



**Department of Energy**

**Environmental Management  
Consolidated Business Center  
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OCT - 9 2007

Mr. Timothy Fischer, Project Manager  
United States Environmental Protection Agency  
Region V-SRF-6J  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

EMCBC-00013-08

Mr. Thomas Schneider, Project Manager  
Ohio Environmental Protection Agency  
Southwest District Office  
401 East Fifth Street  
Dayton, Ohio 45402-2911

Dear Mr. Fischer and Mr. Schneider:

**ELEVATED TOTAL URANIUM CONCENTRATION LEVELS IN SURFACE WATER  
WEST OF FORMER WASTE PIT 3**

As described in my letter of August 31, 2007, subsequently approved by USEPA on September 24, 2007, a maintenance action was undertaken to address concerns raised by both Ohio and USEPA. Enclosed is a copy of the completion report for this activity that was submitted by the contractor overseeing this work.

As described in the final report, this work activity has appropriately addressed the issues that were raised by the EPAs. The field observations and subsequent water samples corroborate prior studies of this area, DOE's theory as to the cause and the proposed resolution of this situation.

As a result of this effort and the proposed DOE path forward, we are respectfully requesting the EPAs approve the soil certification package for this area. Upon approval of the certification package, DOE will submit the interim Operable Unit 5 Remedial Action Report for review and approval.

If you have any questions, please feel free to contact me at (513) 648-3139.

Sincerely

A handwritten signature in black ink that reads "Johnny W. Reising".

Johnny W. Reising  
Director

Mr. Fischer  
Mr. Schneider

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EMCBC-00013-08

Enclosure

cc: J. D. Chiou, Fluor  
J. Craig, DOE-EMCBC  
M. Cullerton, Tetra Tech  
S. Helmer, ODH  
F. Johnston, Stoller  
T. Jones, DOE-EMCBC  
F. Miller, Miller-Hastings Environmental Services, LLC  
R. Norton, Fluor  
J. Powell, DOE-LM  
M. Shupe, HIS GeoTrans  
AR Coordinator – Wanda Sumner

Attachment 1 – Photograph Package



**Figure 1 Higher Leachable Uranium Suspect Area – Starting Conditions (Looking West From Pit 3 Berm)**



**Figure 2 Area Due South of Suspect Area – Starting Conditions (Looking Southwest From Pit 3 Berm)†**

Attachment 1 – Photograph Package



Figure 3 Consolidation of Brush Piles (Looking West From Pit 3 Berm)†



Figure 4 6-inch Scrape of Suspect Area (Looking West From Pit 3 Berm)†

Attachment 1 – Photograph Package



Figure 5 6-inch Scrape of Suspect Area (Looking North From Southern Boundary of Area) ↑



Figure 6 Spread of Excavated Soil on Southern Berm of Pit 5 (Looking East) ↑

Attachment 1 – Photograph Package



Figure 7 Spread of Excavated Soil on Southern Berm of Pit 5 (Looking West) ↑



Figure 8 Excavation of the Base of the Former Clearwell (Looking South From Southern Edge of Pit 3) ↑

Attachment 1 – Photograph Package



**Figure 9 Backfill / Regrading of Suspect Area (Looking East From Consolidated Brush Pile) ↑**



**Figure 10 Completed Backfill and Regrading of Suspect Area (Looking West From Pit 3 Berm) ↑**

Attachment 1 – Photograph Package



Figure 11 Puddle From Track Rut in Suspect Area [Sampled] (Looking Southwest From Pit 3 Berm) ↑



Figure 12 Puddle in Low-Lying Area Due South of Suspect Area [Sampled] (Looking North) ↑

Attachment 1 – Photograph Package



Figure 13 Pond in Backfilled "Location #65" [Sampled] (Looking Southwest From Pit 3 Berm) ↑

Mr. Johnny Reising, Fernald Project Manager  
Department of Energy – Environmental Management  
10995 Hamilton-Cleves Hwy.  
Harrison, OH 45030

**RE: Maintenance Action Report Regarding the Swale West of Former Waste Pit 3**

Dear Mr. Reising,

As described in letter EMCBC-00733-07 from Johnny Reising of DOE to both the United States Environmental Protection Agency and the Ohio Environmental Protection Agency, entitled “Elevated Total Uranium Concentration Levels in Surface Water West of Former Waste Pit 3”, dated August 31, 2007 and subsequently approved by USEPA on September 24, 2007, a maintenance action was performed on the soil west of pit 3.

