

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-01246-RM
ADDRESS: 634 OURAY AVENUE

AUGUST 1985

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

ALBUQUERQUE OPERATIONS OFFICE

DEPARTMENT OF ENERGY

BY

BENDIX FIELD ENGINEERING CORPORATION
P.O. Box 1569
Grand Junction, Colorado 81502

APPROVED BY

M. Tucker
M. TUCKER
DOE PROJECT ENGINEER

DATE

August 5, 1985

REA01246:REA-AB006

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PDR WASTE PDR
WM-54

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 EXECUTIVE SUMMARY	1
1.1 Introduction	1
1.2 Evaluation and Recommendation	1
2.0 PROPERTY DESCRIPTION	2
2.1 General Description	2
2.2 Existing Facilities and Structures	2
3.0 RADIOLOGIC SURVEY	4
3.1 Introduction	4
3.2 Gamma Exposure-Rate Surveys	4
3.2.1 Exterior Findings	4
3.2.2 Interior Findings	4
3.3 Boreholes, Soil Samples, and Other Measurements	4
3.4 Radon/Radon Daughter Concentration	5
3.5 Extent of Contamination	5
4.0 RECOMMENDED REMEDIAL ACTION	6
4.1 Decontamination and Restoration	6
4.2 Evaluation of Recommended Remedial Action	6
5.0 REFERENCES	7
6.0 APPENDIX	8

1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-01246-RM, is a single-family residence and a four-car garage with an apartment above, located at 634 Ouray Avenue, 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, 12 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$1,961. Remedial action on this property will take approximately 5 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 634 Ouray Avenue, Grand Junction, Colorado

Zoning: Residential (RMF-64)

Lot Size: Approximately 6,250 sf (0.14 acres)

Legal Description: Lots 21 and 22, Block 61, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 3 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:	Alley
South:	Ouray Avenue
East:	Alley (asphalt)
West:	Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Two-story single-family residence
Size:	Approximately 3,000 sf
Construction Date:	1895
Construction:	Wood-frame
Foundation:	Concrete stemwall on spread footing
Footing Depth:	Not determined
Basement:	None
Crawl Space:	Yes - under entire living area
Condition:	Good

Other Structures:

Type:	Two-story four-car garage with apartment above
Size:	Approximately 1,800 sf
Construction:	Wood-frame
Foundation:	Monolithic concrete slab-on-grade
Condition:	Good

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: None known

Architectural Significance: None known

Historical Significance: None known

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-01246-RM on May 29, 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 associated with the sidewalk south of the primary structure.

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, 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: 14 to 17 uR/h
Highest Outside Gamma Reading (HOG): 55 uR/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 18 uR/h
Highest Inside Gamma Reading (HIG): 18 uR/h

Interior gamma exposure-rate measurements are summarized in Appendix Table 3.2.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figure 3.2. Data from these investigations are included in Appendix Table 3.1.

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 3.3 shows identified areas and estimated depths of contamination on this property, based on assessments of all measurements taken. As noted in this figure, areas recommended for remedial action that contain identified residual radioactive materials are:

- (AREA A) The soil south of the primary structure and adjacent to the city sidewalk is contaminated to a depth of 12 inches (approximately 30 sf).
- (AREA B) Several small deposits south of the primary structure are contaminated. The depth of contamination is 6 inches (approximately 71 sf).
- (AREA C) A portion of the 4-inch-thick brick sidewalk south of the primary structure is contaminated to a total depth of 9 inches (approximately 24 sf).
- (AREA D) The soil beneath the 4-inch-thick concrete city sidewalk south of the primary structure is contaminated. The total depth of contamination is 12 inches (approximately 250 sf).

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-01246-RM, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.3) 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 \$1,961.

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	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	Sample Locations
Figure 3.3	Estimated Extent of Contamination

Official Survey Report

Memo of Understanding

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Gamma Scan Field Map

Radium Concentrations at Exterior Locations

DOE ID #GJ-01246-RM

634 Ouray Avenue

Page 1 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1	158232	00	DS	<1.0		*	Buried electrical line
		34	DS	<1.0		*	
2	168270	03	TC	3.1		*	Sewer line DC = 0 inches
		06	TC	3.6		*	
		09	TC	4.0		*	
		12	TC	4.3		*	
		15	TC	4.4		*	
		18	TC	4.1		*	
		21	TC	3.8		*	
		24	TC	3.7		*	
		27	TC	3.6		*	
		30	TC	3.6		*	
		33	TC	3.6		*	
		36	TC	3.6		*	
		39	TC	3.6		*	
		42	TC	3.8		*	
		45	TC	3.8		*	
		48	TC	3.9		*	
		51	TC	4.0		*	
		54	TC	4.1		*	
		57	TC	4.1		*	
		60	TC	4.2		*	
3	176257	03	TC	3.5		*	Buried utility line North of primary structure DC = 0 inches
		06	TC	3.5		*	
		09	TC	3.7		*	
		12	TC	3.7		*	
		15	TC	3.7		*	
		18	TC	3.8		*	
		21	TC	3.8		*	
		24	TC	3.8		*	
		27	TC	3.7		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.8		*	
		39	TC	3.9		*	
		42	TC	3.9		*	
		45	TC	4.0		*	
		48	TC	4.0		*	
		51	TC	4.0		*	
		54	TC	4.1		*	
		57	TC	4.0		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-01246-RM

634 Ouray Avenue

Page 2 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
3	176257	60	TC	4.1		*	
		63	TC	4.1		*	
4	186259	00	DS	<1.0		*	Next to bricks
5	193270	03	TC	3.0		*	Sewer line
		06	TC	3.5		*	East of primary
		09	TC	3.7		*	structure
		12	TC	3.8		*	DC = 0 inches
		15	TC	3.8		*	
		18	TC	3.9		*	
		21	TC	3.8		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.7		*	
		36	TC	3.8		*	
		39	TC	3.8		*	
		42	TC	3.8		*	
		45	TC	3.9		*	
		48	TC	3.9		*	
		51	TC	4.0		*	
		54	TC	4.0		*	
6	208270	03	TC	3.2		*	Sewer line
		06	TC	3.5		*	East of primary
		09	TC	3.6		*	structure
		12	TC	3.7		*	DC = 0 inches
		15	TC	3.7		*	
		18	TC	3.6		*	
		21	TC	3.7		*	
		24	TC	3.6		*	
		27	TC	3.6		*	
		30	TC	3.4		*	
		33	TC	3.4		*	
		36	TC	3.7		*	
		39	TC	3.7		*	
		42	TC	3.9		*	
		45	TC	3.9		*	
		48	TC	4.0		*	
		51	TC	4.1		*	
		54	TC	4.1		*	
		57	TC	4.1		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-01246-RM

634 Ouray Avenue

Page 3 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
7	225261	03	TC	3.0		*	Water line DC = 0 inches
		06	TC	3.4		*	
		09	TC	3.7		*	
		12	TC	3.7		*	
		15	TC	3.8		*	
		18	TC	3.7		*	
		21	TC	3.7		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.9		*	
		39	TC	3.9		*	
		42	TC	3.9		*	
		45	TC	3.9		*	
		48	TC	4.1		*	
		51	TC	4.1		*	
		54	TC	4.0		*	
		57	TC	4.1		*	
		60	TC	4.1		*	
		63	TC	4.2		*	
8	232228	00	DS	1.5		*	Gas line
		18	DS	<1.0		*	
9	240236	03	TC	3.0		*	Unknown utility line South side of primary structure DC = 0 inches
		06	TC	3.4		*	
		09	TC	3.6		*	
		12	TC	3.7		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.8		*	
		24	TC	3.7		*	
		27	TC	3.8		*	
		30	TC	3.9		*	
		33	TC	4.0		*	
		36	TC	4.0		*	
		39	TC	4.1		*	
		42	TC	4.0		*	
		45	TC	4.1		*	
		48	TC	4.1		*	
		51	TC	4.0		*	
		54	TC	4.0		*	
		57	TC	4.1		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-01246-RM

