

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-18426-MR
ADDRESS: 2315 NORTH 1ST STREET

AUGUST 1985

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

ALBUQUERQUE OPERATIONS OFFICE

DEPARTMENT OF ENERGY

BY

BENDIX FIELD ENGINEERING CORPORATION
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DATE

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-18426-MR, is a single-family residence located at 2315 North 1st Street, Grand Junction, Colorado.

The purpose of this assessment is to evaluate the extent of uranium millsite contamination at this property. This assessment includes recommended remedial action, estimated volume of material to be removed, and estimated cost of the proposed action.

1.2 Evaluation and Recommendation

The action recommended is the removal of contaminated material and restoration of the property to its original condition. The identified residual radioactive material found on this property is tailings; the estimated volume is: exterior, 267 cu. yd.; interior, 28 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$22,920. Remedial action on this property will take approximately 30 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 2315 North 1st Street, Grand Junction, Colorado

Zoning: Residential (RSF-5)

Lot Size: Approximately 30,087 sf (0.7 acres)

Legal Description: Beginning S.89°37'E. 661.8 feet from the southwest corner of the NE 1/4 NE 1/4 section 10, T1S, R1W, U.M., thence N.0°06'50"E. 143.0 feet, thence S.89°37'E. 150.0 feet, thence S.88°09'30"E. 60.42 feet, thence south to the south line of the NE 1/4 NE 1/4 section 10, thence west to the beginning, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2.5 mile(s) northwest of the State of Colorado Tailings Repository. Appendix Figure 2.1 shows the property location relative to its surroundings.

Utilities: Utility locations are shown in Appendix Figure 2.2.

Electrical:	Overhead
Gas:	Underground
Telephone:	Underground/Overhead
Sewer:	Underground
Water:	Underground
Cable TV:	Overhead

Bordering Properties:

North:	Vacant land/pasture
South:	Single-family residences (2)
East:	Single-family residence/North 1st Street
West:	Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence
Size:	Approximately 1,330 sf
Construction Date:	1936
Construction:	Wood-frame over partial basement and crawl space
Foundation:	Concrete foundation wall and footings

Footing Depth:	Approximately 18" to bottom of footing from grade in crawl space and approximately 84" to bottom of footing from grade in basement
Basement:	Yes - partial
Crawl Space:	Yes - partial
Condition:	Good

Other Structures:

Type:	Garage/old packing shed
Size:	Approximately 970 sf
Construction:	24-inch-thick sandstone walls. Floor elevation is 6 feet below outside grade
Foundation:	Assumed concrete foundation and footing
Condition:	Good

Type:	Chicken coop/shed
Size:	Approximately 343 sf
Construction:	Wood-frame
Foundation:	Dirt
Condition:	Fair

General Remarks:

Orchard, gardens, free-standing solar panels, ditches, structures, utilities, landscaping, and other special features of this property are included in Appendix Figure 2.2.

Historical Data:

This structure is not over 50 years old. Therefore, it does not meet the eligibility criteria for consideration of inclusion on the National Register of Historic Places.

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-18426-MR on June 17, 1985. Data collection methods were performed in accordance with procedures fully described in the Radiologic Support Operations Procedures Manual GJ-07(84) (Bendix Field Engineering Corporation, 1984). These data were evaluated to determine the areal and vertical extent of uranium mill tailings contamination at this property as well as any other contaminated material that may have originated from the millsite.

A review of historical information from the files of the Colorado Department of Health (CDH) and the inclusion data from Oak Ridge National Laboratory (ORNL) was conducted to determine areas of potential contamination identified during previous radiologic assessments of this property.

The Bendix radiologic survey was designed to investigate the entire property, with emphasis on previously identified areas of contamination. Conclusions based upon data analyses are discussed in Section 3.5, Extent of Contamination. Photocopies of the Official Survey Report, team leader notes, deconvolution graphs, and Exterior Gamma Scan map are included in the Appendix (Section 6.0).

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 15 to 16 $\mu\text{R/h}$
Highest Outside Gamma Reading (HOG): 297 $\mu\text{R/h}$

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1.

3.2.2 Interior Findings

Background Readings: 14 to 16 $\mu\text{R/h}$
Highest Inside Gamma Reading (HIG): 17 $\mu\text{R/h}$

Interior radium-concentration measurements are presented in Appendix Table 3.2. Interior gamma exposure-rate measurements are summarized in Appendix Table 3.3. Appendix Figure 3.2 shows interior exposure rates and locations of these measurements.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figures 3.2 and 3.3. Data from these investigations are included in Appendix Tables 3.1 and 3.2.

3.4 Radon/Radon Daughter Concentration (RDC)

The working level was not assessed by CDH. No RDC measurements were taken by Bendix.

3.5 Extent of Contamination

Appendix Figures 3.4a and 3.4b show identified areas and estimated depths of contamination on this property, based on assessments of all measurements taken. As noted in these figures, areas that contain identified residual radioactive materials are:

- (Area A) Surface Material: Soil
Direction From Primary Structure: Interior
Other Directions: Crawl space
Total Depth of Contamination: 12 inches
Approximate Square Footage: 12
- (Area B) Surface Material: Concrete
Direction From Primary Structure: Southeast
Other Direction: Garage floor
Total Depth of Contamination: 12 inches
Other (height or thickness): 4-inch-thick concrete
Approximate Square Footage: 756
- (Area C) Surface Material: Soil
Direction From Primary Structure: Southwest
Other Directions: West property line
Total Depth of Contamination: 12 inches
Approximate Square Footage: 139
- (Area D) Surface Material: Soil
Direction From Primary Structure: Southwest
Other Directions: West property line, immediately north
of Area C
Total Depth of Contamination: 6 inches
Comments: This is in the garden area.
Approximate Square Footage: 110
- (Area E) Surface Material: Soil
Direction From Primary Structure: Southwest
Other Directions: West property line, north of Area D
Total Depth of Contamination: 18 inches
Approximate Square Footage: 25
- (Area F) Surface Material: Soil
Direction From Primary Structure: Southwest
Other Directions: East of the chicken coop and shed
Total Depth of Contamination: 6 inches
Approximate Square Footage: 1,762

- (Area G) Surface Material: Lawn
Direction From Primary Structure: West
Other Directions: North of Area F
Total Depth of Contamination: 12 inches
Approximate Square Footage: 40
- (Area H) Surface Material: Soil
Direction From Primary Structure: Southwest
Other Directions: East of Area F
Total Depth of Contamination: 12 inches
Approximate Square Footage: 30
- (Area I) Surface Material: Lawn
Direction From Primary Structure: South
Other Directions: West of the garage
Total Depth of Contamination: 6 inches
Approximate Square Footage: 364
- (Area J) Surface Material: Soil
Direction From Primary Structure: East
Other Directions: Adjacent to the primary structure
Total Depth of Contamination: 15 inches
Approximate Square Footage: 100
- (Area K) Surface Material: Lawn
Direction From Primary Structure: East
Other Directions: Adjacent to Area J
Total Depth of Contamination: 6 inches
Approximate Square Footage: 464
- (Area L) Surface Material: Soil
Direction From Primary Structure: East
Total Depth of Contamination: 12 inches
Approximate Square Footage: 117
- (Area M) Surface Material: Soil
Direction From Primary Structure: West
Other Directions: West of chicken coop and shed
Total Depth of Contamination: 6 inches
Approximate Square Footage: 60
- (Area N) Surface Material: 3/4-inch gravel
Direction From Primary Structure: East
Other Directions: North of the garage
Total Depth of Contamination: 12 inches
Approximate Square Footage: 1,456
- (Area O) Surface Material: 3/4-inch gravel
Direction From Primary Structure: East
Other Directions: North of the garage
Total Depth of Contamination: 15 inches
Approximate Square Footage: 450

- (Area P) Surface Material: 3/4-inch gravel
Direction From Primary Structure: East
Other Directions: Northwest of garage
Total Depth of Contamination: 6 inches
Approximate Square Footage: 393
- (Area Q) Surface Material: Lawn
Direction From Primary Structure: South
Other Directions: West of the garage
Total Depth of Contamination: 12 inches
Approximate Square Footage: 169
- (Area R) Surface Material: 3/4-inch gravel
Direction From Primary Structure: East
Other Directions: East of the garage
Total Depth of Contamination: 9 inches
Approximate Square Footage: 126
- (Area S) Surface Material: 3/4-inch gravel
Direction From Primary Structure: Southeast
Other Directions: East of garage
Total Depth of Contamination: 6 inches
Approximate Square Footage: 226
- (Area T) Surface Material: 3/4-inch gravel
Direction From Primary Structure: Southeast
Other Directions: Southeast of the garage
Total Depth of Contamination: 9 inches
Approximate Square Footage: 510
- (Area U) Surface Material: 3/4-inch gravel
Direction From Primary Structure: Southeast
Other Directions: South of the garage
Total Depth of Contamination: 6 inches
Approximate Square Footage: 662
- (Area V) Surface Material: Soil
Direction From Primary Structure: Southeast
Other Directions: Adjacent to the south end of garage
Total Depth of Contamination: 12 inches
Approximate Square Footage: 750
- (Area W) Surface Material: Lawn
Direction From Primary Structure: Southeast
Other Directions: West of garage
Total Depth of Contamination: 12 inches
Approximate Square Footage: 1,104
- (Area X) Surface Material: Lawn
Direction From Primary Structure: South
Other Directions: West of Area W
Total Depth of Contamination: 6 inches
Approximate Square Footage: 240

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-18426-MR, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figures 3.4a and 3.4b) and transport of removed material to the disposal site.

After remedial action is completed, the areas involved will be restored to original condition in accordance with the Bendix drawings, Vicinity Properties General Construction Specification (Bendix Field Engineering Corporation, 1984), and Statement of Work for Construction Subcontractor.

Dislocation of the occupants will not be required for this remedial action.

4.2 Evaluation of Recommended Remedial Action

Volume calculations of the areas included for remedial action are presented in Appendix Table 4.1. Cost estimates are presented in Appendix Table 4.2.

Estimated cost of remedial action is \$22,920.

This remedial action will result in removal of the identified residual radioactive materials.

There is no owner preference with respect to remedial action, and no legal or other complications are foreseen at this time.

5.0 REFERENCES

ARIX, A Professional Corporation, Procedures Manual for the Grand Junction Remedial Action Program, for Colorado Department of Health, Radiation Control Division, and the U.S. Department of Energy, 1983.

Bendix Field Engineering Corporation, Procedures Manual Radiologic Support Operations Grand Junction Vicinity Properties, (GJ-07), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Engineering, Construction, and Land Support Manual Grand Junction Vicinity Properties Project, (GJ-08), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Grand Junction Vicinity Properties Operating Manual, (GJ-16) for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 1984.

Bendix Field Engineering Corporation, Vicinity Properties General Construction Specification, for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 1984.

Bendix Field Engineering Corporation, Environmental Assessment of Preliminary Cleanup Activities at Offsite Properties Contaminated by Tailings from the Grand Junction Inactive Uranium Millsite, (GJ-04), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations, Albuquerque, New Mexico, 1983.

U.S. Department of Energy, Programmatic Memorandum of Agreement (DOE No. DE-GM04-84AL28460) between the U.S. Department of Energy, the Advisory Council on Historic Preservation, and the Colorado State Historic Preservation Officer, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

U.S. Department of Energy, Vicinity Properties Management and Implementation Manual, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

U.S. Environmental Protection Agency, Standards for Remedial Action at Inactive Uranium Processing Sites (40 CFR Part 192), Washington, D.C., 1983.

6.0 APPENDIX

This Appendix contains the following:

Appendix Tables:

Table 3.1	Radium Concentrations at Exterior Locations
Table 3.2	Radium Concentrations at Interior Locations
Table 3.3	Summary of Interior Gamma Exposure Rates
Table 4.1	Area and Volume Calculations
Table 4.2	Estimated Cost of Decontamination and Restoration

Appendix Figures:

Figure 2.1	Vicinity Map
Figure 2.2	Site Plan
Figure 3.1	Exterior Grid-Point Exposure Rates
Figure 3.2	Interior Gamma Exposure Rates and Sample Locations
Figure 3.3	Exterior Sample Locations
Figure 3.4a	Interior Estimated Extent of Contamination
Figure 3.4b	Exterior Estimated Extent of Contamination

Official Survey Report

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Exterior Gamma Scan Map

Radium Concentrations at Exterior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
6	121182	00	DS	4.4		*	West property line
		06	DS	3.4		*	
7	122236	00	DS	3.9		*	Southwest of primary structure on west property line
		06	DS	4.2		*	
		12	DS	3.8		*	
		18	DS	1.3		*	
8	122255	00	DS	7.6		*	West property line
		06	DS	2.6		*	
		12	DS	2.1		*	
9	125205	00	DS	2.8		*	West property line along fence
		06	DS	2.2		*	
10	132193	00	DS	3.7		*	South edge of garden
		06	DS	4.3		*	
		12	DS	2.9		*	
11	142256	00	DS	7.3		*	East of shed
		06	DS	1.8		*	
12	147264	00	DS	3.9		*	East of shed
		06	DS	1.6		*	
13	151249	00	DS	3.4		*	
		06	DS	2.0		*	
14	152269	00	DS	12.3		*	East of shed
		06	DS	1.3		*	
15	156283	03	TC	8.7		*	West of primary structure DC = 12 inches Based on the deconvolution graph
		06	TC	11.0		*	
		09	TC	9.3		*	
		12	TC	6.6		*	
		15	TC	4.8		*	
		18	TC	3.9		*	
		21	TC	3.6		*	
		24	TC	3.4		*	
		27	TC	3.3		*	
		30	TC	3.3		*	
		33	TC	3.4		*	
		36	TC	3.4		*	

Radium Concentrations at Exterior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
16	158264	03	TC	6.0		*	East of shed
		06	TC	4.6		*	DC = 6 inches
		09	TC	3.8		*	Based on the
		12	TC	3.3		*	deconvolution graph
		15	TC	3.1		*	
		18	TC	3.1		*	
		21	TC	3.1		*	
		24	TC	3.2		*	
17	161269	00	DS	1.6		*	West of primary
		06	DS	<1.0		*	structure
18	162234	00	DS	1.1		*	North edge of
		00	DS	1.1		*	garden
19	165295	00	DS	1.7		*	Background
		00	GS		2.7	*	DC = 0 inches
		03	TC	2.9		*	
		06	TC	3.3		*	
		09	TC	3.6		*	
		12	BH	3.6	<1.0	*	
		15	TC	3.4		*	
		18	TC	3.1		*	
		21	TC	2.9		*	
		24	TC	2.7		*	
		27	TC	2.7		*	
		30	TC	2.7		*	
		33	TC	2.6		*	
		36	TC	2.6		*	
20	170250	03	TC	6.5		*	Southwest of primary
		06	TC	5.6		*	structure
		09	TC	4.7		*	DC = 9 inches
		12	TC	3.9		*	Based on the
		15	TC	3.5		*	deconvolution graph
		18	TC	3.2		*	
		21	TC	3.2		*	
		24	TC	3.1		*	
		27	TC	3.2		*	
		30	TC	3.1		*	
		33	TC	3.3		*	
		36	TC	3.3		*	
		39	TC	3.3		*	
		42	TC	3.2		*	

Radium Concentrations at Exterior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
20	170250	45	TC	3.2		*	
		48	TC	2.9		*	
21	174264	00	DS	4.0		*	
		06	DS	1.4		*	
22	176236	00	DS	2.7		*	
		06	DS	2.1		*	
23	185236	03	TC	3.5		*	Southwest of primary structure DC = 6 inches Based on all available data
		06	TC	3.6		*	
		09	TC	3.6		*	
		12	TC	3.5		*	
		15	TC	3.2		*	
		18	TC	3.1		*	
		21	TC	3.1		*	
		24	TC	2.9		*	
		27	TC	2.8		*	
		30	TC	2.9		*	
24	186266	00	DS	1.6		*	West of primary structure
		06	DS	<1.0		*	
25	187248	03	TC	8.2		*	Southwest of primary structure DC = 9 inches Based on the deconvolution graph
		06	TC	6.7		*	
		09	TC	5.3		*	
		12	TC	4.3		*	
		15	TC	3.7		*	
		18	TC	3.0		*	
		21	TC	2.9		*	
		24	TC	2.8		*	
		27	TC	2.8		*	
		30	TC	2.8		*	
26	192258	00	DS	7.9		*	South of flagstone patio
		06	DS	2.0		*	
27	200250	00	DS	2.5		*	South of primary structure
		06	DS	1.0		*	

Radium Concentrations at Exterior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
28	200260	03	TC	3.3		*	West of primary structure DC = 6 inches Based on all available data
		06	TC	3.0		*	
		09	TC	2.9		*	
		12	TC	2.7		*	
		15	TC	2.6		*	
		18	TC	2.5		*	
		21	TC	2.4		*	
		24	TC	2.5		*	
		27	TC	2.5		*	
		30	TC	2.5		*	
29	200266	00	DS	<1.0		*	South of flagstone patio
		06	DS	<1.0		*	
30	205242	00	DS	15.8		*	DC = 6 inches Based on all available data
		06	DS	1.1		*	
		03	TC	3.2		*	
		06	TC	3.2		*	
		09	TC	3.3		*	
		12	TC	3.3		*	
		15	TC	3.2		*	
		18	TC	3.0		*	
		21	TC	3.0		*	
		24	TC	2.9		*	
		27	TC	2.9		*	
		30	TC	2.9		*	
		33	TC	2.9		*	
		36	TC	2.9		*	
31	205258	03	TC	28.3		*	West of primary structure Auger refusal DC = 9 inches Based on the deconvolution graph
		06	TC	20.6		*	
		09	TC	14.9		*	
		12	TC	11.0		*	
		15	TC	9.2		*	
		18	TC	7.6		*	
		21	TC	7.3		*	
32	208272	00	DS	5.6		*	Gas line Top of line
		06	DS	1.1		*	
		18	DS	<1.0		*	
33	209276	03	TC	3.2		*	On west side of primary structure DC = 0 inches
		06	TC	3.2		*	
		09	TC	3.1		*	

Radium Concentrations at Exterior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
33	209276	12	TC	3.1		*	
		15	TC	3.1		*	
		18	TC	3.0		*	
		21	TC	3.1		*	
		24	TC	3.1		*	
		27	TC	3.2		*	
		30	TC	3.2		*	
		33	TC	3.3		*	
		36	TC	3.1		*	
		39	TC	3.1		*	
		42	TC	2.9		*	
		45	TC	3.0		*	
		48	TC	3.0		*	
		51	TC	2.9		*	
		54	TC	2.9		*	
		57	TC	3.0		*	
		60	TC	2.9		*	
		63	TC	2.7		*	
		66	TC	2.7		*	
		69	TC	2.6		*	
		72	TC	2.6		*	
		75	TC	2.5		*	
		78	TC	2.5		*	
34	210264	03	TC	7.7		*	Southwest corner of primary structure DC = 6 inches Based on the deconvolution graph
		06	TC	5.8		*	
		09	TC	4.5		*	
		12	TC	3.8		*	
		15	TC	3.3		*	
		18	TC	3.0		*	
		21	TC	2.9		*	
		24	TC	2.9		*	
		27	TC	2.9		*	
		30	TC	2.8		*	
		33	TC	2.9		*	
		36	TC	2.9		*	
35	212239	00	DS	19.9		*	South of primary structure
		06	DS	12.2		*	
		12	DS	3.4		*	
36	212254	00	DS	11.4		*	Southwest of primary structure
		06	DS	1.4		*	

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Radium Concentrations at Exterior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot.	Ct Spectr.		
37	217266	00	DS	20.5		*	Southwest of primary structure
		06	DS	2.9		*	
38	222228	00	DS	8.8		*	South of primary structure
		06	DS	2.8		*	
39	222300	03	TC	2.6		*	North of primary structure DC = 0 inches
		06	TC	2.7		*	
		09	TC	2.8		*	
		12	TC	2.8		*	
		15	TC	2.8		*	
		18	TC	2.9		*	
		21	TC	2.8		*	
		24	TC	2.8		*	
		27	TC	2.9		*	
		30	TC	2.9		*	
		33	TC	2.9		*	
		36	TC	2.8		*	
40	225258	03	TC	2.1		*	South of primary structure DC = 0 inches
		06	TC	2.3		*	
		09	TC	2.4		*	
		12	TC	2.3		*	
		15	TC	2.3		*	
		18	TC	2.3		*	
		21	TC	2.4		*	
41	226201	00	DS	1.7		*	South of primary structure
		06	DS	<1.0		*	
42	233230	03	TC	6.8		*	South of primary structure DC = 12 inches Based on the deconvolution graph
		06	TC	6.8		*	
		09	TC	5.5		*	
		12	TC	4.2		*	
		15	TC	3.2		*	
		18	TC	2.8		*	
		21	TC	2.6		*	
		24	TC	2.6		*	
		27	TC	2.6		*	
		30	TC	2.6		*	
43	236215	03	TC	3.6		*	South of primary structure DC = 0 inches
		06	TC	3.6		*	
		09	TC	3.3		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-18426-MR

