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PUBLIC INFORMATION SESSION CONCERNING
NIAGARA FALLS STORAGE SITE

Youngstown, New York

September 10, 2008

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P R O C E E D I N G S

MS. KREUSCH: Good evening, everyone. My name is Arlene Kreusch and I'm the Outreach Program Specialist for the Buffalo District, and I just wanted to make you aware that the restrooms -- just to cover the logistics for the meeting, the restrooms are over here, and there's emergency exits in the back, and there's also the entrance that you came in tonight.

I'm now going to introduce Mr. Bill Kowalewski. He is the Program Manager for the Lake Ontario ordinance work site and Niagara Falls Storage Site. thank you.

MR. KOWALEWSKI: Good evening, everybody. Thanks for coming tonight. Welcome to the second public information session that the Corps of Engineers is sponsoring regarding the remedial investigation report for the Niagara Falls Storage Site. May I have the next slide, please.

The purpose of tonight's meeting is to continue the discussion and address questions and concerns regarding the remedial investigation report for the Niagara Falls Storage Site. The agenda for tonight's presentation is shown on the slide in front of you. Hopefully you've had an

opportunity earlier this evening to engage one-on-one with our technical specialists who were available starting at 6:30.

The presentation is scheduled for one hour. At about 8:15 we will begin the question and answer period for tonight's presentation, and then we will wrap up the meeting about 9:00 o'clock. There will be a few minutes available afterwards if individuals would like to come forward and speak with our project team individually again.

I'd like to recap where we're at with the remedial investigation of the Niagara Falls Storage Site to try to bring everybody up to speed for tonight's meeting. In December of 2007 the Corps of Engineers published their Remedial Investigation Report, which was the culmination of an eight-year effort to study the situation at the Niagara Falls Storage Site with regards to the nature and extent of contamination and the assessment of health and ecological risks at the site.

In April of 2008 Dr. Boeck from the community submitted a very nice and detailed report with eleven major concerns, based upon his review of the document.

In May of '08 we held our first public information session on this topic and we discussed several technical areas of concern which were raised in the review of the document to that time. Those issues were mainly about the integrity of the interim waste containment structure and the potential for off-site migration due to underground pipelines. From that event, the main meeting, we captured 53 additional questions about the report.

In July of 2008 we received another 12 written comments from Ms. Anne Roberts, and 59 comments from Scott King in the Community LOOW Project. In August of 2008 Dr. Boeck provided us with six additional topics regarding ongoing review of the report. In September we received 78 comments from the US EPA and their review of the document.

On Monday of this week, we received another written report from Niagara County. It was prepared by Mr. Norm Buski and submitted on behalf of Niagara County by Mr. Gary Abraham, special counsel to the County.

We do know that the New York State Department of Environmental Conservation has conducted a

review of the report and we still expect to get comments from them in the future.

So from the time that we published the report in December we've accumulated to date 234 comments from the public review of this report. Tonight we're prepared to discuss in further detail those issues that were raised in May and also some of the issues that have been brought to our attention through the comments received in about the August time frame.

The comments and questions that we compile tonight will be added to the overall collection of comments, and beginning on about October 13th the Corps team is going to formally kick off its comprehensive review and preparation of a response document to all of the concerns and questions we have received. So we will provide this responsiveness summary to the public when we're done, and it will outline where the Corps is going to go on each of these issues with regards to the future of the project.

This Remedial Investigation Report for the Niagara Falls Storage Site represents the first major compilation and evaluation of data by the Corps of Engineers since we got involved with the

investigation of the site in the late 1990's. I'd like to stress that this report marks the beginning, not the end of an ongoing and expanded effort to collect and evaluate data at the site. The data collected and evaluated in the Remedial Investigation Report is not intended to be the final answer on environmental conditions at the site. Rather it represents the body of evidence that we have at this time needed to support the next phase of the process, which is the Feasibility Study. The Feasibility Study is the document where we will identify and evaluate the potential long-term remedies for this site.

In addition to the Investigation Report that we're talking about tonight, the Environment Surveillance Program, which was started in 1981 by the Department of Energy, continues. We perform that regularly throughout the year and publish those reports, and we will continue to do so as long as we're involved with this project, to insure the public safety and health.

I should mention that as we get down the road with this project and approach the selection of a long-term remedy, those efforts will themselves generate a lot more data. There will be a lot

more field sampling, a lot more engineering evaluation of the property as we get towards remedial design, remedial action and long-term monitoring of whatever solution is ultimately selected.

That kind of recaps not only where we're at with this report but in short where we're at in the overall process, and what I'd like to do now is, again, thank you for your attendance tonight, and I'd like to introduce Dave Kuliowski and Halle Serazin, from one of our prime contractors, SAIC, and they're going to continue with the presentation tonight. They will discuss the overall Federal cleanup process that was created by Congress and developed by the US Environmental Protection Agency. We're going to again go over some of the conclusions of the RIR report, and then discuss in more depth some of the topics that were raised at the last meeting and submitted to us since about the August time frame.

Okay. Without any further ado, Halle and Dave. Thank you.

MS. SERAZIN: The Comprehensive Environmental Response Compensation and Liability Act, also known as CERCLA or Superfund, defines a systematic

approach for identifying, investigating and cleaning up hazardous waste sites. All the actions at the Niagara Falls Storage Site are being performed consistent with CERCLA methods and this graphic shows you where we are in that process. As you know, we recently completed the remedial investigation, which defined the nature and extent of site contamination and evaluated potential risks to human health and the environment.

The Feasibility Study is the next step in the process. We're holding these meetings to review and respond to your comments submitted for the remedial investigation. Once the remedial investigation comments are received, we will perform a data gap analysis and decide whether any of the data gaps identified need to be addressed in an addendum to the remedial investigation or whether they can be addressed as part of the Feasibility Study. During the Feasibility Study we will develop clean-up objectives and evaluate multiple remedial alternatives to address site contamination.

The Feasibility Study leads to the proposed plan where the preferred remedial alternative is

selected. Finally a record of decision will be filed to document final decisions on site closure.

Note that the CERCLA process allows for a removal action at any time during the process if it's determined that human health or the environment are at risk.

So now let's back up and see how we got to where we are. During World War II the Army Corps of Engineers built several facilities across the United States to manufacture munitions for the war. In 1942, the Corps acquired more than 7,000 acres of agricultural land in northwestern New York State and constructed a NTP -- or a production plant known as the Lake Ontario Ordinance Work, or LOOW. TNT production at the LOOW ended a year later in July of 1943.

In 1944 the Manhattan Engineer District was granted use of a portion of the LOOW for the storage of radioactive residues generated from uranium ore processing. With this action the Niagara Falls Storage Site was created.

In 1974 the Former Utilized Sites Remedial Action Program, or FUSRAP was formed, to address the legacy wastes left behind by the Manhattan Engineer District Atomic Energy Commission

Program, including the materials stored at the Niagara Falls Storage Site.

Seven years later, in 1981, the Department of Energy began an environmental monitoring program to assess radon emissions from NFSS and to look for radiological contaminants in surface water, sediment and ground water. Later that same year, radioactively contaminated soil from a vicinity property was excavated and placed in an area called the R10 Pile on the NFSS property.

Various remedial actions were performed throughout the 1980's including construction of the Interim Waste Containment Structure from between 1982 to 1986. In 1997 control of the NFSS was transferred from the Department of Energy back to the Corps. The Corps continued to environmental monitoring of the site and in February 1999 the Corps issued the first scope of work directing the performance of a remedial investigation which was completed in 2007. Next slide.

So let’s look at some of the accomplishments. In the 1980's the United States Department of Energy consolidated radioactive residues and contaminated soil and debris into the Interim

Waste Containment Structure. Presented here is a photograph taken during the IWCS construction and a photograph of how it appears today. The IWCS was engineered to slow radon emissions, rain infiltration and the migration of contaminants in ground water. Residues were placed directly on naturally occurring clay and into the basement of building 411. Prior to placing materials into the building 411 basement, drains, pipes and openings in the basement were sealed, and details on that operation will be presented a little later.

Approximately 190,000 cubic yards of radioactive waste and materials containing radium and thorium were placed in the IWCS. Construction of the IWCS took several years beginning in 1982 and ending in 1986. In 1999 isolated areas of residual radioactivity from across the NFSS were incorporated into the IWCS.

The remedial investigation was conducted to determine the nature and extent of contamination and included a regional ground water flow and contaminant transport model and an evaluation of the integrity of the IWCS. The remedial investigation was an eight year effort. It included three phases of field investigation.

During the remedial investigation more than 1,400 samples were collected and more than 150,000 analytical results were recorded.

