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Region V, SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

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

Dear Mr. Jablonowski & Mr. Schneider:

RESPONSE TO COMMENTS ON THE REVISED APPROACH TO THE DECONTAMINATION AND DISMANTLEMENT SEQUENCE FOR THE MULTI-COMPLEX DECONTAMINATION AND DISMANTLEMENT PROJECT

This letter is in response to the August 1, 2003 conference call between Jim Saric (U.S. EPA) Tom Schneider (Ohio EPA) and Johnny Reising (DOE) where regulatory agency issues pertaining to the Multi-Complex Decontamination and Dismantlement (D&D) project were discussed. During the call, DOE recapped the revised approach and explained why the Fernald Team believes it is compliant. Both agencies indicated their preference for the historically utilized approach and, in light of this agency preference DOE reiterated the schedule, safety, and physical accessibility drivers as to why the revised approach is considered to be preferable. U.S. EPA then indicated additional details would be needed in order to fully evaluate the approach.

During the discussion, the agencies stated there was a need for additional detail relating to the following four subject areas:

1. Need to discuss how the Waste Acceptance Organization (WAO) inspection process will address the potential for the commingling of above waste-acceptance criteria (AWAC) material with other WAC compliant materials, especially in the potential situation where affected piping or equipment releases holdup material that further contaminates otherwise WAC compliant materials during takedown.
2. Need to demonstrate how the WAO managers will adequately staff the job, including an identification of what additional WAO personnel will be necessary to address the demands of the re-sequencing approach.

3. Need to provide further detail relating to the environmental and radiological controls that will be put in place to address the increased possibility of environmental release with the revised approach.
4. Need to provide further detail relating to the radiological monitoring that will be conducted to track the impacts of the revised effort, and demonstrate that it is being performed safely and compliantly.

The remainder of this letter addresses each of these four subject areas, and provides backup information as attachments where necessary. This information is a supplement to DOE's initial proposal letter of July 11, 2003, and the subsequent comment responses prepared to address Ohio and U.S. EPA's written comments on the initial letter. To recap the timeline of the responses, DOE received Ohio EPA's comments in a letter dated July 17, 2003, and a written response was formally transmitted to both agencies on July 28, 2003. DOE then received U.S EPA's comments in a letter dated July 28, 2003, and a draft response was transmitted informally (via email) on July 30, 2003. The follow-up formal response is also included along with this letter.

Topic 1. How will the WAO inspection process address the commingling of AWAC materials with other WAC compliant materials, including the potential for residue spillage onto other WAC compliant materials?

Because WAO's inspection process (and WAC attainment demonstration) is an integral activity that is intertwined within the structural demolition process, it is helpful to go through our planned approach for structural demolition under the revised sequencing in more detail in order to place the nature of the WAO inspection activities into proper perspective. A flowchart that summarizes this integrated process is also enclosed, which outlines the major steps and shows where the key WAO involvement areas reside in the process.

The three Multi-Complex D&D project buildings of interest under the revised approach will be brought down to the ground mechanically and in sections (such as column bays), rather than utilizing the Plant 4 or Plant 1 implosion approach. This section-by-section approach lends itself for more targeted removal of piping and equipment as additional access is gained and reduces commingling of suspect materials with larger quantities of structural members. Using Building 2A as an example, the building will be dismantled starting from both the western (Digestion) and eastern (Denitration) ends and working towards the middle (Extraction). Before the first column bay is structurally dismantled, piping and equipment that is made more readily accessible (via the initial transite panel removal) will be removed using hydraulic shears and set aside. Then, a column bay or two will be structurally dismantled and brought down to the ground gradually by shearing structural members one at a time; this approach results in the structure being purposely folded over gradually rather than felling the structure. Note that after the first column bay(s) are folded down to the ground, piping and equipment in the next bay (which may have been initially inaccessible in the middle of the building and is now on an end) may become more accessible and therefore available for additional targeted item-by-item removal as access permits. During the

planning for the demolition activity, structural evaluations were conducted to pinpoint the best means of "folding over" the column bays through the strategic structural cuts necessary. This purposeful "folding over" approach is the first step to minimizing the increased potential for residue releases as equipment and piping is brought down concurrently with structural members.

For safety reasons, heavy equipment operations such as shearing have a 75-foot exclusion zone per piece of equipment. Therefore, as a bay or two is brought down to the ground, there will be only one or two pieces of heavy equipment working in an area at once to segregate the materials now on the ground. The heavy equipment operators will begin by segregating the structural steel from the equipment and piping and placing them in two separate piles. The structural steel pile will be size reduced to meet OSDF WAC under WAO inspection. The WAO field inspector is in radio contact with the equipment operator and works with him to coordinate the access to the working pile for inspection. The piping and equipment (regardless if it was removed prior to or after the structural bay was brought to the ground) is visually inspected piece-by-piece by WAO to determine if the pipe or piece of equipment has visible process material. If a piece fails visual inspection, it is cleaned using high-pressure water and re-inspected, then cleaned a second time if necessary. Piping and equipment that passes WAO's visual inspection are then size reduced to meet OSDF size criteria, inspected by WAO again, and loaded into roll-off boxes for transport to the Bulk Debris OMTA or OSDF.

In the event that a tank or pipe is breeched during the structural dismantlement of the bay or during the subsequent debris segregation step and process residue spills on structural members to the point where the members are now visually stained, those members will be power washed using high-pressure water equipment and inspected by WAO against the OSDF visual inspection criteria (i.e., the visual staining criteria that has always been employed) before being loaded into roll-off boxes for transport to the Bulk Debris OMTA or OSDF. Dry residues that can be removed by HEPA vacuuming will also be removed as rapidly as worker safety and physical access permits. Items that cannot be adequately cleaned by the two high-pressure washing attempts are then containerized for off-site disposal as these items are deemed ineligible for OSDF disposal. The intent is to exercise the effort to make as much debris eligible for OSDF disposal as possible including using the two high-pressure water wash down attempts where necessary. Only when materials fail the visual criteria after washing is a decision made to deem the material ineligible for disposal. This results in a bias for on-site disposal and the need to consider all materials as "suspect" materials pending the outcome of the WAO inspection, so that this intentional bias can be satisfied.

As explained in our earlier comment responses, mere contact with process residue (i.e., should it be inadvertently spilled onto other WAC compliant materials during takedown) does not render a piece of debris ineligible for disposal; rather, it speaks to the need to conduct the visual inspections diligently and remove the residue as quickly as field conditions permit. WAO field representatives encounter such conditions periodically even with the earlier sequencing approach, and know what to look for and how to direct the cleaning so that the materials can be inspected accordingly. While an increased possibility for such spillage must be acknowledged with the revised approach, the steps designed and performed to control environmental releases (discussed below under Topic 3) such as foaming of accessible interior equipment voids and lockdown of exterior surfaces, serve to keep such instances to a minimum. Only if an otherwise foamed and

locked down piece of equipment cannot be removed with the targeted approach (due to lack of accessibility), will the need develop to drop the piece of equipment concurrently with the structural members using the "folding over" approach to column bay removal. In this instance, it is concluded by the Fernald Team that the controls utilized (foaming and lockdown to the degree practical that access permits, coupled with rapid removal of spilled materials, should they occur)

will serve to keep cross-contamination to a minimum. All oversight representatives in the field are trained to watch for such cross-contamination and direct the removal of such materials as quickly as field conditions permit, and institute the appropriate wash downs or HEPA vacuuming needed, as has been implemented historically.

As the WAO inspectors work their way through a particular pile (either the sorted structural members or the sorted process piping and equipment), they may direct the shear or grappler operator to pull out a "sub-pile" of working materials from the larger pile from which to begin a manageable subset of debris to work with. In the historical approach, where all the equipment and piping has been removed before structural takedown begins, the emphasis has been on size reduction and observance for the occasional prohibited item that is encountered. In the revised approach, the "greater scrutiny" that has been discussed in our telephone conversations, is really aimed at treating both the equipment/piping segregated pile and the structural debris segregated pile as "suspect" piles that need more painstaking (and slower) inspection. This is what results in the forecasted durational increase of inspection that has been discussed in earlier calls, and is the major driver for the number of field WAO representatives that will be needed, recognizing that each shear must operate within the 75 foot exclusion zone concept, which sets the limit on the number that can be working at any particular moment. Hence, the WAO managers need to look at rotational shifts for the field personnel to make sure the longer durations are accommodated appropriately. This is discussed in greater detail under Topic 2 below.

Topic 2. How will WAO managers adequately staff the job, and what additional WAO personnel will be necessary?

For the D&D projects, WAO has two primary hold points: 1) a pre-loadout walk down to visually inspect debris that the Subcontractor has segregated from prohibited material, size reduced to meet OSDF category requirements, and has decontaminated or otherwise claims to be free of residues/prohibited material; and 2) oversight during transfer of debris to roll-off boxes to ensure that only debris visually inspected during the walk down is loaded out. Under the old D&D sequence, these activities were not full time, due to the stepwise nature of structural demolition. The more linear sequence of D&D activities allowed WAO to float staff members among the various D&D work locations, instead of dedicating full-time staff to each. Under the revised sequencing we expect that the continuous pace of activities requiring WAO oversight will increase such that each D&D work area will require dedicated WAO resources, as well as relief staff to accommodate stay times and lunch breaks. We plan to initially assign two additional FTEs to the WAO D&D team for this purpose, which brings the total number of WAO field staff at the D&D projects to 11 (five typically assigned to day shift, and four to night shift, plus the two additional FTEs). These additional FTEs are based on the best planning information available today, and will be adjusted as needed once activities are underway. As noted in our earlier letter and comment responses, WAO has received Senior Management's commitment to meet any additional FTE needs that may emerge as the project proceeds.

At the OSDF, WAO has three verification locations for incoming material: 1) the Bulk Debris OMTA; 2) the entrance to the disposal cells; and 3) dump locations in the disposal cells. Current staffing allows WAO to meet WAC Attainment Plan requirements at these locations. This is accomplished partially through use of cross-trained staff performing work under WAO's direction (e.g., GeoSyntec and radiological control technicians) who also have responsibilities other than waste acceptance. For the duration of D&D under the revised sequencing method, we will continue to rely on cross-trained staff but will also increase dedicated WAO staff by two FTEs. This will allow increased vigilance by dedicated WAO staff to inspect loads as they are dumped at the Bulk Debris OMTA and/or the OSDF disposal cells. No adjustment should be required for the entrance to the disposal cells, since activities at that location are limited to review of manifests and recording of placement locations. Again, as noted above, WAO has Senior Management's commitment to meet increased FTE loads that may be encountered as the project proceeds.