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
43	236215	12	TC	3.0		*	
		15	TC	2.9		*	
		18	TC	2.8		*	
		21	TC	2.8		*	
		24	TC	2.8		*	
		27	TC	2.8		*	
44	236257	00	DS	2.0		*	South of primary
		06	DS	1.9		*	structure
45	240177	00	DS	7.1		*	South of primary
		06	DS	1.8		*	structure
46	240230	03	TC	3.8		*	South of primary
		06	TC	3.7		*	structure
		09	TC	3.5		*	Auger refusal
		12	TC	3.1		*	DC = 0 inches
		15	TC	2.9		*	
		18	TC	2.8		*	
47	245268	21	TC	2.8		*	
		03	TC	4.7		*	Water line
		06	TC	4.1		*	Auger refusal
		09	TC	3.5		*	DC = 6 inches
		12	TC	3.1		*	Based on all
		15	TC	2.8		*	available data
		18	TC	2.7		*	
48	246186	21	TC	2.8		*	
		24	TC	2.7		*	
48	246186	00	DS	2.1		*	South of primary
		06	DS	1.4		*	structure
49	247285	03	TC	9.0		*	East side of
		06	TC	10.1		*	primary structure
		09	TC	8.8		*	DC = 15 inches
		12	TC	6.8		*	Based on the
		15	TC	5.2		*	deconvolution graph
		18	TC	4.4		*	
		21	TC	4.0		*	
		24	TC	3.8		*	
		27	TC	3.5		*	
		30	TC	3.4		*	
		33	TC	3.3		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
49	247285	36	TC	3.3		*	
		39	TC	3.3		*	
		42	TC	3.3		*	
		45	TC	3.3		*	
		48	TC	3.3		*	
		51	TC	3.2		*	
		54	TC	3.2		*	
		57	TC	3.2		*	
		60	TC	3.3		*	
		63	TC	3.2		*	
		66	TC	3.2		*	
		69	TC	3.3		*	
50	248265	00	DS	5.1		*	East of primary structure
		06	DS	1.8		*	
51	250170	00	DS	5.6		*	Southeast of primary structure
		06	DS	2.0		*	
52	251254	00	DS	3.5		*	Southwest of primary structure
		06	DS	2.4		*	
53	252296	00	DS	5.2		*	East of primary structure
		06	DS	1.0		*	
54	254219	00	DS	9.3		*	South of primary structure
		06	DS	3.9		*	
		12	DS	1.9		*	
55	255225	03	TC	9.5		*	Southeast of primary structure Auger refusal DC = 12 inches Based on the deconvolution graph
		06	TC	9.2		*	
		09	TC	7.3		*	
		12	TC	5.5		*	
		15	TC	4.2		*	
		18	TC	3.6		*	
		21	TC	3.2		*	
		24	TC	3.0		*	
		27	TC	2.8		*	
		30	TC	2.7		*	
		33	TC	2.8		*	
56	257275	00	DS	2.7		*	
		06	DS	<1.0		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot.	Ct Spectr.		
57	260210	03	TC	6.1		*	Southeast of primary structure DC = 15 inches Based on the deconvolution graph
		06	TC	7.4		*	
		09	TC	8.0		*	
		12	TC	7.0		*	
		15	TC	5.5		*	
		18	TC	4.5		*	
		21	TC	3.8		*	
		24	TC	3.3		*	
		27	TC	3.1		*	
		30	TC	3.0		*	
58	260230	03	TC	6.7		*	Auger refusal DC = 12 inches Based on the deconvolution graph
		06	TC	6.8		*	
		09	TC	5.7		*	
		12	TC	4.4		*	
59	260260	00	DS	4.2		*	East of primary structure
		06	DS	2.0		*	
60	260290	00	DS	4.7		*	East of primary structure
		06	DS	1.1		*	
61	265170	03	TC	6.5		*	Southeast of primary structure DC = 12 inches Based on the deconvolution graph
		06	TC	6.4		*	
		09	TC	5.4		*	
		12	TC	4.6		*	
		15	TC	3.9		*	
		18	TC	3.5		*	
		21	TC	3.2		*	
		24	TC	3.0		*	
		27	TC	3.0		*	
		30	TC	3.1		*	
62	265225	03	TC	6.1		*	Auger refusal DC = 12 inches Based on the deconvolution graph
		06	TC	6.2		*	
		09	TC	5.5		*	
		12	TC	4.2		*	
		15	TC	3.4		*	
		18	TC	3.0		*	
		21	TC	2.7		*	
		24	TC	2.7		*	
		27	TC	2.6		*	
		30	TC	2.7		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
62	265225	33	TC	2.7		*	
		36	TC	2.7		*	
63	270270	00	DS	2.0		*	East of primary structure
		06	DS	1.4		*	
64	270280	03	TC	3.3		*	East of primary structure DC = 0 inches
		06	TC	3.2		*	
		09	TC	2.9		*	
		12	TC	2.8		*	
		15	TC	2.7		*	
		18	TC	2.6		*	
		21	TC	2.7		*	
		24	TC	2.7		*	
65	270300	00	DS	4.7		*	Northeast of primary structure
		06	DS	3.4		*	
		12	DS	1.9		*	
66	271250	00	DS	<1.0		*	
		06	DS	1.5		*	
67	273200	03	TC	2.8		*	Southeast of primary structure DC = 0 inches
		06	TC	2.9		*	
		09	TC	3.2		*	
		12	TC	3.1		*	
		15	TC	3.0		*	
		18	TC	2.8		*	
		21	TC	2.6		*	
		24	TC	2.6		*	
		27	TC	2.5		*	
		30	TC	2.6		*	
68	273292	03	TC	3.6		*	East of primary structure DC = 0 inches
		06	TC	3.7		*	
		09	TC	3.5		*	
		12	TC	3.3		*	
		15	TC	3.1		*	
		18	TC	2.9		*	
		21	TC	2.7		*	
		24	TC	2.6		*	
		27	TC	2.5		*	
		30	TC	2.6		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
69	276266	00	DS	2.6		*	East of primary structure
		06	DS	1.5		*	
70	280210	00	DS	2.3		*	Southwest of garage
		06	DS	<1.0		*	
71	280220	00	DS	2.4		*	Southwest of garage
		06	DS	<1.0		*	
72	281179	00	DS	2.1		*	
		06	DS	<1.0		*	
73	285270	00	DS	3.1		*	
		06	DS	<1.0		*	
74	285293	03	TC	37.1		*	East of primary structure DC = 15 inches Based on the deconvolution graph
		06	TC	51.7		*	
		09	TC	44.8		*	
		12	BH	27.3	7.6	*	
		15	TC	16.5		*	
		18	TC	11.0		*	
		21	TC	8.1		*	
		24	TC	6.3		*	
		27	TC	5.4		*	
		30	TC	5.0		*	
		33	TC	4.8		*	
		36	TC	4.9		*	
		39	TC	4.8		*	
		42	TC	4.9		*	
		45	TC	4.7		*	
		48	TC	4.5		*	
		51	TC	4.3		*	
		54	TC	4.1		*	
		57	TC	3.9		*	
		60	TC	3.8		*	
75	290200	00	DS	2.8		*	South of garage
		06	DS	5.2		*	
		12	DS	1.1		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
76	290210	00	DS	26.9		*	
		06	DS	5.2		*	
		12	DS	1.2		*	
77	290264	03	TC	4.8		*	North of garage DC = 12 inches Based on the deconvolution graph
		06	TC	5.3		*	
		09	TC	4.9		*	
		12	TC	4.3		*	
		15	TC	3.9		*	
		18	TC	3.9		*	
		21	TC	3.8		*	
		24	TC	3.8		*	
		27	TC	3.6		*	
		30	TC	3.5		*	
		33	TC	3.3		*	
		36	TC	3.4		*	
		39	TC	3.4		*	
78	290280	03	TC	43.8		*	Driveway east of primary structure DC = 12 inches Based on the deconvolution graph
		06	TC	62.1		*	
		09	TC	44.1		*	
		12	BH	24.0	10.1	*	
		15	TC	13.7		*	
		18	TC	9.5		*	
		21	TC	7.5		*	
		24	TC	6.5		*	
		27	TC	6.1		*	
		30	TC	5.6		*	
		33	TC	5.5		*	
		36	TC	5.3		*	
		39	TC	5.1		*	
		42	TC	5.0		*	
		45	TC	4.8		*	
		48	TC	4.7		*	
		51	TC	4.6		*	
		54	TC	4.5		*	
		57	TC	4.3		*	
		60	TC	4.3		*	
		63	TC	4.1		*	
		66	TC	4.2		*	
		69	TC	4.2		*	
79	290300	00	DS	2.3		*	East of primary structure
		06	DS	2.0		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
80	298220	00	DS	92.0		*	South of garage
		06	DS	2.9		*	
		12	DS	2.8		*	
81	300163	00	DS	2.5		*	On property line south of garage
		06	DS	2.2		*	
82	300180	00	DS	4.6		*	Southeast of garage
		06	DS	1.9		*	
83	300195	03	TC	9.3		*	South of garage DC = 12 inches Based on the deconvolution graph
		06	TC	12.0		*	
		09	TC	10.7		*	
		12	TC	7.3		*	
		15	TC	5.4		*	
		18	TC	4.5		*	
		21	TC	4.0		*	
		24	TC	3.5		*	
		27	TC	3.3		*	
84	300275	03	TC	12.0		*	North of garage DC = 12 inches Based on the deconvolution graph
		06	TC	9.4		*	
		09	TC	7.4		*	
		12	TC	6.2		*	
		15	TC	5.5		*	
		18	TC	5.2		*	
		21	TC	4.9		*	
		24	TC	4.9		*	
		27	TC	4.8		*	
		30	TC	4.8		*	
85	305295	03	TC	15.5		*	East of primary structure DC = 12 inches Based on the deconvolution graph
		06	TC	20.7		*	
		09	TC	13.4		*	
		12	TC	9.1		*	
		15	TC	6.7		*	
		18	TC	5.2		*	
		21	TC	4.7		*	
		24	TC	4.4		*	
		27	TC	4.3		*	
		30	TC	4.3		*	
		33	TC	4.4		*	
		36	TC	4.4		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
86	310270	03	TC	16.1		*	North of garage
		06	TC	15.9		*	DC = 12 inches
		09	TC	10.8		*	Based on the
		12	BH	7.3	2.3	*	deconvolution graph
		15	TC	5.4		*	
		18	TC	4.5		*	
		21	TC	4.2		*	
87	310280	03	TC	6.2		*	Northeast side
		06	TC	7.1		*	of driveway
		09	TC	5.6		*	DC = 12 inches
		12	TC	4.4		*	Based on the
		15	TC	3.8		*	deconvolution graph
		18	TC	3.5		*	
		21	TC	3.5		*	
		24	TC	3.5		*	
88	310300	00	DS	3.8		*	
89	311188	00	DS	1.8		*	Southeast of garage
		06	DS	1.1		*	
90	315210	00	DS	2.0		*	Southeast of
		06	DS	<1.0		*	garage
91	316250	00	DS	2.5		*	East of garage
		06	DS	1.8		*	
92	320164	00	DS	4.0		*	Southeast corner of
		06	DS	2.3		*	property
93	320175	03	TC	19.6		*	Southeast of garage
		06	TC	14.0		*	DC = 9 inches
		09	TC	9.1		*	Based on the
		12	TC	6.7		*	deconvolution graph
		15	TC	5.5		*	
		18	TC	4.8		*	
		21	TC	4.3		*	
		24	TC	4.0		*	
		27	TC	3.8		*	
93	320175	30	TC	3.9		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
94	320220	00	DS	1.8		*	East of garage
		06	DS	1.3		*	
95	320260	03	TC	5.3		*	East side of driveway DC = 9 inches Based on the deconvolution graph
		06	TC	5.8		*	
		09	TC	4.8		*	
		12	TC	3.7		*	
		15	TC	3.1		*	
		18	TC	2.9		*	
		21	TC	2.8		*	
		24	TC	2.9		*	
		27	TC	2.9		*	
96	325230	00	DS	1.5		*	East of primary structure
		06	DS	1.4		*	
97	325295	03	TC	41.1		*	Northeast side of driveway Auger refusal DC = 15 inches Based on the deconvolution graph
		06	TC	64.8		*	
		09	TC	91.2		*	
		12	TC	70.1		*	
		15	TC	37.1		*	
		18	TC	20.7		*	
		21	TC	13.0		*	
		24	TC	10.0		*	
98	328190	03	TC	11.1		*	East property line DC = 12 inches Based on the deconvolution graph
		06	TC	12.2		*	
		09	TC	9.9		*	
		12	BH	7.6	1.9	*	
		15	TC	6.0		*	
		18	TC	5.0		*	
		21	TC	4.2		*	
		24	TC	3.6		*	
		27	TC	3.5		*	
		30	TC	3.4		*	
		33	TC	3.4		*	
		36	TC	3.7		*	
99	328212	03	TC	8.6		*	East property line DC = 9 inches Based on the deconvolution graph
		06	TC	7.3		*	
		09	TC	5.7		*	
		12	TC	4.7		*	
		15	TC	3.9		*	
		18	TC	3.3		*	
		21	TC	3.0		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
99	328212	24	TC	2.9		*	
		27	TC	3.0		*	
		30	TC	3.1		*	
		33	TC	3.2		*	
		36	TC	3.3		*	
100	328240	00	DS	2.6		*	On property line
		05	DS	<1.0		*	East of garage
101	328260	00	DS	2.0		*	East of primary
		06	DS	1.2		*	structure
102	328280	03	TC	4.0		*	East of driveway
		06	TC	4.3		*	near fence
		09	TC	4.1		*	DC = 0 inches
		12	TC	3.8		*	
		15	TC	3.4		*	
		18	TC	3.1		*	
		21	TC	2.8		*	
		24	TC	2.9		*	
		27	TC	2.9		*	
		30	TC	3.0		*	

Measurement GB = GAD-6 Borehole
 Types: GS = GAD-6 Surface
 DS = Delta Scintillometer
 TC = Total Count Borehole
 SS = Soil Sample
 BH = Combined GAD-6 and
 Total Count Borehole

Notes: DC = Depth of Contamination
 * = No Soil Sample Taken
 [n] = Reading Taken n-Inches
 Above Floor or Ground
 Date of Survey = 06-17-85
 Team Leader = TF

Radium Concentrations at Interior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1		00	DS	20.2		*	
		06	DS	16.8		*	
		09	DS	6.2		*	
		12	DS	1.9		*	
2		03	TC	56.6		*	In garage
		06	TC	71.1		*	Auger refusal
		09	TC	45.7		*	DC = 12 inches
		12	TC	27.0	12.5	*	Based on the
		15	TC	18.5		*	deconvolution graph
		18	TC	14.9		*	
		21	TC	12.9		*	
		24	TC	11.5		*	
		27	TC	10.8		*	
		30	BH	10.0	9.3	*	
		33	TC	9.7		*	
3		00	GS		6.8	*	East wall
4		[36]	GS		3.1	*	West wall of garage
5		[36]	GS		5.2	*	North wall of garage

Measurement Types:

GB = GAD-6 Borehole

GS = GAD-6 Surface

DS = Delta Scintillometer

TC = Total Count Borehole

SS = Soil Sample

BH = Combined GAD-6 and
Total Count Borehole

Notes: DC = Depth of Contamination

* = No Soil Sample Taken

[n] = Reading Taken n-Inches
Above Floor or Ground

Date of Survey = 06-17-85

Team Leader = TF

Location	Number of Readings Taken at Waist Level	Range at Waist Level (uR/h)	Mean at Waist Level (uR/h)	Number of Readings Taken at Surface	Range at Surface (uR/h)	Mean Surface (uR/h)
Basement	16	14-17	15	16	14-17	16
Crawl space	00	00	00	13	15-33	17
Garage	12	17-69	32	10	17-70	37

Exposure rates and room locations are shown in Appendix Figure 3.2.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-18426-MR

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<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
INTERIOR					
	Concrete				
B	21 x 36 =	756	x 0.3 =	227	
	Volume of Concrete			227	= 227/27 = 8
	Contaminated Fill				
A	4 x 3 =	12	x 1.0 =	12	
B	21 x 36 =	756	x 0.7 =	529	
	Volume of Fill			541	= 541/27 = 20
	TOTAL VOLUME - INTERIOR				= 28
EXTERIOR					
C	5 x 20 =	100			
	13 x 3 =	39			
		139	x 1.0 =	139	
D	11 x 10 =	110	x 0.5 =	55	
E	5 x 5 =	25	x 1.5 =	38	
F	15 x 22 =	330			
	50 x 12 =	600			
	38 x 14 =	532			
	20 x 5 =	100			
	20 x 10 =	200			
		1,762	x 0.5 =	881	
G	10 x 4 =	40	x 1.0 =	40	
H	10 x 6 / 2 =	30	x 1.0 =	30	
I	13 x 28 =	364	x 0.5 =	182	

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-18426-MR

Page 2 of 3

<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
J	10 x 10 =	100	x 1.3 =	130	
K	20 x 10 =	200			
	10 x 10 =	100			
	15 x 10 =	150			
	7 x 2 =	14			
		<hr/>			
		464	x 0.5 =	232	
L	13 x 9 =	117	x 1.0 =	117	
M	6 x 10 =	60	x 0.5 =	30	
N	24 x 4 =	96			
	30 x 30 =	900			
	25 x 10 =	250			
	15 x 10 =	150			
	12 x 5 =	60			
		<hr/>			
		1,456	x 1.0 =	1,456	
O	30 x 15 =	450	x 1.3 =	585	
P	17 x 15 =	225			
	8 x 6 =	48			
	10 x 12 =	120			
		<hr/>			
		393	x 0.5 =	197	
Q	3 x 35 =	105			
	8 x 8 =	64			
		<hr/>			
		169	x 1.0 =	169	
R	14 x 9 =	126	x 0.8 =	101	
S	14 x 9 =	126			
	10 x 10 =	100			
		<hr/>			
		226	x 0.5 =	113	

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-18426-MR

Page 3 of 3

<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
T	5 x 30	= 150			
	15 x 9	= 135			
	17 x 15	= 225			
		<hr/>			
		510	x 0.8	= 408	
U	50 x 7	= 350			
	30 x 9	= 270			
	14 x 3	= 42			
		<hr/>			
		662	x 0.5	= 331	
V	25 x 30	= 750	x 1.0	= 750	
W	24 x 10	= 240			
	18 x 10	= 180			
	25 x 15	= 375			
	8 x 15	= 120			
	21 x 9	= 189			
		<hr/>			
		1,104	x 1.0	= 1,104	
X	20 x 12	= 240	x 0.5	= 120	
		<hr/>			
TOTAL VOLUME - EXTERIOR				7,208	= 7,208/27 = 267

See Appendix Figures 3.4a and 3.4b For Areas

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-18426-MR

Page 1 of 2

INTERIOR

Remove/store/replace personal property items	
Lump sum	\$ 1,000
Saw-cut concrete floor at perimeter	
128 lf @ \$1.50/lf	192
Undermine/shore interior columns and walls	
15 lf @ \$3/lf	45
Remove/replace concrete floor (4")	
756 sf @ \$4/sf	3,024
Remove identified residual radioactive materials	
19 cy @ \$18.50/cy (machine-close)	352
1 cy @ \$100/cy (manual-close)	100
Place low slump concrete under columns and walls	
2.5 cy @ \$225/cy	563
Backfill underslab with compacted roadbase	
20 cy @ \$11.50/cy	230
Cleanup	
Lump sum	100
SUBTOTAL INTERIOR	\$ 5,606

EXTERIOR

Remove/store/replace personal property items	
Lump sum	\$ 200
Remove identified residual radioactive material	
21 cy @ \$44/cy (manual-open)	924
246 cy @ \$14.50/cy (machine-open)	3,567
Replace areas with compacted roadbase	
107 cy @ \$11.50/cy	1,231
Replace areas with topsoil	
133 cy @ \$9.50/cy	1,264
Replace drive surface with 3/4" aggregate	
27 cy @ \$13.50/cy	365

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-18426-MR

Page 2 of 2

Replace areas with sod 2,320 sf @ \$.35/sf	\$ 812
Replace trees 10 ea @ \$30/ea	300
Replace bushes and vines 50 ea @ \$20/ea	1,000
Replace perennials and bulbs 300 sf @ \$3/sf	900
Cleanup, dampproofing, etc. Lump sum	200
	<hr/>
TOTAL EXTERIOR	\$ 10,763
TOTAL INTERIOR	5,606
ACCESS CONTROL	300
	<hr/>
SUBTOTAL	\$ 16,669
CONTINGENCY @ 10%	1,667
	<hr/>
SUBTOTAL	\$ 18,336
CONTRACTOR OVERHEAD & PROFIT @ 25%	4,584
	<hr/>
GRAND TOTAL	\$ 22,920

