



Department of Energy

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06 DEC 1999

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Mr. James A. Saric, Remedial Project Manager
U.S. Environmental Protection Agency
Region V, SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0214-00

Mr. Thomas Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

SUPPLEMENTAL WASTE PIT 5 INFORMATION

In a letter of November 30, 1999 from the Department of Energy (DOE) to the U.S. Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA), information was provided relative to the plan to proceed with the excavation of Pit 5 prior to the start time documented in the Excavation Plan. Although this letter provided some discussion of the implementation plan for the excavation of Pit 5, it became apparent during a December 2, 1999 walk-through of the Waste Pit Remedial Action Plan (WPRAP) area with OEPA, that additional details needed to be provided to the agencies. The purpose of this letter, therefore, is to provide these details on:

- 1) the Pit 5 excavation approach (including plans for removal of the water cover);
- 2) dust control through the use of an applied protective cover; and
- 3) a definition of BAT for radon control for this operation.

The plan for the excavation of Pit 5 begins with the need to remove the water cover. As discussed with the U.S. EPA and OEPA, a graded approach will be utilized for the removal of the Pit 5 water cover. Specifically, the plan is to initially remove water to the extent that material is exposed only at the eastern end of Pit 5. Removal of additional water cover will be performed as the excavation proceeds; that is, through the progression of excavation activities across the pit and/or through the lowering of the water table in conjunction with pit material movement. Thus, Pit 5 will be segregated into 3 sections:

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- the westernmost section will maintain a water cover
- the easternmost section will be the working excavation,
- and a transitional zone will exist in-between that will utilize an applied protective cover material.

As the water cover is being removed and the water recedes from the eastern side of Pit 5, an applied protective cover will be placed over the newly exposed material as soon as feasible. Current plans are to use a protective cover material consisting of polymer and recycled fiber. Information on this type of material (ConCover, or equivalent) and its applicability for use on material such as that in Pit 5 is enclosed. This material was used successfully at the Weldon Springs Site. The application and maintenance of this cover will be facilitated by its color and textural quality. Specifically, the color and quality of the material will provide a visible indicator which will allow the individual applying the cover to ensure that all areas are covered. In addition, these indicators will provide for a means of visually identifying cracks or other areas, which require the reapplication of cover material through the life of the Pit 5 excavation. A typical application involves an initial placement of about ¼ inch of cover (i.e., two lifts) onto the surface, with reapplication of ½ inch (i.e., one lift) when needed. It is anticipated that the cover would need to be reapplied every three months, although environmental conditions, pit conditions, work progress, etc., could increase or decrease that frequency.

The water cover will be removed by siphoning and pumping the water off the pit material and transferring it to the Clearwell. It is expected that the removal of the water cover from the eastern end of Pit 5 will take approximately one week. Free liquids may also be removed by various dewatering techniques such as cut trenches, well points, and through free drainage of staged materials. The intent is to remove free liquids, so as to facilitate material handling without creating a dust problem. By removing free liquids, the material will be more manageable during transport from the Pit 5 excavation to the Material Handling Building minimizing the likelihood of spillage and minimizing personnel exposure.

Excavation at the eastern end of Pit 5 will begin as exposed material becomes available during initial water removal. Initially, the excavation will be performed with the use of excavator(s) located on or near the berm at the eastern end of the pit. This equipment will pull the material toward the eastern berm of Pit 5. Specifically, the plan is to place the material near the pit liner/concrete pad interface at the eastern end of Pit 5, such that any water that free drains from the material will drain back into Pit 5. On a daily basis, it is expected that about 400 - 500 tons of Pit 5 material will be excavated and staged in this manner to support transport to the Material Handling Building the next day. The long-range plan is to keep excavating Pit 5 in this manner until material can no longer be reached. At that time, it is expected that excavation equipment will be placed physically within Pit 5.

