

Response to Comments

**Radiation Survey and
Remedial Assessment
Northwest Property Area**

**Fansteel, Inc.
Muskogee, Oklahoma**

Kirkpatrick & Lockhart
Pittsburgh, Pennsylvania

Project No. 111
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**Earth Sciences
Consultants, Inc.**

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Remedial Assessment
Northwest Property Area**

**Fansteel, Inc.
Muskogee, Oklahoma**

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**Response to Comments
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Northwest Property Area
Fansteel, Inc.
Muskogee, Oklahoma**

Fansteel, Inc. (Fansteel) understands that the Nuclear Regulatory Commission (NRC) has divided the Northwest Property Area into two areas: the "westernmost area" and the "easternmost area," in order to facilitate agency comments. Fansteel will address the NRC's comments using this classification.

I. LAND AREAS

A. General Concerns

Fansteel recognizes that the Branch Technical Paper (BTP) is the applicable criterion for the release of areas of land. Radiochemical analysis of off-site soils and of soils located on the Northwest Property (land) Area was performed to demonstrate that the soils do not exceed the BTP criteria.

Fansteel concurs that the area of the site that the NRC refers to as the "westernmost portion" of the Northwest Property Area is an unaffected area. Additionally, Fansteel believes that the area of the site that the NRC refers to as the "easternmost portion" of the Northwest Property Area is also an unaffected area based upon the results of the radiological survey (see Response III.B.7). Fansteel also notes that the "pond" shown on the map that was submitted does not exist. This "pond" is simply a low-lying area which occasionally collects storm water at times of heavy rainfall. This "pond" was never used for any activities relating to Fansteel operations.

B. Comments: Westernmost Section

1. Fansteel believes that the western section of the Northwest Property Area, as designated by the NRC, is in fact an unaffected area as defined in NUREG/CR-5849. No manufacturing, processing, or support activities have taken place in this area of the Fansteel property.

2. Fansteel did collect and analyze 30 off-site randomly selected soil samples in accordance with the approved work plan (Page 4-13, revised July 1992) for background characterization purposes. These soil samples were analyzed for uranium and thorium concentrations. The results of these analyses are summarized in the enclosed Table 1. The locations of the 30 off-site background soil samples are identified on Figure C-1 of the Northwest Property Area report. Additionally, 20 soil samples were collected from the Northwest Property Area and analyzed for gross alpha and gross beta activity in accordance with the approved work plan (Page 4-14, revised July 1992). The gross alpha and gross beta results for these 20 on-site samples were consistent with the activity of the off-site background samples. Therefore, in accordance with the work plan (Page 3-16 and Appendix A, Page A-8), no radionuclide analyses were performed on these samples. The location of the 20 on-site soil samples are presented in Figure C-3 of the report and the analytical results are summarized in Table 2, enclosed with this letter.

Sample locations for the 20 on-site samples were identified by dividing the number of grid intersections in the area by 20 and using every nth intersection from an arbitrarily chosen starting point as a sampling point. This is not a classically random selection method, as each intersection does not enjoy an equal chance of selection once the first sample location is determined. However, the method used does provide for a site-wide distribution of sampling locations. Given the number of possible sampling points, it was considered more desirable to provide site-wide coverage than a purely random distribution of sample locations.

3. Gamma survey measurements were deliberately obtained in an arbitrary unit, counts per minute. The purpose of this survey method was to look for potentially significant differences between the surface and 1-meter readings as a source of information on possible subsurface contamination. The method used allows resolution as statistically significant (using two standard deviations) differences as low as plus or minus 200 counts per minute, or approximately 0.2 microRad. This resolution is not obtainable using a microRad scale.

Given the low level of activity in this area and the sensitivity of the meter used (approximately 900 counts per minute per microRad per hour), use of a microRad-per-hour scale would mask slight differences that might alert Fansteel to the presence of potentially contaminated subsurface materials.

MicroRad-per-hour readings were obtained throughout this area in the course of routine work area health physics monitoring. Also, the readings obtained in counts per minute can be converted to readings in microRad per hour by dividing the observed counts per minute by 900. The western section of the Northwest Property Area exhibited a gamma radiation field strength of approximately 8 to 10 microRads per hour. This value is somewhat elevated due to the presence of a large volume of radioactive ore processing residues stored on other areas of the Fansteel site.

Measurements of gamma radiation in terms of counts per minute were made throughout the survey of both structure surfaces and land areas because of the ubiquitous presence of gamma shine from the several large accumulations of radioactive ore processing residues which are not located in the Northwest Property Area. These sources cause substantial variations in the "local background" over relatively short distances (within a building over a course of a few hundred feet or less outdoors) depending upon distance from the sources, shielding by buildings, etc. Therefore, gamma survey activities were limited in purpose to locating any point sources of radioactivity or localized concentrations of ore or ore processing residue at or near the survey location. Such localized concentrations might be able to produce a discernable difference between a surface reading and a reading 1 meter normal to the surface even if the meaning of the numerical value of the reading, whether in terms of microRads per hour or counts per minute, was rendered questionable by the presence of substantial amounts of gamma shine from the ore processing residues.

Counts per minute of gamma radiation in the survey activities can be converted to microRads per hour by dividing the counts per minute by 900. However, Fansteel wishes to reiterate its reservations regarding interpretation of any particular gamma field strength reading as indicating the local presence of radioactive material.

4. The "pond" has been addressed above. There is no pond in the Northwest Property Area.
5. See Response No. 4 above.
6. See enclosed Table 1.
7. All gamma survey measurements collected at the 30 off-site background locations are presented in Table 1 enclosed with this letter. Please note that the background measurements were obtained in counts per minute for the reasons expressed in Response I.B.3 above.
8. Well sampling data presented in the Northwest Property Area report for MW-151D appear to be suspect due to large variations in analytical results. As a result, an additional sample has been collected from this well and submitted to Accu-Labs Research, Inc. for analysis. The results of this analysis are presented in Table 3 enclosed with this report. The data presented in Table 3 do not indicate the presence of elevated radioactivity in this well.
9. The locations of all roads and paved areas are identified in Figure 1 enclosed.

C. Comments: Easternmost Section - Northwest Property Area

1. Fansteel believes that virtually all the entire eastern section of the Northwest Property Area should be considered an unaffected area. Those areas of the eastern section which are adjacent to Building 1 (Service Building) may be considered as affected areas, although ore storage activities in this area were incidental and limited in scope and duration. Some containerized ore was stored on the area of land immediately south of the warehouse portion of Building 1, and containerized ore and residues were transported into and out of the warehouse portion of Building 1 through the truck dock on the north side of the building.

2. As stated previously in the response to Comment I.B.2, results of soil samples collected in the Northwest Property (land) Area were consistent with the results of background off-site soil samples with respect to gross alpha and gross beta. As a result and in accordance with the work plan, no radionuclide analyses were performed on samples from this area.
3. No soil was excavated from the Northwest Property Area. The only excavation which has occurred on this area of the site was the removal of a laboratory sump as defined on Pages 5-3 and 5-4 of the report. As stated in the report, only the interior of the sump was identified as exhibiting radioactivity at levels significantly above background. The exterior of the sump and surrounding soils were surveyed when the sump was removed. No elevated levels of radioactivity were observed, therefore, no soils were excavated. Results of the postexcavation survey are summarized in the enclosed Table 4.
4. See response to Comment I.C.3. The area of the sump excavation was surveyed and determined not to exhibit levels of radioactivity that would require isotopic analysis per the work plan.
5. See response to Comment I.C.4.
6. All analytical data associated with monitoring wells installed in the Northwest Property Area (soils and groundwater) are summarized in Tables 2, 3, and 4 of the subject report. This response is based on our understanding of your comment.
7. See response to Comment I.B.3.
8. Open land surveys of the roadways and areas adjacent to them, which were performed in accordance with the approved work plan, did not indicate the presence of radioactivity levels that would require additional sampling or analysis (See Figure C-2 and Table D-2 of the Northwest Property Area report).
9. See Figure 1.

10. The well log for MW-151D has been revised and is enclosed with this letter as Attachment A.
11. Fansteel is aware of no drums of waste or waste materials being buried on or near the Northwest Property Area. The comment in the report regarding the potential for drums or wastes to be buried on site was made in response to an allegation made by a regulatory agency representative. Fansteel has investigated the areas of the site where waste materials have allegedly been buried (including the installation of test pits, soil borings, and geophysical and radiological surveys) and have discovered no evidence to substantiate these allegations.
12. The piping systems identified in Figure 12 of the work plan are associated with site utilities and storm water management. These piping systems have not been used for the conveyance of licensed materials.

II. STRUCTURES

A. General Concerns

Several general concerns were expressed in the comments submitted by the NRC with regard to the decommissioning survey performed on structures located in the Northwest Property Area. The first of these concerns related to an apparent misunderstanding with regard to release criteria. Fansteel in no way presumes that measurements performed using an alpha radiation detector are related specifically to removable radioactivity, while measurements performed using a beta-gamma detector are related specifically to fixed radioactivity. This misunderstanding apparently originates from the footnotes appended to the survey data tables. Fansteel's understanding of the release criteria is presented in the following paragraphs.

The release criteria for structures and equipment is based on surface contamination as described in NRC's Regulatory Guide 1.86. In order to present a conservative criterion for release of structures and equipment, Fansteel utilized the release limits contained in NRC Regulatory Guide 1.86 for natural thorium. These release limits are given as 1,000 disintegrations per minute per 100 square centimeters of fixed radioactivity (i.e.,

nonremovable by conventional wipe sampling techniques). The release limit for removable radioactivity is given as 200 disintegrations per minute per 100 square centimeters. The release limits for natural uranium contamination in NRC Regulatory Guide 1.86 are 5,000 disintegrations per minute per 100 square centimeters of fixed radioactivity and 1,000 disintegrations per minute per 100 square centimeters of removable radioactivity.

Fansteel considers that the use of the thorium release limit is extremely conservative for the determination of contamination by licensed material used at the Fansteel site. The licensed material used at the Fansteel site consists of natural and artificial ores and tin smelting slags which were processed for recovery of tantalum and columbium, and the processing residues remaining after the recovery of these constituents. The ores, slags, and processing residues contain comparatively equal mass-based concentrations of uranium and thorium. The chemical processing used to extract tantalum and columbium from the ores and slags did not mobilize the uranium and thorium contained in the raw materials and, therefore, did not affect the mass-based concentrations of these elements.

Field radioactivity measurement devices cannot distinguish between radioactivity from thorium and radioactivity from uranium. Therefore, Fansteel adopted the release criteria for thorium, the most conservative criteria. Along these lines, the detected radioactivity on building and equipment surfaces was considered to be due exclusively to thorium decay, even though less than half of the detected radioactivity was expected to be associated with thorium. Radiochemical assays performed on the ore processing residues present on site indicated that the greater portion of the detected radioactivity is actually due to uranium decay.

Fansteel understands that portable radiation measuring instruments do not distinguish between fixed and removable radioactivity on surfaces. The distinction between fixed and removable radioactivity can only be made by performing wipe tests of the surfaces. The footnotes to the data tables should not be considered as implying that Fansteel considers measured alpha particle radioactivity as removable and beta-gamma radioactivity as fixed.

NRC also points out in its comments that the ratio of alpha to beta activity is approximately equal to one, i.e., alpha particle emissions from Th_{232} are approximately equal to

beta particle emissions from Th_{228} . Fansteel finds no disagreement with this statement. However, under the conditions present at the Fansteel site, Fansteel does disagree with the contention that beta-gamma measurements are more reliable indicators of the actual presence of contamination. Fansteel's position in this matter is not based on instrument operating characteristics but rather on the fact that there is a very large mass of radioactive materials present adjacent to the Northwest Property Area, and this imposes a substantial and variable background signal on beta-gamma detectors rendering data obtained from their use to be of questionable meaning for purposes of determining low levels of surface contamination.

It was for this reason, the fact that beta-gamma activity could not be readily measured in a manner that produces meaningful results at the Fansteel site, that Fansteel determined that measurements of alpha particle activity alone would be used to determine the presence of contamination on surfaces. Alpha radioactivity detectors are not substantially affected by the presence of the ore processing residues located on the Fansteel property. Beta-gamma measurements were only used as a secondary check on the alpha measurements. Areas exhibiting significant alpha contamination would also be expected to exhibit an elevated beta-gamma activity. However, because of the conditions previously described, Fansteel did not find it reasonable to utilize the numerical value of the beta-gamma measurement as its indicator of surface contamination.

Therefore, Fansteel's statement that the structures are not contaminated with radioactivity is based on the most reliable data that could be collected under the circumstances. Given the difficulty presented by the site conditions in utilizing and interpreting beta-gamma data and the fact that less than half of the radioactivity that might be present on any surface is actually due to thorium (the balance being due to uranium), the use of alpha radioactivity measurements alone as the criterion for determining the presence of radioactive contamination should be acceptable. Conversely, the presence of beta-gamma radioactivity on a surface in the absence of a comparable level of alpha particle activity should not be interpreted as evidence of contamination on the surface.

As a practical consideration for the interpretation of survey results, it must also be noted that the surfaces surveyed in the Northwest Property Area were almost entirely hard,

clean, and smooth. Thus, alpha particle emissions from contamination remaining on these building and equipment surfaces would be readily measurable by alpha particle detection equipment.

B. Comments: Buildings 5 & 6

1. Buildings 5 and 6 are unaffected areas as per NUREG/CR-5849. These structures were used for lawn maintenance and general storage. They were not used at any time for the storage or processing of licensed materials.
2. Multiple determinations of background were performed prior to beginning survey activities and were rechecked, at a minimum, on a daily basis during survey activities. The background values obtained satisfy the requirements of Equation 8.22 of NUREG/CR-5849.
3. Background for survey instruments was determined by obtaining a minimum of 10 background measurements at a specified location (southwest corner of the Research and Development Building). This is a building that was not used for licensed activities and is of similar construction to the other structures on the property (i.e., brick and metal construction). Average and standard deviation of the background value was then calculated. The value of the background was then remeasured each day, compared with the initial background average value, and recorded. If the daily background value was within the envelope established by the average of ten determinations plus or minus two standard deviations, the previously determined average value was utilized.