Topic 3. What environmental and radiological controls will be put in place to address the needs of the revised approach?

In order to place the necessary controls into perspective, it is worthwhile to reiterate that one of the drivers for the revised sequence is to gain a meaningful schedule advantage. If the team does a sloppy job of preparing the project for the subsequent demolition and then creates a bigger mess once it is dropped, then the potential schedule advantage will be lost. So there is an inherent driver for the team to "do the job right" and get the necessary controls in place to minimize releases to the degree possible prior to the structural demolition activity. From that vantage point, the following is a summary of the principal controls that will be put in place.

For this revised approach, key field workers directly supporting the building demolition will initially be placed in respiratory protection, where we normally would not need to make that decision under the historical approach. The decision to employ this protection rests with the Project Radiological Engineer and he will be evaluating the necessity of the continued use of this protective measure for the field crews throughout project execution.

For the three structures, accessible exterior surfaces of piping and equipment remaining in the structure have been washed and locked down prior to opening the building to the environment. Interior voids of the piping and equipment have been foamed and openings sealed to the extent reasonable to minimize residual process material from escaping during structural demolition. The decision as to how much foam and lock down agent is needed, and where it is applied, rests with the D&D Project Manager with input from the radiological technicians who inspect and survey the activity (using appropriate radiological field survey instrumentation) for compliance with contractual facility release criteria.

As discussed above in Topic 1, the D&D project is utilizing an approach that targets the removal of piping and equipment that is readily accessible to a shear, coupled with utilizing mechanical means to gradually bring the structural and any remaining piping and equipment down to the ground a section at a time. These approaches are intended to greatly reduce the risk of releasing

process material to the environment. As noted in one of our earlier comment responses, the decision as to whether a specific item can be removed via the targeted approach, or is best brought down concurrently with the structural demolition, rests with the D&D Project Manager in consultation with field input from WAO, radiological control, and industrial safety.

Additionally, the D&D project will continue to apply dust suppression during structural demolition and size reducing activities, to further control airborne releases. Water used for dust suppression will be diverted to the storm sewer system, which drains into the Storm Water Retention Basins and then is brought to the AWWT for treatment. Rinsate waters generated during the washing/cleaning of piping and equipment (including the power washing utilized for items that fail initial visual inspection criteria) are collected, sampled, and transferred directly to the AWWT for treatment. The decision as to which waters qualify as dust suppression water and which waters need to be considered rinsate waters for physical transfer to the AWWT will follow the same protocols and criteria that have been followed for all of the D&D projects under the historical sequence.

Topic 4. What monitoring will be conducted to track the potential impacts of the revised sequencing?

There are three types of air monitoring that have been, and will continue to be, utilized during the Multi-Complex D&D project:

- The site perimeter air samplers that monitor overall off-site air emissions under the IEMP program
- D&D project boundary air samplers
- Breathing zone air samplers worn by individual D&D workers and general work area monitoring.

The IEMP monitoring is not discussed in detail here, as it is not the primary tool used to evaluate the effectiveness of the controls in place at the D&D projects. (The IEMP monitoring does provide a longer-term look at trends -- which is important as a secondary tool -- and provides a historical record of composite project-related impacts on fenceline concentrations). The project boundary air monitoring, as discussed below, serves as the primary tool for evaluating the effectiveness of the controls and providing day-to-day feedback to the Project Radiological Engineer on project performance.

For this project, the boundary air samplers are strategically placed around the circumference of the project, and are run while work activities are underway (currently a "24/7" activity). Currently there are six samplers in use, and we plan to continue with all six during the structural demolition activity. The sampling that has been performed throughout the life of this project is "retrospective" sampling, where samples are allowed to decay for seven days, which effectively eliminates any contribution to the final count by noble gas daughters. The sampling has been used to verify that contractor activities have not caused airborne radioactivity concentrations at the project boundary to exceed 2 percent of the appropriate Derived Air Concentration (DAC) limit, based on a weekly average of the daily sample results. Note that maintaining air

concentration levels at the 2 percent DAC limit (based on continuous occupational exposure of 2000 work hours) would ensure that no personnel adjacent to the project boundary would receive a dose greater than 100 mrem from exposure to airborne radioactivity. The administrative level of 2 percent was established to provide a broad indicator to evaluate adequacy of the radiological controls used during the work activities. If a weekly average of 2 percent were to be exceeded, it would then trigger a further investigation of the cause by the Project Radiological Engineer and the application of corrective measures by the subcontractor. To date, this project has not exceeded a 2 percent weekly average at the project boundary, which illustrates the overall effectiveness of the controls in place.

For worker protection purposes, the project also conducts general area sampling of work areas and some personal air sampling (i.e., breathing zone samplers) to verify the adequacy of assigned respiratory protection. The project-specific air sampling is in compliance with 10 CFR 835 and the site's Radiological Control Requirements Manual (RM-0020).

As an enclosure, we have included our Technical Basis: Air Sampling Plan for Demolition Closure Projects (SD-1064) document which describes in further detail how air sampling is conducted for the Fernald Closure Project's D&D projects. This enclosure defines the project boundary sampling and the worker protection sampling, and also provides three maps of the boundary sampling locations for Plant 2/3, Plant 8, and the General Sump portions of the Multi-Complex D&D project. We have also enclosed several examples of the data plots obtained for the project boundary samplers during the month of April 2003. These examples show the type of feedback data available to the Project Radiological Engineer to assist him in the assessment of the controls and the performance of the subcontractor's activities. This information is simultaneously shared with the IEMP staff members who are performing concurrent assessments of site boundary data, allowing them to correlate project activities with fenceline results. The examples provided are representative of the data that have been obtained throughout the course of the project, and illustrate the effectiveness of the work processes and radiological controls implemented to date.

Conclusion

As we indicated during the conference call, we believe we are in compliance with our requirements, are adequately monitoring our performance, and are moving forward with the project. We again welcome any visits by you or your staff members to observe our processes first hand and meet with the Fluor Fernald individuals involved with the key implementation decisions on the project (Scott Osborn, D&D WAO lead; Bill Connell, Project Radiological Engineer; and Pat O'Neill, D&D Project Manager) and DOE site staff. We are confident that their continued leadership and involvement will contribute greatly to the implementation of the revised sequencing approach and result in a successful conclusion of this effort.

Sincerely,

Glenn Griffiths

Glenn Griffiths
Acting Director

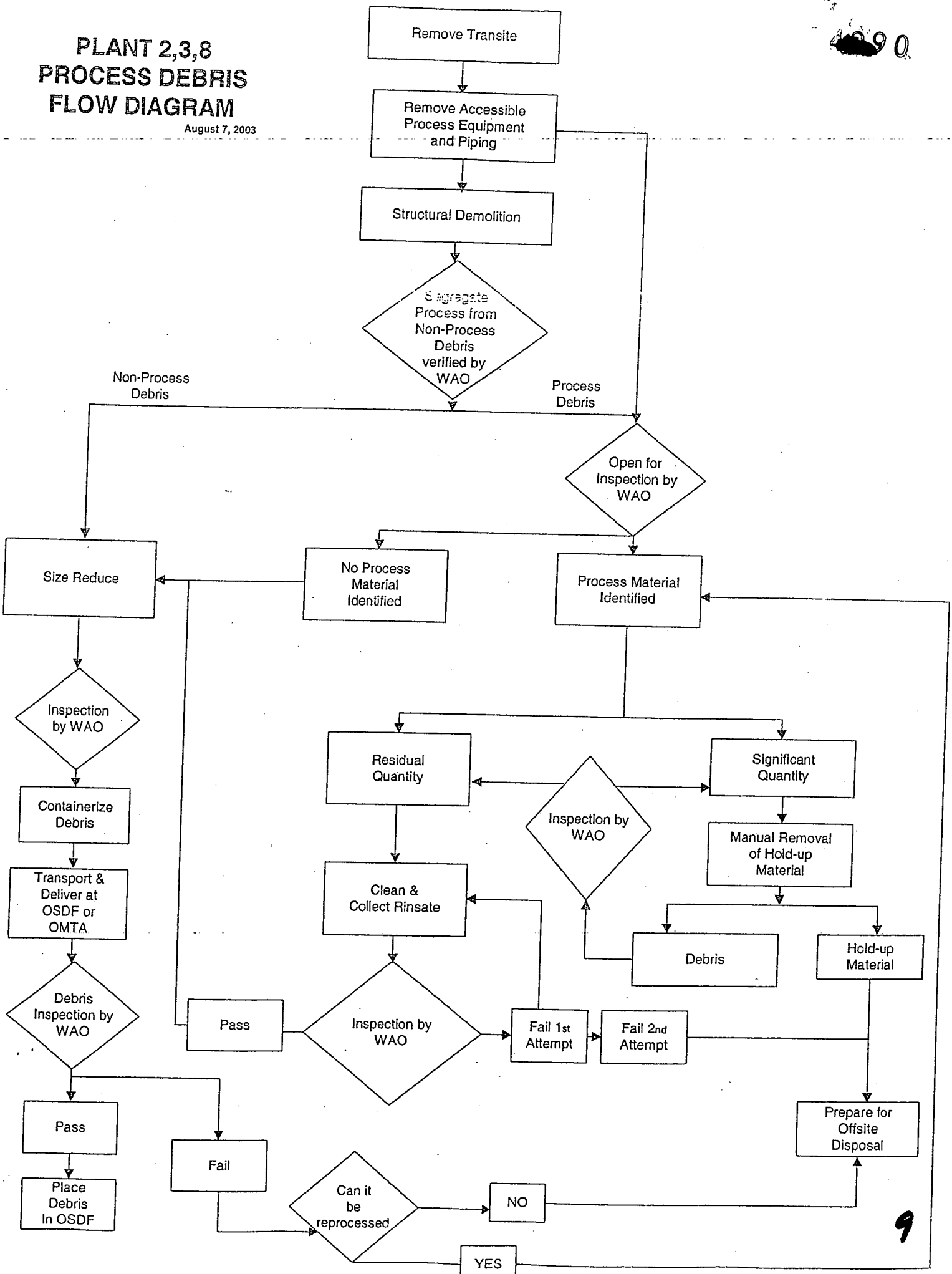
Enclosures: As Stated

cc w/enclosure:
J. McCloskey, EM-31/CLOV
M. Boyd, OH/Springdale
J. Trygier, OH/FCP
T. Schneider, OEPA-Dayton (three copies of enclosure)
J. Saric, USEPA-V, SR-6J
F. Bell, ATSDR
M. Cullerton, Tetra Tech
M. Shupe, HSI GeoTrans
R. Vandegrift, ODH
AR Coordinator, Fluor Fernald, Inc./MS78

cc w/o enclosure:
R. Greenberg, EM-31/CLOV
K. Johnson, OH/FCP
B. Edmondson, Fluor Fernald, Inc./MS52-0
M. Jewett, Fluor Fernald, Inc./MS52-5
M. Stevens, Fluor Fernald, Inc./MS87
ECDC, Fluor Fernald, Inc./MS52-7