634 Ouray Avenue

Page 4 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
9	240236	60	TC	4.0		*	
		63	TC	4.0		*	
10	252225	00	DS	2.4		*	South yard
		06	DS	1.7		*	
11	252235	00	DS	2.6		*	Next to sidewalk
		06	DS	2.3		*	
12	252252	00	DS	5.3		*	Next to sidewalk
		06	DS	1.7		*	
13	252264	00	DS	3.2		*	Next to sidewalk
		06	DS	4.9		*	
		12	DS	1.8		*	
14	255230	03	TC	19.5		*	Sidewalk
		06	BH	20.0	11.3	*	South of primary structure
		09	TC	13.0		*	
		12	BH	8.9	4.5	*	DC = 12 inches
		15	TC	6.5		*	Based on the deconvolution graph
		18	TC	5.4		*	
		21	TC	4.9		*	
		24	TC	4.5		*	
		27	TC	4.4		*	
		30	TC	4.4		*	
		33	TC	4.4		*	
		36	TC	4.4		*	
15	255250	03	TC	35.8		*	Sidewalk
		06	BH	37.6	27.4	*	South of primary structure
		09	TC	23.5		*	
		12	BH	14.8	8.1	*	DC = 12 inches
		15	TC	9.9		*	Based on the deconvolution graph
		18	BH	7.5	4.0	*	
		21	TC	6.3		*	
		24	TC	5.4		*	
		27	TC	4.9		*	
		30	TC	4.6		*	
		33	TC	4.5		*	
		36	TC	4.5		*	
		39	TC	4.5		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-01246-RM

634 Ouray Avenue

Page 5 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
16	258225	00	DS	1.8		*	Next to sidewalk
		06	DS	1.1		*	
17	258239	00	DS	1.2		*	Next to sidewalk
		06	DS	1.2		*	
18	258252	00	DS	3.2		*	South yard
		06	DS	2.8		*	
		12	DS	1.4		*	
19	258263	00	DS	2.9		*	Next to sidewalk
		00	DS	1.5		*	
20	263258	00	DS	9.3		*	Next to tree
		06	DS	2.4		*	
21	268243	00	DS	2.6		*	Next to brick walkway
		06	DS	1.5		*	
22	269245	03	TC	10.2		*	Brick walk
		06	TC	7.7		*	South of primary
		09	TC	6.1		*	structure
		12	TC	5.1		*	DC = 9 inches
		15	TC	4.7		*	Based on the
		18	TC	4.4		*	deconvolution graph
		21	TC	4.3		*	
		24	TC	4.0		*	
		27	TC	4.0		*	
		30	TC	3.8		*	
		33	TC	3.5		*	
23	270220	00	DS	1.1		*	Background
		03	TC	3.2		*	DC = 0 inches
		06	BH	3.4	1.1	*	
		09	TC	3.7		*	
		12	BH	3.8	1.0	*	
		15	TC	3.8		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-01246-RM

634 Ouray Avenue

Page 6 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
23	270220	18	BH	3.9	1.3	*	
		21	TC	3.9		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.9		*	

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 = 05-29-85
 Team Leader = TRU

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	*	*	*	*	14-18	*
GROUND FLOOR	*	*	*	*	14-17	*
GARAGE	*	*	*	*	14-16	*
=====	=====	=====	=====	=====	=====	=====

* The historical data indicate the absence of interior contamination at this property. This information was investigated by performing a walking gamma scan.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-01246-RM

Page 1 of 1

<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
EXTERIOR					
Concrete and Brick					
C	6 x 4 =	24	x 0.3 =	7	
D	5 x 50 =	250	x 0.3 =	75	
Volume of Concrete and Brick				= 82 =	82/27 = 3
Contaminated Fill					
A	3 x 10 =	30	x 1.0 =	30	
B	3 x 6 =	18			
	3 x 6 =	18			
	3 x 5 =	15			
	5 x 4 =	20			
		71	x 0.5 =	36	
C	6 x 4 =	24	x 0.5 =	12	
D	5 x 50 =	250	x 0.7 =	175	
Volume of Fill				= 253 =	253/27 = 9
TOTAL VOLUME - EXTERIOR					= 12

See Appendix Figure 3.3 For Areas

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Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-01246-RM

Page 1 of 1

Remove/replace concrete sidewalk 250 sf @ \$3/sf	\$ 750
Remove/replace brick walk 24 sf @ \$2.50/sf	60
Remove identified residual radioactive material 9 cy @ \$14.50/cy	131
Replace areas with road base 7 cy @ \$11.50/cy	81
Replace areas with topsoil 2 cy @ \$9.50/cy	19
Replace areas with sod 66 sf @ \$0.50/sf	33
	<hr/>
TOTAL EXTERIOR	\$ 1,074
TOTAL INTERIOR	0
ACCESS CONTROL	200
	<hr/>
SUBTOTAL	\$ 1,274
CONTINGENCY @ 10%	127
	<hr/>
SUBTOTAL	\$ 1,401
CONTRACTOR OVERHEAD & PROFIT @ 40%	560
	<hr/>
GRAND TOTAL	\$ 1,961

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SC/July 20, 1985
REA01246/REA-AAB

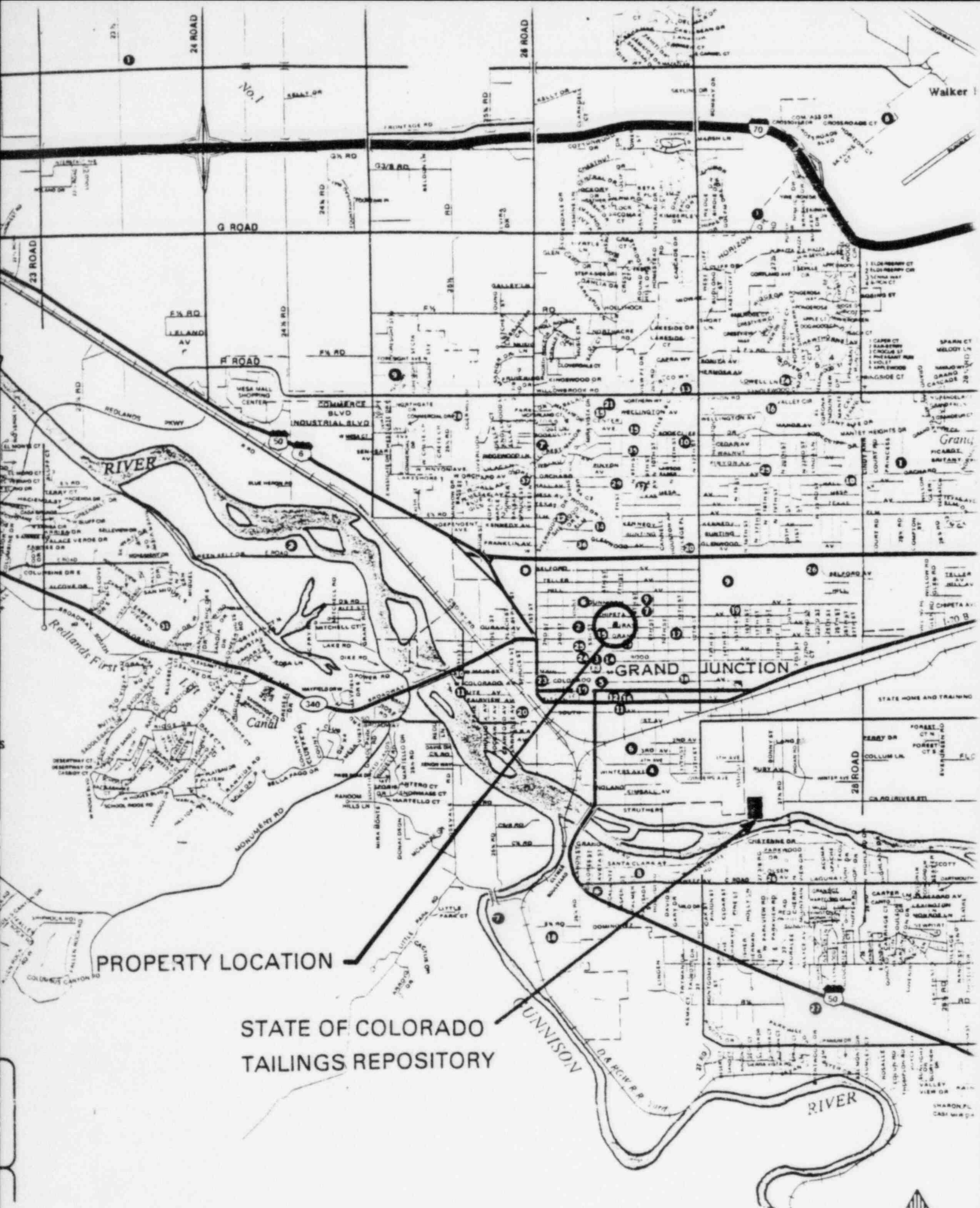


FIGURE 2.1
VICINITY MAP



LOTS 21 AND 22 BLOCK 61
CITY OF GRAND JUNCTION,
MESA COUNTY, COLORADO.

