think we're going to get started. My name is Jessica Torry and I'm here at the TSC in Denver and the materials and corrosion lab. This morning we have a great presentation for you on Intro to Hazardous Materials.

[2:21] Just a few reminders before we get started. We are going to record the meeting so please be sure to mute your phones. We're going to take questions at the end or you can write your questions in the chat window at WebEx and then I will read those to Lisa at the end.

[2:39] Eventually, I plan to post these all on the Web, which we've had some technical difficulties with. Either way I will have the slides and recordings available that even if they're not on the Web I can send those to you for reviewing at a later date.

[2:59] We do this to inform our reclamation staff about the importance of litigating corrosion. This year, we've added the third installment so we will have three webinars a year. We've included our hazardous materials colleagues in the [inaudible] webinar series.

[3:18] We hope to present again in April and again in June. We will have one focus on protective coating and another focus on cathodic protection and I hope concrete cylinder pipe inspection. We also offer a corrosion school. That just happened in February so unfortunately, we won't have another probably for another year but look for those.

[3:48] Lastly, on the business side, I have a mailing list that I keep, that I just use for the corrosion webinars. Typically, you'll just get maybe a month before an email announcing the webinar and then about a week before with a reminder for the date of the webinar.

[4:09] If you'd like to be added to that, please just shoot me an email and I will make sure you get on that list so you hear about all of the upcoming webinars.

[4:18] Now, we can get started with our topic today. Our speaker is Lisa Pederson. She has a Masters in chemical engineering and a PE license. She has spent many years in the environmental engineering field including in both the public and the private sector.

[4:41] For example, she worked for HDR Engineering, Rusty and I, both the EPA and the state department and she's done quite a lot of contracted work with the core of engineers particularly in the Pacific Northwest division on their dams. She has been six years now at reclamation and she has been in the materials and corrosion labs since we reorganized two or three years ago.

[5:08] We welcome her today to give the "Intro to Hazardous Materials" webinar.

Lisa: [5:14] Thank you, Jessica. Welcome this morning to Intro to Hazardous Materials.

[5:23] I'm using the term "hazardous materials" as a general term. It covers many regulated materials such as hazardous waste, asbestos, PCBs, equipment containing elemental mercury, used oil, and depending on the state that your project is in, it may cover other things like electronics, which would be like print circuit boards that you would find in your control units.

[5:55] A lot of the electrical equipment may fall into this category. It also may cover concrete aggregate, and we will talk about these in a little more detail later.

[6:09] What's role of hazardous material for VAR. Reclamations facility manager shall consider hazardous waste handling for the initial purchase of hazardous materials, hazardous substances, oils, or as early as possible in the design processes, which include hazardous materials or has the potential to generate hazardous waste.

[6:33] It is reclamation policy to carefully consider such purchases or designs with the intention of substituting non-hazardous materials or making process changes where possible to avoid or reduce the generation of hazardous waste.

[6:49] Whenever the generation of hazardous waste is unavoidable, reclamation will ensure effective management is employed to minimize potential releases to the environment, and any long-term liability. That's from Reclamation Manual Environmental P-15 section 5A.

[7:09] Why do we have this? The federal environmental regulations are from cradle to grave. In other words, when we put something into one of our facilities, and then we remove it, if it is a hazardous waste or hazardous material, we will own that from the minute we install it to perpetuity.

[7:42] That's why it's important to know what you're dealing with in a project. The other issue is that Executive Order 12088 states that all federal agencies will follow state and local environmental regulations. Those state and local regulations tend to be more strict than the federal.

[8:10] It's important to know where your facility is at, and to know what those regulations that are surrounding it. By doing this ahead of time, you can save the schedule and budget for your construction project.

Jessica: [8:23] For those of you that just joined us, we are getting a little bit of feedback on the phone so please make sure your audio is on mute mode. Thanks.

Lisa: [8:35] OK. As I said before, the regulations are from cradle to grave so that when we are disposing or recycling a material, that responsibility cannot be delegated. Since I've come to reclamation, I've seen that in several cases the idea that reclamation can delegate the responsibly to the construction contractor. That is not true.