PLANT 2,3,8 PROCESS DEBRIS FLOW DIAGRAM

August 7, 2003



SUPPORTING DOCUMENT	DOCUMENT NO: SD-1064	Effective Date: 06/18/2003
Fluor Fernald, Inc.	Technical Basis: Air Sampling Plan for Demolition Closure Projects	
	☐ POSITION PAPER ■ TECHNICAL BASIS	
	AUTHOR: Bill Connell	Revision No: 4
ESH&Q SAFETY AND HEALTH Radiological Control	Approval: *ON FILE* Date 6/16/03 Dan Thiel, Radiological Control Manager	

Concurrence Signature:

ON FILE Date: 6/16/03

J.L. Barber, Radiological Compliance

Supersedes - None

This plan is intended to stand as a living document, Section A contains an overview of the process for project closure, Section B identifies specifics associated with Task 1 of the Plant 2, 3 and 8 Complex. Subsequent activities and air sampling will be addressed as new "Sections" added to this document through revision and approval. Initial issue: 12/26/01.

Revision 1 includes changes made with respect to Personal Air Sampling (PAS) in uranium areas and addition of Sections C and D. Revision date: 02/22/02.

Revision 2 includes addition of Section E. Revision date: 07/18/02.

Revision 3 includes addition of section F. Revision date: 10/31/02

Revision 4 includes addition of section G and H. Revision date 06/23/03

SECTION A:
DEMOLITION CLOSURE PROJECT, PROJECT SPECIFIC AIR MONITORING PLAN

1. Description of Project Operations

The scope of the Demolition Closure Project entails the demolition of most of the remaining buildings at the Fernald site as of 10/1/2001. These buildings include the Plant 2, Plant 3, Plant 8, and Pilot Plant complexes, buildings 30/45, 30A, 31, 46, 64, 65, 68, 71, 77, 79, 80, 82, and Silos 1 through 4, as well as numerous small structures throughout the former process area. Administration Area buildings included in the scope are buildings 11, 14, 15, and 53. Essentially all activities involved in building demolition are potential sources of airborne radioactivity.

The usual sequence of operations in each former process area building involves sealing all pathways to the environment, performing a preliminary washdown of the building, abating asbestos, decontaminating and downsizing interior equipment and systems, and removing interior transite and insulation. The building then undergoes a final release cleaning and encapsulation of structural members, the building slab, and the interior surfaces of the exterior transite siding. Following a radiological contamination survey to insure that the

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contamination levels specified in Part 8C 2.4.3 of the Demolition Closure Contract for the opening of a structure to the environment have been met, removal of the exterior transite siding commences. Demolition of the structural members follows. This is typically accomplished by a track-mounted shear.

The steps for the demolition of the Administration Area buildings will be similar to those performed on buildings in the former process area. Since the contamination levels in these buildings are low, some steps, such as the release cleaning and encapsulation may be omitted. However, since some contaminated surfaces may have been obscured during various remodeling projects, any such surfaces will be treated so that they meet the requirements of Part 8C 2.4.3 if and when they are discovered.

2. Engineering and Administrative Controls

The engineering controls which are used to control airborne radioactivity are designed to either isolate or control the source. Isolation controls include sealing the building's pathways to the environment. These pathways include stacks, vents, and broken windows. The Demolition Closure Contract specifies that Fluor Fernald must approve the adequacy of the sealing of the building before work that could generate airborne radioactivity can begin. Isolation is further accomplished through the use of personnel and equipment vestibules. In the case of uranium contaminated buildings these vestibules are simple, single-chamber structures. These have proven to be adequate to prevent the escape of airborne radioactivity from the building during the six demolition projects which have already been completed and two which are currently underway. Where thorium is the isotope of concern, plans are to provide the vestibules with HEPA-filtered ventilation and multiple chambers or mandatory residence times to prevent the escape of airborne radioactivity.

Measures used to control airborne radioactivity at its source include using local HEPA-filtered ventilation and HEPA-ventilated containments for saw cutting or torch cutting components. Thorium contaminated debris will be washed down and encapsulated prior to its removal from the building or containment. Water is the primary method used for the control of airborne radioactivity during structural demolition. Typically the work area is misted while a stream of water is continuously applied to the point where the shear is contacting the structure. The wash water is collected and sampled before it is transferred to the AWWT.

The administrative controls that are used to control airborne radioactivity are the Demolition Closure Contract, the contractor's Safe Work Plans, the RWP's which govern all radiological work on the project, and the postings and informational signs at the job site. Part 8C 2.4.2 of the Model Contract requires the contractor to design and perform the work such that airborne radioactivity concentrations in the work area do not exceed 10% of the appropriate DAC, applying the appropriate respiratory protection factor. The contractor is further required to control airborne radioactivity concentrations at the project boundaries such that 2% of the appropriate DAC is not exceeded, based on a weekly average, or 10% of the appropriate DAC is not exceeded in any one shift. The contractor's Safe Work Plans are formal documents in which the contractor proposes the work methods to be used in order to safely meet the pertinent contractual requirements. Safe Work Plans may not be implemented until they are reviewed and approved by Fluor Fernald.

The project RWP's are written specifically for the major steps of a demolition project and include the appropriate hold points and require good radiological practices so as to minimize the unnecessary generation of airborne radioactivity. The project radiological postings clearly define the extent of the Airborne Radioactivity Area, which typically coincides with the perimeter of the building itself. When outdoor areas are posted for activities such as tank demolition the boundaries will be set conservatively wide and verified with sampling. The informational signs

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used at the job site clearly identify the vestibules used for entering and exiting the building or containments. Doors which do not lead to a vestibule are also clearly marked on both the building interior and exterior.

3. Radiological Boundary Configurations

Project Radiological Boundaries generally coincide with the project construction area boundaries. In the case of buildings in the former process area the construction area boundary will be posted as a Contamination Area and will usually track the compound boundary, which is delineated by a metal wire fence which generally follows the edges of the streets that surround the compound. For the demolition of Administration Area buildings the construction area will be sufficiently large to encompass the work, including space for the loading and movement of rolloff boxes. Since the rolloff boxes are internally contaminated at a minimum, some of the construction area will be posted as a Controlled Area. If, however, an unbroken Contamination Area pathway is established from the demolition project to either the OMTA or the OSDF, then essentially the entire construction area will be posted as a Contamination Area.

Within the posted Contamination Areas the Airborne Radioactivity Area boundaries are usually set at the building perimeter. Experience with past D&D projects has indicated that this approach is adequate, given the engineering and administrative controls that are applied to the work. When demolition work is performed outside the building perimeter, such as tank or pipe bridge demolition, Airborne Radioactivity Area boundaries are established around the work area, approximately twenty feet back from the work.

4. General Work Area Air Monitoring Equipment

All D&D project air sampling is conducted in accordance with the requirements of Procedure 602-1025. 60 lpm low volume air samplers are usually chosen for general work area air monitoring during all phases of a D&D project. For specific jobs that are of a short duration and have a high potential for generating relatively high concentrations of airborne radioactivity, 10 cfm high volume air samplers will be chosen. Both the low and high volume air samplers are placed so that they will be in the pathway of the highest expected airborne radioactivity concentrations. Breathing zone sampling is conducted with lapel samplers.

5. Air Monitoring Equipment used for Boundary Verification

60 lpm low volume air samplers in environmentally secure housings are used for the routine verification of project boundaries in accordance with Part SC 2.4.2 of the Demolition Closure Contract. The samplers are placed on both the upwind and downwind sides of the building under demolition and are run daily during the project work hours. The number of samplers will vary with the size of the building, its potential for producing airborne radioactivity, and the isotope of concern. Before the building is opened to the environment the samplers are usually placed near equipment vestibules since they represent the likeliest pathway to the environment.

When the isotope of concern is thorium, boundary samples will be obtained prior to the start of work to obtain typical baseline concentrations. These samples, as well as samples obtained once the D&D work has started, will undergo alpha spectroscopy to determine the isotopic mix of the sample, which will perhaps allow the application of a somewhat less restrictive DAC than that of pure Th-230 or Th-232.

Boundary verification for work outside the building perimeter is accomplished with 60 lpm low volume air samplers, which are run while the outdoor work is in progress. In all cases, all boundary verification samplers will be run sufficiently long to obtain the sample volumes required by Procedure 602-1025.

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6. Air Monitoring in Occupied Areas adjacent to Airborne Radioactivity Areas
The normally occupied areas associated with a D&D project, which are the CP, break, and office trailers, are outboard of the project boundary verification air samplers. Project boundaries, where the boundary verification samplers are positioned, encompass demolition work areas but not the administrative support areas such as the trailers mentioned above. Also, in many cases the support trailers are positioned at least 75 feet away from any structure undergoing demolition, so that the required 75 foot clearance from operating shear and grapple heads can be maintained without impacting support operations. When a trailer is required to be placed closer than 75 feet to a structure undergoing demolition, such as the proposed placement of T-95 adjacent to the General Sump, boundary verification samplers will be placed between the trailer and the work area.