CK082085
REAL8426/REA-617/LMR

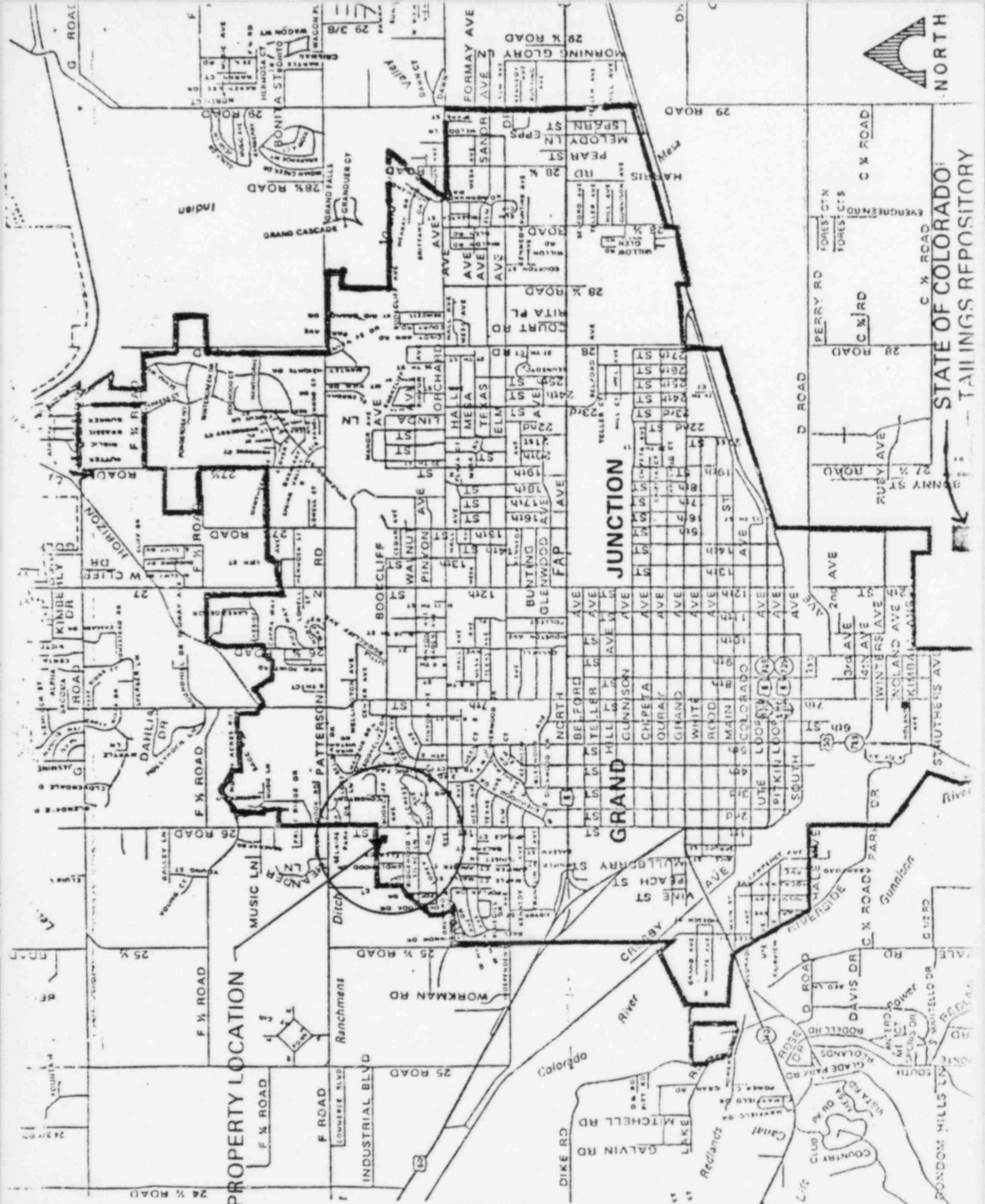
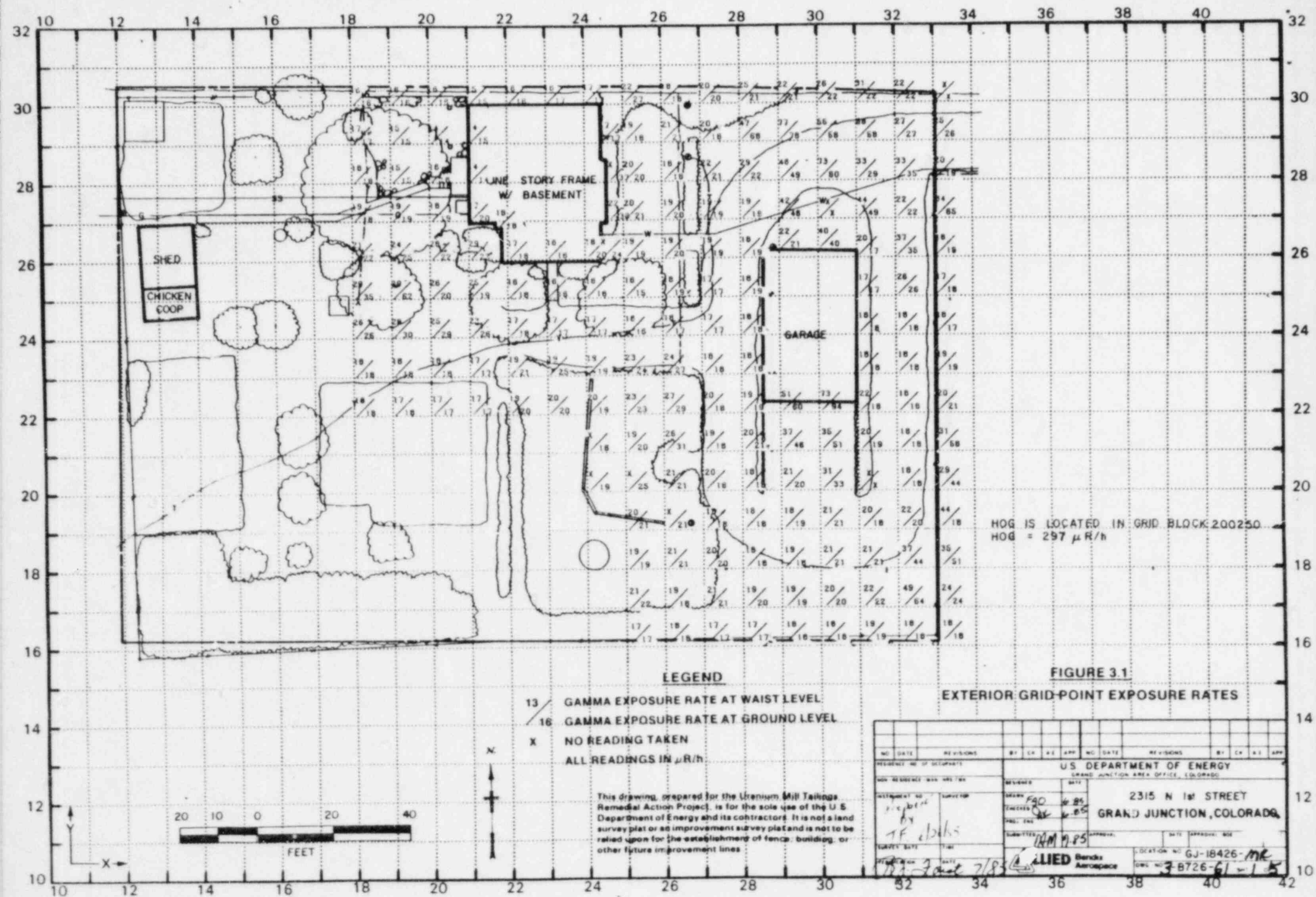
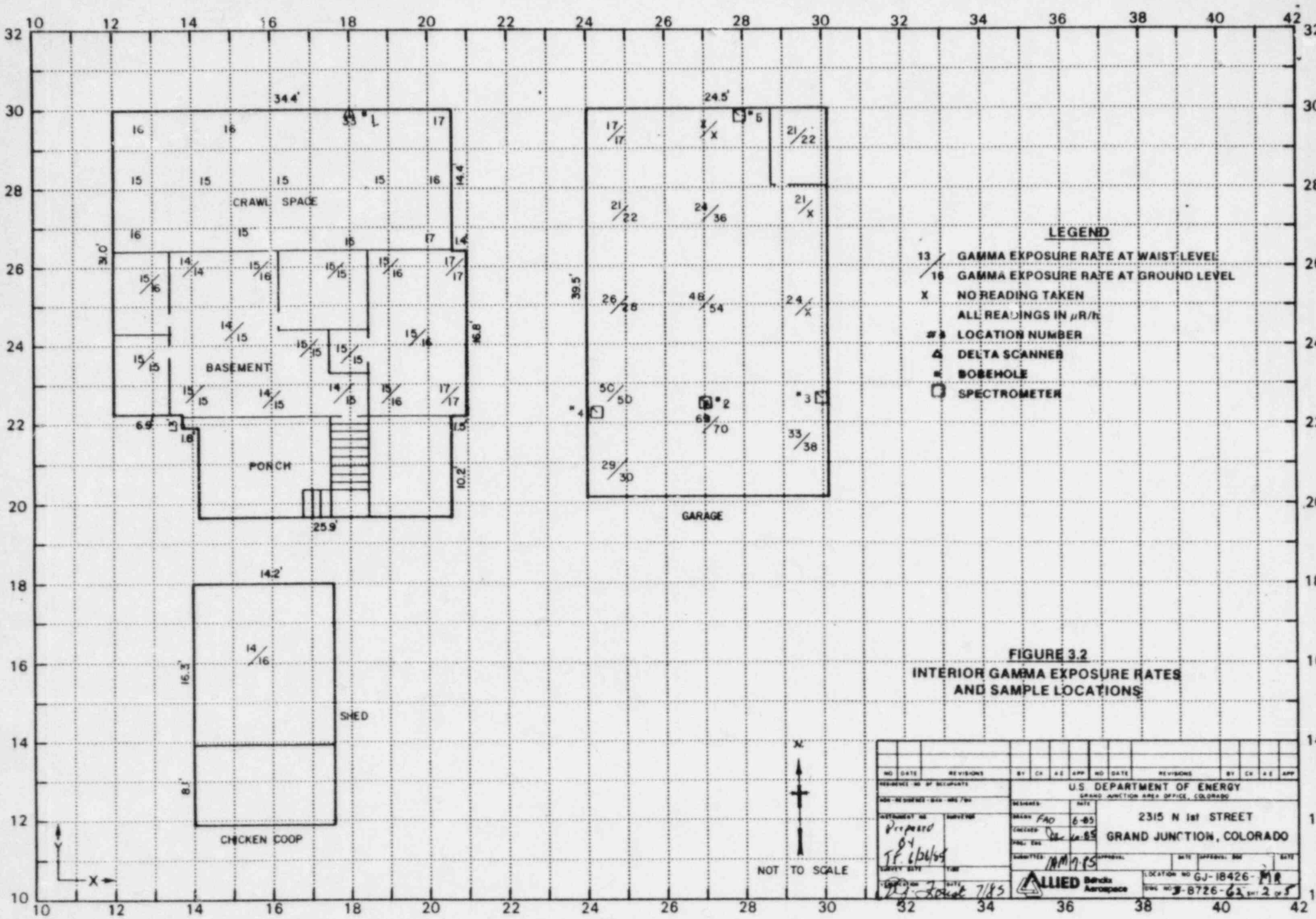


FIGURE 2.1
VICINITY MAP





NO. DATE		REVISIONS		BY		CH		A.E.		APP.		NO. DATE		REVISIONS		BY		CH		A.E.		APP.	
RESIDENT NO. OF SURVIVORS												U.S. DEPARTMENT OF ENERGY											
ADN - RESIDENTS - BSA - HMC / W												GRAND JUNCTION AREA OFFICE, COLORADO											
ATTACHMENT NO.						SUBJECT						DESIGN						DATE					
P-10000						7/85						6-85						2315 N 1st STREET					
CHECKED						DATE						6-85						GRAND JUNCTION, COLORADO					
SURVEY DATE						TIME						SOURCES						DATE					
7/85						7/85						ALLIED						Berkley Aerospace					
LOCATION NO. GJ-18426-MR												SUNG NO. 8-8726-65											
CH. 2 OF 5																							

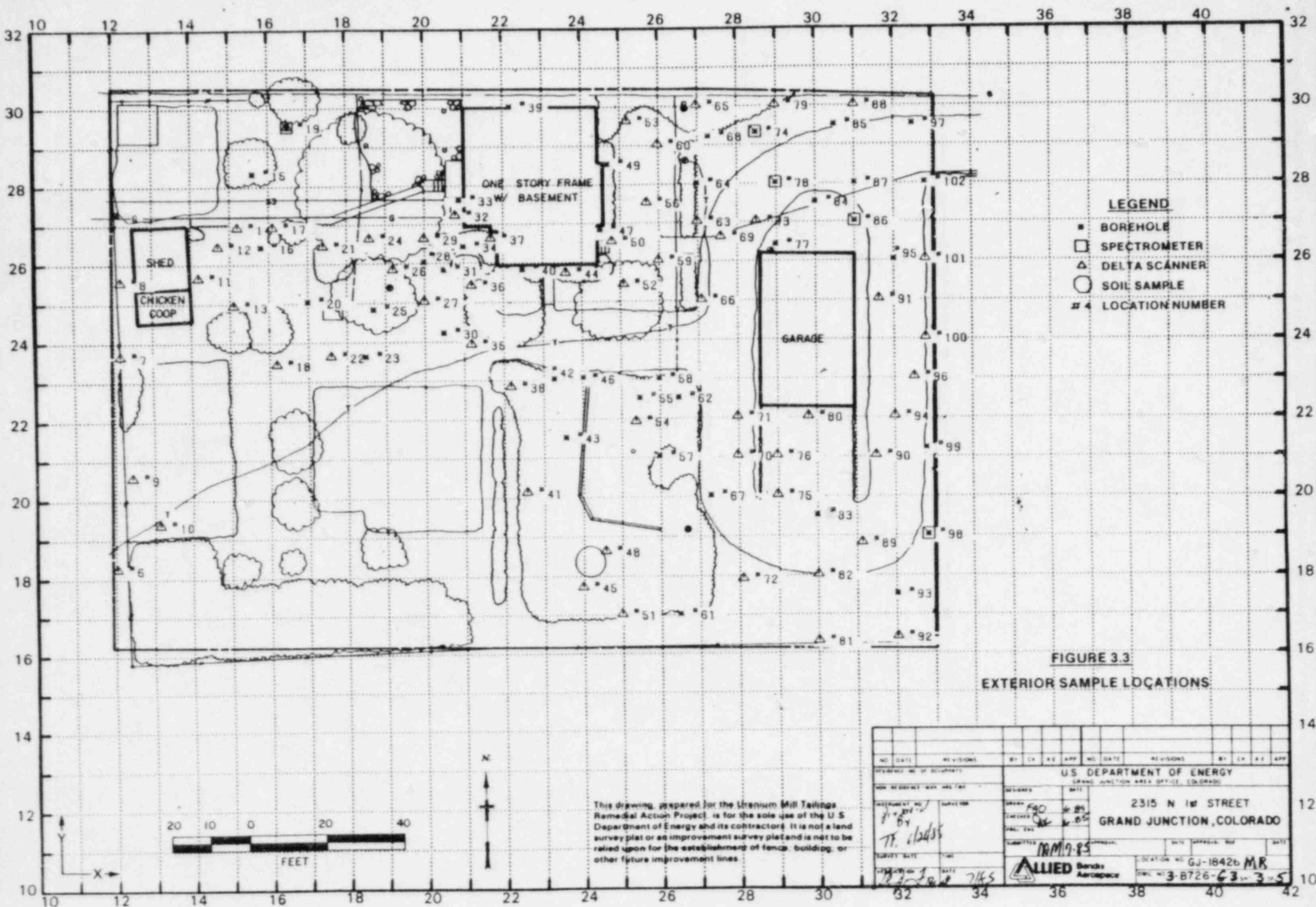
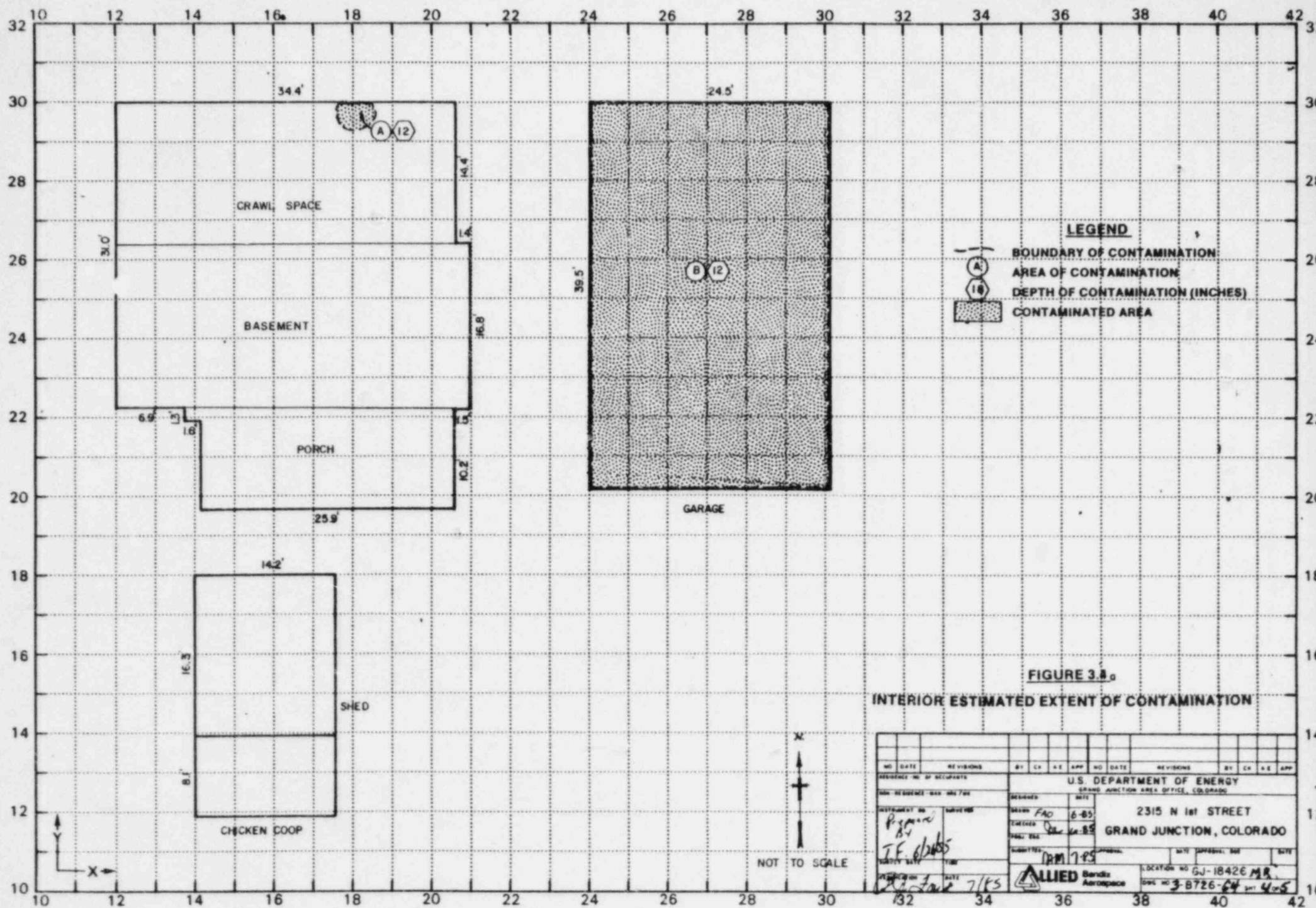
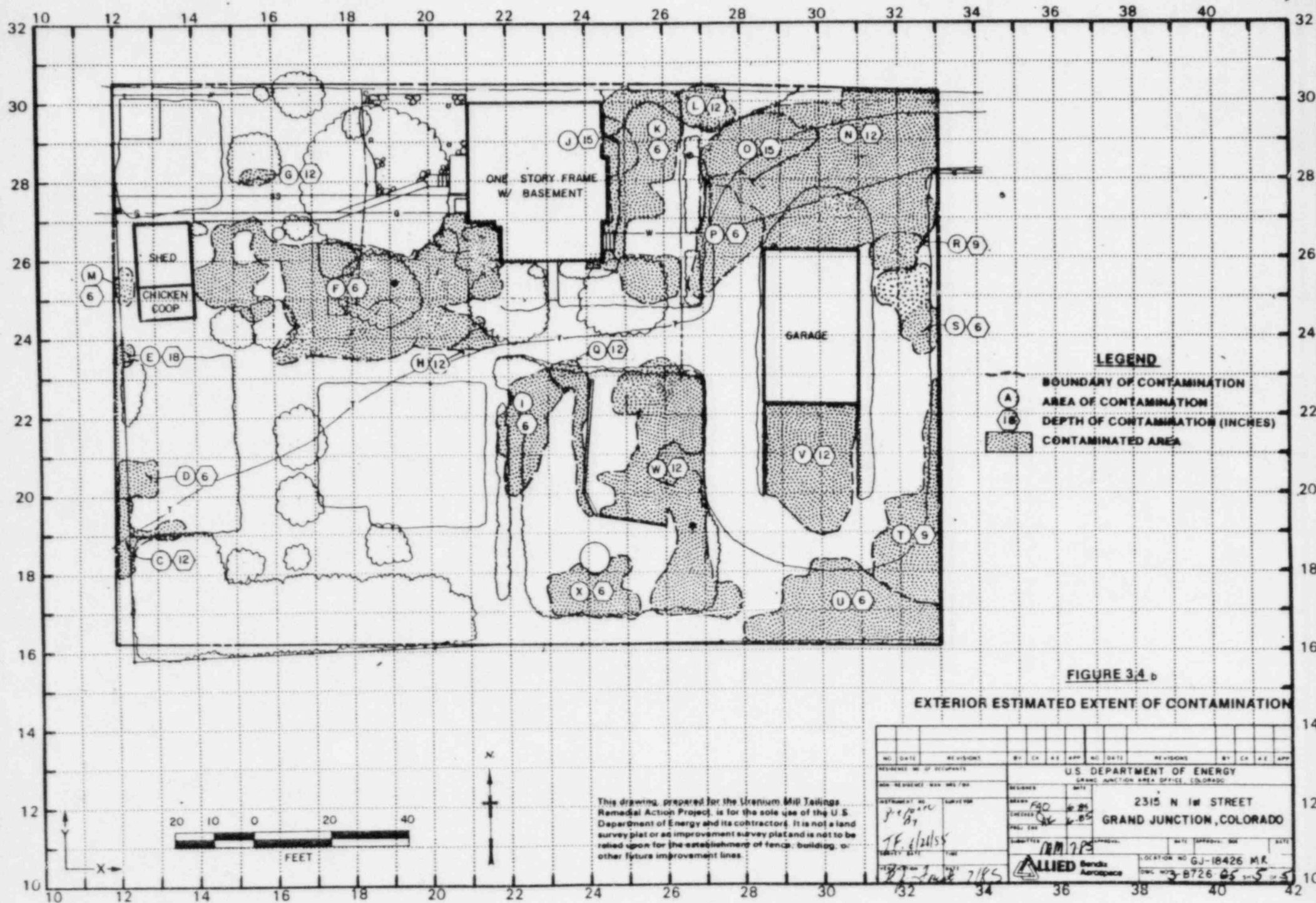