Average values of background were determined weekly by accumulation of at least ten additional background readings in the designated location. Background values were stable over the course of the survey activity.

4. Please see Response No. I.B.3 above.

5. Sampling for removable radioactivity was performed using methods consistent with NUREG/CR-5849 Section 6.4.4 guidance. The results of this sampling indicate that removable radioactivity is present at less than 2 disintegrations per minute per 100 square centimeters in both Buildings 5 and 6.
6. Areas in Buildings 5 and 6 where residual radioactivity exhibited the potential to be greater than 25 percent of the unrestricted use criteria (based on instrumental surveys) were investigated and, where necessary, additional surveys were performed and evaluated (see Response II.B.5). In no instance was residual radioactivity encountered in Buildings 5 and 6 in excess of 25 percent of the appropriate unrestricted use criteria. Refer to data summary table provided in response to Comment III.B.7.
7. There are no areas with radioactivity in excess of the criteria for unrestricted use located in any of these structures.

C. Comments: Buildings 1 - 4

1. The structures addressed in this comment should not be considered as affected areas based upon the results of the radiological survey (see response to III.B.7).
2. See response to Comment II.B.2.
3. See response to Comment II.B.3.
4. See response to Comment II.B.4.
5. Sampling for removable radioactivity was performed using methods consistent with NUREG/CR-5849 Section 6.4.4 guidance. Removable radioactivity data for grid locations in Buildings 1 through 4 are presented in the summary table provided in response to Comment III.B.7 for grid locations exhibiting alpha activity in excess of 100 disintegrations per minute per 100 square centimeters. The results of this sampling indicate that removable radioactivity is minimal.

6. Areas in Buildings 1 through 4 where residual radioactivity exhibited the potential to be greater than 25 percent of the unrestricted use criteria were investigated and, where necessary, additional surveys were performed and evaluated. Refer to data summary tables provided in response to Comment III.B.7 for actions to demonstrate that alpha activity for all grid locations surveyed in Buildings 1 through 4 does not exceed 25 percent of the unrestricted use criteria.
7. Areas in Buildings 2 and 3 which exhibited the potential for contamination in excess of unrestricted use criteria were investigated and, where necessary, additional surveys were performed and evaluated. Refer to the summary table provided in response to Comment III.B.7 for actions to demonstrate that alpha activity was below the applicable unrestricted use criteria in these areas.
8. The location of the bathroom in Building No. 3 is identified in Figure C-41 of the report as RM 112. The observed level of radioactivity in the building bathroom was not due to contamination of any sort. The observed levels of radioactivity are associated with the glazed ceramic tile present on the walls of the bathroom.
9. The laboratory bench sink was found to exhibit some contamination based on the evaluation of data in the Northwest Property report. As recommended, this sink was surveyed for activity in excess of the unrestricted release limits. The sink drain was also disassembled and surveyed. In each case, alpha contamination was found to be less than 11 disintegrations per minute per 100 square centimeters which is well below the conservative unrestricted release limit of 200 disintegrations per minute per 100 square centimeters. These readings supported Fansteel's assumption that contamination of sink internals was not a concern.
10. The entire Northwest Property Area is classified as an unaffected area. The only site areas classified as affected are located outside the Northwest Property Area.

III. DATA TABLES AND FIGURES

A. General Concern

Fansteel recognizes that the quantity of information provided in the data tables is significant. As a result, Fansteel has provided a summary table which identifies all grid locations that were surveyed and found to potentially exhibit alpha activity levels in excess of the unrestricted use criteria. These grid locations are identified in Summary Table 5-1.

B. Comments

1. Table footnotes should reference only the thorium release criteria. Other release criteria were inadvertently included in the tables. A new summary table has been prepared in response to NRC Comment III.B.7 which identifies only those points which exhibited radioactivity in excess of the release criteria during the initial instrument survey of the Northwest Property Area.
2. As stated in the report, a few areas of elevated radioactivity were identified during survey activities. When an area of elevated activity was identified, it was properly cleaned and resurveyed. The two measurements that are provided for some of the survey points in the data tables reflect radioactivity of the area prior to and following cleaning. Additionally, the instruments used for the detection of beta-gamma activity and alpha and gamma activity were operated by separate survey crews which occasionally resulted in a specific grid location being surveyed for beta-gamma on one day and alpha and gamma on a second day.
3. Refer to Summary Tables 5-1 and 5-2. Wipe sample data were only provided when activity levels were high enough to warrant additional evaluation. Removable alpha and removable beta columns were not utilized for these tables.
4. The gross alpha and gross beta results for May 3, 1993 are not missing from Table 4 of the report. These parameters were not analyzed for at this sampling point at this specific time.

5. A master legend is provided to support existing figures that may have incomplete legends. This master legend is provided in the enclosed Figures section. Figure C-2 was revised to explain the use of the symbols bordering the site area diagram and C-45 was revised to explain what is meant by the shaded area on Wall 1.
6. Figures C-2 and C-3 were revised to clearly indicate all building locations. Building labels include both the building name and the building number. These revised figures are provided in the enclosed Figures section.
7. Fansteel recognizes that the quantity of information provided in the data tables is significant. As a result, Fansteel has provided a summary table which identifies all grid locations that were surveyed and found to potentially exhibit alpha activity levels in excess of the unrestricted use criteria. These grid locations are identified in Summary Table 5-1. An additional table, Summary Table 5-2, is also provided to identify all grid locations that were surveyed and found to potentially exhibit alpha activity levels high enough to result in reclassifying an unaffected area to an affected area (i.e., radioactivity in excess of 25 percent of the release criteria). The assumptions and basis used to develop the two summary tables and to evaluate the data in those tables are identified below.
 - The first and most important assumption used in collecting data from the Northwest Property Area is that all areas within the Northwest Property Area were classified as unaffected areas and were surveyed accordingly. This is based on Fansteel's assessment that although the Northwest Property Area is a portion of the facility covered by the NRC license, it was not significantly impacted by facility operations.
 - The second key assumption is that alpha survey data will provide the basis for determining if radioactive contamination at grid locations meets the guidelines for unrestricted use criteria. This approach was used because the large accumulations of radioactive ore processing residues located outside the Northwest Property Area rendered gamma and beta data

evaluations meaningless for evaluating low contamination levels inside the Northwest Property Area. (See response to NRC Comment IIA.)

- The final significant assumption affected the way all survey data were evaluated. As indicated in the work plan and in our response to NRC Comment IIA, Fansteel conservatively assumed that all radioactive contamination was due to natural thorium and that it was removable. This resulted in an initial evaluation of all data against the most restrictive release criteria for thorium (200 disintegrations per minute per 100 square centimeters). This approach was determined to be very conservative since isotopic analysis identified a high percentage of natural uranium in addition to the thorium, and wipe surveys indicated that removable contamination was minimal.

Utilizing the assumptions identified above, Fansteel evaluated all survey data in the Northwest Property Area to identify grid locations where the 200 disintegrations-per-minute-per-square-centimeter unrestricted use criteria were exceeded. This evaluation was conducted by a computer search of the entire database used to generate the radioactive survey data tables in the July 1993 report. The results of this evaluation demonstrated that most of the approximate 60,000 grid locations surveyed had alpha activity levels well below the conservative unrestricted release criteria for thorium and, therefore, could be eliminated from further consideration. Only 18 locations had alpha activity readings in excess of the release criteria and had to be evaluated further. These locations are identified in Table 5-1.

The grid locations identified in Table 5-1 are the only grid locations in the Northwest Property Area that were determined to have the potential to exceed the unrestricted release criteria. This is based on alpha readings for those locations exceeding 200 disintegrations per minute per square centimeter. Upon further evaluation of the radioactive contamination at these locations, it was determined that the 1,000-disintegrations-per-minute-per-square-centimeter unrestricted release criteria could be applied in lieu of the more conservative criteria of 200

disintegrations per minute per square centimeter. This is because wipe samples conducted at each of the 18 locations clearly indicated that the majority of the contamination was fixed (reference Table 5-1). Alpha activity for all 18 grid locations are well below the more appropriate release criteria of 1,000 disintegrations per minute per square centimeter and do not require further consideration.

The next significant portion of the data evaluation was to review all data which had the potential to exceed 25 percent of the unrestricted use criteria. The purpose of this phase of the evaluation was to determine if any areas of the Northwest Property Area are candidates for reclassification from an unaffected area to an affected area. It is our belief that this portion of the evaluation would also provide the basis for demonstrating that our initial assumption that classifying the entire Northwest Property Area as an unaffected area was appropriate.

Similar to the computer search conducted to generate Table 5-1, a search of the same database was conducted for alpha readings that exceeded 25 percent of the conservative 200-disintegrations-per-minute-per-square-centimeter criteria (i.e., greater than 50 disintegrations per minute per square centimeter). Grid locations which met this criteria are identified in Table 5-2. The survey data for these grid locations were evaluated further to determine if justification existed to use 1,000-disintegrations-per-minute-per-square-centimeter release criteria in lieu of the more conservative 200-disintegrations-per-minute-per-square-centimeter criteria.

Removable radioactivity sampling was conducted at grid locations exhibiting radioactivity in excess of 100 disintegrations per minute per square centimeter to further ensure that the majority of the contamination was fixed. In all cases, this was found to be the case and the 1,000-disintegrations-per-minute-per-square-centimeter guideline was applied. No grid locations identified in this table exhibited contamination levels in excess of 25 percent of the 1,000-disintegrations-per-minute-per-square-centimeter guideline, and therefore, no areas within the Northwest Property Area were considered for reclassification to an affected area. The classification of "unaffected area" for the entire Northwest Property Area was demonstrated to be appropriate. Fansteel did not believe it necessary to sample

grid locations with alpha readings in the 50 to 100 disintegrations per minute per square centimeter for removable radioactivity since there were no indications that removable contamination was significant.

In summary, no survey data for buildings within the Northwest Property Area exceeds the unrestricted use criteria for thorium. Also, the classification of "unaffected area" for the entire Northwest Property Area was demonstrated to be appropriate based on grid locations not exceeding 25 percent of the 1,000-disintegrations-per-minute-per-square-centimeter unrestricted use guideline.

Tables

Table 1
Background Soil Radioactivity Analysis Results
Fansteel, Inc.
Muskogee, Oklahoma

Sample Number	Gross ⁽¹⁾		Gamma ⁽²⁾		Uranium ^(1,3)	Radium-226 ⁽¹⁾	Radium-228 ⁽¹⁾	Thorium ^(1,4)
	Alpha	Beta	Surface	1 Meter				
1	14 ± 5	21 ± 5	2,508	1,955	0.3	0.96 ± 0.13	1.2 ± 0.2	3.2
2	11 ± 6	26 ± 6	1,717	898	0.3	0.97 ± 0.13	1.2 ± 0.3	2.8
3	10 ± 5	8 ± 5	-581	6	0.8	0.86 ± 0.13	0.52 ± 0.15	1.0
4	20 ± 6	23 ± 5	2,526	1,509	0.8	0.90 ± 0.13	1.3 ± 0.2	2.4
5	16 ± 6	26 ± 5	2,565	1,860	1.0	0.90 ± 0.13	1.1 ± 0.2	4.9
6	21 ± 6	24 ± 5	2,557	1,222	0.8	0.81 ± 0.13	1.4 ± 0.2	5.9
7	20 ± 4	23 ± 5	1,659	1,020	0.8	0.88 ± 0.13	1.2 ± 0.2	2.7
8	18 ± 6	19 ± 5	1,995	908	0.9	0.83 ± 0.13	1.3 ± 0.2	4.7
9	2 ± 4	13 ± 5	-180	-55	3.1	1.1 ± 0.1	0.65 ± 0.15	2.2
10	18 ± 6	21 ± 5	2,355	1,024	0.7	1.0 ± 0.1	1.4 ± 0.1	4.2
11	13 ± 5	25 ± 5	2,100	960	1.5	0.95 ± 0.12	1.3 ± 0.2	2.9
12	16 ± 5	14 ± 5	2,619	1,418	1.6	0.99 ± 0.14	1.2 ± 0.2	3.4
13	18 ± 5	18 ± 5	1,604	1,166	1.3	1.1 ± 0.1	1.4 ± 0.2	4.1
14	18 ± 6	18 ± 5	1,239	484	1.6	1.0 ± 0.1	0.96 ± 0.22	3.3
15	22 ± 6	15 ± 5	1,933	1,210	2.1	0.95 ± 0.12	1.4 ± 0.2	3.4
16	13 ± 5	22 ± 5	1,225	1,055	1.6	1.1 ± 0.1	1.2 ± 0.2	3.7
17	11 ± 5	23 ± 5	1,603	2,034	1.0	0.92 ± 0.13	1.0 ± 0.2	3.5
18	20 ± 6	18 ± 5	1,751	1,160	1.3	0.80 ± 0.12	1.2 ± 0.2	3.0
19	13 ± 5	24 ± 5	1,023	463	0.3	0.91 ± 0.11	1.1 ± 0.2	3.7
20	18 ± 6	18 ± 5	2,268	2,099	1.4	1.1 ± 0.2	1.4 ± 0.2	2.5
21	14 ± 5	24 ± 5	775	-210	0.9	1.1 ± 0.1	1.4 ± 0.2	2.9
22	12 ± 5	24 ± 5	1,446	1,174	1.1	0.91 ± 0.14	1.1 ± 0.2	3.2
23	18 ± 6	24 ± 5	2,076	1,634	1.1	1.0 ± 0.1	1.1 ± 0.2	3.1

See footnotes at end of table.