The Corps' mission is the protection of human health and the environment. To accomplish this, the Corps conducts maintenance activities and annually publishes technical memorandum which highlight findings from the Environmental Surveillance Program. Measured radon and external gamma radiation data show that exposures from the site are currently well below Federal standards.

So let's review some of the key conclusions from the remedial investigation. We gave you these back in May but we'll repeat them here. No immediate off-site risk to nearby communities, no off-site radiological contaminant migration currently occurring via surface water or sediments, ground water plumes are limited in extent and coincide with historic operational areas. The remedial investigation included an assessment of the integrity of the IWCS and concluded that with continued maintenance the structure will be sound for some time. However, the IWCS was not designed as nor will it be used as a permanent storage facility.

Finally, the Feasibility Study will be conducted to address on-site and future risks.

Now Dave Kulikowski will begin our follow-up on some of the remedial investigations that we've received so far.

MR. KULIKOWSKI: Thank you. So since the public information session held on May 7th, we received comments regarding a variety of topics. Your comments are important, especially as we perform our data gap analysis, as we head into that. Thank you for taking the time to read and comment on these large voluminous technical reports. Written responses to public comments will be available after all comments are received in mid October.

We've grouped the remedial investigation comments received today into the categories listed on the slides. Tonight we're going to discuss each of these categories in more depth to help focus and encourage additional public discussion and comments. The principal focus of the comments tonight include ground water, pipelines, contaminant plumes, soundness of the IWCS, radiological contamination and access to information. Some of these topics cover more than

one issue so we'll get started. There's a lot of information to cover here.

All right. The NFSS ground water model assessed ground water dynamics both regionally and locally for the site. The areas of comments that were received regarding ground water flow, they concerned the presence of sand lenses, and the possibility of paleochannels, and the level of ground water within the IWCS. Next slide.

So let's start our discussion with a couple of definitions. Let's start with sand lenses. Till roughly 10,000 years ago most of New York State was covered by glaciers. When the glaciers melted they left behind till deposits consisting of mixed clay, sand, gravel and boulders, kind of a sedimentary melange. Till deposits like those found in the NFSS, they slow ground water flow and consequently contaminant migration. However, till deposits often contain embedded sand lenses, and the NFSS is no exception. The sand lenses, so it's kind of a well sorted sand pocket within the till.

Moving on to paleochannels, a paleochannel is a remnant of a stream channel cut into older rock filled by sediments of younger, overlying rock.

So it's essentially a buried river channel. So if present, the paleochannel would allow for faster contaminant migration.

The NFSS is situated over a clay layer called the upper clay till. That's shown in the brown area on the top there. The upper clay till is approximately 15 feet thick and it lies above a multi-layer glacial complex designated as a glacio-lacustrine clay. During the remedial investigation, 250 bore holes or monitoring wells were installed that fully penetrate the upper clay till. The borings were used to construct three dimensional structure maps of the glacial deposits at the NFSS to give us an understanding of what things look like underground.

This graphic or stratographic profile is a profile of the subsurface layers at the NFSS and it includes a depiction of where the sand lenses occur, and the sand lenses occur in the upper clay till at that little blond -- So this stratographic profile was drawn based on information obtained from all of the soil borings.

So in addition to the stratographic profiles, a geostatistical study of the borings was conducted and it concluded that the sand lenses

are not interconnected over distances greater than 15 to 20 feet horizontally, and over four to five feet vertically. So given the tight data point coverage especially in the vicinity of the IWCS, the presence of a paleochannel would mostly like have been identified during an RI, and it was not.

Furthermore, the finding of no defined plumes currently in the lower water bearing zone, it's further evidence that the upper clay till is slowing ground water flow and contaminant transport. There are locations in the lower water bearing zone that exceed background concentrations but there's no defined plumes. Next slide.

All right. Moving on. Concern was expressed regarding the level of ground water within the IWCS itself. The geophysical result suggests that the water level inside the IWCS was three feet below the foundation of building 411 at the time the measurement was taken, but without monitoring within the IWCS the level of saturation can't be definitively known. So if the level of the ambient water level surrounding the IWCS is also representative of the water level in the IWCS, then a semi-saturated condition would exist at the base of the IWCS. However, it's believed that the

flow inhibiting properties of the IWCS cap restricts water infiltration into the IWCS and lowers the water table beneath it.

So, the possibility of rising ground water levels within the IWCS residues was considered in a hypothetical, worst case scenario, and it was considered by the ground water model, which assumed saturated conditions based on the 95% upper competence limit of measured ground water levels. This level is around 320 feet above mean sea level, and for reference, the bottom of the former building 11 concrete floor is nine feet lower at 311. So for this hypothetical worst case scenario, 66% of the residues were considered saturated. The ground water model simulation assumed that the IWCS cutoff walls were not present, but it did include the impact of horizontal and vertical flow barriers associated with the concrete walls of the buried buildings.

So finally, results of the worst case simulation, they predict an increased lateral extent of ground water contamination, an exceedence of the U-238 screening levels within 50 years directly below the IWCS. However, the predicted hypothetical worst case ground water

plume shows no IWCS related exceedence of the uranium screening level at the site boundary within a thousand years. Next slide.

The next topic of discussion was pipelines, and that will be done by Halle.

MS. SERAZIN: Let me know if you can't hear me. Sometimes I can be kind of soft-spoken so I'll try to speak up. Several questions were received regarding pipelines at the NFSS including are pipelines transporting contaminants across the site, arr pipelines allowing contaminants to migrate out of the IWCS, are pipelines transporting contaminants off site, and finally, are pipelines acting as preferential pathways for ground water flow. The question -- next slide.

The question, are pipelines moving contaminants across the NFSS, is a good one, because as you can see from this graphic, the pipelines are present pretty much across the entire site. If you can't make this out clearly from where you're seated, a larger version of this graphic is available on a poster in the front of the room here. But this graphic was included to show you the extent of pipelines present across the NFSS property and you can see that they are

quite widespread. Also note that the different types of pipelines present at the NFSS are shown using different colors. A variety of pipelines are present at the site but based on our knowledge of site operations, we know that the most heavily contaminated lines are the acid waste - red, and sanitary - green lines. These lines carry operational wastewater, so it makes sense that they would be the most heavily contaminated. The flow in the acid waste and sanitary lines was based on gravity, so the lines slope and get deeper as they approach the wastewater treatment plant off the northwest corner of the Niagara Falls Storage Site. Other lines carried clean water for drinking, fire suppression and industrial processing. These lines were pressurized and carry clean water. The remedial investigation sampling focused on acid waste in sanitary lines because they are believed to be the most heavily contaminated and because they included manholes for easy access. Although a variety of contaminants were found in pipeline water and sediments, only lead and PCB’s were identified as chemicals of concern, and they’re shown here as purple and green dots. These

locations are shown on the graphic and may need further evaluation during the Feasibility Study.

Please note that this graphic also shows the four locations where waste and sanitary lines have been sealed at the property boundaries. There's three locations on the north and one on the south.

Next up, are pipelines allowing contaminants to migrate out of the IWCS. To address comments received regarding the possibility of pipelines allowing contaminant migration out of the IWCS, we went to the IWCS construction drawings. This graphic is based on an IWCS construction drawing titled South Piping Plan and Schedule. This drawing shows the location of pipelines under the IWCS where the lines were cut and filled and where sections of the pipe were removed. Pipelines were excavated from the building perimeters to an area immediately outside the IWCS cutoff wall. Some lines between the buildings were also removed. Lines were sealed at both ends with concrete or grout. This included lines running between the former wastewater treatment plant building and the 42 inch diameter fresh water intake line from the Niagara River. Next.

Are pipelines currently transporting

contaminants off-site? To answer this question, first note that relatively few lines cross the NFSS boundary. The site layout map that we presented in slide 14 shows a total of three sanitary lines, again two on the north side and one on the south side, and one acid waste line extending north off the NFSS. All of these pipelines have been sealed at the property boundary. Fire suppression, drinking, industrial processing and cooling water pipelines were left intact but are believed to be clean.

Another important observation for off-site contaminant transport migrations via pipelines is that no porous bedding material, for example, sand or gravel, was observed from around pipelines leaving the NFSS. Porous bedding material would enhance the likelihood that the pipelines would act as preferential pathways for contaminant migration. During pipeline construction, pipeline trenches were most often backfilled with native material. In some cases, like the ones shown here, the pipeline was encased in concrete bedding material. Furthermore, we have been and will continue to investigate radiological contaminants in off-site low pipelines. At the meeting back in

May, several questions were received regarding pipelines as potential routes for contaminant migration in ground water and how this issue was addressed in the Remedial Investigation Report. Although ground water model did not quantify ground water flow through pipelines or pipeline bedding material, this issue was addressed.