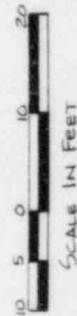
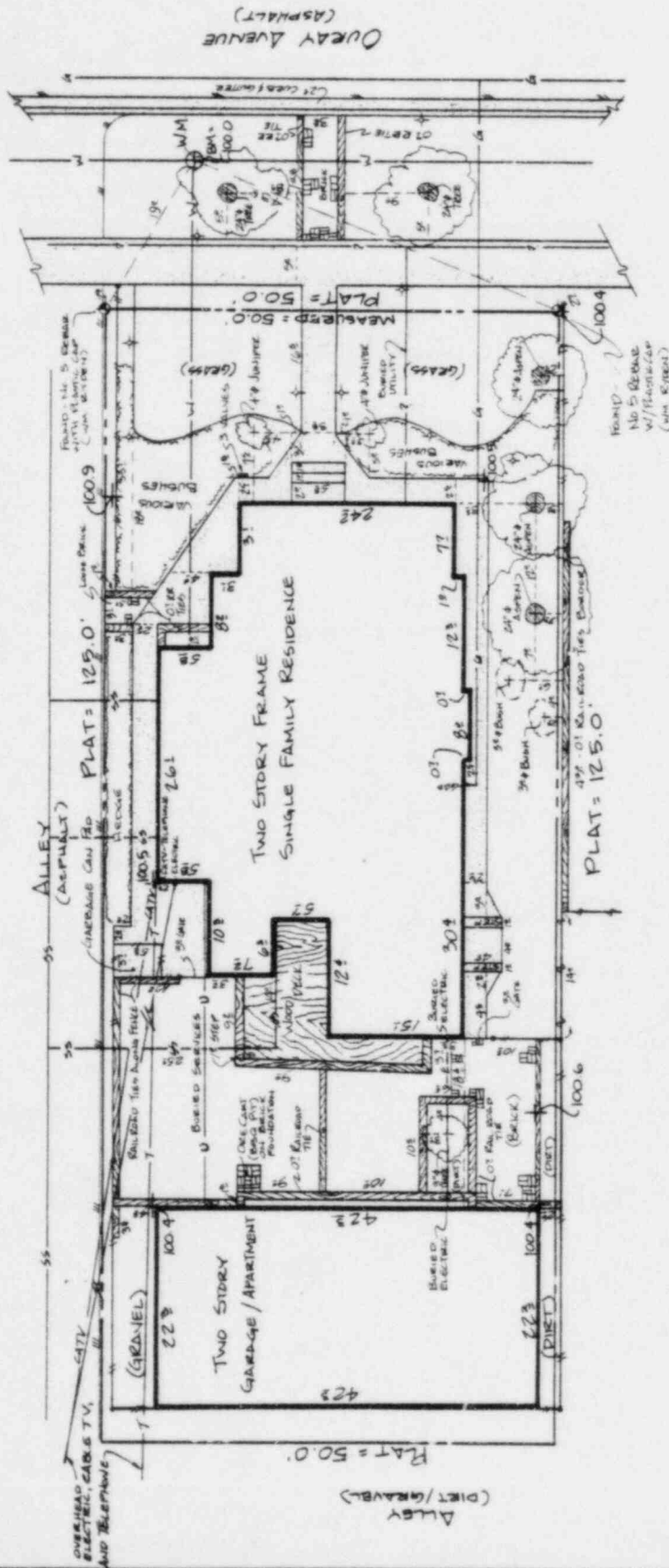
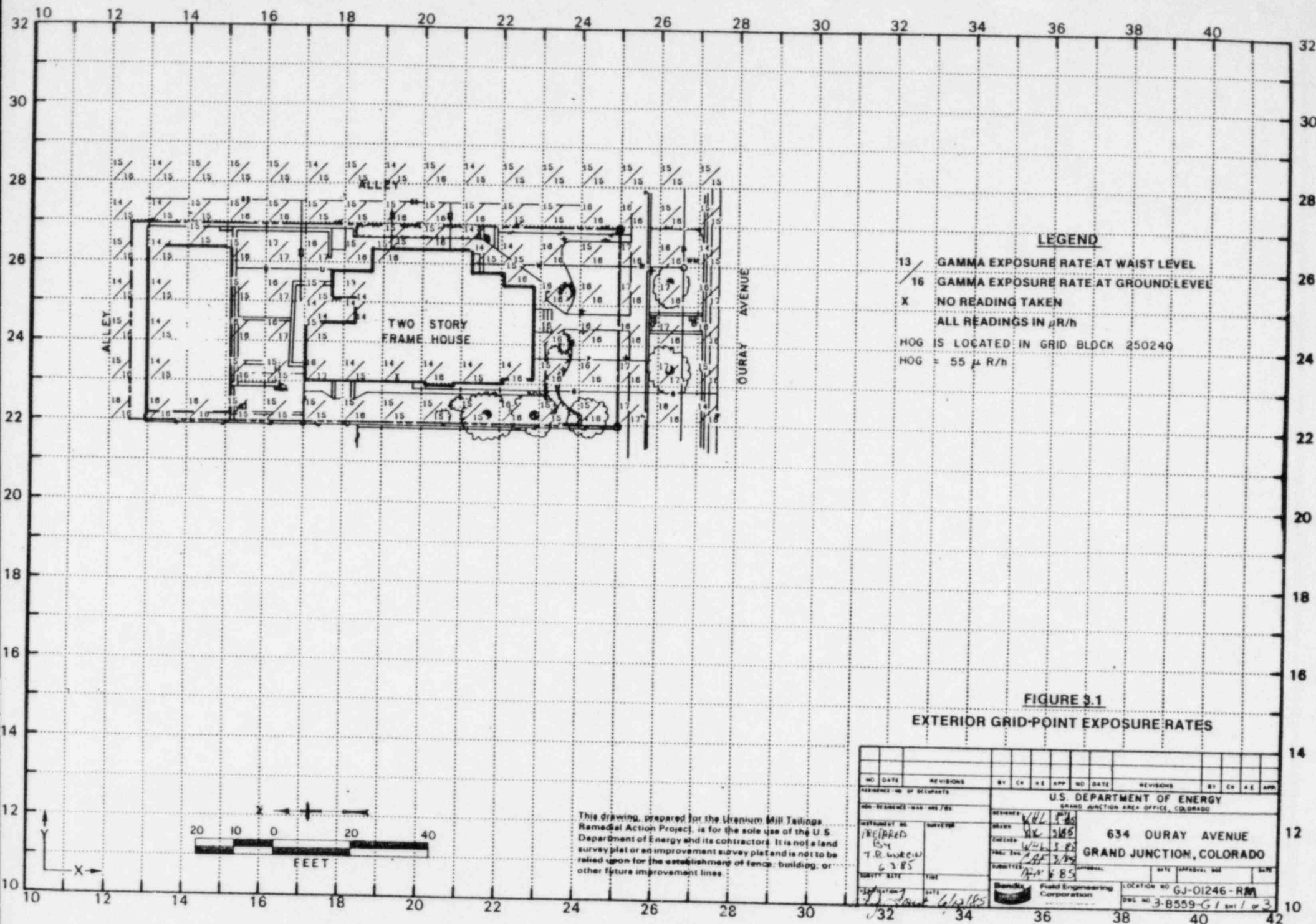
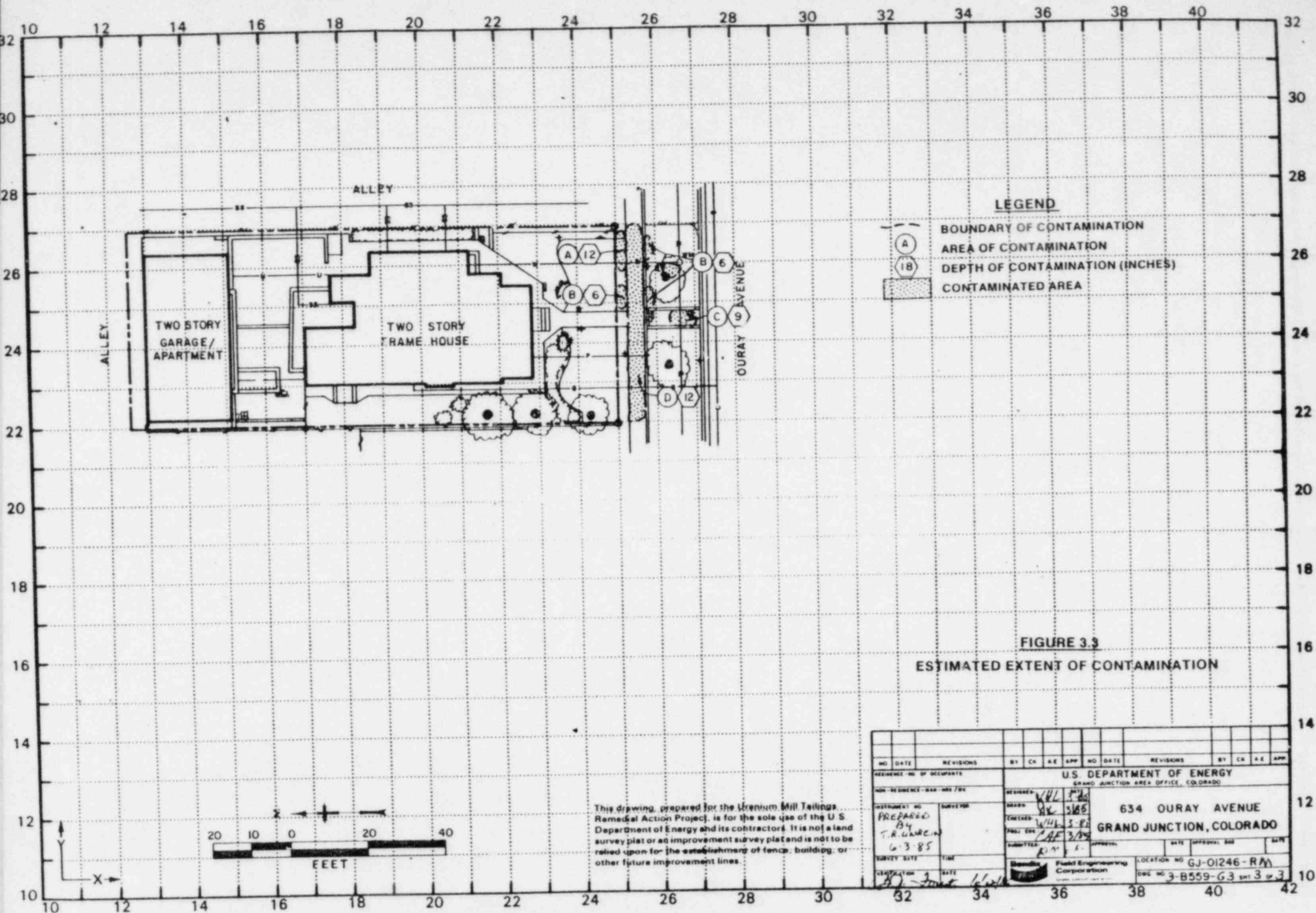