Table 1
(Continued)

Sample Number	Gross ⁽¹⁾		Gamma ⁽²⁾		Uranium ^(1,3)	Radium-226 ⁽¹⁾	Radium-228 ⁽¹⁾	Thorium ^(1,4)
	Alpha	Beta	Surface	1 Meter				
24	10 ± 4	13 ± 5	779	803	0.8	0.95 ± 0.12	0.87 ± 0.19	3.7
25	11 ± 5	22 ± 5	1,866	1,497	0.2	0.74 ± 0.12	1.1 ± 0.2	3.6
26	19 ± 6	25 ± 5	2,325	1,405	1.4	0.98 ± 0.13	1.2 ± 0.2	3.9
27	15 ± 6	19 ± 5	1,216	458	0.7	0.98 ± 0.14	0.95 ± 0.21	3.7
28	17 ± 5	19 ± 5	623	1,073	1.7	0.95 ± 0.13	1.2 ± 0.2	3.5
29	13 ± 5	19 ± 5	344	-503	1.5	0.81 ± 0.14	0.98 ± 0.21	2.2
30	18 ± 6	28 ± 5	1,770	1,397	0.1	1.1 ± 0.1	1.4 ± 0.2	2.7
Average	15.6	20.5			1.08	0.95	1.16	3.33
Standard Deviation	4.5	4.6			0.62	0.10	0.22	0.92
Maximum	22 ± 6	28 ± 5			3.1	1.1 ± 0.2	1.4 ± 0.2	5.9

⁽¹⁾Results presented are in picocuries per gram.

⁽²⁾Gamma results based on instrument survey at time of sample collection less background. These results are presented in counts per minute (cpm).

⁽³⁾Uranium concentrations include U-238, U-235, and U-234.

⁽⁴⁾Thorium concentrations include Th-22P, Th-230, and Th-232.

Table 2
 Radioactivity Soil Analysis Results⁽¹⁾
 West Plant Unaffected Area
 Fansteel, Inc.
 Muskogee, Oklahoma

Sample Number	Gross Alpha	Gross Beta
1251	21 ± 6	23 ± 5
1269	12 ± 5	25 ± 5
1281	18 ± 6	21 ± 5
1303	20 ± 6	17 ± 5
1311	18 ± 6	17 ± 5
1337	24 ± 6	20 ± 5
1341	19 ± 6	19 ± 5
1389	21 ± 6	23 ± 5
1372	11 ± 5	18 ± 5
1363	15 ± 5	20 ± 5
1354	19 ± 6	19 ± 5
1380	17 ± 6	28 ± 5
1399	15 ± 6	22 ± 5
1408	13 ± 5	19 ± 5
1418	17 ± 6	19 ± 5
1423	16 ± 6	18 ± 5
1437	15 ± 5	20 ± 5
1445	19 ± 6	19 ± 5
1454	22 ± 6	20 ± 5
1458	18 ± 6	21 ± 5
Average	17.5	20.4
Standard Deviation	3.4	2.7
Maximum	24 ± 6	28 ± 5

⁽¹⁾All results presented in this table are in picocuries per gram.

Table 3
MW-151D
Groundwater Chemistry Data
Fansteel, Inc.
Muskogee, Oklahoma

Radiochemistry	Concentration (pCi/l)
Gross Alpha - total	4 ± 3
Gross Beta - total	3 ± 3
Uranium-233 and -234 - total	0.4 ± 0.2
Uranium-235 - total	0.0 ± 0.1
Uranium-238 - total	0.1 ± 0.1
Potassium-40 - total	0.7
Thorium-228 - total	0.1 ± 0.1
Thorium-230 - total	1.3 ± 0.4
Thorium-232 - total	0.1 ± 0.1

Note: The above results are for Accu-Labs Research, Inc. Sample No. 8713-53435-4-1 taken from Well No. 151 on March 29, 1994.

Table 4
Radiation Survey Lab⁽¹⁾
Sump Excavation
Fansteel, Inc.
Muskogee, Oklahoma

Location	Alpha (cpm)	Beta (cpm)	Gamma Surface (cpm)	Gamma Meter (cpm)	Notes
001A		22			Bottom of Excavation
001B	2	33	3,714	2,886	
001C		27			
002A		29			Side Wall of Excavation
002B	ID ⁽²⁾	30	4,115	3,192	
002C		33			
003A		2			
003B	3	21	3,643	2,899	
003C		10			

⁽¹⁾All results corrected for background activity.

⁽²⁾Indistinguishable from background.

Summary Table 5-1
 Alpha >200 dpm/200 cm²
 Fansteel, Inc.
 Muskogee, Oklahoma

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R000-S006 ⁽¹⁾	Building 1, Exterior, Roof Vent	001B	5/14/93 5/25/93	400 61		Not required
B1-R000-S008 ⁽¹⁾	Building 1, Exterior, Roof Vent	001B	5/14/93 5/25/93	421 83		Not required
B1-R000-S011 ⁽⁵⁾	Building 1, Exterior, Roof Scrubber	001B	5/17/93 5/24/93	1,050 210		No data
B1-R000-S011 ⁽¹⁾	Building 1, Exterior, Roof Scrubber	002B	5/17/93 5/24/93	1,007 108	4/26/94	0.34
B1-R000-S018 ⁽¹⁾	Building 1, Exterior, Roof Hatch	001B	5/17/93 5/25/93	378 161	4/26/94	0.17
B1-R000-S025 ⁽⁵⁾	Building 1, Exterior, Roof Vent Only	001B	5/17/93	307		No data
B1-R000-S026 ⁽¹⁾	Building 1, Exterior, Roof Vent	001B	5/17/93 5/21/93	364 33		Not required
B1-R000-S028 ⁽¹⁾	Building 1, Exterior, Roof Vent	001B	5/17/93 5/25/93	314 56		Not required
B1-R114-A004 ^(2,4)	Building 1, Room 114, Cart	001B	5/5/93 5/6/93	255 288	7/26/93	-0.05
B1-R114-A004 ^(2,4)	Building 1, Room 114, Cart	002B	5/5/93 5/6/93	516 300	7/26/93	3.1
B1-R114-F114 ⁽³⁾	Building 1, Room 114, Floor Only 1 of 100's Above 200	V048B	5/3/93	238	7/26/93	2.1
B1-R114-M003 ⁽³⁾	Building 1, Room 114, Perforated Stand Only Location	001B	5/4/93	239	7/26/93	5.6

See footnotes at end of table.

Summary Table 5-1
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R123-A001 ^(2,4)	Building 1, Room 123, Laboratory Bench	002B	2/23/93	656	7/26/93	1.3
B1-R123-M007 ⁽¹⁾	Building 1, Room 123, Long Glass Storage	001B	2/23/93	512	4/26/94	0.08
B2-R000-S013 ⁽³⁾	Building 2, Exterior, Roof Vent	002B	4/16/93	333	7/26/93	12.1
B2-R000-S047 ⁽³⁾	Building 2, Exterior, West Pad	002B	4/19/93	272	7/26/93	0.44
B2-R000-X001 ⁽⁵⁾	Building 2, Exterior, North Wall	I037B	3/25/93	227		No data
B2-R000-X001 ⁽⁵⁾	Building 2, Exterior, North Wall	I045B	3/25/93	233		No data

⁽¹⁾Area had been cleaned and resurveyed. The July 1993 submittal provided both readings for completeness. Final readings are as noted and are below the 200 dpm/100 cm² release criteria. These release criteria are conservative since they assume contamination is 100 percent removable.

⁽²⁾Area had been cleaned and resurveyed. The July 1993 submittal provided both readings for completeness. Final readings are as noted and are below the 1,000 dpm/cm² release criteria. These criteria were shown to be applicable based on wipe data indicating contamination to be fixed.

⁽³⁾Wipe data for this location demonstrate that removable contamination is negligible and that the 1,000 dpm/cm² release criteria are applicable. Survey data for these locations are well below the 1,000 dpm/cm² release criteria.

⁽⁴⁾Item removed from Northwest Property Area.

⁽⁵⁾No wipe data exist for these grid locations because of their limited accessibility (i.e., crane rental required). However, since all wipe data taken for grid locations identified in Table 5-1 and Table 5-2 demonstrate that removable contamination is negligible, it is assumed that removable contamination is negligible for these locations and the 1,000 dpm/cm² release criteria are applicable. Data for these grid locations are shown to be well below the 1,000 dpm/cm² release criteria.

Summary Table 5-2⁽¹⁾
 200 \geq Alpha > 50 dpm/cm²
 Fansteel, Inc.
 Muskogee, Oklahoma

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-P201-P201	Building 1, Platform 201, Platform	A003B	5/10/93	59		
		A007B	5/10/93	53		
		B002B	5/10/93	106	4/26/94	1.31
		B006B	5/10/93	153	4/26/94	1.05
B1-P202-E001	Building 1, Platform 202, Transformer	001B	5/12/93	53		
B1-P202-P202	Building 1, Platform 202, Floor	A005B	5/12/93	88		
		A007B	5/12/93	88		
		A009B	5/12/93	118	7/26/93	2.52
		A011B	5/12/93	94		
		B002B	5/12/93	59		
		B004B	5/12/93	59		
		B006B	5/12/93	106	7/26/93	1.83
		B008B	5/12/93	88		
		B010B	5/12/93	53		
		B012B	5/12/93	65		
		C001B	5/12/93	82		
		C003B	5/12/93	76		
		C005B	5/12/93	59		
		C009B	5/12/93	100		
		C011B	5/12/93	76		
		D002B	5/12/93	53		
		D004B	5/12/93	71		
		D006B	5/12/93	176	7/26/93	1.96
		D008B	5/12/93	88		
		E001B	5/12/93	53		
		E003B	5/12/93	71		
		E005B	5/12/93	100		
		E007B	5/12/93	65		
E011B	5/12/93	82				
F002B	5/12/93	59				
F004B	5/12/93	59				
F006B	5/12/93	88				
F008B	5/12/93	59				
F010B	5/12/93	88				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-P202-P202 (Continued)	Building 1, Platform 202, Floor	F012B	5/12/93	118	7/26/93	5.52
		G001B	5/12/93	88		
		G007B	5/12/93	129	7/26/93	2.15
		G009B	5/12/93	53		
		H002B	5/12/93	106	7/26/93	1.01
		H004B	5/12/93	88		
		H006B	5/12/93	129	7/26/93	1.96
		H008B	5/12/93	94		
		I003B	5/12/93	124	7/26/93	0.59
		I005B	5/12/93	65		
		I007B	5/12/93	124	7/26/93	0.48
B1-R000-S006	Building 1, Exterior, Roof Vent	001B	5/25/93	61		
B1-R000-S007	Building 1, Exterior, Roof Vent	001B	5/14/93	57		
B1-R000-S008	Building 1, Exterior, Roof Vent	001B	5/25/93	83		
B1-R000-S010	Building 1, Exterior, Roof Vent	001B	5/14/93	71		
B1-R000-S011	Building 1, Exterior, Roof Scrubber	002B	5/24/93	108	4/26/94	0.34
B1-R000-S012	Building 1, Exterior, Roof Vent	001B	5/17/93	57		
B1-R000-S013	Building 1, Exterior, Air Conditioner	001B	5/17/93	71		
		002B	5/17/93	93		
B1-R000-S015	Building 1, Exterior, Air Conditioner	002B	5/17/93	136	4/26/94	0.61
		004B	5/17/93	71		
		005B	5/17/93	121	4/26/94	1.13
B1-R000-S017	Building 1, Exterior, Roof Vent	001B	5/17/93	86		
B1-R000-S018	Building 1, Exterior, Roof Hatch	001B	5/25/93	161	4/26/94	0.17

See footnote at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R000-S019	Building 1, Exterior, Air Conditioner	001B	5/17/93	71		
B1-R000-S020	Building 1, Exterior, Roof Vent	001B	5/17/93	200	4/26/94	0.08
		003B	5/17/93	79		
B1-R000-S022	Building 1, Exterior, Roof Vent	001B	5/17/93	86		
B1-R000-S023	Building 1, Exterior, Roof Vent	001B	5/17/93	143	4/26/94	-0.10
		002B	5/17/93	179		
B1-R000-S024	Building 1, Exterior, Roof Vent	001B	5/17/93	171	4/26/94	0.25
		002B	5/17/93	57		
B1-R000-S026	Building 1, Exterior, Roof Vent	004B	5/21/93	50		
B1-R000-S027	Building 1, Exterior, Roof Vent	001B	5/17/93	171	4/26/94	0.08
		002B	5/17/93	100		
B1-R000-S028	Building 1, Exterior, Roof Vent	001B	5/25/93	56		
B1-R000-S029	Building 1, Exterior, Roof Vent	001B	5/17/93	100		
B1-R000-S030	Building 1, Exterior, Roof Vent	001B	5/17/93	100		
B1-R000-S031	Building 1, Exterior, Roof Vent	001B	5/17/93	179	4/26/94	0.17
B1-R000-S032	Building 1, Exterior, Roof Vent	001B	5/17/93	200	4/26/94	0.25
B1-R000-S033	Building 1, Exterior, Air Conditioner	003B	5/17/93	129	4/26/94	0.43
B1-R000-X001	Building 1, Exterior, North Wall	A013B	3/29/93	72		
		A077B	5/12/93	57		
		E002B	3/29/93	72		
		E006B	3/29/93	94		
		E010B	3/29/93	61		
		E026B	3/29/93	67		