This graphic compares fluctuation in the depth of ground water with the depth of pipelines across the site. The range of ground water depths accounts for sea level fluctuation in the water table. Water levels in the upper water bearing zone fluctuate between two and ten feet over ground surface. Acid waste and sanitary sewer pipelines occur between nine and twelve feet below ground surface with some lines going as deep as 17 feet. Portable lines were pressurized, not gravity feed, so they were level across the site and located closer to ground surface. Some as shallow as two feet below ground surface.

Given these depth intervals, there is the potential for deeper lines to be exposed to ground water more than just seasonally. Can you go back.

Also, little water was found in the pipelines. During the remedial investigation 20

pipeline locations and 31 manholes were identified for water and sediment sampling. Sixteen of the pipeline locations and eight manhole locations were found to be dry. The fact that little water was found in the pipelines across the site could indicate that the lines are in relatively good shape because it does not appear that ground water is seeping into them. Despite the fact that little water was observed in the on-site pipelines, water that was encountered was assumed to be in direct contact with ground water in the upper water bearing zone. The ground water plume maps presented in the RI were drawn to include pipeline water samples. This assumption is evident in the ground water plume maps, particularly in the southeast of the IWCS. The development of plume maps based in part on pipeline sample results is highly conservative and based on additional information that has been compiled regarding the pipelines, we do not believe that the water quality in the pipelines is consistent with water quality in the surrounding aqua firm. And this will be discussed a little later in the presentation.

Now let's take a look at some of the

contaminants we've mentioned in comments. Dave.

MR. KULIKOWSKI: The remedial investigation includes several depictions of groundwater plumes across the site as you see here. It's important to keep in mind the depictions, they're a snapshot in time. The plumes are drawn with the data available at the time that the remedial investigation was written. The environmental concentration of contaminates and our understanding of what the data is telling us changes over time. Plumes can change over time as you get more data. The picture on this slide shows the sitewide radiological groundwork developed by the remedial investigation and they're overlaying with a footprint of historic site operational areas and these are pre IWCS type areas. It's important to note that the location of existing groundwater plumes corresponds closely with the areas of the storage site operation particularly in the area around the IWCS. So this suggests that the plumes that appear to be emanating from the IWCS, you know, if you see the maps today; are in fact the result of the storage operation not currently determined by the IWCS. Let's take a look at several comments received

regarding groundwater contaminants at several locations, we're going to try and focus in on some of the plumes. The -- we'll talk about the groundwater plumes southeast of former building 409, and we'll talk about uranium and wet drainage surface water and plumes locations associated just to the east of that. And then the groundwater plume in the northwest corner of the NFSS.

Next slide. This slide shows the dissolved total uranium groundwater plume located southeast of former building 409. The area shown in green is the background level, the area shown in yellow is the drinking water matter. Talk a little bit about building 409. It's formerly located south of the IWCS with a secondary water reservoir associated with a low fresh water treatment plant. During the building's use as an intermediate settling basin partially purified uranium known as yellow cake accumulated in building 409. In 1985, after removal of the yellow cake, building 409 underwent a contamination operation in high pressure water. Building 409 was then demolished and the rubble was filled with concrete and covered with backfill to a minimum depth of two feet. During demolition the pipelines in building

409 were cut and some of the sections removed. Some or all of these past activities may be responsible for the uranium levels now evident in the building 409 area. Now looking at the configuration of a plume. Building 409's plume was drawn with the dissolve toward uranium data for monitoring wells, temporary well points and manholes. The plume extending north and east was drawn based on uranium concentrations from one temporary well point, and water within an existing manhole, and the manhole was on a sanitary pipeline. The plume is drawn assuming that it was tracking a ten inch potable waterline which was left in place. The manhole water was not in direct contact with groundwater, but for plume delineation it can certainly be assumed to be. So in researching this plume, it was found that the concentration of dissolve for uranium at the temporary well point, that TWPA 33 in the center of the plume had been mis-reported by the lab, the actual concentration is ten times lower than what was reported in the remedial investigation. So the configuration of this plume is probably overly conservative because it was drawn assuming that pipeline water was in direct contact with

groundwater. If we update the data and look at the plume maybe today, next slide. So, if we do a couple of things, if we correct the uranium value at the temporary well point, bringing it ten times lower, remove the concentration from the manholes, you know, we'll assume that they are in direct contact with groundwater, and include more recent environmental data, this is what the plume would look like today. So, again they are snapshots in time, but with changes you get more data. Next slide.

All right, at the meeting back in May it was noted that the concentration with resolve towards uranium in the groundwater plume west of the IWCS seemed to correlate with the elevated concentrations of total uranium in the west drainage ditch surface water. So concern was expressed that the remedial investigation had misrepresented the distribution of total uranium west of the IWCS and that groundwater might actually be discharging on surface water. However there does appear to be some correlation between the levels of total uranium and surface water and groundwater west of the IWCS. Several lines of evidence suggest otherwise, so these include the

pattern of uranium distribution in surface water and groundwater, the concentrations of uranium measured and other potential sources of uranium. So let’s look at each of these points.

Next slide. All right, the next slide shows the results of the uranium groundwater plume located west of the IWCS as well as the total uranium concentrations measured in west surface water, the areas in green, the background, the areas in yellow exceed the potable water standard. So the concentration in surface water those are the underlining values. So let’s look at the pattern of uranium distribution. The first thing to note is that the concentrations of total uranium measured in the west drainage ditch surface water, the variable along the ditch, they range from 9.9 to 48.3 micrograms per liter with no obvious concentration uranium. So the uranium could have come from several sources rather than a single source with gradually decreasing concentrations moving away from a groundwater seep or some other discrete source. Next. Note that the concentrations of dissolved total uranium in groundwater, they decrease as we move westward away from the IWCS, and that the concentration of

total uranium detected in several wells in the plume in the west drainage ditch are below background levels. It's also important to note that the potential for west drainage ditch including the groundwater -- (Inaudible he moved away from podium.) -- it's inconsistent with the relative global ability of uranium and -- (Inaudible he moved away from podium). Now let's talk about measured concentrations. Since no one is expected to use the west drainage surface water, the concentration of total uranium in the west drainage in the surface water was compared to the surface water level, so the drinking water standard was used as a point of comparison for groundwater data, noting again the concentrations in western most wells are not only below the drinking water standards but also below the background levels for total uranium. Let's talk about other uranium sources. Radioactive R-10 storage pile was left uncovered and unprotected in the air for a number of years. Wind erosion and runoff likely contributed to this contaminate migration, the object involved was now with the IWCS. So, since this graphic was drawn, we see an decrease in concentration of uranium to the west

bank of surface water. (Inaudible due to problem with machine.) -- And finally based upon Dr. Gurgella's (sic) comments in May, about the potential for interconnection of surface water in west ditch and groundwater, the Corps has added free sampling -- Inaudible) -- that will be reported in the 2008 technical memo. Next slide. In that May meeting (Inaudible because of problem with machine) and the northwest corner, was migrating off the northern corner of the NFSS. The location of the plume also corresponds to the operational (Inaudible) -- the current plume configuration does appear to -- Inaudible -- NFSS property to the north, however this plume was drawn using relative entry data points. And additional investigation for this area is currently being planned. All right, now we're going to move on to the (Inaudible problem with machine) -- IWCS. The remedial investigation used non obtrusive study techniques to maintain IWCS integrity and insure water safety, so there's no intrusion of the IWCS. The geophysical results that were conducted indicate no short term competency issues. The survey found no major deep heated fault fracture or geologic or pressure

points within that IWCS area. So in addition to the geophysical survey results, we also have several other indications of --(Inaudible) in the IWCS. Provided that the clay path has been --- (Inaudible) -- So the currently monitored groundwater concentrations at 18 locations at the NFSS with 12 surrounding the IWCS. Data from these wells indicate only seasonal variation of uranium near the IWCS. If the IWCS is in breach, we can expect to see an increase in groundwater concentration trends. In addition to the groundwater monitoring ongoing environmental surveillance activities also measure the readings of radon gas and gamma radiation from the IWCS. And we're finding further evidence for the -- (Inaudible) -- we don't see evidence of groundwater contamination from the IWCS into the lower water -- (Inaudible) Now moving on to radiological concerns.

MS. KREUSCH: Dave, before you move on, could you talk a little bit louder.

MR. KULIKOWSKI: Okay, I'm done now.