[9:11] Anytime we do have to dispose of it, we will still have the responsibility. That's why we want the records of the testing, transportation, and the disposal. We want to ensure the waste is being correctly classified and disposed of.

[9:30] Note that the contractors who also are working at the site, and generate waste, will become co-generators and they share the responsibility. Again, for the contractors, that responsibility cannot be delegated either...

[9:45] [background phone conversation]

Jessica: [9:45] Hi, this is Jessica again. I'm going to try and mute all the participants, but if you are on the line, we can hear someone. Please try to make sure your audio is in mute and then we'll take questions at the end. Thanks.

Lisa: [10:11] Continuing, as I just mentioned, contractors are co-generators but reclamation, as the site owner holds the ultimate responsibility, financially and legally.

[10:26] For example, on the Superfund sites, where EPA is involved, we've got these issues will last and have lasted for, sometimes, decades. If it happens on a BOR, on a reclamation site, reclamation will be involved in having to deal with all those wastes until the site is cleaned up.

[10:56] In some cases, we've had sites where PCBs from transformers and the like, that oil has leaked into the ground. BOR is responsible for the complete clean-up of those sites.

[11:14] We also have, currently going on, the lead bill mine drainage project. Even though these mines have closed down a hundred years ago, we're still being impacted by the acid mine drainage. Just because it happened in the past, and though we may not be currently working there, didn't cause it, we're still going to be responsible to take care of it.

[11:45] Back on to the Executive Order 12088, just a reminder that all government agencies shall follow the state environmental regulations. Note that those state regulations tend to be more strict. They do tend to cover far more than the federal regulations.

[12:08] For example, Colorado, also has regulations on the book that cover the disposal of electronic wastes. Meaning, if your project site is in Colorado, you cannot dispose of monitors, printed circuit boards, wiring, those all have to go into a special facility and they have to be recycled. They cannot be just disposed of as solid waste.

[12:38] Washington and California, both of those states regulate PCBs down to smaller parts per million level than the federal standards. Federal standards is 50 parts per million but Washington and California regulate PCBs in oil down to two parts per million and five parts per million, respectively.

[13:02] It's important to know what your state regulations say. By knowing ahead of time what you've got on your site and what's in your project, you can get a cost estimate that reflects this. You can handle these costs and the risk early on and you can budget far more efficiently.

[13:29] The contractors will also be able to bid the work more accurately. I won't say that it'll cut out change orders completely, but it will cut them down and it also can cut down on construction delays.

[13:47] I've run into some projects where a contractor ran into hazardous materials, there'd been no survey done and it stopped the project completely while this was dealt with. It caused a several month delay.

[14:03] Some contractors don't want to work with hazardous materials, their attorneys won't let them do this. If this does occur, there are other options that we can deal with. We can split it out as a separate contract.

[14:20] In some of the regions we're looking at putting IDIQ contracts in place just to deal with hazardous materials. We can call up these hazardous materials contractors and deal with these issues.

[14:35] What kind of hazardous materials can you find at BOR sites? We've mentioned some of these already such as asbestos, PCBs, which stands for polychlorinated biphenyls, regulated metals, coal-tar, electronics and used oil.

[15:02] The first one, asbestos, this is probably the most prevalent in that it's found in a lot of different locations throughout a BOR facility. You can find it in electrical wire insulation. In this particular picture on the left, half of those have asbestos and half don't.

[15:26] You cannot pick by color or texture. They're all cloth wiring in there. Like I said, the only way you're going to be able to find it out is actually by testing. You cannot go by color. Just because it's white and asbestos is white does not mean it's asbestos. I think in this particular

case it was the pink ones and the blue ones. There's actually no rhyme or reason.

[15:52] Picture right, those are insulator boards. Those also tested very positive for asbestos. Sometimes you'll have other insulator boards, it looks like a black plastic. Again, the only way you're going to know is to grab a sample and have it analyzed.

[16:12] If somebody tells you they can look at it and tell you, the only way you specifically know is to have the material tested.

[16:21] Other places you can find it is in electrical putty, as in the material that's usually used to prevent leakage and occasionally, you'll find it in coatings. There's a picture on the right, is coal-tar and asbestos wrapped, you never know. You may also be able to find it in office materials, in floor tiles, ceiling tiles and sometimes, wallboard.