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Mr. Tom Schneider

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Fugitive emissions from non-water covered Pit 5 material will be primarily controlled through the use of the applied protective cover discussed above. As necessary, other means of dust control, as described in Section 5.0 of the Excavation Plan and Section 5.0 of the Operations Environmental Control Plan will be used.

The plan for the control of radon during the Pit 5 excavation process is to:

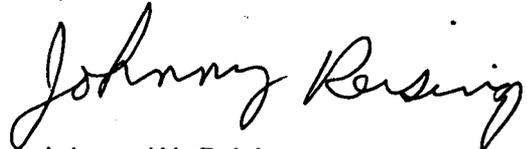
- 1) rely on the ability of the pit material to hold water and maintaining a level of saturation in the pit waste as practical
- 2) on maintaining water cover on the western portion of the pit using a graded approach to water removal as the excavation face advances, and,
- 3) on limiting the disturbance of pit material by minimizing the area of affected excavation.

The IEMP monitoring, as supplemented by the WPRAP occupational radon monitoring, will be used to evaluate the effectiveness of these measures. Additionally, if the excavation of Pit 5 needs to be stopped for an extended period of time, the need to implement temporary controls will be evaluated considering downtime duration and extent of potential generated risk.

As requested, copies of DOE responses to previous U.S. EPA and OEPA comments regarding the applicability of Subpart Q are enclosed with this letter. Specifically, these responses are to OEPA comment #49 to the Draft Remedial Design Package, and to USEPA specific comment #5 to the Sampling and Analysis Plan submitted with the Draft Final Remedial Action Package.

If you have any questions or comments, please contact Dave Lojek at 648-3127.

Sincerely,



Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Lojek

Enclosures

Mr. James A. Saric
Mr. Tom Schneider

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cc w/enclosures:

N. Hallein, EM-42/CLOV
G. Jabloncwski, USEPA-V, SRF-5J
T. Schneider, OEPA-Dayton (three copies of enclosure)
F. Bell, ATSDR
M. Schupe, HIS GeoTrans
R. Vandegrift, ODH
F. Barker, Tetra-Tech
AR Coordinator, FDF/78

cc w/o enclosures:

A. Tanner, OH/FEMP
J. Hall, OH/FEMP
D. Lojek, OH/FEMP
T. Hagen, FDF/65-2
J. Harmon, FDF/90
R. Heck, FDF/2
S. Hinnefeld, FDF/31
T. Walsh, FDF/65-2
ECDC, FDF/52-7