FIGURE 3.3
EXTERIOR SAMPLE LOCATIONS

NO		DATE		REVISIONS		BY		CX		RE APP		NO		DATE		REVISIONS		BY		CX		RE APP									
RESIDENTIAL NO. OF OCCUPANTS												U.S. DEPARTMENT OF ENERGY LIFE AND JUNCTION AREA OFFICE, COLORADO																			
NON-RESIDENTIAL MARK AND TYPE												DESIGNED				DATE				2315 N 1st STREET GRAND JUNCTION, COLORADO											
RESIDENTIAL NO. 1												DESIGN				FID				DATE				NOV 2 1985							
7/15/85												CHECKED				JW				DATE				NOV 2 1985							
7/15/85												SPECIAL TAG																			
PROPERTY NAME												SUBMITTED				DATE				APPROVAL				DATE							
7/15/85												ALLIED				Bonds				LOCATION NO				GJ-18426 MR							
7/15/85												Aerospac				FACIL NO				3-8726-63-3-5											

[illegible]



3/85

DOE ID NO. GJ-18426-MR

Date 6/18/85

U.S. DEPARTMENT OF ENERGY
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT
GRAND JUNCTION VICINITY PROPERTIES

Official Survey Report

Property Address 2315 North 1st Street
Property Owner Elizabeth Zeni
Address of Owner (if different from above) Same
Report Prepared By Thomas Flores

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

1 1 No evidence of residual radioactive material on surveyed property.

1 X 1 Residual radioactive materials found at the following locations:

1 X 1 In open areas.

1 X 1 Under or around exterior improvements.

1 X 1 Under or around a typically nonoccupied structure.

1 y 1 Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

1 1 Levels of radiation from residual radioactive materials, if any, do not exceed EPA Standards and no action is required under the Uranium Mill Tailings Remedial Action Project.

1 y 1 Levels of radiation from residual radioactive materials exceed EPA Standards such that Remedial Action is recommended and will be accomplished, with your consent, as soon as budget and schedule permit.

cc:

G. A. Franz, III, GJ/CDH

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 17 uR/h
HOG = 297 uR/h

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: June 17, 1985

To: Files

From: Thomas Flores

Subject: Team Leader Notes - GJ-18426-RS

Address: 2315 North 1st Street

Owner: Elizabeth J. Zeni

Team Members

T. Flores (Team Leader)	M. Gilfillan
M. Duran	V. Young
N. Wallace	R. Herman
S. Larsen	K. Roemer
H. Lucero	V. Hebel

The survey crew arrived at 7:30 AM.

After gridding the primary structure, a grid point survey and a grid block scan was performed. A walking scan was performed, results were elevated readings found outside the gridded area. The team members gridded the whole property and a scan was performed.

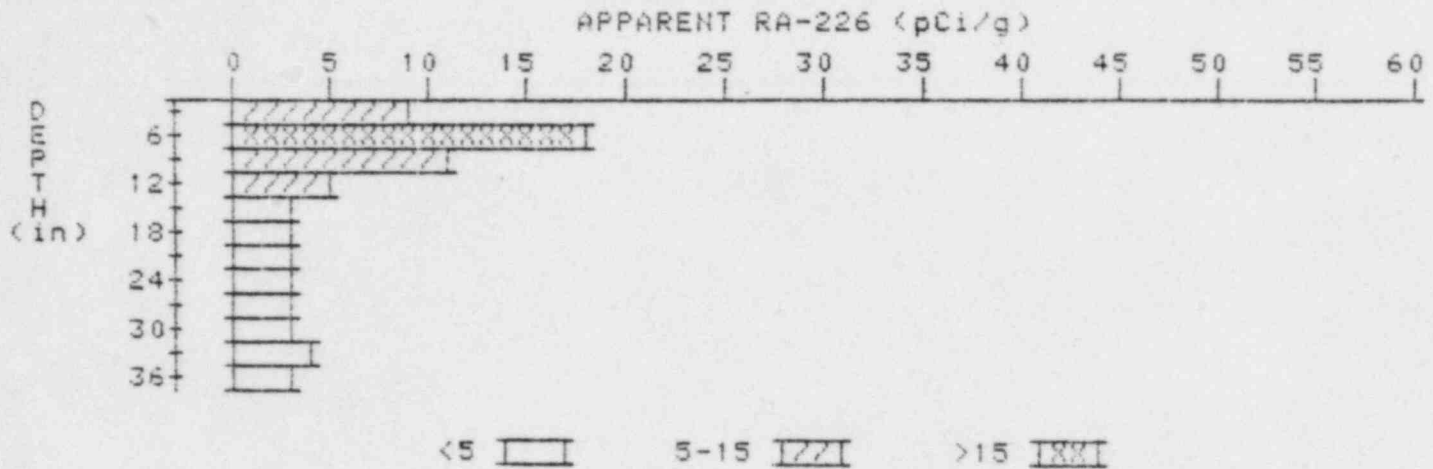
The primary structure and the garage were scanned; elevated readings were found in the crawl space of the primary structure and in the garage.

A core was drilled and a borehole was performed in the garage. The concrete floor appears to be contaminated, the walls are clean. The elevated reading on the wall was attributed to shine.

The appropriate action was taken to include the surrounding spillover properties for remedial action.

APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 15
LOCATION: 156283



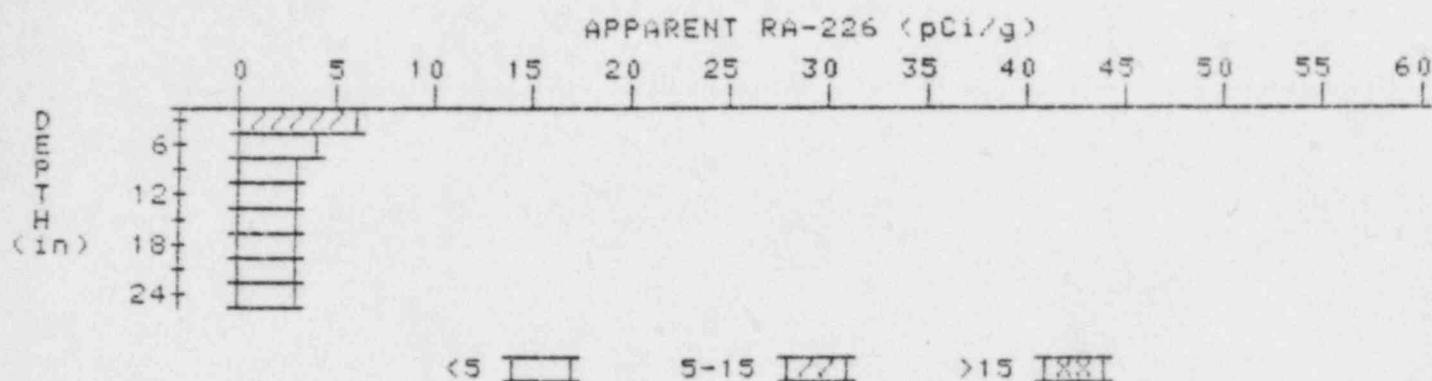
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.7	8.7
6	11.0	18.1
9	9.3	11.1
12	6.6	5.0
15	4.8	3.2
18	3.9	2.8
21	3.6	3.4
24	3.4	3.2
27	3.3	3.1
30	3.3	3.1
33	3.4	3.6
36	3.4	3.4

APPARENT RADIUM-226 CONCENTRATION 16 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-13426-MR

HOLE NUMBER: 16

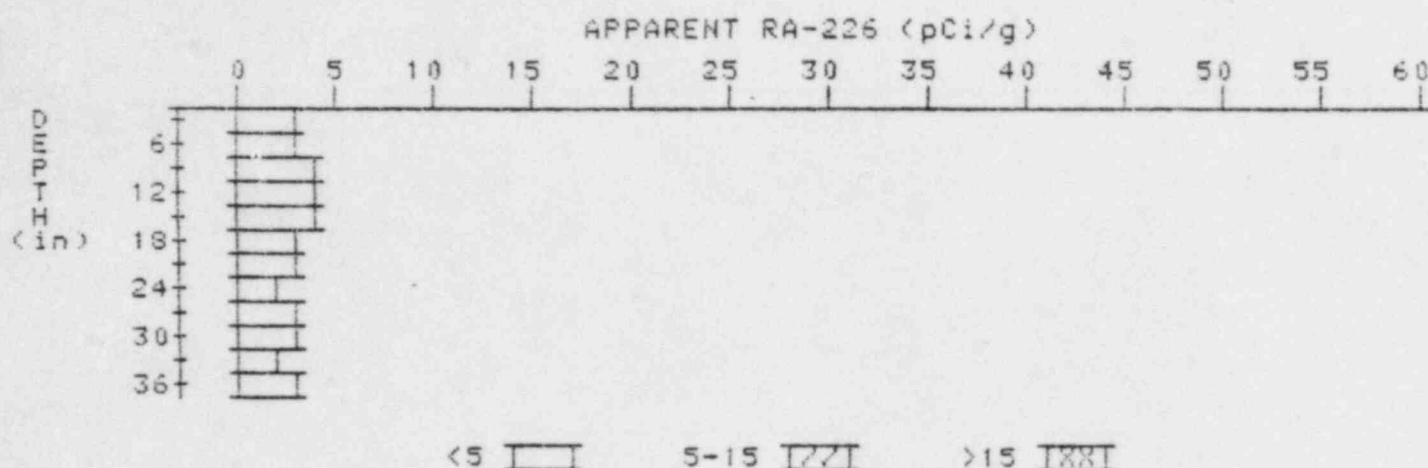
LOCATION: 158264



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.0	6.0
6	4.6	3.5
9	3.8	3.3
12	3.3	2.8
15	3.1	2.7
18	3.1	3.1
21	3.1	2.9
24	3.2	3.2

APPARENT RADIUM-226 CONCENTRATION 19 DECONVOLUTION GRAPH

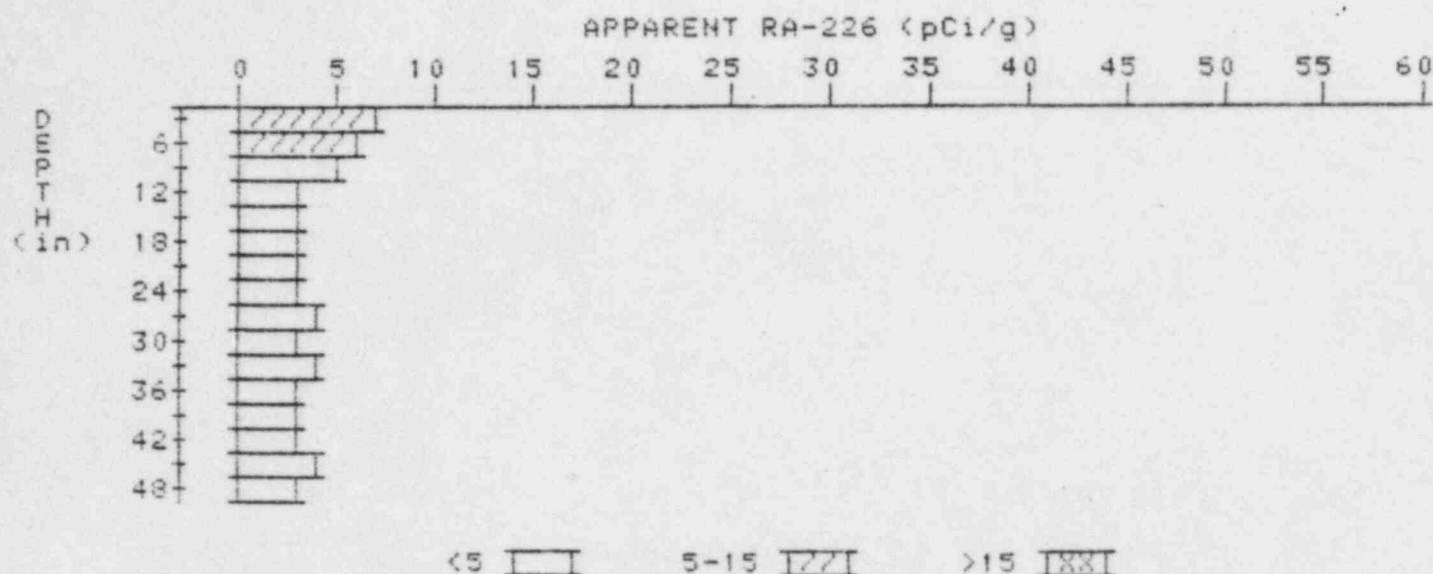
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 19
LOCATION: 165295



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.3	3.5
9	3.6	4.1
12	3.6	4.0
15	3.4	3.6
18	3.1	2.9
21	2.9	2.9
24	2.7	2.3
27	2.7	2.7
30	2.7	2.9
33	2.6	2.4
36	2.6	2.6

APPARENT RADIUM-226 CONCENTRATION 20 DECONVOLUTION GRAPH

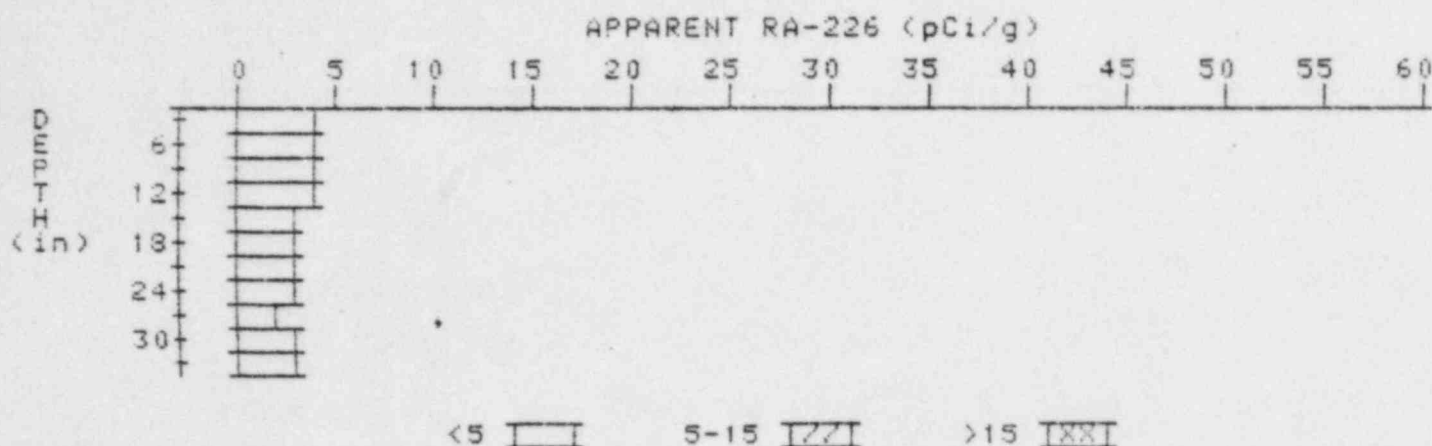
PROPERTY NUMBER: GJ-13426-MR
HOLE NUMBER: 20
LOCATION: 170250



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.5	6.5
6	5.6	5.6
9	4.7	4.5
12	3.9	3.2
15	3.5	3.3
18	3.2	2.7
21	3.2	3.4
24	3.1	2.7
27	3.2	3.6
30	3.1	2.6
33	3.3	3.7
36	3.3	3.3
39	3.3	3.5
42	3.2	3.0
45	3.2	3.7
48	2.9	2.9

APPARENT RADIUM-226 CONCENTRATION 23 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 23
LOCATION: 185236



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	3.5	3.5
6	3.6	3.8
9	3.6	3.8
12	3.5	3.9
15	3.2	2.8
18	3.1	2.9
21	3.1	3.5
24	2.9	2.7
27	2.8	2.4
30	2.9	2.9
33	3.0	3.0

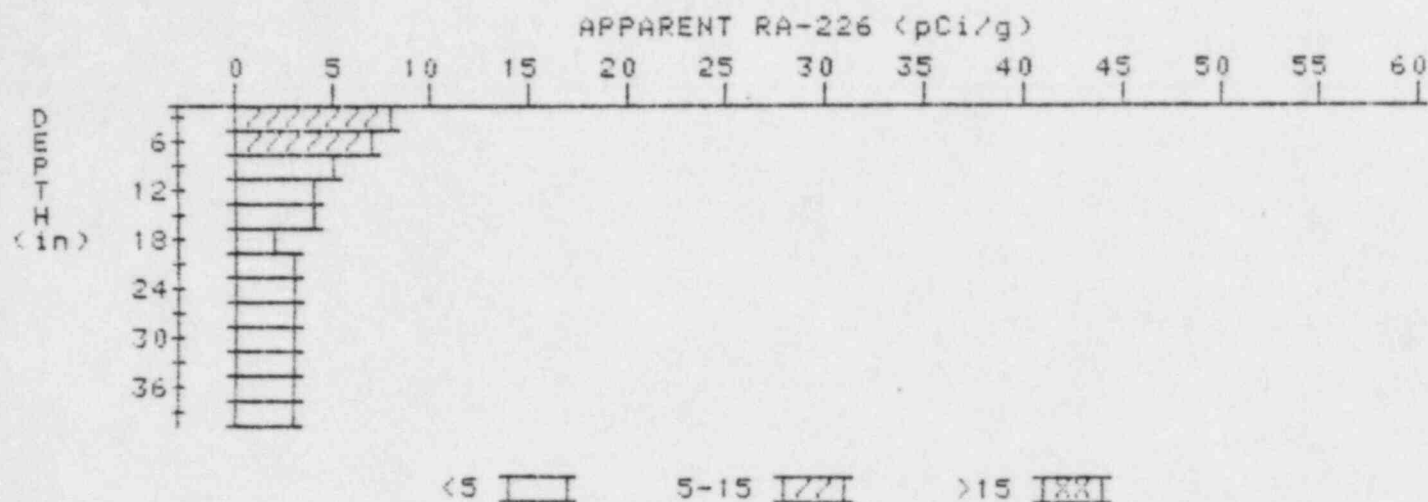
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

25

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 25

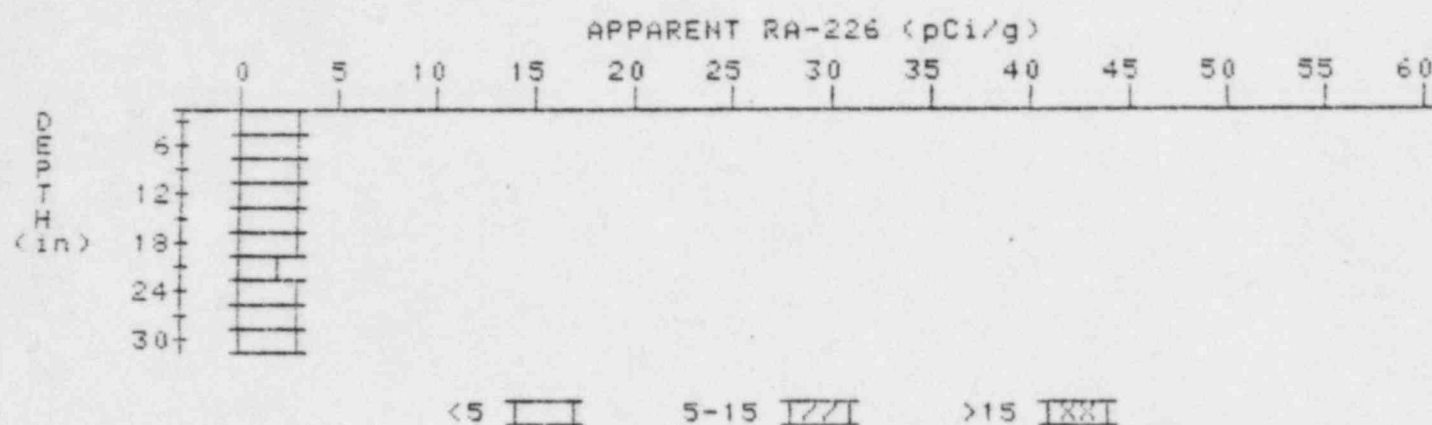
LOCATION: 187248



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.2	8.2
6	6.7	6.5
9	5.3	4.6
12	4.3	3.6
15	3.7	3.9
18	3.0	1.9
21	2.9	2.9
24	2.8	2.6
27	2.8	2.8
30	2.8	2.6
33	2.9	2.9
36	3.0	3.0
39	3.1	3.1

