

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-06425-RM
ADDRESS: 709 NORTH 6TH STREET

JUNE 1985

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

ALBUQUERQUE OPERATIONS OFFICE

DEPARTMENT OF ENERGY

BY

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June 13, 1985

REA06425:REA-605

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-06425-RM, is a tri-plex (3 dwelling units) located at 709 North 6th Street, Grand Junction, Colorado.

The purpose of this assessment is to evaluate the extent of uranium millsite contamination at this property and present a recommendation based on this assessment.

1.2 Evaluation and Recommendation

It is recommended that no remedial action be performed and that a Property Completion Report be prepared for use in the DOE certification process. The identified residual radioactive material found on this property is tailings; the estimated volume is: exterior, 1.5 cu. yd.; interior, 0 cu. yd.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 709 North 6th Street

Zoning: Residential (RMF-32)

Lot Size: Approximately 5,000 sf (0.1 acre)

Legal Description: South 50.0 Feet of North 100.0 Feet of Lots 17, 18, 19, and 20, Block 38, Grand Junction Addition, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 miles 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:	Overhead
Sewer:	Underground
Water:	Underground
Cable TV:	Overhead

Bordering Properties:

North:	Single-family residence
South:	Single-family residence
East:	North 6th Street
West:	Alley

2.2 Existing Facilities and Structures

Primary Structure:

Type:	1 1/2 story tri-plex
Size:	Approximately 2,400 sf
Construction Date:	1905
Construction:	Wood-frame
Foundation:	Concrete stemwall on spread footing
Footing Depth:	Approximately 17" to bottom of footing from grade
Basement:	None
Crawl Space:	Yes; under entire living areas
Condition:	Good

Other Structures:

Type:	Garage
Size:	Approximately 160 sf
Construction:	Wood-frame
Foundation:	None
Condition:	Fair

General Remarks:

Structures, utilities, landscaping, and other special features of this property are included in Appendix Figure 2.2.

Historical Data:

This structure is over 50 years old. Therefore, it does meet the eligibility criteria for consideration of inclusion on the National Register of Historic Places.

Alterations to Structure: This structure was originally a single-family residence and was converted into three apartments.

Architectural Significance: None

Historical Significance: None

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-06425-RM on March 26, 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. These records indicate contamination in the yard on the west side of the primary structure, in the driveway, and in the southeast corner of the east yard by the concrete curb.

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, Memo of Understanding, team leader notes, and deconvolution graphs are included in the Appendix (Section 6.0).

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 12 to 15 uR/h
Highest Outside Gamma Reading (HOG): 26 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1. Appendix Figure 3.2 presents the ranges of elevated gamma readings and indicates areas of possible contamination.

3.2.2 Interior Findings

Background Readings: 13 to 16 uR/h
Highest Inside Gamma Reading (HIG): 16 uR/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 Figures 3.3a and 3.3b show 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 3.3a and 3.4. 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 Figure 3.5 shows identified areas and estimated depths of mill tailings on this property, based on assessments of all measurements taken. As noted in this figure, areas that contain identified residual radioactive materials are:

- (AREA A) A small deposit is located in the driveway southeast of the primary structure and extends to a depth of 12 inches (approximately 16 sf).
- (AREA B) A small isolated deposit outside the east property line, in the city easement, extends to a depth of 9 inches (approximately 30 sf).

NOTE: The petrology report shows that the elevated gamma readings in the backyard are due to coal cinders and therefore should not be involved in the remedial action.

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

We do not recommend decontamination and restoration of this property. It is recommended that no remedial action be performed and that a brief Property Completion Report be prepared for use in the DOE certification process.

4.2 Evaluation of Recommended Remedial Action

The recommendation that no remedial action be performed on this property is made because the levels of radioactivity on this property fall below the EPA standards (40 CFR 192):

The concentration of Radium-226 in soil averaged over any area of 100 square meters shall not exceed the background level by more than -

- (1) 5 pCi/g, averaged over the first 15 cm of soil below the surface, and
- (2) 15 pCi/g, averaged over 15-cm-thick layers of soil more than 15 cm below the surface.

Appendix Table 4.1 presents the area and volume calculations of contamination present on the property. Appendix Table 4.2 presents the calculations for concentrations of Radium-226 in soil for this location.

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	Calculations For Concentration of Radium-226 in Soil

Appendix Figures:

Figure 2.1	Vicinity Map
Figure 2.2	Site Plan
Figure 3.1	Exterior Grid-Point Exposure Rates
Figure 3.2	Exterior Gamma Scan
Figure 3.3a	Interior Gamma Exposure Rates and Sample Location - Crawl Space
Figure 3.3b	Interior Gamma Exposure Rates - Ground Floor
Figure 3.4	Exterior Sample Locations
Figure 3.5	Exterior Estimated Extent of Contamination

Official Survey Report

Memo of Understanding

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

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.		
2	140260	00	DS	1.2		*	5' east of fence
		03	TC	3.7		*	Backyard
		06	TC	3.9		*	
		09	TC	4.0		*	DC = 0 inches
		12	TC	4.2		*	
		15	TC	4.3		*	
		18	TC	4.3		*	
		21	TC	4.3		*	
		24	TC	4.3		*	
		27	TC	4.3		*	
		30	TC	4.3		*	
		33	TC	4.3		*	
3	150230	00-06	SS			6.5	Wet soil with cinders
		03	TC	5.1		*	Southeast corner
		06	TC	4.8		*	of garage
		09	TC	4.5		*	
		12	TC	4.3		*	DC = 0 inches
		15	TC	4.1		*	Based on the
		18	TC	4.2		*	petrology analysis
		21	TC	4.2		*	
		24	TC	4.2		*	
		27	TC	4.2		*	
		30	TC	4.3		*	
		33	TC	4.3		*	
4	150250	03	TC	4.0		*	Backyard
		06	TC	4.2		*	
		09	TC	4.2		*	DC = 0 inches
		12	TC	4.2		*	
		15	TC	4.1		*	
		18	TC	4.1		*	
		21	TC	4.1		*	
		24	TC	4.1		*	
		27	TC	4.1		*	
		30	TC	4.0		*	
		33	TC	4.0		*	
5	151250	00	DS	3.1		*	20' north of garage
		06	DS	1.9		*	DC = 0 inches
		00	GS		3.9	*	Based on the
		06	GS		2.6	*	petrology analysis
		00-06	SS			5.5	Soil with cinders

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	154236	00	DS	9.8		*	In front of garage door
		06	DS	1.4		*	
		00	GS		7.3	*	
		06	GS		3.6	*	
7	154238	00	DS	1.6		*	East of garage door DC = 0 inches
		03	TC	3.9		*	
		06	TC	3.9		*	
		09	TC	4.1		*	
		12	TC	4.2		*	
		15	TC	4.2		*	
		18	TC	4.4		*	
		21	TC	4.4		*	
		24	TC	4.5		*	
		27	TC	4.4		*	
		30	TC	4.3		*	
		33	TC	4.2		*	
8	155270	00	DS	2.7		*	10' south of lilac bushes Backyard DC = 0 inches
		03	TC	3.7		*	
		06	TC	3.9		*	
		09	TC	4.0		*	
		12	TC	4.1		*	
		15	TC	4.2		*	
		18	TC	4.2		*	
		21	TC	4.4		*	
		24	TC	4.3		*	
		27	TC	4.4		*	
		30	TC	4.4		*	
		33	TC	4.4		*	
9	160250	03	TC	3.8		*	Backyard DC = 0 inches
		06	TC	4.1		*	
		09	TC	4.1		*	
		12	TC	4.1		*	
		15	TC	4.0		*	
		18	TC	4.0		*	
		21	TC	4.0		*	
		24	TC	4.1		*	
10	169260	03	TC	3.4		*	West of house DC = 0 inches
		06	TC	3.7		*	
		09	TC	3.8		*	

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.		
10	169260	12	TC	3.8		*	
		15	TC	4.0		*	
		18	TC	4.0		*	
		21	TC	4.2		*	
		24	TC	4.2		*	
		27	TC	4.3		*	
		30	TC	4.4		*	
		33	TC	4.5		*	
		36	TC	4.4		*	
11	174276	00-06	SS			2.6	Wet soil
		03	TC	3.5		*	Northeast of house
		06	TC	3.7		*	Sewer line
		09	TC	3.9		*	
		12	TC	4.0		*	DC = 0 inches
		15	TC	4.0		*	
		18	TC	4.0		*	
		21	TC	4.0		*	
		24	TC	4.1		*	
		27	TC	4.1		*	
		30	TC	4.1		*	
		33	TC	4.1		*	
		36	TC	4.0		*	
		39	TC	4.0		*	
		42	TC	4.0		*	
		45	TC	4.0		*	
		48	TC	3.9		*	
		51	TC	3.9		*	
		54	TC	3.9		*	
		57	TC	3.8		*	
		60	TC	3.8		*	
		63	TC	3.8		*	
12	180238	00	DS	1.7		*	
		12	DS	<1.0		*	
		15	DS	<1.0		*	On gas line
13	182238	03	TC	3.7		*	South of house
		06	TC	3.7		*	Gas line
		09	TC	3.8		*	
		12	TC	3.8		*	DC = 0 inches
		15	TC	3.9		*	
		18	TC	3.9		*	
		21	TC	3.8		*	

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.		
13	182238	24	TC	4.1		*	
		27	TC	3.9		*	
		30	TC	4.0		*	
		33	TC	4.0		*	
		36	TC	4.0		*	
		39	TC	4.0		*	
		42	TC	4.1		*	
		45	TC	4.2		*	
		48	TC	4.3		*	
		51	TC	4.4		*	
		54	TC	4.4		*	
		57	TC	4.3		*	
		60	TC	4.3		*	
		63	TC	4.2		*	
		66	TC	4.0		*	
		69	TC	4.0		*	
		72	TC	4.0		*	
		75	TC	4.0		*	
		78	TC	4.0		*	
		81	TC	4.0		*	
14	190230	03	TC	3.7		*	
		06	TC	4.1		*	South of house
		09	TC	4.1		*	Driveway
		12	TC	4.1		*	
		15	TC	4.2		*	DC = 0 inches
		18	TC	4.1		*	
		21	TC	4.1		*	
		24	TC	4.0		*	
		27	TC	4.1		*	
		30	TC	3.9		*	
		33	TC	3.8		*	
		36	TC	3.7		*	
		39	TC	3.5		*	
		42	TC	3.6		*	
15	193277	03	TC	3.7		*	North of house
		06	TC	3.9		*	Water line
		09	TC	4.1		*	
		12	TC	4.1		*	
		15	TC	4.2		*	