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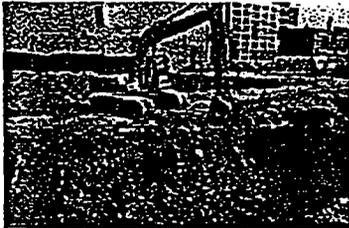
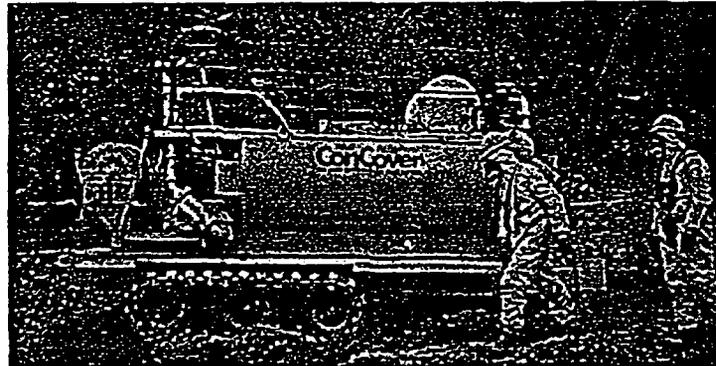
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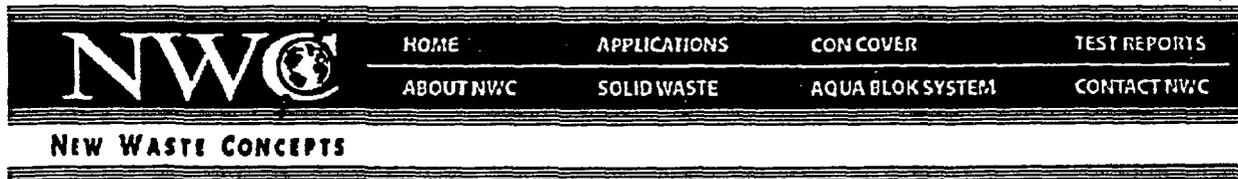
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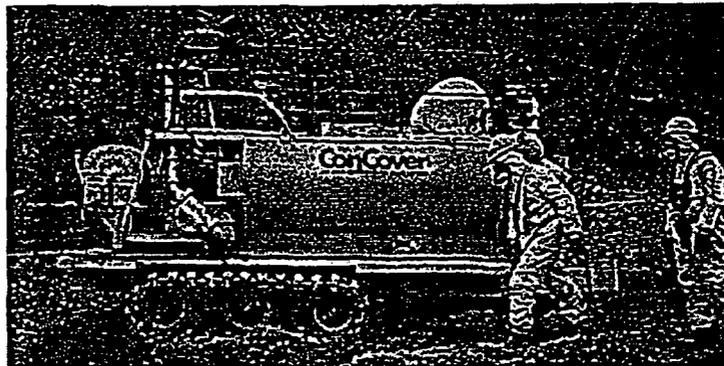
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RESPONSE TO USEPA AND OHIO EPA COMMENTS
ON THE DRAFT REMEDIAL DESIGN PACKAGE
FOR OPERABLE UNIT 1

Section #: 2.1.1 Page #: 4 Line #: 28 Code #: C
Original Comment #: 47

Comment: This bullet describes the assumptions made about the excavation strategy and describes the excavation phases. We have serious doubts that the clay layers are continuous beneath the pits. In other comments we have requested that additional strategies be developed to prevent the infiltration of surface waters and to monitor the impacts to the GMA.

Response: This comment is similar to Ohio EPA Original General Comment #6. Please see response to Ohio EPA Original General Comment #6.

Action: Section 4.5 of the Excavation Plan has been revised to clarify this issue as discussed above, and as discussed in the response to Ohio EPA Original General Comment #6.

Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.1 Page #: 6 Line #: 4 - 6 Code #: C
Original Comment #: 48

Comment: As mentioned in previous comments, where will nontypical wastes be stored prior to transfer to FDF and where will FDF store, treat and/or dispose of this waste.

Response: See the Response to Ohio EPA Original Comment #16 and U.S. EPA Original Specific Comments #28 and #29.

Action: No further action required.

Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.6.1 Page #: 10 Line #: 42 - 45 Code #: C
Original Comment #: 49

Comment: The list of functional requirements does not include a reference to DOE Orders and/or NESHAPs that require and/or imply the following on stack emissions of radon:
1.) radon flux <20 pCi/m²/sec
2.) radon concentration above any point, anytime <100 pCi/L; and
3.) radon concentration on the facility <30 pCi/L annual average.

Response: Although the referenced text section does not include specific regulatory requirements, it does state that off-gases will be treated to control emissions per applicable regulatory standards. The applicable regulatory requirements are then discussed in Section 3.0 of the Design Criteria and Assumptions section, including Table 3-1, which addresses each of the specific Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBC) requirements for OU1, as identified in the OU1 ROD.

The 20 pCi/m²/sec flux standard does not apply to a point source, nor to an excavated portion of the pits. The standard is only applicable to unexcavated portions of the pits. If the pits remain unexcavated, the standard will not be

RESPONSE TO USEPA AND OHIO EPA COMMENTS
ON THE DRAFT REMEDIAL DESIGN PACKAGE
FOR OPERABLE UNIT 1

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exceeded, based on previous sampling and analysis of the waste pits. When the pits are being excavated, BAT will be applied to reduce the radon emissions.