APPARENT RADIUM-226 CONCENTRATION 28 DECONVOLUTION GRAPH

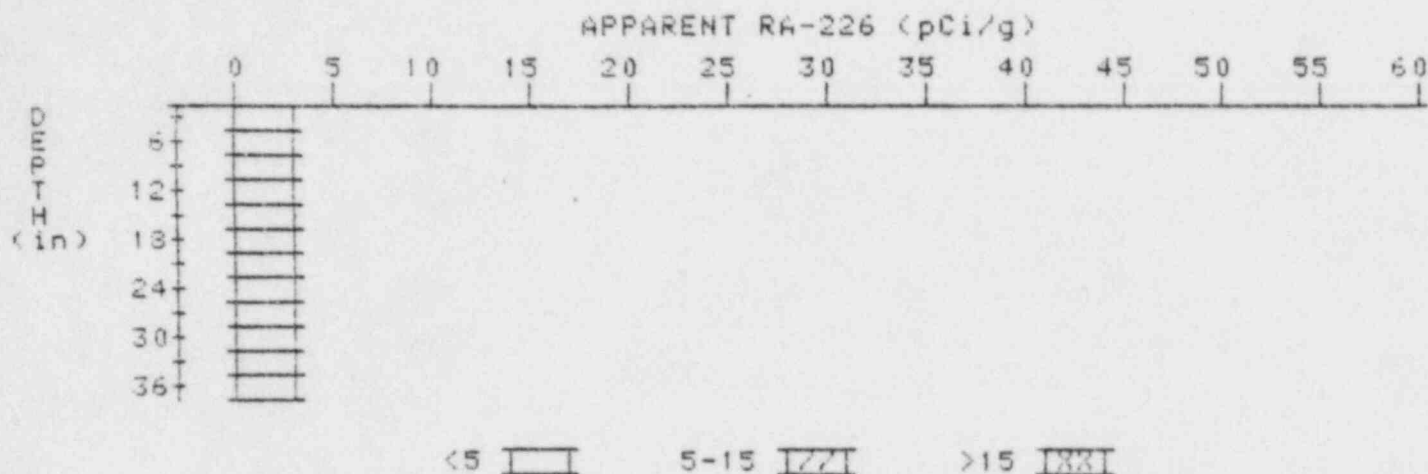
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 28
LOCATION: 200260



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.3	3.3
6	3.0	2.6
9	2.9	3.1
12	2.7	2.5
15	2.6	2.6
18	2.5	2.5
21	2.4	2.0
24	2.5	2.7
27	2.5	2.5
30	2.5	2.5

APPARENT RADIUM-226 CONCENTRATION 30 DECONVOLUTION GRAPH

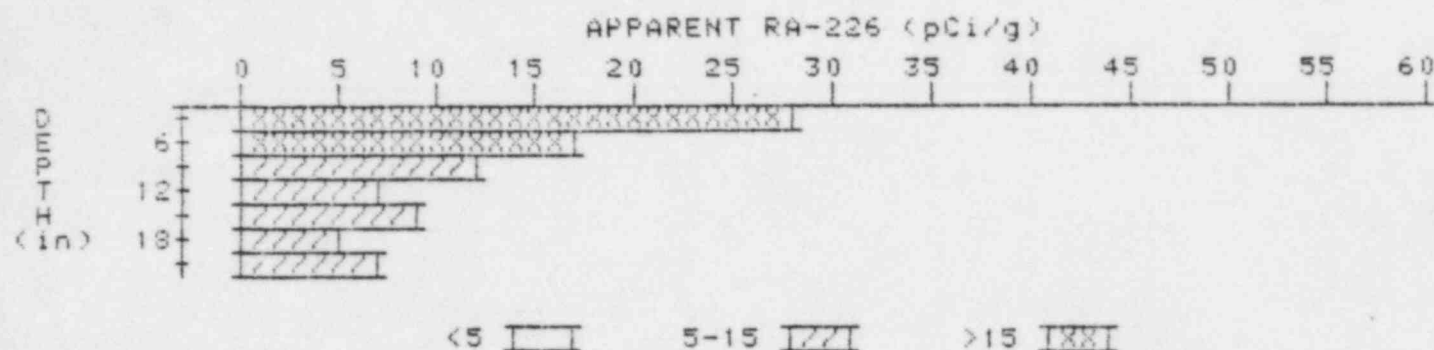
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 30
LOCATION: 205242



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.2	3.0
9	3.3	3.5
12	3.3	3.5
15	3.2	3.4
18	3.0	2.6
21	3.0	3.2
24	2.9	2.7
27	2.9	2.9
30	2.9	2.9
33	2.9	2.9
36	2.9	2.9

APPARENT RADIUM-226 CONCENTRATION 31 DECONVOLUTION GRAPH

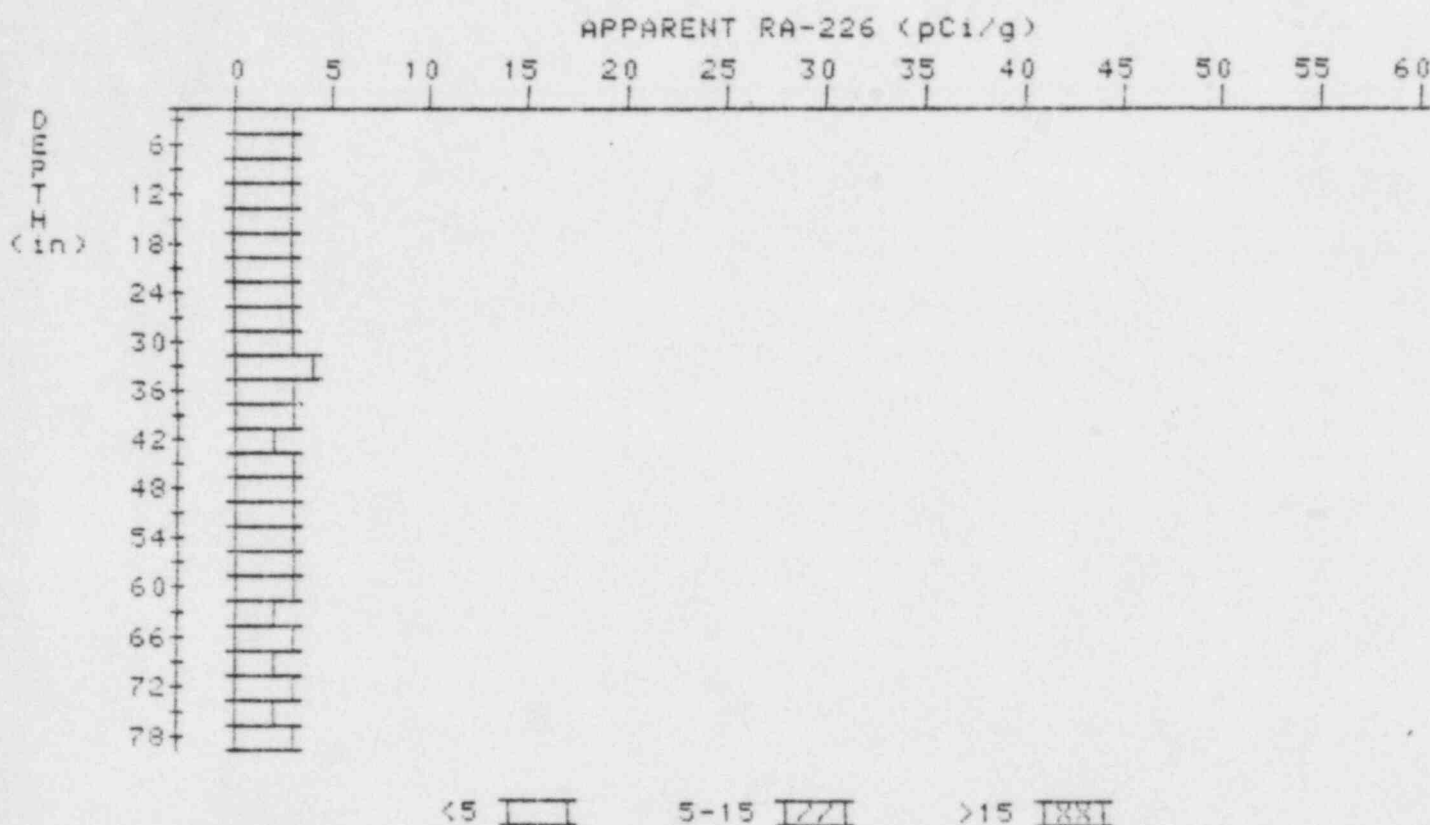
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 31
LOCATION: 205206



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	28.3	28.3
6	20.6	17.0
9	14.9	11.7
12	11.0	7.3
15	9.2	8.8
18	7.6	5.3
21	7.3	7.3

APPARENT RADIUM-226 CONCENTRATION 33 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 33
LOCATION: 209276



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.2	3.4
9	3.1	2.9
12	3.1	3.1
15	3.1	3.3
18	3.0	2.6
21	3.1	3.3
24	3.1	2.9
27	3.2	3.4
30	3.2	3.0
33	3.3	3.0
36	3.1	2.7
39	3.1	3.5

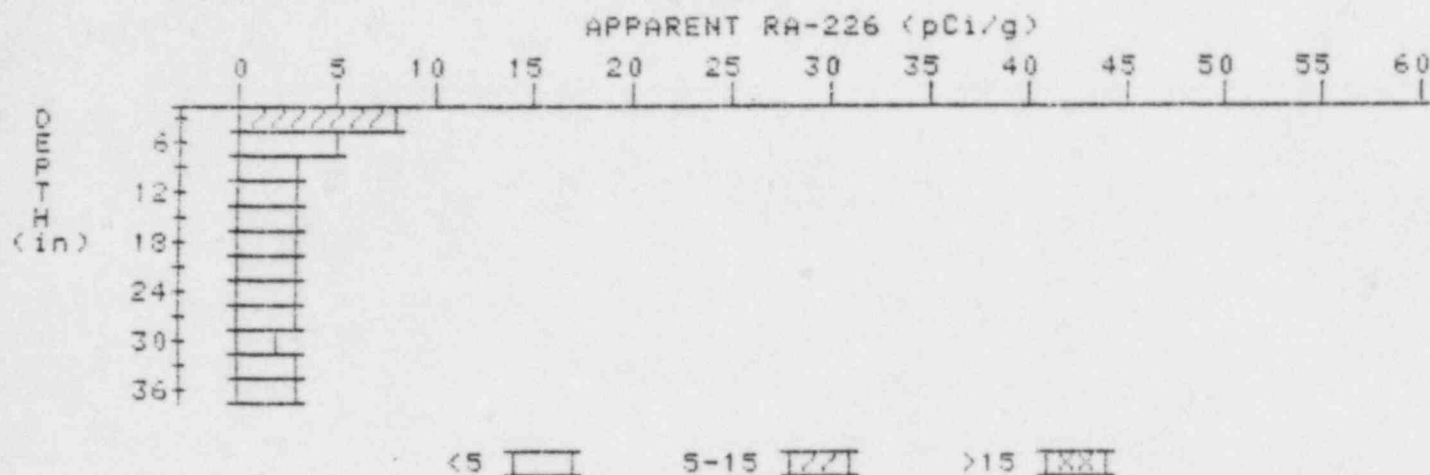
42
45
48
51
54
57
60
63
66
69
72
75
78

2.9
3.0
3.0
2.9
2.9
3.0
2.9
2.7
2.7
2.6
2.6
2.5
2.5

2.4
3.2
3.2
2.7
2.7
3.4
3.1
2.3
2.9
2.4
2.8
2.3
2.5

APPARENT RADIUM-226 CONCENTRATION 34 DECONVOLUTION GRAPH

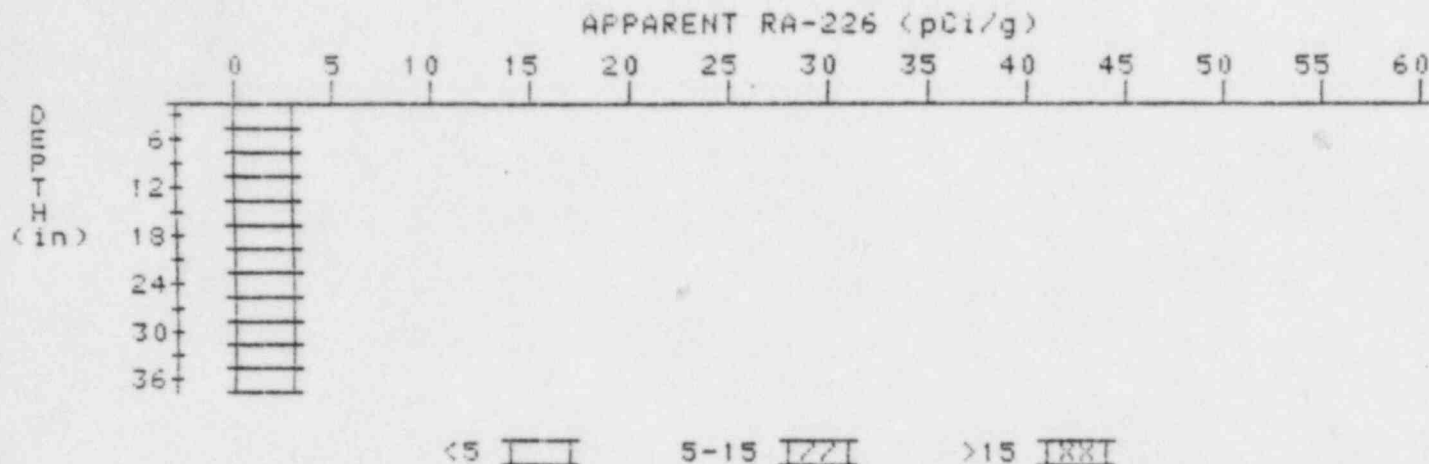
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 34
LOCATION: 210264



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	7.7	7.7
6	5.8	4.7
9	4.5	3.4
12	3.8	3.4
15	3.3	2.9
18	3.0	2.6
21	2.9	2.7
24	2.9	2.9
27	2.9	3.1
30	2.8	2.4
33	2.9	3.1
36	2.9	2.9

APPARENT RADIUM-226 CONCENTRATION 39 DECONVOLUTION GRAPH

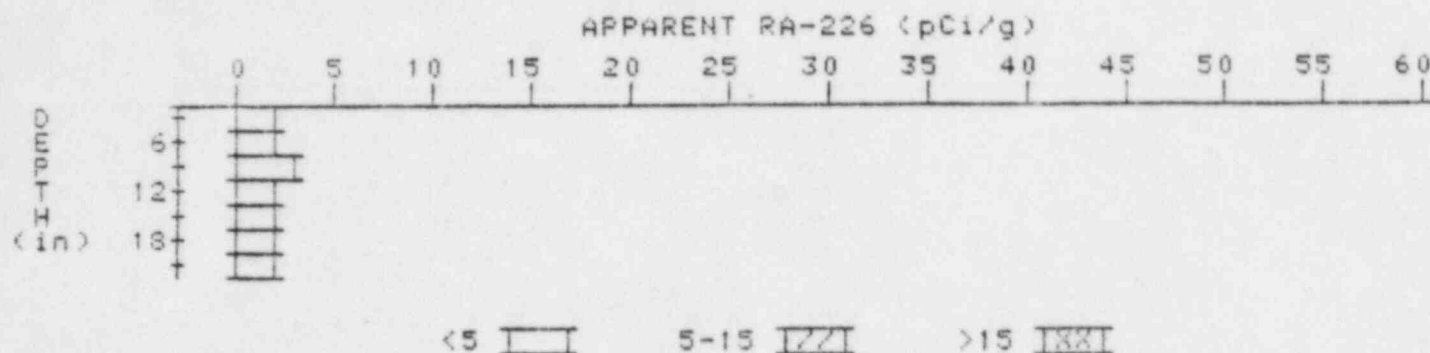
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 39
LOCATION: 222300



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.6	2.6
6	2.7	2.7
9	2.8	3.0
12	2.8	2.8
15	2.8	2.6
18	2.9	3.3
21	2.8	2.6
24	2.8	2.6
27	2.9	3.1
30	2.9	2.9
33	2.9	3.1
36	2.8	2.8

APPARENT RADIUM-226 CONCENTRATION 40 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 40
LOCATION: 225253



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.1	2.1
6	2.3	2.5
9	2.4	2.8
12	2.3	2.1
15	2.3	2.3
18	2.3	2.1
21	2.4	2.4

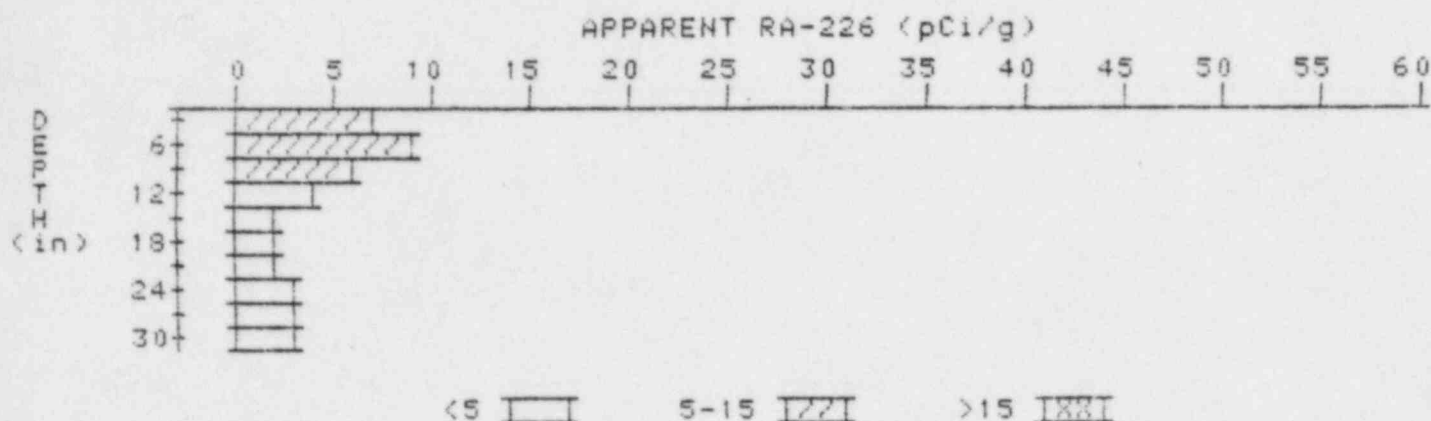
APPARENT RADIUM-226 CONCENTRATION 42

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 42

LOCATION: 233230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.8	6.8
6	6.8	9.1
9	5.5	5.5
12	4.2	3.7
15	3.2	2.1
18	2.8	2.4
21	2.6	2.2
24	2.6	2.6
27	2.6	2.6
30	2.6	2.6

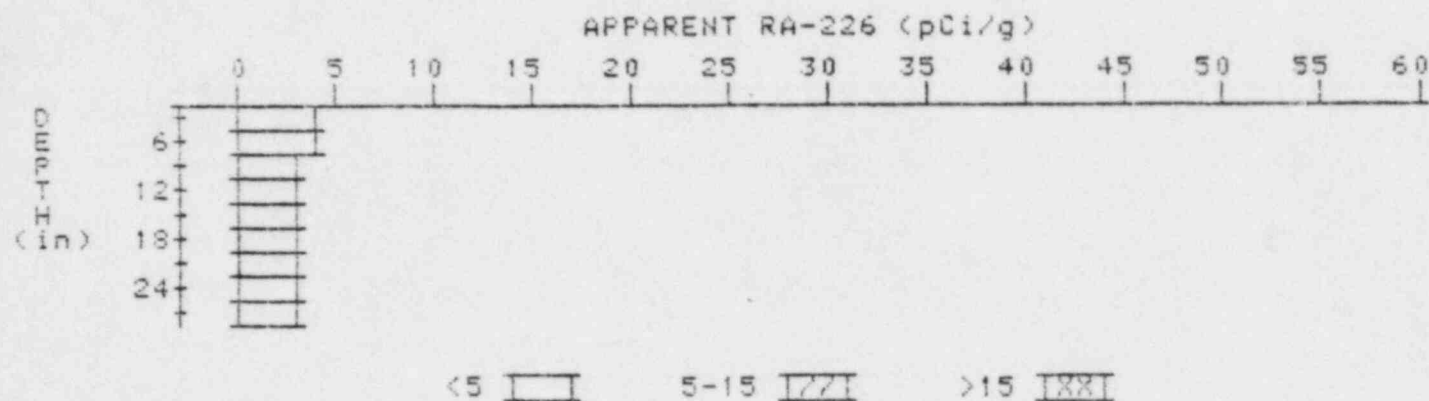
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