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.		
15	193277	18	TC	4.2		*	
		21	TC	4.3		*	
		24	TC	4.2		*	
		27	TC	4.2		*	
		30	TC	4.2		*	
		33	TC	4.2		*	
		36	TC	4.1		*	
		39	TC	4.1		*	
		42	TC	4.0		*	
		45	TC	4.1		*	
16	219250	03	TC	3.0		*	East of house
		06	TC	3.2		*	
		09	TC	3.3		*	DC = 0 inches
		12	TC	3.4		*	
		15	TC	3.6		*	
		18	TC	3.7		*	
		21	TC	3.8		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	TC	3.8		*	
17	231235	00	DS	9.9		*	4' South of sidewalk
		06	DS	9.9		*	Gravel drive in
		03	TC	12.3		*	front of house
		06	TC	15.2		*	
		09	TC	11.0		*	
		12	TC	7.5		*	DC = 12 inches
		15	TC	5.7		*	Based on the
		18	TC	4.8		*	deconvolution graph
		21	TC	4.3		*	
		24	TC	4.0		*	
18	248227	00	DS	<1.0		*	
		00	GS			*	
19	250250	00-06	SS		<1.0	2.2	Sandy soil
		03	TC	3.0		*	In front of house
		06	TC	3.4		*	
		09	TC	3.7		*	DC = 0 inches
						*	

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.		
19	250250	12	TC	3.8		*	
		15	TC	3.7		*	
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	TC	4.0		*	
		33	TC	4.0		*	
		36	TC	4.0		*	
		39	TC	3.9		*	
20	255227	03	TC	5.4		*	Southeast corner of yard
		06	TC	5.5		*	
		09	TC	4.8		*	
		12	TC	4.2		*	DC = 9 inches Based on the deconvolution graph
		15	TC	4.1		*	
		18	TC	3.9		*	
		21	TC	3.8		*	
		24	TC	3.9		*	
		27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.9		*	
		36	TC	4.1		*	
21	259225	00	DS	2.1		*	Southeast corner of yard
		06	DS	1.9		*	
		00-06	SS			4.7	Road base

Measurement GB = GAD-6 Borehole
 Type: 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 = 03-26-85
 Team Leader = KAC

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	2.0		*	Northeast corner
		06	DS	2.1		*	of garage
		12	DS	1.4		*	
		06-12	SS			2.0	Dry soil

Measurement Type: 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 = 03-26-85
Team Leader = KAC

Table 3.3

Summary of Interior Gamma Exposure Rates

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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)
CRAWL SPACE	*	*	*	*	15-17	*
GROUND FLOOR	*	*	*	*	15-16	*
GARAGE	7	15-17	16	6	15-19	16

* The CDH and ORNL data indicates the absence of interior contamination in the primary structure at this property. This information was investigated by performing a walking gamma scan. These areas and the ranges of gamma measurements are shown in Appendix Figures 3.3a and 3.3b. Exposure rates in the garage are shown in Appendix Figure 3.3a.

Table 4.1
Area and Volume Calculations
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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>
EXTERIOR								
A	4 x 4	=	16	x	1.0	=	16	
B	5 x 12/2	=	30	x	0.8	=	24	
TOTAL VOLUME - EXTERIOR						=	40	= 40/27 = 1.5

NOTE: Total square feet of Areas A and B = 46 square feet
46 square feet = 4.3 square meters

See Appendix Figure 3.5 For Areas

=====

$$C_{avg} = \frac{C_c \times A_c + C_b (100m^2 - A_c)}{100m^2}$$

Where

C_{avg} = Concentration average (pCi/g)

C_c = Concentration of Contamination (pCi/g)

A_c = Area of Concentration (m^2)

C_b = Background Concentration (pCi/g)

$$C_{avg} = \frac{15.2 \times 4.3 + 2 (100 - 4.3)}{100}$$

$$C_{avg} = 2.56 < 7$$

Therefore, concentration does not meet EPA Standards of 7 pCi/g

NOTE: Background Radium concentration for this area is 2 pCi/g

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RR060585
 REA06425/REA-605/LMR

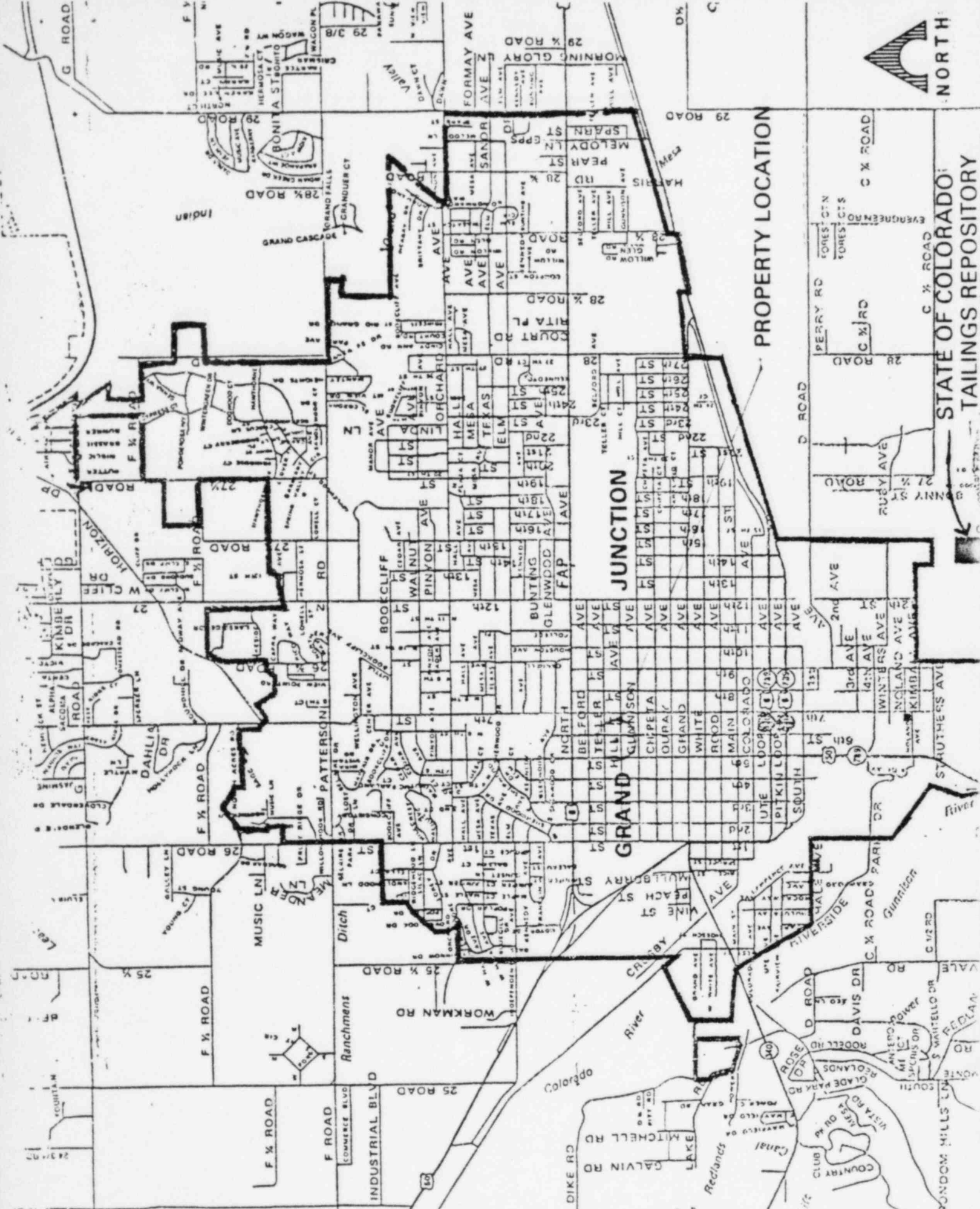
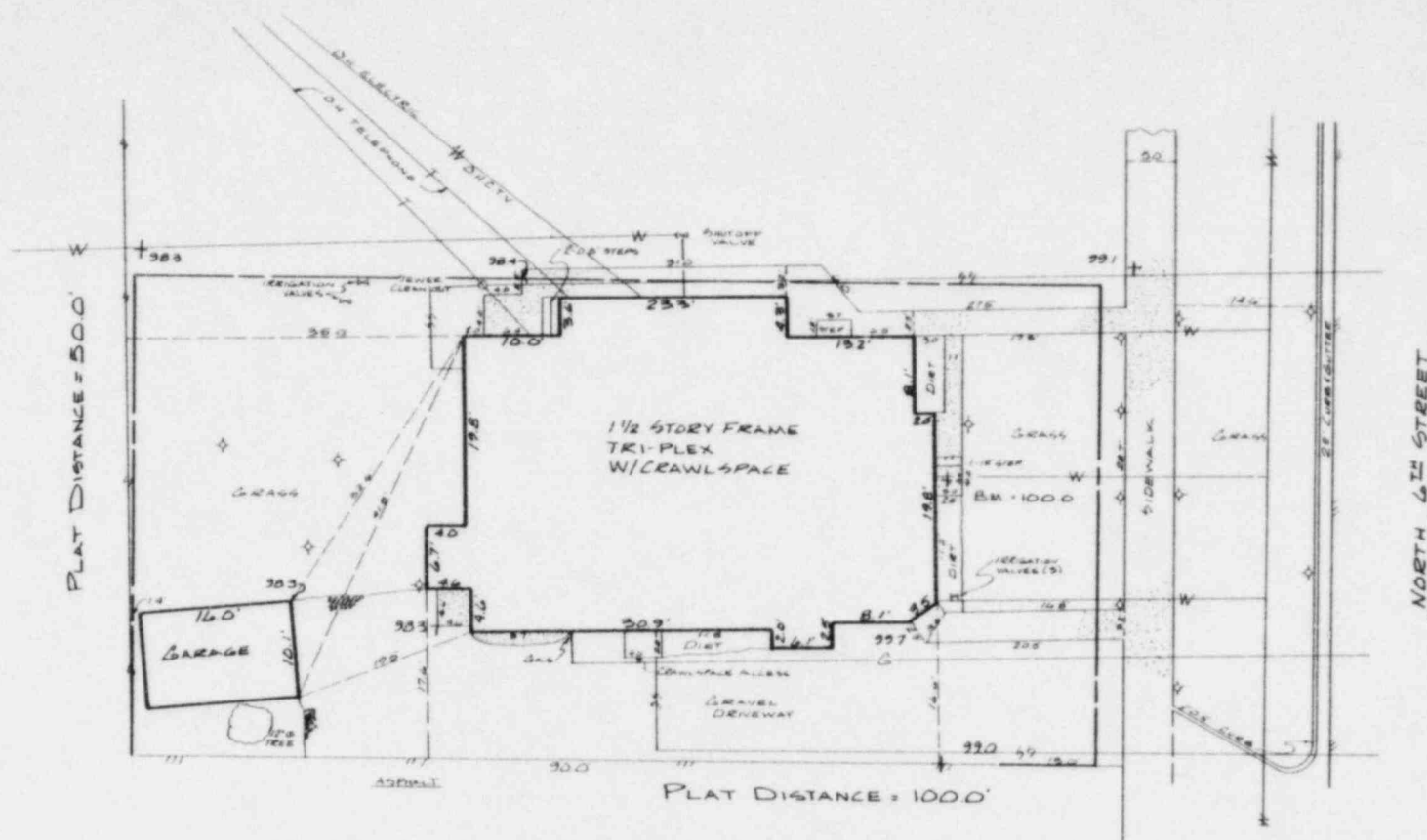