FIGURE 2.2 SITE PLAN

U.S. DEPARTMENT OF ENERGY	DOE ID NO. GJ01246 EM
GRAND JUNCTION PROJECT OFFICE, COLORADO	
ADDRESS 634 OURAY AVENUE GRAND JUNCTION, COLORADO	
SURV. W/L 3-15-85	DRAWN RSK 3-19-85
DRAWING NO. 3-C559-F1	SHEET 1 OF 1

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 used for any purpose other than the improvement of fence, building, or other future improvement lines.





3/85

DOE ID NO. GJ-01246-RS 2M 7P Date May 31, 1985

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

Official Survey Report

Property Address 634 Ouray Avenue
Property Owner Intra West Bank
Address of Owner (if different from above) 359 Main, Grand Junction, Colo.
Report Prepared By T.R. Unrein

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

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

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

1 1 In open areas.

1 XX 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 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 XX 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 = 18 uR/h
HOG = 55 uR/h

June 12, 1985

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

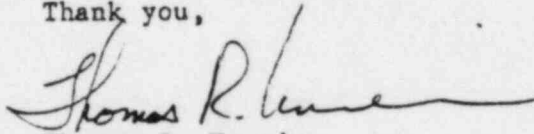
ATTN: Coleen Campbell

Dear Coleen:

"No Comments" concerning Department of Energy (DOE) Identification (ID)
number GJ-01246-RS (634 Ouray Avenue) has been noted.

JB RM

Thank you,



Thomas R. Unrein
RSD Survey Team Leader

TRU:pr

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: May 29, 1985

To: Files

From: Thomas R. Unrein

Subject: Team Leader Notes - GJ-01246-R^M8 90

Address: 634 Ouray Avenue

Owner: Intra West Bank

Team Members

T. Unrein (Team Leader)
R. Herman
R. Wilkins
H. Mattison

D. Bell
M. Gilfillan
L. Kula

Instruments

Crutch Scintillometers - C-1024, C-1036, C-3510, C-1115, C-1196
Total Counts - C-1062, C-3573
Downhole Spectrometer - C-0498
Delta Scintillometers - C-3943, C-3942

Team members arrived at the property at 7:45 AM.

Utility line investigations will be further away from the house than usual because of the concrete sidewalks and the brick patio.

I (T. Unrein) had to leave the property at 9:00 AM to pick up the keys from the bank.

The interior survey indicated no elevated gamma readings.