**Summarization of the Scope of Work**

The scope of work for this maintenance action, in short, was to remove approximately six inches of the surface of the area suspected as being the source of higher leachable uranium causing elevated levels of uranium in small surface water ponds. This removed material was to be transported to a “high spot” in a nearby area and distributed sufficiently to prevent extended contact time with ponding rain water and leaching of the residual uranium, treated with lime or phosphate to further reduce leachability, and adequately revegetated to stop erosion and spread of this soil. The scraped area and nearby depressions were to be filled and graded to reduce or eliminate future ponding. Prior to movement of any soil, two brush piles lying in the footprint of the scrape area would need to be moved to the west and consolidated into an existing and much larger brush pile allowing access to the suspect soil. (Refer to the attached Photo Package, Figures 1 and 2, for a view of the starting conditions.)

**Summarization of Field Activities**

On September 24<sup>th</sup>, 2007 a field crew was mobilized and work began on this maintenance action. The brush piles were easily moved and consolidated with the use of a CAT D-4 Bulldozer and a CAT 953 Track Loader (Refer to Figure 3). Subsequently, the dozer performed the scrape of the suspect area measuring roughly 40-feet (east-west) by 65-feet (north-south). The soil was pushed to the northern boundary of the suspect area where it was loaded out using the track loader (Refer to Figures 4 and 5). All excavated material was transported to the berm between the former pit 5 and former pit 3. The soil was spread in an approximate 6-inch lift along the southern edge of former pit 5, where 250-pounds of phosphate-based fertilizer (15-30-15, N-P-K) was mixed thoroughly with the aid of a small bobcat skid steer equipped with a toothed-bucket. This area was then seeded and covered with straw for revegetation (Refer to Figures 6 and 7.)

The scraped suspect area was immediately backfilled with the soil removed from the base of the former Clearwell (from an unrelated but concurrent maintenance activity). (Refer to Figure 8 for a photo of the former Clearwell excavation and Figure 9 for a photo of the suspect area being filled/graded) In an effort to prevent future ponding in this vicinity, two mounds of soil that were present approximately 50-feet due south were leveled with the excess soil pushed into a large depression even further south of the mounds. This depression, associated with surface water sampling location #65, was approximately 1-foot deep prior to backfill. Additional soil from the former Clearwell excavation was brought to this southern depression ("Location #65") to bring the ground elevation up to a grade that promoted a southerly water flow from the entire area.

The grading of the entire area spanning from the scraped suspect area to the southern end of the large depression near surface water sampling location #65 was completed on Wednesday, October 3<sup>rd</sup>, 2007. (Refer to Figure 10.)

With the scraped area and vicinity fully regraded and as part of the concurrent maintenance activities relative to the former waste pits area matting and revegetation, the entire disturbed area west of waste pit 3 will be re-seeded. However, due to the amount of sand present in the material from the former Clearwell that was used as backfill, the suspect area will also have jute matting placed over it along with several coir logs. This will be done in an effort to prevent washout of the newly backfilled area stemming from a heavy rainfall.

#### **Notable Field Observations**

It should be noted that during both the scrape of the suspect area and the leveling of several mounds south of this area, there was absolutely no evidence of debris or presence of foreign material. Additionally, the soil that was removed from the suspect area had no physical dissimilarities as compared to the surrounding soil. Both of these observations give additional credence to the theory that the source of the elevated uranium levels in the surface water was indeed the leachable soil conditions and not some unknown buried waste materials in this area.

Prior to completion of grading activities, a two-day rainfall produced several areas of ponding water, which were used as indicators as to where to focus the remaining grading activities. These small ponds (and/or puddles) were sampled by both the Ohio Environmental Protection Agency and members of DOE's Legacy Management contractor, Stoller. (Refer to Figures 11, 12, and 13.) The four locations that were sampled with their associated uranium concentrations were: top of former pit 5 slope (<1 ug/L), scraped area (16.8 ug/L), small low-lying area due south of the scraped area (22.9 ug/L), and the former large depression "location #65" (21.5 ug/L). All of these concentrations are significantly lower than the uranium drinking water criterion of 30 ug/L and the surface water FRL of 530 ug/L.

**Conclusion**

As evidenced by the results of the various and unplanned water samples collected during this maintenance action, all associated activities were successfully completed. As stated above, the completion of the revegetation throughout the area will be done concurrent with other maintenance actions in the former waste pits area.

If you have any question related to this maintenance action, please contact me at (513) 484-2324.

Sincerely,

Frank Miller  
President/CEO  
Miller-Hastings Environmental Services, LLC