MS. SERAZIN: Okay, since our meeting back in May, we had -- there were several comments regarding several radiological issues including

sitewide contamination with cesium 137, the storage of materials from the Nosatomic (sic) Power Laboratory at the NFSS site and concerns regarding how radiological background levels were determined for groundwater. Let's start with some background information on nuclear physics. Nuclear fission can occur naturally, but typically occurs in nuclear reactors or following a detonation of a nuclear weapon. Nuclear fission occurs when a (Inaudible) bomb strikes the nucleus of a large atom such as uranium. The neutron is at first absorbed into the nucleus and creates an unstable atom, that unstable atom quickly breaks up releasing energy and then it continues. The majority of radiological constituents present at the Niagara Falls Storage site include members of the massively occurring uranium, thorium and -- (Inaudible) -- these radial nuclides are found in the natural ores that were brought to the Niagara Falls Storage site. To effect the possibility that fission contaminated materials have been stored at the Niagara Falls Storage site, the remedial investigation included a sitewide evaluation of fission byproducts including cesium 137, cobalt, plutonium, americium (sic) 241 and

isotopic uranium. The radials of the various uranium isotopes were evaluated for evidence of enrichment. As part of the environmental surveillance program analyses for cesium 137 and plutonium will be added to three wells where cesium 137 was previously detected. In addition the remedial investigation included 68 data points of plutonium 239 in soil. But since the remedial investigation was completed an additional 17 data points of plutonium in soil were found. However, these data points show no detectable plutonium in any of these additional 17 samples. Next. At the May meeting concern was expressed regarding sitewide contamination with cesium 137. Cesium 137 is a nuclear fission product with worldwide distribution due to fallout from atmospheric testing of nuclear weapons. Between 1945 and 1980 over 500 atmospheric nuclear weapons tests were conducted at various sites around the world. This map shows ambient levels of cesium 137 for the lower 48 states due to atmospheric testing of nuclear weapons. So it’s pretty much -- it’s out there, it’s everywhere. Most remedial investigation samples analyzed from radiological constituents included analyses for cesium 137. In

fact cesium 137 was analyzed for and over 800 soil samples. So we have an abundance of analytical results of cesium 137, and the distribution of cesium 137 in site media is well characterized. From this area we can see that the concentrations of cesium 137 at the Niagara Falls Storage site are higher than specific background levels, and are greater at best than in surface soil. Since the concentration and distribution of cesium 137 at NFSS is not consistent with what we usually expect to see from nuclear -- from atmospheric fallout, cesium 137 was identified as a potential concern. Although the sources of cesium 137 are not clear, potential risk due to exposure to cesium 137 will quantify by the baseline reference, and cesium 137 was identified as a radio nuclide of concern for the most conservative receptor in several of the exposure areas. These areas of contamination will be further addressed in the feasability study. The Nosatomic (sic) Power Laboratory is based in upstate New York and is a world class research and development facility dedicated to the development and support of nuclear propulsion technology for naval reactors aboard US Navy ships and submarines. The photo

here is a picture of the USS Monolith which is the world's first nuclear submarine. Although limited records are available, we do know that between 1952 and 1954 waves generated at the Nosatomic Power Lab were shipped to the NFSS. Material shipped to the NFSS included small fractions of containers with -- plutonium and radioactivity. A large majority of the radioactivity in this, is material like cesium 137, and only a small fraction of the material contained residual plutonium. Several materials were originally stored near a railroad far north of the NFSS, but was later moved to onsite location. These materials were transferred to the Oakridge burial ground during the late 1950's and low level combustible waste was burned on site. Records will indicate that no plutonium barium waste or unmarked waste was burned on site. The final radiological concern regards the methods used to determine background concentration in ground water. Background brown water samples were collected at 26 locations along the boundary of the LOOW site and on modern landfill property. These locations were selected because they are off site up gradient from the NFSS, and I believe to

be un-impacted by site operation. These locations I believe to be representative of onsite conditions because they are drawn from the same geologic material. The further you move away from the site, the more likely it is that the geology and background conditions would be different. So review of historical news documents on background locations were also conducted and the rational for the selection of the background sample locations as presented in the remedial investigation report. For data that accurately portrayed background conditions, the data must be free from other contaminate sources. Elevated concentrations of the background location would project the potential for other impacts and could cause the elimination of a well from the background data. Without other sources of contamination analytical results are back on data and are expected to be fairly uniform. In regards to uniformity in background data says that statistical tests were conducted. Groundwater data from two wells located near a rail on the modern landfill property were determined to have out water concentrations of uranium. The same approach was used for all other background media including

surface soil, subsurface soil, sediment and surface water. Next. The final focus of comment and we may be able to get additional access to information. And now Bill Kowalewski is going to give you some information.

MR. KOWALEWSKI: First, full copies of these reports are available in the Youngstown Lewiston libraries and we've also, due to the volume of information, taken just the text of these documents and made it available on our Buffalo District website, so you can get that on-line, if you want the basic text and narrative of the reports without all of the figures and all of the accompanying tables. Next slide.

To kind of go back to the time line and where we are headed from tonight, this is a snapshot of the project schedule as we know it today. It is subject to change due to a lot of variables. Funding is an issue. Contracting is an issue. The outcome of the remedial investigation and whether or not there's an addendum or additional work is an issue. But overall, what we have mapped out for you is that the Feasibility Study which is the next major product to come out of the Corps, which identifies and evaluates the

potential long-term remedies for this site, is scheduled at this point to be completed late in 2010. The next step in the process, which we assume at this point will take place about a year later, is the proposed plan.

The proposed plan is the document in which the Corps of Engineers will offer its suggestion for the long-term remedy to be implemented at the site. Based upon our professional judgment and review of all the data to date, that is where we will recommend what should happen with this site. There will be several public meetings involved with that. There will be a dedicated review period and public comment period, and we will go through much the same process we are here tonight. We will take that public input in and evaluate it, and ultimately after that input has been evaluated we have the option of going back and doing more studies at the feasibility stage, or proceeding forward and selecting a remedy to be implemented. That remedy we would document in something called a Record of Decision, and that is essentially the Corps' final answer on what will happen with the site.

And that is on track now, as best we can

tell, for about a year after the proposed plan comes out.

The earliest that we would see actual physical re-mediation start at the site in our estimate now would be 2013. And that would include the remedial design effort as well as field work. And then for some period of time after that, and it depends largely upon the remedy that is selected, we would execute the clean-up action and go into a long-term monitoring scheme. Next slide.

Okay. So what's next. Kind of going back to where we started. We have received again 234 comments to date and we do expect more comments in and we are going to continue to accept public comment on the investigation report. We are going to address all those questions and assess the need for any additional investigative work where we have essential data gaps that are required to proceed with the Feasibility Study. That will begin, as I mentioned before, in about mid October, and we would like to have that data gap analysis done by the Christmas period.

Following that, we will begin, restart work on the Feasibility Study with a work plan on which

we will seek public input. This will provide additional detail on the process by which we will develop the Feasibility Study and continue our outreach program with that study. We have adopted a new project delivery process for the Feasibility Study. Rather than come out in 2010 with another large volume for people to read and digest, we have broken this study down into its components, and we are going to work on those sequentially. We are going to release them as we develop them. And each release will incorporate its own public outreach and participation element so that by the time we get to the end of Feasibility Study in 2010 there really should be no surprises. I mean, much of this work will have been released, discussed, re-evaluated and completed as we do it.

And of course, throughout this whole process as long as the Corps of Engineers is still working on this site, we are going to continue with our site maintenance, site security and environmental monitoring and reporting at the site. Okay. Next slide.

Before we move into the question period I'm going to let Arlene step in and speak to how we'll handle that. I realize that I had neglected to

introduce some of our team members early on, and now might be a good time to do that because I do expect them to be standing up engaging you on your questions. So I'd like the Corps project team members to just please stand quickly as I introduce you so folks know who they're speaking to in questions and answers. I again am Bill Kowalewski, the program manager for all the projects at the Niagara Falls Storage Site and the Lake Ontario Ordinance Works. Duane Lenhardt is the project manager who has joined us this year and is working specifically on projects with Niagara Falls Storage Site. Michelle Rhodes is our project engineer on the Niagara Falls Storage Site and our technical lead. Dr. Judy Leithner, she's our regional technical specialist on chemical and nuclear processes. Dr. Karen Keil is our ecological and human health risk assessor. Bill Frederick standing in the back is our lead hydrogeologist. Of course you've met Arlene Kreusch, our outreach specialist. There you are. And key members of our contract team. You've met Halle Serazin and Dave Kulikowski. We have Tom Hydcek (sic) from Petrotech. From Hydrogeologic, Eric Evans, Don DeMarco. They are hydrogeologists

and ground water monitors. And also Mr. John Peterson from the Argonne National Laboratories. He has a great deal of experience and a great deal of historical knowledge about the site. Okay. Arlene.