[16:58] Another common occurrence is Transite. The material on the right is electrical conduit, where you run your electrical wiring, the material on the right are the trays that you lay your electrical equipment on.

[17:18] Those, typically, you'll find those marked. They'll say Transite on it and in some cases, they've gone ahead and marked them as asbestos containing and you'll find a sticker. The one on the right actually did. The one on the left was not.

[17:32] Other places you can find it, in mechanical valves, in the stem-packing, in control joints. It's sometimes used as a gasketing material, not always, but sometimes. Since asbestos is a natural occurring mineral, it may also show up in concrete aggregate.

[18:01] As note up here says, "It's directly regulated to some states, for example, California, but just because it is not specifically named does not mean it's regulated."

[18:12] It's still not allowed to be released into the air, which may occur when handling. That goes to environmental regulations 40 CFR 763. You're just not allowed to release environmental hazards into the air.

[18:34] Another very common one is PCBs, polychlorinated biphenyls. It's found in transformer oil. That's probably the classic place for finding PCBs that most people will remember. It works as an anti-microbial. It is also found in coatings. Most of our oil has been dealt with. If it hasn't, it's required by law to have a sticker marked on it if it does not contain PCBs or if it does.

[19:12] When it's been found in the hydraulic oil or the electrical breaker oil, it's usually a result of cross contamination where somebody had some extra oil back in the day. They just needed to top something off. They dump this old stuff in. In that case, you end up contaminating pretty much the whole system. All that oil has to be disposed of then as a PCB containment oil.

[19:46] The reason why it was added to coatings was as an elastomeric. It's also an anti-microbial. It hasn't been terribly common. In my testing, I have not found it very commonly yet, but who knows?

[20:09] Regulated metals. These are very common in all of the coatings so we're talking back here about the vinyl resins. I've found them in resins, the coal tar enamel, coal tar and even the common day, the new coatings that we're using. They also have metals in high amounts.

[20:35] Typically, we've talked about lead and that was the old standard. It's a great coating. It adheres really well. It works very well for preventing corrosion but it's now on its way out due to the health concerns. The other place you might be able to find it is in used oil.

[20:59] Again, it's probably a cross contamination issue. When you put contaminated oil in with the hydraulic regular oil causing that oil to be contaminated.

[21:15] What metals are we looking for? Federal standards has this called RCRA 8s and that is on the far right where it talks about those eight metals. That's the typical list for most of the states, those eight metals. In California, they regulate 17 metals and those are referred to as the cam 17s. That is only for California.

[21:44] All the rest of the states for BOR would be following the RCRA 8. It's just a difference for what California wants to regulate. Again, you need to know this for where your project is at.

[22:06] Coal tar is typically found in -- it's a protective coating -- pipes. It can be found on the inside and on the exterior usually penstocks, large piping, on the interior. It's got coal tar enamels, the really thick stuff and it's several millimeters thick and then move to coal tar epoxy. Both of them are black in color. You break it a chunk of it off and you smell it.

[22:43] It smells like asphalt and it tends to be very thick. Again, it's also a very new coating but it has environmental and health concerns. Our coating's people are looking at other coatings that we may be able to use to replace these.

[23:06] Coal tar, it also may contain asbestos. There they go again with that asbestos, it shows up everywhere. It was used as a stiffener because the coal tar tends to be...It doesn't have much structure, so you put the asbestos in there to give it a structure and maintain on the surface you want to coat.

[23:32] What you do if you think you got hazardous materials? In the inception of your project, this is the place to go get a handle on what you got. Start screening for those possible hazardous materials that may happen, based on what I've shown you in the past. Where it might occur. Once you've got an idea, you've got a site survey done.

[24:03] You can use those screening results in the design process for your cost estimate, and in inferior designs, so the contractor knows what to

deal with. We want to be able to tell the contractor what he needs to deal with, and how to deal with it. What testing do we need? What kind of facilities do they need to send these materials generated to?

[24:35] Are they going to go to the recycling facilities? Are they going to go to hazardous waste disposal facilities? Are the PCBs going to have to go to a PCB incinerator? We need to spell this out in the specifications so the contractor can appropriately deal with any waste generated. Once we've selected our contractor and we're onto construction, we get into the submittal review.