FIGURE 2.1
VICINITY MAP



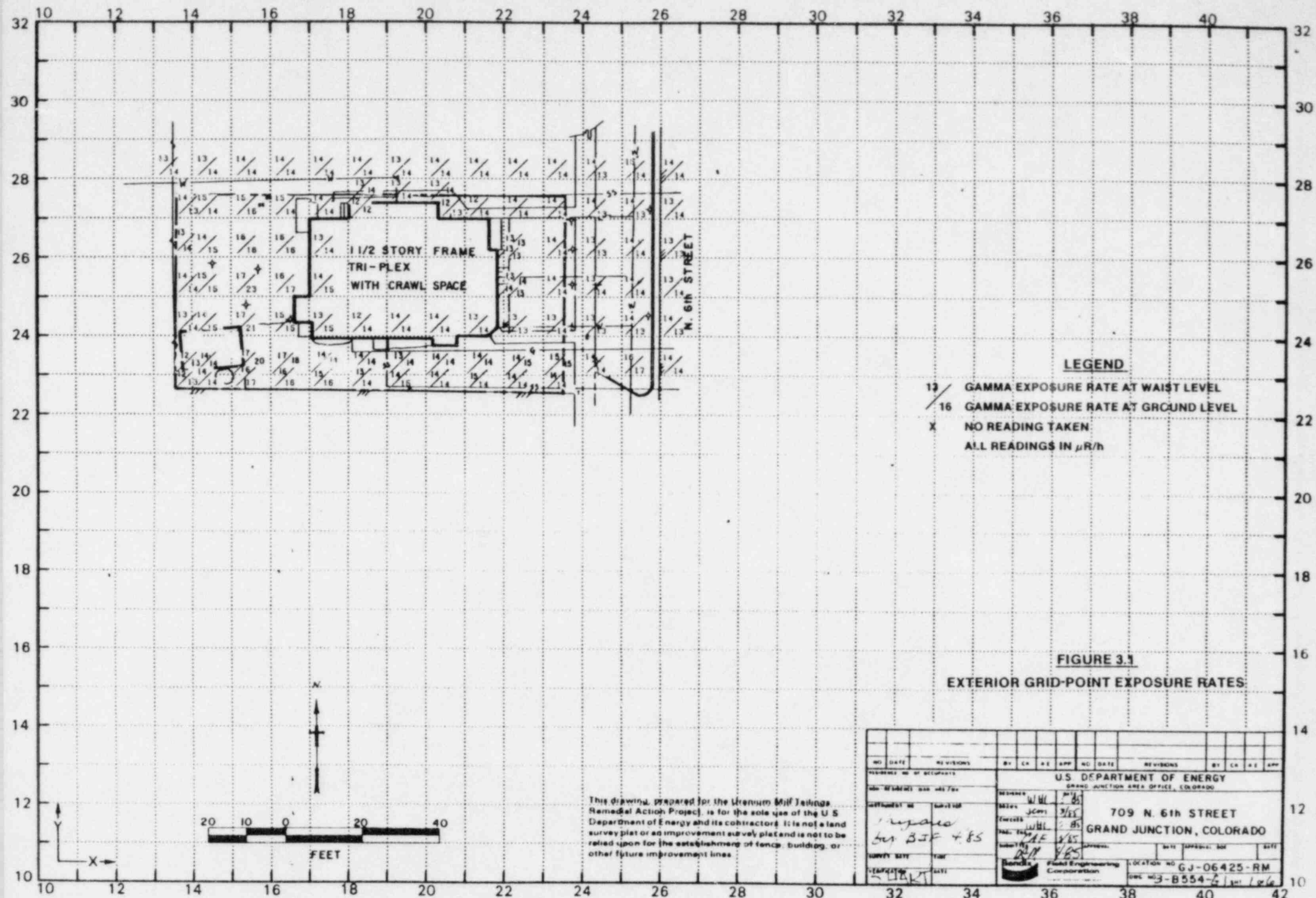
SOUTH 500 FEET OF NORTH 1000 FEET
OF LOTS 17, 18, 19, AND 20 BLOCK 38
GRAND JUNCTION ADDITION
CITY OF GRAND JUNCTION
MESA COUNTY, COLORADO

