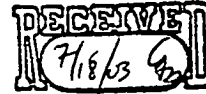


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July 14, 2003

**VIA TELECOPIER AND CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Ms. Sharon R. Cotner
FUSRAP Program Manager
U.S. Army Corps of Engineers
8945 Latty Avenue
Berkeley, MO 63134

Re: St. Louis North County Feasibility Study and North County Proposed Plan
 Comments of General Investment Funds Real Estate Holding Company

Dear Ms. Cotner:

On behalf of General Investment Funds Real Estate Holding Company ("GIFREHC") and its subsidiary, GIFREHC Missouri Holding Company, we are pleased to have the opportunity to provide the following comments on the North County Feasibility Study and North County Proposed Plan ("FS/PP") 68 Fed. Reg. 23290-91 (May 1, 2003). We also appreciate the Corps' courtesy in extending the comment period by 45 days (to today) in response to our request.

GIFREHC has a significant and demonstrable interest in the further investigation and final remediation of the North County sites. GIFREHC's subsidiary owns the property (Vicinity Property 2L or "VP2(L)") located immediately adjacent to the east of the Hazelwood Interim Storage Site ("HISS"). Indeed, prior studies on behalf of the Department of Energy ("DOE") have indicated the presence of radiological residuals in near surface soil samples in concentrations far greater than otherwise summarized in the FS/PP (*i.e.*, Th-230 at 81,000 pCi/g; Ra-226 at 1,400 pCi/g, and U-238 at 990 pCi/g).¹

Given the importance of the decisions contemplated by the FS/PP, Lisa G. Feldt, a principal of Integrated Management & Environmental Solutions, LLC, was retained to review the FS/PP and provide a report. Having served for over 20 years in various senior posts in the U.S. Environmental Protection Agency's Superfund and Air and Radiation Programs and the DOE's Environmental Management Program, Ms. Feldt is particularly well qualified to provide this assessment. Ms. Feldt's report on the FS/PP is enclosed and is incorporated as part of GIFREHC's comments. The following comments emphasize certain of the concerns and

¹ See *Radiological Survey of Properties In The Vicinity of The Former Cotter Site, Hazelwood/Berkeley, Missouri* (LM003), ORNL Health and Safety Research Division (May 1987) (Activity No. AH-10-05-00-0; ONLWCO1) (ORNL/TM-10008) at Table 5 (Samples 7A-C) and Table 6 (holes 7 and 8).

observations noted in Ms. Feldt's enclosed report, provide additional context for those comments, and raise additional matters that should be considered in connection with any future remedial decision making and planning and reflected in the North County Record of Decision (the "ROD").

A. ROD Does Not Supplant Prior Agreements Between the United States and GIFREHC.

In response to the presence of MED/AEC materials on VP2(L), GIFREHC long ago conducted its own risk assessment and, based on that assessment and close coordination with the DOE, developed and has since implemented its own functional "institutional controls" for VP2(L). These controls are documented in the form of a detailed site management plan (the "SMP"),² which restricts access to certain contaminated areas of VP2(L), and establishes procedures and work rules governing the full range of normal property management activities which could otherwise result in inadvertent radiation exposures to site occupants or others. As a result of this effort, GIFREHC continually has assured both that occupants of the site are safe, and that contaminated MED/AEC materials are secured and remain onsite pending decontamination and removal by the United States. In a certain June 1994 agreement between the GIFREHC and DOE (the "1994 Work Agreement"),³ among other things, DOE agreed (i) that it had reviewed and approved of the SMP as an appropriate guide for the management of the radiologic risk posed by the radiologic contamination at VP2(L) and that the SMP was consistent with DOE guidelines and procedures. The DOE also agreed that it would accept responsibility for the management of the contaminated soils and contaminated building materials generated in connection with carrying out the SMP, and would provide certain services in connection with carrying out the SMP.

The USACE ratified both the SMP and the 1994 Work Agreement in that certain Right of Entry Agreement, dated as of Oct. 6, 1998 (the "1998 Rail Spur Agreement"). In that agreement, among other things, GIFREHC authorized the Corps in 1998 to construct a temporary rail spur across the southwest corner of VP2(L). This spur connects the HISS to an existing rail line, and is the means by which the USACE transported the HISS storage stockpile soils offsite for out-of-state disposal. GIFREHC was advised that use of its property for a portion of the rail spur saved the United States millions of dollars over the cost of a new trestle that otherwise would have been required.

In each of these agreements, agencies of the United States made certain commitments to GIFREHC. These agreements each contemplate the issuance of the North County ROD. However, the issuance of the ROD does not alter the United States' contractual obligations to GIFREHC under these agreements, which remain in full force. In preparing and implementing the ROD, the government's covenants under these agreements should be viewed as site-specific ARARs and should be taken into account in all remedial planning.

² Site Management Plan, 9150 Latty Avenue, Hazelwood, Missouri; prepared by Haley & Aldrich, Inc., Cambridge, MA, for GIFREHC (H&A File No. 11007-044) (June 1994). The SMP was modeled on the site-specific health and safety plan developed by the DOE for the HISS. DOE, *FUSRAP Health and Safety Plan No. 11/6134/140/153-HSP Rev. 0* (Nov. 1993).

³ That certain agreement by and between GIFREHC and the DOE, signed June 28, 1994.

B. GIFREHC Supports A Removal Alternative To Achieve Unrestricted Use.

GIFREHC strongly supports the proposed Remedial Action Objectives and remediation goals that, when achieved, will "allow for unlimited use and unrestricted exposure." ES-17. While the United States' early nuclear activities have benefited and continue to benefit the nation as whole in a variety of important ways, for too long North County property owners and residents have carried a disproportionate share of the costs and risks of achieving these benefits enjoyed by all. It is appropriate now for the United States to fully shoulder that burden and those costs in order to spread them more equitably among the American people. For this reason, the remedy for the North County site should go as far as reasonably possible to restore the 87 individual properties impacted by MED/AEC wastes and activities to the status quo ante.

Remedial Alternatives 1 and 2 in the FS (no action, or institutional controls only) do not meet this standard, and would continue to impose the full costs and risks of securing radioactive material releases on individual property owners. Alternatives 3 and 4 would reduce those burdens, but would leave the legacy of permanent radioactive waste disposal "cells" in the middle of a active residential and commercial community, potentially affecting future development opportunities and property values. As indicated in Ms. Feldt's report, it is also uncertain that such cells, as currently described and justified in the FS, would either satisfy CERCLA protectiveness requirements or would be sufficiently secure to prevent recontamination of adjacent properties.

GIFREHC supports remedial Alternatives 5 and 6 as far as they go (*i.e.*, removal of contamination to unrestricted use levels and disposal out of state), but suggests that they should be both merged and expanded. Both Alternatives 5 and 6 call for the removal of soils in currently accessible areas to unrestricted use levels in all parts of the North County Site for out of state disposal. But the two Alternatives differ in their treatment of currently "inaccessible" areas (*e.g.*, under roads, rails, bridges and buildings). Alternative 6 calls for the removal of soils from such inaccessible areas now, just as for accessible areas. Alternative 5 would place institutional controls over inaccessible areas for the time being, and address them when property owners make them available for remediation. However, under Alternative 5, decisions regarding the appropriate extent of remediation for those areas would also be deferred to a new round of CERCLA analysis, apparently on a case-by-case basis, if and when they became accessible. Neither the FS nor the PP provide a rationale for deferring decisions on the appropriate cleanup standard, or why that standard might be different than the standard adopted for the rest of North County soils related to their current "inaccessibility". According to the PP alternatives analysis, the reasons for preferring Alternative 5 over 6 are (1) an increased risk of traffic mishaps during the remediation of transportation corridors (which apparently comprise nearly all of such areas) and (2) increased costs of \$60 million – characteristics that would remain regardless of when remediation occurs. No other ARAR or human health justification is provided for the different alternatives.

1. *Merge Alternatives 5 and 6.*

Consistent with Alternative 5, GIFREHC supports deferring action on "inaccessible areas" until such time as their respective property owners make them available for remediation and restoration. However, GIFREHC does not support deferring a decision on

remedial goals until that time. As in Alternative 6, the ROD should prescribe the same ARAR-based and health risk-based remedial goals for both accessible and inaccessible areas, with the understanding that implementation of the final remedy will be deferred for inaccessible areas until a later date. If changes in ARARs, technologies or uses in the interim suggest a more or less protective approach is warranted, the lead agency can certainly move to amend the ROD at that time to appropriately address those new circumstances. Otherwise, the absence of a commitment by the United States to implement a protective remedy for these areas at the appropriate time will only create ambiguity and uncertainty respecting these areas that may interfere with or delay putting these lands to their highest and best use over time. It has taken the United States nearly 26 years and millions of dollars in studies and analysis to reach the current decision point respecting the accessible areas. The ROD should not bind the United States and the St. Louis community to repeat that process over and over as individual inaccessible areas become available for remediation on an ad hoc basis without strong and compelling justification. We do not believe that case has been made.

2. *Expand Alternatives 5 and 6 to Include Structures and Improvements.*

The Proposed Plan recites that the FS addresses "structures" in addition to soil, sediment, surface water and groundwater (PP at p. 4); however we have not identified any remedial goals in either the FS or PP with respect to structures. Just as soils and groundwater at the North County Site have been impacted by MED/AEC wastes, so too have structures. GIFREHC has continually been confronted with the challenge of safely and appropriately managing both building maintenance tasks involving contaminated building components, and management of the resulting building maintenance debris (e.g., the VP2(L) roof replacement project).

The radiological characterization of structures summarized in the FS appears to be limited to buildings at HISS/Futura (e.g., FS p. 2-60), and no data is provided for VP structures that have been impacted, and the remedial alternatives discussed do not address how unrestricted use clearance will be achieved for these materials. For example, in 1992, DOE conducted a radiological assessment of the external components of the main building at VP2(L) (performed to assess any effects from the temporary loss of the cover of the HISS main pile during a high wind event). The DOE's letter report of that study given to GIFREHC (attached as Exhibit 2 to these comments) indicates the presence of fixed contamination in excess of DOE's cleanup guidelines (100 disintegrations per minute or "dpm") on the roof and certain concrete steps, external walls, concrete footings, shed roof materials, gas regulation equipment, electrical boxes, sidewalk areas, and window ledges.⁴

At VP2(L), some of these materials were addressed during the 1996-'97 removal action or subsequent roof removal project. The remaining materials do not present any immediate risk as they are controlled by procedures under the VP2(L) Site Management Plan. However, especially considering the 200-1,000 year time frame relevant to this action, it is

⁴ See undated letter report, "Radiological Survey Information for the Building at 9150 Latty Avenue in Hazelwood, Missouri," from David Adler, DOE, to J. Katkish, First Management Group, Inc. (sent by the Oakridge FUSRAP office to GIFREHC on Oct. 15, 1992), attached as Exhibit 2 to these comments. The letter report also established that beta-gamma survey results were well below DOE's 5000 dpm/100CM² cleanup standard.

inevitable that these conditions at VP2(L) and similarly situated properties will need to be addressed in the course of routine maintenance or redevelopment of the property. The FS should be revised to provide additional structural characterization information for the VPs, and remedial alternatives to address the proper management and disposal, by the United States, of contaminated structural materials over time to meet the human health protectiveness requirements of CERCLA, and ARARs. As the draft FS and PP recite at several locations, Missouri may interpret its rules to prohibit the land disposal of such materials in Missouri.

C. Potential "Inaccessible Areas" on VP2(L)

The FS recites that soils beneath permanent structures (*i.e.*, "inaccessible soils") will not be remediated as part of this action, and cites as examples soils under roads, bridges, railroads and other permanent structures. ES-36. A preliminary indication of presumed "inaccessible" soils is provided at Figure ES-3.

GIFREHC strongly supports the position set forth in the FS and PP that the determination of whether soils are "inaccessible" is determined by decisions by the affected property owners. Given the extreme management burdens that could be imposed on property owners plagued with a hodgepodge of small, temporarily "inaccessible" areas under walkways, current parking lots and small structures (each of which presumably would be subject to institutional controls), landowners may reasonably determine that such areas should be deemed accessible now and remediated and replaced now, even where they serve as functional, temporary caps on contaminated soils, rather than allowing action to be deferred to some indefinite future date, to some indefinite future remedial standard. The FS and ROD should identify any more specific criteria for "inaccessible" areas that will be applicable, and confirm that such areas will be defined finally only after consultation with affected landowners following or in connection with the pre-design investigation. The FS does not indicate how additional "inaccessible" areas will be identified.

As this potential issue arises on VP2(L), two areas in particular should not be deemed "inaccessible" without further consultation with GIFREHC -- the area of unexpectedly high subsurface contamination VP2(L) in the southwest corner of the VP2(L) west parking area, and the area comprising that part of the HISS rail spur that crosses VP2(L). These areas should be remediated as part of the current action.

1. The "Hot Spot" Under the VP2(L) Parking Lot is Not Inaccessible and the FS and ROD Should Indicate That the Area Will Be Remediated to Unrestricted Use Levels

Although not identified as "inaccessible" in Figure ES-3, this is to confirm that the "hot spot" identified in 1996 -- involving Th-230 concentrations greater than 30,000 pCi/g -- along the VP2(L)/HISS fence line, and under what is now the southwest corner of the VP2(L) west parking area should be deemed accessible. The soils in this area are highly contaminated, and adjoin unpaved areas that are also relatively highly contaminated. At the direction of the DOE, remediation of this area was deferred during GIFREHC's 1996 removal action due to the high activity levels. The area was marked with granite curbing, and temporarily capped with sheeting, gravel and pavement. A copy of DOE's December 13, 1996 confirming

correspondence (and related sampling data) is provided as Exhibit B to Ms. Feldt's attached report. The current asphalt cover was intended as a temporary control measure pending remediation by the United States pursuant to the ROD. GIFREHC understands that the mere presence of the asphalt cover will not cause these soils to be deemed "inaccessible", and that they will be removed to the same extent as other areas of VP2(L). Like the FS, the ROD should reflect that this "hot spot" is not "inaccessible."

2. *The Portion of the HISS Rails Spur On VP2(L) is Not Inaccessible and the FS and ROD Should Indicate That It Will Be Remediated to Unrestricted Use Levels*

Figure ES-3 mistakenly shows the entire length of the HISS rail spur to be "inaccessible." As discussed above, a portion of that spur crosses VP2(L) pursuant to the terms of a limited right of entry in favor of the United States set forth in the 1998 Rail Spur Agreement. That agreement provides that the spur (at least insofar as it is present on VP2(L)) is a temporary structure. In particular, Section 1(c) of the 1998 Rail Spur Agreement provides that the Corps shall remove the portion of that rail spur present on VP2(L) no later than October 2010, and shall remediate the property underneath it. GIFREHC hereby affirms its expectation that the HISS spur will be removed in accordance with the Government's covenant. Even if this discrete area is the last area to be remediated as part of this action, it should nevertheless be remediated as part of this action, and to levels comparable to other portions of VP2(L). Figure ES-3 of the FS should be revised, and the ROD should reflect that this portion of the HISS rail spur is not "inaccessible."

D. *VP2(L) Should Be Remediated First Among the VPs, and this Determination Should be Reflected in the ROD*

There are a great number of individual VPs to be addressed under the preferred alternative; however neither the FS nor the PP addresses when remediation will begin at any of the VPs, or the relative priority with which the individual VPs will be addressed. The data cited in the FS suggests that VP2(L) is potentially the most impacted VP. Characterization data omitted from the FS but referred to herein or in Ms. Feldt's enclosed report confirm that the concentrations on at least portions of VP2(L) are far greater than previously publicly acknowledged by the Corps (i.e., > 30,000 pCi/g Th-230 in the top 15 cm, and perhaps > 80,000 pCi/g). Through implementation of the SMP (i.e., GIFREHC's informal "institutional control"), GIFREHC has assured that VP2(L) workers and contractors are and will remain safe, and that contaminated media and building materials are not disturbed. Nevertheless, GIFREHC wishes to be relieved of these policing duties and associated costs as soon as possible.