See footnote at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R000-X001 (Continued)	Building 1, Exterior, North Wall	E034B	3/29/93	56		
		E038B	3/29/93	56		
		E046B	3/29/93	83		
		E050B	3/29/93	56		
		E054B	3/29/93	72		
		E062B	3/29/93	67		
		E070B	3/29/93	94		
		E074B	3/29/93	61		
		E078B	3/29/93	72		
B1-R000-X002	Building 1, Exterior, East Wall	A001B	5/13/93	86		
		A013B	5/13/93	114	4/26/94	0.25
		E010B	3/30/93	67		
		E018B	3/30/93	67		
		E022B	3/30/93	61		
		E026B	3/30/93	67		
		E030B	3/30/93	89		
		E034B	3/30/93	94		
B1-R000-X003	Building 1, Exterior, South Wall	A033B	5/12/93	100		
		A065B	5/12/93	57		
		E002B	3/30/93	106	7/26/93	1.25
		E010B	3/30/93	83		
		E014B	3/30/93	72		
		EC30B	3/30/93	78		
		E034B	3/30/93	67		
		E050B	3/30/93	122	4/26/94	0.34
B1-R000-X004	Building 1, Exterior, West Wall	E018B	3/29/93	56		
		E022B	3/29/93	61		
		E026B	3/29/93	67		
		E030B	3/29/93	61		
		E034B	3/30/93	67		
B1-R000-X005	Building 1, Exterior, Roof	A001B	5/7/93	77		
		A005B	5/7/93	77		
		A009B	5/7/93	100		

See footnote at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R000-X005 (Continued)	Building 1, Exterior, Roof	A013B	5/7/93	69		
		A017B	5/7/93	69		
		A021B	5/7/93	77		
		A037B	5/7/93	62		
		A045B	5/7/93	62		
		A049B	5/7/93	100		
		A057B	5/7/93	62		
		A061B	5/7/93	69		
		A065B	5/7/93	77		
		A077B	5/7/93	54		
		A089B	5/7/93	54		
		A093B	5/7/93	85		
		E005B	5/7/93	77		
		E009B	5/7/93	192	4/26/94	0.17
		E013B	5/7/93	77		
		E029B	5/7/93	54		
		E033B	5/7/93	54		
		E037B	5/7/93	31		
		E041B	5/7/93	92		
		E045B	5/7/93	62		
		E047B	5/7/93	85		
		E057B	5/7/93	62		
		E065B	5/7/93	54		
		E085B	5/7/93	62		
		E089B	5/7/93	54		
		E093B	5/7/93	62		
		I013B	5/13/93	57		
		I033B	5/13/93	100		
		I037B	5/13/93	71		
		I045B	5/13/93	71		
		I049B	5/13/93	107	4/26/94	-0.01
		I053B	5/13/93	79		
		I061B	5/13/93	57		
I069B	5/13/93	64				
I077B	5/13/93	86				
M013B	5/13/93	57				

See footnote at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R000-X005 (Continued)	Building 1, Exterior, Roof	M021B	5/13/93	79		
		M029B	5/13/93	57		
		M033B	5/13/93	93		
		M037B	5/13/93	71		
		M053B	5/13/93	64		
		M061B	5/13/93	64		
		M065B	5/13/93	57		
		M069B	5/13/93	71		
		Q001B	5/13/93	71		
		Q029B	5/13/93	57		
		Q037B	5/13/93	57		
		Q053B	5/13/93	71		
		Q069B	5/13/93	57		
		Q077B	5/13/93	71		
		U001B	5/13/93	79		
		U005B	5/13/93	86		
		U009B	5/13/93	64		
		U045B	5/14/93	79		
		U061B	5/14/93	79		
		U065B	5/14/93	71		
		U069B	5/14/93	71		
		Y017B	5/14/93	57		
		Y025B	5/14/93	86		
		Y033B	5/14/93	64		
		Y053B	5/14/93	64		
		Y057B	5/14/93	57		
		Y061B	5/14/93	57		
		Y069B	5/14/93	64		
		Y073B	5/14/93	64		
		Y077B	5/14/93	86		
		AC005B	5/14/93	71		
		AC013B	5/14/93	107	4/26/94	-0.01
		AC017B	5/14/93	64		
		AC029B	5/14/93	64		
		AC041B	5/14/93	71		
		AC053B	5/14/93	64		
AC077B	5/14/93	64				

See footnote at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R000-X005 (Continued)	Building 1, Exterior, Roof	AG001B	5/14/93	57		
		AG005B	5/14/93	71		
		AG029B	5/14/93	64		
		AG037B	5/14/93	64		
		AG041B	5/14/93	86		
		AG049B	5/14/93	64		
B1-R108-D108	Building 1, Room 108, Drop Ceiling	E005E	4/14/93	55		
B1-R113-F113	Building 1, Room 113, Floor	A011B	4/16/93	57		
B1-R113-M001	Building 1, Room 113, Shelves	001B	4/16/93	76		
B1-R113-M011	Building 1, Room 113, Desk	001B	4/16/93	64		
B1-R114-A009	Building 1, Room 114, Storage Bins	002B	5/5/93	61		
B1-R114-A011	Building 1, Room 114, Storage Bins	006B	5/5/93	56		
B1-R114-A015	Building 1, Room 114, Storage Bins	003B	5/5/93	67		
B1-R114-A017	Building 1, Room 114, Cabinet	002B	5/6/93	61		
B1-R114-A018	Building 1, Room 114, Work Table	001B	5/6/93	56		
		002B	5/6/93	89		
B1-R114-A026	Building 1, Room 114, Shelves	001B	5/6/93	61		
		002B	5/6/93	89		
B1-R114-A029	Building 1, Room 114, Work Table	001B	5/6/93	100	7/26/93	5.72
		002B	5/6/93	56		
B1-R114-A032	Building 1, Room 114, Work Table	002B	5/6/93	67		
B1-R114-A033	Building 1, Room 114, Shelves	001B	5/6/93	56		
B1-R114-A036	Building 1, Room 114, Shelves	003B	5/6/93	67		

See footnote at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-A038	Building 1, Room 114, Machinist's Bench	001B	5/6/93	139	7/26/93	11.99
		002B	5/6/93	139		
		003B	5/6/93	67		
		004B	5/6/93	133		
B1-R114-A039	Building 1, Room 114, Work Table	001B	5/6/93	72	7/26/93	16.49
		002B	5/6/93	133		
B1-R114-A050	Building 1, Room 114, Parts Bin	005B	5/7/93	83		
B1-R114-A052	Building 1, Room 114, Pipe Rack	001B	5/7/93	72		
B1-R114-A061	Building 1, Room 114, Fan	001B	5/7/93	56		
B1-R114-A062	Building 1, Room 114, Storage Rack	002B	5/12/93	53		
		005B	5/12/93	59		
		006B	5/12/93	82		
		010B	5/12/93	53		
B1-R114-C114	Building 1, Room 114, Ceiling	U001B	4/22/93	67		
		U045B	4/22/93	67		
		Y025B	4/22/93	58		
B1-R114-E004	Building 1, Room 114, Arc Welder	001B	5/4/93	89		
B1-R114-E008	Building 1, Room 114, Drill Press	001B	5/4/93	61		
B1-R114-E026	Building 1, Room 114, Drill Press	002B	5/4/93	117	7/26/93	4.54
B1-R114-F114 ⁽²⁾	Building 1, Room 114, Floor	A015B	4/29/93	53		
		J008B	4/30/93	91		
		K007B	4/30/93	59		
		K015B	4/30/93	101		
		M007B	4/29/93	82		
		M025B	4/29/93	71		
		M031B	4/29/93	65		
		M033B	4/29/93	94		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	M041B	4/29/93	59		
		M043B	4/29/93	59		
		M049B	4/29/93	53		
		M051B	4/29/93	100		
		M053B	4/29/93	106		
		M055B	4/29/93	59		
		M059B	4/29/93	65		
		M061B	4/29/93	59		
		N002B	4/29/93	106	7/26/93	0.69
		N004B	4/29/93	59		
		N006B	4/29/93	71		
		N008B	4/29/93	71		
		N010B	4/29/93	53		
		N020B	4/29/93	88		
		N022B	4/30/93	112		
		N026B	4/30/93	65		
		N028B	4/30/93	153		
		N030B	4/30/93	100		
		N032B	4/30/93	106	7/26/93	1.1
		N034B	4/30/93	53		
		N038B	4/30/93	76		
		N040B	4/30/93	65		
		N046B	4/30/93	118		
		N048B	4/30/93	88		
		N050B	4/30/93	147		
		N052B	4/30/93	94		
		N056B	4/30/93	129		
		N058B	4/30/93	53		
		O001B	4/30/93	94		
		O003B	4/30/93	71		
		O005B	4/30/93	71		
O019B	4/30/93	53				
O025B	4/30/93	106	7/26/93	0.06		
O027B	4/30/93	82				
O029B	4/30/93	59				
O031B	4/30/93	71				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	O033B	4/30/93	71		
		O035B	4/30/93	88		
		O037B	4/30/93	53		
		O039B	4/30/93	59		
		O045B	4/30/93	76		
		O047B	4/30/93	118		
		O049B	4/30/93	100		
		O051B	4/30/93	118		
		O053B	4/30/93	112	7/26/93	1.32
		O055B	4/30/93	112		
		O057B	4/30/93	71		
		O061B	4/30/93	53		
		P006B	4/29/93	62		
		P008B	4/29/93	54		
		P010B	4/29/93	77		
		P012B	4/29/93	62		
		P014B	4/29/93	54		
		P024B	4/29/93	69		
		P030B	4/29/93	77		
		P034B	4/29/93	77		
		P036B	4/29/93	115		
		P042B	4/29/93	92		
		P044B	4/29/93	115		
		P046B	4/29/93	123	7/26/93	2.37
		P048B	4/29/93	138		
		P050B	4/29/93	169		
		P052B	4/29/93	108		
		P054B	4/29/93	85		
		P056B	4/29/93	123	7/26/93	0.79
		P058B	4/29/93	92		
		P060B	4/29/93	108		
		Q001B	4/29/93	54		
		Q007B	4/29/93	77		
		Q011B	4/29/93	54		
		Q013B	4/29/93	69		
		Q017B	4/29/93	85		
Q027B	4/30/93	100				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	Q031B	4/30/93	62		
		Q033B	4/30/93	77		
		Q037B	4/30/93	69		
		Q039B	4/30/93	62		
		Q043B	4/30/93	54		
		Q047B	4/30/93	77		
		Q049B	4/30/93	62		
		Q051B	4/30/93	162		
		Q053B	4/30/93	177	7/26/93	0
		Q057B	4/30/93	85		
		Q059B	4/30/93	85		
		Q061B	4/30/93	108		
		R008B	4/30/93	77		
		R012B	4/30/93	54		
		R014B	4/30/93	69		
		R016B	4/30/93	138		
		R018B	4/30/93	115		
		R020B	4/30/93	54		
		R026B	4/30/93	77		
		R030B	4/30/93	69		
		R036B	4/30/93	54		
		R038B	4/30/93	62		
		R040B	4/30/93	69		
		R044B	4/30/93	54		
		R046B	4/30/93	123	7/26/93	2.37
		R048B	4/30/93	69		
		R050B	4/30/93	115		
		R052B	4/30/93	92		
		R054B	4/30/93	62		
		R056B	4/30/93	54		
		R058B	4/30/93	62		
		S001B	4/30/93	54		
		S007B	4/30/93	77		
		S013B	4/30/93	100		
		S017B	4/30/93	69		
S021B	4/30/93	69				
S027B	4/30/93	69				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	S031B	4/30/93	77		
		S037B	4/30/93	69		
		S039B	4/30/93	69		
		S041B	4/30/93	77		
		S045B	4/30/93	54		
		S047B	4/30/93	108		
		S049B	4/30/93	69		
		S051B	4/30/93	108	7/26/93	0.91
		S053B	4/30/93	62		
		S055B	4/30/93	77		
		S057B	4/30/93	77		
		S059B	4/30/93	62		
		S061B	4/30/93	69		
		T010B	4/30/93	71		
		T012B	4/30/93	82		
		T014B	4/30/93	171		
		T016B	4/30/93	118		
		T018B	4/30/93	53		
		T020B	4/30/93	82		
		T034B	5/3/93	72		
		T042B	5/3/93	89		
		T044B	5/3/93	156		
		T046B	5/3/93	67		
		T048B	5/3/93	128	7/26/93	1.83
		T050B	5/3/93	106		
		T052B	5/3/93	72		
		T058B	5/3/93	78		
		T060B	5/3/93	89		
		U001B	4/30/93	54		
		U013B	4/30/93	85		
		U017B	4/30/93	54		
		U035B	4/30/93	69		
		U037B	4/30/93	85		
		U041B	5/3/93	138		
U045B	5/3/93	62				
U047B	5/3/93	154				
U049B	5/3/93	92				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/c m ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	U051B	5/3/93	92		
		U053B	5/3/93	131	7/26/93	1.10
		U057B	5/3/93	169		
		U059B	5/3/93	100		
		V010B	5/3/93	77		
		V012B	5/3/93	54		
		V016B	5/3/93	77		
		V018B	5/3/93	69		
		V020B	5/3/93	108		
		V032B	5/3/93	108	7/26/93	0
		V034B	5/3/93	62		
		V036B	5/3/93	54		
		V038B	5/3/93	92		
		V040B	5/3/93	85		
		V042B	5/3/93	54		
		V044B	5/3/93	69		
		V046B	5/3/93	123		
		V050B	5/3/93	92		
		V052B	5/3/93	108		
		V054B	5/3/93	146	7/26/93	3.63
		V056B	5/3/93	131		
		V058B	5/3/93	54		
		V060B	5/3/93	69		
		W013B	5/3/93	51		
		W017B	5/3/93	67		
		W019B	5/3/93	72		
		W029B	5/3/93	67		
		W039B	5/3/93	82		
		W047B	5/3/93	62		
		W049B	5/3/93	82		
		W051B	5/3/93	123		
		W053B	5/3/93	77		
		W057B	5/3/93	62		
X008B	5/3/93	117				
X012B	5/3/93	56				
X014B	5/3/93	72				
X018B	5/3/93	94				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net	
				(dpm/cm ²)	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	X020B	5/3/93	150	
		X030B	5/3/93	61	1.96
		X034B	5/3/93	61	
		X038B	5/3/93	106	
		X040B	5/3/93	94	
		X046B	5/3/93	56	
		X048B	5/3/93	67	
		X050B	5/3/93	89	
		X052B	5/3/93	156	
		X056B	5/3/93	94	
		Y013B	5/3/93	61	
		Y021B	5/3/93	94	
		Y023B	5/3/93	100	
		Y025B	5/3/93	72	
		Y029B	5/3/93	56	
		Y031B	5/3/93	83	
		Y033B	5/3/93	83	
		Y035B	5/3/93	78	
		Y043B	5/3/93	72	
		Y045B	5/3/93	56	
		Y047B	5/3/93	67	
		Y049B	5/3/93	83	
		Y051B	5/3/93	67	
		Y053B	5/3/93	67	
		Y061B	5/3/93	56	
		Z004B	5/3/93	54	
		Z006B	5/3/93	54	
		Z010B	5/3/93	54	
		Z012B	5/3/93	62	
		Z014B	5/3/93	69	
		Z016B	5/3/93	62	
		Z018B	5/3/93	54	
		Z022B	5/3/93	100	7/26/93
Z026B	5/3/93	54			
Z030B	5/3/93	62			
Z032B	5/3/93	100			
Z036B	5/3/93	69			
			7/26/93	1.32	