Team Leader Notes
Thomas R. Unrein
GJ-01246-RS
May 29, 1985
Page 2

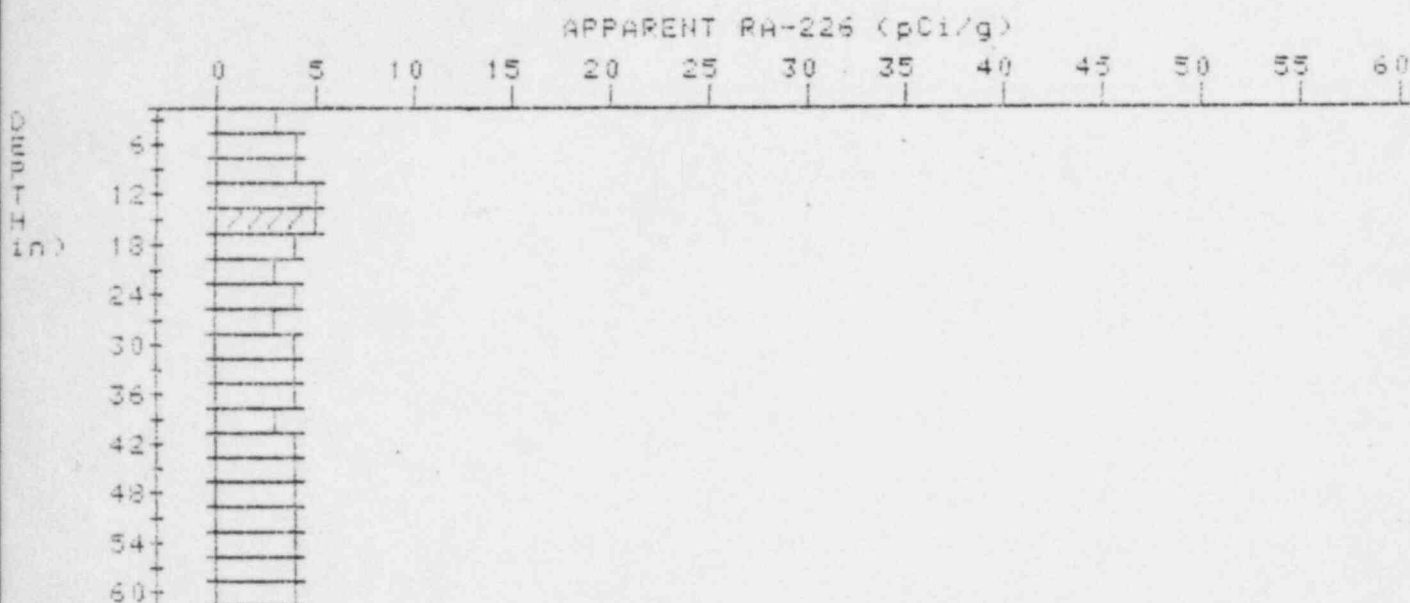
The exterior data indicated elevated gamma readings associated with the sidewalks south of the primary structure. The elevated gamma readings stopped at the alley, southeast of the primary structure (where the sidewalk and the alley meet). The elevated readings (gamma) did continue into the sidewalk west of 634 Ouray. The property address is 628 Ouray, it is an apartment building. The owner of the apartment building is unknown. The building is DOE ID GJ-04309.

The survey was completed at 12:15 PM. All personnel were frisked and returned to the office.

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

2

PROPERTY NUMBER: GJ-01246-RM
HOLE NUMBER: 2
LOCATION: 168270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.6	3.6
9	4.0	4.2
12	4.3	4.7
15	4.4	5.1
18	4.1	4.1
21	3.8	3.4
24	3.7	3.7
27	3.6	3.4
30	3.6	3.6
33	3.6	3.6
36	3.6	3.6
39	3.6	3.6
42	3.8	4.0
45	3.8	3.6
48	3.9	3.9
51	4.0	4.0
54	4.1	4.6

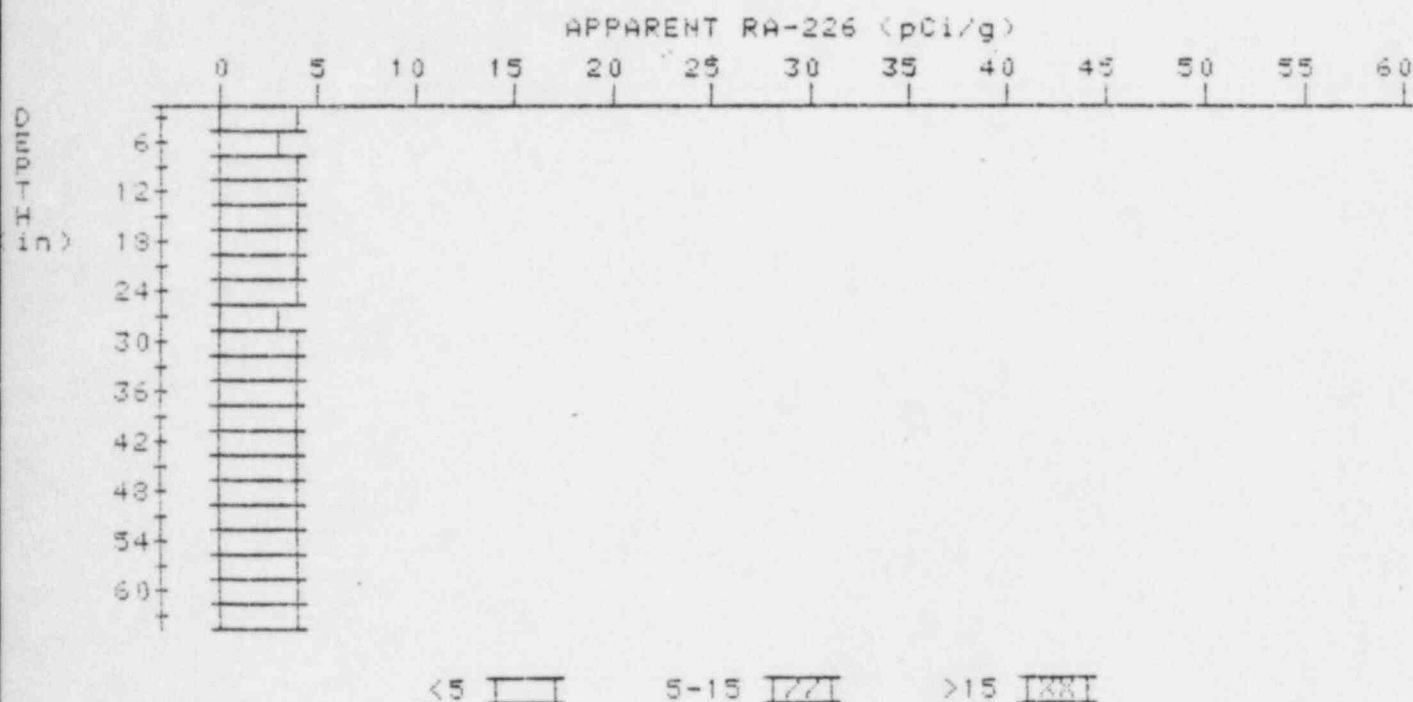
57
60

4.1
4.2

3.9
4.2

APPARENT RADIUM-226 CONCENTRATION 3 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01246-RM
HOLE NUMBER: 3
LOCATION: 176257



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.5	3.5
6	3.5	3.1
9	3.7	4.1
12	3.7	3.7
15	3.7	3.5
18	3.8	4.0
21	3.8	3.8
24	3.8	4.0
27	3.7	3.3
30	3.8	4.0
33	3.8	3.8
36	3.8	3.6
39	3.9	4.1
42	3.9	3.7
45	4.0	4.2
48	4.0	4.0
51	4.0	3.8

