

[REDACTED]

December 1, 2012

[REDACTED],  
U.S. Army Corps of Engineers, Buffalo District  
FUSRAP,  
1776 Niagara Street  
Buffalo, NY 14207

**RE: Request for Public Input regarding, “The Field Sampling and Analysis Plan for the Niagara Falls Storage Site Balance of Plant Operable Unit, November 2012.”**

Dear [REDACTED],

On November 9, 2012 the US Army Corps of Engineers posted “ The Field Sampling and Analysis Plan for the NFSS Balance of Plant Operable Unit, November 2012” (the plan) on the USACE web site and requested public input on the plan within 30 days. Please accept the following comments.

1) Review of the published project schedule reveals that site investigation, geophysical surveys, excavation, well drilling and installation of wells should be already complete.

Site investigation scheduled for 11/5/2012 to 11/9/2012

Geophysical survey scheduled for 11/7/2012 to 11/9/2012

Excavation scheduled for 11/12/2012 to 11/30/2012

Well drilling and installation scheduled for 11/12/2012 to 11/30/2012

Assuming that the published schedule has been adhered to and the field sampling plan executed, requesting public input after the event, effectively excludes the public from having input to the plan.

2) The plan does not address the major public concern of leakage from the Interim Waste Containment Structure. Temporary well point (TWP) 833 previously measured 958 ug/L of total uranium, an order of magnitude higher than any other area associated with known residual contamination. The plan should have called for re-sampling of the groundwater in this area with the objective of identifying the source of the elevated uranium contamination.

See Appendix A for previous discussion with USACE on this topic.

3) Plutonium was recently discovered in scale on sewer pipes just north of the NFSS. The sewer pipes discharged to the Niagara River. Plutonium has been discovered in Lake Ontario sediments around the mouth of the Niagara River. Cesium-137 of the order of 60pCi/L was detected in groundwater east of the Interim Waste Containment Structure during the course of the Remedial Investigation (USACE 2007 RI report).

Cesium-137 and plutonium are associated with nuclear waste from reprocessing at the Knolls Atomic Power Laboratory, some of which is known to have been placed within the Interim Waste Containment Structure. The plan should have called for analysis of KAPL associated contaminants as well as radium, uranium and thorium, since the potential exists for these contaminants to be present in and around the Interim Waste Containment Structure and the NFSS water lines and

sewers. The recent USACE detection of plutonium in pipes at the disused Lake Ontario Ordnance Works sewage treatment plant, provides evidence that the site may be the source of the plutonium in sediments around the mouth of the Niagara River.

4) In order to delineate groundwater contamination south of the Interim Waste Containment Structure, pipelines associated with former building 409 should be investigated. Historical plans indicate that Bechtel may have overlooked the existence of water lines south of the Interim Waste containment Structure. These lines have the potential to interfere with general groundwater flow by providing preferential pathways. The plan does not investigate the potential of pipelines to act as preferential pathways south of the Interim Waste Containment Structure.

5) The direction of groundwater flow south of the Interim Waste Containment Structure appears to be incorrectly specified as northwest. Under the influence of the Central Drainage Ditch groundwater in the upper tills is known to flow eastward. Therefore wells sunk to delineate the groundwater contamination around the southern portion of the Interim Waste Containment Structure are incorrectly placed. Well 950, north west of former Temporary Well Point 831 and well 951, north west of Temporary Well Point 833 are afforded special attention, with a rapid turnaround in sample analysis and further sampling dependent upon the results obtained. The direction of groundwater flow at these locations appears to have been assumed to the north west, which is not correct.

6) The delineation of groundwater contamination in the area EU4, north of the NFSS, calls of a single well to be drilled into the lower water bearing zone (LWBZ). How will results from a single well delineate groundwater contamination in the LWBZ in EU4? Please clarify.