Additionally, a 60 lpm low volume air sampler will be run in the men's and women's PPE doffing areas of the project CP trailers to monitor resuspension of radioactivity while the workers doff their PPE.

7. Methods of Internal Monitoring and Bioassay
Where the workforce is exposed to airborne uranium the method of bioassay will be urinalysis. Experience with prior D&D projects involving uranium contaminated facilities indicates that obtaining urine samples at a greater frequency than the normal 60 day cycle for Rad Worker II trained workers should not be necessary. Where the workforce is exposed to airborne thorium the method of internal exposure monitoring will be personal air sampling. Initially, all personnel entering a thorium Airborne Radioactivity Area will wear a lapel sampler. The results of this sampling will be analyzed to determine if support personnel, such as RCT's, IH Technicians, Safety Engineers, supervisors, and workers not performing hands-on demolition can be cut back to 25% lapel sampler coverage. No changes from 100% lapel sampler coverage in thorium Airborne Radioactivity Areas will be made without the concurrence of the Programmatic Radiological Control Manager or designee.

3. Contingency Plans
The Model Demolition Contract states that if any of the limits on airborne radioactivity specified in Part 8C 2.4.2 are exceeded, the contractor shall immediately implement radiological controls at the source of generation. Additionally, upon written notification from Fluor Fernald, the contractor has one week to provide a written explanation of the causes of the problem and corrective actions taken to prevent recurrence. Any results that exceed the limits specified in Part 8C 2.4.2 will also be evaluated to determine if any action should be taken pursuant to RM-0020.

ECTION B:
ask 1 of the Plant 2, 3 and 8 Complex

ask 1 of the Demolition Closure Contract comprises the decontamination and demolition of all above grade omponents in FEMP Site grids 19 and 20, with the exception of Building 80. These components include Plants 3, 8, the General Sump, and associated structures such as pipe bridges. Additionally, conveyors and associated echanical equipment will be removed from the sub-grade sections of components 2F and 2H, after which the sulting exposed pits will be backfilled with gravel.

ie airborne radioactivity data collected during the seven previous major building D&D projects at the FEMP ficate that fugitive emissions are not expected to exceed 2% of the applicable DAC at the project boundaries. his is due to the effectiveness of the engineering and administrative controls applied to the work. These controls

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are summarized in Section A of the Project Specific Air Monitoring Plan (item 2). Confirmatory sampling is performed at the project radiological boundary on a daily basis, whenever D&D work is in progress. Planned sampler locations for the initial phases of Task 1 include: immediately north of T-95, which is the main project control point; south of Building 8C; at the west end of 101st Street; west of Building 2A; north of Building 2A; and east of Building 2A. During the later phases of Task 1, when thorium work commences in Plant 8, some boundary samplers should be shifted south to Plant 8 from their initial location. Additionally, daily sampling will be conducted in both the men's and women's doffing areas at T-95, and in the outer chambers of the HEPA-ventilated personnel vestibules which access thorium contaminated work areas in Plant 2A's Extraction Area, Building 3E, and Plant 8 after thorium work commences. Sampling outside thorium area equipment vestibules will be conducted on those days when the vestibule is in use. All these locations are shown on the attached map. It should be noted that the map presents typical boundaries which may change as Task 1 work progresses.

General area air sampling in building interiors is conducted in large zones, and is conducted primarily to verify the adequacy of controls and prescribed respiratory protection. The specific sampler locations typically follow the progress of the work.

Personal air sampling will be used for internal monitoring. Initially 100% coverage will be provided for all entrants into thorium contaminated work areas. Coverage for support personnel in these areas may be reduced if the data demonstrate that this would be feasible. Any change in this area requires the concurrence of the Radiological Control Manager. Typically no personal air sampling coverage will be provided for entrants into uranium contaminated areas where respiratory protection is prescribed by the RWP. The RWP's authorizing evolutions which historically have resulted in elevated breathing zone concentrations of airborne radioactivity, such the initial building gross washdown, equipment dismantlement, and asbestos abatement, will usually prescribe a PAPR for respiratory protection unless there is a competing respiratory hazard, such as a potential for chemical exposure. Entrants into uranium contaminated areas where the RWP does not prescribe respiratory protection will have personal air sampler coverage provided at the project RCTs' discretion. Personnel performing work such as transite removal will usually have representative coverage while personnel on tours and inspections or work such as vehicle refueling usually will not.

The potential for the escape of airborne thorium contamination from the thorium work areas is limited but real. Several measures will be taken to confirm that no individual in a uranium contaminated work area that is adjacent o a thorium area is routinely exposed to an airborne thorium concentration >2% of the applicable thorium DAC. Outdoor areas where respirator use is required will be posted adjacent to thorium work areas. When work ommences in a thorium work area GA samples will be submitted for alpha spectroscopy to determine the ffective DAC. Radiological engineering will compare and track gross alpha count rates from GA samplers placed djacent to the thorium work areas with the thorium work area effective DAC. Additionally, filters from these amplers will be submitted periodically for alpha spectroscopy. Based upon these analyses, the configuration of ne outdoor respirator areas will adjusted to the smallest feasible footprint.

Vorkers in areas adjacent to thorium areas will wear respiratory protection. While some minor intakes of thorium ıay occur, it is not anticipated that any dose will exceed 100 mrem. Estimates of the potential for intakes and ıternal dose for these workers will be derived from the GA sampling conducted in these areas and the protection .ctor of the respirators worn in these areas. Under these controls, a worker wearing a full face air purifying ıspirator in an area adjacent to a thorium area would have to be exposed to an ambient thorium airborne

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concentration of 1 DAC in order to attain a concentration of 2% of the DAC inside the respirator facepiece. This scenario would only happen under an extreme upset situation and would not be recurring.

Attachments for Section B: (3 pages) Maps for Task 1, Plant 2, 3 and 8

SECTION C:
Task 1A, Building 53A and Associated Pipe Bridges

Task 1A of the Demolition Closure Contract comprises the decontamination and demolition of Building 53A, the Health and Safety Building, and its associated pipe bridges. Building 53A has limited areas of fixed radiological contamination, primarily on roof appurtenances on the old eastern section of the building. Currently inaccessible areas where radiological contamination is suspected to exist include the laboratory hood ductwork and sink drains in the bioassay and IH areas. Interior demolition in the old section may expose some radiological contamination. The demolition subcontractor plans to post the building as a uranium contamination area, which will improve the efficiency of roll-off box delivery and pick up, and will preclude the need for reporting if contamination is discovered during demolition.

Air sampling during the decontamination and demolition of Building 53A will be limited. Personal air sampling coverage will be provided to workers during the interior demolition of the bioassay and IH areas if respiratory protection is not prescribed for this work. GA sampling will be conducted in these areas. Boundary air sampling will be conducted at the eastern end of the construction area which is normally the downwind side, and at the western end of the construction area which is an area where site personnel congregate during lunch and at the end of the shift.

SECTION D:
Task 4, Buildings 64 & 65

Task 4 of the Demolition Closure Contract comprises the decontamination and demolition of Buildings 64 and 65. The isotopes of concern in Building 65 are ^{232}Th and ^{230}Th, while the radiological contaminant of concern in Building 64 is uranium. A mitigating factor in the potential for the generation of airborne radioactivity during Task 4 is the fact that Task 4 does not entail equipment dismantlement. Additionally, since the construction of both Buildings 64 and 65 is metal siding over a structural steel frame, the potential for the generation of airborne radioactivity during exterior transite removal is nonexistent. After interior transite is removed from the office in the southeast corner of Building 64, both buildings will be washed down, locked down, and dismantled by a track-mounted shear after the facility release cleaning survey is completed.

Boundary air sampling for Task 4 will be conducted with one sampler on the west side of Building 65, and one sampler on the east side of Building 64. Due to the small footprint of the 64/65 complex and the mitigators mentioned above, two boundary samplers will be adequate. The west side boundary air sampler results will be reported in terms of the BL65 effective DAC. 100% personal air sampling coverage will be provided to personnel in the thorium airborne radioactivity area. Representative personal air sampling coverage will be provided to personnel who are not wearing respiratory protection in uranium contamination areas.

SECTION E:

Task 3, The Pilot Plant

Task 3 of the Demolition Closure Contract comprises the decontamination and demolition of the Pilot Plant. Pilot Plant components where uranium is the radiological contaminant of concern include Buildings 37, 54A, 54B, 54C, and 13B. ^{230}Th and ^{232}Th are the isotopes of concern in Buildings 13A, 13C, Component 13D, and the XS11 and XS12 dust collectors. Additionally, transuranics, primarily ^{238}Pu, have been identified in the acid bricks and steel coatings in Building 13A and in Tank T2 in Component 13D. Controls for the transuranics are bracketed by the controls for the two isotopes of thorium which are present.

In addition to its radiological challenges, the Pilot Plant presents a significant chemical hazard, particularly in Building 54A. Hydrogen fluoride (HF) residues have been identified in the HF scrubber system. Residual quantities of uranium hexafluoride, which evolves HF when disturbed, may be encountered in the UF_6 to UF_4 system. The presence of a potentially corrosive atmosphere and/or the copious quantities of water which may be used to mitigate the hazard will prevent some job coverage or general area air sampling during some phases of equipment and system dismantlement in Building 54A. This will not, however, lead to a gap in assessing the effectiveness of either engineering controls or PPE. Due to the nature of the chemical hazard it is anticipated that all potentially exposed workers will be in Level B protective clothing, comprised of acid suits and supplied-air respirators. The effectiveness of this maximum level of protection will be confirmed by the FEMP bioassay program.

Boundary sampling for Task 3 will be similar to that of Task 1, in that boundary samplers will be placed around the project, with special attention paid to areas posted for thorium. Samplers will be placed at the north side, east side, and south side of the Pilot Plant compound. The filters from these samplers will be counted and reported as a percentage of the uranium DAC. Additionally, 2 samplers will be placed on the west side and southwest corner of the project. Filters from these samplers will be counted and reported as a percentage of the ^{232}Th DAC. No thorium exclusion zone will be set up on the west side or southwest corner of the project since these areas comprise Component 13D, which is already posted for thorium. A posted thorium exclusion zone with a boundary air sampler will be set up immediately north of Building 13A. This is the only outdoor area adjacent to Building 13A which is not already posted for thorium. A somewhat less restrictive DAC than that of ^{232}Th, based upon the isotopic mixture identified by the RI/FS data from Building 13A, may be adopted with the concurrence of the Radiological Control Manager and the Internal Dosimetrist. If so, this new effective DAC and the rationale for its adoption will be detailed in an attachment to this air sample plan.