Indeed, Pursuant to the 1998 Rail Spur Agreement with GIFREHC, the Corps agreed to fully remediate VP2(L) in accordance with the approved EE/CA and approved ROD, and to:

use its best efforts to do so by 2008 or within two years of the approval of the applicable ROD, whichever is later; ... [and] in any event, ...to remediate [VP2(L)] on a first priority and expedited basis as among the HISS and the other Latty Avenue Vicinity Properties.

1998 Rail Spur Agreement, §10(a). Doubt about the Corps' willingness to stand by its covenant to address VP2(L) first has been raised by the "St. Louis FUSRAP North County Site Property Characterization Plan," (Apr. 2000),⁵ located in the Administrative Record. This document suggests (perhaps erroneously) that the Corps does not plan to honor its commitments both to (1) complete remediation of VP2(L) by the earlier of 2008 or two years after ROD approval (the document suggests commencement in 2009), and (2) in any event, to remediate VP2(L) prior to other VPs.

Considering the extent of existing impacts relative to other VPs, and the Corps' prior covenants, the ROD should reflect that VP2(L) will be remediated on a first priority and expedited basis as among the HISS and the other Latty Avenue VPs. The fact that the neighboring HISS may be used as a transshipment point for other area removals should not impact this decision as all such activities must be sufficiently controlled to prevent any risk of re-contaminating any remediated areas of VP2(L).

E. Clarify That Latty VPs Are Considered "On-Site" For Purposes Of The NCP

In various locations in both the FS and PP, the text suggests that the NPL-listed portions of the North County "Site" are limited to the SLAPS, HISS and Futura Coatings properties. Although the geographic scope of the original HRS scoring may have been limited to these areas, subsequent characterization data summarized in the FS and elsewhere confirms that the HISS VPs (including VP2(L)) are properties where contamination has "come to be located" and, therefore, that they are part of the same "facility." *See* 54 Fed. Reg. 19526 (May 5, 1989) ("EPA contemplates that the preliminary description of facility boundaries at the time of scoring will need to be refined and improved as more information is developed"). *See also* 40 CFR §300.68. The FS/PP and ROD must confirm that the Latty VPs are part of the CERCLA "facility," for which permit waiver authority may be exercised under CERCLA §121.⁶ Similarly, the FS and ROD should confirm that the Latty VPs would be covered by any CERCLA five-year reviews to the extent that any contamination remains on these properties during or after construction.

F. Confirm that "Supplemental Standards" Are Proposed only for HISS/Futura and SLAPS; and Only Under Alternatives 2 and 3.

Ms. Feldt's report cites concerns with the propriety and justification for potential use of so-called "supplemental standards" in the former primary storage areas at HISS/Futura and SLAPS. We understand, and the FS and ROD should be explicit, that these are proposed only under Alternatives 2 and 3, and that they are not being considered for use in connection with Alternatives 5 or 6, or for use in any event on VP2(L) or any other VP. *See* PP at pp. 17 –

⁵ USCOE: "St. Louis FUSRAP North County Site Property Characterization Plan," Rev. 0 (Apr. 2000) (ID No. 00-137; MARKS No. FN:1110-1-8100g), at Table 3, p. 2. Note that the right of entry referred to on this table is for installation, operation and removal of the HISS rails spur, and expires in 2010.

⁶ Note that the USACE has conceded in other contexts that NRC licensing would be applicable to its FUSRAP activities conducted in off-site locations. *See e.g.*, 64 FR 16504, 16505, col. 3 (Apr. 5, 1999) ("[The Corps] acknowledges that NRC license requirements may apply to portions of FUSRAP response actions conducted off-site, beyond the scope of the [CERCLA] permit waiver").

19. GIFREHC would object strongly to creating nuclear burial cells on its property or otherwise in the North County community. These standards were designed for use in connection with remote, isolated mill tailings sites and, in that regard, are not appropriate for the current setting.

G. Final Status Surveys and Other Cleanup Documentation

The PP provides only limited information concerning the surveys that will be conducted to confirm that the cleanup has achieved the remedial action objectives. From an affected property owner's perspective, these surveys raise several issues which should be resolved in the ROD. First, the benchmark for confirming the adequacy of the remediation is whether the remediation has achieved the remedial action objective of the ROD – unrestricted site use at CERCLA-protective levels. Given that the actual remedial goals are proposed at concentrations that would allow residual concentrations somewhat higher than these levels, based on the expectation developed from similar cleanups that remediation to these higher concentrations will, in fact, result in achieving the lower, CERCLA-protective concentrations, the final status surveys must be designed to confirm that assumption has held true at each of the VPs and other affected areas.

Second, the final status surveys must be performed and reported on a individual, property-by-property basis. The legacy of MED/AEC activities has clouded the appropriate and safe uses of the 87 affected North County properties. While GIFREHC supports the United States' efforts proposed in the FS/PP to restore these properties to full beneficial use, the cloud may well remain unless individual property owners are provided with the documentation that clearly demonstrates to laymen and radiation health physicists alike that the remediated properties are, in fact, fully ready for reuse. GIFREHC believes such reports should document the results of the work, including site-specific survey data, and affirmatively confirm that each such property is "ready for reuse" without restriction.⁷

Third, the final status surveys and post-remedial reports must also address conditions in Vicinity Property buildings. While remedial planning has been based in part on the need to assure healthful and protective working environments in structures on the affected VPs over time, which GIFREHC of course supports, the final status surveys should confirm that those conditions have been achieved (or, in the case of VP2(L), remain) with respect to all potential exposure routes. To the extent those surveys identify contaminated building components that will need to be properly managed in the future, they reports should document those findings, and specify how the United States will manage them.

H. Institutional Controls and Long-Term Stewardship

Alternative 5 specifically contemplates use of institutional controls to control exposure risks for inaccessible areas. Once VP structures are taken into account, we believe that even Alternative 6 may require some such controls. As described in the PP, the contemplated

⁷ For example, PP Figure 5 shows an area of VP2(L) as having been remediated – presumably in connection with the East Pile removal effort and related construction of the Corps' contractor equipment storage area. But, although that effort has been completed for some time, GIFREHC has not yet received any documentation establishing the post-removal remedial status of that area establishing that it is fully ready for unrestricted reuse.

form of the institutional controls will be designed to provide notice to property owners, enforcement mechanisms, and a manner to contact a government agency for more information. The text of the PP provides that the controls are designed to give the government notice of planned activities in areas of residual contamination, "*so that the government may conduct the necessary remedial action work prior to or in conjunction with the performance of*" such activities. PP at p. 33. GIFREHC strongly supports the government's commitment to take full responsibility for these areas. This commitment should be reflected in the instruments of the institutional control, and in the long term stewardship plan.

The long term stewardship plan must include transparent procedures for property owners with residual contamination-(in soils or structures) to obtain the government's timely and effective efforts to remove and dispose of residual contamination as the need arises. GIFREHC's own experience provides an excellent case study of the ongoing need property owners may have for such services, and the extreme hardship imposed on property owners when the government is unable or unwilling to shoulder its responsibility for such conditions. While the government may not be reasonably expected to be able to respond to all decontamination needs at a moment's notice, a transparent procedure, coupled with a commitment by the government to undertake the work to the standards of the ROD, will allow affected property owners to plan appropriately, and to provide appropriate notice to the responsible government agency, and to coordinate with that agency. Absent transparent, workable and timely response procedures, the long term effectiveness of the remedy may be jeopardized by frustrated property owners without the resources to undertake, as GIFREHC has in the past, appropriate protective radiological management steps.⁸ The stewardship plan thus functions as an institutional control itself. Because this control is central to the continued long-term protectiveness and implementability of the remedy, these minimum elements of the long term stewardship plan should be reflected and detailed in the ROD, even if the details are completed subsequently. The ROD should also carry the commitment to develop the long-term stewardship plan through a public notice and comment process, which includes elements to assure the government's continued accountability.

I. Implementation

Procedures for further remedial design investigations and soil removals are addressed only superficially in the FS and PP. While this may be appropriate in the more typical case of a NPL site comprising a single property, the North County site is somewhat unique in the number of individual properties and property owners affected over a large commercial and residential area. Normal commercial operations at affected properties may be significantly and adversely impacted and interrupted in the short term when the actual soil removals begin. To document the short term implementability and effectiveness of the remedy, the decision documents should detail how such work will be coordinated and planned with individual

⁸ Providing transparent, timely and workable procedures is akin to the common workplace practice by employers of providing designated smoking areas. Just as the people of the North County will need to maintain their buildings and grounds, so too employees will smoke. If a designated smoking area is not provided, employees will still smoke, but may do so in hiding, or in areas or in a manner that creates a significant fire hazard.

property owners, including means of compensating them for temporary disruptions or business dislocations.

The PP similarly touches only lightly on the control measures that will be implemented over the course of the North County excavations and transshipments to assure that contaminated soils are not re-released to the environment (as they were when brought to the HISS), and to assure that persons present in VP workplaces are protected from unexpected or unwarranted exposures. This is of particular concern at VP2(L), which is located immediately adjacent to the HISS. The USACE has successfully used such procedures in the past (e.g., during the East Pile removals), and we assume they are anticipated for the contemplated excavations. Given the importance of this issue, the ROD should include a description of and commitment to the monitoring – including air monitoring, action levels, and response plans – that will be undertaken during the course of construction (which we understand will be spread over several years), and a commitment to timely share and interpret the data generated by such monitoring with potentially affected landowners or occupants.

J. Extent of Radiological Characterization

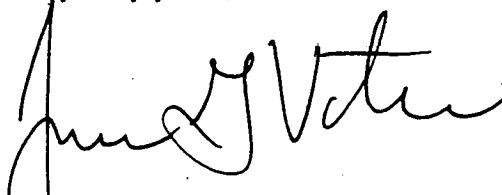
Ms. Feldt's report identifies data from several historical characterization efforts by DOE and others respecting VP2(L) that are not acknowledged in the text of the FS or PP, or perhaps in the analysis of risks and options.⁹ Additional data may also be available from characterization work undertaken by the USACE in connection with the construction of the HISS rail spur across VP2(L), design studies for the construction of the USACE's contractor equipment storage area on VP2(L), and following removal of the East Piles. GIFREHC has never received documentation of this work. This additional data, and any implications for the sufficiency of the current data set and site findings, should be taken into account as necessary in further remedial design characterization, removal procedure design, worker and workplace monitoring and health protections, and setting remedial priorities among VPs and the primary storage properties.

⁹ This includes *Radiological Survey of Properties In The Vicinity of The Former Cotter Site, Hazelwood/Berkeley, Missouri* (LM003), ORNL Health and Safety Research Division (May 1987) (Activity No. AH-10-05-00-0; ONLWCO1) (ORNL/TM-10008) at Table 5 (Samples 7A-C) and Table 6 (holes 7 and 8). See also DOE/OR/20722-203 (vol. II)(Rev. 1), Table 3-4 (documenting specific activity levels of 9310 pCi/g for Th-230 in one area of VP2(L)). Full account also should be taken of the prior BHE studies provided to the USACE by GIFREHC documenting, among other things, external radiation surveys of VP2(L) at the completion of the 1996-1997 removal action.

K. CONCLUSION

GIFREHC strongly supports the proposed Remedial Action Objectives and remediation goals that, when achieved, will "allow for unlimited use and unrestricted exposure." The ROD should reflect the commitment today to achieve that standard for all North County properties, and include requirements for appropriate short term protective measures, post-remedial documentation, and long term stewardship to assure that the North County community and affected property owners obtain the full benefit intended benefit of the proposed action .

Very truly yours,



Jeffrey J. Davidson
James G. Votaw

Exhibit 1: Comments of Integrated Management & Environmental Solutions LLC on Behalf of GIFREHC, re North County Site Feasibility Study and North County Proposed Plan (Jul. 14, 2003).

Exhibit 2: Letter report, "*Radiological Survey Information for the Building at 9150 Latty Avenue in Hazelwood, Missouri*," from David Adler, DOE, to J. Katkish, First Management Group, Inc. (circa Oct. 15, 1992).

cc: John R. Katkish, GIFREHC
Berny Hintz, AIA
Elisabeth G. Feldt



Department of Energy

Field Office, Oak Ridge

P.O. Box 2001

Oak Ridge, Tennessee 37831—

Mr. John Katkish
President
First Management Group, Inc.
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RADIOLOGICAL SURVEY INFORMATION FOR THE BUILDING AT 9150 LATTY AVENUE IN HAZELWOOD, MISSOURI

Dear Mr. Katkish:

The purpose of this letter is to transmit the results of a radiological survey that was conducted on the property at 9150 Latty Avenue, adjacent to the Department of Energy's (DOE) Hazelwood Interim Storage Site (HISS), in Hazelwood, Missouri.

The survey was undertaken after high winds (at times exceeding 70 miles per hour) resulted in a tear in the HISS storage pile cover. Personnel at the Stone Container building were notified of the incident and asked to close any open doors and windows so that dust would not blow inside the facility. All appropriate local, state, and federal officials were notified.

Three types of measurements were made during the survey. The first measurement was designed to detect transferable radioactive contamination which is easily removed by wiping with a cloth. If contamination from the HISS cover incident was present, it would be indicated by this type of measurement. The second measurement was designed to detect fixed radioactive material, which is not easily removed and generally requires some form of abrasive removal to be dislodged. This fixed radioactive material is not indicative of dust from the HISS cover failure, but could be due to naturally occurring radioactive material present in construction materials, or from the deposition and plate-out of contamination over a period of many years. The third type of measurement was a direct instrument reading of both transferable and fixed contamination.

Measurements were made along the base of the building, at other locations on the building's exterior, a parked tractor trailer, and on the roof. No transferable contamination at levels above DOE guidelines was observed in 137 of 138 transferable contamination measurements -- indicating no significant dust deposition from the HISS cover incident. This observation is further substantiated by air sampling shortly after the cover incident which did not indicate airborne releases of contamination in excess of DOE guidelines. Fixed radioactive material was found on some building surfaces at levels above DOE's cleanup guideline for alpha emitters of 100 disintegrations per minute

per 100 square centimeters (100 dpm/100cm²) above background. All beta-gamma survey results were well below the guideline of 5000 dpm/100 cm² above background for beta-gamma emitters. All of the survey results are provided in the attached tables.

Although some fixed radioactivity was detected on the outside surfaces of the building, there is no immediate health hazard to personnel working in or around the building. It is recommended that work involving the abrasion or cutting of these surfaces be performed under guidance provided by qualified health physics personnel. Should you so desire, DOE would be pleased to provide consultation as to the controls it would implement under similar circumstances.

If you have any questions or comments, please contact me at (615) 576-9634.

Sincerely,

A handwritten signature in black ink, appearing to read "David G. Adler". The signature is fluid and cursive, with the first name "David" being more prominent than the last name "Adler".