MS. KREUSCH: Thank you, Bill. It's very important for us to be able to record your questions and comments tonight, so we've asked our court reporter to actually pass the microphone around to the audience so instead of just asking your question, could you raise your hand first so that he can find you in the audience and pass the mike to you to ask your question. Also I just wanted to let you know that there are copies of tonight's presentation at the back table if you didn't pick one up when you came in. There are also copies in the red folders of the presentation that was given in May, in case you didn't make it to our May meeting, so that you'll have all of that background information. There are CD's of both the May presentation and tonight's presentation also at the back table when you go out.

Also, if you are interested in being on our mailing list, make sure that you sign the sign-in

sheet on your way out if you didn't sign it when you came in, and we have an electronic list service that we have also, so if you would like to receive those, please give us your email address. There are comment cards on the table. If you have any questions but you don't want to ask them in front of the large audience tonight you can write your question on the comment card and put it in the feedback box that's in the back of the room so that we can -- and we will address those questions that we get on the website, so you will get a response to those.

And with that I'm going to start the question and answer part. I just ask that we have one person at a time. I ask that you wait for the mike to get to you, and I also ask the team members that are responding to questions to come up to the mike that's over here to respond so that everyone can hear what everyone has to say. Amy.

MS. WITRYOL: I should say my name first. Amy Witryol. I don't have -- I don't want to take up all the time that's necessary to ask questions or comments on the 40 slides. I think it's a good example as to why we need a Restoration Advisory Board, so that we can have real technical dialogue

on each one of these items. My first question is, since you covered a lot of the comments that Ann Roberts made, will the contractors' narratives to the slides be available to us, could you send it out to us electronically so I could share that with Ann?

MS. KREUSCH: The narrative is on the CD.

MS. WITRYOL: Oh, the narrative is on the CD. Great. Thank you. Just very quickly, again, this format underscores why the community is, in my view, crippled by not having the Restoration Advisory Board. For example, the slides on the Nosatomic (sic)Power Laboratories, those conclusions could not have been reached based on all the documentation that we have, so I'm concerned that your contractors don't have complete documentation, and if in fact they do have documentation that shows what was in all of the drums that came, and can document for us the amounts of plutonium that came, that would certainly be new documentation that has not yet been shared with the community. Background locations, in and of itself, looking at each location and the historical documentation we have on which of those wells were impacted and which

weren't, this isn't the forum to have that exchange and that dialogue. Particularly where we have a wide variety of experience in terms of familiarity with the massive amounts of 60 years worth of documentation on the low side, so I would urge the Army Corps to re-engage the Restoration Advisory Board, make your contractors available to speak with those residents who are very -- have spent many years looking at documentation to be able to have the exchange so that when we get to a public forum it can be more effective and certainly for folks in the community who are more interested in kind of a higher altitude discussion, they don't have to sit here and listen to the technical exchange.

And the last point that I wanted to make is not to diminish the efforts that the Army Corps has made at the LOOW site for the last 20 years because they more than any other agency have at least done something to clean up the LOOW site while the New York State DEC has made a bigger mess of this site for the past 40 years. And hopefully there will come a time, hopefully very soon, where the Army Corps may decide to re-engage its Restoration Advisory Board, and if it does, I

would encourage the EPA to send technical folks, not a public affairs representative, who we welcome and appreciate at RAB meetings, but to engage the community in dialogue instead of having that dialogue with the Army Corps behind closed doors. And I would especially encourage the New York State DEC to engage the Restoration Advisory Board in good faith. Based on form requests, I have the DEC over many years telling the Restoration Advisory Board one thing and telling the Army Corps another thing, or not telling the community members on the Restoration Advisory Board anything at all. And that has got to change. If the DEC is having discussions with the Army Corps behind closed doors, the EPA technical people are having it behind closed doors, the community is disadvantaged, and we truly feel that if everyone is looking at the same information at the same time and we have genuine dialogue, then all of the agencies can make a decision, whether we agree or disagree, that's a better informed decision. And that's what the objective is, the objective of the community is, because we need your best decisions because literally our lives depend on it with the nature of the material

that's here. Thank you.

(Applause.)

MS. KREUSCH: Did you want to say anything or --

MR. KOWALEWSKI: I think we've captured all of that. You know, we recognize the level of interest and expertise out there in the community and on these technical issues, I mean, the way we do business within the Corps and with the agencies, to provide the openness and a complete and clear record of the issue, the question, the concern, and the Corps' response, is to do what we're doing here tonight and to put all of that in writing and make it available to everybody. So we are going to be addressing all of these points. I'm not going to get into a debate about the RAB forum, whether it exists or not. We've spent many, many hours at the senior level discussing that issue with some of the leadership of the community group. We've been there and we can engage the community through an active outreach program where we just launched a community assessment, a request for your input, because the Corps has to plan, schedule and budget its project dollars and balance the needs of the project, the

needs of the community, and figure out what activities we're going to support over the coming year or two in the public outreach program.

There's many other issues that were raised technically that I think we will respond to in writing.

MS. WITRYOL: Does the agency have conferences with the Army Corps outside of the public? Are you saying that there is no communication between the agencies?

MR. KOWALEWSKI: Absolutely not. I mean, it's expected that agencies are going to communicate with each other and discuss project issues. We come out, we do that with the public, we do it with land owners. We've got a huge audience of people to deal with.

MS. WITRYOL: We're looking for transparency and quality of transparency. We certainly hope that all of the agencies will seek a better level of public participation and not exclude the public from that dialogue and that conversation. Tonight is not a dialogue. It's a presentation and a Q. and A. They're allowed to have dialogue with you. We can't.

MR. KOWALEWSKI: That's not true, Amy. And

I don't think that tonight is just some kind of a charade. This is meaningful. This is us coming out to the community and putting our presentation in public and getting these issues captured, and we are going to do so in a very clear and deliberate and written record so there's no question about what the Corps' position is on these issues.

MS. WITRYOL: But for example, Ann Roberts is not here, and she won't have the opportunity to address these technical issues which you've just told me you'll respond to in writing. So again, it's the dialogue that the community is looking for, both in this public forum so everyone, a wide audience has an opportunity but also in a small forum where the experts have the opportunity to talk to you about each slide, rather than be funneled into 45 minutes on 40 slides and not even having, you know, all of our community experts here to participate on, you know, on the one night where we have the opportunity, versus the agencies who can schedule a conference call with you anytime. So I'd appreciate it, and go forward.

MS. KREUSCH: Thank you, Amy. Okay. Next. Tim.

MR. HENDERSON: Tim Henderson, H-E-N-D-E-R-S-O-N. You mentioned on one of the slides that you weren't holding the ground water near the west drainage ditch to potable water standards, that potable water standards didn't apply to that area. I find that kind of troubling given the population of you know, wildlife in the area. Also, on one of the maps there's a 42-inch water supply line. I was curious as to what is the source of that water that would travel in a 42 inch water line. And also, what is the material used in the pipelines. Is it wood, AVS composite or concrete?

MS. KREUSCH: Tim, I didn't get your first question. I'm sorry. I got the phrase what --

MR. HENDERSON: There was one slide not holding the ground water to the potable water standard, and I found that troubling given the population of wildlife in the area.

MS. KREUSCH: Does anyone from the team have a response to that?

MS. SERAZIN: I can answer the first two anyway. The question about the potable water supply, that, what we're comparing that to is called a maximum contaminant level, and that's developed under the Drinking Water Act. It

assumes that a person is going to drink two liters of that water every day, and that is their sole supply of water. And I understand you're concerned about wildlife in the area, but typically wildlife don't get all their water from one supply every single day. So even if they were using it, they wouldn't, that wouldn't be their sole water supply. So it's a conservative limit called the maximum contaminant level, and it really is for distribution systems, for public drinking water systems.

MR. HENDERSON: But it's known as the western drainage ditch, it's not the western storage ditch.

MS. SERAZIN: Right, right, and so there are probably times of the year where it's dry. It wouldn't even be a water supply. It's --

MR. HENDERSON: Yes, but I'm more concerned about the other times of the year where it's flowing toward Lake Ontario.

MS. SERAZIN: Right, and what it is --

MR. HENDERSON: And if there are areas, any areas at all that are contaminated, how can we be assured that it's not migrating naturally towards the lake as ground water does?

MS. SERAZIN: Well, we're monitoring the concentrations in that ditch, and as we indicated in the presentation, the concentrations peaked probably right when we were out there disturbing the ground and getting ready for the remedial investigation field activities. All the concentrations in that area have steadily gone down since that time.

