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Department of Energy

Oak Ridge Operations
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Oak Ridge, Tennessee 37831— 8723

November 1, 1994

Mr. Daniel Wall
Site Assessment and Federal
Facility Section - Superfund Branch
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Dear Mr. Wall:

QUARTERLY PROGRESS REPORT FOR THE PERIOD JULY - SEPTEMBER 1994 FOR THE FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM (FUSRAP) ST. LOUIS SITE

The following items represent the significant activities and achievements related to the FUSRAP St. Louis Site for the period July through September 1994:

- During the third quarter, the FFA schedule called for submittal of a draft Record of Decision (ROD) to EPA by September 30, 1994. In the course of written communications between DOE Assistant Secretary Grumbly and senior EPA management, DOE requested that this milestone be deferred to accommodate the need for additional stakeholder involvement in the remedy selection process; EPA management agreed to this request. DOE submited an plan describing its near-term interim actions; and over the next several months, DOE will involve the stakeholders and continue to work with EPA toward a technically implementable, as well as a politically acceptable, solution for remedial action in St. Louis.

- In addition to numerous discussions and public meeting forums, EPA and DOE held a formal quarterly project managers' meeting in St. Louis on July 14; the meeting included representatives from the Missouri Department of Natural Resources (MDNR). The focus of the meeting was to discuss the remedy selection process, stakeholder involvement in the decisionmaking, and site environmental conditions.

- In order to provide stakeholders with an opportunity to hear various points of view, DOE and the St. Louis County Department of Health sponsored a workshop for "key" stakeholders on August 8th. The meeting allowed affected decisionmakers an opportunity to address the issues related to various cleanup options. In addition to the nearly 30

stakeholders invited to participate in the workshop, approximately 75 interested citizens observed the proceedings.

At the workshop, DOE committed to begin work on an interim removal action on the St. Louis Airport Site (SLAPS) residential vicinity properties. DOE Assistant Secretary Grumbly set as a goal that this interim removal action would begin in October 1994. Assistant Secretary Grumbly committed to spend up to $15 million dollars in 1994 on St. Louis cleanup-related activities -- including additional interim removal actions.

Assistant Secretary Grumbly also asked the participants at the workshop to consider becoming the nucleus for a new stakeholders' advisory group that would provide community-based advice regarding the ultimate remedy selection for the St. Louis Site. On September 13, this stakeholder group convened and formed the "St. Louis Site Remediation Task Force." The task force has broad-based representation, including participation from regulators, local elected officials, public health officials, scientists, private property owners, utility companies, environmentalists, and other affected agencies such as the airport authority. Dr. Alpha Fowler Bryan, Director of the St. Louis County Department of Health was selected by the group as its chairperson.

- During August and September, DOE initiated the engineering and construction preparations for remedial action on the SLAPS residential vicinity properties. These efforts included preparing engineering drawings of the excavation areas, cleanup technical specifications, work schedules, civil and radiological survey of the properties, sampling of the contaminated soil areas to provide the necessary information on soil characteristics to the disposal facility in Utah, and arrangements for waste transportation and disposal.

- DOE continued its efforts to evaluate technologies available for soil treatment. In August, FUSRAP personnel collected numerous samples of soil representative of the North County area. These samples are undergoing laboratory testing to assess the characteristics that critically affect treatment methodologies, as well as preliminary bench scale testing to identify treatment technologies that have a potential for being successfully applied to the soils. If the bench-scale tests yield promising results, larger-scale pilot tests will be undertaken next year.

- On August 22nd, researchers from the Ames laboratory mobilized to the SLAPS site to begin their field work testing innovative characterization technologies. The Ames researchers are developing new, cost-effective site screening and characterization methodologies based on holistic assessments of site conditions combined with new, innovative sampling and analysis tools. On September 12th and 13th, Ames Lab representatives conducted workshops and demonstrations on their methodologies; the demonstrations included a tour of actual field

applications at SLAPS and on the ballfields. The technologies tested included geophysical testing and gamma logging of wells at the site, age-dating of the deep aquifer, and testing of mobile screening technologies for detecting radioactivity in soils. The workshops were attended by a broad cross-section of people, including scientists, public health officials, environmental cleanup personnel, environmentalists, and private citizens.

- DOE submitted an application for renewal of the Hazelwood Interim Storage Site (HISS) National Pollutant Discharge Elimination System (NPDES) permit. The permit application included a request to modify the stormwater sampling requirements in a way that would maintain the same level of information generated to ensure protection of public health and the environment while at the same time saving over $10,000 per year.