[25:03] We want to ensure that the contractor is following the specs that we wrote, so we go through those. Make sure that their submittals meet the standards. Are they sending it to a recognized licensed facility? Once we've sent the waste out, we want to be able to get all the final paperwork back, the final manifests from the disposal facilities.

[25:35] One thing I've seen common is that the contractor will send you the manifest signed by the transporter, but you're not getting a copy of the manifest signed by the disposal facility, and that's the one that you want. That's the one that you want to be able to pay from because that means that the waste was sent to a facility and accepted.

[26:01] At record keeping we need copies. All this because we have to keep in perpetuity. We're responsible for this paperwork. Yes, the contractors will keep their paperwork but we will own this responsibility in perpetuity. We want to have good records in case there's ever a question.

[26:23] How can TSC and the Materials and Corrosion Lab help? Specifically, we have specialized training certifications. Currently, we are Asbestos Building Inspector Federal and State for Colorado, Utah, and Montana. We'll be adding Nevada very soon. We've got the BOR or reclamation HECP and that includes Grand Coulees HECP class confined space train.

[27:00] We also come with our own equipment. We got all harnesses for fall protection. One of our members is also part of the TSC underwater inspection team. We've got certified hazardous materials managers, professional engineers. Specifically, in a project, how can we help? We talked about the FUR process before.

[27:31] What we would do with you is review the project scope and develop a hazardous materials survey scope in conversations with you. Looking at drawings, photos that you would have. If you have any historical documentation.

[27:52] Sometimes those old drawings and the product manuals will specifically list out Mercoid switches or asbestos-containing material. That is a great source of information. Once we have that information, we can develop a project scope.

[28:14] Once we've done that and that's agreed upon, we'll start scheduling a site visit. What we've tried to do is schedule that site visit during an outage so that we can get access to all the equipment

that's on the scope. Because we want to do a thorough assessment as possible, and an outage is the best way to do that.

[28:41] Please understand that we're going to try to fit ourselves into your schedule, not you fit into ours. I've traveled weekends, evenings, whatever. Whatever it takes to try to make your schedule so that you're not having to put your facility in an outage just for us.

[29:02] Once we're there, our people are experienced to know what to look for. Honestly, that just takes experience in looking at the materials and understanding where they might occur. We'll go through and work with your people, especially if its electrical equipment.

[29:24] We'll work with your electricians on what we can get samples from because the sampling is destructed. It's not always possible to be able to get samples but we could still document it, and note it. Then once we're down the path, we send samples to laboratories, they'll get analyzed.

[29:46] We will get a report back that lists out our findings. Note that this information is stored on a SharePoint site. I've got the address listed. This is what it looks like. The point of it is that you'll always have access with VOR personnel.

[30:15] These reports include photo documentation, so you'll see pictures of everything that we've looked at. We'll know whether it's suspect material or not, and what the findings were in the analytical results. Once we're done with that, we go into the [inaudible] design.

[30:41] As we noted before, we research into the State and Federal regulations so that you got specifications that are written for the Federal and State requirements. We can document how all these materials need to be dealt with. Once we're into construction, we provide reviews of the submittals.

[31:05] Again, as I mentioned before, we want to make sure that we've got them well documented, and that the contractor is meeting the intended submittal. Also, in case you run into something that wasn't dealt with before. We can also provide on-site assistance and consultation if you've come up with something that you hadn't discovered previously.

[31:30] Here's a case study. They're currently on the same facility but they are two entirely different projects. One is gate recoating. We did a sampling of all the gates facility and the hydraulic controls. We went and collected samples of all of the coating materials, the control wiring, oils, and all that to get an idea of what we had on the site.

[32:11] From that third bubble, what we ended up looking at were metals, asbestos, gyros. The gyros go with the hydraulic oil. PCBs with coatings. This was compiled and analyzed. We've put together the report and talked about that with the facility and then the team lead.

[32:39] What that allowed us to do was to put together party estimate worksheets, and specifications sections that met the State and Federal regulations for this particular project. Now, we're into the construction

phase. Going through the submittal reviews and approvals, to, again, ensure that we're meeting the State and Federal regulations.