General area air samplers will be placed in the doffing area of Building 13B, which is the temporary Control Point for Task 3. When T-207, the 5-plex control point trailer currently being installed, is placed in service GA samplers will be placed in the men's, women's, and thorium doffing areas.

Personal air samplers will be issued to 100% of entrants into thorium areas. Typically, personal air samplers will not be issued to personnel who will be wearing respiratory protection in uranium airborne radioactivity areas. Representative personal air sampler coverage will be provided to personnel who are not wearing respiratory protection in uranium areas.

Periodic Working Level measurements will be performed in the Pilot Plant buildings. Initially, weekly measurements will be performed in Building 13A with monthly measurements in Buildings 54A and 37. The

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sampling frequency may be diminished as conditions change. For example, it is anticipated that placing Building 13A under negative pressure with 7 air changes per hour will reduce the concentration of airborne thoron daughters in the building.

SECTION F:
Task 6, The Laboratory Complex

Task 6 of the Demolition Closure Contract comprises the decontamination and demolition of the Laboratory, Building 15A; the Laboratory Garage, Building 15C; and associated pipe bridges. Building 15C is a small annex of Building 15A and will be treated as part of 15A for purposes of posting, access control, contamination control, and monitoring for airborne radioactivity.

Uranium is the primary radiological contaminant of concern for much of the Laboratory Complex. ^{232}Th is the isotope of concern in room S-43 with its associated ductwork and drains while ^{230}Th is the isotope of concern in rooms C-15 and C-40 with their associated ductwork and drains. These three rooms will be maintained under HEPA-filtered negative pressure during decontamination and equipment dismantlement. During these evolutions personal air samplers will be issued to 100% of the entrants into these rooms and boundary samplers will be placed at the entrances. Filters from these samplers will be counted and reported as percentages of the appropriate thorium DAC. After the completion of decontamination and equipment dismantlement the rooms will be locked down and surveyed for release from thorium surface contamination and airborne radioactivity controls in order to facilitate structural demolition. Debris from these rooms will be treated as thorium-containing.

Boundary sampling for Task 6 will be similar to that of previous tasks. Boundary samplers will be placed at the northern, eastern, and southern boundaries of the project area. No sampler is planned for placement at the western boundary since the western boundary of Task 6 is also the eastern boundary of Task 3, the Pilot Plant, and a Task 3 boundary air sampler is already in place at this location. This sampler will continue to run after the start of Task 6 since roll-off box trucks will routinely use the road between The Pilot Plant and the Lab for the duration of both tasks. Filters from the boundary samplers will be counted and reported as percentages of the uranium DAC.

General area air samplers will be placed in various locations in the Laboratory. Typically, personal air samplers will not be issued to personnel who will be wearing respiratory protection in uranium airborne radioactivity areas. Representative personal air sampler coverage will be provided to personal who are not wearing respiratory protection in uranium areas.

T-207, which is already in use as the Task 3 Control Point, will be used for Task 6, as well. No changes in the sampling currently underway in T-207 are planned.

SECTION G:
Plant 1 Complex – Phase II

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Task 8 of the Demolition Closure Project comprises the decontamination and demolition of the Plant 1 Storage Building, Building 1B; the Pump Station and Power Center, Building 20A; the Chemical Warehouse, Building 30A; the CP Storage Warehouse, Building 56A; the general In-Process Warehouse, Building 71; Tension Support Structures TS-4, TS-5, TS-6; and associated pipe bridges.

Uranium is the radiological contaminant of concern for the Plant 1 Complex, Phase II. Levels of removable contamination throughout the complex are expected to be relatively low. General area air samplers may be placed for some aspects of interior demolition in Buildings 20A, 30A, 56A, and 71. Typically, personal air samplers will not be issued to personnel who will be wearing respiratory protection in airborne radioactivity areas. Representative personal air sampler coverage will be provided to personal who are not wearing respiratory protection in contamination areas.

Boundary sampling for Task 8 will be similar to that of previous tasks. Boundary samplers will be placed at the northern, eastern, southern, and western boundaries of the project area. Low volume air samplers will also be placed at the men's and women's doffing areas in T-93, which will serve as the Task 8 Control Point.

SECTION H:
Task 2, The Liquid Storage Complex

Task 2 of the Demolition Closure Project comprises the decontamination and demolition of the Maintenance Building, Building 45A; the Plant 8 Warehouse, Building 80; the HP Fire Protection Pump House, Building 26A; the Elevated Water Storage Tank, Building 26B; and associated pipe bridges.

Uranium is the radiological contaminant of concern for much of the Liquid Storage Complex. The Building 55 isotopic mix, B-65, is the isotope of concern in the east end of Building 80. Since work with B-65 wastes n Building 80 has been underway only for approximately one year it is likely that the building can successfully ›e decontaminated and revert to uranium controls. General area air samplers will be placed in Buildings 45A ınd 80 during various phases of interior demolition. The results from the general area sampler at the east end ›f Building 80 will be reported as a percent of the B-65 DAC until the decontamination is verified as :omplete. Low contamination levels in Building 26A do not warrant the placement of a general area air ampler there.

›oundary sampling for Task 2 will be conducted at the north and west boundaries of the project, west of ;uilding 45A and in the general vicinity of 2nd and A Streets. Task 1 and Task 3 boundary samplers already rovide coverage for the east and south boundaries respectively of Task 2. When project management obtains ıd installs the Control Point trailer for Task 2 outside Building 45, low volume samplers will be placed in the offing areas. Project management currently anticipates that the Elevated Water Storage Tank will be emolished by controlled implosion, although the final decision has not been made yet. Should the decision be ade to proceed with the implosion the placement of boundary samplers for this activity will be evaluated at at time. A minimum of four samplers will be used for this activity with the exact placement determined by e location of the charges and the direction of the structure's fall.

ersonal air samplers will be issued to 100% of the entrants into the east end of Building 80 while it is being ›ntrolled to the B-65 isotopic mix. Typically, personal air samplers will not be issued to personnel who will be

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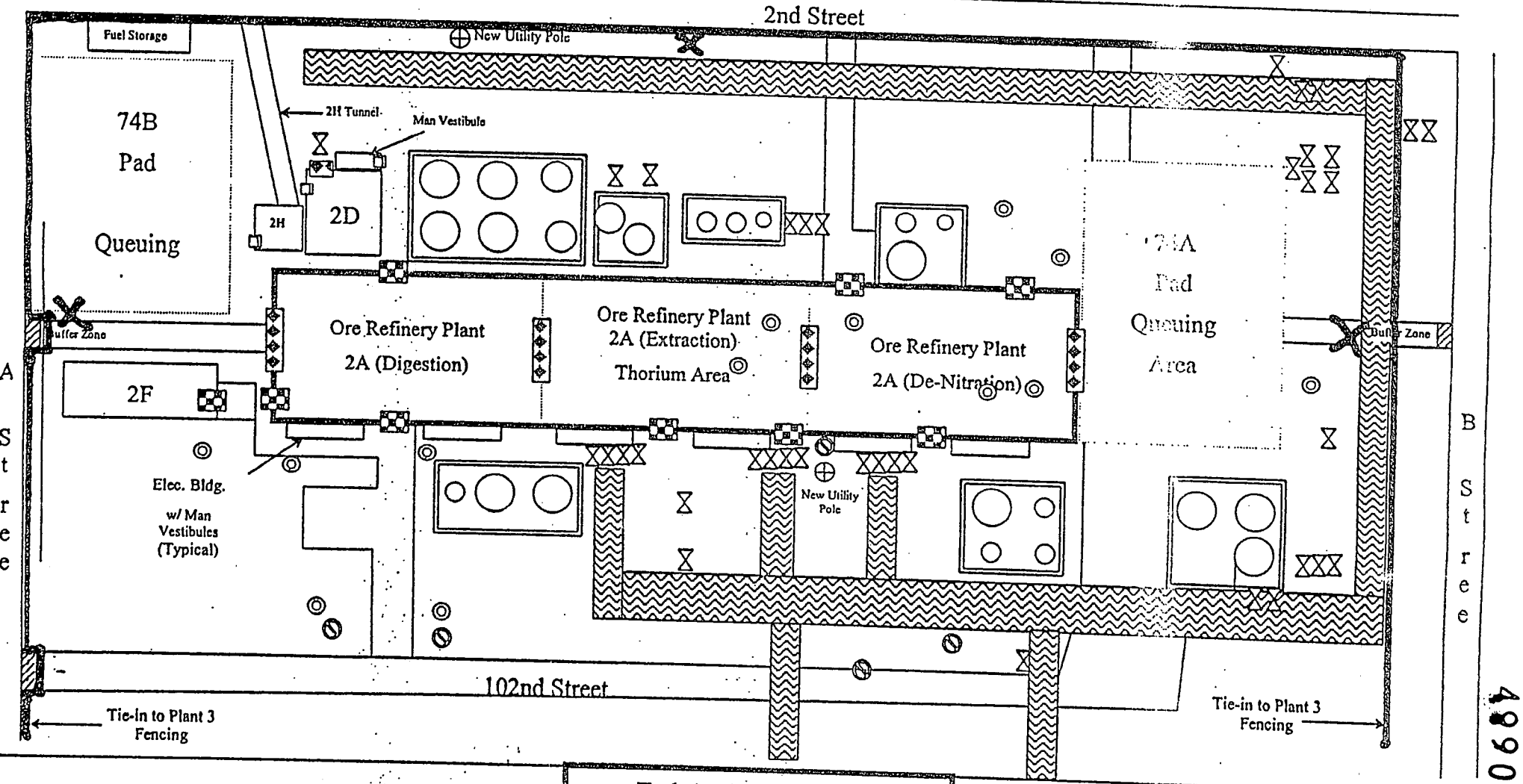
wearing respiratory protection in uranium airborne radioactivity areas. Representative personal air sampler coverage will be provided to personnel who are not wearing respiratory protection in uranium contamination areas.