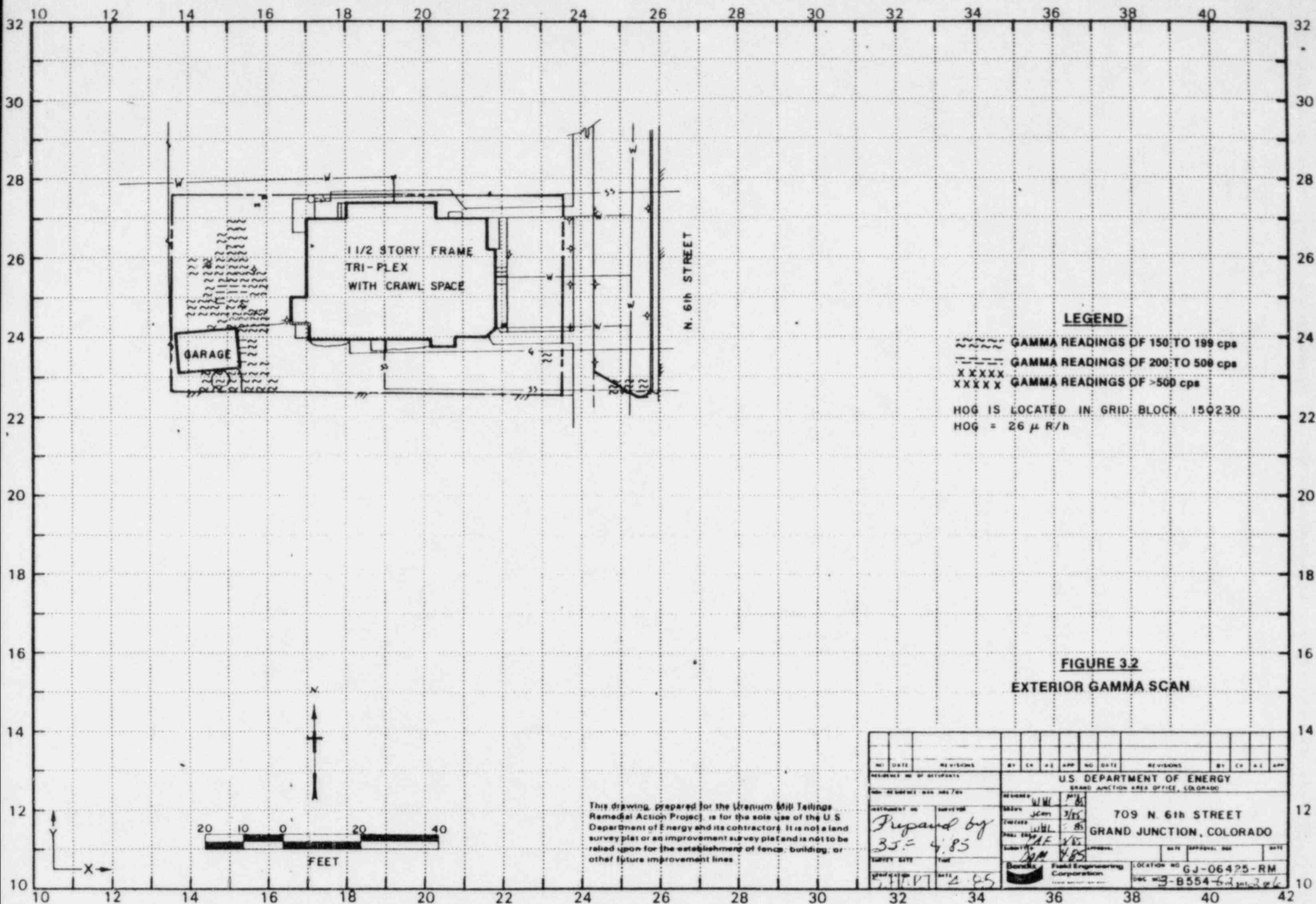


This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

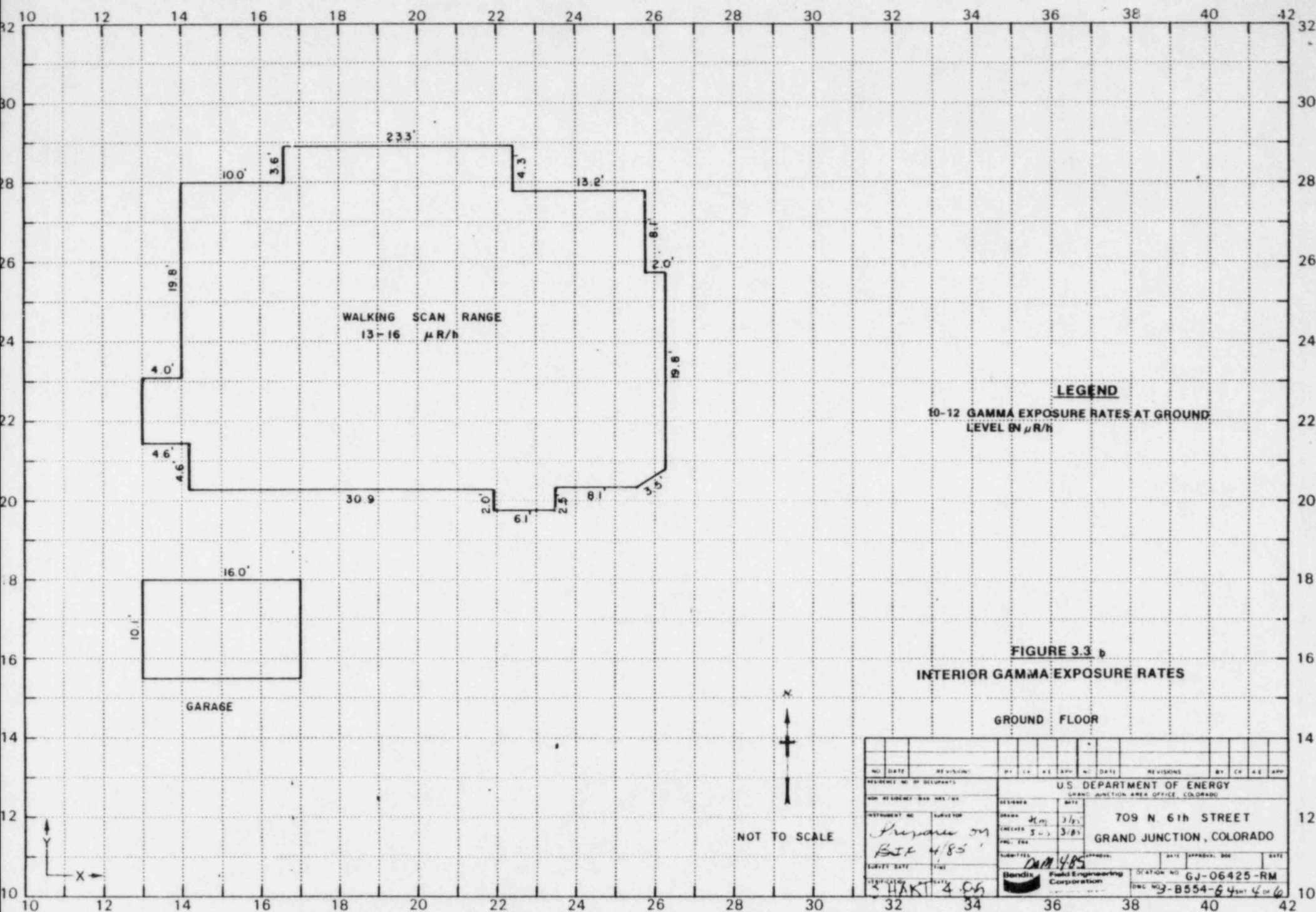
FIGURE 2.2 SITE PLAN

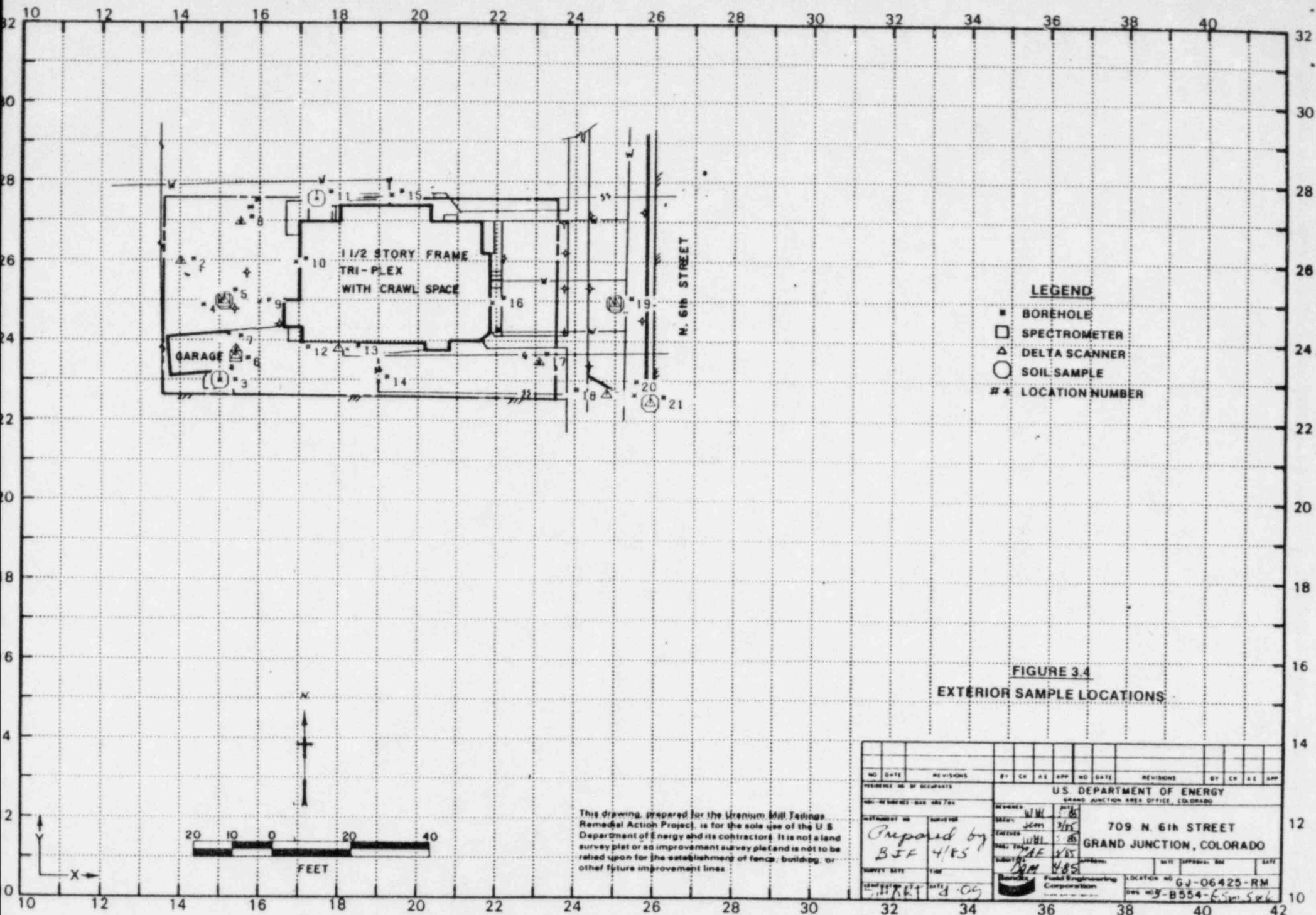
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION PROJECT OFFICE, COLORADO		DOE ID NO. 4306425RM
ADDRESS 709 N. 6TH STREET GRAND JUNCTION, COLORADO		ALLIED Remedial Action Engineering & Construction P.O. Box 1000 Grand Junction, CO 81501
SURV. WHL 3-13-85	DRAFT RLB 3-14-85	CK 2
DRAWING NO. 3-C 554 F1	SHEET 1 OF 1	

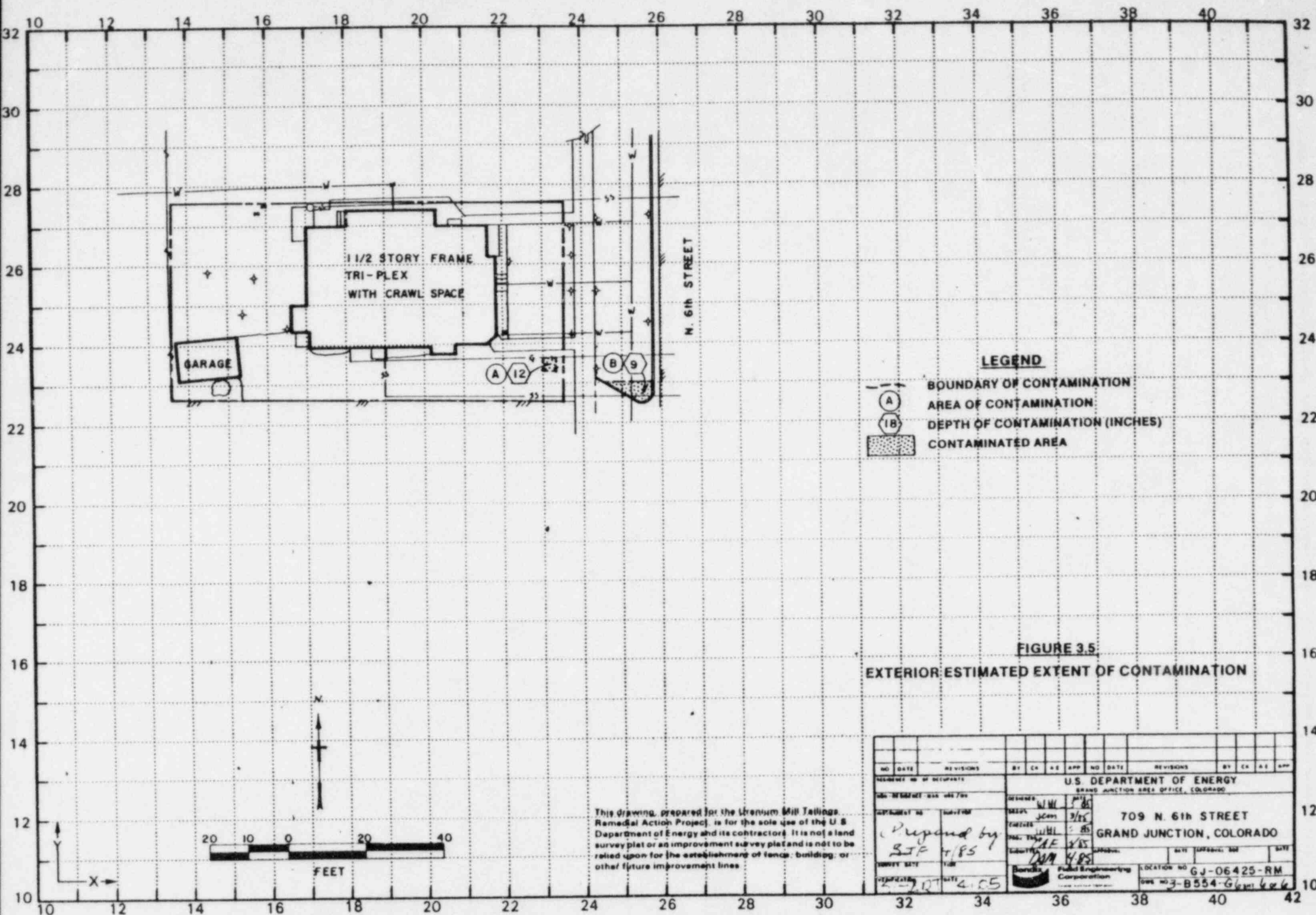




REV	DATE	NO	VISIONS	BY	EX	APP	NO	DATE	REVISIONS	BY	EX	APP
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO												
PROJECT NO. 709 N 6th STREET				709 N 6th STREET GRAND JUNCTION, COLORADO								
PREPARED BY J. H. V. 4.85				CHECKED BY J. H. V. 4.85				DATE 3/85				
SURVEY DATE 4/85				DRAWN BY J. H. V. 4.85				LOCATION NO. GJ-06425-RM				
SCALE 1" = 40'				BORDERS Fuel Engineering Corporation				DRL NO. B-554-6-2				







3/85

DOE ID NO. GJ-06425-RM Date 4-19-85

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

Official Survey Report

Property Address 709 North 6th Street
Property Owner Rosemary Faith
Address of Owner (if different from above) 623 Hill Ave.
Report Prepared By Kent Cary

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 XX 1 In open areas.

1 1 Under or around exterior improvements.

1 1 Under or around a typically nonoccupied structure.

1 1 Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

1 XX 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 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 = 16 uR/h
HOG = 26 uR/h

April 19, 1985

Colorado Department of Health
222 South 6th Street
Grand Junction, CO 81501

ATTN: Coleen Campbell

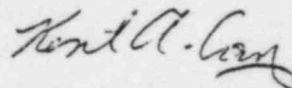
Dear Coleen:

Regarding your phone call on April 18, 1985 concerning
Department of Energy (DOE) Identification (ID) number GJ-06425-RM
located at 730 North 6th Street.

Since you had no comments concerning the assessment of the
property, the assessment will proceed.

Thank you for your time and cooperation. If you have any
questions please call me at 242-8621 extension 473.

Sincerely,



Kent A. Cary
Assistant, Field Service II

Internal
Memorandum



Field Engineering
Corporation

Grand Junction Operations

Date March 26, 1985 Letter No.