David G. Adler, Site Manager
Former Sites Restoration Division

Table 1

CONTAMINATION SURVEY RESULTS FOR PROPERTY AT 9150 LATTY AVENUE
Roof at Stone Container

Location	Alpha (DPM/100cm ²)		Beta-Gamma (DPM/100cm ²)
	transferable	fixed	direct
1A	<6	131	<751
2A	<9	121	717
3A	<6	131	<561
4A	<6	81	759
5A	<6	260	548
6A	<6	81	1012
6B	<6	32	843
6C	<6	250	<751
7C	<6	220	<656
8C	<6	91	675
9C	<6	101	843
10C	<9	111	717
11C	<6	170	1181
12C	<6	190	548
13C	<6	210	<465
14C	<13	230	<846
15C	<13	81	590
16C	<9	418	633
6D	<9	141	<417
16D	<6	131	<513
6E	<6	61	717
7E	<6	81	717
8E	<6	161	<704
9E	<6	250	<846
10E	<6	121	759
16E	<9	230	<417
10F	<6	141	<656
16F	8	260	<417
10G	<6	279	506
16G	<6	210	<465
10H	<6	180	<417
16H	<6	200	<417
10I	<6	161	<751
16I	<13	240	<656
10J	*	161	<751
16J	<6	240	<513
10K	<6	161	<799
16K	<6	151	<417
10L	<6	101	<656
16L	<6	32	<465

continued

* Smear not analyzed.

Table 1, continued
CONTAMINATION SURVEY RESULTS FOR PROPERTY AT 9150 LA.
Roof at Stone Container

Location	Alpha (DPM/100cm ²)		Beta-Gam. (DPM/100cm ² , direct
	transferable	fixed	
10M	<6	71	<417
16M	<6	230	<417
10N	<6	141	<609
16N	<6	161	<417
100	<6	170	422
110	<6	180	<417
120	<6	240	<465
130	<6	131	<417
140	<6	61	<513
150	<6	161	<561
160	<6	250	464

STONE CONTAINER ROOF

<----N-----

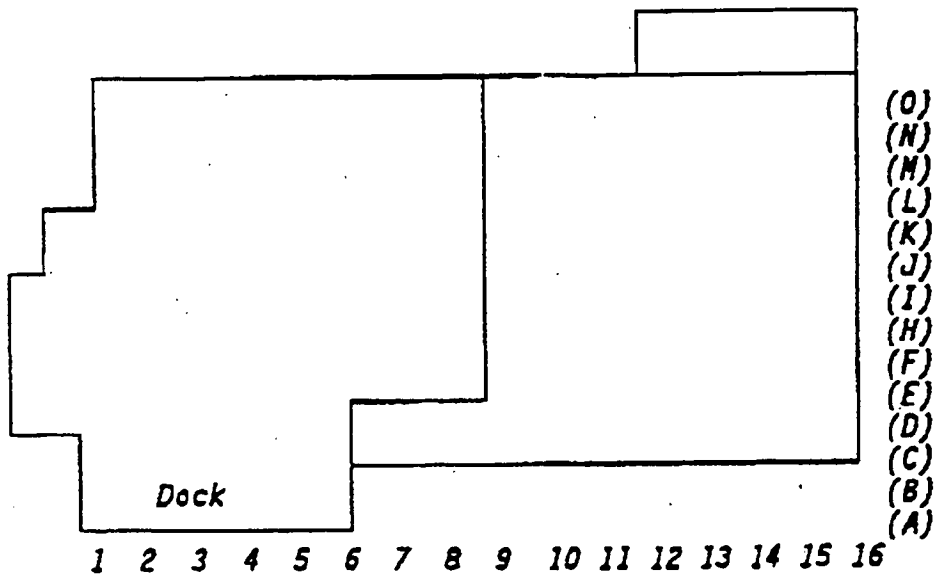


Table 2

**CONTAMINATION SURVEY RESULTS FOR PROPERTY AT 9150 LATTY AVENUE
Stone Container Base**

Location	Alpha (DPM/100cm ²)		Beta-Gamma (DPM/100cm ²) direct
	transferable	fixed	
1. concrete footing	<1	60	1940
2. concrete footing	<1	60	590
3. concrete step	3	180	<561
4. concrete footing	<1	40	1645
5. wall	<1	40	1392
6. concrete footing	3	30	1223
7. wall	<1	130	675
8. concrete footing	<1	50	<609
9. concrete footing	<1	110	1096
10. door	3	<26	<417
11. concrete pad	3	50	<799
12. door	<1	40	801
13. shed roof	6	281	928
14. shed roof	9	261	1265
15. gas reg. (wh. box)	<1	<26	675
16. gas reg	<1	180	675
17. wood door	<1	40	<465
18. concrete footing	<1	50	633
19. metal elec. box	6	321	590
20. metal shed roof	6	231	1307
21. metal shed roof	6	180	1012
22. wood step pad	<1	<26	759
23. concrete pad	<1	40	<704
24. concrete driveway	6	80	<417
25. sidewalk	<1	<26	843
26. metal window ftg.	<1	40	<704
27. sidewalk	<1	40	801
28. concrete @ frtdoor	9	30	717
29. concrete footing	<1	<26	590
30. sidewalk	3	110	548
31. windowledge	9	401	1307
32. windowledge	3	581	2193
33. brick wall	<1	40	1265
34. wall	3	170	<513
35. wall	<1	<26	<417

EXPANDED SURVEY OF THE BASE
OF STONE CONTAINER

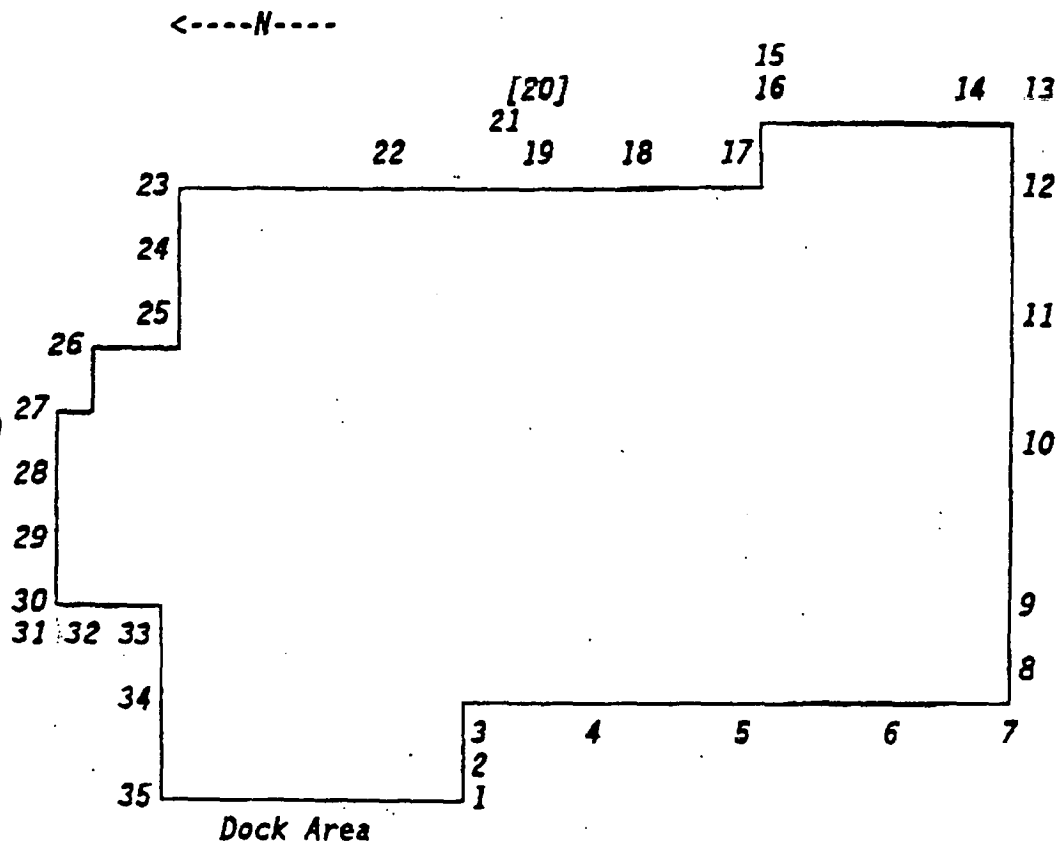


Table 3

**CONTAMINATION SURVEY RESULTS FOR PROPERTY AT 9150 LATTY AVENUE
Stone Container Dock**

Location	Alpha (DPM/100cm ²)		Beta-Gamma ¹ (DPM/100cm ²)		
	transferable	fixed	transferable	fixed	direct
1	<1	89	<98	675	*
2	6	168	<90	675	*
3	3	119	<60	1054	*
4	6	159	65	928	*
5	3	248	<60	590	*
6	<1	228	<90	843	*
7	<1	119	<120	1434	*
8	<1	149	118	1476	*
9	<1	168	98	1223	*
10	3	166	*	*	<758
11	<2	106	*	*	759
12	<2	176	*	*	801
13	<2	146	*	*	717
14	<2	206	*	*	1265
15	3	196	*	*	1181
16	3	196	*	*	<710
17	<2	146	*	*	970
18	9	86	*	*	717
19	3	206	*	*	1096
20	3	106	*	*	548
21	<2	156	*	*	548
22	18	277	*	*	<900
23	41	708	*	*	<852
24	15	267	*	*	843
25	3	166	*	*	<520
26	6	247	*	*	590
27	9	297	*	*	1096
28	12	156	*	*	843

¹ First nine locations were analyzed for both fixed and transferable beta-gamma. Based on field measurements of these smears, transferable beta-gamma was discontinued.

* Smears not analyzed.

THE DOCK & STONE CONTAINER

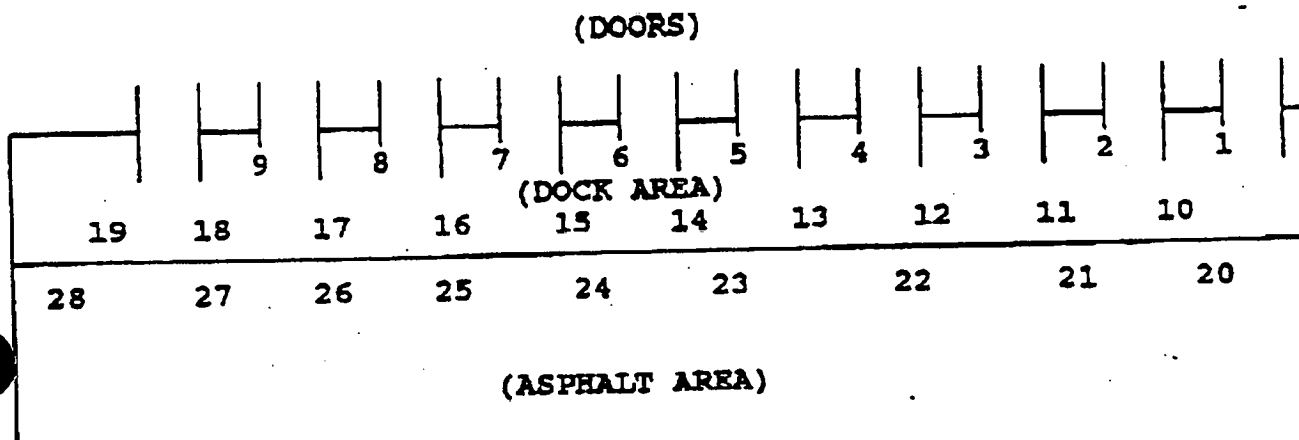
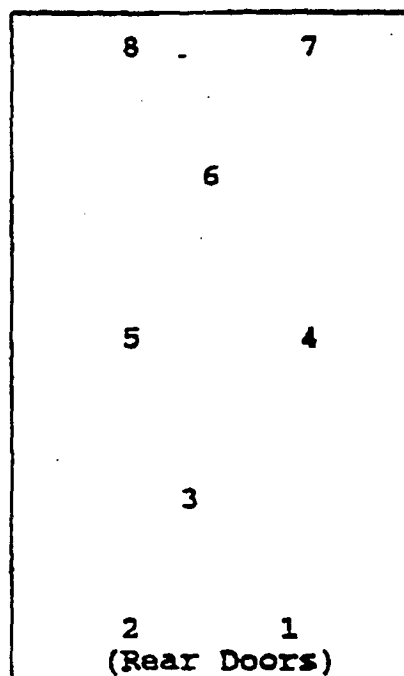


Table 4

CONTAMINATION SURVEY RESULTS FOR PROPERTY AT 9150 LATTY AVENUE
Stone Container Trailer 43

Location	Alpha (DPH/100cm ²)		Beta-Gamma (DPH/100cm ²)	
	transferable	fixed	transferable	fixed
1	3	30	72	970
2	3	30	<90	801
3	<1	<34	<98	<623
4	<1	20	<68	1012
5	<1	40	<98	548
6	6	<34	<83	970
7	6	<18	<75	<530
8	<1	<18	<75	<530

STONE CONTAINER TRAILER #43



SURVEY AROUND THE EXTERIOR
of
STONE CONTAINER

<-----N-----

11 10 Steel Metal Shed

8 9

6 7

5

Dock Area

1

2

3

4

Step

Airborne Sampling Data

SAMPLE LOCATION	#	DATE	SAMPLE TIME	ACTIVITY uCi/ml (GROSS ALPHA)
HISS Perimeter,	1	3/27/91	370 min.	< 1.5X10 ⁻¹⁴
Downwind of Torn	2	3/30/91	240 min.	3.0X10 ⁻¹⁴
Cover Near Stone	3	3/31/91	240 min.	< 4.0X10 ⁻¹⁴
Container.	4	4/01/91	240 min.	< 2.0X10 ⁻¹⁴
(All Samples)	5	4/02/91	895 min.	< 4.0X10 ⁻¹⁵
	6	4/03/91	1440 min.	< 6.0X10 ⁻¹⁵
	7	4/04/91	1440 min.	< 5.0X10 ⁻¹⁵
	8	4/05/91	300 min.	< 1.0X10 ⁻¹⁴

* Samples were counted by gross alpha techniques. Sample # 1 was during the actual event during and after wetting of the pile.

The applicable DACs for ²³⁰Th are:

INHALED AIR - LUNG RETENTION CLASS

WEEKLY

YEARLY

3X10⁻¹²

7X10⁻¹²

Based on the DACs as listed above, & DAC is:

Sample #1 = < 1.0 *
 Sample #2 = 1.5 *
 Sample #3 = < 1.0 *
 Sample #4 = < 1.0 *
 Sample #5 = < 1.0 *
 Sample #6 = < 1.0 *
 Sample #7 = < 1.0 *
 Sample #8 = < 1.0 *

* Based on the weekly lung retention class DAC.

INTEGRATED MANAGEMENT & ENVIRONMENTAL SOLUTIONS, LLC

9105 Whitingway Rd.
Berkeley, MO 63134
Phone (314) 229-6187, Fax (314) 229-6188
info@imsolutions.com

July 14, 2003

Ms. Sharon R. Cotner
FUSRAP Program Manager
U.S. Army Corps of Engineers
8945 Latty Avenue
Berkeley, MO 63134

Re: North County Site Feasibility Study and North County Proposed Plan
Comments of Integrated Management & Environmental Solutions LLC
On behalf of GIFREHC

Dear Ms. Cotner:

On behalf of the General Investment Funds Real Estate Holding Company (GIFREHC) and its subsidiary, GIFREHC Missouri Holding Company, I was commissioned to perform a review and prepare this report concerning the U.S. Army Corps of Engineers' North County Site Feasibility Study and North County Proposed Plan (FS/PP), 68 Fed. Reg. 23290 (May 1, 2003). I understand that this report will be submitted to you as a component of GIFREHC's overall comments on the FS/PP.

A. INTRODUCTION

The key objective of my review was to assess the extent to which it has been demonstrated that the preferred remedial alternative, when implemented, will provide the appropriate level of overall protection to occupants of 9150 Latty Avenue (i.e., HISS Vicinity Property 2(L) or "VP2L") and similarly impacted properties consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and adherence to applicable or relevant and appropriate requirements (ARARs). While my review was conducted largely from GIFREHC's perspective, the noted issues are generally of wider relevance to other VPs and FS/PP development process as a whole.