MR. HENDERSON: Gone down or gone elsewhere?

MS. SERAZIN: Well, we do monitor that area. We don't monitor the western ditch offsite, but -- and then the question about the 42 inch line, that was a 42 inch supply line from the river, so it was originally there with -- a lot of buildings under the IWCS were waste water, or they were actually, I'm sorry, drinking water treatment buildings, so the water was brought in from the river and it was settled and made clean to potable standards.

MS. KREUSCH: Does someone from the team have a response to the one about what was in the -- it was what was in the pipelines or what the pipelines were made of?

MR. HENDERSON: The materials that they were made out of.

MS. KREUSCH: Okay. We'll have to respond to that in the response in the summary. Thank you, Tim.

MS. MULGIVER: Hi. My name is Judy Mulgiver. Regarding the last question was, the professionals are here and you guys don't know what it's made out of? I mean, that's just bizarre, number one. Also, there was a mention that the pipes were cut off and there was concrete and grout oozing off these pipes, am I correct?

MR. KOWALEWSKI: Yes.

MS. MULGIVER: What about the deterioration of that material? You know, I mean, and how often were the tests done on those pipes? Is it ongoing, is it twice a year? I mean, I haven't read the report but I just want to know how often you do it and if you know, was there is deterioration of the concrete and grout that was used? There were other questions. Okay. Regarding the plume, the picture on the slide that you guys showed was from 1981 from DOE, and then you have reassessment of the plume. Now, is that based on the test you did currently, like in 1991, and if so, is it a guess or is it actuality?

MS. KREUSCH: Okay. Michelle Rhodes is going

to answer your questions on that.

MS. RHODES: Can everybody hear me? I'm soft-spoken as well, so. Your first question, you bring up a valid point. The pipelines as they're shown on this figure, for example, the areas in green are actually what was removed. I would say they grouted the areas, you know, that they had left there, and the ends of the ones that were removed. However, we have no way to assess the quality of that seal now. There's a few things, so obviously that would be a data gap, so there's a few things we do to address things like that. The first thing, when we conducted the ground water models, we assumed that basically, this picture here with the clay dykes. We assume there were no clay dykes. So they're at the level of conservatism to our models. There was an issue brought up about the integrity of the pipelines and could there be you know, potential transport issues. This document that we had found, the pipe scheduling, shows the removal, and it was really, you know, they were very deliberate in how they removed the lines. They wanted to make sure they removed the areas before they constructed that clay dyke around it. I guess what we were trying

to show in that one slide with the uranium plume is there was a concern raised that, is the contamination from the southern area -- is the integrity of the dyke intact.

There's a couple things that we did to sort of insure that. However, there's always uncertainties associated with site data. The first again is, we assumed there was no dyke in the model. The second is, there was a report issued by the Department of Energy in the early 80's, before the interim waste containment structure was actually built. And at that time we identified the areas east and south of building 409 to be contaminated. And what we wanted to show by that slide is, our recent data for the uranium plumes is consistent with that location. So basically we found what we thought we were going to find, and that that plume is more likely the result of past contamination before the IWCS was even built, than leaching from the IWCS through the clay dykes.

Additionally, we do the Environmental Surveillance Program, and we do have a well that's you know, very close to building 409 and also close to the south dyke, and we measure that, we

actually increased our measurement of that. Originally we did it annually. We increased that to in the spring and in the fall. So it's when water is highest and when water is the lowest, to keep a closer eye on that.

MR. GIANNETTI: My name is Bob Giannetti, G-I-A-N-N-E-T-T-I. I want to address the format of the meeting just briefly again. I came here at 6:30, which was the announced time. It didn't start until 7:15. There was a lot of milling around and I question to what purpose. And I think that the exhibits that people were looking at could have been better contemplated and appreciated after the presentation, which would have provided -- which would have provided some sort of context, and I don't feel there has been sufficient context displayed in this meeting. There are undoubtedly many, many other questions that have to be addressed and I wish we had the 45 minutes at the start of this program to actually talk about those things. As to the format, I think it's, if you make a presentation, all information is selective -- all information transmission is a selective activity. It seems to me that the Corps has made the selection. How

about turning the process around. Whether you use whatever intermediary or whatever facilitation process, you need to get comments and concerns on the table from people in the general public before you start dispensing information. That's the share and that's what I believe Amy Witryol was talking about, that's been totally inadequate at this meeting. And it's such an important issue that it's very disturbing to me. And I really would hope that the next time there is a meeting announced for 6:30 that we actually start at 6:30. Thank you.

MS. KREUSCH: Thank you. I'm going to address part of that. We just recently announced that we were performing a community assessment and we really would like to hear from the community what format they would like us to interact with them in when we -- so please write us or call us or email us and let us know how you want to hear from us, how often you want to hear from us, what mechanism you want us to use to give you information, to provide us with feedback. We really want to develop an outreach program that meets the needs of the community. Thank you.

MS. TOWER: I'm Harriett Tower, T-O-W-E-R.

I'm a member of the community here. I don't have any particular expertise. I'm here to try and learn. I find it a very slick presentation. I am very offended by the fact that our community members who have the expertise have been not allowed to participate in the way that it was normally set up. These are the people we trust. These are people we turn to when you're asking for feedback right now. As in your last questions, the feedback, that's what we want. We want our people that have studied this on our own, our own chemists our own people that are looking at things, to be able to correspond with you and not be shoved off and shut up. That's what we want. And my other question had to do with the activity at the bottom of that facility. How on earth are you ever going to test it and see how it is, if there are cracks developing or if anything is there? You have no way of doing that without disturbing whatever else is supposedly supposed to be intact.

MS. KREUSCH: Thank you. Michelle, do you want to address the --

MS. RHODES: It's obviously a great concern that you bring up. Obviously our biggest concern

is the IWCS integrity. That is mainly what our focus is on the site. What it houses is very special and we want to make sure it stays there obviously until it's decided what the permanent solution is. But we basically have, as I mentioned before, the Environmental Surveillance Program, and that's sort of the way we monitor the integrity of the cap. And that's another reason why based on this RI that we actually increased our frequency of monitoring. We originally would sample once a year. We have a network of ground water wells surrounding the cap and we sample that regularly. We originally, like I said, sampled annually. We changed that to twice a year. So anything that would be even coming straight out through the clay dykes while we have lower ground water wells, but if it went down and out that way, it would be detected during that program. All the samples that we collect as part of that Environmental Surveillance Program. It's published annually and a report is available and it highlights all the results and the conclusions based on it.

MS. ROLAND: I'm Mary Ann Roland.

MS. KREUSCH: Wait a minute. Wait a minute.

Can we take the question from Mary Ann before we go back to -- let him bring the microphone to you.

MS. ROLAND: I'm questioning whether you test anything off-site at all. You have shown the plumes on your map but they're only the plumes that are on the site, and I'm wondering if you have reports from the community of plumes that have been shown or surfaced away from the site, towards the lake. I know of one example that was very disturbing to me, that surfaced on a person's property that was kind of covered up. We had several people look at it and it was tested by a chemical engineer, and nothing was reported. It was hush hush, and it was a person whose wife, actually two wives had died of cancer on his property. And so the contamination is very evident. Now whether it came from the CWM site or whether it came from the LOOW site, I mean actually they kind of overlap in some places there, but has there been any testing of any places off-site?

MS. KREUSCH: Is there someone from the team that can respond to that?

MS. RHODES: I guess from the Niagara Falls Storage Site perspective, there's two areas that

we have focused on for potential off-site additional sampling. One is the northwest, north of the northwest portion of property where we show the uranium plume being close to our site boundary. Obviously we want to make sure that we define the extent of that. The other is as we talked about last time, is the potential for the interconnection between ground water in the west drainage ditch, so we've added three sample locations as part of our environmental surveillance to address that. I'm not familiar with what, I guess it was a chemical of some type that this individual had. I know and maybe Paul Dickee can elaborate a little, the Niagara County Department of Health did a youngs (sic) survey, and subsequent sampling of residential wells and maybe he could fill us in on the results of that. I don't know if that was part of the study or not.

MR. DICKEE: My name is Paul Dickee. I attempted a well study in the Towns of Lewiston and Porter below the escarpment. We wanted to identify active working wells and find out who was drinking ground water and find any wells that were sample able, and we did -- I don't remember the exact numbers. There weren't very many. Maybe

around a dozen or so that were sampled. There weren't really any contaminants of concern that were identified. The results of the study are published upon our Niagara County website if anybody wants to take a look at them. That's Niagaracounty.com/health. And you can check that out. It was really an interesting exercise but we didn't find anything we had to follow up with.