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	Z038B	5/3/93	69		
		Z040B	5/3/93	62		
		Z042B	5/3/93	85		
		Z044B	5/3/93	115		
		Z050B	5/3/93	169		
		Z052B	5/3/93	169	7/26/93	1.64
		Z054B	5/3/93	154		
		Z056B	5/3/93	77		
		AA009B	5/3/93	62		
		AA015B	5/3/93	62		
		AA019B	5/3/93	92		
		AA021B	5/3/93	62		
		AA023B	5/3/93	54		
		AA025B	5/3/93	92		
		AA029B	5/3/93	85		
		AA031B	5/3/93	69		
		AA033B	5/3/93	69		
		AA035B	5/3/93	115		
		AA037B	5/3/93	85		
		AA039B	5/3/93	92		
		AA041B	5/3/93	69		
		AA043B	5/3/93	108		
		AA045B	5/3/93	115	7/26/93	1.37
		AA049B	5/3/93	62		
		AA051B	5/3/93	77		
		AA053B	5/3/93	100		
		AA055B	5/3/93	138		
		AB010B	5/3/93	54		
		AB012B	5/3/93	62		
		AB014B	5/3/93	77		
		AB016B	5/3/93	108		
		AB018B	5/3/93	62		
		AB020B	5/3/93	69		
		AB024B	5/3/93	69		
		AB026B	5/3/93	54		
		AB028B	5/3/93	62		
		AB032B	5/3/93	62		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	AB034B	5/3/93	54		
		AB036B	5/3/93	54		
		AB040B	5/4/93	92		
		AB042B	5/4/93	77		
		AB044B	5/4/93	77		
		AB046B	5/4/93	123	7/26/93	1.32
		AB050B	5/4/93	154		
		AB052B	5/4/93	100		
		AB054B	5/4/93	62		
		AB056B	5/4/93	85		
		AB058B	5/4/93	69		
		AC013B	5/3/93	67		
		AC015B	5/3/93	56		
		AC019B	5/3/93	94		
		AC021B	5/3/93	67		
		AC025B	5/3/93	67		
		AC029B	5/3/93	61		
		AC031B	5/3/93	94		
		AC033B	5/3/93	78		
		AC035B	5/3/93	83		
		AC039B	5/3/93	100		
		AC041B	5/3/93	122	7/26/93	0.60
		AC043B	5/3/93	100		
		AC045B	5/3/93	72		
		AC047B	5/4/93	85		
		AC049B	5/4/93	169		
		AC051B	5/4/93	100		
		AC053B	5/4/93	177	7/26/93	0.69
		AC055B	5/4/93	100		
		AC057B	5/4/93	115		
		AC059B	5/4/93	64		
		AC061B	5/4/93	77		
		AD012B	5/3/93	72		
		AD032B	5/3/93	67		
		AD038B	5/3/93	92		
		AD040B	5/3/93	67		
AD042B	5/3/93	92				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	AD044B	5/3/93	77		
		AD046B	5/3/93	133		
		AD050B	5/4/93	185	7/26/93	0.85
		AD052B	5/4/93	77		
		AD054B	5/4/93	108		
		AD056B	5/4/93	108		
		AD060B	5/4/93	54		
		AE013B	5/4/93	54		
		AE029B	5/4/93	62		
		AE031B	5/4/93	108		
		AE033B	5/4/93	108	7/26/93	0.79
		AE035B	5/4/93	92		
		AE037B	5/4/93	100		
		AE039B	5/4/93	77		
		AE041B	5/4/93	100		
		AE043B	5/4/93	116		
		AE045B	5/4/93	92		
		AE047B	5/4/93	123	7/26/93	1.20
		AE049B	5/4/93	115		
		AE051B	5/4/93	123		
		AE053B	5/4/93	154		
		AE059B	5/4/93	100	7/26/93	0.95
		AF028B	5/4/93	77		
		AF030B	5/4/93	92		
		AF032B	5/4/93	92		
		AF034B	5/4/93	131		
		AF036B	5/4/93	108		
		AF038B	5/4/93	138		
		AF040B	5/4/93	108	7/26/93	0.79
		AF042B	5/4/93	100		
		AF044B	5/4/93	108		
		AF046B	5/4/93	146		
		AF048B	5/4/93	162	7/26/93	0.47
		AF050B	5/4/93	100		
AF052B	5/4/93	115				
AF054B	5/4/93	69				
AF056B	5/4/93	115				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	AF058B	5/4/93	54		
		AF060B	5/4/93	108	7/26/93	0.95
		AG009B	5/4/93	77		
		AG029B	5/4/93	54		
		AG031B	5/4/93	169		
		AG033B	5/4/93	162		
		AG035B	5/4/93	131		
		AG037B	5/4/93	108	7/26/93	0.28
		AG039B	5/4/93	92		
		AG041B	5/4/93	92		
		AG043B	5/4/93	177		
		AG045B	5/4/93	154		
		AG047B	5/4/93	154		
		AG049B	5/4/93	162	7/26/93	0.47
		AG051B	5/4/93	154		
		AG053B	5/4/93	92		
		AG055B	5/4/93	108		
		AG057B	5/4/93	62		
		AG061B	5/4/93	154		
		AH032B	5/5/93	100	7/26/93	0.69
		AH034B	5/5/93	154		
		AH036B	5/5/93	54		
		AH038B	5/5/93	92		
		AH040B	5/5/93	123		
		AH042B	5/5/93	177		
		AH044B	5/5/93	123	7/26/93	1.1
		AH046B	5/5/93	92		
		AH048B	5/5/93	138		
		AH050B	5/5/93	100		
		AH052B	5/5/93	177		
		AH056B	5/5/93	77		
		AH058B	5/5/93	92		
		AH060B	5/5/93	62		
AI009B	5/5/93	85				
AI029B	5/5/93	62				
AI031B	5/5/93	69				
AI033B	5/5/93	69				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)			
					Date	Net		
B1-R114-F114 (Continued)	Building 1, Room 114, Floor	AI035B	5/5/93	62				
		AI037B	5/5/93	54				
		AI039B	5/5/93	108	7/26/93	0		
		AI043B	5/5/93	177				
		AI045B	5/5/93	115				
		AI049B	5/5/93	162				
		AI051B	5/5/93	115	7/26/93	0.47		
		AI053B	5/5/93	77				
		AI057B	5/5/93	77				
		AI059B	5/5/93	77				
		AJ012B	5/5/93	69				
		AJ038B	5/5/93	92				
		AJ044B	5/5/93	85				
		AJ046B	5/5/93	54				
		AJ048B	5/5/93	115				
		AJ050B	5/5/93	85				
		AJ054B	5/5/93	54				
		AJ056B	5/5/93	62				
		AK013B	5/5/93	69				
		AK033B	5/5/93	85				
		AK035B	5/5/93	69				
		AK037B	5/5/93	62				
		AK039B	5/5/93	100				
		AK041B	5/5/93	54				
		AK043B	5/5/93	77				
		AK045B	5/5/93	54				
		AK047B	5/5/93	77				
		AK049B	5/5/93	54				
		AK053B	5/5/93	54				
		B1-R114-M009	Building 1, Room 114, Solvent Cart	002B	5/4/93	89		
		B1-R114-W063	Building 1, Room 114, Wall 63	E029B	4/26/93	54		
E041B	4/26/93			69				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R114-W065	Building 1, Room 114, Wall 65	A001B	4/27/93	54		
		A061B	4/27/93	85		
		C052B	4/27/93	54		
		E057B	4/28/93	62		
		E009B	4/29/93	10		
		E017B	4/29/93	10		
B1-R114-W185	Building 1, Room 114, Wall 185	C002B	5/14/93	53		
B1-R114-W186	Building 1, Room 114, Wall 186	C004B	5/14/93	53		
		C006B	5/14/93	53		
B1-R114-W194	Building 1, Room 114, Wall 194	A007B	5/11/93	64		
B1-R114-W209	Building 1, Room 114, Wall 209	A011B	5/10/93	59		
B1-R114-W210	Building 1, Room 114, Wall 210	A007B	5/10/93	53		
B1-R115-F115	Building 1, Room 115, Floor	A015B	4/5/93	56		
		A019B	4/5/93	78		
		A029B	4/5/93	83		
		B016B	4/5/93	78		
		B028B	4/5/93	94		
		C001B	4/5/93	56		
		C017B	4/5/93	106	7/26/93	5.75
		C021B	4/5/93	72		
		C025B	4/5/93	56		
		C029B	4/6/93	83		
		D018B	4/6/93	56		
		D024B	4/6/93	61		
		E015B	4/6/93	56		
		E021B	4/7/93	94		
		E027B	4/7/93	89		
		F020B	4/7/93	67		
F022B	4/7/93	72				
F030B	4/7/93	61				
G005B	4/7/93	78				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R115-F115 (Continued)	Building 1, Room 115, Floor	G007B	4/7/93	61		
		GC09B	4/7/93	67		
		G013B	4/7/93	56		
		G015B	4/7/93	78		
		G017B	4/7/93	67		
		G021B	4/7/93	78		
		G027B	4/7/93	72		
		H008B	4/8/93	83		
		H012B	4/8/93	94		
		H014B	4/8/93	78		
		H016B	4/8/93	67		
		H018B	4/8/93	72		
		H030B	4/8/93	67		
		I005B	4/14/93	108	7/26/93	6.63
		I007B	4/14/93	175	7/26/93	10.37
		I009B	4/14/93	83		
		I011B	4/14/93	58		
		I017B	4/14/93	83		
		I019B	4/14/93	83		
		I021B	4/14/93	100	7/26/93	5.96
		I023B	4/14/93	67		
		I025B	4/14/93	75		
		I027B	4/14/93	67		
		I029B	4/14/93	75		
		J002B	4/14/93	100	7/26/93	2.90
		J004B	4/14/93	92		
		J006B	4/14/93	190	7/26/93	9.43
		J008B	4/14/93	67		
		J010B	4/14/93	75		
		J012B	4/14/93	125	7/26/93	3.34
		J014B	4/14/93	125	7/26/93	3.75
		J016B	4/14/93	58		
		J020B	4/14/93	67		
J026B	4/14/93	67				
K005B	4/14/93	100	7/26/93	7/87		
B1-R115-W069	Building 1, Room 115, Wall 59	A015B	4/19/93	67		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R116-A017	Building 1, Room 116, Storage Bins	001B	5/10/93	59		
B1-R116-A025	Building 1, Room 116, Storage Bins	002B	5/10/93	53		
B1-R116-F116	Building 1, Room 116, Floor	A001B	5/6/93	62		
		A007B	5/6/93	85		
		B004B	5/6/93	85		
		C001B	5/6/93	77		
		D002B	5/6/93	69		
		E007B	5/6/93	54		
		F004B	5/6/93	62		
		H004B	5/6/93	62		
		I001E	5/6/93	85		
		I003B	5/6/93	54		
		I007B	5/6/93	85		
		J006B	5/6/93	54		
		L002B	5/6/93	77		
		L004B	5/6/93	54		
B1-R116-W073	Building 1, Room 116, Wall 73	A003B	5/11/93	64		
B1-R117-F117	Building 1, Room 117, Floor	E007B	4/15/93	57		
		F008B	4/15/93	51		
B1-R117-M001	Building 1, Room 117, Lockers	002B	4/15/93	51		
B1-R117-M004	Building 1, Room 117, Table	004B	4/15/93	51		
B1-R117-M008	Building 1, Room 117, Heater	001B	4/15/93	51		
B1-R117-W076	Building 1, Room 117, Wall 76	A001F	4/16/93	114	4/26/94	0.23
B1-R118-F118	Building 1, Room 118, Floor	C001B	4/20/93	58		
B1-R118-M010	Building 1, Room 118, Fan	001B	4/23/93	82		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R119-F119	Building 1, Room 119, Floor	A001B	4/20/93	75		
		A003B	4/20/93	58		
		A005B	4/20/93	83		
		D002B	4/20/93	58		
B1-R120-A002	Building 1, Room 120, Laboratory Bench	001B	2/25/93	80		
B1-R121-F121	Building 1, Room 121, Floor	C001B	4/21/93	76		
B1-R121-W091	Building 1, Room 121, Wall 91	A001B	4/22/93	59		
		A003B	4/22/93	147	4/26/94	0.05
		A005B	4/22/93	94		
B1-R121-W092	Building 1, Room 121, Wall 92	A001B	4/22/93	53		
		A003B	4/22/93	65		
B1-R121-W093	Building 1, Room 121, Wall 93	A003B	4/22/93	53		
B1-R121-W094	Building 1, Room 121, Wall 94	A001B	4/22/93	59		
		A003B	4/22/93	124	4/26/94	0.05
B1-R122-E002	Building 1, Room 122, X-Ray Fluorescence Machine	004B	2/24/93	52		
B1-R122-M003	Building 1, Room 122, Cabinet	001B	2/24/93	67		
B1-R123-A001	Building 1, Room 123, Laboratory Bench	001B	2/23/93	94		
B1-R123-A003	Building 1, Room 123, Laboratory Bench	001B	2/23/93	56		
B1-R123-A004	Building 1, Room 123, Laboratory Bench	001B	2/23/93	161	4/26/94	0.86
		001B	3/10/93	55		
		002B	2/23/93	161	4/26/94	0.32
B1-R123-A007	Building 1, Room 123, Laboratory Bench	001B	2/23/93	67		
B1-R123-A009	Building 1, Room 123, Acid Storage	002B	2/24/93	72		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R123-A011	Building 1, Room 123, Laboratory Desk	001B	2/24/93	83		
B1-R123-A013	Building 1, Room 123, Laboratory Bench	004B	2/24/93	128	4/26/94	0.05
B1-R123-A014	Building 1, Room 123, Laboratory Bench	004B	2/24/93	78		
B1-R123-A016	Building 1, Room 123, Cabinet	004B	2/24/93	59		
B1-R123-A017	Building 1, Room 123, Laboratory Bench	001B	2/24/93	52		
B1-R123-A018	Building 1, Room 123, Laboratory Bench	001B	2/24/93	67		
B1-R123-A020	Building 1, Room 123, Cabinet	004B	2/24/93	67		
B1-R123-A021	Building 1, Room 123, Cabinet	001B	2/24/93	89		
B1-R123-A023	Building 1, Room 123, Laboratory Bench	004B	2/24/93	81		
B1-R123-A029	Building 1, Room 123, Laboratory Bench	001B	2/23/93	150	4/26/94	-0.04
B1-R123-A030	Building 1, Room 123, Laboratory Bench	001B	2/24/93	59		
B1-R123-E001	Building 1, Room 123, Hood	002B	2/24/93	53		
B1-R123-E002	Building 1, Room 123, Grinder	001B	2/24/93	165	4/26/94	2.48
B1-R123-E002	Building 1, Room 123, Grinder	002B	2/24/93	129	4/26/94	0.32
B1-R123-E003	Building 1, Room 123, Shaker	001B	2/24/93	182	4/26/94	0.32
B1-R123-E011	Building 1, Room 123, Hood	004B	2/24/93	65		
B1-R123-E015	Building 1, Room 123, Hood	005B	2/24/93	59		
B1-R123-E017	Building 1, Room 123, Hood	004B	2/24/93	135	4/26/94	-0.13