54	4.1	4.5
57	4.0	3.6
60	4.1	4.3
63	4.1	4.1

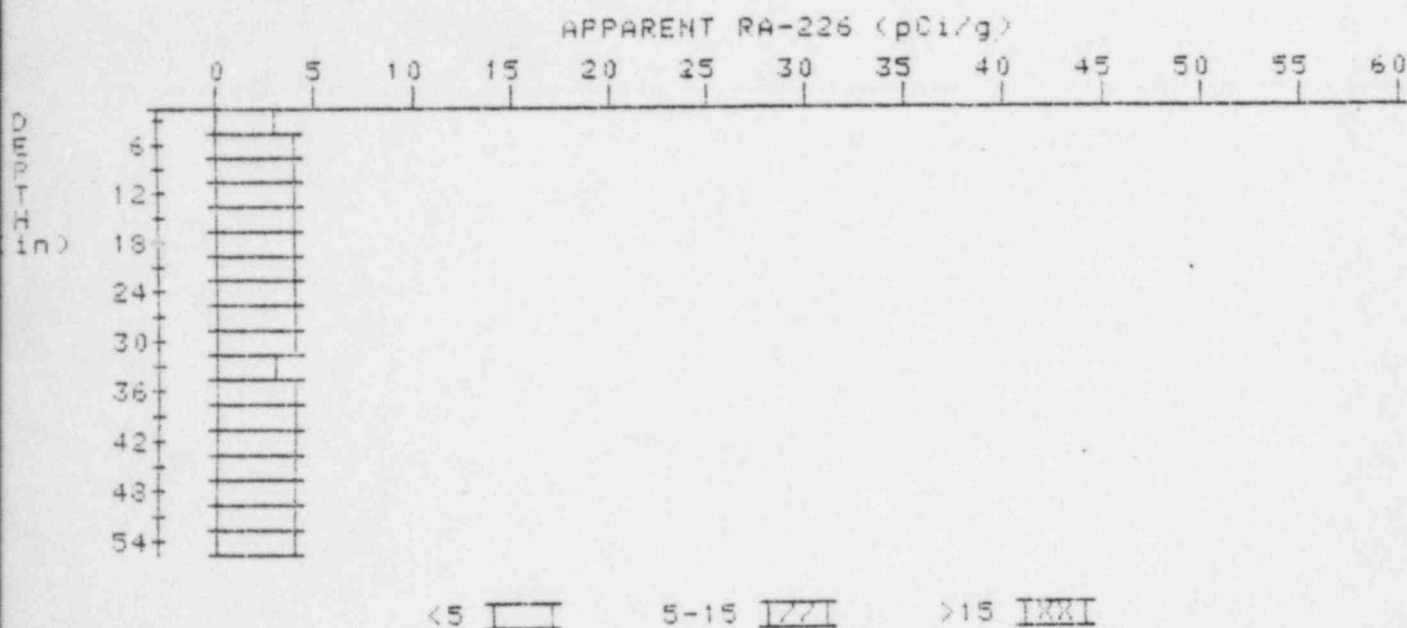
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

5

PROPERTY NUMBER: GJ-01246-RM

HOLE NUMBER: 5

LOCATION: 193270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.5	4.0
9	3.7	3.9
12	3.8	4.0
15	3.8	3.6
18	3.9	4.3
21	3.8	3.6
24	3.8	3.8
27	3.8	3.8
30	3.8	4.0
33	3.7	3.3
36	3.8	4.0
39	3.8	3.8
42	3.8	3.6
45	3.9	4.1
48	3.9	3.7
51	4.0	4.2
54	4.0	4.0

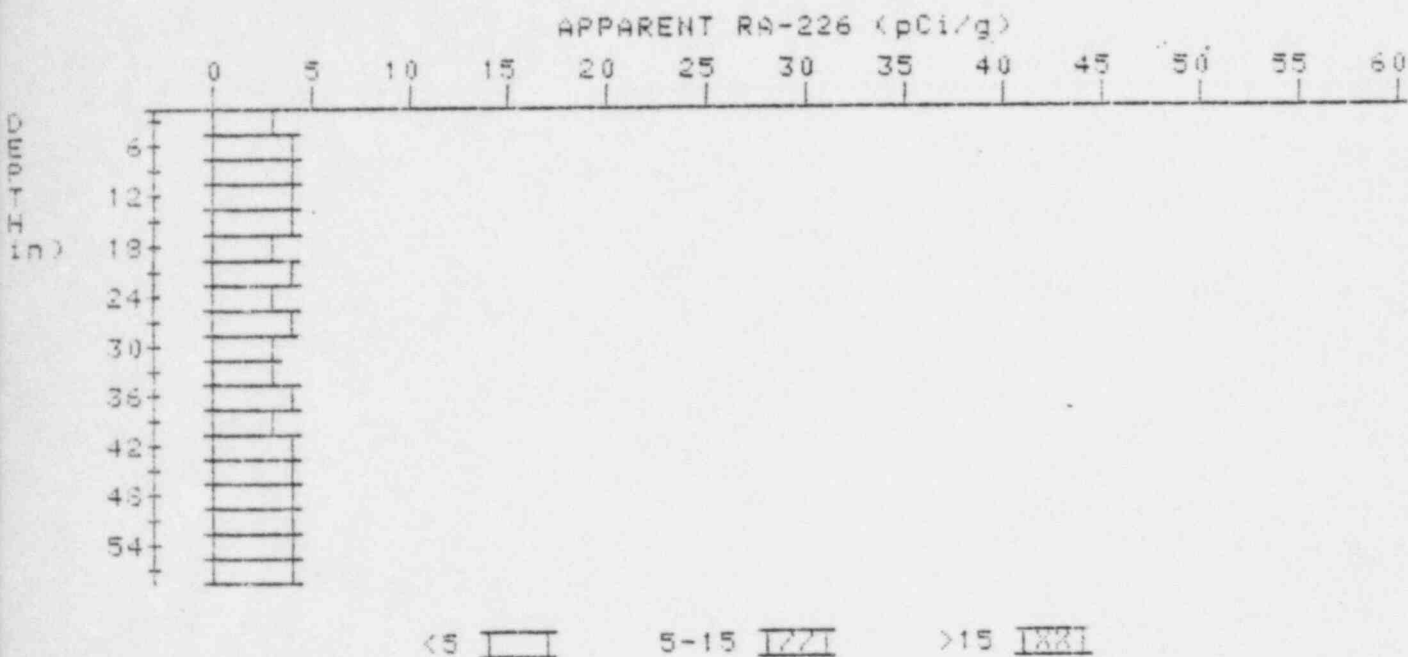
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

6

PROPERTY NUMBER: GJ-01246-RM

HOLE NUMBER: 6

LOCATION: 208270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.5	3.9
9	3.6	3.6
12	3.7	3.9
15	3.7	3.9
18	3.6	3.2
21	3.7	4.1
24	3.6	3.4
27	3.6	4.0
30	3.4	3.0
33	3.4	2.9
36	3.7	4.2
39	3.7	3.3
42	3.9	4.3
45	3.9	3.7
48	4.0	4.0
51	4.1	4.3
54	4.1	4.1

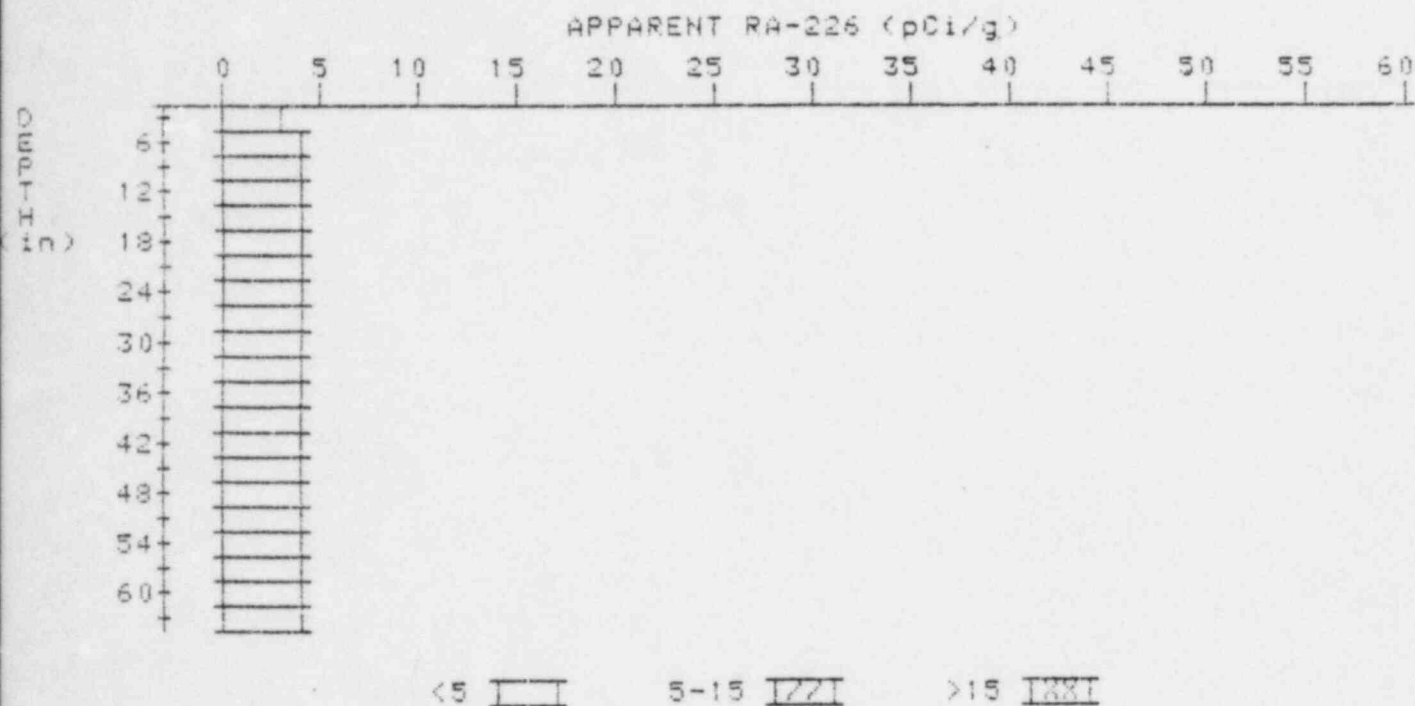
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