It is the intent of DOE during the project is to keep radon levels below 100 pCi/L at any given point and below 30 pCi/L annual average. However, workers in the WPRAP area will be protected through the application of ALARA practices during every phase of the project.

Action: No further action required.

Commenting Organization: Ohio EPA

Commentor: DSW

Section #: 2.8

Page #: 14

Line #: General

Code #: C

Original Comment #: 50

Comment: This proposes to pump water from OU1 to the Bionitrification Surge Lagoon. The BSL has already been reaching its storage capacity frequently (>1/yr) so that incoming sources had to be shut down. Although the clearwell of the waste pits is currently a source of water in the BSL, the plan will provide for additional volume from OU1. Some of this volume will come from the change in the reduction of soil water holding capacity from remedial activities. Some will come from water removal activities during excavation. The BSL will also be receiving additional volume from other sources on the site such as the OSDF leachate collection system. Additional surge flow storage may be required to accommodate the additional volumes of water requiring treatment. If additional capacity is not provided, there is an increased potential for contaminated water leaving the site or entering the groundwater (e.g., additional overflows to the swale by the waste pits). More detail showing all sources of water (from a site wide perspective) entering the BSL under different flow regimes and the sites hierarchy of shutdowns must be included.

Response: This comment requests additional detail on site-wide sources of water entering the BSL and the hierarchy of shutdown of these sources during periods when the storage capacity of the BSL is in danger of being exceeded. DOE does not agree that this sitewide detail is appropriate in WPRAP documentation. However, the requested sitewide detail is provided in the OMMP. Specifically, all projected site-wide flows to the BSL are described in the OMMP, Section 4.3, and are summarized in the OMMP, Figure 4-6. The hierarchy of shutdown decisions for sources routed to the BSL is provided in the OMMP, Sections 5.3, 5.4 and in Figure 5-2 (Wastewater Operations Decision Flow Chart). It is anticipated that the OMMP will be updated periodically, as necessary, to reflect changes in sitewide water management.

The commentor is also referred to the response for Ohio EPA Original General Comment #1 for additional detail on prioritization of the individual flows within the domain of WPRAP.

Action: Please refer to the action for Ohio EPA Original General Comment #1.

Commenting Organization: Ohio EPA

Commentor: DSW

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.0

Page #: 31

Line: NA

Original Specific Comment #: 5

Comment: Section 4.0 discusses monitoring for radionuclide emissions other than radon as required by Title 40 of the *Code of Federal Regulations* Part 61, Subpart H. However, FEMP is also subject to the radon emission regulations of Subpart Q of Part 61. In fact, FEMP is explicitly mentioned (under its former name, "Feed Materials Production Center") in the "Designation of Facilities" section of Subpart Q. The SAP should be revised to discuss how compliance with the 20 picocuries per square meter per second standard for radon listed in Subpart Q will be verified.

Response: The standard of 20 pCi/m2/sec applies only to the waste pits prior to excavation and after the pits have been remediated. The waste pits, as is, do meet the standard. After the pits are remediated, radon emissions will be measured to verify that the standard has been met. During excavation and working of the pit materials, BAT shall be applied to minimize radon emissions.

Action: No further action required with respect to the RA Package.

**TECHNICAL REVIEW COMMENTS ON
"SAMPLING AND ANALYSIS PLAN FOR WASTE PIT MATERIALS"**

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.3.2

Page #: 9

Line: 29

Original Specific Comment #: 1

Comment: The text discusses use of a gamma scanner to provide a 100 percent evaluation of individual bin composites. In addition to evaluating gamma-emitting target radionuclides, this scanner is intended to provide information regarding the enrichment status of uranium. However, the text provides little information on how this scanner is to be used. The text should be revised to provide additional information on the specific technical capabilities and limitations, including detection limits, of this scanner.

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