In connection with my analysis, I reviewed the draft St. Louis North County Site Feasibility Study and Proposed Plan, certain additional documents from the North County Administrative Record, and certain documents obtained from GIFREHC's files. The narrative comments below summarize the principal concerns or questions identified in my review that should be addressed by the U.S. Army Corps of Engineers (COE) prior to issuing the Record of Decision for the St. Louis North County Site (ROD). In addition, Attachment A to this report provides line-by-line, specific comments on the FS and PP, arranged for your convenience in the order in which they appear in the documents. The majority of these line-by-line comments refer to specific instances where the general issues summarized below arise (and should be addressed) in the text of the FS/PP.

B. SUMMARY OF MAJOR COMMENTS

1. The Level And Extent Of Contamination Are Not Adequately Reported in the FS/PP For The VP2L Property

The highest level of thorium-230 (Th-230) given in the FS text for the HISS/Futura and Latty Avenue Vicinity Properties is 830 pCi/g. We presume that 830 pCi/g was the contaminant level used to characterize the current and future risk at VP2L and incorporated into the analysis of implementability, effectiveness and the proposed schedule for remediating VP2L and other North County properties. Based upon review of certain documents in the Administrative Record and data that previously has been provided to the Department of Energy (DOE) and the COE by GIFREHC, it appears that the extent and level of contamination at VP2L property has not been adequately restated and considered in the FS.

- As early as 1987, documentation exists that shows significantly higher levels of Th-230 at the VP2L property than is reported in the FS. A May 1987 Oak Ridge National Laboratory (ORNL) report commissioned by the DOE and titled, *Radiological Survey of Properties in the Vicinity of the Former Cotter Site, Hazelwood/Berkeley, Missouri (LM003)*, documents Th-230 at 8,800 pCi/g in the surface soil and at 81,000 pCi/g in the subsurface soil. This 1987 ORNL document is part of the Administrative Record (ID No. 1297).

- In a December 13, 1996 letter to GIFREHC, DOE acknowledged receipt of data generated by GIFREHC's consultant indicating the presence of Th-230 at 33,970 pCi/g in a discrete area on the west side of VP2L adjacent to the HISS fence line, encountered while undertaking a limited removal action coordinated with DOE. A copy of this letter (and attached data) is provided as Attachment B to this report.
- An August 1990 Bechtel National, Inc. (BNI) report titled, *Radiological Characterization Report of FUSRAP Properties in the St. Louis, Missouri Area*, identified Th-230 at 5,700 pCi/g at the VP2L property. This report is part of the Administrative Record (ID Nos. 1319 and 1321).
- In March 1992, DOE published a report titled, *Engineering Evaluation/Cost Analysis-Environmental Assessment for the Proposed Decontamination of Properties in the Vicinity of the Hazelwood Interim Storage Site, Hazelwood, Missouri*. This report states that Th-230 was found at the VP2-L site at 5,700 pCi/g. The 1992 report is also part of the administrative record (ID No. 1169).

The 5,700-pCi/g level for the VP2L is identified only in Appendix D, Attachment 5 of the FS report and is not carried forward in the FS text and analysis. It is not clear whether the 5,700-pCi/g or the 830-pCi/g Th-230 level was used in the risk and alternatives analysis documented in the FS. This inadequate characterization in the FS/PP poses several potentially significant issues.

First, the potential current and future risks calculated for the Latty VPs and HISS may be understated in the FS/PP. Table D-4b of the FS gives the potential current and future risks for the VPs (highest value), assuming industrial use, as 2×10^{-4} . The potential current and future risks should be reevaluated using all the available data.

Second, the source or fate and transport mechanism for the higher levels of Th-230 found at VP2L may not be adequately characterized in the FS. For example, there is insufficient documentation or discussion given in the FS regarding the potential impact of soil contamination from the ground water regime (specifically HZ-A), and the potential for recontamination of remediated areas by subsequent shallow groundwater flow. Given the 81,000 pCi/g level of Th-230 identified in the subsurface soils in discrete areas (at

approximately a 6 foot depth), the source of contamination should be assessed further for the VP2L property.

Third, the necessary monitoring and worker safety control measures during and following the proposed remediation are not adequately described in the FS/PP for the VP2L property. The FS must identify specific measures that will be necessary to control radiation exposure of the industrial work force at VP2L during the remediation.

Fourth, the proposed schedule for a 2007 start of remediation of the VP2L property (see April 2003, St. Louis FUSRAP North County Site Property Characterization, Table 3, Administrative Record ID 137) does not appear to factor in the levels of contamination found at the VP2L property. Although site exposures, in fact, presently appear to be well controlled at safe levels at VP2L through voluntary efforts and consistent implementation of the Site Management Plan for 9150 Latty Avenue (developed by GIFREHC in consultation with the DOE), the potential risk levels should be reevaluated in light of all the relevant data, and the VP2L remediation start date should be adjusted accordingly.

Finally, the incomplete characterization baseline data reported for VP2L certainly raises the question whether the characterization data reported in the FS (and presumably relied upon for risk and cost calculations, and other purposes) has been sufficient with respect to the other VPs and at the immediately adjacent HISS.

Section 300.430(a)(ii)(C) of the NCP states that, "[s]ite-specific data needs, the evaluation of alternatives and the documentation of the selected remedy should reflect the scope and complexity of the site problems being addressed." In addition, NCP § 300.430(d)(1) requires that the site be adequately fully characterized, "for the purposes of developing and evaluating effective remedial alternatives." These requirements of the NCP do not appear to have been met for the VP2L property as characterized in the FS/PP.

2. The FS/PP Does not Adequately Address Management and Remediation of Currently Inaccessible Areas.

Under the preferred remedy, remediation of "inaccessible soils" would be indefinitely deferred and the areas would be made subject to institutional controls. The FS lists inaccessible areas as roads, bridges, and permanent structures. The FS also leaves open the possibility for identifying additional areas of inaccessibility after the ROD is issued, during the remedial design phase, although no presumptive criteria are provided for these potential case-by-case determinations. The FS states that the remediation goals for all properties is to allow unrestricted residential use in order to protect human health and the environment. But the FS also suggests that this protective goal may not be maintained with respect to areas currently deemed inaccessible, as it provides that the appropriate level of remediation would be evaluated once inaccessible areas are made accessible, and presumably could be subject to less protective remediation. Currently, the manufacturing facility rail spur and the portion of the HISS rail spur that temporarily crosses VP2L are the only identified "inaccessible" areas on VP2L.

To meet the remediation goals and the ARARs identified for the St. Louis North County site, the clean-up levels for inaccessible areas must be consistent with the clean-up levels identified for the current accessible soils. Particularly given the 200 to 1000 year time frame relevant to this action, the FS (and the ROD) should commit to achieving the same level of protectiveness for soils throughout the North County site (regardless of whether they are currently "inaccessible") or identify sufficient supplemental standards consistent with 40 CFR 192, Subpart C. This is necessary to achieve and demonstrate long-term protection to human health and the environment and to adequately assess the long-term effectiveness of the remedy in accordance with the NCP, 40 CFR § 300.430.

The anticipated criteria for "inaccessibility" determinations also should have been set forth in the draft FS so that the public could better understand and comment on the extent of the North County soils for which remediation will be deferred, and consider whether Alternative 6 is in fact the preferred approach.

Similarly, the FS refers only generically to the kinds of institutional controls that the COE would seek to impose on currently "inaccessible" areas. Property owners and the public need to understand the details of the anticipated controls to assess their potential practical impact on continued property use until the final remediation is complete. While this impact may be minimal, it could be substantial. The anticipated details of these measures should be identified in the FS. Without this information, it is difficult to provide meaningful comment on the overall protectiveness and practicability of Alternative 5 and, again, whether Alternative 6 may be the preferred approach.

3. The Discussion In The FS/PP of the Remedial Approach for "Deep" Soil Contamination Is Not Adequate.

The potential existence of deep soil contamination (i.e., greater than 8 feet) at the North County Site – and the potential use of less stringent remedial standards for such soils – is not raised until Chapter 4 of the FS. It appears that this reference is inserted only as a placeholder, to retain the approach as a future "option." While the lead agency is always free to seek to modify a ROD after a further public process, retaining alternative clean-up standards for deep soil contamination as a discretionary "option" at the North County Site without further public process does not appear permissible on the current record given that the contamination in the deep soil may alter risk estimates and analysis of the implementability and long-term effectiveness of the identified preferred remedy.

The less stringent, "supplemental standards" (75/210/750 pCi/g for Ra-226, Th-230 and U-238) proposed as an option for the deep soil are derived from the supplemental standards for subsurface soils under 40 CFR Part 192, Subpart C, and would require the imposition of permanent institutional controls. Whether it is appropriate to rely on such standards at all on the current record is highly doubtful. EPA wrote these standards, and its guidance interpreting the proper use of the supplemental standards specifically provides that the supplemental standards were not expected to be used often. "They were designed [only] for situations in which worker safety would be adversely impacted or clearly greater environmental harm would result from the remedial action necessary" to achieve the more stringent standards normally applied. EPA

Directive 9200.4-25, "Use of Soil Clean-up Criteria in 40 CFR 192 as Remediation Goals for CERCLA Sites." The factual case has not been made in the FS that supplemental standards are necessary or appropriate for deep soils at the HISS or HISS Vicinity Properties.

It is difficult for the public to assess the impact of, and comment on, the proposed use of supplemental standards as, indeed, the FS does not clearly identify where any such deep soil contamination may exist. In accordance with NCP, 40 CFR §300.430, the FS must adequately describe: (1) the extent of deep soil contamination and; (2) the effect of the deep soil on the baseline risk assessment and on the alternatives evaluation.

With the 200 to 1,000-year timeframe identified in 40 CFR 192, Subpart A, it is not reasonable to presume (as the analysis in the FS does) that deep soils would never be used or present in the context of a residential setting. The FS states that the only likely current exposure scenario would involve industrial/utility workers and if institutional controls were lost, exposure would be less than 100 mrem/year. This dose rate does not meet the current requirements of CERCLA. See U.S. EPA Directive 9200.4-18, Establishment of Clean-up Levels for CERCLA Sites with Radioactive Contamination (Aug. 22, 1997). Moreover, the FS should also acknowledge that there exists a possibility that these deep soils could be transferred for use in a residential or other uncontrolled setting at some point in the future. If this occurred and the deep soils had been remediated to the less stringent levels of the proposed supplemental standards, as above, the resulting dose rate may well be below 100 mrem/year, but would not be sufficiently protective to meet the requirements of CERCLA. Because the remediation goals specified in the FS are sufficient to allow for unrestricted use in a residential setting, the unrestricted release criteria must be used as the basis for calculating the clean-up levels for any deep soils. If the supplemental standards were derived from the unrestricted release criteria of 5 pCi/g or 15 pCi/g, the deep soil standards would be 15 and 45 pCi/g respectively for Ra-226.

Throughout the FS and inherent in the COE's analysis of most of the alternatives, a 100 mrem/year dose rate is assumed to represent a CERCLA "protective" level. While we understand that the DOE has adopted a primary health standard of 100 mrem/year

effective dose equivalent to members of the public (based on the ICRP's recommendation to limit long-term average effective dose equivalents to 100 mrem or less) (see DOE Order 5400.5), and that DOE Order 5400.5 standards were to be the basis for remedial actions conducted under the DOE's 1992 EE/CA for the HISS and Vicinity Properties, the U.S. Environmental Protection Agency (EPA) authoritatively stated in 1997 that the 100-mrem/yr criterion is not sufficiently protective to meet the requirements of CERCLA, and that 15 mrem/year or less is the appropriately protective level under the statute and regulations. See EPA Directive 9200.4-18, "Establishment of Clean-up Levels for CERCLA Sites with Radioactive Contamination" (Aug. 22, 1997). Accordingly, if supplemental standards are applied to any deep soils, those standards must assure a dose rate of 15 mrem/year or less to meet the minimum protectiveness requirements of the NCP, 40 CFR 300.430.

4. Commitment To Long-Term Monitoring Is Inadequate In The FS And Inconsistent With The Requirements Of The NCP

To the extent construction of the remedy leaves inaccessible areas, deep soil areas, groundwater e.g., hydrogeologic zones HZ-A, B and C) (and perhaps site improvements) with COC concentrations above ARARs or remediation goals, long-term monitoring must be a component of the remedy to assure the overall protectiveness and effectiveness of the proposed remedy. Similarly, to the extent the remedy relies on institutional controls, there must be long term monitoring to assure that those controls continue to be honored, and remain effective for their purpose.

For example, although the FS recites that the uppermost aquifer is not currently being utilized, radiological contamination does exist in HZ-A. The FS states that remediation of HZ-A is not needed because (1) there are no current receptors (i.e., yield from HZ-A is insufficient as a drinking water source) and; (2) there is no significant hydraulic communication between HZ-A and the lower water bearing zones. The record evidence supporting this second assumption in particular appears to be limited. Only one of the twenty-one wells installed at the HISS/Futura/Latty Avenue Vicinity properties was screened in the lower water-bearing zones. Similarly, there is a concern that shallow groundwater from the HISS may carry contaminants offsite and recontaminate previously

remediated areas at neighboring properties, such as VP2L. The apparent response in the FS to this issue, that groundwater moves slowly, may not be valid where the relevant time frame is 200 to 1,000 years.

To verify the assumptions made in the FS, to demonstrate the continuing effectiveness of the proposed remediation and control measures, and to ensure that any residual contamination (e.g., from inaccessible areas and deep soils) does not pose or create a threat to human health and the environment, adequate long-term monitoring needs to be identified in the FS and specified in the ROD.

5. The FS/PP Does Not Adequately Characterize The Residual Risk Or Provide Sufficient Basis For Deviating From The CERCLA "Point Of Departure" Residual Risk Of 10^{-6}

The collective residual cancer risk after the proposed remediation is complete, as calculated in the FS, appears to be approximately a 3×10^{-4} cancer risk. The Ra-226 clean-up levels of 5 pCi/g (surface soils) and 15 pCi/g (subsurface soils) largely drives this residual risk estimate. This risk estimate applies to the average for all the properties being addressed in the St. Louis North County Site remediation. (Again, it is unclear whether the impact of inaccessible areas and deep soil contamination are factored into this residual risk estimate.) Based on the information presented in the FS, the estimated potential residual risk at VP2L is not separately stated. Information needs to be provided to assess the residual risk at each Vicinity Property so that specific evaluations (and comment) can be made on the protectiveness of the proposed remedy, as well as the need for institutional controls, worker safety measures and long-term monitoring.

In the FS, the COE justifies accepting final risk levels less protective than the NCP's default point of departure for risk (1×10^{-6}) due to practical implementability issues and cost considerations. We do not believe a sufficient record has been established to justify this deviation from default NCP criteria, at least beyond the 2×10^{-5} residual cancer risk level.

With regard to implementability, the FS cites the inability of field instruments to detect radiation levels that correspond to a 10^{-6} cancer risk. However, laboratory instruments are capable of measuring concentrations as low as 1 pCi/g. Based on data in

FS Table D-8, it appears that achieving a 1 pCi/g level would correspond to approximately a 2×10^{-5} residual cancer risk. A residual risk of 2×10^{-5} is an order of magnitude more protective than 3×10^{-4} .

At sites where non-radiological contaminants are at issue, laboratory analyses are generally the only means to confirm attainment of RGs. The fact that a relatively inexpensive means exists to demonstrate attainment of a less stringent standards does not justify the less stringent standards themselves. The FS and ROD must justify why remedies for radiologic sites are subject to a lower threshold for deviation from NCP risk standards than are applicable at non-radiologic sites.