[33:02] This is actually a fairly common project. Looking at the coatings, the different types of coatings and what we need to do with them. In this particular case, the gates had to be worked onsite, which adds another layer of regulatory difficulty. Because you now have to deal with potential exposures to the environment.

[33:33] In other cases, they're able to take the gates off and send them to the shop. In that case, regulatory wise, it makes our work much simpler. At the same site, an island has built up a sediment in the forebay area of the dam. We're now looking at how to remove that sediment.

[34:06] Historically, that area had been used for gold mining. The sediment carried down now has heavy levels or high levels of elemental Mercury in it. Now, we're developing a sampling analysis plan to collect samples on that. Depending upon what those levels of metals and other materials in there end up being, we're going to develop methods and disposal options for the client.

[34:44] This one's in the [inaudible] stage or in the sampling and analysis plan development. The area has also been heavy agriculture. One of the other items we're looking at is the potential for pesticides and herbicides.

[35:03] It's the same dam but entirely two different projects, both dealing with hazardous materials. Here's a quick review. Knowing what you have and how much you have, you can state your budget and your construction schedule. Another takeaway, VOR owns waste generation responsibility forever, so, document, document, document.

[35:33] The common materials you'll find will be asbestos, PCBs, regulated metals, coal tar, used oil, elemental mercury, and other materials depending upon what your state regulations require.

[35:44] Here's a list of resources. I added the URL for that SharePoint site, so in case you need to use it or you lost that email that I sent you. The results, so the pictures that we take, the reports we write, and the original analytical lab reports are all housed on this site so that they're not going to get lost in our email. They're out there and you can download them and the pictures any time you need to.

[36:28] Another resource are your regional hazardous materials coordinators. Every region has at least one. In the areas, they also have their own. Then there's Reclamation Manual MVP-15, which I read an excerpt from the beginning. Thank you.

Jessica: [36:49] Thank you, Lisa. I am going to un-mute everyone. We will take some questions. If you don't happen to have a microphone, you can also call but put your questions into the chat window in the WebEx.

[37:12] Any questions for Lisa now?

[37:14] [pause]

Jessica: [37:14] OK, I'm not hearing anyone. Go ahead to the last line. This is our group. We have quite a few new fresh faces, some new hires just in the past month. Feel free to contact any of us. We'll hang on the line for another five minutes or so in case anyone has some questions, in general, or specific to your facilities.

[37:54] Also, you have my email, so feel free to email me. Here's Lisa's email. Email her with questions as you think of them. Thank you very much for your attention today.

[38:06] [background sounds only]

[38:06] [background conversations]

Jessica: [38:06] The other thing, I think it would be OK [inaudible] . I was going to say something. [laughs]

Lisa: [38:12] Yeah, do that because otherwise...

Jessica: [38:14] We'll see how it goes. I think it will be fine. Yeah.

Lisa: [38:19] Thank you.

Jessica: [38:20] Actually, no I think I'll write that down in my notes. I have the ability to [inaudible] , so I need to do that.

[39:43] [laughter]

Lisa: [39:43] Is it usual now we have questions?

[39:46] [pause]

Jessica: [39:46] Not necessarily. Tends to be if one person asks something...

[39:50] [crosstalk]

Lisa: [39:50] You know what you can do?

[39:52] [crosstalk]

Lisa: [39:52] Yes.

[39:52] [crosstalk]

Lisa: [39:52] Yes, that actually works. It's called seeding.

Jessica: [39:47] Yeah, I should have done that. There was a lot of people on though, there was at least like 30 users. I know a lot of times...

Lisa: [39:58] I would put that note down though, to have one or two seeds in the audience. Because a lot of times that will get people going...they

are like, "I don't want to be the first one". And so you can just have canned questions and have two different people.

[40:19] It works if there is one, but it's better if you have two, but then you can just come up with canned questions. I would suggest that much though.

Jessica: [40:38] Yeah, I've got it here now. I think by now, this is like our 15th webinar or something...

[40:45] [crosstalk]

Lisa: [40:45] You always learn something.

Jessica: [40:44] Then the software always changes...

Lisa: [40:45] Yeah that's why I always keep plenty of time.