MS. KREUSCH: Thank you, Paul. There was a woman in the back that had a question.

MS. MULGIVER: My name is Judy Mulgiver again. There's a lot of money spent on the work you're doing and the testing and everything and like Peter Hower (sic) said, you know, we have people in our community that are experts. If it's even possible to consider putting like 5% or 2% of the money that you guys get for labs to do the testing that is necessary or look at the mounds of paperwork that you guys provide, you know, so, I just feel that you guys get paid for all the work that you do. We have people in the community that are spending their time and effort on all this, and I just feel like there should be something provided to the community for us to thoroughly investigate the reports and be able to, you know,

pay professionals to do it, because you know, we're not all scientists, we're not experts, but we do have some people in RAB, that they are. Would that even be part of a consideration?

MS. KREUSCH: Even if there was a RAB, the participants would not be paid.

MS. MULGIVER: But is there something for the public where we could have independent people looking at this stuff?

MR. KOWALEWSKI: What I can offer to you now is that the Corps process, there are several levels of independent review within the Corps. People who don't work on the project review the data and the findings and critique us several times before we come out with a report like this. The other agencies involved, like the USEPA, the New York State DEC, the health agencies, they also participate in this. I mean, they are public agencies looking out for the public's health and safety on these issues. So that is additional level of review that our reports get. There is no mechanism for us to fund community members or independent bodies to do what you described.

MS. MULGIVER: I mean, the agencies, State agencies are strapped already. We know that.

There is not enough people to go through the mounds of problems that we have in this state. You know what I'm saying?

MR. KOWALEWSKI: I understand your concern and what you're saying. I can't answer for the State or the other Federal agencies and their funding or staffing issues but --

MS. MULGIVER: You can't share your money with the public?

MR. KOWALEWSKI: No. Ma'am, the way Congress appropriates money and the way the laws are passed, to give the authority to the Corps to conduct these kind of studies just doesn't allow for that.

MS. KREUSCH: Tom, Mrs. Weld in front of the room has a question.

MS. WELD: Thank you. Marin Weld. I want to say that at my advanced years, I'm not going to be able to go back to school till we really understand these engineering reports. I appreciate the graphics and I want to say that the Restoration Advisory Board represent me as a citizen and I'm grateful for their volunteering of personal expertise, but I want you to realize that the main word there is advisory, and if you want

our advice and our feedback, these are our representatives that have a background that won't take up your time like perhaps, you may be humoring us here. I thought I knew what a plume was, and so now I just want to be sure that it's where something is sort of puddled or spread out. You see where I'm coming from.

On one of your maps I also noticed that there was a great deal of concern about building 409. And I like the colors that said, we sealed up the pipes and they were shown in green, and then near your border you left some sleeping dogs lie and those pipes were in purple. But I notice that there's a little section of purple pipe coming out of building 409 in two places before it got sealed and drained. And I thought that was rather interesting and with my limited knowledge of what I'm looking at, it caught my attention. Thank you.

MS. KREUSCH: Thank you. Michelle.

MS. RHODES: Thank you for your comments. That caught our attention as well. That was kind of odd to note that there were two lines still coming out. I think maybe one reason for that, and I can't speak for the DOE, but as Halle

mentioned in the presentation, that there was some decontamination in that building and basically you know, it was kind of leveled into itself in a way, for disposal. So maybe they felt that that, it wasn't a major source of contamination. We were worried about that in the RI and we actually did some additional sampling that surrounded that building to make sure that that wasn't a source term. Right. Exactly. And actually it's fairly clean around it. We had that one hit of 833 that keeps getting brought up but it was east of a, a lower hit. So again, it just reaffirms what's in the DOE report. I'm not saying that it was perfectly clean in that area, but definitely that might have been the reason behind it.

MS. KREUSCH: Karen Allen has a question.

MS. ALLEN: I'm Karen Allen and I'm a citizen of the area, and my concern is that you work as a team or you work with layman individuals, but you work together. And you are asking the community not to have an organization, not to work together but to come as individuals, but we all know that there's more strength in a group than there is in an individual. So again, I've been part of the RAB for seven years and I've put in hundreds of

hours, and I just see this as a slap in the face. And I just think that you should realize that just ordinary citizens isn't left behind and you're also asking us to invest money for copies and emails and other things that we're doing in order to communicate with one another in trying to bring about, to your attention the things that we think you should listen to.

MS. KREUSCH: Thank you, Karen. Any other comments, questions?

MR. LACAIJCZYK: I'm Tom Lacaijczyk. I just wanted to address an earlier question. It was a question about the composition of the pipelines. In fact, the composition is described in the Remedial Investigation Report, and it's kind of a complicated answer. There are fresh water lines there and there's 21,000, more than 21,000 feet, and it's reported that they're made of cast iron. And then the storm water lines, there's 4,000 feet of those. Sanitary sewer lines, 11,875 feet, and acid lines or process waste lines, 3,830 linear feet of those, so that's a lot of pipe. But the composition of all of those, storm water, sanitary and acid sewer lines, it's all reported as vitreous clay pipe. So that's probably most of

what was out there. I just wanted to answer that question.

MS. KREUSCH: Tom, does that answer -- Do you have a following --

MR. LACAIJCZYK: I thought I answered the question.

MS. KREUSCH: Okay. Are there any other questions? Okay. We'll be right there.

MS. WITRYOL: There's a time line of the site and the facilities, so you're saying all of the pipes are, I mean, what you just mentioned now, how about what was done before like 1960? You know, there's a time line going back to 1943, I think. I mean, what was used then?

MR. LACAIJCZYK: What I described, that was what was put out there in --

MS. WITRYOL: In 1940?

MR. LACAIJCZYK: Correct.

MS. WITRYOL: Oh, okay.

MS. KREUSCH: Dr. Boeck has a question, way up here, Tom. I'm sorry.

DR. BOECK: A few comments. I noticed as the slides went by a couple things of interest, since I probably raised the question in the first place. Slide 15 on the pipelines, I have the same

diagram, and it's a missing a major pipeline. That, in that diagram it doesn't show that there is a line north of the building 411, which originally went to the ditch, which probably was cut when it crossed the clay dyke, but we have no documentation on it, and there is no documentation that that line was ever plugged. It went into a valve pit, and the portion of the line is shown, but is not shown in that particular diagram. I submitted that some months ago.

Secondly, I'm somewhat disturbed about the typo involving one of the uranium levels. Our committee has written several comments on that. We also suspected it was a typo. I wish you'd make that information public when you identify errata which are in the documents and please let us know because we are spinning our wheels on bad pieces of data that we suspect may be incorrect, but we can't establish that on our own.

And finally, regarding cesium 137, I have a paragraph from a local resident who was a high school student at the time and he was sent out there to pick up these copper cylinders which were filled with cesium 137. They were spilled on the ground and some of them were leaking and they were

partially buried, so that is one of the sources of that spot of cesium 137 contamination which is a known issue.

This afternoon as I prepared for this session I read the Corps' website. There's a page on there entitled LOOW and NFSS frequently asked questions. I'm somewhat upset that some sections are actually in error and misleading to the public. The Corps has competent professionals but someone didn't check what was written on that site. I have a handout and I won't go through it in detail. I put my comments in italics and the remainder of the text is quoted from Corps documents.

Some of the things which came to my attention, okay, question one, tell me more about the interim waste containment structure at the NFSS. Going on through the paragraph the sentence says, the thickness of the cap was calculated based on the percolation rate of radon, such that by the time radon percolates through the cap it is harmless. Comment. Radon remains radioactive. It is a known cause of lung cancer. It is never harmless. Okay.

C2, is there a buildup of radon gas within

the IWCS at NFSS. Okay. It reads, radon is slowly generated and begins to move through the five and half feet of compact clay and soil covering the buried material. Okay. Radon is continuously generated and it will be for the next thousands of years. There's nothing slow about it. Radon has a half life of 3.62 days. That's incorrect. The half life of radon, which should have been checked, is 3.823 days. Again, simply this stuff was not properly read, typewritten or type checked.

The next sentence goes on, referring to radon. By the time it moves through the soil, almost all of it is no longer radon, it is harmless. Again, not correct. Radon decay produces radioactive lead 210. The result of 200 curies of radium, they produce radon. The radon in turn moves outward and upward and creates lead 210 when it decays. Neither radon nor lead 210 are harmless.

So that what we have above the structure is a gradual infiltration of radon being converted to lead 210 so the radioactivity is moving out of the location where it is and upward into the soils and a portion of it will make it out to the

atmosphere. Okay.