The FS also states that the incremental risk reduction that would be achieved by applying a clean-up level more stringent than the proposed 5/15 pCi/g levels does not warrant the additional cost of a more stringent standard. While this may be true, there is no quantitative cost analysis in the FS to support this conclusion. The FS must provide a quantitative cost analysis to justify deviating from the CERCLA "point of departure" of 10^{-6} , and from 2×10^{-5} to 3×10^{-4} .

6. Use Of 40 CFR 192 As Relevant And Appropriate Requirement May Not Meet CERCLA Standards.

The FS looks to the 40 CFR Part 192, Subpart B standard of 5/15 pCi/g for Ra-226 in surface/subsurface soils to establish Ra-226 remediation goals, and then uses the 5 pCi/g as the benchmark for setting surface soil remediation goals for Th-230 and U-238. According to Table D-11 of the FS, the resulting site-specific dose is estimated at 19 mrem/year for Ra-226, which, as discussed in comment No. 3 (§§4-5) above, is less protective than the 15 mrem/year level required by EPA to meet the particular requirements of CERCLA. See EPA Directive 9200.4-18, *Establishment of Clean-up Levels for CERCLA Sites with Radioactive Contamination* (Aug. 22, 1997). The FS must justify this deviation or adjust the remediation goal for Th-230 and U-238 in surface soils.

With respect to subsurface soils, EPA has explained that the 40 CFR Part 192, Subpart B 15 pCi/g subsurface standard is not a protective value in and of itself, but

rather a practical adaptation recognizing the finding that remediation to this level, in certain circumstances, generally results in actual clean-up to a CERCLA-protective 5 pCi/g level. The 15 pCi/g practical standard is especially useful as it represents a concentration that can be measured relatively cheaply and quickly with field instruments. See EPA Directive 9200.4-25, Use of Soil Clean-up Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites.

It is not clear from the data presented in the FS whether the proposed 15 pCi/g standard is sufficiently protective overall to meet CERCLA and NCP criteria. EPA clearly states that using the 15 pCi/g practical standard is not warranted in situations where there exist significant quantities of contamination of Ra-226 between 5 and 30 pCi/g in the subsurface. For example, according to FS Attachment 12, Appendix D, the range of Ra-226 found at VP2L was from 0.33 to 89 pCi/g with a mean concentration of 2.29 pCi/g. (As indicated in comment No. 1, above, this represents an incomplete statement of the available soil data for VP2L, and acknowledging the additional data in the FS may require, among other changes, modifications to FS Attachment 12). Given this distribution, it appears that Th-230 will be the risk limiting factor driving clean-up, not Ra-226, as is supposed by application of 40 CFR Part 192, Subpart B standards. The FS should clarify whether the 15 pCi/g is an appropriate and protective standard, consistent with CERCLA and the NCP, for the subsurface soils at VP2L and other Vicinity Properties.

The FS proposes using Ra-226 as surrogate to "measure" levels of Th-230 because the field detection limit for Th-230 is 2120 pCi/g. The technical basis for the adequacy of such an approach is not clear from the FS. The FS should explain how the use of Ra-226 as a surrogate for Th-230 rationally will provide a sufficiently accurate assessment of the final site conditions.

The FS also states the use of 40 CFR 192 as an ARAR is consistent with the 1998 St. Louis Downtown Site (SLDS) ROD. This is not completely accurate. The SLDS ROD had a surface soil clean-up level of 5 pCi/g for Th-230. For SLDS, the surface soil clean-up level for Th-230 was consistent with the Ra-226 clean-up level. The SLDS remedy appears consistent with EPA guidance on the use of 40 CFR 192 as an ARAR

(EPA Directive 9200.4-25), which states that, "at a minimum, this would generally mean that Thorium-230 and Thorium-232 should be cleaned up to the same concentrations as their radium progeny." The FS should state why a deviation from the Th-230 clean-up standards used for SLDS should be deemed protective under the NCP and compliance with ARARs, or otherwise justified for the North County Site.

7. Use Of 10 CFR 40 Appendix A, I, Criterion 6(6) To Determine Clean-up Standards For Th-230 And U-238

EPA Directive 9200.4-35P, *Remediation Goals for Radioactively Contaminated CERCLA Sites using the Benchmark Dose Clean-up Criteria in 10 CFR Part 40 Appendix A, I, Criterion 6(6)* (Apr. 2000) states that when 5 pCi/g and/or 15 pCi/g standards are used as relevant and appropriate requirements, these soil standards should continue to apply to combined levels of radium-226 and radium-228, as well as the combined levels of Th-230 and Th-232. The proposed surface soil standards for Th-230 at the North County Site do not comply with this interpretation of the regulation, and may not be protective or comply with ARARs.

As discussed above, to meet CERCLA protectiveness criteria, the benchmark dose rate should be 15 mrem/year or less when establishing clean-ups using Criterion 6(6). EPA Directive 9200.4-18, *Establishment of Clean-up Levels for CERCLA Sites with Radioactive Contamination* (Aug. 22, 1997). The FS should explain why the deviation from EPA's interpretation of its regulations is warranted and how the use of the proposed clean-up levels for Th-230 and U-238 are protective under CERCLA.

The FS should also further discuss whether use of Criterion 6(6) is appropriate. It is one element of a comprehensive siting and management program, the other elements of which are not present or accounted for at the North County site. It may not be appropriate to rely on one provision of a comprehensive program where the other circumstances assumed by that program to exist are not present (e.g., that the U.S. would ultimately take title to disposed cells).

In addition, the FS should consistently make clear that the clean-up levels proposed under 40 CFR 192 and Criterion 6(6) are levels above background. The FS

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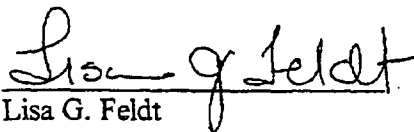
should discuss what background levels and associated dose and risk rates are for the St. Louis North County Site (currently only identified in Appendix D). In addition, discussion should be added that describes the process used for determining background for the St. Louis North County site.

C. CONCLUSION

In general, the remediation goal of unrestricted use proposed by the COE in the St. Louis North County Feasibility Study and Proposed Plan demonstrates a true commitment by the United States to restore lands impacted by our nation's Cold War legacy to complete and beneficial use. Remediating all properties to unrestricted use will provide the maximum protection to human health and the environment as envisioned by CERCLA.

As I have indicated above, I believe that a more complete characterization of the North County properties and the adherence to all the components of the relevant and appropriate environmental requirements must be completed in order to achieve a comprehensive and protective remedy that meets the requirements of the NCP and the COE's remediation goal of unrestricted release

**INTEGRATED MANAGEMENT &
ENVIRONMENTAL SOLUTIONS, LLC**

By: 
Lisa G. Feldt

ATTACHMENTS

- A: Specific Comments of IMES on St. Louis North County FS/PP
- B: Letter from David Adler, DOE, to GIFREHC (Dec. 13, 1996) (enclosing VP21 analytical data).
- C: Biographical Profile of Elisabeth G. Feldt

ATTACHMENT A

To Report of Integrated Management & Environmental Solutions
July 14, 2003 Comments on Draft St. Louis North County FS/PP

SPECIFIC COMMENTS ON ST. LOUIS NORTH COUNTY SITE FEASIBILITY STUDY/PROPOSED PLAN

EXECUTIVE SUMMARY

- 1) Pg. ES-1, 1st Paragraph and Pg. 2 of Proposed Plan: Clarify that Latty Vicinity Properties meet the definition of facility/site as defined under CERCLA, § 101(9) and NCP 40 CFR §300.6 and therefore are subject to the same RGs, five-year reviews (potentially) and permit waivers as the narrowly defined NPL site.
- 2) Pg. ES-3, Site History, 1st paragraph, last sentence and Pg. 4 of Proposed Plan: Add Latty Avenue VPs to sites that were contaminated.
- 3) Pg. ES-4, 3rd paragraph: The sentence that reads, "Removal actions started under the EE/CAs...." is not complete or clear and is confusing when the following sentence discusses ROD criteria superceding commitment to clean-up criteria in previously issued documents.
- 4) Pg. ES-5, 2nd paragraph and Pg. 6 of Proposed Plan: The removal at HISS included the removal of the Eastern Piles that were located at VP2L. In addition, a portion of the temporary HISS rail spur is also located on VP2L. The document should acknowledge the removal actions at VP2L. As written, it appears that the removal action only took place on the HISS property.
- 5) Pg. ES-8, 4th paragraph and Pg. 10 of Proposed Plan: The ranges of contaminant levels given for HISS/Futura are inconsistent with what has been provided to DOE and the COE for VP2L. Specifically, documentation has been provided that indicates Th-230 has been found in one area on VP2L at 33,970 and 81,000 pCi/g. Per DOE instruction, this hot spot area was not excavated and is covered with asphalt pending final site remediation

under the North County ROD. In addition, several documents in the Administrative Record show significantly higher levels of Th-230 contamination. (i.e., 81,000 pCi/g). While currently exposure to this material is being managed through adherence to the VP2L Site Management Plan, COE must address these levels of contamination as part of the overall remediation to eliminate any future risk. In addition, there is an inconsistency within the FS documentation for VP2L. Attachment 5 of Appendix D gives a maximum level for Th-230 found at 5700pCi/g. Again, the statement that the highest concentration for Th-230 in the HISS/Futura properties is 830pCi/g is not supported. FS should state the full extent of contamination for VP2L and confirm that related calculations remain valid.

- 6) Pg. ES-9, Summary of Site Risks, 2nd paragraph and Pg. 11 of Proposed Plan: Specify the 10^{-6} is the point of departure and should only be deviated from if there are technical implementation issues or the increased cost does not warrant a 10^{-6} level of protectiveness.
- 7) Pg. ES-15, 3rd paragraph: For the properties that currently exceed CERCLA risk range, acknowledge that these are being controlled through various institutional controls and best management practices. Also in Table ES-2 and Table D-4A, it may be misleading to group all the vicinity properties together. It is not clear why vicinity properties were presented as a worst case and average scenario, while the other properties were not presented this way.
- 8) Pg. ES-15, Conclusions of Risk Evaluation, 1st paragraph: Conclusion should be consistent with previous paragraphs and specify that a few properties exceed CERCLA risk range currently but exposure is being controlled as a practical matter. See specific comment No. 7.
- 9) Pg. ES-16, Ground Water: There needs to be discussion on potential pathway for contamination (or recontamination) of soils from HZ-A.
- 10) Pg. ES-17, 1st paragraph: Disagree that "Remediation will result in residual site conditions that allow for unlimited use and unrestricted exposure." Proposed remedy

does not address inaccessible areas and has supplemental standard for deep soil that in a residential setting would exceed dose rate of 15 mrem/year.

- 11) Pg. ES-17, Table ES-3: Unless commitment is made to address inaccessible areas and deep soil adequately, the remedial objective "Eliminate or minimize the potential migration of contaminants off-site, including the potential for migration to ground water and surface water, by removing the sediment and soil sources" is not met.
- 12) Pg. ES-18: Citation to 40 CFR 300.430(e)(90(iii)(B) is not complete. Add, "or provide grounds for invoking a waiver under Paragraphs f(1)(ii)(C) of this section."
- 13) Pg. ES-18, third paragraph: Specify the supplemental standards under 40 CFR Part 192, Subpart C are also being proposed for a deep soil excavation "option" for Alternatives 2,3, 5 and 6, and explain the significance of that option.
- 14) Pg. ES-21, 2nd paragraph and Pg. 17 of Proposed Plan: The Th-230 surface soil remediation goal of 14Pci/G is not consistent with SLDS ROD. The surface soil Th-230 remediation goal for SLDS was 5 pCi/g and is consistent with the intent of 40 CFR 192 and supporting EPA guidance. (Feb 12, 1998, EPA Directive 9200.4-25, Use of Soil Clean-up Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites).
- 15) Pg. ES-21, 3rd paragraph: See specific comment No. 13.
- 16) Pg. ES-24, Table ES-4, Remediation Goals for Use with Institutional Controls at SLAPS and HISS/Futura and Pg. 18/32 of Proposed Plan: Do not agree, "...that public exposure limits would not be exceeded should the institutional controls be lost". The dose rate would be less than 100 mrem/year versus less than 15 mrem/year. 15 mrem/year is the level that EPA deems protective for CERCLA clean-up actions. (August 22, 1997 EPA Directive 9200.4-18, Establishment of Clean-up Levels for CERCLA Sites with Radioactive Contamination).
- 17) Pg. ES-26, Table ES-6: Given potential for deep soil contamination and inaccessible areas, land use restrictions should be a component for each alternative except Alternative

6. The table incorrectly specifies that Alternatives 2, 3 and 5 would not require any land use restrictions.
- 18) Pg. ES-30, Table ES-8: No explanation or notation given to category "Properties with previous DOE removal actions that will require additional investigation." Given some of the discrepancies identified in specific comment No. 5, VP2L could fit into this category.
- 19) Pg. ES-31, On-going Removal Actions: See specific comment No. 3.
- 20) Pg. ES-33, Excavation: Need to discuss deep soil excavation.
- 21) Pg. ES-34, Excavation: See specific comment No. 20.
- 22) Pg. ES-36, Excavation: See specific comment No. 15. In addition, an open-ended commitment for addressing inaccessible areas at a later date, at least for private properties, is not acceptable. The clean-up criterion is for unrestricted use. That commitment needs to be made in this FS and Record of Decision for inaccessible areas to meet protectiveness and long-term effectiveness criteria in the NCP.
- 23) Pg. ES-36, Monitoring: Given that there are sources still in place (i.e., deep soils at supplemental standards and inaccessible areas), long-term monitoring is required in HZ-A and within buildings at a minimum, to address long-term effectiveness of remedy.
- 24) Pg. ES-37, Alternative 5: Five-Year reviews would also apply to areas where contaminated deep soils at supplemental standards are left in place.
- 25) Pg. ES-41, Alternative 5 and 6: Disagree that mobility would be "slightly" reduced. By placing material in off-site permitted facility, there should be a "significant" reduction of mobility.

CHAPTER 1

- 26) Pg. 1-1, 2nd paragraph: See specific comment No. 1.

- 27) Pg. 1-4, 1st paragraph: It clearly states that Latty Avenue VPs are not part on the NPL. The significance of this should be clarified. See specific comment No. 1.

CHAPTER 2

- 28) Pg. 2-8, § 2.2.1.3, 1st paragraph: The acreage given for the "Latty Avenue properties" support that the Latty Avenue Vicinity Properties and specifically VP2L may be part of the NPL site listing. (See www.EPA/Superfund, NPL Site Narrative for St Louis Airport/HISS/Futura Coating Co.)
- 29) Pg. 2-9, 4th paragraph: Change "...storage piles at HISS and an adjacent property" to "...storage piles at HISS and Latty Avenue VP2L."
- 30) Pg. 2-9, 4th paragraph: The work conducted by GIFREHC and the creation of the East Piles at the VP2L property was per agreements entered into between DOE and GIFREHC (1994) and later adopted by COE (1998). DOE specifically agreed that this was a private party removal action. GIFREHC has been reimbursed for these response costs by the United States. Therefore, the text should recognize the work as a removal action under CERCLA. FS text also must acknowledge that a portion of the HISS rail spur is on the VP2L property and has been utilized (per 1998 Agreement) to support COE removal actions and will be used to support the remedial work. In addition, the COE has committed that the rail spur at VP2L will be removed as part of the final remediation under this action.
- 31) Pg. 2-25, Local Hydrostratigraphy at HISS: Only one well was screened in the lower HZ. This is not adequate to make the determination that there is no/minimal communication between the upper (HZ-A) and the lower aquifer (HZ-D/E). Long-term monitoring of groundwater must be component of remediation
- 32) Pg. 2-31, Latty Avenue Properties, 3rd paragraph: Part of the "recently constructed spur" is also on the VP2L property but must be removed by 2010. See specific comment No. 30.