Plan Map

Fluor Fernald Contract # 648

Task 1, Plant 2 Complex

Figure 1



Task 1, Plant 3 Complex

Pipe Bridges

Gated Access Points

Bermed Areas

Monitoring well

Water hydrant

PIV Valve

Man Vestibule (Approx. 4'x8'x10')

Project Specific Health and Safety Plan
1789-648-P8-0014
2
October 31, 2001

Personnel Entry to Plant 2 will be via T-95 in the Plant 3 Complex

Project Radiological Boundary:

Exterior Air Sampler Location: X

4890

Figure 2

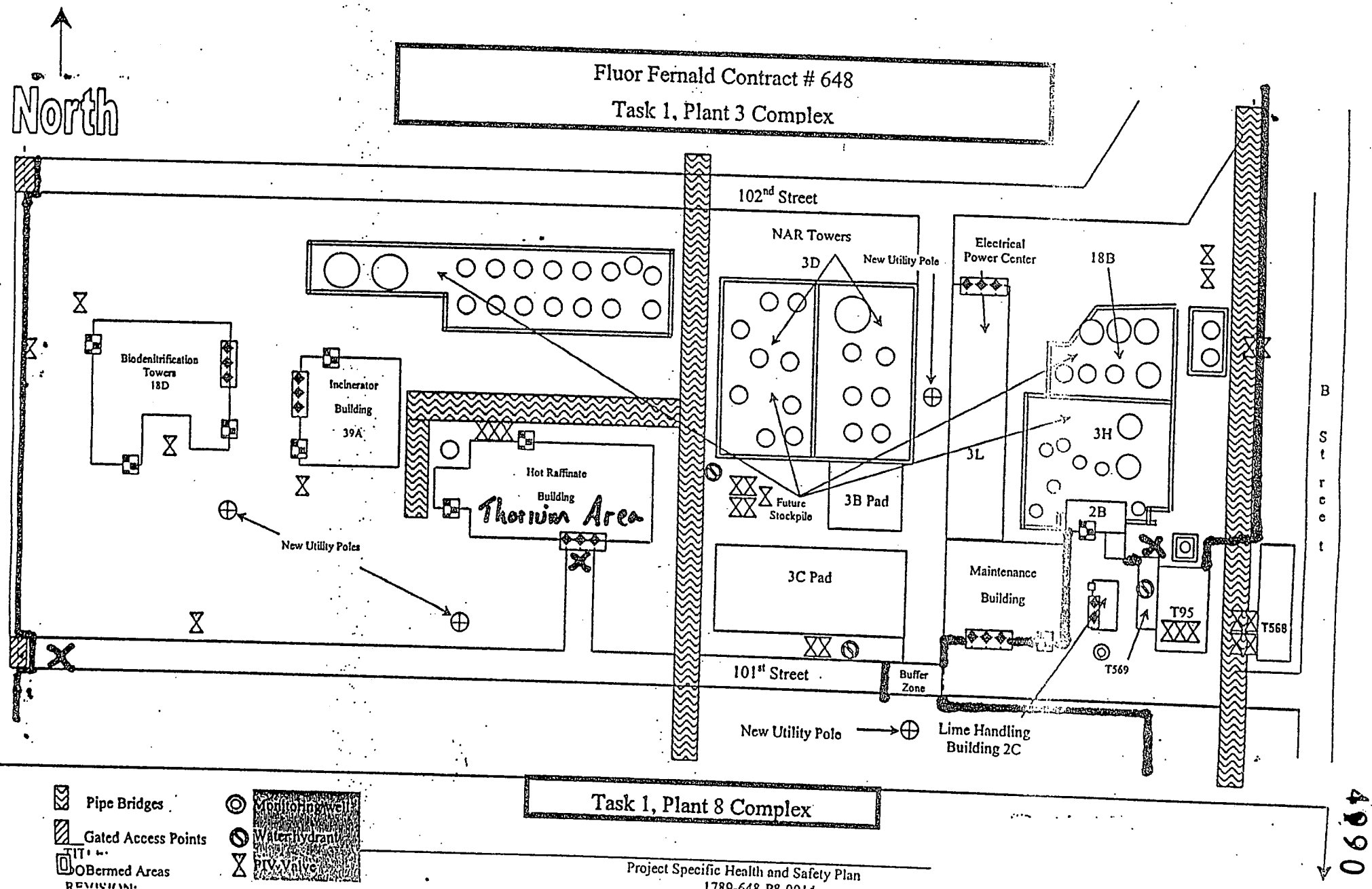


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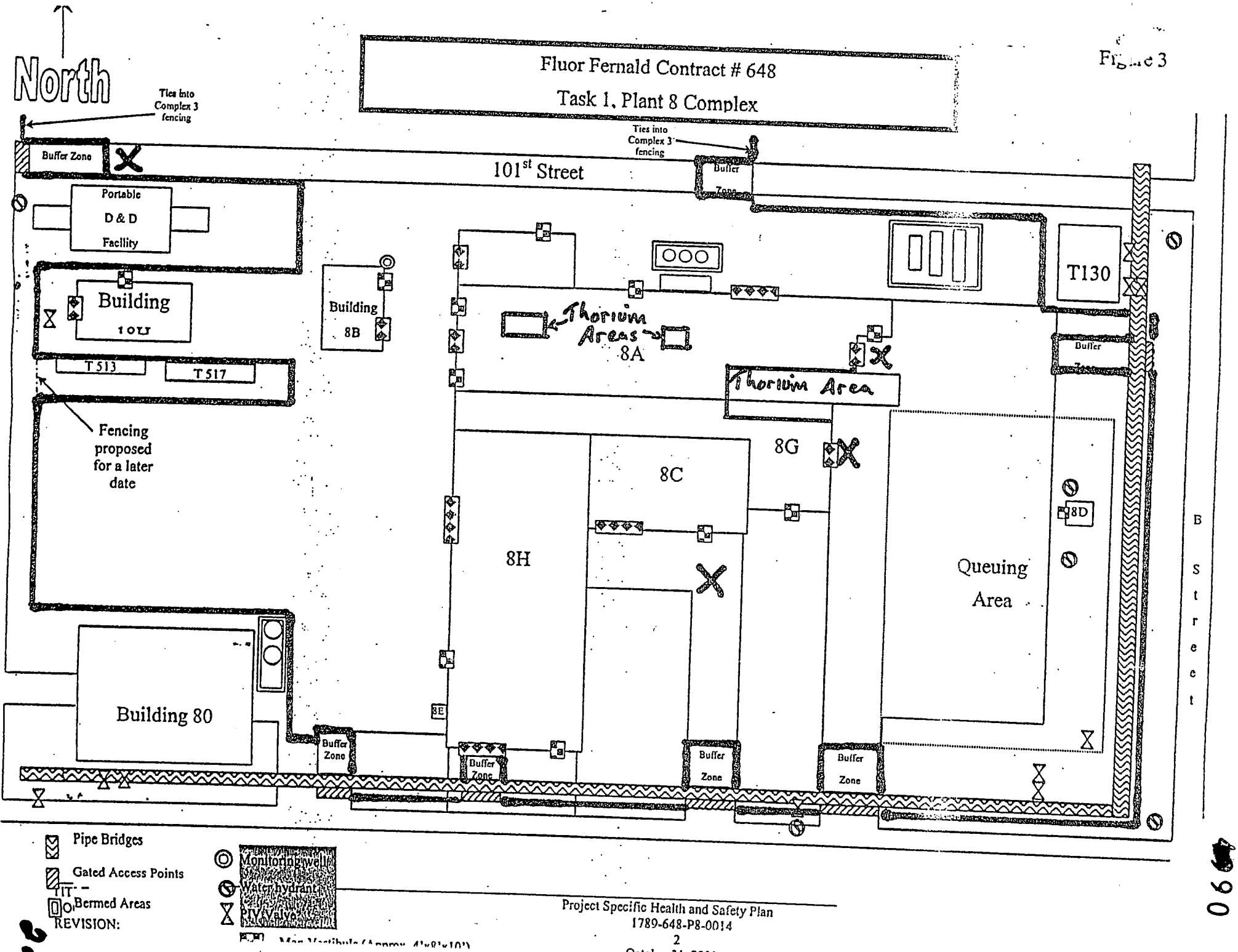
Figure 3

Fluor Fernald Contract # 648

Task 1, Plant 8 Complex



REVISION:

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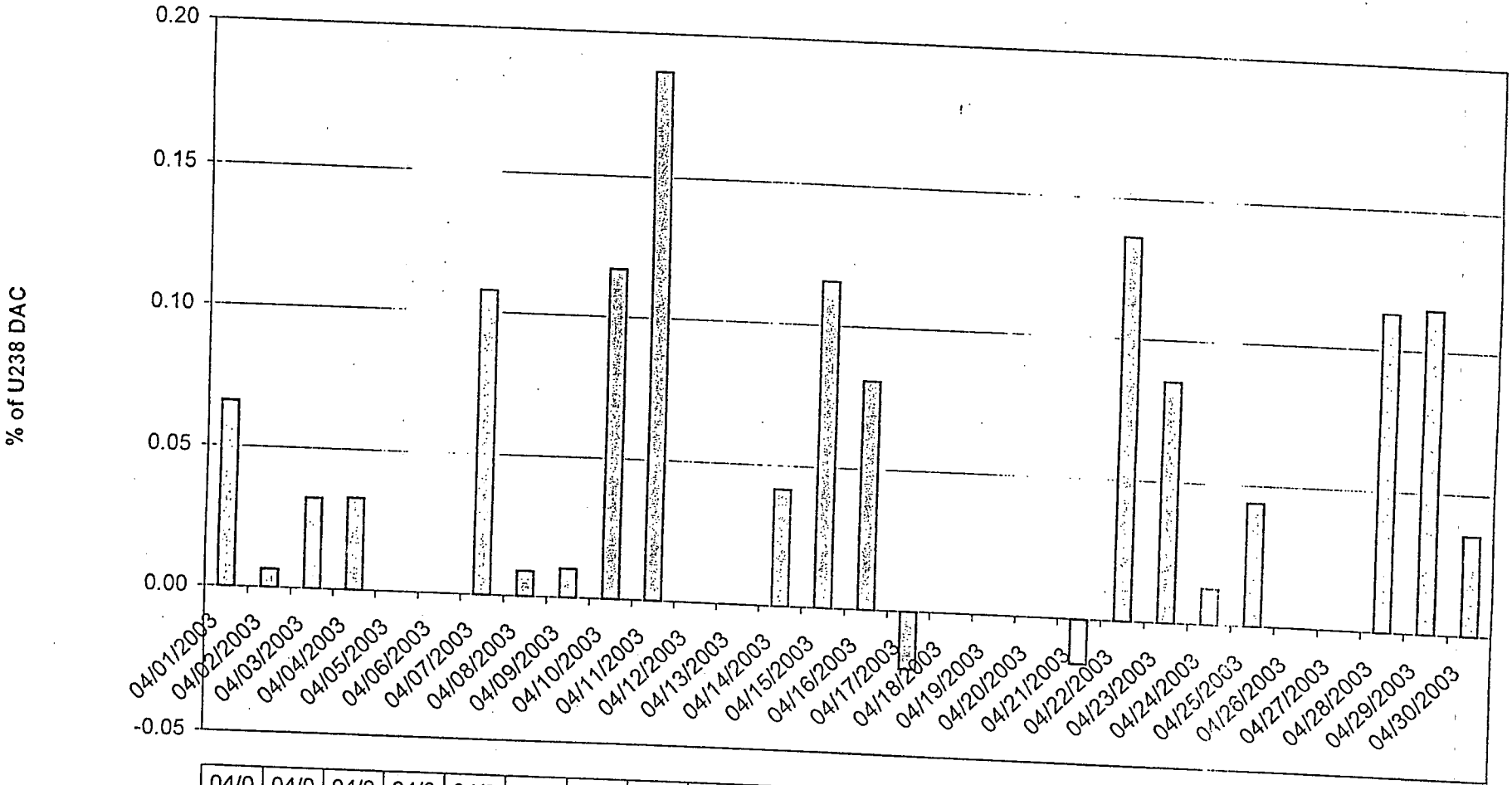
090