43

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 43

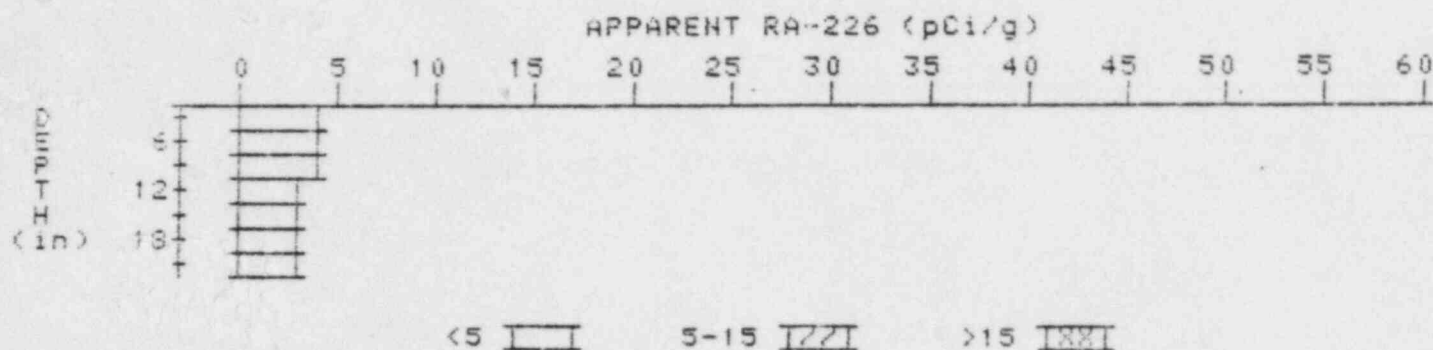
LOCATION: 236215



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.6	3.6
6	3.6	4.1
9	3.3	3.3
12	3.0	2.6
15	2.9	2.9
18	2.8	2.6
21	2.8	2.8
24	2.8	2.8
27	2.8	2.8

APPARENT RADIUM-226 CONCENTRATION 46 DECONVOLUTION GRAPH

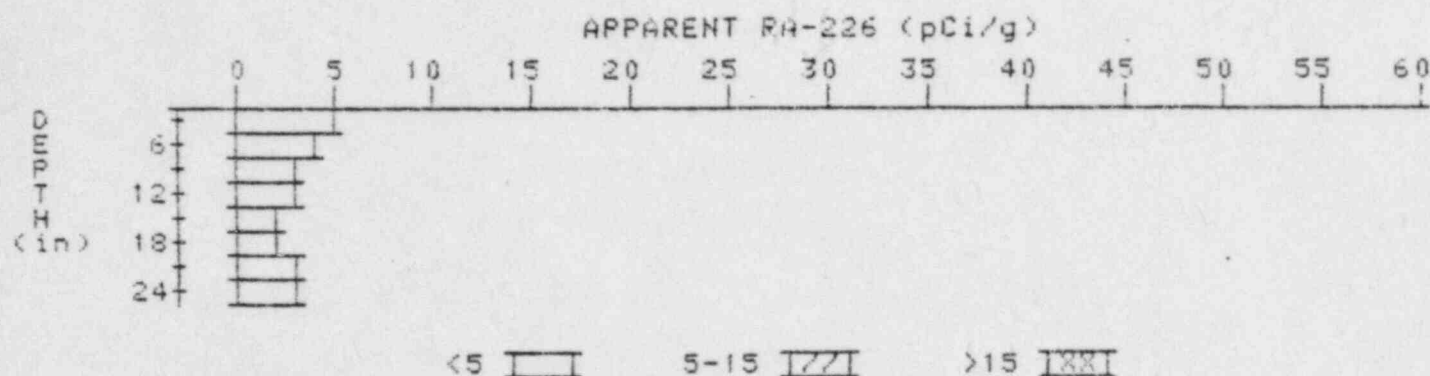
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 46
LOCATION: 240230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.8	3.8
6	3.7	3.9
9	3.5	3.9
12	3.1	2.7
15	2.9	2.7
18	2.8	2.6
21	2.8	2.8

APPARENT RADIUM-226 CONCENTRATION 47 DECONVOLUTION GRAPH

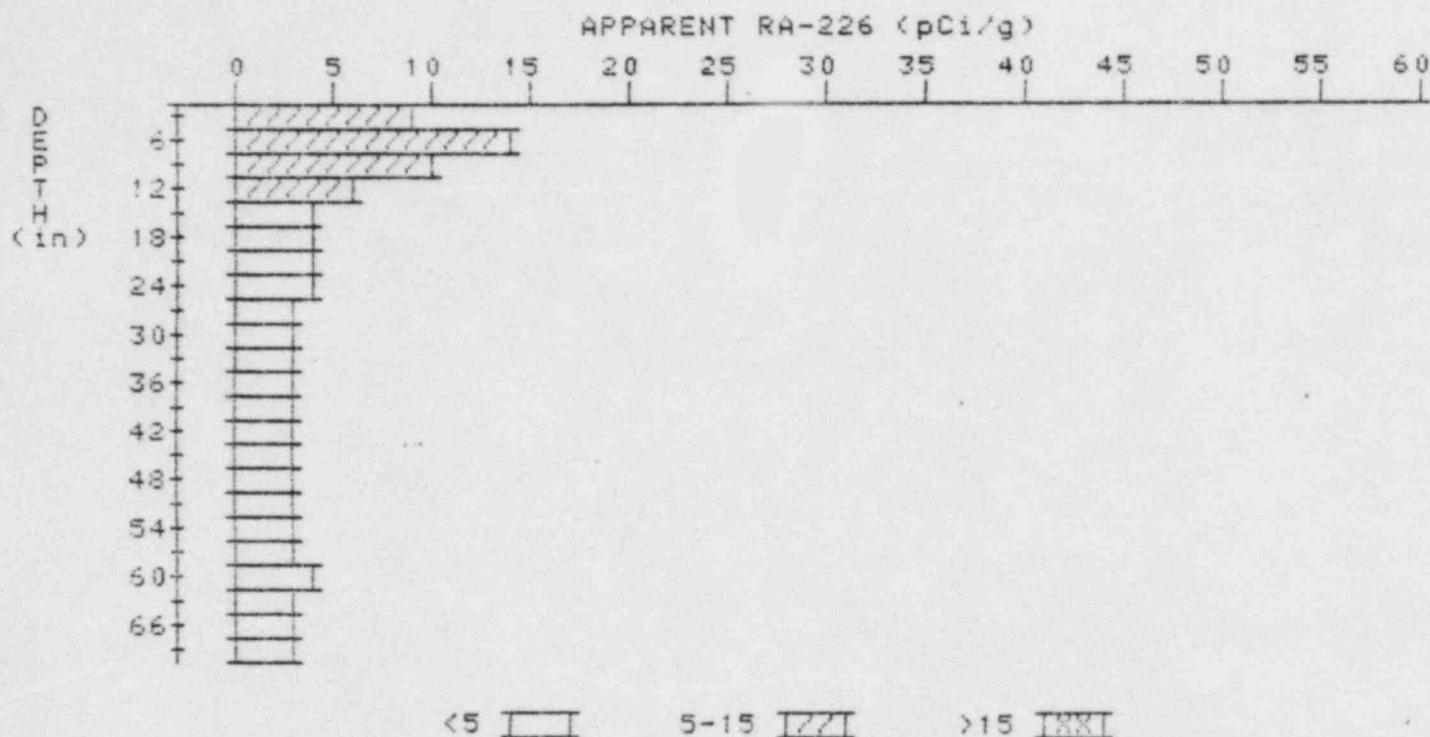
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 47
LOCATION: 245268



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.7	4.7
6	4.1	4.1
9	3.5	3.1
12	3.1	2.9
15	2.8	2.4
18	2.7	2.3
21	2.8	3.2
24	2.7	2.7

APPARENT RADIUM-226 CONCENTRATION 49 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 49
LOCATION: 247285



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	9.0	9.0
6	10.1	14.4
9	8.8	10.0
12	6.8	6.1
15	5.2	3.8
18	4.4	3.7
21	4.0	3.6
24	3.8	4.0
27	3.5	3.1
30	3.4	3.4
33	3.3	3.1
36	3.3	3.3
39	3.3	3.3
42	3.3	3.3
45	3.3	3.3

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61.6

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61.5
61.0
61.2
61.0
61.7
61.0
61.0
61.6

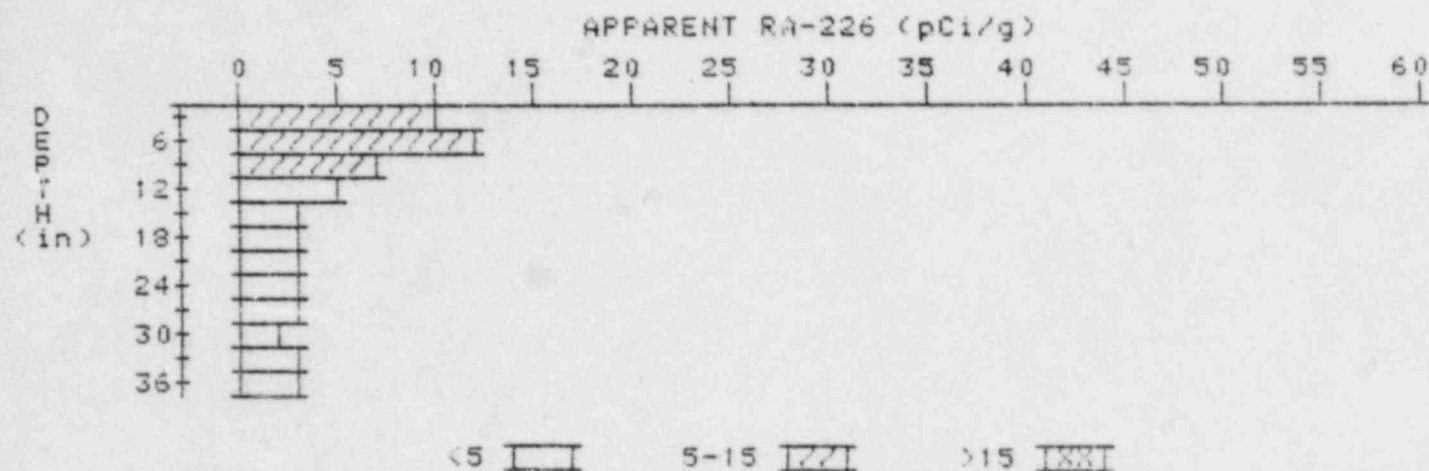
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

55

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 55

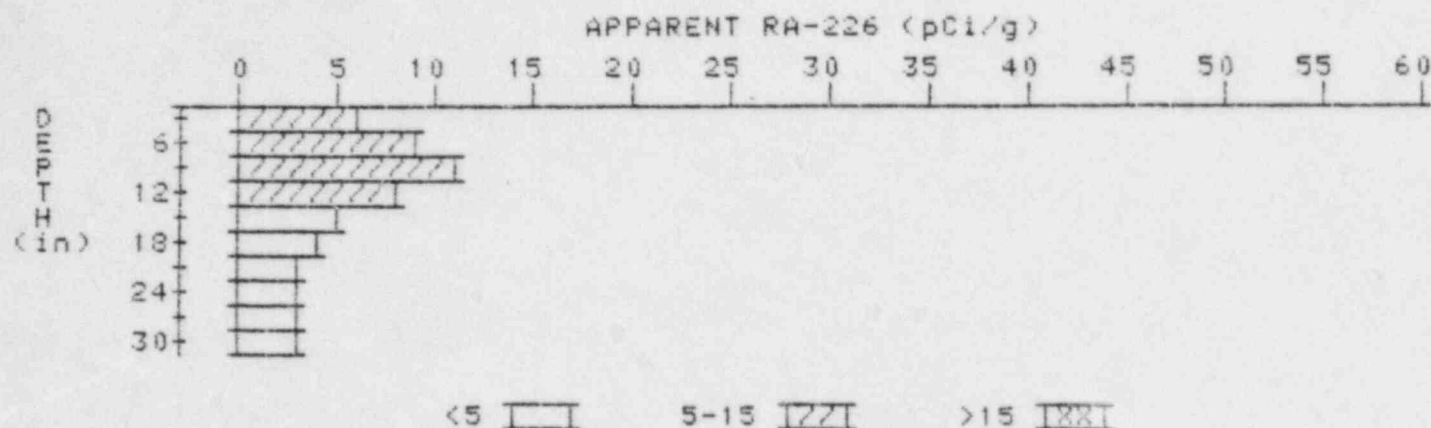
LOCATION: 255225



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	9.5	9.5
6	9.2	12.0
9	7.3	7.1
12	5.5	4.6
15	4.2	3.0
18	3.6	3.2
21	3.2	2.8
24	3.0	3.0
27	2.8	2.6
30	2.7	2.3
33	2.8	3.0
36	2.8	2.8

APPARENT RADIUM-226 CONCENTRATION 57 DECONVOLUTION GRAPH

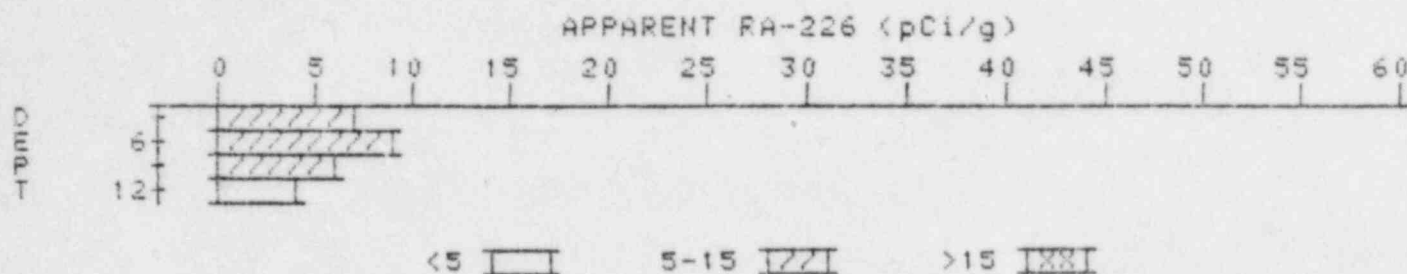
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 57
LOCATION: 260210



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.1	6.1
6	7.4	8.6
9	8.0	10.8
12	7.0	7.9
15	5.5	4.6
18	4.5	4.0
21	3.8	3.4
24	3.3	2.8
27	3.1	2.9
30	3.0	3.0

APPARENT RADIUM-226 CONCENTRATION 58 DECONVOLUTION GRAPH

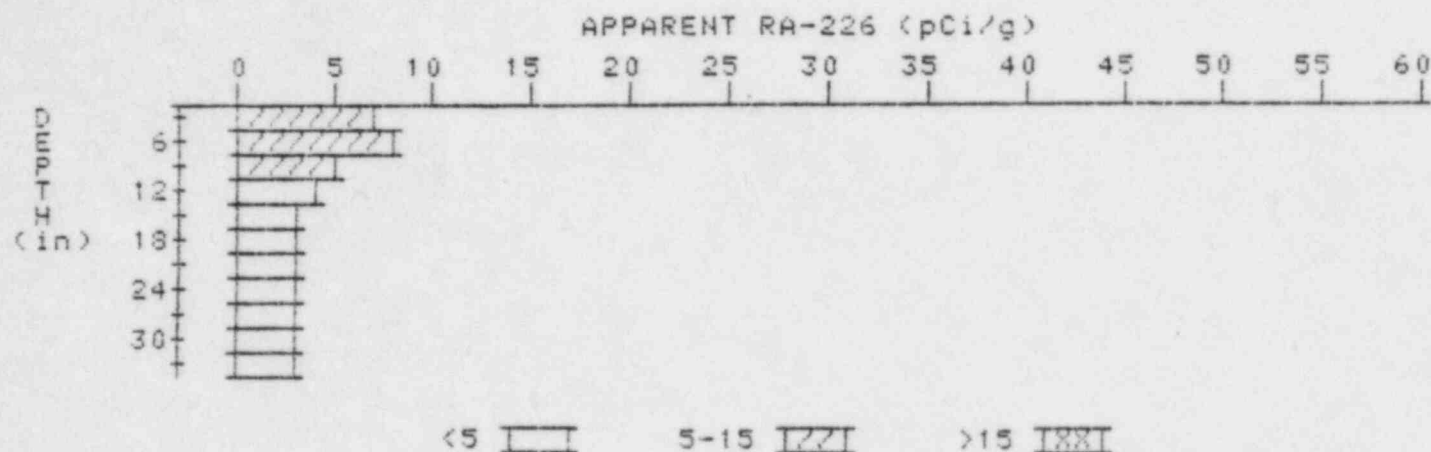
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 58
LOCATION: 260230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.7	6.7
6	6.8	8.9
9	5.7	6.1
12	4.4	4.4

APPARENT RADIUM-226 CONCENTRATION 61 DECONVOLUTION GRAPH

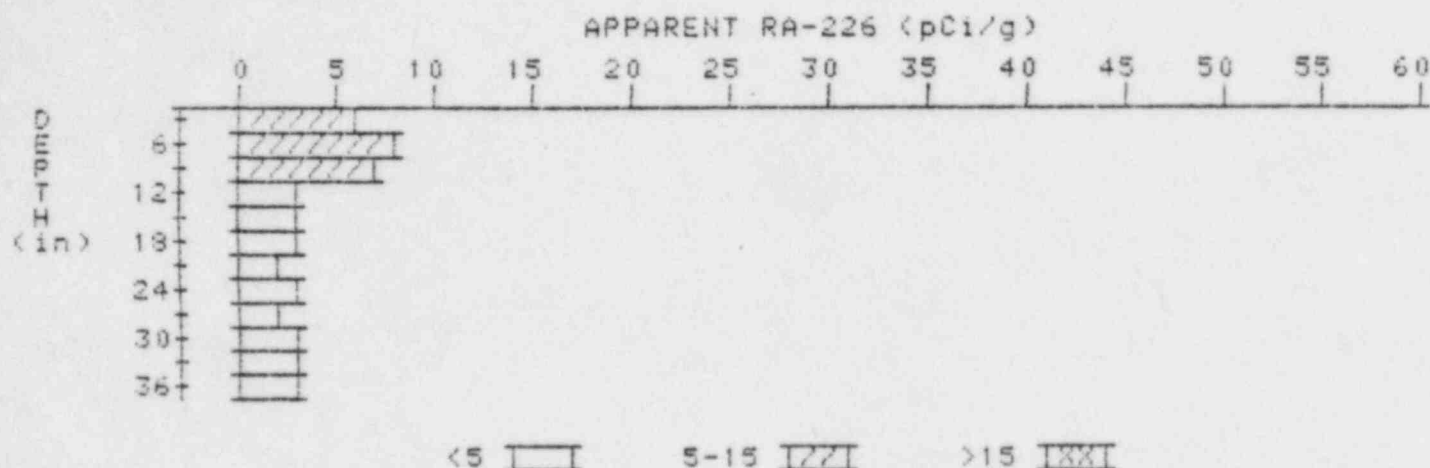
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 61
LOCATION: 265170



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.5	6.5
6	6.4	8.0
9	5.4	5.0
12	4.6	4.4
15	3.9	3.4
18	3.5	3.3
21	3.2	3.0
24	3.0	2.6
27	3.0	2.8
30	3.1	3.1
33	3.2	3.2

APPARENT RADIUM-226 CONCENTRATION 62 DECONVOLUTION GRAPH

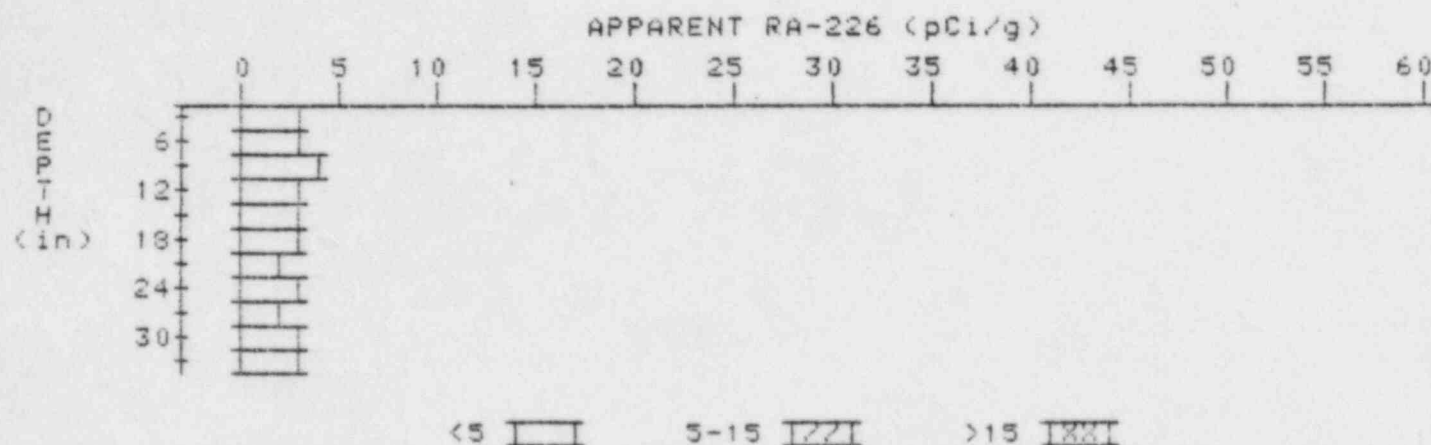
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 62
LOCATION: 265225