- 33) Pg. 2-36, Table 2-9: Data provided to the DOE and the COE by GIFREHC should be listed. See specific comment No. 5.

- 34) Pg. 2-37-55, Table 2-10 and 11: Tables 2-10 and 11 indicate that there is no inorganic/heavy metal contamination at VP2L. VP2L needs to be further characterized to support this.

- 35) Pg. 2-60, 1st paragraph. The depth of contamination (surface to 6 feet) at HISS is not supported by the data summarized in Table 2-10. Reference to Appendix D should be added.

- 36) Pg. 2-60, § 2.3.1.6: Th-230 is found as high as 2,000 pCi/g. This is higher than the maximums given in early sections of the FS. See specific comment No. 5.

- 37) Pg. 2-62, § 2.3.1.9: Th-230 is found at 1,200 pCi/g. Again this is inconsistent with the maximum given in early sections of the FS and the Proposed Plan. Also inconsistent with Appendix D of the FS, the DOE's prior studies, and reports provided by GIFREHC to DOE and COE. FS must accurately report the data for VP2L. Also, there is no discussion of depth of contamination at VP2L and other vicinity properties.

- 38) Pg. 2-62, § 2.3.1.10: Identify site as VP2L. Description that East Piles originated from construction activities is not completely accurate. See specific comment No. 30. Also the statement that the property was "...extensively contaminated with radioactive isotopes of uranium, thorium, and the actinium series as a result of commercial activities by private parties which managed ores and other materials" raises several issues. First, the data summarized in the FS (without the discrepancies already mentioned in previous comments) and the statement in § 2.3.1.9 that "Only 2 out of 231 samples collected exhibited concentrations of Th-230 exceeding proposed criteria" does not support this statement. Second, the contamination at VP2L and other vicinity properties originated from the storage of residue materials both at HISS and SLAPs, transportation of materials to HISS by DOE and others, airborne particulate transfer from the HISS under DOE/COE management and perhaps other means. The generic reference to source of contamination given in 2.3.1.10 is too broad in the context of the East Piles. At the very least, the

attribution should be to "commercial activities managing ores at the HISS property by Cotter Corp. and other private parties."

- 39) Pg. 2-65, § 2.4. Discussion needs to be added regarding potential fate and transport mechanism for HZ-A groundwater to contaminate subsurface/deep soils.
- 40) Pg. 2-66, 2nd paragraph: Do not agree that a 1400 pCi/g level of sediment contamination is "minimal".
- 41) Pg. 2-68/69: Do not agree that risk assessment should exclude radon especially if it is one of the major environmental release mechanisms. Need to commit that remediation to clean-up levels will achieve an acceptable radon concentration in vicinity buildings such as VP2L, consistent with the requirements of 40 CFR § 192.12(b)(1) and (2).
- 42) Pg. 2-69, 3rd bullet: The 100 mrem/yr criterion is not protective under CERCLA (EPA Directive August 22, 1997, Establishment of Clean-up Levels for CERCLA Sites with Radioactive Contamination). Where deep soil contamination exists, any supplemental standards should equate to a dose rate of 15 mrem/year or less or the remedy does not meet protectiveness threshold defined in the NCP.
- 43) Pg. 2-71: Reference is made to "the most contaminated of the VPs" and to "the highest VP". In addition, scheduling of remediation needs to account for extent and level of contamination and previous commitments made to property owners (e.g., 1998 Agreement between GIFREHC and COE). The remediation start date of 2007 for VP2L is not considered adequate. (Information was not found in the FS on potential start date. The 2007 date was identified in Table 3 of the April 2000 St. Louis FUSRAP North County Site Property Characterization, Administrative Record ID 137).
- 44) Pg. 2-79, Table 2-17: The basis for the subsurface RG of 3 times the surface RG should be explained and should be shown to result in a CERCLA protective level.
- 45) Pg. 2-80, Table 2-17, footnote b: Deep soil contamination has not previously been discussed in FS (and is not presented until Chapter 4). It is not clear why deep soil

excavation was not carried through in any of the alternatives. The final risk numbers must factor exposure to this contamination and the proposed supplemental standards for clean-up.

- 46) Figure 2-12, Hazelwood Interim Storage Site and Futura Coatings Location. The East Piles were on VP2L. VP2L should be marked on the figure.
- 47) Pg. 3-1, § 3.2.1: As long as a decision on how clean is clean for inaccessible areas is deferred and supplemental standards for deep soils exceed a dose exposure of 15 mrem/yr, site specific RGs do not appear to "produce residual site conditions that allow for unlimited use and unrestricted exposure."
- 48) Pg. 3-3, § 3.2.2: Add "and groundwater" to end of first sentence to be consistent with Table 3-1.
- 49) Pg. 3-4, 1st paragraph: Identifying ARARs should also factor in exposure pathways and risk receptors.
- 50) Pg. 3-5, 3rd paragraph: Need to clarify that VP properties, specifically VP2L, receive same treatment as "on site" in terms of not requiring specific permits.
- 51) Pg. 3-7, 2nd paragraph, 3rd sentence: Should read "Standards set forth in Subpart B apply to the clean-up of residual radioactive materials from land and buildings....".
- 52) Pg. 3-8, 2nd paragraph, 3rd sentence: Should read "The standard of selection for a supplemental standard is one that comes as close to meeting the otherwise relevant and appropriate standard...."
- 53) Pg. 3-8, 3rd paragraph: Text justifies use of supplemental standards for subsurface soils in accordance with 40 CFR 192.21c because radiological materials do not pose a current or future hazard. This is not accurate given remediation is required to protect human health and the environment.

- 54) Pg. 3-9, 5th paragraph: When giving clean-up levels in accordance with either 40 CFR 192 or Criterion 6 (6), FS should always say that level is above the background number for the respective radionuclides. Also state that the U-238 benchmark dose concentration is for surface and subsurface soils.
- 55) Pg. 3-12: Disagree with statement that one of the reasons for periodic monitoring is to "assure the continued lack of migration from the contaminated soils". It has already been identified that radioactive contamination exists in HZ-A. Monitoring as it relates to ground water should assure the remediation is effective and that continued migration to the groundwater (HZ-A) is eliminated.
- 56) Pg. 3-12, § 3.4.4, 2nd paragraph: Disagree that there are no contaminants of concern (COC) for groundwater. Radionuclides and metals have been identified in groundwater.
- 57) Pg. 3-14, § 3.5, 1st paragraph: The dose exposure for residential exceeds 15 mrem/year. This is not deemed protective for CERCLA clean-up actions (August 22, 1997 EPA Directive 9200.4-18, Establishment of Clean-up Levels for CERCLA Sites with Radioactive Contamination).
- 58) Pg. 3-15, 1st full sentence: See specific comment No. 54.
- 59) Pg. 3-15, 2nd paragraph: The use of 50 pCi/g for U-238 standard is too qualitative. Should show in Appendix D how 50 pCi/g ensures that the decay products will not exceed natural abundance.
- 60) Pg. 3-22, Air Monitoring: Short term monitoring should be done in all areas, not just "unremediated" areas. Long-term monitoring should be conducted in areas that are not currently proposed for remediation.
- 61) Pg. 3-25, § 3.6.6.3, 1st paragraph: FS does not support statement that current data indicates response actions alternatives for buildings are not required. Only Futura building is listed as being surveyed. DOE conducted a survey of the external surfaces of

VP2L in 1992 (following the loss of the cover of the HISS main pile) and detected fixed contamination above DOE unrestricted use criteria.

- 62) Pg. 3-22, 1st line: Contaminated soils should not be used a backfill for Airport runway expansion. The contaminant levels are not protective so how could beneficial use be justified?
- 63) Pg. 3-33, Table 3-5: Vittrification is not effective for low-level radioactive waste such as found at the St. Louis North County Site.
- 64) Pg. 3-34, Table 3-5: Incincration is not effective for the contamination found at the St. Louis North County Site. In addition, the transportation technologies listed were not discussed in text. Given that the a portion of the HISS rail spur is located on VP2L and that, historically, contamination has spread to vicinity properties when the material was transported to the HISS, additional discussion and analysis is needed regarding transportation. Specifically, the FS should identify measures that will be taken to ensure that the industrial workers at VP2L and the public in general are not adversely impacted in the short term.
- 65) Pg. 3-40, Effectiveness: A multi-layer cap does not eliminate the long-term issue of shallow ground water in contact with contaminated subsurface soils.
- 66) Pg. 3-42, § 3.7.5.1: Effectiveness discussion for removal needs to factor in the short term transportation risk and how it will be managed. See specific comment No. 64.
- 67) Pg. 3-48, § 3.7.8: Consider whether the discussion of off-site disposal technologies needs to factor in the potentially higher levels of contamination that may exist, e.g., the "hot spot" found at VP2L and impact to off-site disposal option. See specific comment No. 5.
- 68) Pg. 3-49, Table 3-6: The basis for screening out the synthetic liner option is not discussed.
- 69) Pg. 3-50, Table 3-6: The barge transportation technology is screened out duc to high cost. This is not consistent with the text in § 3.7.7 that indicates that barging is retained

CHAPTER 4

- 70) Pg. 4-1, § 4.2, 1st paragraph: The description of Table 4-1 is not consistent with the title of Table 4-1.
- 71) Pg. 4-1, §4.2, 3rd paragraph: Removal is also the main technology versus supplemental for Alternative No. 5.
- 72) Pg. 4-1, § 4.2, 4th paragraph: Long-term monitoring and five year reviews are necessary whenever any contamination is left in place above the protective clean-up level. In addition, long-term monitoring is required for any properties that have "inaccessible" areas. Since deferring decisions on inaccessible areas is part of Alternative 5, long-term monitoring must be a component of the remedy.
- 73) Pg. 4-2, Table 4-1: Well drilling prohibitions should be component of institutional controls for all alternatives (not just alternatives 2-4) since groundwater will not be addressed but contamination exists in HZ-A. In addition, disagree that long-term monitoring is "unlikely" for alternative 5. See specific comment No. 72.
- 74) Pg. 4-3, Table 4-2: The total in-situ and ex-situ volumes given are not consistent with volumes identified in the Appendix C, Cost Assumption Summary Table (278,400 cubic yards/348,020 cubic yards respectively). In addition rounding volumes to 2 significant figures is misleading.
- 75) Pg. 4-4, Table 4-3: Disagree that Alternative 5 will allow "Land Use D" given that properties such as VP2L will have inaccessible areas that do meet protectiveness criteria. Institutional controls will be necessary.
- 76) Pg. 4-5, Table 4-4. See general comments regarding use of 10 CFR 40, Appendix A, I, Criterion 6(6).
- 77) Pg. 4-10, Supplemental Standards for Deep Soils: The discussion of deep soils in the FS is not adequate. Assumptions are made about exposure that cannot be predicted for a 200

to 1000-year period. The FS states that if this deep soil were at some point used in a residential setting, the dose would be less than 100 mrem/year. Per EPA guidance, 15 mrem/year or less is the protective dose rate for sites being cleaned up under CERCLA. It is not appropriate to have the initial discussion of deep soils in Chapter 4 versus Chapter 2 or 3. It is also not accurate to indicate that under alternatives 5 and 6, clean-up will be done to unrestricted use when clearly institutional controls are necessary for inaccessible areas and/or deep soils.

- 78) Pg. 4-11, On-going Removal action: See specific comment No. 3. In addition, it is not clear why the statement about excavating under buildings is within this heading versus "Excavation".
- 79) Pg. 4-11, Institutional Controls: See specific comment No. 77.
- 80) Pg. 4-12, Monitoring: The statement that, "In addition, monitoring will support evaluation of impacts resulting from the remaining soils unavailable for remedial action ...", supports our previous assertion that long-term monitoring must be an explicit part of the remediation strategy, especially for properties such as VP2L. Radon monitoring must be a requirement in all buildings that are being used for industrial purposes. Only the Futura building is identified as requiring radon monitoring. The manufacturing building at VP2L should also be periodically monitored for radon to assure the long-term effectiveness of the remedy.
- 81) Pg. 4-12, Remedial Action Control Measures: Given that the HISS rail spur is also located on VP2L and that a significant amount of remedial activity will be taking place at this site, the remedial action control measures are not adequately addressed as set forth in the FS. These measures must address worker health and safety protections, including monitoring, action levels and response plans, for the VP workforces potentially affected by activities at the HISS or on the VPs during the remediation phase. Specific control measures need to be determined upfront to ensure that the existing workforce is not impacted from a safety and health perspective. These measures must be identified in the FS to adequately assess the short-term effectiveness of the selected remedy.

- 82) Pg. 4-13, 2nd paragraph: The basis for identifying "additional soils" as inaccessible need to be discussed in the FS and agreed to by all affected parties. This open-ended statement could have an impact on VP2L in terms of whether the preferred remedy is protective or desirable. This applies to all alternatives except alternative 6.
- 83) Pg. 4-14, 1st paragraph: Demolition of building identified as an option for all alternatives except alternative 4. It is not clear why this is retained as an option.
- 84) Pg. 4-15, Institutional Controls: As discussed, 100 mrem/year is not a CERCLA protective dose rate.
- 85) Pg. 4-15, 5th bullet: Restricted groundwater use needs to be a component for all alternatives identified, not just alternative 2, 3, and 4.
- 86) Pg. 4-17, § 4.2.5: In this section, it is stated that institutional controls may be necessary to restrict land use. The type of institutional controls and process for obtaining/implementing such controls needs to be discussed in the FS. For industrial properties such as VP2L, the specific requirements need to be agreed to and understood up front in order to make an informed decision on the overall implementability of the proposed remedy.
- 87) Pg. 4-18, 1st partial paragraph: See specific comment No. 80.
- 88) Pg. 4-18, Monitoring: The stated intent of monitoring is "to verify that there is no significant migration to useable groundwater...". This is not correct and inconsistent with clean-up objectives. Monitoring should assess adequacy and permanence of remediation and to ensure that no or minimal migration is occurring to ground water.
- 89) Pg. 4-19, 1st paragraph: See specific comment No. 83.
- 90) Pg. 4-19, § 4.2.6, 2nd paragraph: The qualifier "regardless of current or likely future land use," applies to Alternative 5.

CHAPTER 5

- 91) Pg. 5-2, Cost: Clarify whether the costs are in FY 2000 or FY 2003. Cost tables and Appendix C indicate FY 2003. Also § 5.6.17 indicates FY 2003.
- 92) Pg. 5-26, § 5.6.2.1: Again, the need for institutional controls at properties such as VP2L is not defined for Alternative 5.
- 93) Pg. 5-27, § 5.6.2.2, 1st paragraph: The statement that the "least benefit in terms of risk and hazard reduction..." as it relates to deep soils in inaccessible areas is not supported. As presented, deep soil contamination has not been adequately characterized in the FS. To make a statement on relative risk reduction is apparently premature.

APPENDIX C

- 94) Government Estimate Work Sheets: There is no breakdown given for Alternative 5.
- 95) Cost Assumption Summary for Alternative 5: For VP2L as well as other vicinity properties, there is a cost component for remediating roofing material. This is not discussed anywhere in the FS or alternatives analysis. Please provide basis for remediation. Aspects of the roof at VP2L have already been remediated.
- 96) Cost Assumption Summary Table for Alternative 5: The cost assumes that monitoring will only be required for SLAPS VPs. This is not acceptable given that monitoring will be necessary (short and long term) at properties where inaccessible areas may be identified and where deep soil contamination is proposed to be cleaned up to supplemental standards.
- 97) On-Site Disposal Cell Estimate: Since onsite disposal is not an option in conjunction with Alternative 5, it is unclear and confusing why there is a cost work sheet.
- 98) In Situ Volumes for North County Site: For VP2L, volumes are presented for excavation in soils to clean-up standards as well as supplemental standards. Alternative 5 for soils does not include use of supplemental standards (Other than deep soils that are not identified in the table). Please provide basis for these supplemental standard volumes. In

addition, there is no contingency for inaccessible areas identified, though clearly VP2L has a manufacturing building on site as well as two rail spurs, one of which will be removed as part of this action.