Sincerely,

[REDACTED]

## Appendix A

Dear [REDACTED],

In trying to understand the Lewiston-Porter community's ongoing concerns about leakage from the Interim Waste Containment Structure (IWCS), it is helpful to consider the following:

The IWCS is designed to isolate the radioactive residues and wastes from the surrounding groundwater, but ground water seasonally intrudes the residues, as shown by 5 years of performance monitoring.

The realization that groundwater flows in and out of the IWCS makes the monitoring of the surrounding ground water for radioactive contaminants escaping from the IWCS especially important.

The Remedial Investigation identified a network of abandoned underground pipelines on the NFSS, south and east of the IWCS, which has the capability of compromising the current ground water monitoring system.

The underground pipelines are below the water table most of the time, so that the pipes may act as preferential pathways for contamination migration and result in much faster rates than predicted by the theoretical ground water model.

An unusually high level of uranium was found in groundwater at TWP 833, south of the IWCS in 2003. The level of uranium, around 1,000pCi/L, is not typical of that associated with past radioactive waste storage practices (up to 150pCi/L).

Until the source of the uranium in temporary well TWP 833, the sanitary sewer and monitoring well OW-11B is investigated and identified, leakage from the IWCS can not be ruled out.

Please find my detailed responses below in red.

Yours sincerely,

Ann Roberts

In a message dated 3/22/2012 4:23:38 P.M. Central Daylight Time, fusrap@usace.army.mil writes:

Classification: UNCLASSIFIED

Caveats: NONE

Dear Lewiston-Porter Community Member,

I'm writing you to address a recurring claim made by a few members of the community which inaccurately portrays conditions on the Niagara Falls Storage Site. This claim, which has been confusing when covered in the media, involves the performance of the Interim Waste Containment Structure (IWCS), and was first discussed with the community in 2010.

Let me assure you that the IWCS, which was engineered and constructed by the U.S. Department of Energy in the early 1980s, is functioning properly and is safely containing the radioactive materials stored within it. The Corps has applied the full strength of our scientific and engineering team to ensure public safety by evaluating over 25 years of environmental monitoring data for the Niagara Falls Storage Site to formulate to this conclusion.

The environmental monitoring program was only recently upgraded in response to public comment on its inadequacy. Many groundwater monitoring wells were not analyzed for twenty years.

The Corps is committed to protecting human health and the environment. We value community input and have listened carefully and spent considerable time, taxpayer dollars, and effort investigating this matter. We have, on multiple occasions, engaged the few community members who are making these claims. We find their claims, and their analysis of the same data we are looking at, technically incomplete and flawed.

The Corps scientific analysis is summarized below and the supporting documents, data and record of engagement with community members will be made available tomorrow on line at:  
[www.lrb.usace.army.mil/fusrap/nfss/index.htm#IWCS](http://www.lrb.usace.army.mil/fusrap/nfss/index.htm#IWCS)

- The claims focus on a very small amount of data originating from 1 of 39 permanent groundwater wells regularly monitored by the Corps and from 1 temporary well point that was sampled during the remedial investigation. The permanent well in question is named OW11B and the temporary well point is named

TWP833.

The claim focuses on a groundwater plume, first identified in the Remedial Investigation, which involved three sample points, TWP833, MH-06 in the sanitary sewer and well OW-11B. The water in the sanitary sewer was considered to be ground water because of the likelihood of infiltration and exfiltration given the age of the sewer line.

- Monitoring wells surrounding the IWCS are sampled regularly and serve as the first indicators of any change in cell integrity. There is no indication of increasing contaminant concentrations in groundwater which would be an early indicator of IWCS performance and integrity.

Pipelines south and east of the IWCS have been abandoned in place, which may compromise the ground water monitoring system. Contamination may be following preferential pathways provided by the pipelines.

- The wells surrounding the IWCS show the low concentrations of uranium in groundwater remain constant or are declining. This indicates that there is no new or ongoing source of uranium entering the groundwater at these well locations. It also indicates the uranium entered the groundwater in the past and the uranium source no longer exists.