To Files

P.O. Box 1588
Grand Junction, CO. 81501
Tel (303) 242-8621

A Subsidiary of
The Bendix Corporation

From Kent Cary *BJC for KC*

Subject Team Leader Notes - DOE ID No. GJ-06425-RM

709 6th Street

Owner: Rosemary Faith, 623 Hill Ave., 242-4394

Tenant: Sharon Wilson, 242-9387

Field Crew

Garcia

Southern

Hebel

Adams

Dow

Moody

Hardy

Cary

Instruments

Scintillometers: C-3510, C-3502, C-1182, C-1213

Delta Scanners: C-3943, C-3935

PRS-1 Total Counts: C-4006, C-3959

Downhole Spectrometer: C-0498

Surface Spectrometer: C-1372

Most of the crawl space was inaccessible due to a low floor and other obstructions (water and gas pipes).

The contamination in the backyard seemed to be in the first few inches (0-6") and seemed to consist of ashes and coal. Tailings were not evident.

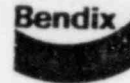
A surface spectrometer was used and soil samples were taken to confirm that the elevated readings were not caused by tailings. A soil sample at Loc. #151250 will be sent to petrology for mineral identification

The three water lines shown on the drawing entering the structure could not be located. Also, the sewer line shown on the south side of the house could not be found.

The house is divided into three apartments sharing common water, with separate gas and electric meters. They also seemed to share a common sewer drain.

The small shed behind the house had a dirt floor and the contamination inside seemed to be the same as in the backyard (coal and ashes). Delta measurements and soil samples were taken.

Internal
Memorandum



Date March 26, 1985 Letter No.

DOE ID No. GJ-06425-RM
Team Leader Notes
Page 2

Sandy of Health and Safety arrived and smelled gas from under the crawl space. She ordered a ventilation fan and it was installed before the scan was conducted. No contamination was found in the crawl space.

A walking scan was conducted on the first floor of the structure. No contamination was found.

Boreholes were drilled on each side of the structure to investigate possible footing/foundation contamination. None was found.

The gas line was struck while augering at grid location 231235. No damage was done to the pipe. The map showed the line to be 2 feet away from this borehole location.

Received the petrology report on soil sample ticket number MDP-086 on April 5, 1985. The sample was collected from the backyard. It confirmed that contamination was not tailings but carbonaceous material. Susan Hart advised me to leave the backyard off the Estimated Extent of Contamination map.

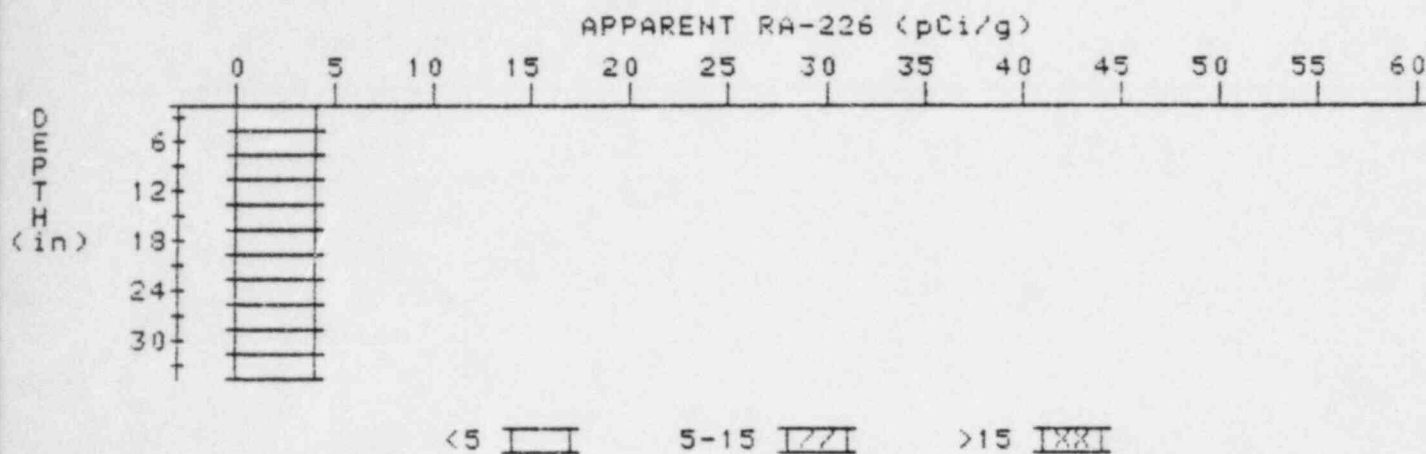
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

2

PROPERTY NUMBER: GJ-06425-RM

HOLE NUMBER: 2

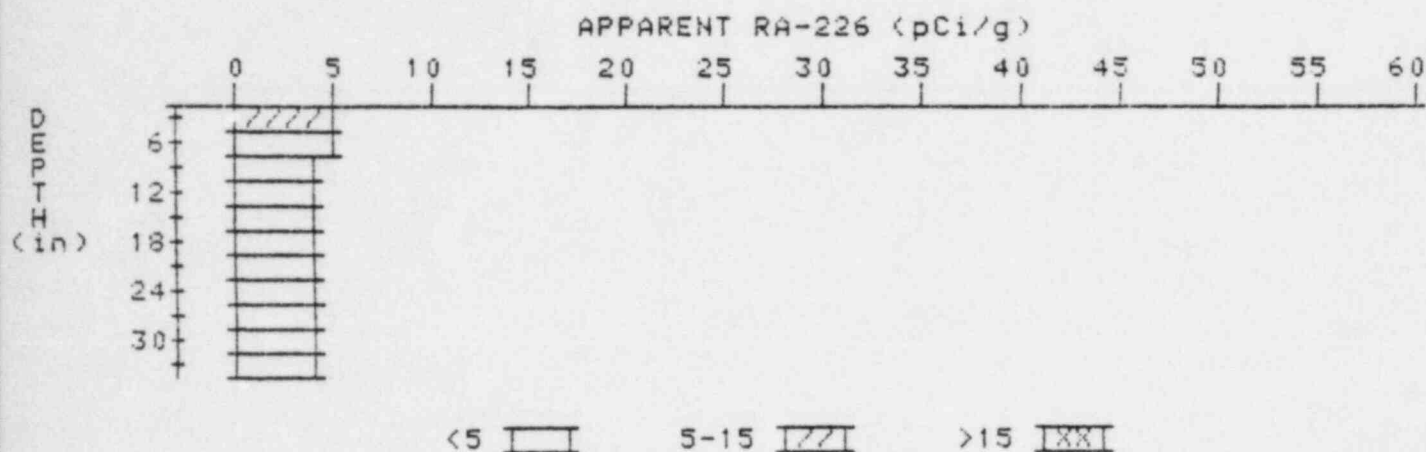
LOCATION: 140260



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.7	3.7
6	3.9	4.1
9	4.0	3.8
12	4.2	4.4
15	4.3	4.5
18	4.3	4.3
21	4.3	4.3
24	4.3	4.3
27	4.3	4.3
30	4.3	4.3
33	4.3	4.3

APPARENT RADIUM-226 CONCENTRATION 3 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 3
LOCATION: 150230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.1	5.1
6	4.8	4.8
9	4.5	4.3
12	4.3	4.3
15	4.1	3.6
18	4.2	4.4
21	4.2	4.2
24	4.2	4.2
27	4.2	4.0
30	4.3	4.5
33	4.3	4.3

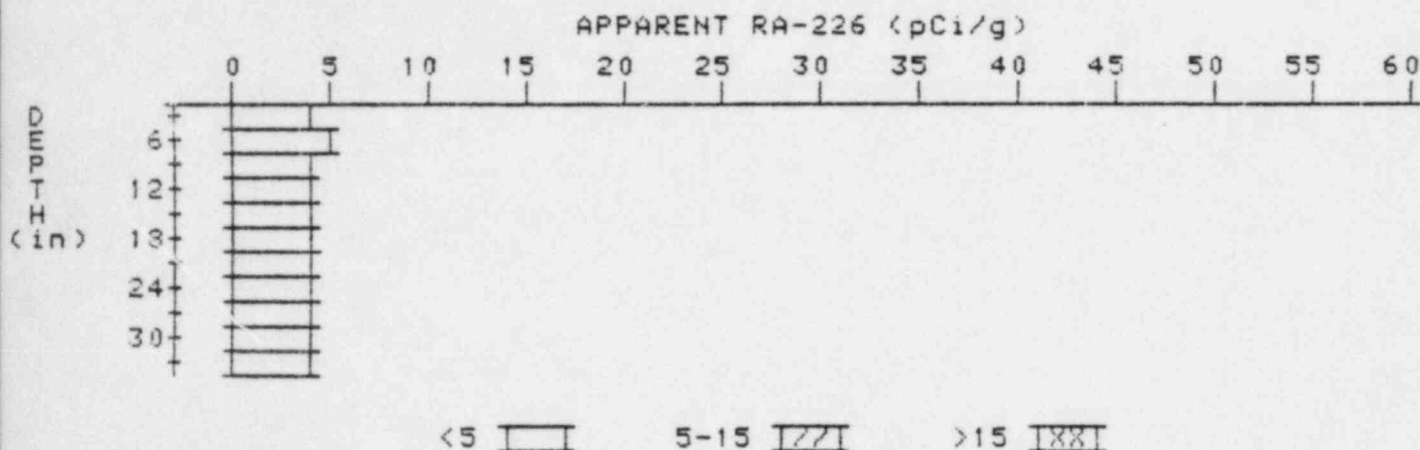
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

4

PROPERTY NUMBER: GJ-06425-RM

HOLE NUMBER: 4

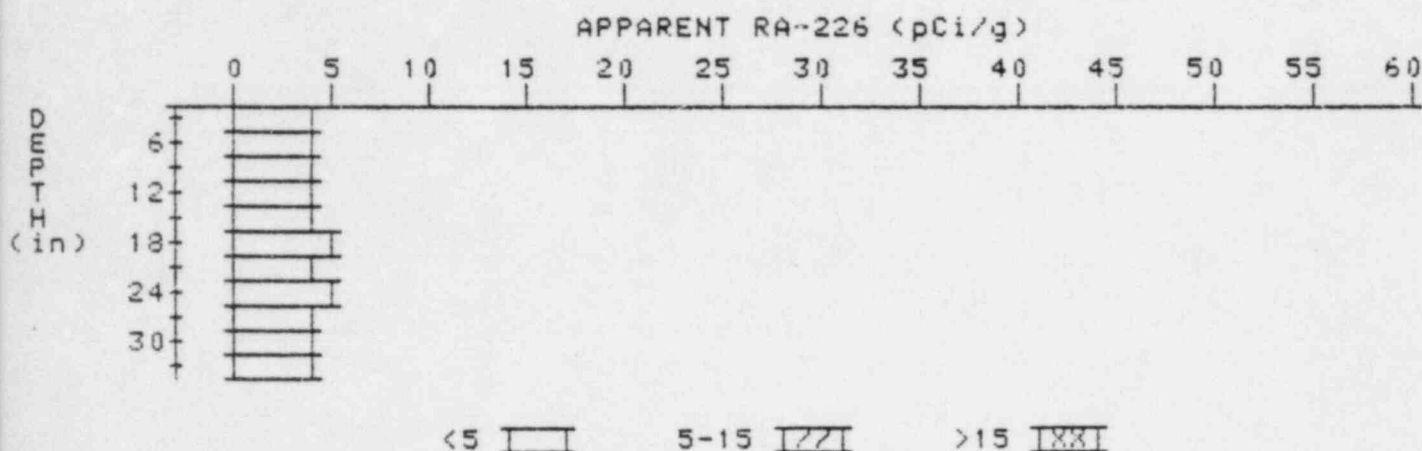
LOCATION: 150250



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.0	4.0
6	4.2	4.6
9	4.2	4.2
12	4.2	4.4
15	4.1	3.9
18	4.1	4.1
21	4.1	4.1
24	4.1	4.1
27	4.1	4.3
30	4.0	3.8
33	4.0	4.0