APPENDIX D

- 99) Pg. D-8, Table D-1: Radionuclides need to be listed as potential contaminants of concern for groundwater or sediment.
- 100) Pg. D-12, Table D-2: Please identify the multiplier for the Latty Avenue Vicinity properties that are listed at bottom of table and shown in BRA Table 2.15
- 101) Pg. D-20, Table D-3: Title of table is not consistent. See Pg. D-19.
- 102) Pg. D-24, Table D-4b: An average value is given for VPs. As indicated in previous comment, VPs are given a worst case and average value for risk and dose. This is potentially misleading given that some properties have significantly higher contaminant levels than others. Need to define what is worst case and what properties drive that calculation and then the basis for deriving an average value.
- 103) Pg. D-25, 3rd paragraph: The highest calculated dose under a current scenario for construction worker is listed as 325mrem/year. Table D-4b, IA-1 has a dose rate of 2801 mrem/year. If properties revert to residential use, doses would be unacceptable (using 15 mrem/year as protective standard) for all properties except IA-11 and IA-13 and VP-average.
- 104) Pg. D-30, 3rd paragraph: Given the number of properties and the diversity in levels of contamination across portions of individual properties, and among the several properties, the use of the 15pCi/g clean-up level for subsurface Ra-226 contamination may not be appropriate if properties (or portions of properties) have Ra-226 contamination between 5 and 30 pCi/g. (EPA Directive 9200.4-25, Use of Soil Clean-up Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites).

- 105) Pg. D-31: Specify the dose rate used for establishing the benchmark goal for Th-230 and U-238. As discussed, EPA's view is that 15 mrem/year or below is the protective dose rate for CERCLA actions.
- 106) PgD-32: Remediation goals for the SLDS ROD are not consistent with what is being proposed for the St. Louis North County Site. The Th-230 surface soil standard for SLDS is 5 pCi/g versus 14 pCi/g for the North County site. We believe the correct approach was used at SLDS.
- 107) Pg. D-33: 1st paragraph: Disagree that using the laboratory detection limit of 1 pCi/g would produce a total risk of 10^{-4} . Using Table D-8, it would be on the order of 10^{-5} .
- 108) Pg. D-34, 1st paragraph: Specify quantitatively the proposed acceptable total risk.
- 109) Pg. D-35, Table D-9: Some of residual means given for the various properties are below the laboratory detection limits specified as 1 pCi/g. Given that this an average concentration, it is not clear how this was measured.
- 110) Pg. D-37, Table D-11: Again, the indicated Ra-226 Benchmark Dose for residential scenario is not considered protective for CERCLA actions in EPA's view.
- 111) Pg. D-39, 2nd paragraph: See specific comment No. 104.
- 112) Pg. D-41, 3rd paragraph: 100 mrem/year used as dose rate for supplemental standards for subsurface and deep soils. Again, 15 mrem/year is the protective dose for CERCLA actions identified by EPA. Therefore the proposed standards do not meet EPA's protectiveness criteria.
- 113) Pg. D-43, Supplemental Standards for Deep Soils, 2nd paragraph: The deep soil supplemental standards are derived from the supplemental standards for subsurface soils. If they were derived from the unrestricted release criteria of 5 pCi/g or 15 pCi/g, the deep soil standards would be 15 and 45 pCi/g respectively for Ra-226. With the 1000-year timeframe identified in 40 CFR 192, it is not reasonable to preclude that these soils would

never be used in the context of a residential setting. Therefore the input to the deep soil calculation needs to be the unrestricted release level.

- 114) Attachment 5 to FS (Pg. 83 of 84): Change all references to "Stone Container" to VP2L to be consistent with other references to this property in the FS and supporting studies.
- 115) Attachment 19 to FS (Pg. 1 of 3): "C" versus "A" should be identified for Alternative 5 for the VP2L property.

* * * *

ATTACHMENT B

To Report of Integrated Management & Environmental Solutions
July 14, 2003 Comments on Draft St. Louis North County FS/PP

**SUPPLEMENTAL VP2L ANALYTICAL DATA
(LETTER FROM DAVID ADLER, DOE, TO GIFREHC (DEC. 13, 1996))**



Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831-8723

December 13, 1996

Stone C.
88-548

Mr. John Katkish, President
First Management Group Investments, Inc.
Suite 246
3201 New Mexico Avenue, N.W.
Washington, D.C. 20016

Dear Mr. Katkish:

HAZELWOOD SITE - IMPROVEMENTS AT 9150 LATTY AVENUE, HAZELWOOD, MISSOURI

As a follow-up to our recent telephone conversations, this letter is to confirm our understanding regarding recent improvements to the trailer lots at the 9150 Latty Avenue property located in Hazelwood, Missouri. These improvements were undertaken by General Investment Funds Real Estate Holding Company (GIFREHC) under the June 28, 1994 agreement between GIFREHC and the Department of Energy (DOE).

As contemplated in the Site Management Plan, we understand that GIFREHC undertook a radiological survey prior to making commercial improvements to the property. GIFREHC's consultant discovered radiological contamination along the fence adjacent to DOE's Hazelwood Interim Storage Site in excess of levels previously identified by our surveys (see Enclosure 1). This information was reported to me by GIFREHC's consultant and I advised him to leave the contamination in place while proceeding with the trailer lot improvements (see Enclosure 2). It is our position that the June 28 agreement fully contemplates and addresses such circumstances and that our commitments regarding remedial action at the property are not affected by these actions.

If you have any questions or would like to discuss this matter further, please give me a call at (423) 576-9634.

Sincerely,


for David G. Adler, Site Manager
Former Sites Restoration Division

Enclosures:

1. Radiological Data and Site Survey Information
2. Zambrana Engineering, Inc. Drawing No. 95086PLB, Sheets 1-3, June 16, 1996

cc w/o enclosures:

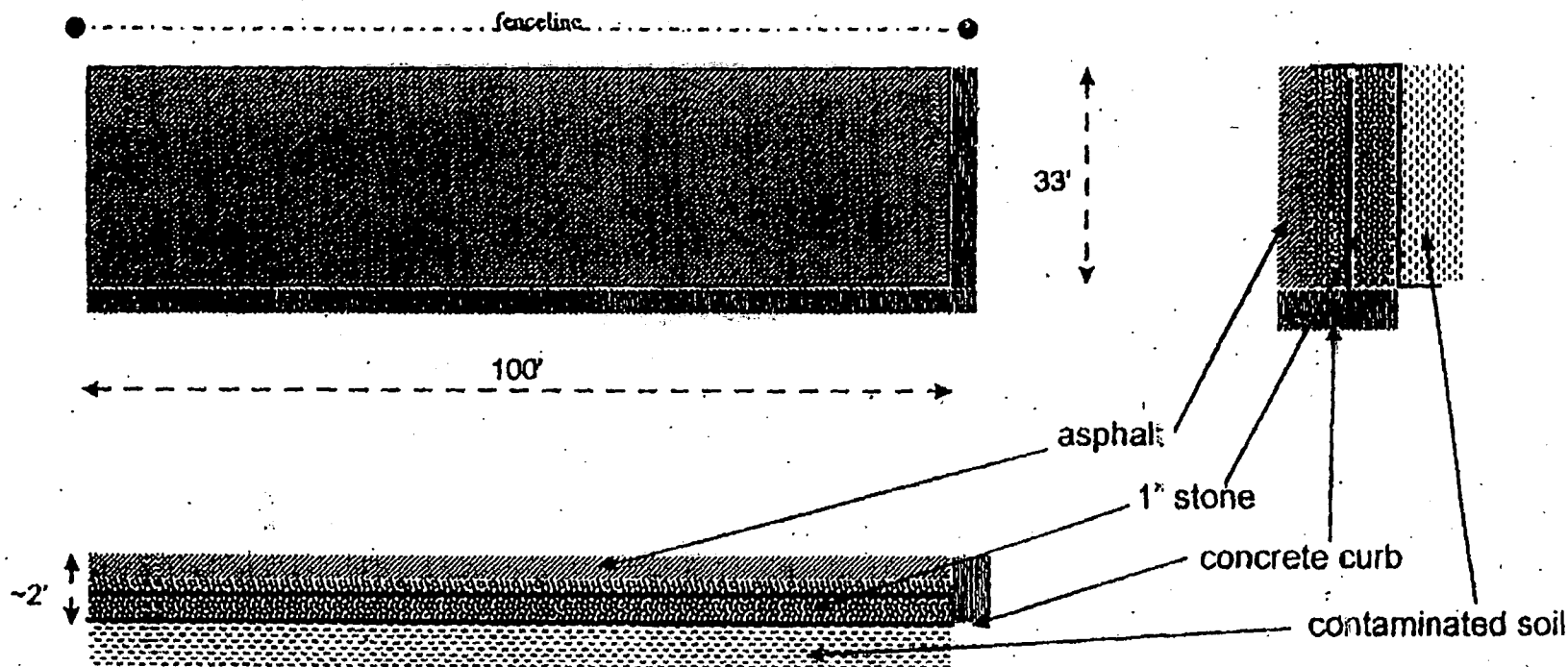
C. R. Miskelley, CC-10
J. J. Davidson, Hale and Dorr

SUMMARY

E_NUMBER	CUST_NUMB	BATCH_ID	SMP_ID	DATECOLL	SMP_TYPE	ANALYTE	RESULTS	RAD_ERR	UNITS	ANA_METHOD
	3		GRD16	19980911	REG	TH-230	18.43	3.35	PC/G	ALPHASPEC 0.08
	7		GRD162	19961002	REG	TH-230	21.86	4.35	PC/G	ALPHASPEC 0.21
	7		GRD163	19961002	REG	TH-230	63.89	10.97	PC/G	ALPHASPEC 0.17
	7		GRD165	19961002	REG	TH-230	23.61	4.51	PC/G	ALPHASPEC 0.17
	7		GRD167	19961002	REG	TH-230	26.68	5.26	PC/G	ALPHASPEC 0.22
	7		GRD168	19961002	REG	TH-230	30.06	5.96	PC/G	ALPHASPEC 0.19
	7		GRD169	19961002	REG	TH-230	75.43	14.60	PC/G	ALPHASPEC 0.11
	7		GRD1612	19981002	REG	TH-230	57.52	10.12	PC/G	ALPHASPEC 0.28
	7		GRD1613	19961002	REG	TH-230	27.88	5.00	PC/G	ALPHASPEC 0.15
	8		GRD1815	19961002	REG	TH-230	50.70	8.95	PC/G	ALPHASPEC 0.18
	11		GRD07	19961014	REG	TH-230	115.40	25.49	PC/G	ALPHASPEC 0.49
	11		GRD08	19961014	REG	TH-230	1166.00	242.30	PC/G	ALPHASPEC 0.35
	11		GRD19	19961014	REG	TH-230	183.10	37.42	PC/G	ALPHASPEC 0.14
	11		GRD09	19961014	REG	TH-230	33970.00	1982.00	PC/G	ALPHASPEC 4.94
	11		GRD010	19961014	REG	TH-230	9263.00	570.40	PC/G	ALPHASPEC 4.29

SUMMARY

E_NUMBER	CUST_NUMB	BATCH_ID	SMP_ID	DATECOLL	SMP_TYPE	ANALYTE	RESULTS	RAD_ERR	UNITS	ANA_METHO	DL
7			GRD00A	19960919	REG	K-40	18.14	2.34	PCI/G	GAMMASPEC	0.25
11			GRD07	19961014	REG	TH-230	115.40	25.49	PCI/G	ALPHASPEC	0.49
11			GRD08	19961014	REG	TH-230	1166.00	242.30	PCI/G	ALPHASPEC	0.35
11			GRD09	19961014	REG	TH-230	33970.00	1982.00	PCI/G	ALPHASPEC	4.94
11			GRD09	19961014	REG	TH-232	27.71	12.81	PCI/G	ALPHASPEC	3.95
11			GRD010	19961014	REG	TH-230	9263.00	570.40	PCI/G	ALPHASPEC	4.29
11			GRD010	19961014	REG	TH-232	18.40	9.89	PCI/G	ALPHASPEC	3.56
11			GRD07	19961014	REG	K-40	17.47	2.36	PCI/G	GAMMASPEC	0.75
11			GRD07	19961014	REG	TH-230	46.98	12.04	PCI/G	GAMMASPEC	10.69
11			GRD08	19961014	REG	K-40	17.52	2.64	PCI/G	GAMMASPEC	1.20
11			GRD08	19961014	REG	TH-230	619.20	67.77	PCI/G	GAMMASPEC	22.80
11			GRD09	19961014	REG	K-40	23.98	5.16	PCI/G	GAMMASPEC	2.93
11			GRD09	19961014	REG	RA-226	144.50	8.29	PCI/G	GAMMASPEC	0.61
11			GRD09	19961014	REG	TH-230	13570.00	2045.00	PCI/G	GAMMASPEC	184.50
11			GRD09	19961014	REG	U-235	28.27	2.28	PCI/G	GAMMASPEC	3.11
11			GRD09	19961014	REG	U-238	156.10	22.37	PCI/G	GAMMASPEC	18.65
11			GRD010	19961014	REG	K-40	18.52	2.92	PCI/G	GAMMASPEC	1.44
11			GRD010	19961014	REG	RA-226	35.14	2.10	PCI/G	GAMMASPEC	0.30
11			GRD010	19961014	REG	TH-230	3646.00	557.50	PCI/G	GAMMASPEC	99.69
11			GRD010	19961014	REG	U-238	38.36	8.32	PCI/G	GAMMASPEC	10.01
12			GRD01	19961012	REG	K-40	16.01	1.69	PCI/G	GAMMASPEC	0.36



- Unexcavated highly contaminated Soil
- 40 mil seamless polyethylene liner
- Concrete curb to be installed at final grade around perimeter
- Clean 1" minus stone
- Asphalt binder and surface

THE LOCATION OF THE UNEXCAVATED HIGHLY CONTAMINATED SOIL IS DEFINED BY A RECTANGLE WITH THE NW CORNER AT E 87 S N 1725 AND THE SE CORNER AT E 90 N 1625