  On August 9th, MDNR conducted an inspection of the HISS stormwater discharge monitoring program and facilities. The review was conducted as part of MDNR's process for evaluation of the DOE application for renewal of the NPDES permit for the site. The reviewers concluded that the facilities were very well maintained and that DOE met or exceeded the criteria of the state in all areas. The inspection report was transmitted to DOE and will become part of the state's file on the HISS NPDES permit that is available for public review as part of the permit renewal process.

- Discussions between DOE and state officials continued in an effort to resolve the matter of the notice of violation (NOV) issued by the state regarding stormwater discharge monitoring at SLAPS. In June 1994, DOE and the City of St. Louis each received a second NOV from the State of Missouri because neither party had submitted an application for a stormwater discharge permit for the St. Louis Airport Site (SLAPS) to the state. Both DOE and the City of St. Louis maintain that they are not legally obligated to obtain a stormwater permit. In a July letter from senior DOE-HQ management to the state, DOE made clear its intent to conduct periodic monitoring of the site, but not to obtain a stormwater discharge permit for the site.

- During the third quarter, DOE initiated environmental monitoring activities at SLAPS. Based on a review of site hydrogeological data, three groundwater wells were selected for sampling to assess the potential for migration of contaminants in the shallow aquifer. Four locations along the site fenceline were selected for placement of tissue-equivalent thermoluminescent dosimeters (TETLDs) and radon monitoring devices; the locations were selected based on the potential exposure to members of the public. DOE also identified two locations at the site from which to sample stormwater discharge. In September, MDNR forwarded comments on the DOE monitoring program; DOE is currently preparing a response based on review of the MDNR comments.

- During July 1994, DOE completed maintenance on the gabion wall at SLAPS.

EPA and MDNR had requested that DOE conduct routine inspection and maintenance on the wall to ensure its integrity as a barrier preventing erosion of contaminated soil from SLAPS as a result of water flow in Coldwater Creek adjacent to the site. The maintenance included removal of vegetation from the length of the wall and inspection of each gabion (a wire mesh basket filled with stone) for deterioration; the inspection revealed that the gabion wall remained in very good condition.

- DOE continued to discuss arrangements with representatives of the City of St. Louis Airport Authority regarding operations and maintenance activities at the airport site. There was agreement in principal on a division of responsibility for activities at the site. While the City of St. Louis will retain ultimate responsibility for the SLAPS property, DOE has agreed to directly support the City by performing a variety of site maintenance functions (fence upgrade, etc.), as well as playing the role of "gatekeeper" at the site. The "gatekeeper" role is designed to allow DOE to use its expertise regarding the radiological conditions at the site to minimize exposure to personnel seeking access to the site.

- DOE submitted an information package to the Federal Aviation Administration (FAA) in response to a concern on FFA's part that a disposal cell at SLAPS, as was proposed in the draft Proposed Plan, could affect airport operations. After reviewing the DOE design considerations for a cell at SLAPS, the FAA indicated that there was little likelihood that a disposal cell would affect airport operations.

- The tenant and the landlord of the property adjacent to HISS (9150 Latty Avenue) continued to express a need to expand the industrial facilities on that property. The work could involve excavation of up 3000 cy^3 of soil -- which the tenant/landlord propose to place into an interim storage pile on the property. The tenant/landlord have agreed to solicit DOE's concurrence on all actions prior to undertaking them. DOE has reviewed a site management plan proposed by the landlord for all actions at the site involving contaminated materials. Periodic discussions continue in order to identify the nature of DOE involvement in monitoring the activities at this site.

- During Spring 1994, the tenant at 9060 Latty Avenue undertook an oil-contaminated soil remediation effort that resulted in the construction of a storage pile containing radioactively contaminated soil on that property. The tenant had arranged for the remediation and removal of oil-contaminated soils on the property; however, soils that were contaminated with both oil and radioactivity were placed into the onsite pile that contains approximately 2,500 cubic yards. The tenant has subsequently vacated the property; a new tenant has begun to occupy the building on the property.

  In recent weeks, the condition of the cover on the storage pile has begun to degrade. FUSRAP has contacted the former tenant and advised

them regarding the condition of the pile cover. DOE has also discussed the situation with the property owner.

During the original oil-contaminated soil cleanup, soils that the cleanup contractor determined met the DOE cleanup criteria (5 pCi/g Ra/Th in the top 15 cm; 15 pCi/g Ra/Th in soils below the top 15 cm) were sent to a disposal facility in the state of Illinois. In recent weeks, the Illinois Department of Nuclear Safety (IDNS) has been gathering information on the disposed soils for its records. DOE is in the process of collecting its sampling data and information regarding the soils from the 9060 Latty Avenue property and will forward this information to IDNS.

- During the quarter, DOE provided support to various utility company activities in areas where there was a potential for contaminated soil. These included:

  - In July, FUSRAP assisted Mallinckrodt and Leclede Gas Company in the placement of several cubic yards of soil from a gas line repair into Building 116 at the St. Louis Downtown Site (SLDS).