APPARENT RADIUM-226 CONCENTRATION 7 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 7
LOCATION: 154238



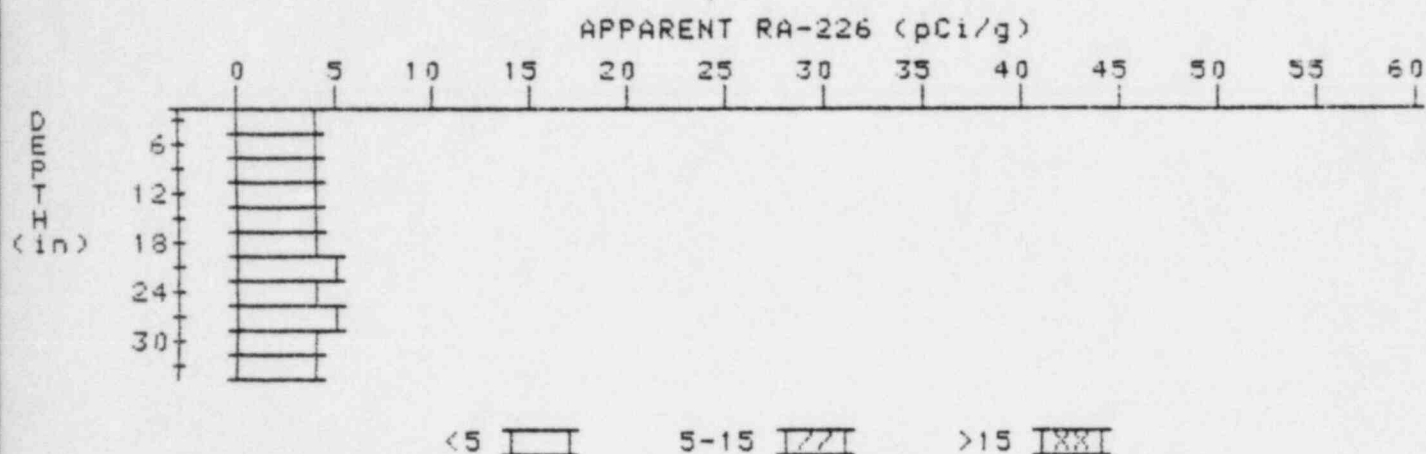
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.9	3.9
6	3.9	3.5
9	4.1	4.3
12	4.2	4.4
15	4.2	3.8
18	4.4	4.8
21	4.4	4.2
24	4.5	4.9
27	4.4	4.4
30	4.3	4.3
33	4.2	4.2

APPARENT RADIUM-226 CONCENTRATION 8 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM

HOLE NUMBER: 8

LOCATION: 155270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.7	3.7
6	3.9	4.1
9	4.0	4.0
12	4.1	4.1
15	4.2	4.4
18	4.2	3.8
21	4.4	4.9
24	4.3	3.9
27	4.4	4.6
30	4.4	4.4
33	4.4	4.4

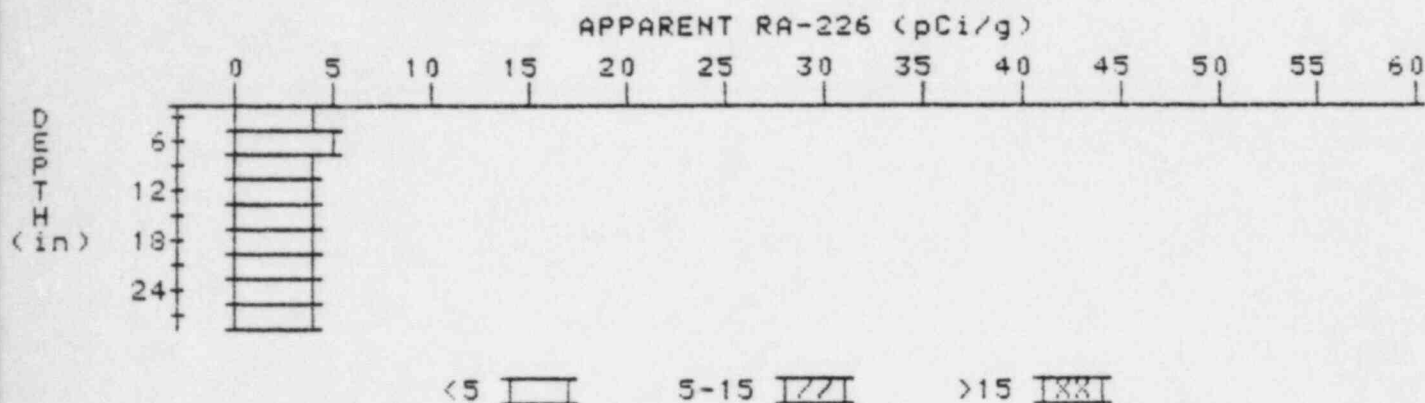
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

9

PROPERTY NUMBER: GJ-06425-RM

HOLE NUMBER: 9

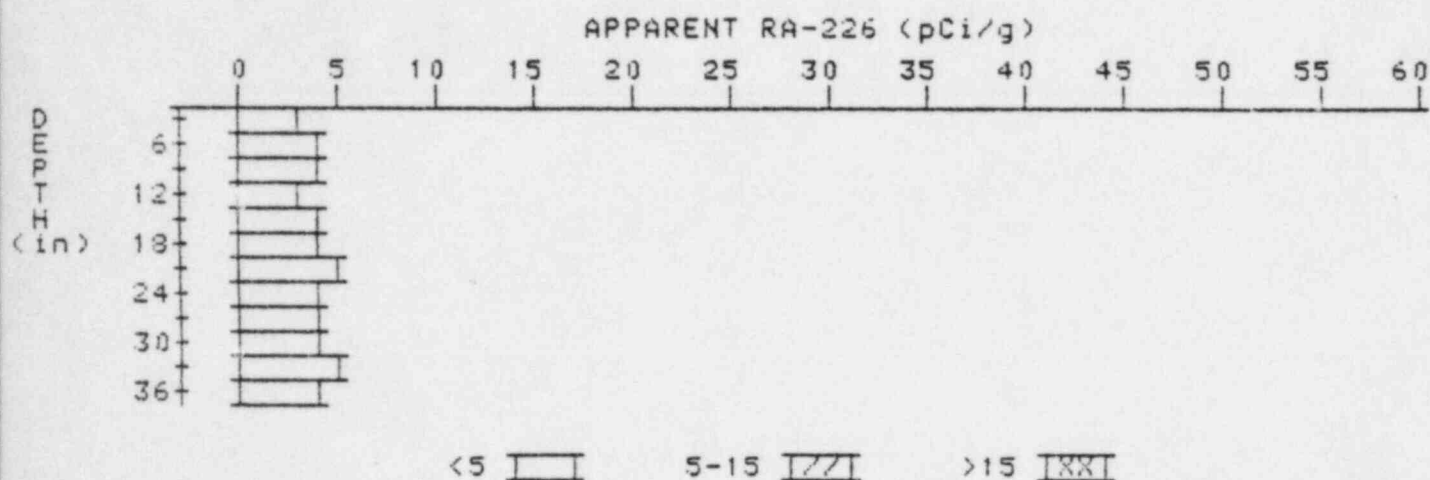
LOCATION: 160250



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.8	3.8
6	4.1	4.6
9	4.1	4.1
12	4.1	4.3
15	4.0	3.8
18	4.0	4.0
21	4.0	3.8
24	4.1	4.5
27	4.0	4.0

APPARENT RADIUM-226 CONCENTRATION 10 DECONVOLUTION GRAPH

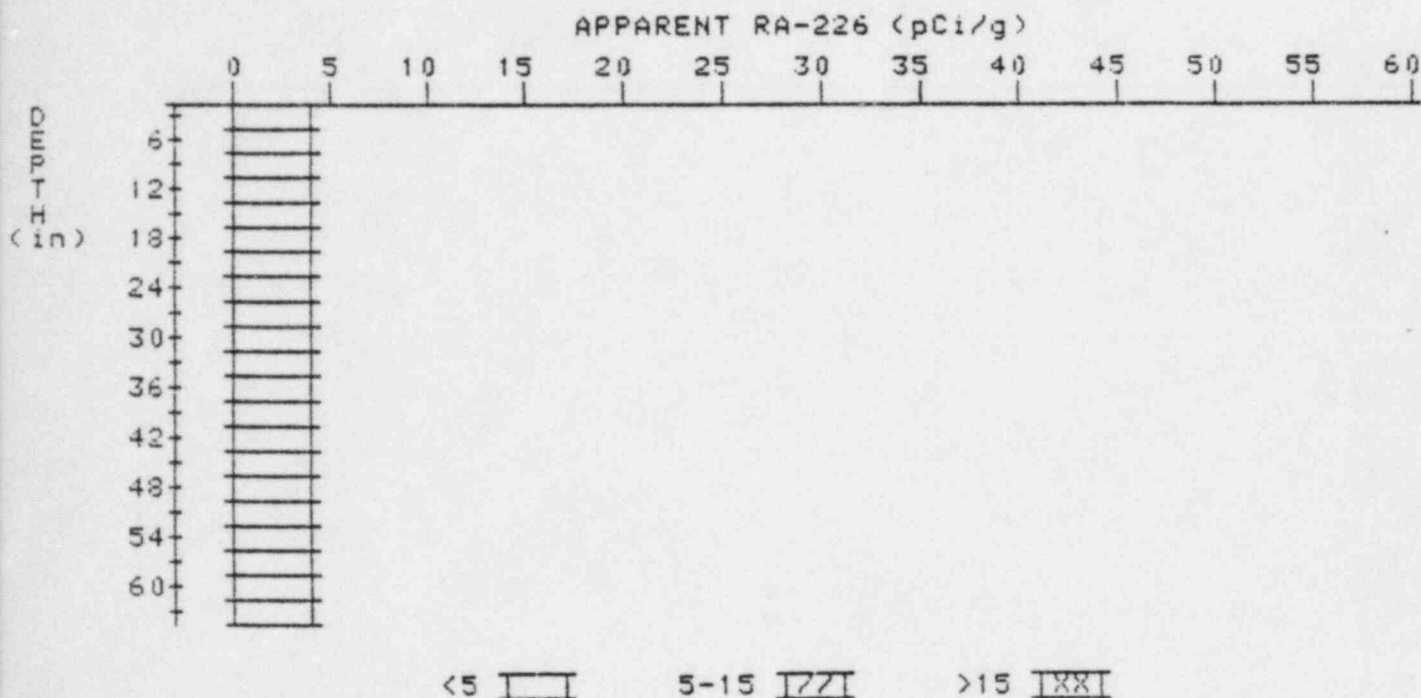
PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 10
LOCATION: 169260