DCC TASK 1 EAST BOUNDARY AIR SAMPLES, APRIL 2003



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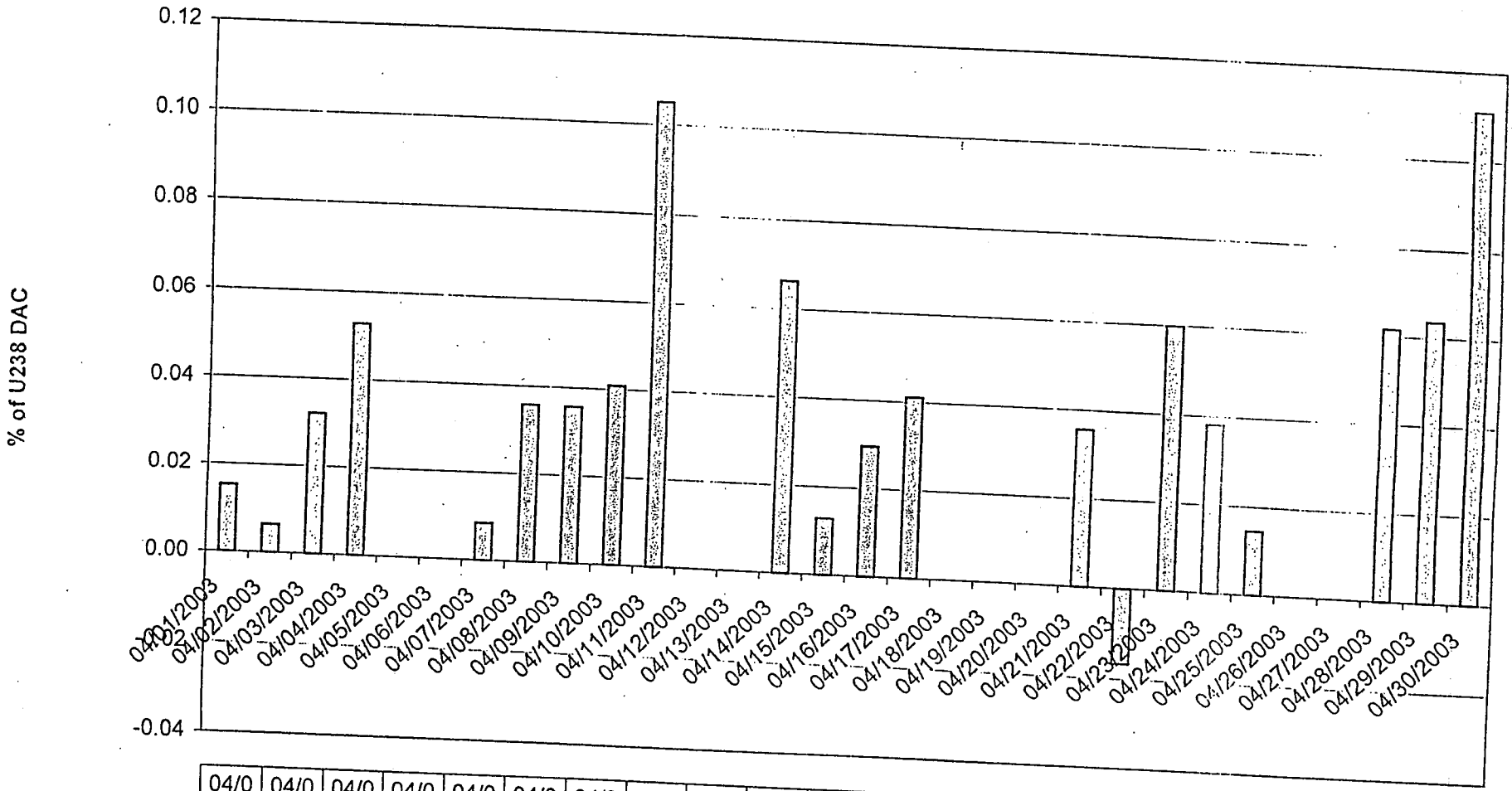
Series1	0.07	0.01	0.03	0.03	0.11	0.01	0.01	0.12	0.19	0.04	0.12	0.08	-0.02	-0.02	0.14	0.09	0.01	0.04	0.11	0.11	0.04

DATE

DCC TASK 1 SOUTH BOUNDARY AIR SAMPLES, APRIL 2003



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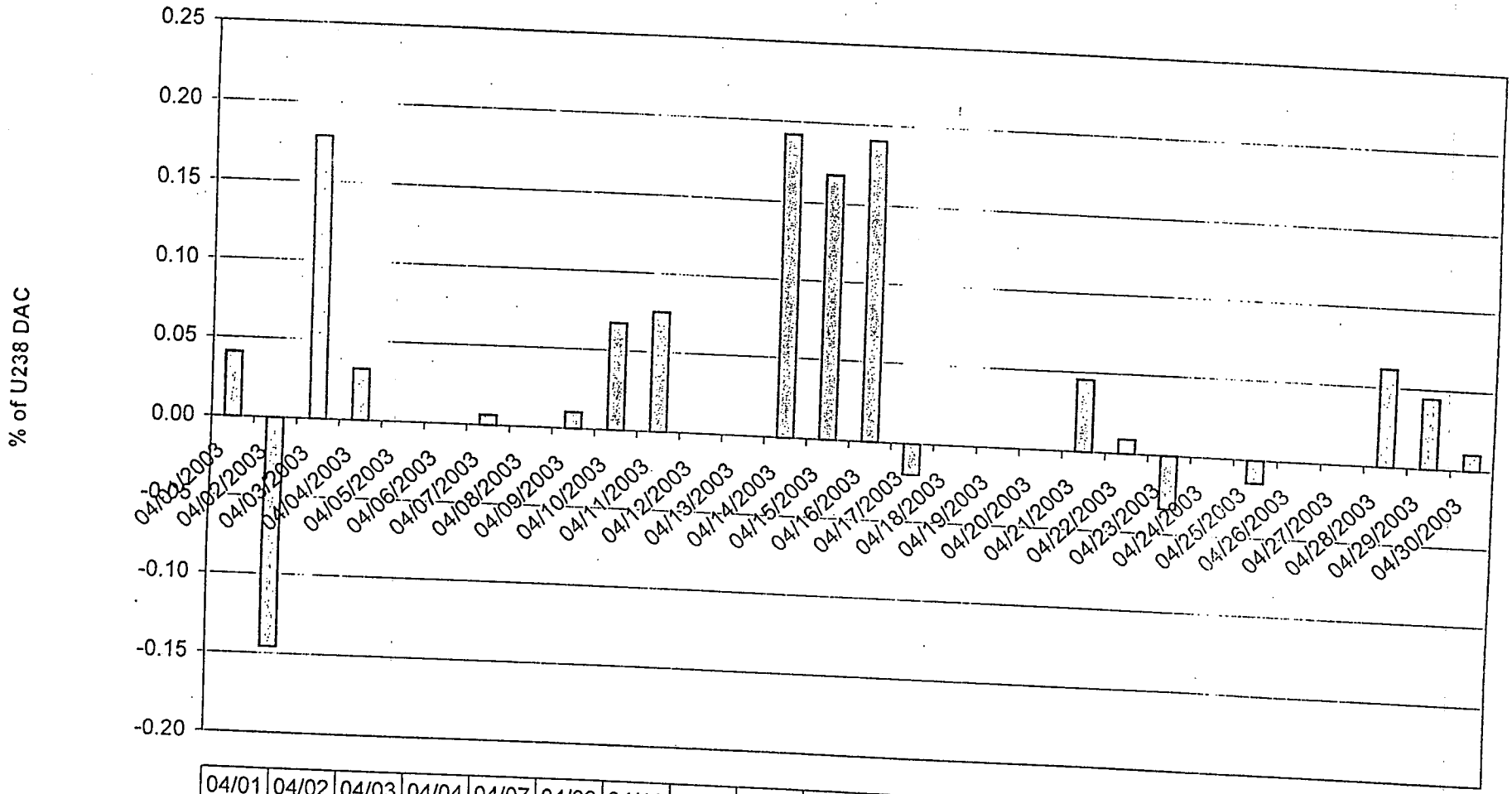
DATE