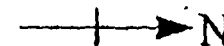
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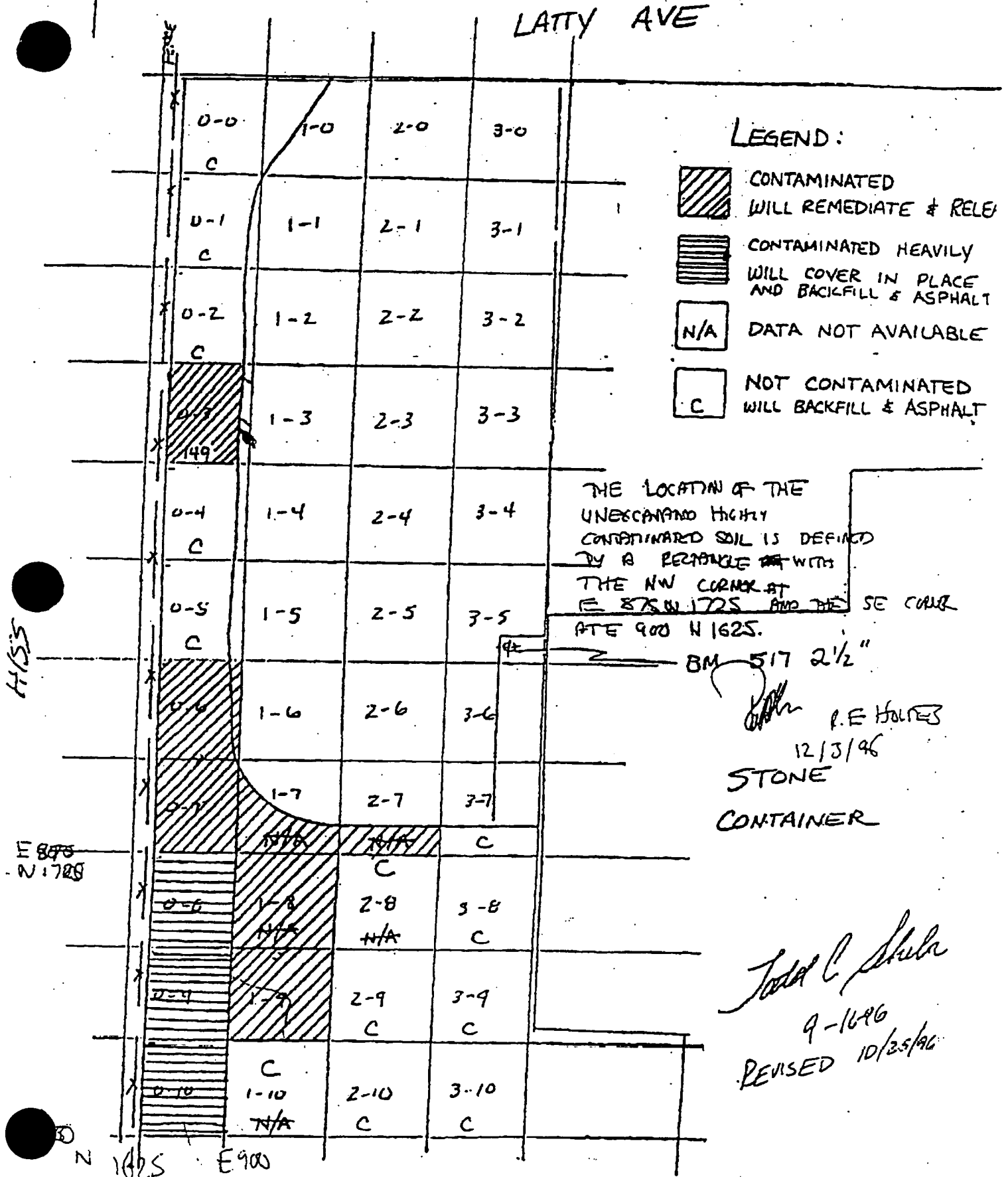
L E Hares

12/3/96

ATG/Stone Container
9150 Latty Avenue
Berkeley, MO
West Side Excavation Phase 2
Grids 0-8, 0-9, & 0-10

Drawing Not to Scale





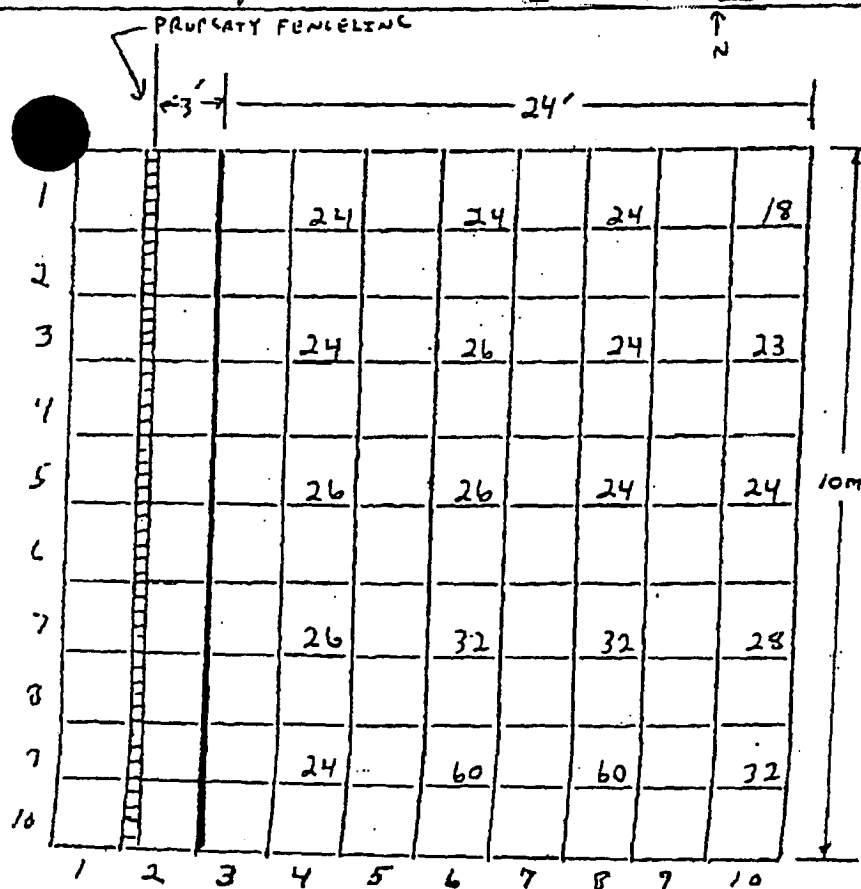
RADIOLOGICAL SURVEY REPORT


Page 1 of 2

GS #: Gif-072

DATE: 10-16-96	INSTRUMENTATION USED				
MIR: 1255	MODEL	S/N	EFF. %	DIRD	CAL. DUE DATE
IRVEYOR: Kountz/Goldstein	M-19	131291	NA	18 μ R	12-19-96
LOCATION: Grid # 0-8 (Phase II)	M-2224	132159	20%	397	8-28-97
VIEWED BY: Oil County	M-2929	126128	390 436	4 620	6-14-97
ear Locations Circled; Date	Rates = μ R/hr				

PURPOSE OF SURVEY: VERIFICATION SURVEY and Soil

Sampling
7/8" Readings recorded in Counts Per MinuteSMEAR RESULTS
RESULTS - DPM/100cm²
UNLESS NOTED

7/8" READINGS TAKEN @ Contact = 100 cm²
 Each block is = 1 meter; Micro "R" readings
 in approximately 1 meter from surface;  denotes Fence

RADIOLOGICAL SURVEY REPORT

Page 1 of 2

FOI #: G.F-073

DATE: 10-16-96

IMB: 1312

URVEYOR: Kountz / Goldstein

LOCATION: Grid # 0-9 (Phase)

REVIEWED BY: Oil County

near locations listed; Use

Dates= 4/2/11

INSTRUMENTATION USED

MODEL

S/N

ENR.70

BKKKD

CAL. DUE DATE

M-19

131291

NA

18 MR

12-19-96

4-22.24

132159

209.

500

8-28-97

7-2424

126128

436

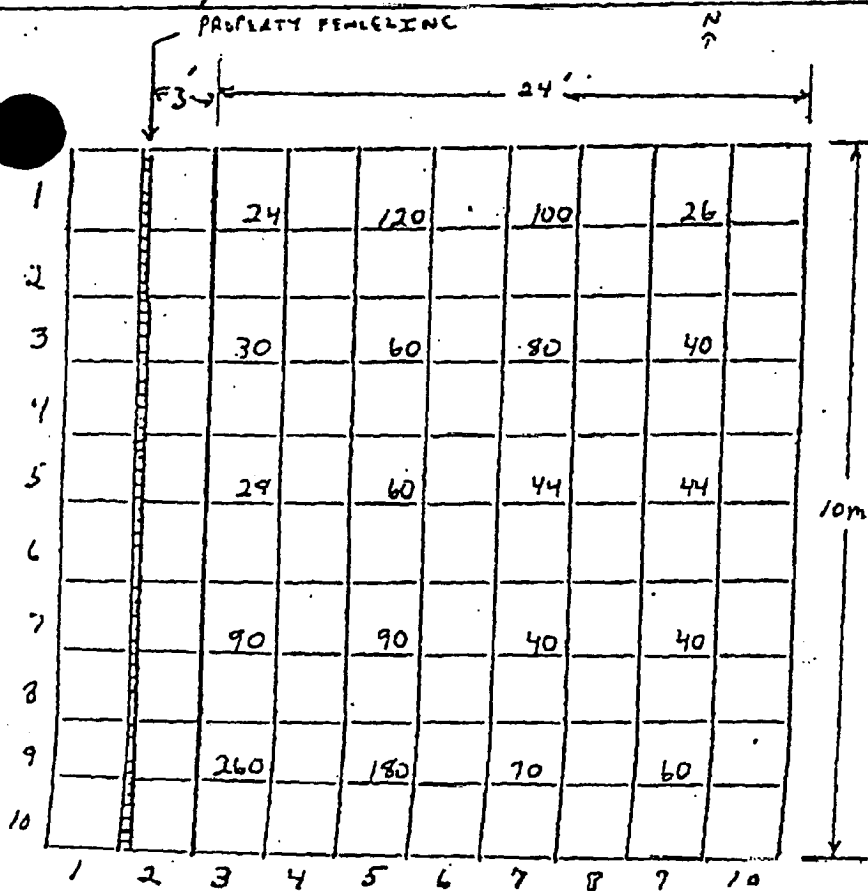
628

6-14-97


PURPOSE OF SURVEY: VERIFICATION SURVEY and Soil

Simplifying
1/4 readings recorded in Counts Per Minute

SMEAR RESULTS
RESULTS - DPM/100cm²
UNLESS NOTED



Q/B' READINGS TAKEN (iv) Contact = 100 cm^2

Remarks: Each block is ≈ 1 meter; Micron "R" readings are approximately 1 meter from surface;  denotes Fence

Page 1 of 2

ATTN: 10-16-96

TIME: 1330

REVIEWER: Goldston/Kel-73

LOCATION: Grid # 0-10 (Phase II)

VIEWED BY: W. H. T.

MODEL	S/N	EFF.%	BRRD	CAL. DUE DATE
-------	-----	-------	------	---------------

M-19	131291	NA	30mg	12-17-96
------	--------	----	------	----------

M-2224	132159	20%	$\frac{21}{900} \text{ D.}$	8-28-97
--------	--------	-----	-----------------------------	---------

M-2929	126128	$\frac{1.32}{.436}$	$\frac{2.19}{620}$	6-14-97
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near locations circled; Use

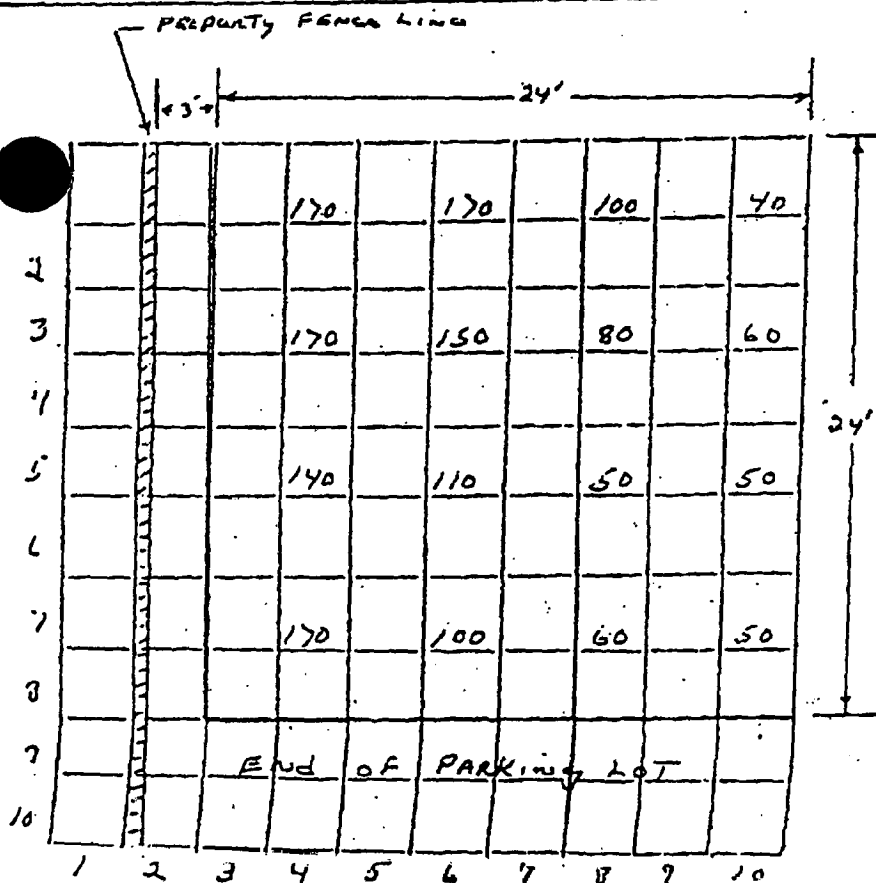
Hales - 4/1/17

TYPE OF SURVEY: VERIFICATION SURVEY and Soil

Sampling

Sampling
15 - readings recorded in Counts Per minute

SMEAR RESULTS
RESULTS - DPM/100cm²
UNLESS NOTED

[illegible]

Q/B' Readings taken @ Contact = 100 cm²

Each block is = 1 meter ; Micra "6" readings

at approximately 1 meter from surface; denotes Fence

INTEGRATED MANAGEMENT & ENVIRONMENTAL SOLUTIONS, LLC

6195 Winnebago Rd.
Bethesda, MD 20814
Phone: (301) 229-6177 Fax: (301) 229-6188

BIOGRAPHICAL PROFILE OF ELISABETH G. FELDT

Lisa Feldt is president of Integrated Management and Environmental Solutions, LLC (IMES), an environmental firm providing consulting and project management expertise to numerous Fortune 500 companies and the government sector. Prior to founding IMES in 2000, Ms. Feldt had 20 years experience in the environmental and regulatory arena. She has worked for the Environmental Protection Agency (EPA) Superfund and Air and Radiation Programs and the Department of Energy's (DOE) Environmental Management Program.

During her tenure at EPA, Ms. Feldt was one of the key individuals responsible for the establishment and implementation of the technical and regulatory components to the Superfund program. She was the regional program manager for all aspects of the Superfund clean up including preparation and implementation of Remedial Investigation/Feasibility Studies, Proposed Plans, Record of Decisions and the Remedial Design, Remedial Action work for Superfund sites across the country. She received EPA's Bronze Medal for her work on the Love Canal Superfund site and was instrumental in developing the remediation strategies for the Glen Ridge/Montclair Radiation Superfund site. With her expertise and experience, Ms. Feldt was designated as one of the technical experts to the EPA working group responsible for the development of the National Contingency Plan. Ms. Feldt was also the primary technical representative in developing the National Radon program and received EPA's Bronze Medal for her work on addressing radon in schools and homes throughout the country.

While at DOE, Ms. Feldt managed the nation's largest cleanup program, the remediation of the country's nuclear facilities and sites that were used in the nuclear weapons program during World War II and the Cold War. Ms. Feldt was the lead senior manager for developing DOE's nuclear facility deactivation program and received numerous departmental awards for her work for the clean-up of sites and facilities located at Hanford, Oak Ridge, Fernald and Rocky Flats. Her last position at DOE was in the senior executive service working as Chief of Staff to the Assistant Secretary for Environmental Management. As Chief of Staff, she was responsible for all aspects of the nuclear clean up program. Her key work as a senior technical advisor on the Waste Isolation Pilot Plan, a first-of-kind, world-class repository for radioactive waste earned her special recognition by the Secretary of Energy. Ms. Feldt left the Department in 2000 after over fifteen years of service. She received the Distinguished Career Service Award where she was recognized for her significant role in "remedying the environmental problems faced by this Country, and has been distinguished by exemplary performance and significant contributions to the success of the programs."