  - In August, there was a water main break on Hall Street, approximately 130 feet north of Destrehan Street, at SLDS. FUSRAP personnel sampled the soils from the excavation area and subsequent analysis determined that the concentration of contamination in the excavated soils was below the DOE cleanup criteria.

  - In September, Southwestern Bell installed an underground telephone line along the west side of Hazelwood Boulevard between Pershall Road and Frost Avenue. Southwestern Bell and DOE worked together to identify the distance away from the roadside in which there was little potential for contaminated soil, and Southwestern Bell installed the new underground line in this area.

- In addition to the routine community relations activities at the DOE Information Center in Hazelwood, a FUSRAP representative made a presentation to members of the Northside Optimist Club on the status of the FUSRAP St. Louis project.

During this quarterly period, environmental sampling conducted by FUSRAP consisted of routine surveillance, limited radiological surveys, and sampling associated with ongoing site activities. A summary of these activities and the analytical results received to date is enclosed. As always, all raw data and analyses are available for EPA review and inspection to the extent that you request.

During the fourth quarter of 1994, there are no scheduled FFA milestones. DOE will continue to work with EPA in developing the schedule to complete the

remedy selection process.

Please advise if you have questions or comments regarding this quarterly report.

David G. Adler, Site Manager
Former Sites Restoration Division

Enclosure

cc: R. Geller (MDNR)
D. Tschirgi (MDNR)

ENCLOSURE

Summary of Third Quarter 1994
Sampling and Analysis

The following is a summary of environmental data collected for FUSRAP sites in St. Louis, Missouri during the third quarter. Samples were collected and analyzed in support of environmental surveillance and characterization of the sites. A total of 268 samples and measurements were collected during the quarter and submitted for various radiological and non-radiological analyses. In addition, 94 radon flux measurements were taken during the second quarter but were not available for inclusion in the second quarter report. The results of the second quarter radon flux measurements are discussed in this report.

Analytical results for these radiological analyses have been compiled and validated. Preliminary evaluation of the data indicate results consistent with past characterization and environmental surveillance findings at the sites. There are no anomalies or significant changes from the previously determined boundaries of contamination.

Radon

In the second quarter of 1994, radon flux measurements were taken using large-area activated-charcoal canisters placed at 7.6-m (25-ft) intervals across the surface of each interim storage pile at HISS for a 24-hour exposure period. Measurement of radon flux provides an indication of the rate at which radon is emitted from a surface. The results of these radon flux measurements were not available for inclusion in the second quarter report, and are therefore provided in this quarterly report. Of the 94 detectors used for radon flux measurements, 20 were collected from the small pile and 74 were collected from the large pile. The highest recorded flux from the small pile was 1.04 $pCi/m^2/s$ and the highest flux recorded from the large pile was 4.25 $pCi/m^2/s$. All radon flux measurements were well below the radon flux standard of 20 $pCi/m^2/s$.

At HISS, 12 fence-line radon detectors were collected in support of routine environmental surveillance activities. The maximum concentration of radon detected at the boundary of the site was 0.7 pCi/L, well below the DOE radon guideline of 3.0 pCi/L for occupied or habitable structures.

At SLDS, 10 radon detectors were collected in support of routine environmental surveillance activities. All measured radon concentrations were also well below the DOE radon guideline of 3.0 pCi/L for occupied or habitable structures. The maximum concentration of radon detected was 1.4 pCi/L.

External Gamma

At HISS, 24 tissue equivalent thermoluminescent dosimeters (TETLD) were utilized in order to determine the external gamma exposure rate at the perimeter of the site in support of the routine environmental surveillance activities. Measurements at HISS ranged from below background to 145.2 mrem/yr above background. Historically the gamma exposure rate measured at the southern end of the site (location 2) has exceeded the DOE guideline of 100 mrem/yr above background. The elevated gamma exposure rates at the southern end of the site reflect localized subsurface contamination. However, the offsite area near location 2 is heavily wooded; it is unlikely that an individual would occupy that area virtually 24 hours a day for one year, which would be necessary for the individual to receive a dose exceeding the DOE guideline.

At SLDS, 14 TETLDs were utilized in order to determine the external gamma exposure rate both within Building 116 and along the perimeter of the building in support of the routine environmental surveillance activities. External gamma exposure rates at SLDS were all below background and therefore none of the TETLDs collected from SLDS yielded results in excess of the DOE guideline of 100 mrem/yr above background.

Environmental Surveillance

Four groundwater samples were taken in support of the reactivation of environmental surveillance activities at SLAPS and analyzed for total uranium, thorium-230, thorium-232, and radium-226. Maximum concentrations were 5.92 pCi/L for total uranium, and 0.55, 0.11, and 0.54 pCi/L for thorium-230, thorium-232, and radium-226 respectively.