7

PROPERTY NUMBER: GJ-01246-RM

HOLE NUMBER: 7

LOCATION: 225261



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	4.2
12	3.7	3.5
15	3.6	4.2
18	3.7	3.5
21	3.7	3.5
24	3.8	4.0
27	3.8	3.8
30	3.8	3.8
33	3.8	3.6
36	3.9	4.1
39	3.9	3.9
42	3.9	3.9
45	3.9	3.6
48	4.1	4.5
51	4.1	4.3

54
57
60
63

4.0
4.1
4.1
4.2

3.6
4.3
3.9
4.2

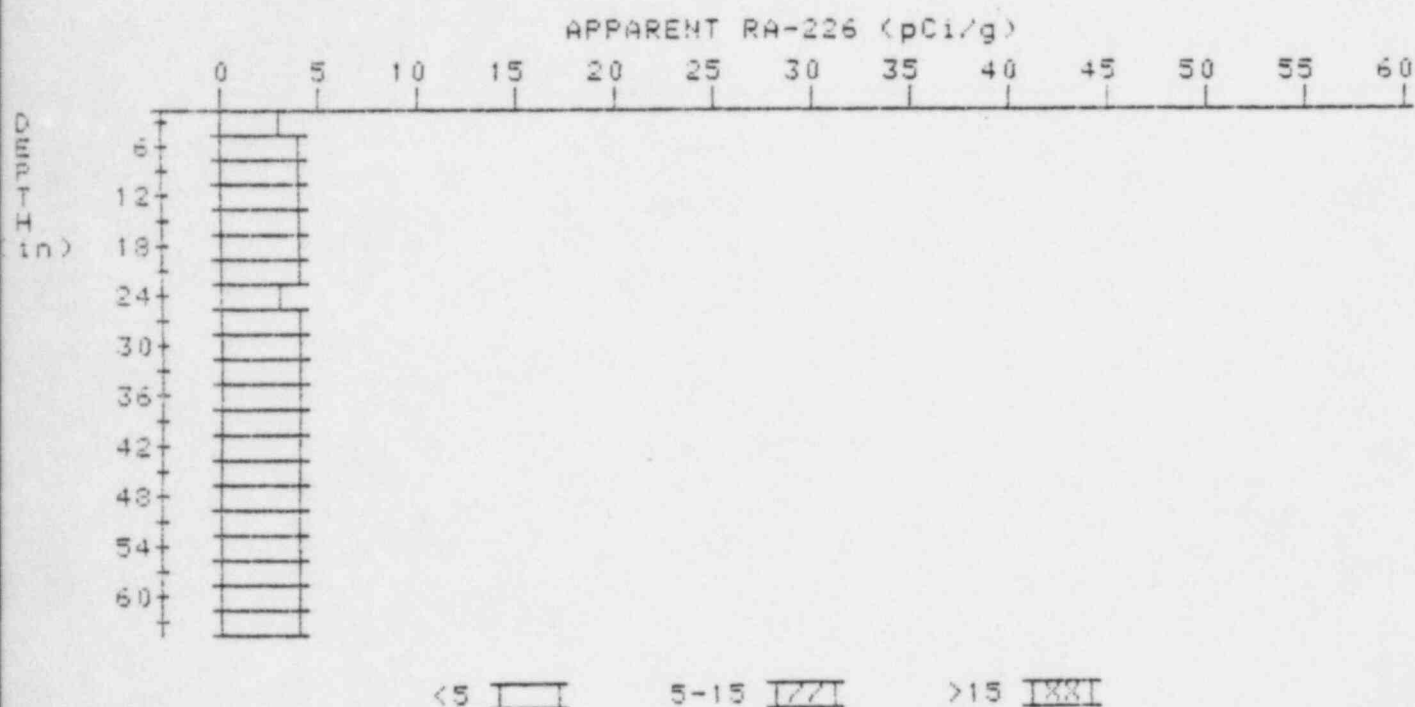
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

9

PROPERTY NUMBER: GJ-01246-RM

HOLE NUMBER: 9

LOCATION: 240236



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.4	3.8
9	3.6	3.8
12	3.7	3.7
15	3.8	4.0
18	3.8	3.8
21	3.8	4.0
24	3.7	3.3
27	3.8	3.8
30	3.9	3.9
33	4.0	4.2
36	4.0	3.8
39	4.1	4.5
42	4.0	3.6
45	4.1	4.3
48	4.1	4.3
51	4.0	3.8

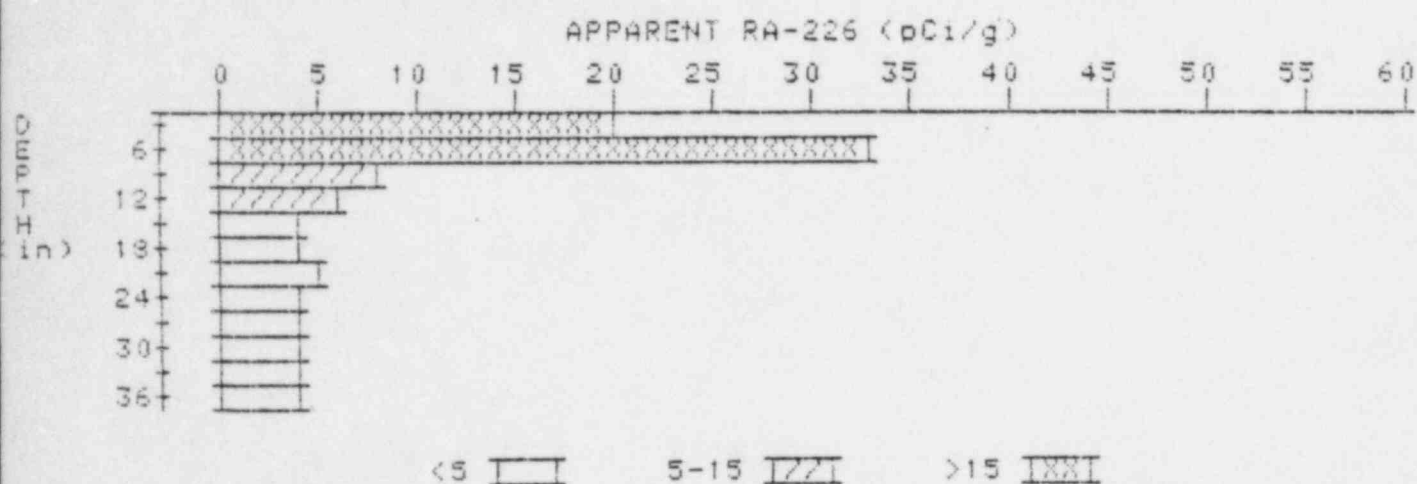
54	4.0	3.8
57	4.1	4.5
60	4.0	3.8
63	4.0	4.0

APPARENT RADIUM-226 CONCENTRATION 14 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01246-RM