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R123-E019	Building 1, Room 123, Hood	004B	2/25/93	67		
		C05B	2/25/93	71		
B1-R123-E020	Building 1, Room 123, Mold Press	001B	2/25/93	57		
B1-R123-E021	Building 1, Room 123, Hood	005B	2/25/93	52		
B1-R123-F123	Building 1, Room 123, Floor	O005B	2/26/93	52		
B1-R123-M003	Building 1, Room 123, Metal Bookcase	004B	2/23/93	71		
B1-R123-M006	Building 1, Room 123, Metal Cabinet	001B	2/23/93	71		
B1-R123-M007	Building 1, Room 123, Long Glass Storage	001B	3/10/93	140	4/26/94	0.86
B1-R123-M008	Building 1, Room 123, Metal Cabinet	001B	2/23/93	129	4/26/94	-0.13
B1-R123-M009	Building 1, Room 123, Metal Cabinet	001B	2/23/93	118	4/26/94	0.32
B1-R123-M016	Building 1, Room 123, Reagent Shelves	002B	2/24/93	88		
B1-R123-W101	Building 1, Room 123, Wall 101	A001B	2/23/93	106	4/26/94	0.05
B1-R125-A002	Building 1, Room 125, Laboratory Bench	006B	3/2/93	62		
		002B	3/2/93	10		
B1-R130-W138	Building 1, Room 130, Wall 138	A001B	4/12/93	80		
		A003B	4/12/93	75		
		A005B	4/12/93	75		
		C002B	4/12/93	65		
B1-R130-W139	Building 1, Room 130, Wall 139	A003B	4/12/93	55		
B1-R130-W140	Building 1, Room 130, Wall 140	A001B	4/12/93	55		
		A003B	4/12/93	65		
		C002B	4/12/93	55		
		C004B	4/12/93	60		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R130-W170	Building 1, Room 130, Wall 170	C002B	4/12/93	55		
B1-R131-A001	Building 1, Room 131, Copier	001B	4/8/93	60		
		001B	4/7/93	80		
B1-R132-F132	Building 1, Room 132, Floor	D002B	4/7/93	130	4/26/94	-0.04
B1-R135-F135	Building 1, Room 135, Floor	C005B	4/26/93	82		
		D002B	4/26/93	59		
		E005B	4/26/93	59		
		F002B	4/26/93	76		
		F004B	4/26/93	65		
B1-R135-M001	Building 1, Room 135, Cart	002B	4/26/93	118	4/26/94	0.41
B1-R135-M008	Building 1, Room 135, Parts Bin	001B	4/27/93	53		
B1-R135-M010	Building 1, Room 135, Parts Bin	001B	4/27/93	65		
B1-R135-M014	Building 1, Room 135, Shelves	001B	4/27/93	53		
B1-R135-M015	Building 1, Room 135, Shelves	002B	4/27/93	65		
B1-R135-M019	Building 1, Room 135, Work Bench	002B	4/27/93	82		
B1-R135-M022	Building 1, Room 135, Work Bench	003B	4/27/93	71		
B1-R135-M023	Building 1, Room 135, Work Bench	001B	4/27/93	71		
B1-R135-W160	Building 1, Room 135, Wall 160	A001B	4/26/93	65		
B1-R140-A002	Building 1, Room 140, Shelf	001B	5/7/93	113	4/26/94	0.14
B1-R140-A004	Building 1, Room 140, Shelf	001B	5/7/93	87		
B1-R140-A013	Building 1, Room 140, Shelf	001B	5/7/93	56		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B1-R140-F140	Building 1, Room 140, Floor	D006B	5/6/93	67		
		E005B	5/6/93	82		
B1-R201-F201	Building 1, Room 201, Floor	B002B	5/10/93	65		
B1-R202-C202	Building 1, Room 202, Ceiling	M005B	5/12/93	59		
B1-R202-E007	Building 1, Room 202, Water Heater	001B	5/13/93	82		
B1-R202-F202	Building 1, Room 202, Floor	A007B	5/11/93	57		
		B002B	5/11/93	71		
		C007B	5/11/93	86		
		D002B	5/11/93	71		
		E007B	5/11/93	64		
		E009B	5/11/93	71		
		F006B	5/11/93	71		
		F008B	5/11/93	100		
		G007B	5/11/93	71		
		G009B	5/11/93	57		
		H008B	5/11/93	64		
		HC14B	5/11/93	57		
		I003B	5/11/93	57		
		I011B	5/11/93	64		
		J008B	5/11/93	64		
		L008B	5/12/93	86		
B1-R202-W202	Building 1, Room 202, Wall 202	M007B	5/12/93	57		
		N010B	5/12/93	57		
B1-R202-W203	Building 1, Room 202, Wall 203	C008B	5/12/93	64		
B1-R202-W203	Building 1, Room 202, Wall 203	A001B	5/12/93	53		
B1-R203-C203	Building 1, Room 203, Ceiling	A001B	5/11/93	59		
B1-R203-F203	Building 1, Room 203, Floors	A001B	5/11/93	65		
		B002B	5/11/93	59		
		C005B	5/11/93	53		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B2-R000-S004	Building 2, Exterior, Roof Vent	001B	4/16/93	133	4/26/94	2.30
B2-R000-S010	Building 2, Exterior, Roof Vent	003B	4/16/93	92		
B2-R000-S011	Building 2, Exterior, Roof Vent	002B	4/16/93	100	7/26/93	18.52
B2-R000-S014	Building 2, Exterior, Roof Vent	002B	4/19/93	150	4/26/94	1.76
		003B	4/19/93	75		
B2-R000-S016	Building 2, Exterior, Roof Vent	001B	4/19/93	92		
B2-R000-S017	Building 2, Exterior, Roof Vent	001B	4/19/93	58		
		002B	4/19/93	183	4/26/94	0.32
B2-R000-S018	Building 2, Exterior, Roof Vent	001B	4/19/93	117	4/26/94	0.86
B2-R000-S021	Building 2, Exterior, Roof Vent	001B	4/19/93	183	4/26/94	-0.04
B2-R000-S023	Building 2, Exterior, Roof Vent	001B	4/19/93	117	4/26/94	1.85
B2-R000-S025	Building 2, Exterior, Roof Hatch	001B	4/19/93	183		(JJH)
B2-R000-S026	Building 2, Exterior, Roof Vent	001B	4/19/93	75		
B2-R000-S028	Building 2, Exterior, Roof Vent	001B	4/19/93	83		
B2-R000-S031	Building 2, Exterior, Roof Vent	001B	4/19/93	75		
B2-R000-S033	Building 2, Exterior, Roof Vent	001B	4/19/93	83		
		002B	4/19/93	67		
B2-R000-S034	Building 2, Exterior, Roof Vent	001B	4/19/93	67		
B2-R000-S036	Building 2, Exterior, Roof Vent	001B	4/19/93	133	4/26/94	0.32
B2-R000-S039	Building 2, Exterior, Air Conditioning Unit	001B	4/19/93	70		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B2-R000-S044	Building 2, Exterior, Sintering Tank	004B	4/19/93	75		
B2-R000-S045	Building 2, Exterior, North Pad	001B	4/19/93	87		
B2-R000-S046	Building 2, Exterior, West Pad	002B	4/19/93	110	4/26/94	0.14
B2-R000-S047	Building 2, Exterior, West Pad	001B	4/19/93	81		
B2-R000-S049	Building 2, Exterior, Cooling Tower Fan	001B	4/16/93	117	4/26/94	1.76
		003B	4/16/93	67		
B2-R000-S050	Building 2, Exterior, Cooling Tower Fan	001B	4/16/93	117	4/26/94	0.59
		002B	4/16/93	83		
		003B	4/16/93	67		
B2-R000-X001	Building 2, Exterior, North Wall	A041B	3/16/93	68		
		A049B	3/16/93	53		
		A057B	3/16/93	53		
		A073B	3/16/93	58		
		E019B	3/25/93	60		
		E027B	3/25/93	73		
		E031B	3/25/93	87		
		E035B	3/25/93	113	4/26/94	0.23
		E039B	3/25/93	107	4/26/94	0.05
		E043B	3/25/93	120	4/26/94	-0.04
		E047B	3/25/93	60		
		E051B	3/25/93	87		
		E059B	3/25/93	87		
		E063B	3/25/93	53		
		E067B	3/25/93	53		
		I005B	3/25/93	53		
		I009B	3/25/93	80		
		I017B	3/25/93	60		
		I021B	3/25/93	73		
		I025B	3/25/93	60		
I029B	3/25/93	113	4/26/94	0.05		
I033B	3/25/93	67				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B2-R000-X001 (Continued)	Building 2, Exterior, North Wall	I041B	3/25/93	153	4/16/94	0.23
		I049B	3/25/93	107	4/26/94	-0.04
		I053B	3/25/93	93		
		I057B	3/25/93	113	4/16/94	0.32
		I065B	3/25/93	100		
		I073B	3/25/93	73		
B2-R000-X002	Building 2, Exterior, East Wall	A001B	3/16/93	58		
		A017B	3/16/93	53		
		E007B	3/17/93	58		
		E019B	3/17/93	58		
		E023B	3/17/93	68		
		I001B	3/17/93	84		
		I005B	3/17/93	179	4/26/94	-0.13
		I017B	3/17/93	63		
B2-R000-X003	Building 2, Exterior, South Wall	A001B	3/17/93	111	4/26/94	-0.10
		A005B	3/17/93	95		
		A065B	3/17/93	58		
B2-R000-X004	Building 2, Exterior, West Wall	A013B	3/17/93	79		
		E003B	3/24/93	87		
		E015B	3/24/93	67		
		E023B	3/24/93	60		
		I001B	3/24/93	53		
		I005B	3/24/93	60		
		I025B	3/24/93	80		
B2-R000-X005	Building 2, Exterior Roof	A001B	4/12/93	67		
		A005A	4/12/93	75		
		A009B	4/12/93	67		
		A013B	4/12/93	125	4/26/94	0.17
		A017B	4/12/93	125	4/26/94	0.08
		A021B	4/12/93	117	4/26/94	0.08
		A025B	4/12/93	58		
		A033B	4/12/93	67		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B2-R000-X005 (Continued)	Building 2, Exterior, Roof	A045B	4/12/93	75		
		E025B	4/12/93	67		
		E061B	4/12/93	58		
		I009B	4/12/93	67		
		I013B	4/12/93	58		
		I029B	4/12/93	58		
		M009B	4/12/93	58		
		M041B	4/13/93	58		
		M045B	4/13/93	58		
		M049B	4/13/93	67		
		M069B	4/13/93	67		
		Q005B	4/13/93	67		
		Q013B	4/13/93	83		
		Q021B	4/13/93	75		
		Q025B	4/13/93	75		
		U001B	4/13/93	83		
		U021B	4/13/93	67		
		Y029B	4/13/93	58		
		Y041B	4/13/93	75		
				AC033B	4/13/93	75
		AC037B	4/13/93	100	4,26/94	1.32
		AC041B	4/13/93	75		
B2-R101-E002	Building 2, Room 101, Vacuum Welder	005B	3/26/93	62		
B2-R101-E007	Building 2, Room 101, Tinius/Olsen Hardener	003B	3/29/93	147	4,26/94	0.34
B2-R104-F104	Building 2, Room 104, Floor	C001B	3/19/93	74		
		J004B	3/19/93	67		
B2-R104-W014	Building 2, Room 104, Wall 14	E013B	4/1/93	67		
B2-R105-F105	Building 2, Room 105, Floor	A003B	3/17/93	59		
B2-R106-F106	Building 2, Room 106, Floor	D002B	3/16/93	52		
B2-R106-W024	Building 2, Room 106, Wall 24	C002B	3/16/93	96		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B2-R115-A002	Building 2, Room 115, Middle Upper Vent	002B	3/31/93	61		
B2-R115-C115	Building 2, Room 115, Ceiling	A017B	3/3/93	56		
		A045B	3/4/93	51		
		E033B	3/4/93	67		
		E053B	3/4/93	56		
		I017B	3/5/93	103	4/26/94	0.08
		I025B	3/4/93	56		
		M073B	3/8/93	69		
		U065B	3/8/93	53		
		Y065B	3/8/93	107	4/26/94	0.17
B2-R115-F115	Building 2, Room 115, Floor	A025B	3/23/93	94		
		B010B	3/23/93	55		
		B040B	3/23/93	71		
		F020B	3/24/93	62		
		K061B	3/29/93	58		
		L002B	3/29/93	75		
		O011B	3/30/93	58		
		P014B	3/30/93	58		
		P014B	3/30/93	58		
		Q021B	3/31/93	56		
		Q033B	3/31/93	56		
		Q049B	3/31/93	56		
		Q063B	3/31/93	67		
		Q065B	3/31/93	56		
		Z060B	4/1/93	58		
		B2-R115-S001	Building 2, Room 115, Steel Beam	001B	3/5/93	51
003B	3/5/93			51		
B2-R202-F202	Building 2, Room 202, Floor	C005B	4/1/93	56		
		D002B	4/1/93	67		
B2-R202-W101	Building 2, Room 202, Wall 101	A001B	4/1/93	67		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B3-P202-P202	Building 3, Platform 202, Platform	C001B	2/18/93	57		
		D001B	2/18/93	57		
		H001B	2/18/93	67		
		K001B	2/18/93	57		
B3-P203-E068	Building 3, Platform 203, Air Compressor	004B	3/22/93	63		
B3-P203-M001	Building 3, Platform 203, Cabinet	001B	3/22/93	55		
B3-P203-M005	Building 3, Platform 203, Cabinet	003B	3/23/93	133	4/26/94	-0.10
B3-R000-S009	Building 3, Exterior, Cooling Tower	003B	4/19/93	58		
		004B	4/19/93	58		
		011B	4/19/93	116	4/26/94	0.17
		012B	4/19/93	58		
		014B	4/19/93	87		
B3-R000-X001	Building 3, Exterior, North Wall	I009B	3/8/93	53		
		M007B	3/8/93	80		
B3-R000-X005	Building 3, Exterior, Roof	A009B	4/6/93	83		
		E017B	4/6/93	72		
		E021B	4/6/93	61		
		E025B	4/6/93	83		
		I017B	4/6/93	67		
		I025B	4/6/93	61		
		M025B	4/6/93	67		
		Q001B	4/6/93	56		
		Q017B	4/6/93	67		
		AC009B	4/8/93	67		
		AC017B	4/8/93	67		
		AC021B	4/8/93	61		
		AG017B	4/8/93	72		
		AG025B	4/8/93	78		
		AK001B	4/8/93	67		
AK009B	4/8/93	83				
AO009B	4/8/93	61				