See previous response.

- Uranium concentrations detected in OW11B and TWP833 were evaluated in the Remedial Investigation Report Addendum [Sections 4.4.2 and 5.4] and the evidence clearly suggests the uranium being detected in these locations resulted from historic site operations. The Remedial Investigation Report Addendum is available on the Corps' website now.

The level of uranium detected at TWP833 is distinct from all other detects in the area of historic storage. These detects are an order of magnitude lower. Uranium levels in OW-11B are steadily increasing, which is characteristic of leakage.

- The claims that the higher levels of uranium in wells OW11B and TWP833 are coming from the IWCS do not agree with supporting data or the historical management of radioactive wastes at the NFSS.

- The claim that temporary well point TWP833 shows evidence of IWCS leakage is unsound because it fails to address the fact that this well point is located in an area where radioactive materials were stored in open piles for over 30 years and exposed to rain and snow which leached into the soil and impacted the groundwater being drawn into this well for sampling.

See previous response.

- Groundwater well OW11B is located at an elevation which makes the claim of leakage impossible. Groundwater flow and contaminant transport follows the physical laws of nature. Groundwater at well OW11B flows westerly towards the central drainage ditch and IWCS at very slow rates, therefore groundwater would have to "flow uphill" from the IWCS to reach OW11B. In addition, the transport of uranium in groundwater is over 100-times slower than the movement of groundwater because site soils can "adsorb" uranium as it travels in groundwater. Thus, the origin of the contamination in well OW11B is likely derived from a nearby sewer line that shows impacts from historic site operations (e.g., equipment decontamination). The Corps may have punctured this sewer line during investigative drilling and plans to determine that condition during 2012.

The Remedial Investigation identified a uranium plume migrating from the south of the IWCS, which ended at well OW-11B. Ground water does not flow uphill in this scenario. The theoretical ground water transport model does not take into account the presence of pipelines on the NFSS, therefore the Corps' model does not reflect what actually happens on site. Uranium is much more soluble than radium in the NFSS groundwater and therefore would be expected to provide the first indication of IWCS leakage.

- During the construction of the IWCS all pipelines were cut and sealed and a clay cut-off wall and dike was installed around the entire IWCS to ensure there was no pathway for contaminant migration from the IWCS. It would defy the engineered purpose of the dike to leave abandoned pipelines running through it as claimed by those who state the IWCS is leaking.

The claim is, that the pipelines left in place outside the IWCS, south and east, are compromising the ground water monitoring and providing pathways for rapid migration of radioactive contamination from the IWCS.

The USEPA also listened carefully to these claims and performed its own independent analysis of our data. The USEPA agrees that the IWCS is performing as designed. To further address this matter, the Corps will perform additional field investigations in the areas identified to gather additional data and alleviate community concerns regarding the IWCS. The data developed from this field investigation will also assist the Corps with evaluating remedial alternatives as part of the future Feasibility Study for the Balance of Plant Operable Unit [i.e., all other areas outside the Interim Waste Containment Structure]. The work plans and sampling plans will be made available on our website prior to the commencement of field activities.

Consistent with community requests EPA also called for additional investigation. Additional investigation by the Corps is appreciated, but until the source of the uranium groundwater contamination is identified, IWCS integrity should be regarded as suspect.

Again, I assure you that the IWCS at Niagara Falls Storage Site is performing as designed. I am committed to engaging the community through technically facilitated discussions as the Corps moves forward to develop the Feasibility Study for the Interim Waste Containment Structure Operable Unit of the Niagara Falls Storage Site.

Determining whether the IWCS is leaking is an essential factor in determining the future of the IWCS, which is ignored in the current Feasibility Study. The source of the unusually high levels of uranium in groundwater around the IWCS should be determined before making assumptions about the subsurface integrity of the IWCS.

Sincerely,

[REDACTED]

Niagara Falls Storage Site and  
Lake Ontario Ordnance Works Site  
Program Manager