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.1	6.1
6	6.2	7.6
9	5.5	6.6
12	4.2	3.3
15	3.4	2.7
18	3.0	2.8
21	2.7	2.2
24	2.7	2.9
27	2.6	2.2
30	2.7	2.9
33	2.7	2.7
36	2.7	2.7

APPARENT RADIUM-226 CONCENTRATION 67 DECONVOLUTION GRAPH

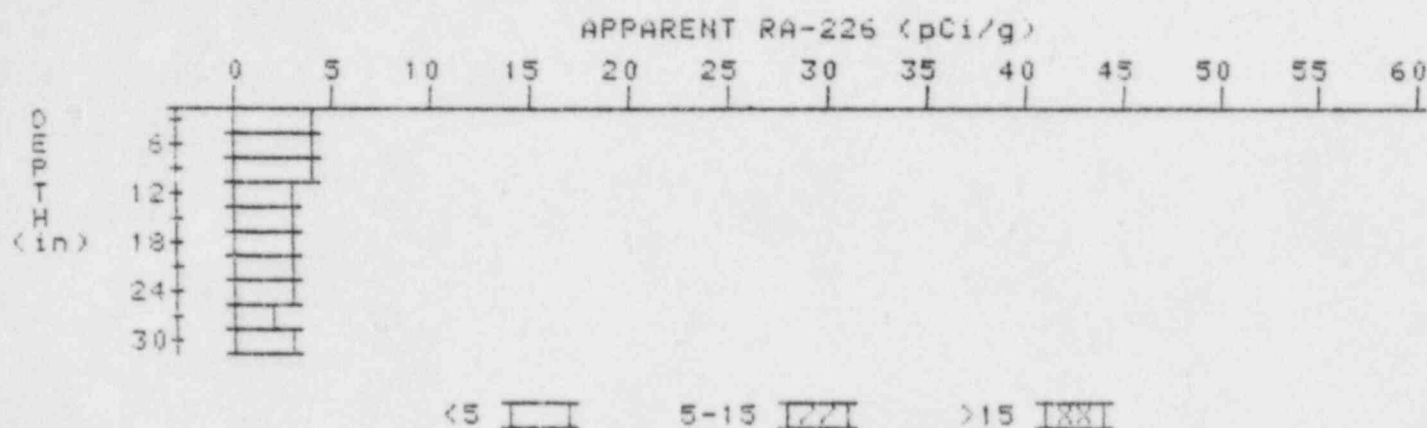
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 67
LOCATION: 273200



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.8	2.8
6	2.9	2.5
9	3.2	3.9
12	3.1	3.1
15	3.0	3.2
18	2.8	2.8
21	2.6	2.2
24	2.6	2.8
27	2.5	2.1
30	2.6	2.8
33	2.6	2.6

APPARENT RADIUM-226 CONCENTRATION 68 DECONVOLUTION GRAPH

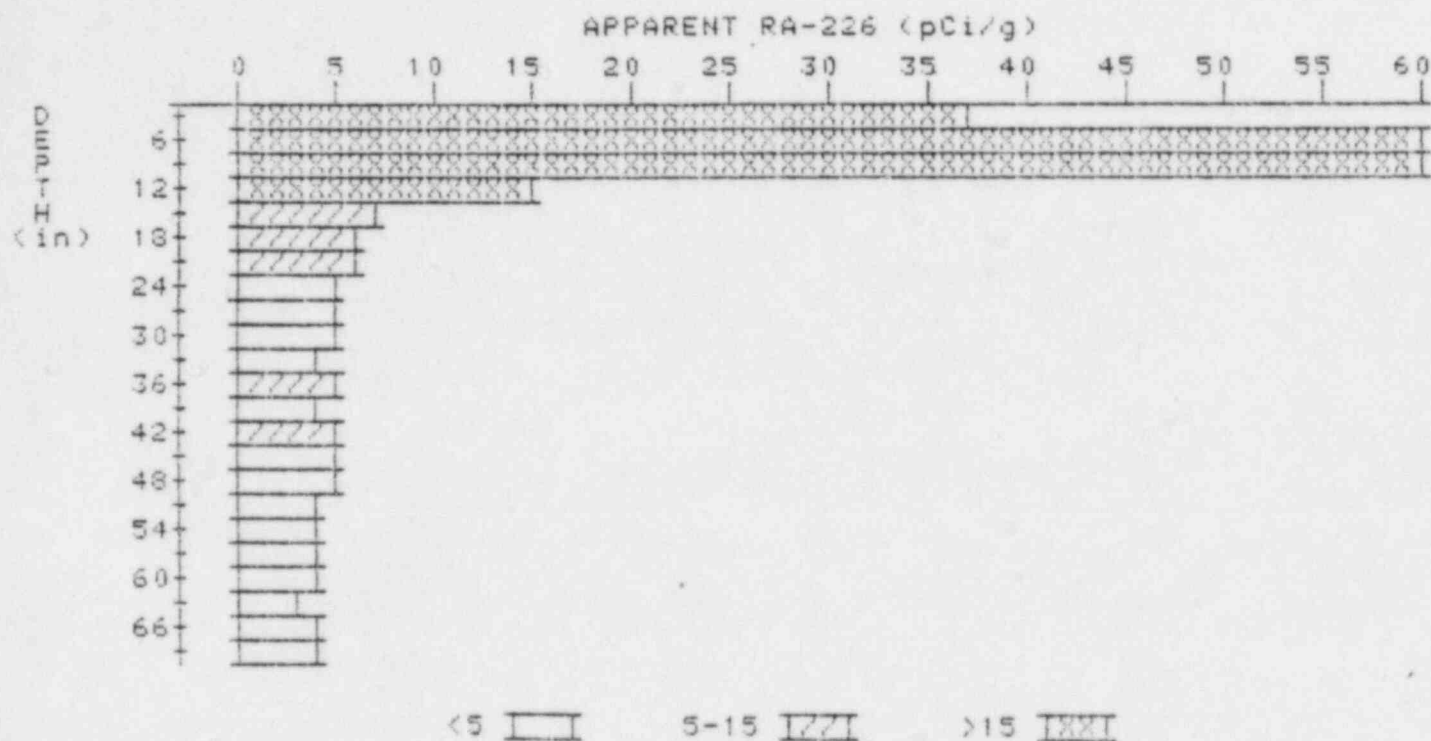
PROPERTY NUMBER: GJ-13426-MR
HOLE NUMBER: 68
LOCATION: 273292



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.6	3.6
6	3.7	4.2
9	3.5	3.5
12	3.3	3.3
15	3.1	3.1
18	2.9	2.9
21	2.7	2.5
24	2.6	2.6
27	2.5	2.1
30	2.6	2.6

APPARENT RADIUM-226 CONCENTRATION 74 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 74
LOCATION: 285293



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	37.1	37.1
6	51.7	89.9
9	44.8	63.6
12	27.3	15.4
15	16.5	7.1
18	11.0	6.4
21	8.1	6.1
24	6.3	4.7
27	5.4	4.5
30	5.0	4.6
33	4.8	4.3
36	4.9	5.3
39	4.8	4.4
42	4.5	4.1

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4.5
4.3
4.1
3.9
3.8
3.6
3.6
3.6

4.5
4.3
4.1
3.7
4.0
3.2
3.6
3.6

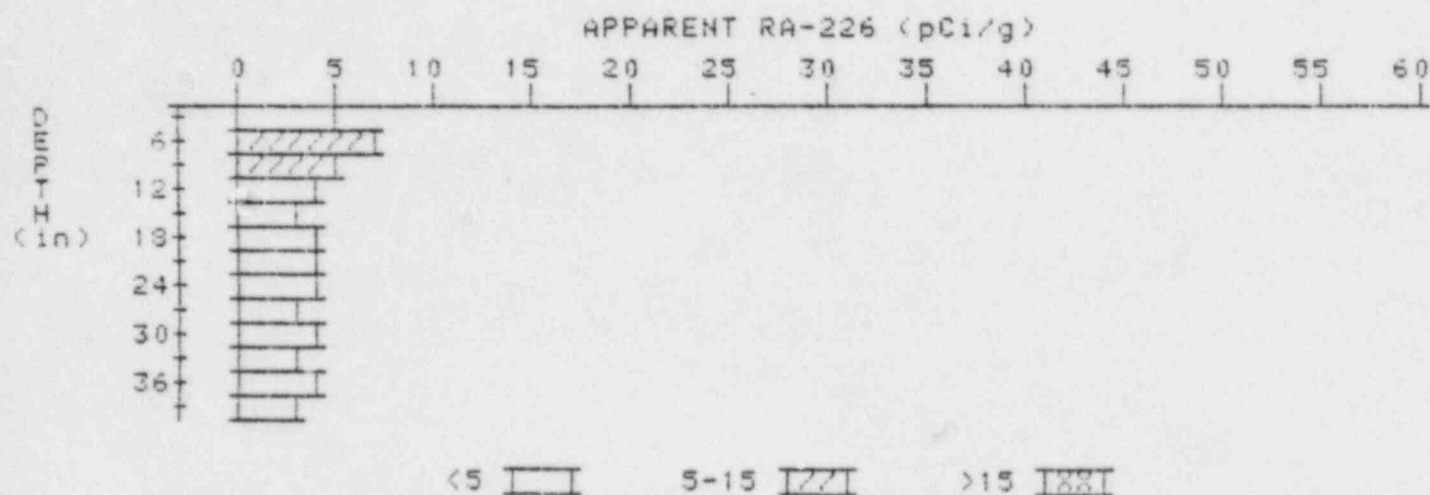
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

77

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 77

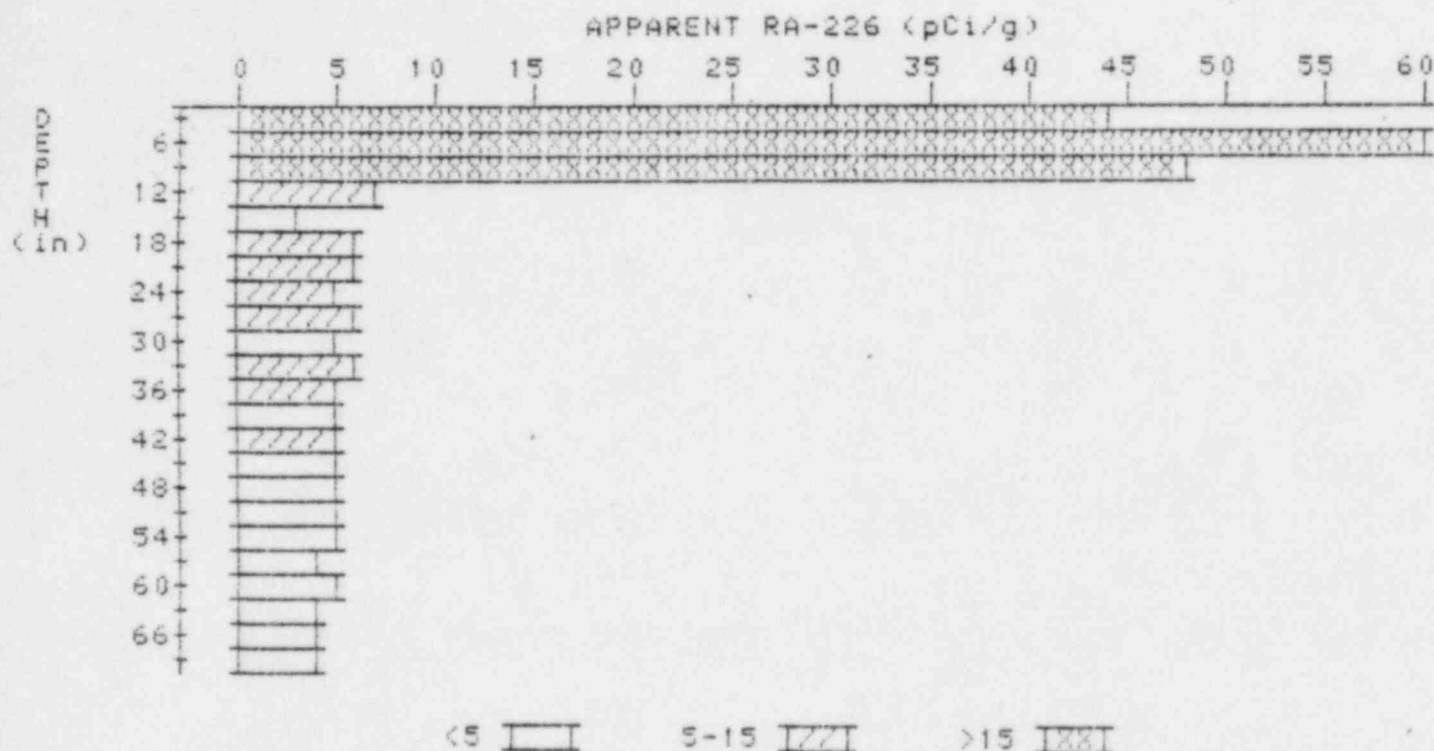
LOCATION: 290264



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.8	4.8
6	5.3	6.9
9	4.9	5.3
12	4.3	3.9
15	3.9	3.2
18	3.9	4.1
21	3.8	3.6
24	3.8	4.2
27	3.6	3.4
30	3.5	3.7
33	3.3	2.8
36	3.4	3.6
39	3.4	3.4

APPARENT RADIUM-226 CONCENTRATION 78 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 78
LOCATION: 290280



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	43.8	43.8
6	62.1	126.6
9	44.1	47.8
12	24.0	6.6
15	13.7	2.9
18	9.5	5.6
21	7.5	5.7
24	6.5	5.4
27	6.1	6.3
30	5.6	4.9
33	5.5	5.7
36	5.3	5.3
39	5.1	4.9
42	5.0	5.2
45	4.8	4.6

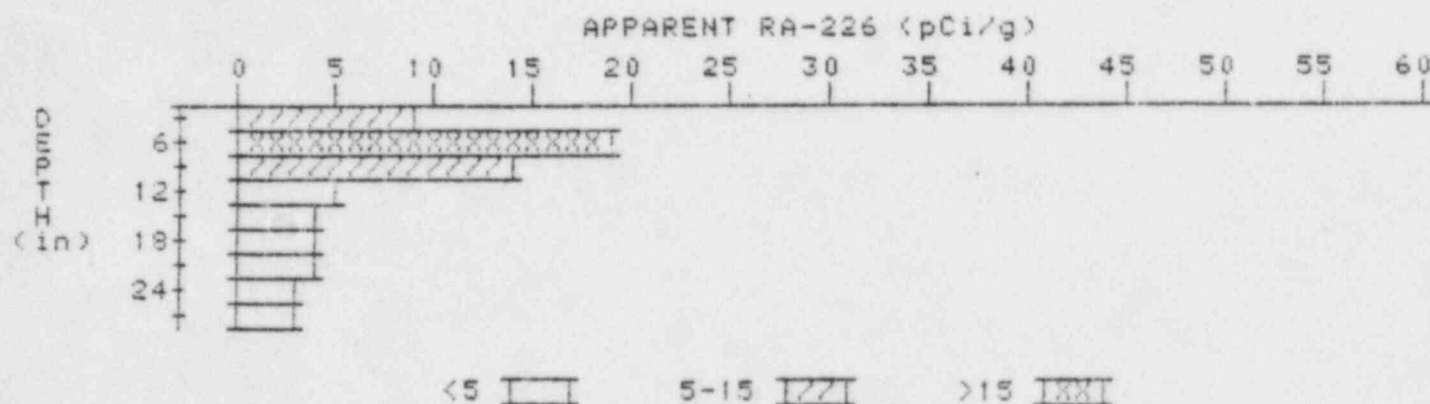
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4.6
4.5
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4.3
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4.2
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4.6
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3.9
4.7
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APPARENT RADIUM-226 CONCENTRATION 83 DECONVOLUTION GRAPH

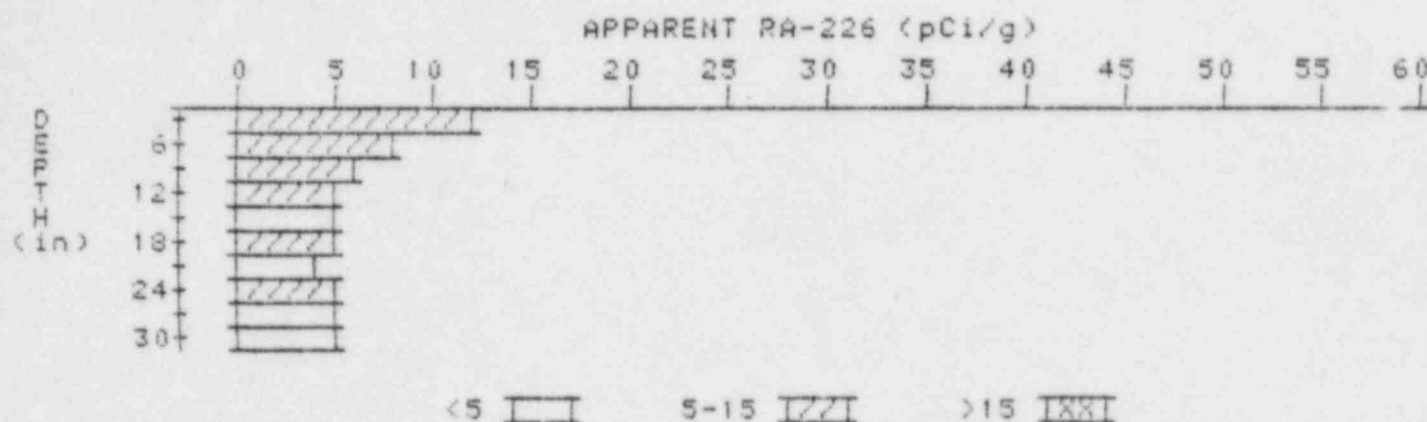
PROPERTY NUMBER: GJ-13426-MR
HOLE NUMBER: 83
LOCATION: 300195



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	9.3	9.3
6	12.0	19.1
9	10.7	14.4
12	7.3	4.6
15	5.4	3.6
18	4.5	3.8
21	4.0	4.0
24	3.5	3.0
27	3.3	3.3

APPARENT RADIUM-226 CONCENTRATION 84 DECONVOLUTION GRAPH

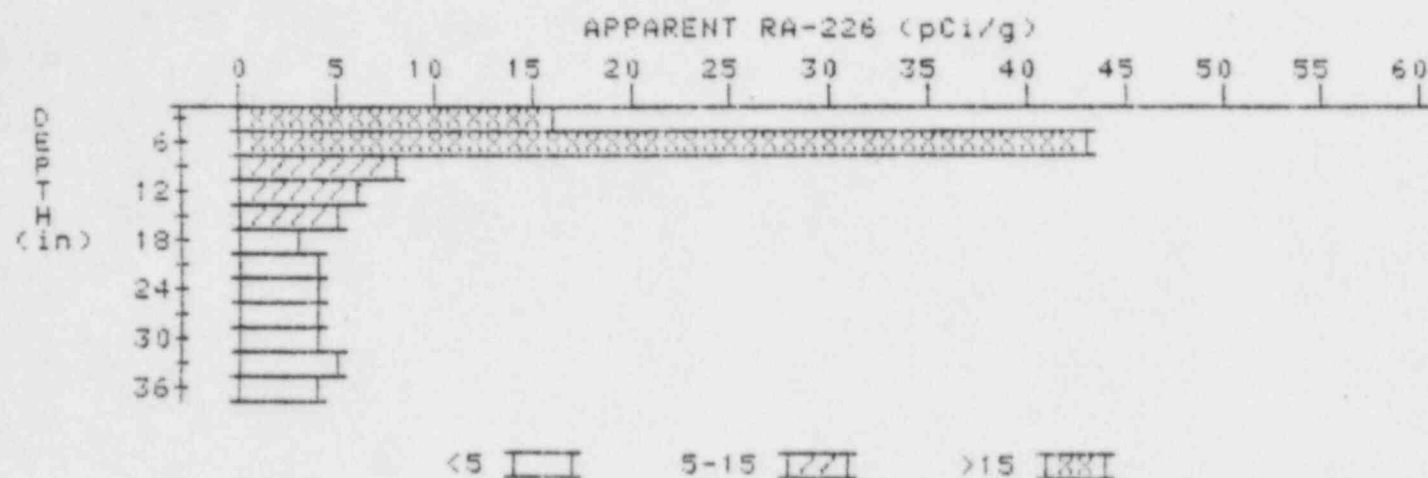
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 84
LOCATION: 300275