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
=====	=====	=====
3	3.4	3.4
6	3.7	4.1
9	3.8	4.0
12	3.8	3.4
15	4.0	4.4
18	4.0	3.6
21	4.2	4.6
24	4.2	4.0
27	4.3	4.3
30	4.4	4.4
33	4.5	4.9
36	4.4	4.4

APPARENT RADIUM-226 CONCENTRATION 11 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 11
LOCATION: 174276



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.5	3.5
6	3.7	3.7
9	3.9	4.1
12	4.0	4.2
15	4.0	4.0
18	4.0	4.0
21	4.0	3.8
24	4.1	4.3
27	4.1	4.1
30	4.1	4.1
33	4.1	4.3
36	4.0	3.8
39	4.0	4.0
42	4.0	4.0
45	4.0	4.2
48	3.9	3.7
51	3.9	3.9

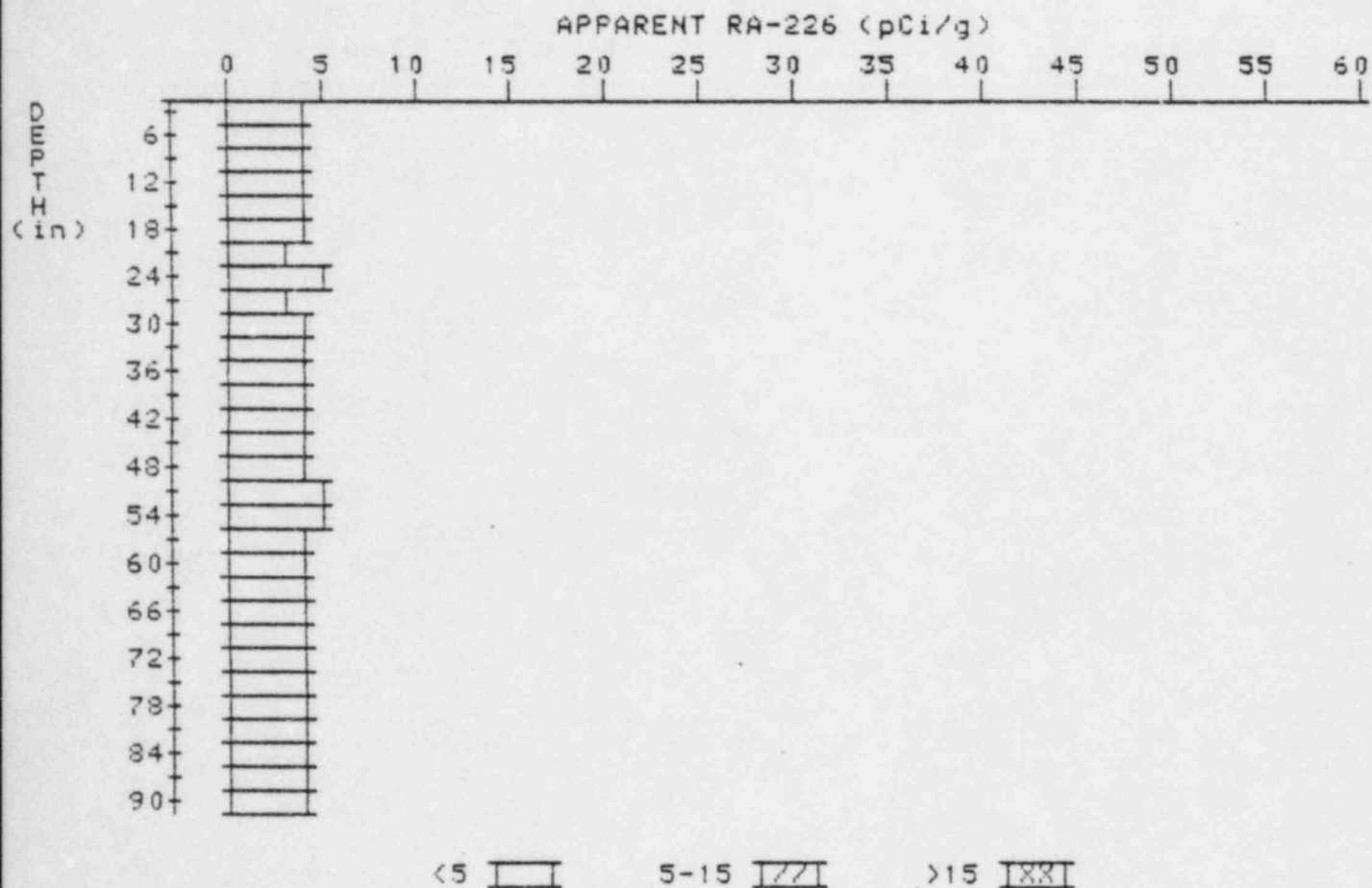
54	3.9	4.1
57	3.8	3.6
60	3.8	3.8
63	3.8	3.8

APPARENT RADIUM-226 CONCENTRATION 13 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM

HOLE NUMBER: 13

LOCATION: 182238

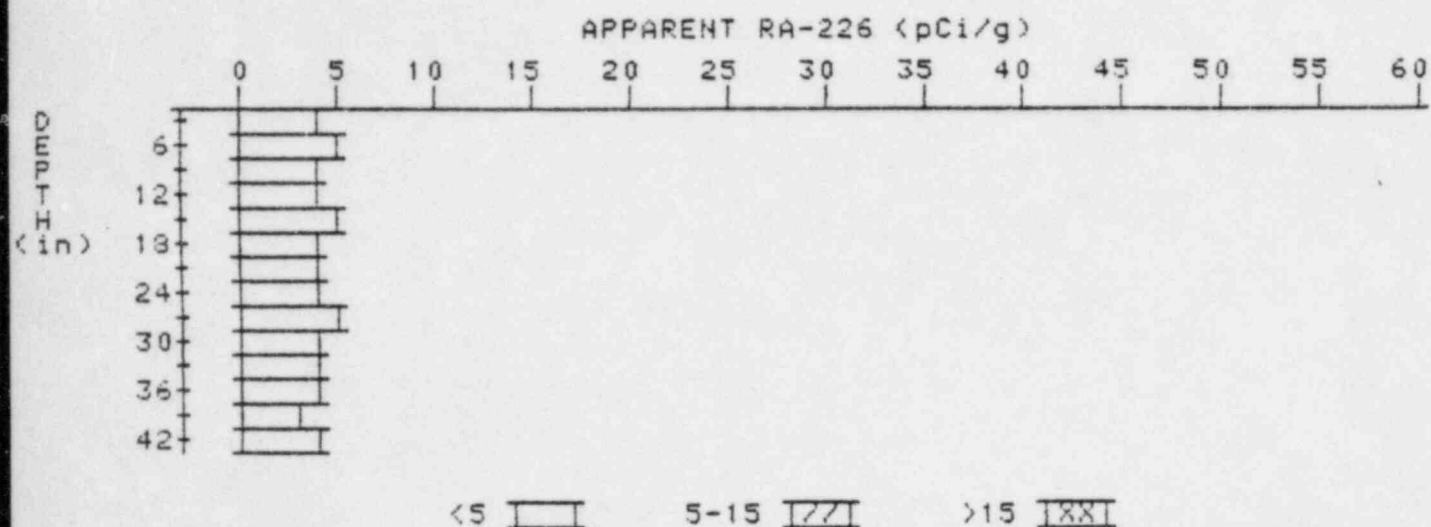


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.7	3.7
6	3.7	3.5
9	3.8	4.0
12	3.8	3.6
15	3.9	4.1
18	3.9	4.1
21	3.8	3.1
24	4.1	5.0
27	3.9	3.4
30	4.0	4.2

33	4.0	4.0
36	4.0	4.0
39	4.0	3.8
42	4.1	4.1
45	4.2	4.2
48	4.3	4.3
51	4.4	4.6
54	4.4	4.6
57	4.3	4.1
60	4.3	4.5
63	4.2	4.4
66	4.0	3.6
69	4.0	4.0
72	4.0	4.0
75	4.0	4.0
78	4.0	4.0
81	4.0	4.0
84	4.0	4.0
87	4.0	4.2
90	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION 14 DECONVOLUTION GRAPH

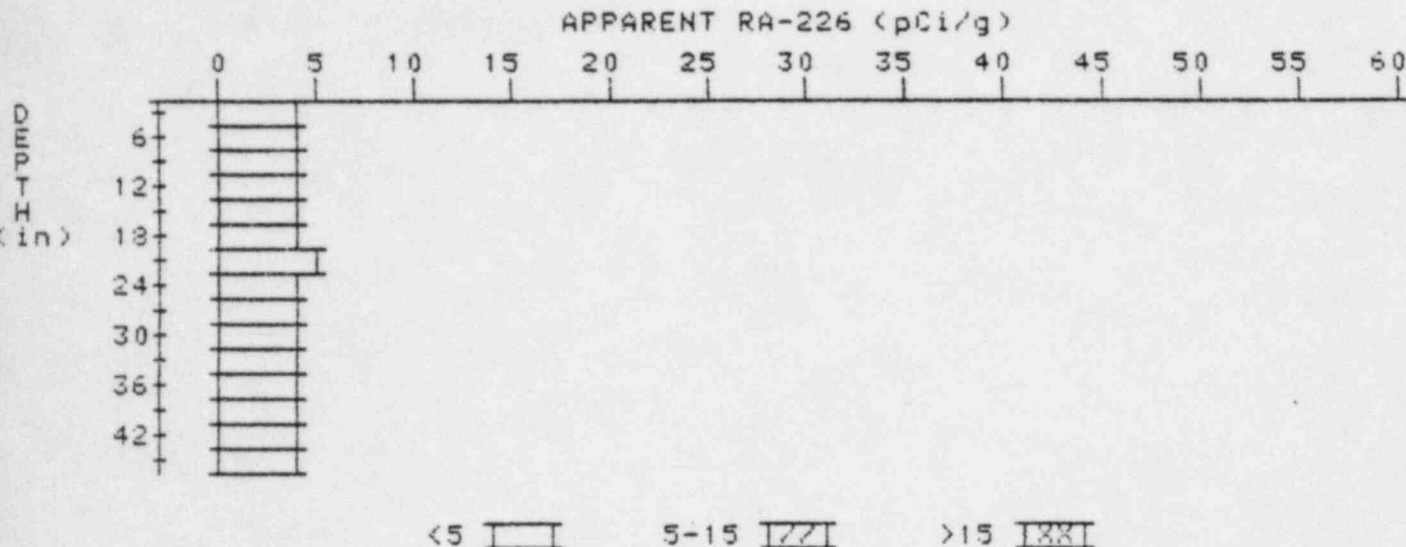
PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 14
LOCATION: 190230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.7	3.7
6	4.1	4.8
9	4.1	4.1
12	4.1	3.9
15	4.2	4.6
18	4.1	3.9
21	4.1	4.3
24	4.0	3.6
27	4.1	4.6
30	3.9	3.7
33	3.8	3.8
36	3.7	3.9
39	3.5	3.0
42	3.6	3.6

APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 15
LOCATION: 193277



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.7	3.7
6	3.9	3.9
9	4.1	4.5
12	4.1	3.9
15	4.2	4.4
18	4.2	4.0
21	4.3	4.7
24	4.2	4.0
27	4.2	4.2
30	4.2	4.2
33	4.2	4.4
36	4.1	3.9
39	4.1	4.3
42	4.0	3.6
45	4.1	4.1

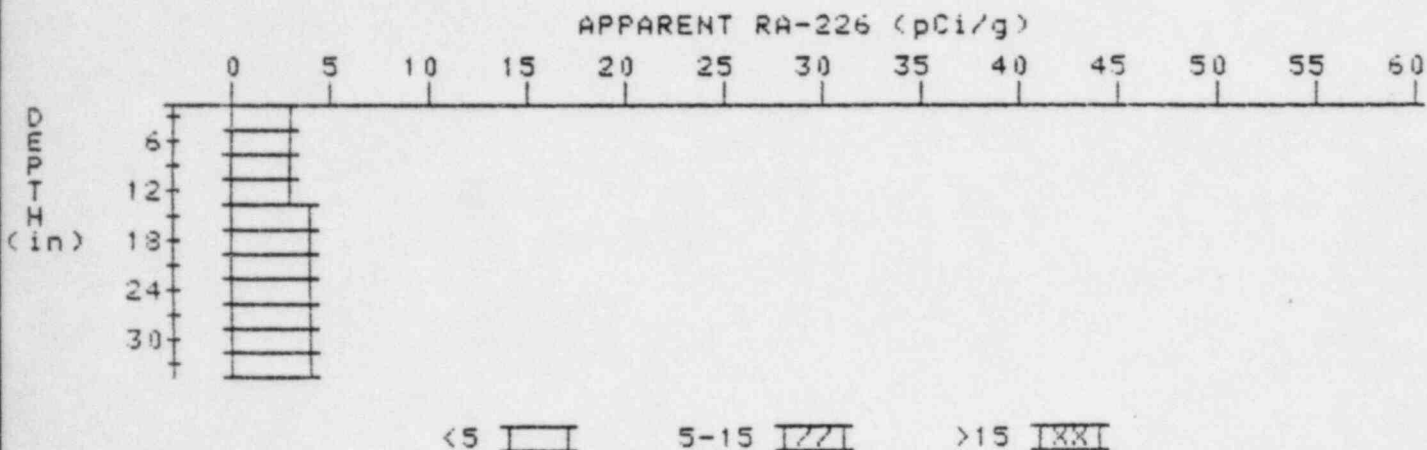
APPARENT RADIUM-226 CONCENTRATION 16

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06423-RM

HOLE NUMBER: 16

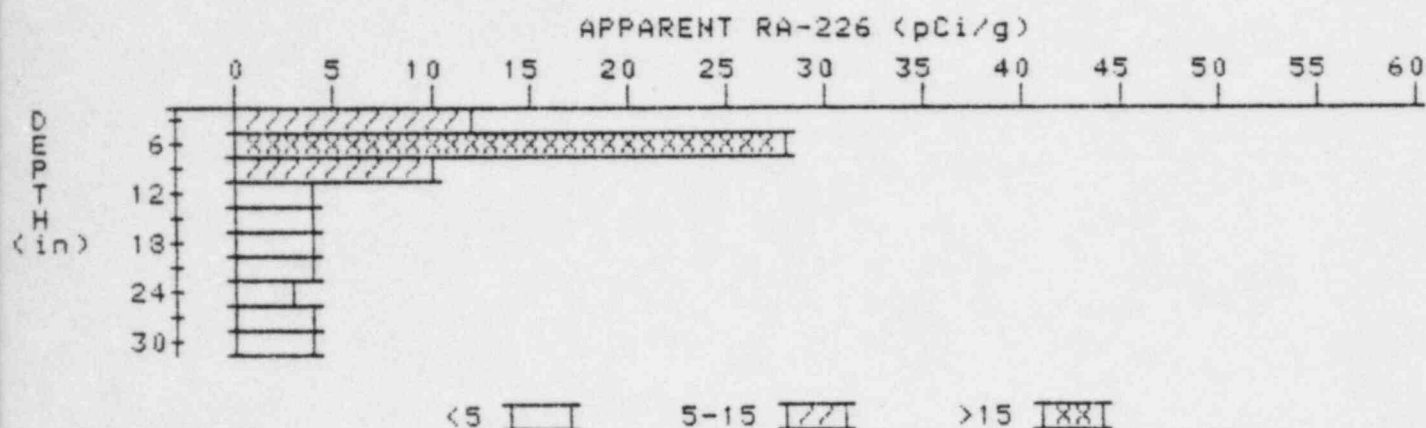
LOCATION: 219250



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.2	3.4
9	3.3	3.3
12	3.4	3.2
15	3.6	3.8
18	3.7	3.7
21	3.8	3.8
24	3.9	4.1
27	3.9	4.1
30	3.8	3.8
33	3.7	3.7

APPARENT RADIUM-226 CONCENTRATION 17 DECONVOLUTION GRAPH

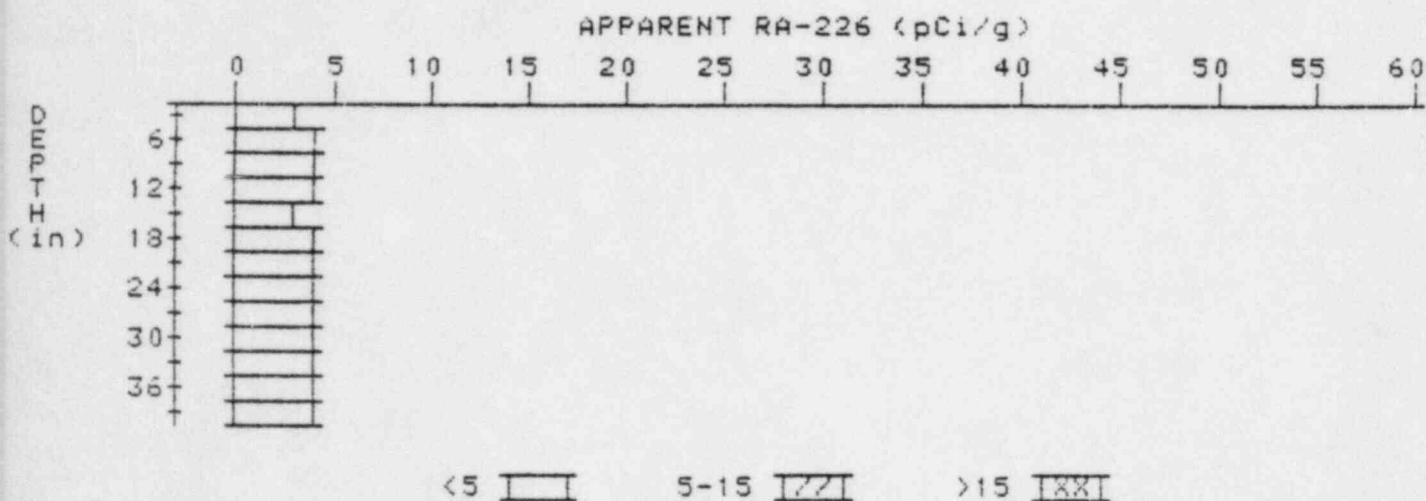
PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 17
LOCATION: 231235



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	12.3	12.3
6	15.2	27.8
9	11.0	9.8
12	7.5	4.5
15	5.7	4.1
18	4.8	4.1
21	4.3	3.9
24	4.0	3.5
27	4.0	4.0
30	4.0	4.0

APPARENT RADIUM-226 CONCENTRATION 19 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 19
LOCATION: 250250

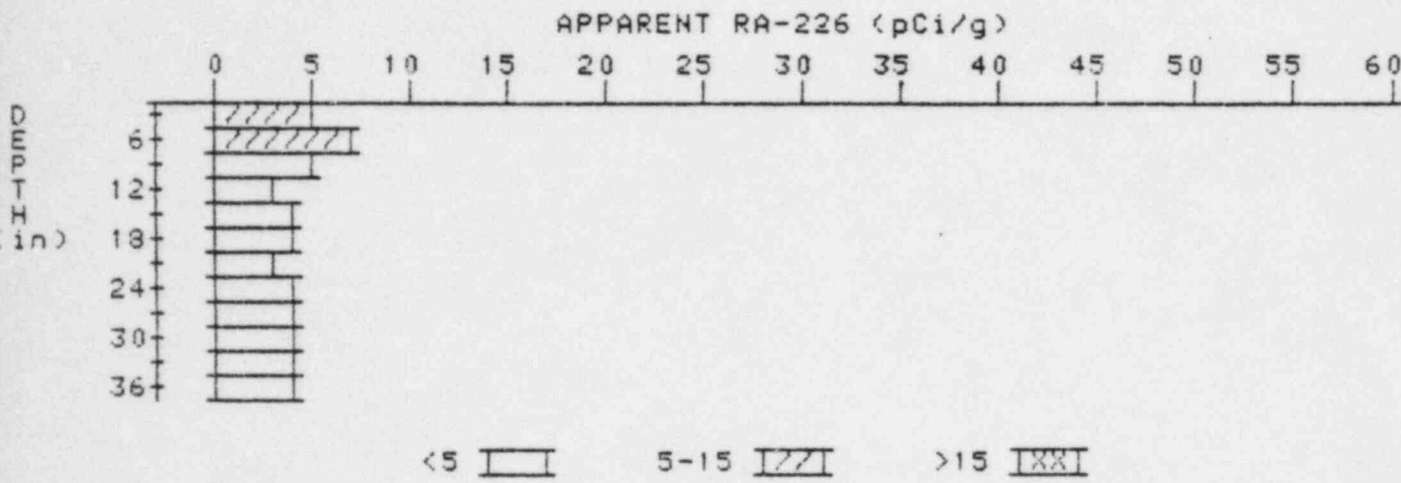


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.4	3.6
9	3.7	4.1
12	3.8	4.2
15	3.7	3.3
18	3.8	3.8
21	3.9	4.1
24	3.9	3.9
27	3.9	3.7
30	4.0	4.2
33	4.0	4.0
36	4.0	4.2
39	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION 20

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06425-RM
HOLE NUMBER: 20
LOCATION: 255227



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	5.4	5.4
6	5.5	6.9
9	4.8	4.6
12	4.2	3.3
15	4.1	4.3
18	3.9	3.7
21	3.8	3.4
24	3.9	4.3
27	3.8	3.6
30	3.8	3.6
33	3.9	3.7
36	4.1	4.1