DCC TASK 1 NORTH BOUNDARY AIR SAMPLES, APRIL 2003



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DATE

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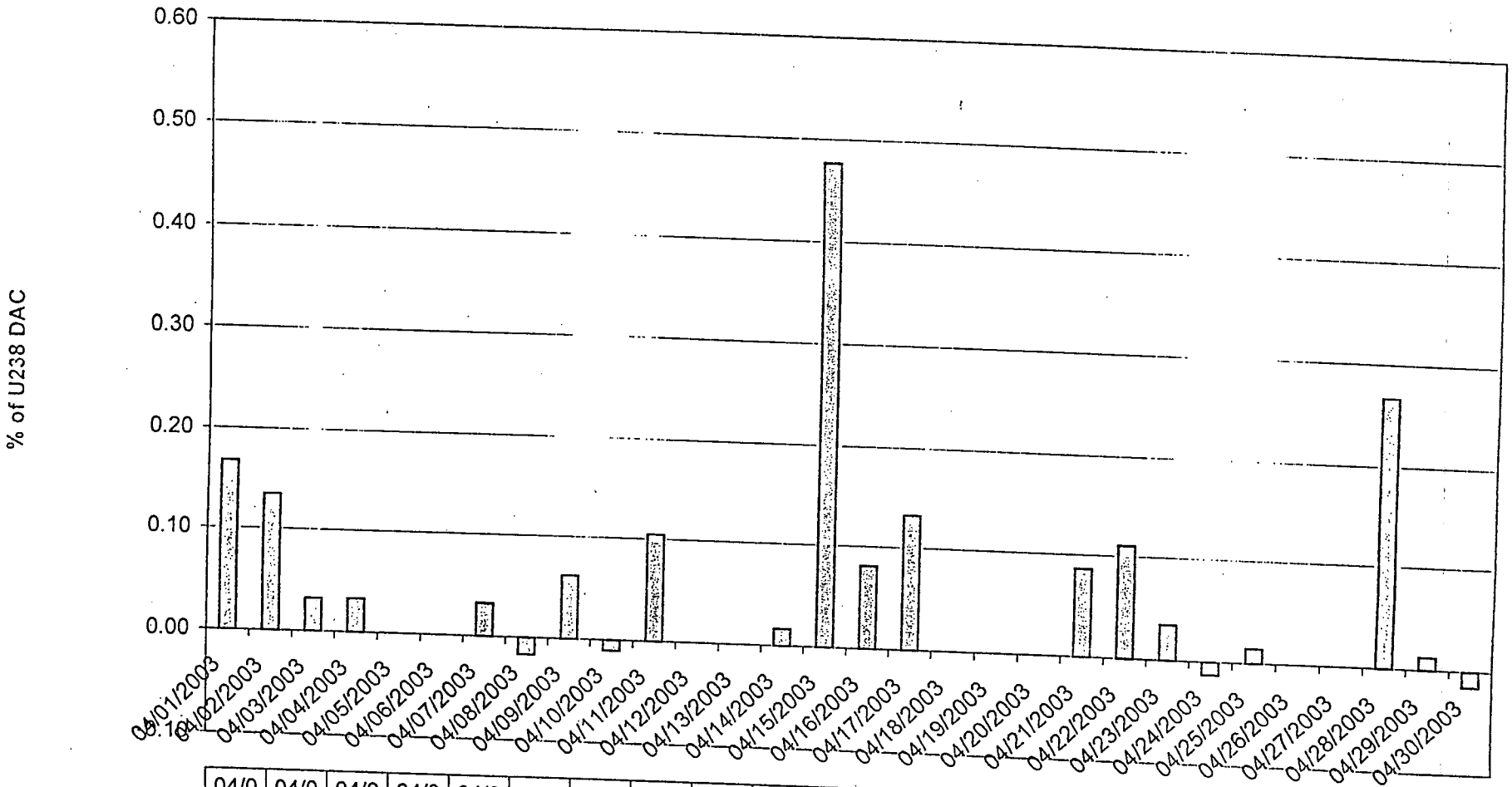
DCC TASK 1 NE BOUNDARY AIR SAMPLES, APRIL 2003



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DATE

4990

RESPONSES TO THE JULY 28, 2003 USEPA LETTER AND COMMENTS ON THE REVISED APPROACH TO DECONTAMINATION AND DISMANTLEMENT SEQUENCE FOR THE MULTI-COMPLEX DECONTAMINATION AND DISMANTLEMENT PROJECT

FERNALD CLOSURE PROJECT
FERNALD, OHIO

AUGUST

US DEPARTMENT OF ENERGY

27

RESPONSES TO U.S. EPA COMMENTS ON THE REVISED APPROACH TO DECONTAMINATION AND DISMANTLEMENT SEQUENCE FOR THE MULTI-COMPLEX DECONTAMINATION AND DISMANTLEMENT PROJECT

Commenting Organization: U.S. EPA Commentor: Saric (Jablonowski)
Section#: Not Applicable (NA) Pg.#: NA Line#: NA
Original Specific Comment# Bullet 1

Comment: U.S EPA shares Ohio EPA's specific concerns with the re-sequencing proposal, generally: Concerns about the commingling of above-WAC and WAC-compliant wastes during D&D, and whether above-WAC waste can be properly segregated for off-site disposal with certainty.

Response: A similar concern was raised by Ohio EPA in their July 17, 2003 letter as Comment No. 1. As explained in that response, a targeted approach to remove process-related equipment and piping will be employed to the extent practical once additional access is gained through the removal of the transite. This concept may not have been adequately conveyed in the text of DOE's July 11, 2003 letter. Therefore, we wish to restate that we intend to remove such items in a targeted manner as access permits. There will, however, be a point in the process where remaining items will need to be removed concurrently with structural items. We conclude that the targeted approach to segregating items to the extent practical, coupled with diligent WAO scrutiny of all items (both at the generating end and the placement end), will sufficiently alleviate concerns regarding the certainty by which items can be segregated and properly disposed.

Commenting Organization: U.S. EPA Commentor: Saric (Jablonowski)
Section#: NA Pg.#: NA Line#: NA
Original Specific Comment# Bullet 2

Comment: Concerns about the potential for process equipment to release contaminants to the environment and/or cross-contaminate otherwise WAC-compliant materials if somehow compromised or damaged during D&D operations.

Response: Regarding the potential for environmental releases, we conclude that the release controls that will still be necessary to be in place under the revised approach adequately address the increased potential that may be perceived. All buildings that are slated for D&D must satisfy the same release criteria regarding the potential for radiological releases to the environment. The revised approach does not create exceptions to these criteria. In addition, air monitoring intensity, frequency, and parameters for both the breathing zone and project boundary monitoring will continue to follow the historically conservative approaches executed to date, following the Project Specific Air Sampling Plan SD-1064. Regarding the potential for increased cross-contamination of otherwise WAC-compliant materials through the revised approach, all debris must be visually free of process residue before it is deemed WAC compliant. Items that fail the visual determination may be decontaminated by pressure washing and then re-evaluated to assess whether they have been rendered eligible for OSDF disposal. Contact with process residues does not in itself render the items ineligible for OSDF disposal provided these residues are adequately removed to pass the visual inspection criterion. WAO is aware that additional cross contamination is a possibility under the revised approach, but feels confident that the diligence of the scrutiny both before and during the loadout process will negate any increased potential for process related materials to be inappropriately dispositioned to the OSDF.

Commenting Organization: U.S. EPA Commentor: Saric (Jablonowski)
Section#: NA Pg.#: NA Line#: NA
Original Specific Comment# Bullet 3

Comment: Uncertainties about the amount of process-related equipment remaining in facilities and the absence of a clear plan for identifying, marking and strategically removing such equipment prior to or during D&D.

Response: A similar concern was raised by Ohio EPA as Comment No.3. In our response to that comment, we provided a listing of the process related equipment anticipated to be left in place for removal

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under the proposed method, for Buildings 2A, Plant 8, and the Hot Raffinate Building (Building 3E). Regarding the approach for targeted removal of items once improved access is gained through transite removal, both the WAO lead and the D&D project manager will closely monitor the situation and make judgments as to when the point is reached where targeted removal is impractical concurrent removal is necessary. Marking of the items (e.g. spray painting) was also evaluated and concluded to be less than 100 percent effective and therefore not as reliable as an initial conclusion might indicate, and could inadvertently lull the inspection personnel to focus on finding the painted items, rather than inspecting all required items. Further, it could also be confusing at the OSDF placement end since the paint would still be present on those painted (initially ineligible) items that then went through subsequent decontamination to make them eligible for OSDF disposal.

Commenting Organization: U.S. EPA Commentor: Saric (Jablonowski)
Section#: NA Pg.#: NA Line#: NA
Original Specific Comment# Bullet 4

Comment: Concerns about whether DOE is relying too heavily on visual observation to ensure WAC-compliance during D&D or while sifting through a mixed debris pile, relatively challenging circumstances.

Response: We conclude that our goal of targeted removal to the extent practical after additional access avenues are gained due to transite siding removal, helps alleviate the concerns raised in this comment. It is our goal to minimize the commingling of materials to the extent we are able, recognizing there will be instances where concurrent removal will occur. As in the past, WAO will continue to perform their visual inspections both prior to and during the loadout process to verify absence of process residues, prohibited items, and that all items meet the OSDF size criteria. Suspect piping and equipment that was taken out prior to exterior panel removal is also evaluated by WAO to determine its proper disposition route.

Commenting Organization: U.S. EPA Commentor: Saric (Jablonowski)
Section#: NA Pg.#: NA Line#: NA
Original Specific Comment# Bullet 5

Comment: Uncertainties regarding whether WAO staff can adequately and safely perform their duties under this re-sequencing proposal, and whether worker safety, radiological control, and waste acceptance requirements can actually be ensured.

Response: Although challenging, the managers involved in the planning of this effort (and who will be involved throughout the field execution where key decisions may be necessary) conclude that it can be done safely, and in full compliance will radiological control and waste acceptance requirements. As stated in our response to Ohio EPA Comment No. 4, the experience of our WAO field personnel is critical to the success of the revised approach from the waste acceptance perspective, and WAO has been assured through senior management commitment that the resource demands created by the revised approach will be met. In all cases where supplemental staff is needed, they will be paired with key senior WAO staff members to effectively meet the increased staff demands the revised approach may warrant.

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