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	12.0	12.0
6	9.4	8.3
9	7.4	6.0
12	6.2	5.3
15	5.5	4.8
18	5.2	5.2
21	4.9	4.4
24	4.9	5.1
27	4.8	4.6
30	4.8	4.8

APPARENT RADIUM-226 CONCENTRATION 85 DECONVOLUTION GRAPH

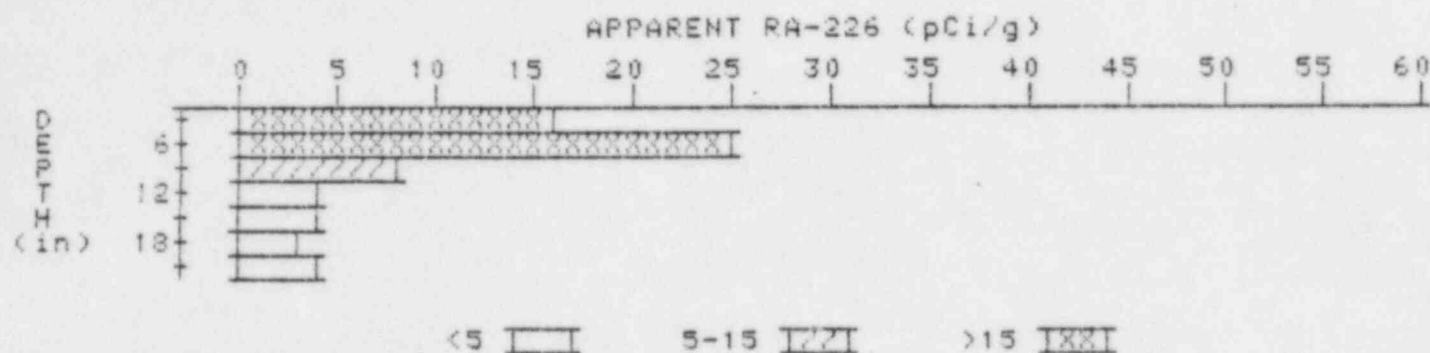
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 85
LOCATION: 305295



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	15.5	15.5
6	20.7	42.9
9	13.4	8.1
12	9.1	5.7
15	6.7	5.1
18	5.2	3.4
21	4.7	4.3
24	4.4	4.0
27	4.3	4.1
30	4.3	4.1
33	4.4	4.6
36	4.4	4.4

APPARENT RADIUM-226 CONCENTRATION 86 DECONVOLUTION GRAPH

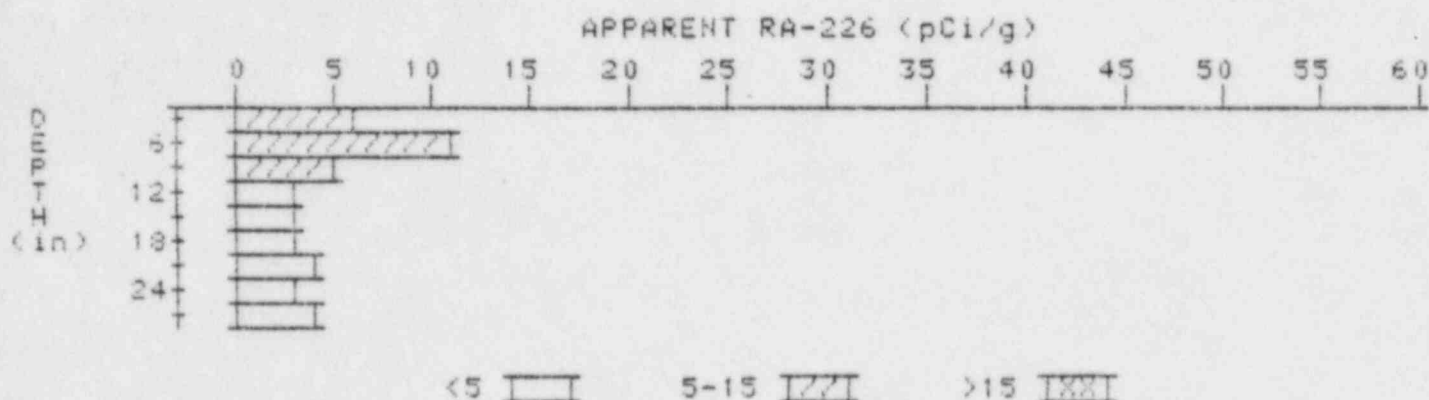
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 86
LOCATION: 310270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	16.1	16.1
6	15.9	24.6
9	10.8	8.0
12	7.3	4.5
15	5.4	3.6
18	4.5	3.4
21	4.2	4.2

APPARENT RADIUM-226 CONCENTRATION 87 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 87
LOCATION: 310280



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.2	6.2
6	7.1	11.4
9	5.6	5.1
12	4.4	3.3
15	3.8	3.3
18	3.5	3.0
21	3.5	3.5
24	3.5	3.1
27	3.7	3.7

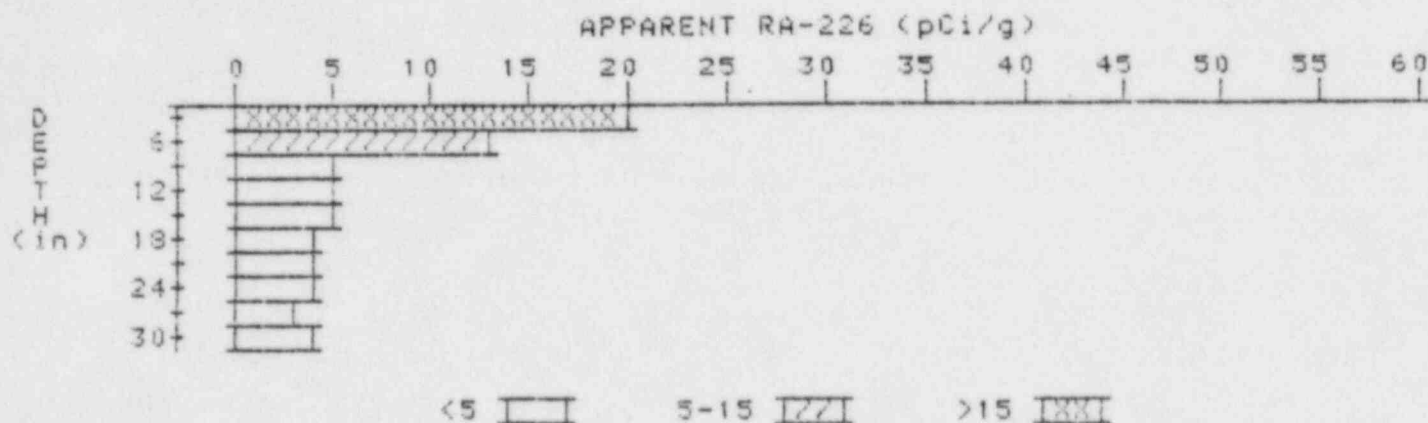
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

93

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 93

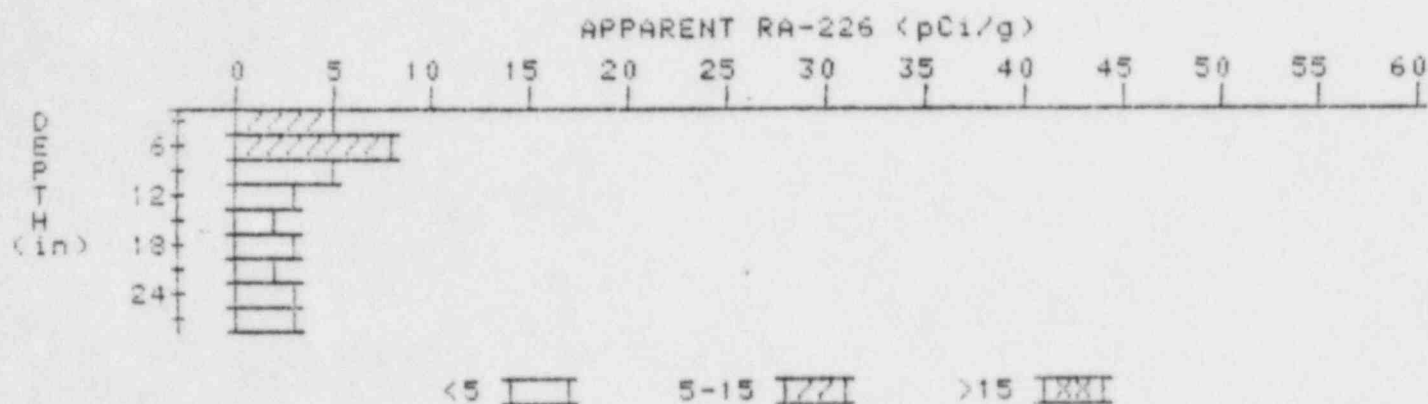
LOCATION: 320175



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	19.6	19.6
6	14.0	12.8
9	9.1	4.7
12	6.7	4.6
15	5.5	4.6
18	4.8	4.4
21	4.3	3.9
24	4.0	3.8
27	3.8	3.3
30	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION 95 DECONVOLUTION GRAPH

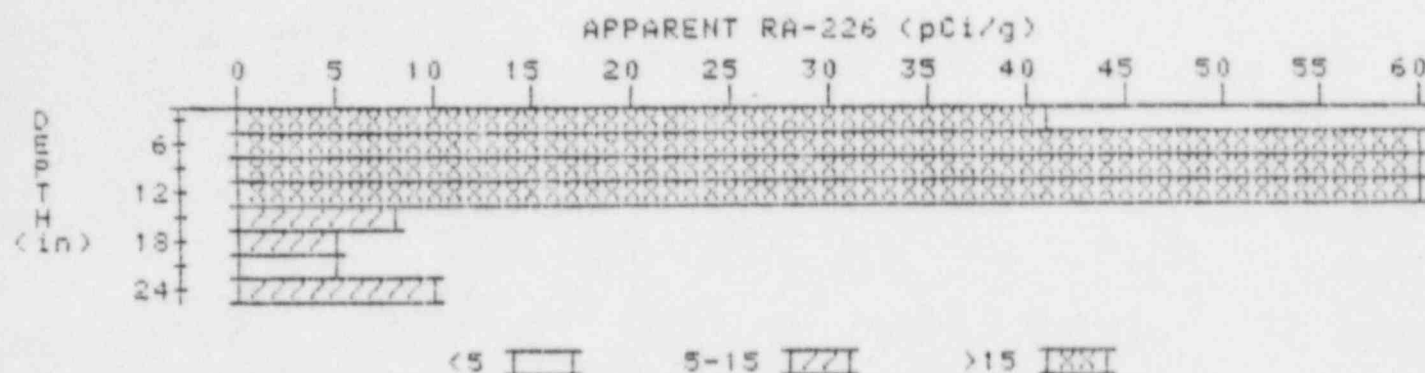
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 95
LOCATION: 320260



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.3	5.3
6	5.8	8.5
9	4.8	5.0
12	3.7	2.8
15	3.1	2.4
18	2.9	2.7
21	2.8	2.4
24	2.9	3.1
27	2.9	2.9

APPARENT RADIUM-226 CONCENTRATION 97 DECONVOLUTION GRAPH

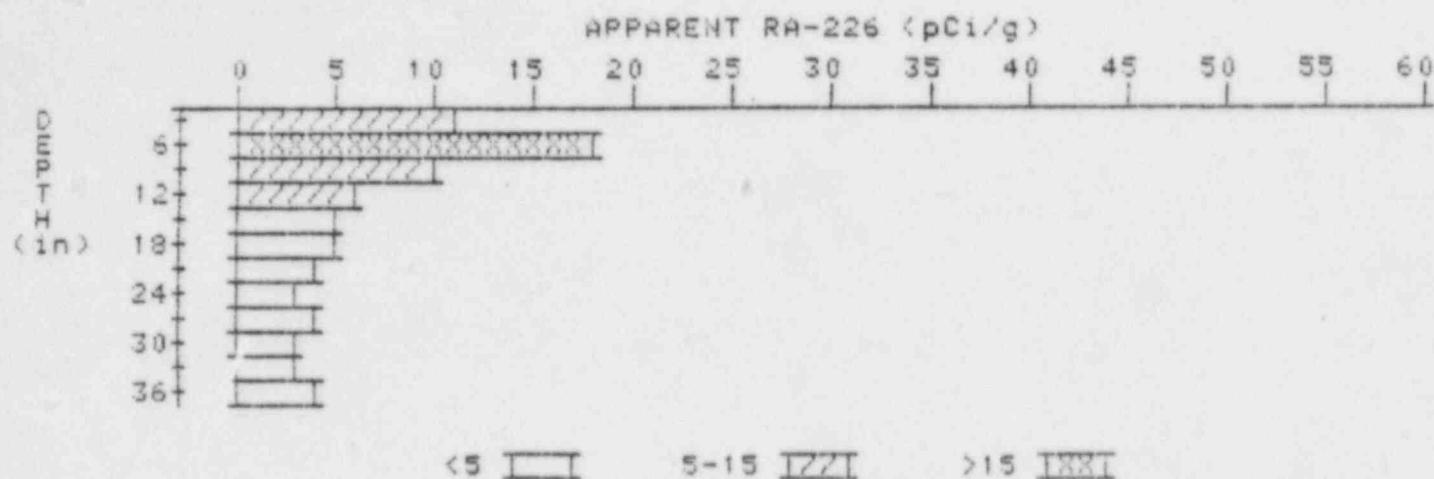
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 97
LOCATION: 325295



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	41.1	41.1
6	64.8	60.0
9	91.2	175.6
12	70.1	91.3
15	37.1	7.6
18	20.7	5.2
21	13.0	4.6
24	10.0	10.0

APPARENT RADIUM-226 CONCENTRATION 98 DECONVOLUTION GRAPH

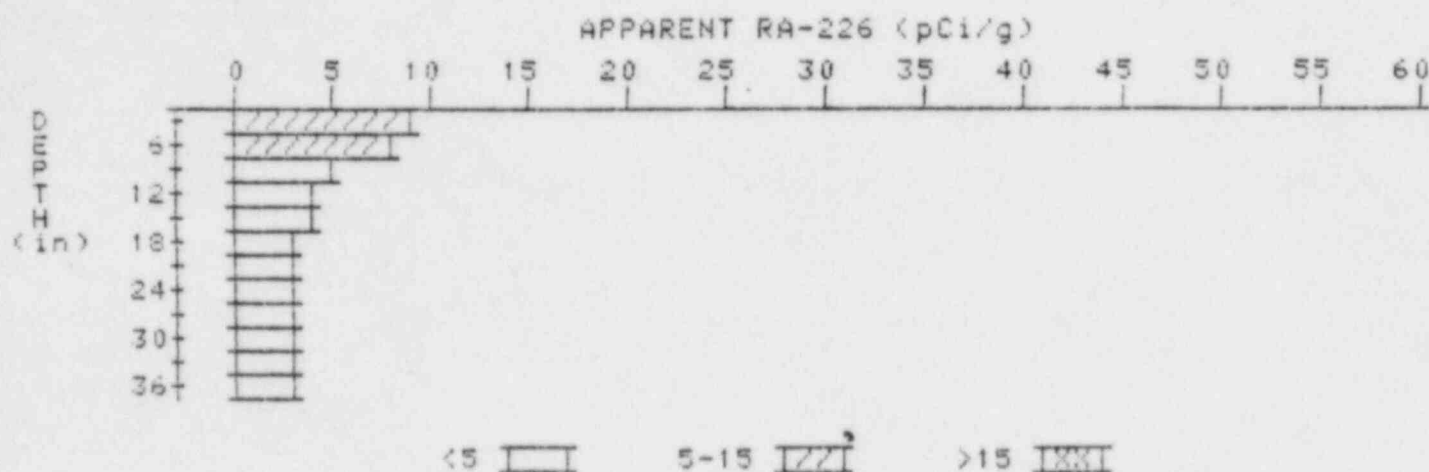
PROPERTY NUMBER: GJ-18426-MR
HOLE NUMBER: 98
LOCATION: 328190



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	11.1	11.1
6	12.2	16.2
9	9.9	9.9
12	7.6	6.4
15	6.0	4.9
18	5.0	4.6
21	4.2	3.8
24	3.6	2.7
27	3.8	3.5
30	3.4	3.2
33	3.4	2.9
36	3.7	3.7

APPARENT RADIUM-226 CONCENTRATION 99 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-13426-MR
HOLE NUMBER: 99
LOCATION: 328212



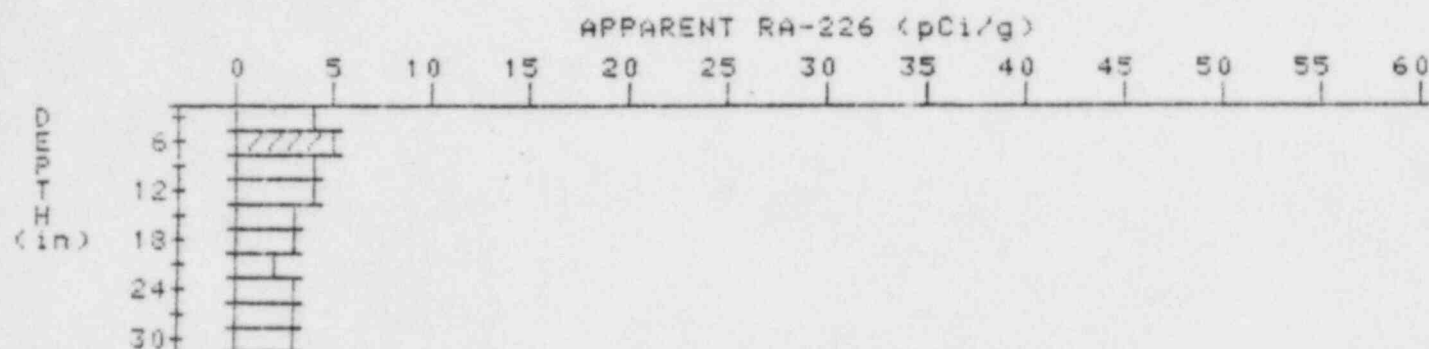
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.6	8.6
6	7.3	7.3
9	5.7	4.6
12	4.7	4.3
15	3.9	3.5
18	3.3	2.9
21	3.0	2.6
24	2.9	2.5
27	3.0	3.0
30	3.1	3.1
33	3.2	3.2
36	3.3	3.3

APPARENT RADIUM-226 CONCENTRATION 102 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 102

LOCATION: 328280



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.0	4.0
6	4.3	5.2
9	4.1	4.3
12	3.8	4.0
15	3.4	3.2
18	3.1	3.1
21	2.8	2.1
24	2.9	3.1
27	2.9	2.7
30	3.0	3.0

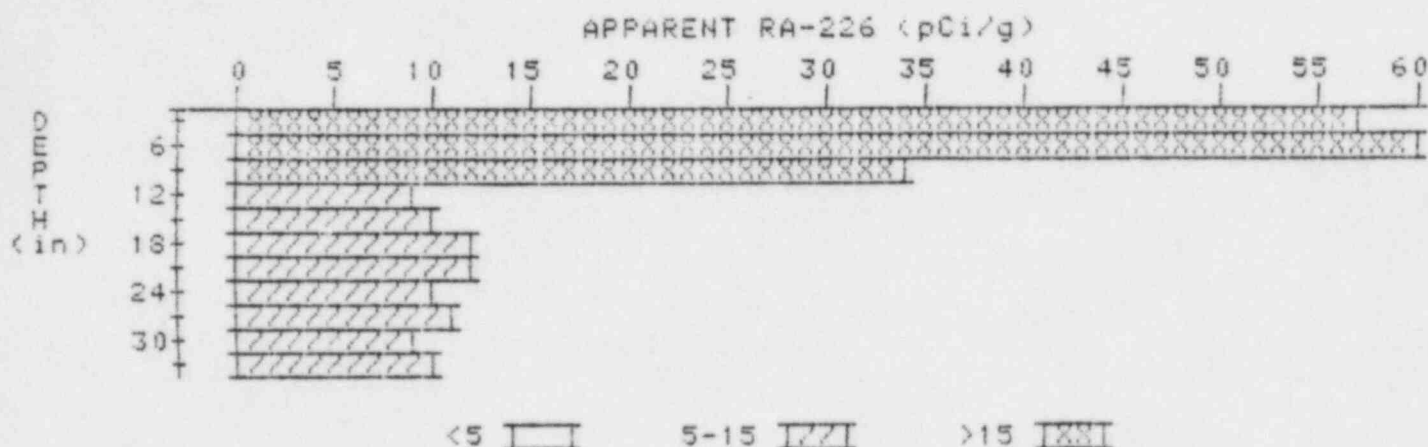
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

2

PROPERTY NUMBER: GJ-18426-MR

HOLE NUMBER: 2

LOCATION:



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	56.6	56.6
6	71.1	142.0
9	45.7	33.8
12	27.0	8.9
15	18.5	9.8
18	14.9	12.1
21	12.9	11.8
24	11.5	10.3
27	10.8	11.0
30	10.0	9.1
33	9.7	9.7