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B3-R000-X005 (Continued)	Building 3, Exterior, Roof	AO025B	4/8/93	133	4/26/94	0.34
		AS001B	4/8/93	67		
		AS005B	4/8/93	83		
		AS025B	4/8/93	61		
		AW001B	4/8/93	89		
		AW005B	4/8/93	72		
		AW013B	4/8/93	89		
		AW021B	4/8/93	72		
		AW025B	4/8/93	83		
		BA001B	4/8/93	78		
		BA013B	4/8/93	56		
		BA021B	4/8/93	89		
		BA025B	4/8/93	72		
		Q0025B	4/8/93	67		
		U0009B	4/8/93	56		
		U0013B	4/8/93	83		
		U0021B	4/8/93	67		
		U0025B	4/8/93	61		
		Y0001B	4/8/93	106		
		Y0021B	4/8/93	78		
Y0025B	4/8/93	100				
B3-R020-F020	Building 3, Room 020, Floor	C003B	2/4/93	75		
B3-R101-E001	Building 3, Room 101, Electron Beam Furnace	005B	3/22/93	55		
B3-R101-E042	Building 3, Room 101, Blue Metal Box, Wheeled	001B	3/4/93	70		
B3-R101-F101	Building 3, Room 101, Floor	K011B	2/5/93	63		
		G-G009B	2/8/93	57		
B3-R101-M001	Building 3, Room 101, Wood Crate	001B	3/4/93	57		
B3-R101-M004	Building 3, Room 101, Wood Crate	001B	3/4/93	181	4/26/94	1.23
B3-R101-M007	Building 3, Room 101, Hose	001B	3/4/93	124	4/26/94	0.08

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B3-R101-W001	Building 3, Room 101, Wall 1	A005B	1/29/93	95		
		B013B	1/29/93	96		
		B020B	1/29/93	143	4/26/94	0.34
B3-R107-F107	Building 3, Room 107, Floor	G001B	3/22/93	63		
		H006B	3/22/93	78		
B3-R108-E017	Building 3, Room 108, Switch Panel	001B	2/12/93	110	4/26/94	0.26
B3-R108-W033	Building 3, Room 108, Wall 33	A003B	3/22/93	55		
		A007B	3/22/93	55		
		A011B	3/22/93	63		
B3-R108-W034	Building 3, Room 108, Wall 34	C006B	2/16/93	74		
B3-R110-W041	Building 3, Room 110, Wall 41	C002B	2/17/93	52		
		C006B	2/17/93	74		
B3-R110-W043	Building 3, Room 110, Wall 43	A003B	2/17/93	96		
		C004B	2/17/93	59		
B3-R110-W045	Building 3, Room 110, Wall 45	C002B	2/17/93	52		
B3-R112-W064	Building 3, Room 112, Wall 64	C004B	2/16/93	100		
		C006B	2/16/93	80		
B3-R112-W065	Building 3, Room 112, Wall 65	C002B	2/16/93	105	4/26/94	0.17
B3-R112-W070	Building 3, Room 112, Wall 70	A001B	2/16/93	119	4/26/94	0.34
		C002B	2/16/93	65		
B3-R112-W071	Building 3, Room 112, Wall 71	A003B	2/17/93	65		
B3-R115-C115	Building 3, Room 115, Ceiling	A001B	3/22/93	55		
B3-R115-F115	Building 3, Room 115, Floor	A001B	2/16/93	59		

See footnotes at end of table.

Summary Table 5-2
(Continued)

Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B3-R115-W053	Building 3, Room 115, Wall 53	C004B	2/16/93	89		
B3-R115-W054	Building 3, Room 115, Wall 54	A001B	2/16/93	81		
B3-R116-W048	Building 3, Room 116, Wall 48	A003B	3/22/93	94		
B3-R201-F201	Building 3, Room 201, Floor	D002B	3/22/93	78		
B3-R201-W082	Building 3, Room 201, Wall 82	A003B	2/18/93	67		
B3-R201-W083	Building 3, Room 201, Wall 83	A001B	2/18/93	67		
		A003B	2/18/93	57		
B3-R201-W084	Building 3, Room 201, Wall 84	A001B	2/18/93	95		
		C002B	2/18/93	86		
B3-R201-W085	Building 3, Room 201, Wall 85	A003B	2/18/93	57		
B3-R201-W086	Building 3, Room 201, Wall 86	A001B	2/18/93	57		
B3-R201-W087	Building 3, Room 201, Wall 87	C002B	2/18/93	57		
B3-R201-W088	Building 3, Room 201, Wall 88	A001B	2/18/93	57		
B3-R202-F202	Building 3, Room 202, Floor	G003B	3/22/93	55		
		H002B	3/22/93	71		
B4-R000-X001	Building 4, Exterior, North Wall	A001B	5/14/93	69		
B4-R101-W002	Building 4, Room 101, Wall 2	A005B	5/14/93	85		
B5-R000-X002	Building 5, Exterior, East Wall	A003B	5/14/93	59		
B5-R000-X003	Building 5, Exterior, South Wall	A005B	5/14/93	82		

See footnotes at end of table.

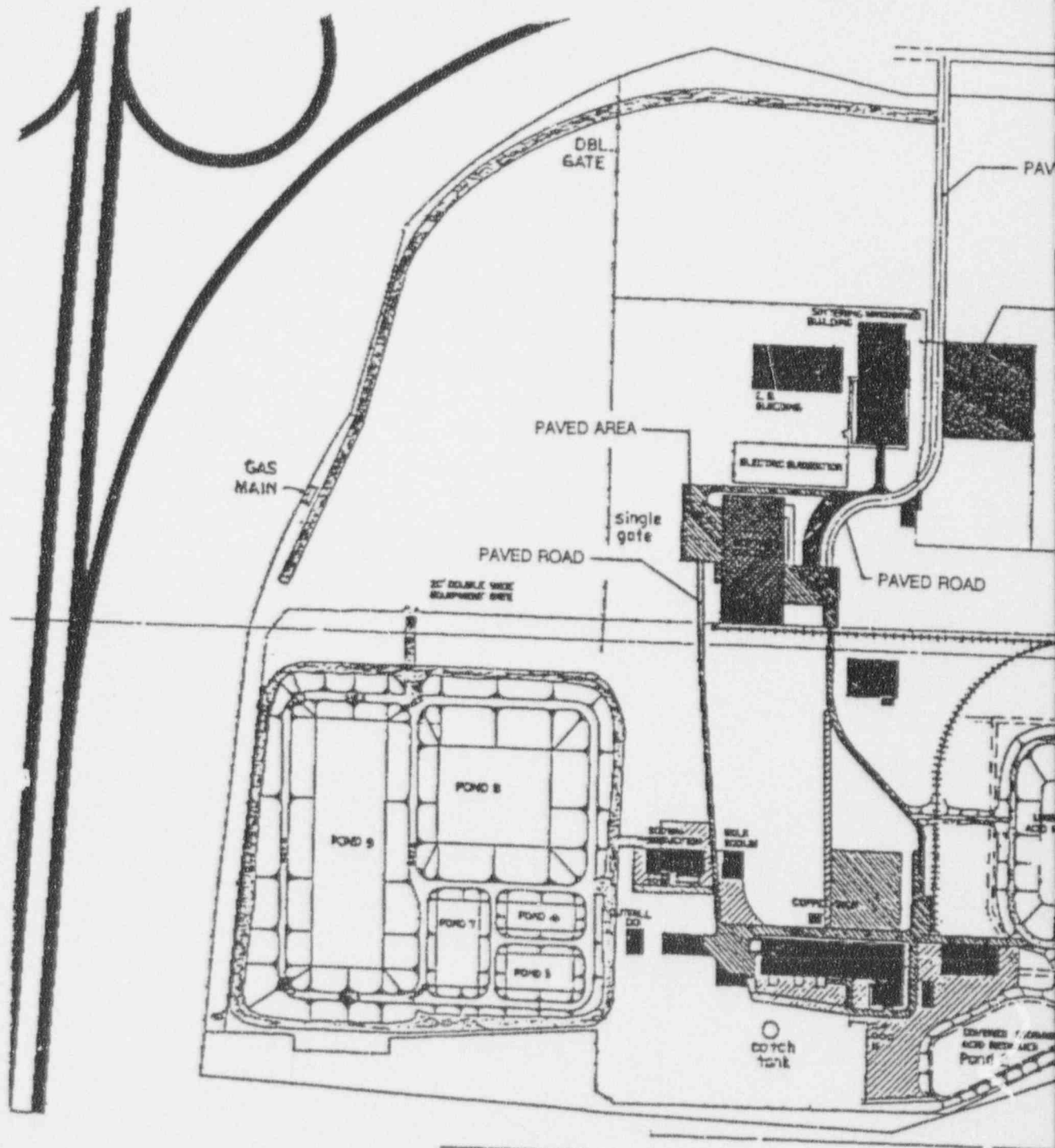
Summary Table 5-2
(Continued)

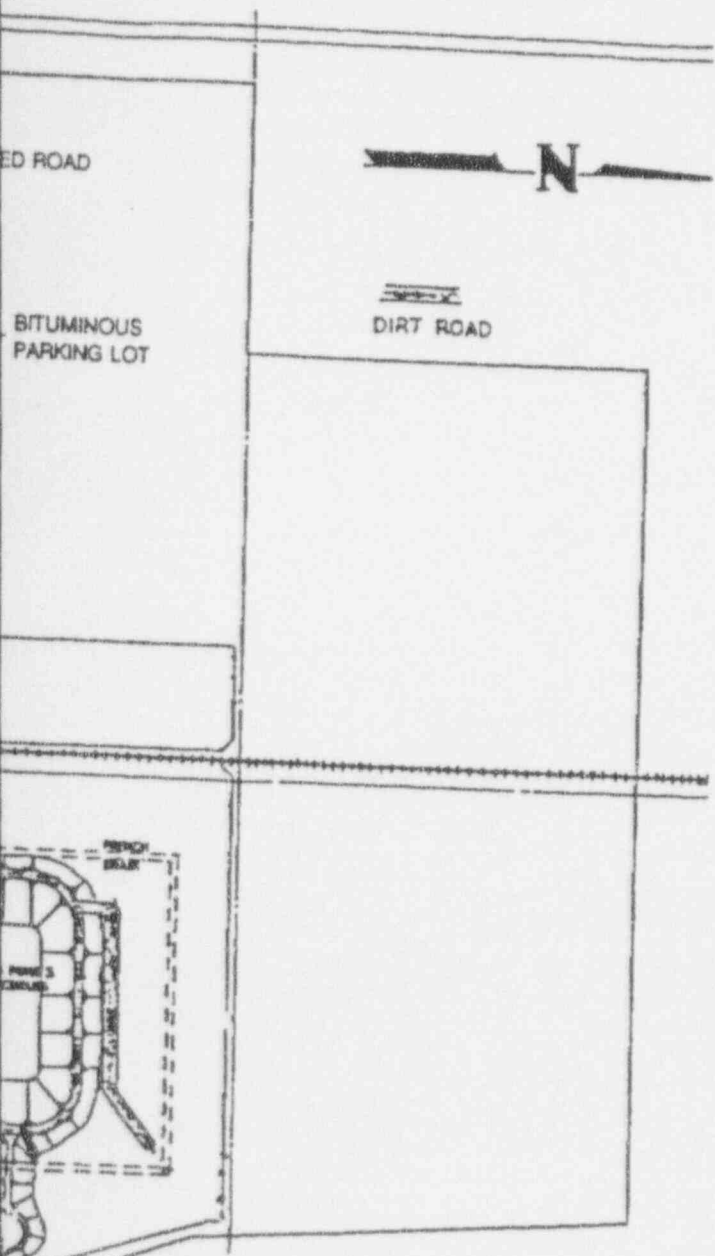
Location ID	Location Name	Grid	Date	Net (dpm/cm ²)	Wipe Data (dpm/cm ²)	
					Date	Net
B5-R000-X005	Building 5, Exterior, Roof	A001B	5/14/93	118	4/26/94	1.58
		D004B	5/14/93	182	4/26/94	1.93
B5-R101-F101	Building 5, Room 101, Floor	A001B	5/14/93	88		
		A003B	5/14/93	106	4/26/94	0.08
		A005B	5/14/93	153	3/28/94	0.81
		B002B	5/14/93	165	4/26/94	0.52
		B004B	5/14/93	94		
		C003B	5/14/93	100		
		C005B	5/14/93	188	3/28/94	0.54
		D002B	5/14/93	82		
B6-R000-X001	Building 6, Exterior, North Wall	D004B	5/14/93	141	4/26/94	0.52
		B063B	5/14/93	65		
B6-R000-X002	Building 6, Exterior, West Wall	A001B	5/14/93	53		
B6-R000-X004	Building 6, Exterior, East Wall	B003B	5/14/93	65		
B6-R000-X005	Building 6, Exterior, Roof	A001B	5/14/93	71		
		B003B	5/14/93	76		