Stormwater Surveillance (NPDES)

Seven stormwater samples were collected from the two outfalls at HISS to comply with the requirements delineated in the NPDES permit number MO-0111252. Samples from each outfall are taken monthly and analyzed for settleable solids and quarterly to analyze for chemical and radioactive contaminants. The results for settleable solids for the third quarter of 1994 are presented in the following table:

Date	Outfall 001 ml/L/hr	Outfall 002 ml/L/hr
7/8/94	0.5	0.7
7/21/94	< 2.0[1]	< 2.0[1]
8/15/94	0.5	0.5
9/26/94	not avail.[2]	not taken[3]

(1) The settleable solids samples collected on July 8 were analyzed at the laboratory 3 days after collection against a method holding time of 48 hours. Additional samples were collected on July 21 for settleable solids. Due to insufficient sample volume, the best detection limit for the July 21 samples was 2.0 mL/L/hr, too high to provide useful data.
(2) Results from the 9/26/94 sampling have not yet been reported.
(3) Flow under or around the flume prevented sampling on 9/26/94. Options for the necessary repairs are under consideration.

No samples were collected from outfall 002 on 9/26/94 due to the problem described in the footnote in the table above. Chemical data for the quarterly sampling of outfall 001 was not available at the time of preparation of this report. Preliminary radiological data faxed from the laboratory for outfall 001 indicated that the maximum concentrations were 0.37 pCi/L for radium-226, 0.02 pCi/L for thorium-228, 2.7 pCi/L for thorium-230, and 0.08 pCi/L for thorium-232. Preliminary data has not gone through quality control review or sample results review. Final data will be included in the next quarterly report.

The radionuclide concentrations were less than the DOE derived concentration guide (DCG) reference values for all groundwater, surface water, and stormwater samples collected in the third quarter of 1994. The DCG is a reference value calculated in DOE Order 5400.5, "Radiation Protection of the Public and the Environment." The DCGs (for ingested water) for the radionuclide analytes included in the third quarter environmental surveillance at HISS are: radium-226, 100 pCi/L; radium-228, 100 pCi/L; thorium-230, 300 pCi/L; thorium-232, 50 pCi/L; lead-210, 30 pCi/L; and total uranium, 600 pCi/L.

Characterization of HISS Vicinity Property (3L)

Twenty-three soil samples were collected from 9060 Latty Avenue (property 3L) to determine the extent of radioactive contamination in support of site cleanup work being performed by the tenant of the property. These samples were analyzed for radium-226, thorium 230, thorium-232, and uranium-238. The DOE guidelines for individual constituents for the subsurface (>0.5 ft. depth) are 15 pCi/g for thorium-230, thorium-232, and radium-226, and 50 pCi/g for uranium-238. The derived composite DOE guideline for the above parameters is given by the sum of the ratios of the above constituents minus their respective background values to the applicable DOE guideline for each constituent. None of the soil samples exceeded the individual or derived composite DOE guidelines for subsurface soils at this site. The maximum concentrations were 1.2 pCi/g for radium-226, 9.0 pCi/g for thorium-230, 1.5 pCi/g for thorium-232, and 7.4 pCi/g for uranium-238.

Characterization of Haul Roads Vicinity Properties

Fourteen soil samples were collected from the haul roads vicinity properties (properties 19, 20, 41, 43, 44, and 45) to gather data in support of interim remedial action. Four samples contained concentrations of thorium-230 in excess of DOE guidelines for surface soils, ranging from 6.0 pCi/g to 76.0 pCi/g.

SLDS Building 116

At SLDS, 160 direct surface contamination readings were taken on the floor and walls in building 116. The survey was conducted as part of a routine biannual surveillance of building 116. The survey is used to determine if contamination conditions are changing in the building as a result of stored materials or other activities. The following table contains a summary of the data obtained from this activity; the data indicate there are no changes in the radiological conditions in the building.

Survey Type	Number of Readings	Maximum dpm/100 cm^2	Average dpm/100 cm^2
Transferrable Alpha	40	7	4.1
Transferrable Beta-Gamma	40	<90	22.4
Direct Alpha	40	1271	165
Direct Beta-Gamma	40	14271	2657

The DOE Surface Residual Contamination Guidelines are:
- 5000 dpm/100 cm^2 for Average Direct Readings
- 15000 dpm/100 cm^2 for Maximum Direct Readings
- 1000 dpm/100 cm^2 for Transferrable Readings

Formerly Utilized Sites Remedial Action Program (FUSRAP)

ADMINISTRATIVE RECORD

for the St. Louis Site, Missouri

U.S. Department of Energy