This goes on to say, radon emissions from the IWCS are monitored as part of the Environmental Surveillance Program and verify this. Okay. The radon emissions from the soil are sampled one day out of the year. Radon emissions from soil are very sensitive to temperature and soil moisture and other conditions and without information on the weather conditions for the week previous to the time the samples are taken, one can't really interpret the data as to whether they are typical or meaningful for anything other than the one day out of the year that they were actually taken.

Another section. D1. Question. What investigations were performed on the IWCS as part of the NFSS Remedial Investigation? The reply is, no direct sampling through the protective clay cap or side clay walls of the IWCS was performed to insure the integrity of this protective layer was not breached. Comment. How can you conduct a valid Feasibility Study without data on the actual current location and concentrations of that radioactive sludge that was put in there 25 years ago? Okay. How can you go forward with feasibility without knowing what you are working

with and where it is? Any remedial action will obviously open up the cap, so I do not agree with the contention that it is impossible nor highly dangerous to sink monitoring wells which would be sealed and capped properly, in order to get data on what's happening inside that place.

Further on, it goes on to a discussion of a multi-technology geophysical walkover which used non-intrusive techniques to infer the condition of the subsurface below the cap. Okay. I have an extended comment from the Corps received on April 30th. I won't read the whole of it, but it goes on saying that items for consideration, geophysical survey indicates no short-term competency issues within it. Corps acknowledges that there are limitations associated with this survey methodology. These limitations are leveraged to the extent possible by integrating other geophysical survey methods. This investigation was not a stand-alone integrity assessment but used as additional weight of evidence of our integrity investigation. Comment on that. This geophysical examination did not and could not examine the cutoff wall adjacent to the location where the highest concentrations of

radium are stored. Because of the presence of the building foundations, the geological examination, geophysical examination was not made in the locations that are most crucial for our situation.

Okay. And again, this section finishes with a comment, in addition, annual environmental surveillance was continued to evaluate any radon emissions from the IWCS cap. Again, I repeat, radon emissions are sampled one day out of the year.

And another section talks about, and today they talked about Niagara Falls Storage Site background locations. Okay. Our radiation committee has examined this and on the basis of historical data we have concluded that ground water samples used, as used, were contaminated by AEC activities and that background samples should be only taken on the unimproved sections of the original LOOW site, excluding the entire NFSS. Okay.

There are too many activities and too much surface contamination to presume that well locations on that particular site are actually background and uncontaminated. Okay. In terms of the geology of this site, we are looking at an

ancient lake bed, ancient, it wasn't really 8,000 years ago it was laid down at the bottom of a lake. And there's no real reason to believe there are any significant variations in the geology or in the presence of natural uranium to take a location a quarter mile away versus a few hundred feet away from areas that we know are contaminated. Thank you for your time.

(Applause.)

MS. KREUSCH: Thank you, Dr. Boeck. There were several different issues that Dr. Boeck raised. One was about radon. Do we have anyone that would, from the team that would like to address those comments or will we respond to them in the respective summary?

MS. RHODES: First, thank you, sir. I'm going to have to take a look at our website again, make sure things are up date. I just wanted to clarify, Dr. Boeck mentioned that we take radon measurements once a year. That is true for the cap. Basically what we do is, we put 180 activated charcoal canisters, just like you would if you were testing radon in your basement, put them directly on top of the cap, leave them for a full day, 24 hours, and measure what's called the

radon flux or how much radon is emanating through the caps. Historically we've been doing this since 1982 and we haven't identified anything above background coming out of the caps.

Additionally, we do have radon monitoring on site. We have two fences, one is surrounding the waste containment structure and the second one is our site sign or site boundary sign. We have radon monitors all along there that we do measure. They are not real time monitors. They are not direct measurements that we could go on the web and see at that moment what they are, but we collect this data biannually, twice a year we go out and collect the monitors, analyze them, and those are -- that data is included in the report. So I just wanted to clarify that statement.

The rest I believe has been informal comments from Dr. Boeck in the RI's that we'll address in written response.

MS. KREUSCH: Okay. Thank you. Amy.

MS. WITRYOL: Amy Witryol. W-I-T-R-Y-O-L. Just a few clarifications. Bill Kowalewski referred to several submissions and referred to a submission of a paper by Bill Boeck. I haven't seen a paper by Bill Boeck but I have seen a paper

that was submitted by the radiation committee of the Restoration Advisory Board and would appreciate reference to that document being accurate. I'd like to thank Bill Boeck for an extraordinary amount of work and research he did in helping to put that paper together, but also to Karen Allen's point, there was collaboration on that paper. Paul Dickee from the Health Department reviewed it and provided comments. I reviewed it and provided comments. Ann Roberts, who is a chemist and engineer, reviewed it and provided comments. Becky Zionts from CWM Chemical Waste provided comments. All of them are -- everyone who provided comments on that paper is credentialed and has a great deal of expertise, except for me. But I would certainly like to give Bill Boeck credit where credit is due for leading the radiation committee for the RAB but I would ask Mr. Kowalewski that when he receives the document that is from the Restoration Advisory Board, that when he references it, he references it as it was submitted.

As far as technical assistance grants are concerned, I'm not sure if the comments Bill made were accurate in response to Judy's questions, but

their first program has technical assistance grants that are available. If you are a restoration advisory board, which every level of government including all of our agencies with the exception of the Army Corps do recognize the RAB as does the Attorney General of the State of New York.

And as for the NFSS it is not out of the realm of possibility to have the FUSRAP program make funds available for technical assistance, even though the Corps would have to bid out the contracts and the community wouldn't' have that option. When I chaired the advocacy committee, we worked collaboratively at that time with the Corps' public affairs officer and did come up with these options. And so if there were a RAB, we certainly could do better. Thank you.

MS. KREUSCH: Thank you. We are pretty much out of time. We could take one more question and then we will adjourn for the evening. Are there any other questions? One more in the back.

MR. KING: Scott King, K-I-N-G. We heard some information tonight about some changes in the data numbers on one of the maps and 17 years plutonium data points, will this information be

provided in an addendum or to the RI.

MS. RHODES: We're not at the point now to figure out how that's going to happen, whether it's going to be part of the response to comments package or in an RI addendum, but we'll definitely make sure that's publicly available. The reason, just to explain a little bit, typically we'd send samples to the lab and they'd be analyzed for certain compounds. We did an analysis early on in the investigation and compared our gross alpha numbers to our uranium and thorium numbers, because plutonium is an alpha emitter. So there is a large discrepancy between, you know, the alpha number and the uranium and thorium number, we sampled for plutonium. So this was done quite early on in the investigation and so they were sent to the lab originally for one analysis and then we used that sample volume at the lab and had it re-analyzed for plutonium. So I think that might be why it got inadvertently, you know, was missing from our data base, but that's where that came from.

MS. WITRYOL: In there -- there are indications of plutonium. It's not in the additional 17 analysis that you did?

MS. RHODES: We took some quick numbers. We have a total of 92 samples for plutonium. We had seven detects total.

MS. WITRYOL: And how many soil samples, how many soil samples out of the 92?

MS. RHODES: 78, and the detects ranged from .08 per gram to 5.72. When we looked at that 5.72 (Inaudible) per gram, just to put that into perspective, the dose to a subsistence farmer, which is our most conservative scenario, it would have been acceptable under that condition, even at our highest level we find on our site.

MS. WITRYOL: But that's above fallout, so that --

MS. RHODES: It's definitely not, it's not an actual, this is definitely from like a capital type of waste.

MS. KREUSCH: Dr. Boeck, the last question, then we've got to go.

DR. BOECK: Justification for not releasing this data before sometime in the future.

MS. KREUSCH: What was that?

MR. BOECK: The justification for not releasing these numbers and the errata that have already been found before some indefinite time in

the future.

MS. RHODES: I just have a -- the answer, it would either be in a response to comments and we'd submit a revised RI data base or it would be part of an RI addendum.

DR. BOECK: That doesn't answer the question, what's your justification for not releasing it soon?

MS. RHODES: Actually to be completely honest with you, we didn't realize it was missing until recently. I know that's a really bad answer but that's the truth.

DR. BOECK: Neither did we.

MS. KREUSCH: Thank you again everyone for coming tonight. I do want to re-emphasize that we appreciate your input. We appreciate you being here tonight and the team will be able to stay for just a few minutes to answer any additional questions if you have one-on-one in the back of the room by the posters. Thank you.

(Meeting concluded,)

CERTIFICATE

I, RHEET L. BAKER, certify that the foregoing transcript of proceedings in the matter of the Niagara Falls Storage Site Public Information Session, was recorded utilizing a Sony BM_246, and transcribed from same machine, and is a true and accurate record of the proceedings herein as best we could due to problems with machine.)

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