(1) All available wipe data are provided for identified grid locations. For locations where wipe sample data are not identified, wipe samples were not taken. Wipe samples were not believed necessary for alpha readings less than or equal to 100 dpm/cm² since there were no indications that the contamination was removable.

(2) Wipe data taken at over 35 grid locations for the Building 1, Room 114 Floor demonstrates that removable contamination is negligible for this area. The grid locations that exhibited higher alpha readings were selected for wipe sampling and provided the basis for this conclusion. All grid locations that had alpha readings in excess of 100 dpm/cm² were not sampled for this area because there were no indications that the contamination was removable.

Figures






ANSTEC
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9406060282-01

REVISION	DATE	DESCRIPTION
FIGURE 1 PAVED AND IMPROVED ROADS FANSTEEL, INC. MUSKOGEE, OKLAHOMA PREPARED FOR KIRKPATRICK & LOCKHART PITTSBURGH, PENNSYLVANIA		
APPROVED	<i>MJM 5/24/94</i>	 Earth Sciences Consultants, Inc.
CHECKED	<i>KY 5/24/94</i>	
DRAWN	<i>DEB/24MAY94</i>	
DRAWING NUMBER		
0111203		

LEGEND

- SURVEY POINT LOCATION
- ▬ RAILROAD TRACK
- x — x — FENCE
- ▬ PROPERTY BOUNDARY
- └─ DOORWAY
- W WALL
- RM ROOM
- - - - - HIDDEN LINES, ROOMS ABOVE OR BELOW
- I INACCESSIBLE
- ① FIXED EQUIPMENT SURVEY POINT LOCATION
- ▩ CHAIN-LINK FENCE

MASTER LEGEND

FANSTEEL, INC.
MUSKOGEE, OKLAHOMA

PREPARED FOR
KIRKPATRICK & LOCKHART
PITTSBURGH, PENNSYLVANIA

APPROVED *MJM 3/24/94*
CHECKED *JCY 5/24/94*
DRAWN

DRAWING NUMBER
0111014



Earth Sciences Consultants, Inc.

REVISION	DATE	DESCRIPTION

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3

9406060282-02-04

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Attachment A

Boring Logs

Boring Log

Client Fansteel, Inc. Project No. 111 Boring No. MW-151D
 Location Muskogee, Oklahoma Driller A. W. Pool Drilling Field Scientist BES
 Date Started 2/15/93 Surface Elevation (ft/msl) 540.55 Checked By/Date RCH - 5/7/93
 Date Completed 2/22/93 Bottom of Well (ft) 70.0 Bottom of Boring (ft) 85.0 Page 1 of 5

Depth (Feet)	Sample No. and Type	SPT Blows (6" or ROD (%))	Sample Recovery (ft)	H-Nu Reading (ppm)	Beta/Gamma Reading (mr/hr)	Profile	Profile Description	Well/Piezometer Construction Detail
0.0								5" I.D. Protective Steel Casing w/ Locking Cap
2.5	SS 1		2.5	<1	<1		Silty Clay Loam - Dusky Brown, Med. Stiff to Stiff, Rooted, Damp to Wet Silty Clay - Grayish Brown, Med. Stiff, Rooted, Damp - Becomes Moist from 1.2' to 1.5' - Med. Red Clay Layers from 1.8' to 2.4'	4" I.D. Sch. 40 PVC Vented Slip Cap Ground Surface 3' x 3' Concrete Rain Apron
5.0	SS 2		5.0	<1	<1		Clay - Med. Brown to Lt. Brown, Very Stiff to Hard, Trace Silt, Rooted to 6.5', Dry - Few Dk. Yellowish-Orange Mottles from 4.2' - Few Dk. Gray, Med.- to Coarse-Grained Sandstone Fragments ($\leq 1/8"$ in Dia.) from 5.4' to 8.2'	12-1/4" Dia. Boring
7.5								8" I.D. Steel Casing
10.0	SS 3		5.0	<1	<1		Sandy Clay - Dk. Yellowish Orange with Pale Yellowish-Brown Mottling, Very Hard, Sand is Fine-Grained, Dk. Reddish-Brown, Well-Rounded Limonite or Iron Concretions ($< 1/8"$ in Dia.) Throughout - Few Grayish-Black (N-2) Mottles from 10'	Cement/Bentonite Grout
12.5								4" I.D. Sch 40 PVC, Flush-Joint, Threaded, Riser Pipe
15.0	SS 4		5.0	<1	<1			
17.5								

See footnotes at end of boring log.

Boring Log

Client Fansteel, Inc. Project No. 111 Boring No. MW-151D
 Location Muskogee Oklahoma Driller A. W. Pool Drilling Field Scientist BES
 Date Started 2/2/93 Surface Elevation (ft/msl) 540.55 Checked By/Date RCH - 5/7/93
 Date Completed 2/22/93 Bottom of Well (ft) 70.0 Bottom of Boring (ft) 85.0 Page 2 of 5

Depth (Feet)	Sample No. and Type	SPT Blows (6") or ROD (%)	Sample Recovery (ft)	H-Nu Reading (ppm)	Beta/Gamma Reading (mr/hr)	Profile	Profile Description	Well/Piezometer Construction Detail
20.0	SS 5		5.0	<1	<1		Sandy Clay - Same as Above - Becomes Dusky Red to Dk. Reddish Brown at 20.3' - Becomes Damp at 20.5'	<p style="font-size: small;"> 12-1/4" Dia. Boring 8" I.D. Steel Casing Cement/Bentonite Grout 4" I.D. Sch 40 PVC Flush-Joint Threaded Riser Pipe </p>
22.5							Clayey Sand - Dusky Red to Med. Red, Sand is Fine- to Med.-Grained, Moist	
25.0	SS 6		5.0	<1	<1		Sand - Grayish Orange, Med.- to Coarse-Grained, Moist	
27.5	NA						Silty Clay - Dusky Red with Few Grayish-Black Mottles, Very Stiff, Coarse-Grained Wet Sand Lenses Throughout, Damp - Becomes Wet at 27.7'	
30.0	SS 7		5.0	<1	<1		Sand - Lt. Gray to Lt. Brown, Med.- to Coarse-Grained, Wet - Becomes Very Coarse-Grained with Trace Gravel (≤1/8" in Dia.) and Dk. Gray Subrounded Shale Fragments at 31.5'	
32.5								
35.0	SS 8		2.5	<1	<1		Shale - Med. Bluish Gray to Med. Gray, Highly Weathered, Soft to 35' - Auger Refusal at 35.0'	
37.5	WR		NA	NA	<1			

See footnotes at end of boring log.

Boring Log

Client Fansteel, Inc. Project No. 111 Boring No. MW-151D
 Location Muskogee, Oklahoma Driller A. W. Pool Drilling Field Scientist BES
 Date Started 2/15/93 Surface Elevation (ft/msl) 540.55 Checked By/Date RCH - 5/7/93
 Date Completed 2/22/93 Bottom of Well (ft) 70.0 Bottom of Boring (ft) 85.0 Page 3 of 5

Depth (Feet)	Sample No. and Type	SPT Blows (6" or RQD (%))	Sample Recovery (ft)	H-Nu Reading (ppm)	Beta/Gamma Reading (mr/hr)	Profile	Profile Description	Well/Piezometer Construction Detail
40.0	WR Core 1	NA 19%	NA 43	NA <1	<1 <1	Shale	- Med. Dk. Gray (N-4), Siliceous, Laminations Angled Slightly (~5°), Horizontal Fractures and Some 45° Fractures, No Staining Evident, Some Spalling of Core Fragments	
42.5								
45.0	Core 2	90%	62	<1	<1		- Becomes More Competent at 45.54' - No Return from 46.0' to 49.75'	
47.5								
50.0							- Regain Return and Grayish Black Clay, Soft at 49.75'	
52.5	Core 3	85%	62	<1	<1	Sandy Shale	- Lt. Gray (N-7), Thin Laminations, Fractured Along Bedding Planes, Some Shale Partings and Pressure-Solution Features Similar to Styolites, Interlaminated with Dk. Gray (N-4) Shale, Lt. Gray Laminae are Calcareous, Dk. Gray are Siliceous and Hard	
55.0							Shale	- Med. Dk. Gray (N-4), Soft, Fissile, Clay Rich, Few Fractures, Sharp Contact with Overlying Sandy Shale - Fractured from 52.3' to 52.5' and 53.55' to 56.0', No Staining Evident - Becomes Grayish Black (N-2) at 53.05' - Core Dry when Broken
57.5	Core 4	18%	57	<1	<1			Bentonite Pellets

See footnotes at end of boring log.

Boring Log

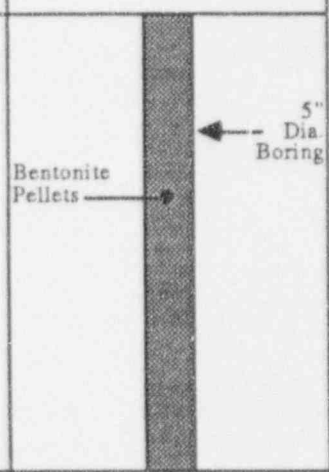
Client Fansteel, Inc. Project No. 111 Boring No. MW-151D
 Location Muskogee, Oklahoma Driller A. W. Pool Drilling Field Scientist BES
 Date Started 2/15/93 Surface Elevation (ft/msl) 540.55 Checked By/Date RCH - 5/7/93
 Date Completed 2/22/93 Bottom of Well (ft) 70.0 Bottom of Boring (ft) 85.0 Page 4 of 5

Depth (Feet)	Sample No. and Type	SPT Blows (6" or ROD (%))	Sample Recovery (ft)	H-Nu Reading (ppm)	Beta/Gamma Reading (mr/hr)	Profile	Profile Description	Well/Piezometer Construction Detail
60.0	Core 4	18%	57	<1	<1	[Hatched Profile]	Shale - Same as Above	
62.5							- Becomes Med. Lt. Gray (N-7), Slightly Harder from 59.1' to 59.35'	
65.0							- Becomes Med. Hard, Slightly Fissile, Siliceous with Some Clay-Filled Horizontal Fractures at 62.7', 63.4', 64.2', and 64.65'	
67.5	Core 5	68%	94	<1	<1	[Hatched Profile]	- Fractured at 30° Angle from 64.4' to 64.5', Shale Grades to Dk. Gray (N-3)	
70.0							- Highly Fractured from 65.0' to 68.3', Horizontal Fractures with No Staining, Very Fissile, Shale Partings Evident Along Fracture Surfaces	
72.5							- Bedding Plane Fractures (~10° Angle) from 66.73' to 67.13'	
75.0	Core 6	95%	99	<1	<1	[Hatched Profile]	- Some Clay Filling at 67.8' and 68.2'	
77.5								

See footnotes at end of boring log.

Boring Log

Client Fansteel, Inc. Project No. 111 Boring No. MW-151D
 Location Muskogee, Oklahoma Driller A. W. Pool Drilling Field Scientist BES
 Date Started 2/15/93 Surface Elevation (ft/msl) 540.55 Checked By/Date RCH - 5/7/93
 Date Completed 2/22/93 Bottom of Well (ft) 70.0 Bottom of Boring (ft) 85.0 Page 5 of 5

Depth (Feet)	Sample No. and Type	SPT Blows (6") or ROD (%)	Sample Recovery (ft)	H-Nu Reading (ppm)	Beta/Gamma Reading (mr/hr)	Profile	Profile Description	Well/Piezometer Construction Detail
<div style="text-align: center;">80.0</div> <div style="text-align: center;">82.5</div> <div style="text-align: center;">85.0</div>	Core 6	95%	99	<1	<1		Shale - Same as Above - Zone of Thin Horizontal Fractures from 79.90' to 80.35', Very Soft - Horizontal Fractures with Clay Filling at 80.85', 81.45', and 82.93'	 <p style="text-align: right;">5" Dia. Boring</p> <p style="text-align: center;">Bentonite Pellets</p>
<div style="text-align: center;">87.5</div>								

SS = Split-barrel sample.
 ND = Not detected.
 NA = Not applicable.
 WR = Water rotary.