HOLE NUMBER: 14

LOCATION: 255230

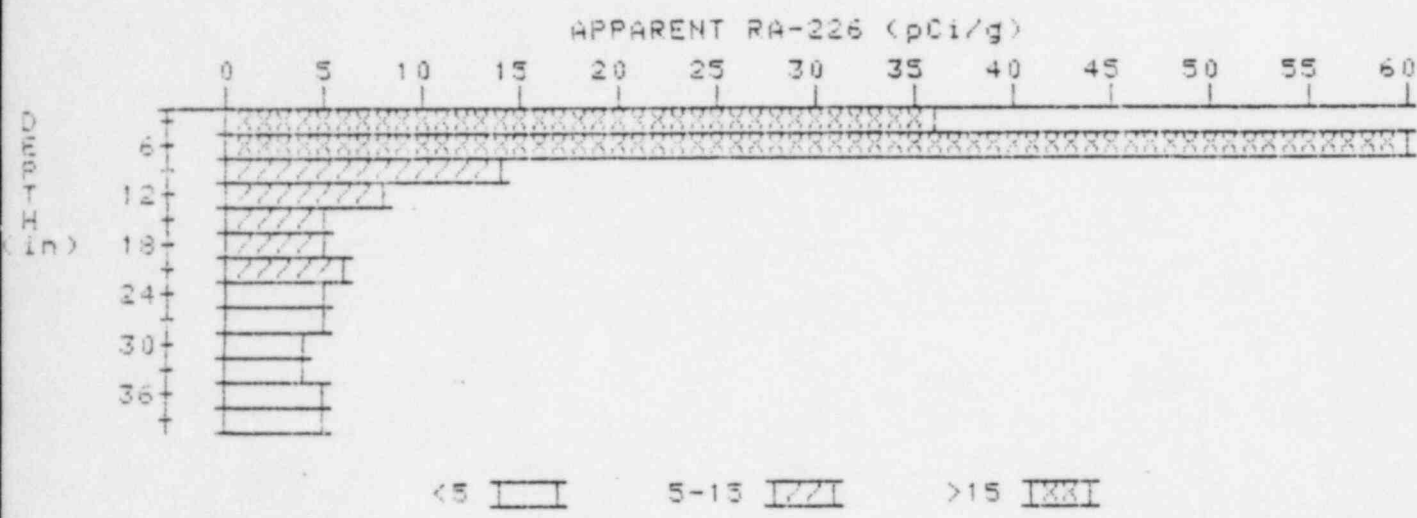


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	19.5	19.5
6	20.0	33.3
9	13.0	7.8
12	8.9	5.9
15	6.5	4.2
18	5.4	4.3
21	4.9	4.7
24	4.5	4.0
27	4.4	4.2
30	4.4	4.4
33	4.4	4.4
36	4.4	4.4

APPARENT RADIUM-226 CONCENTRATION 15

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01246-RM
HOLE NUMBER: 15
LOCATION: 255250

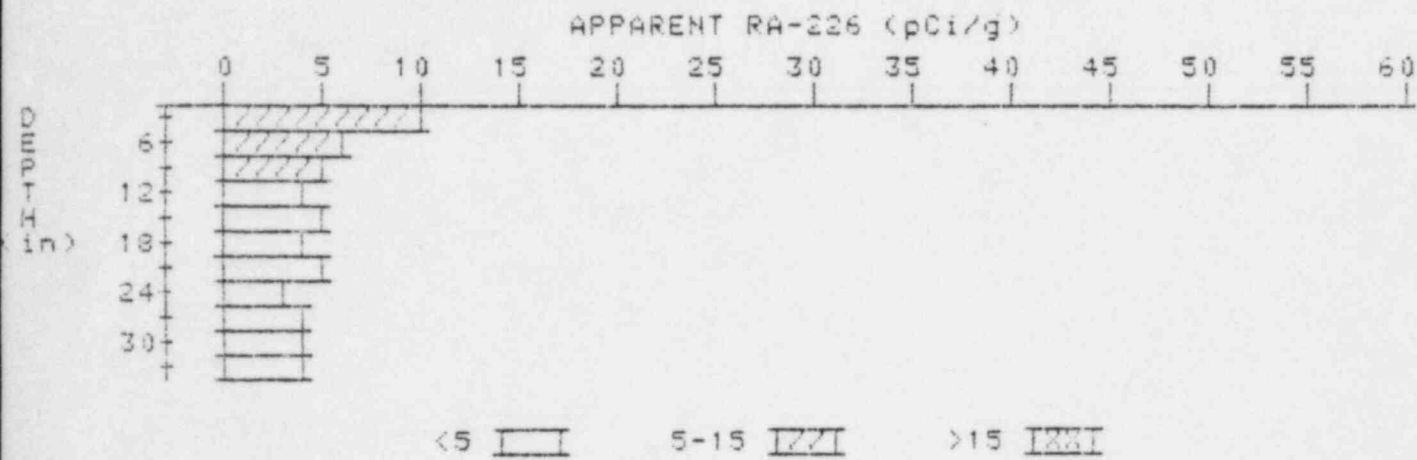


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	35.8	35.8
6	37.6	65.9
9	23.5	13.9
12	14.8	8.0
15	9.9	5.5
18	7.5	5.4
21	6.3	5.8
24	5.4	4.7
27	4.9	4.5
30	4.6	4.2
33	4.5	4.3
36	4.5	4.5
39	4.5	4.5

APPARENT RADIUM-226 CONCENTRATION 22

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01246-RM
HOLE NUMBER: 22
LOCATION: 269245



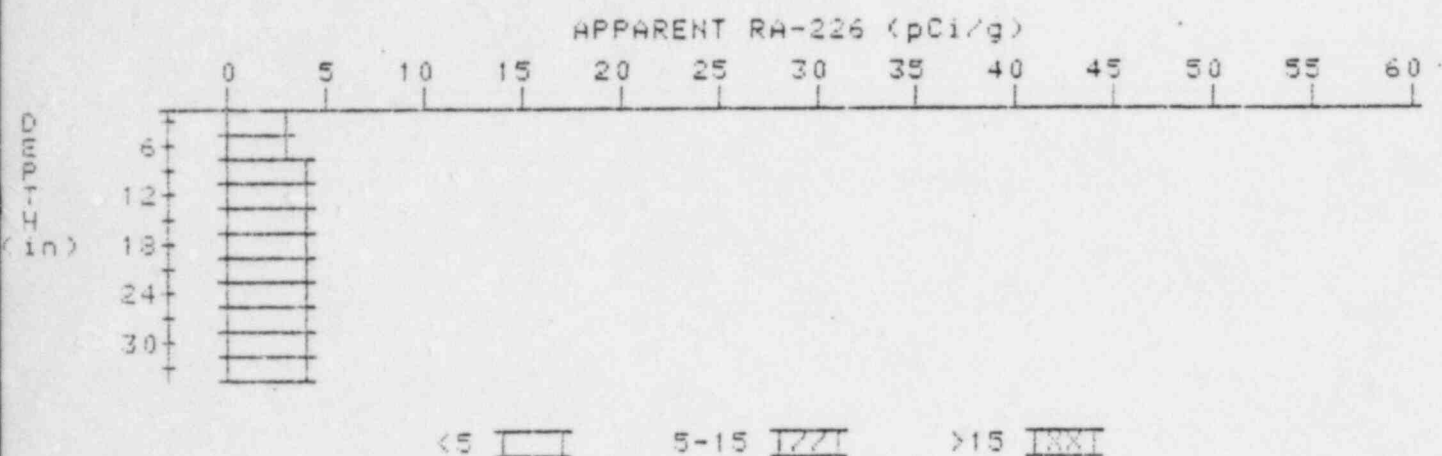
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	10.2	10.2
6	7.7	6.1
9	6.1	5.0
12	5.1	4.0
15	4.7	4.5
18	4.4	4.0
21	4.3	4.7
24	4.0	3.5
27	4.0	4.4
30	3.8	4.0
33	3.5	3.5

APPARENT RADIUM-226 CONCENTRATION 23 DECONVOLUTION GRAPH

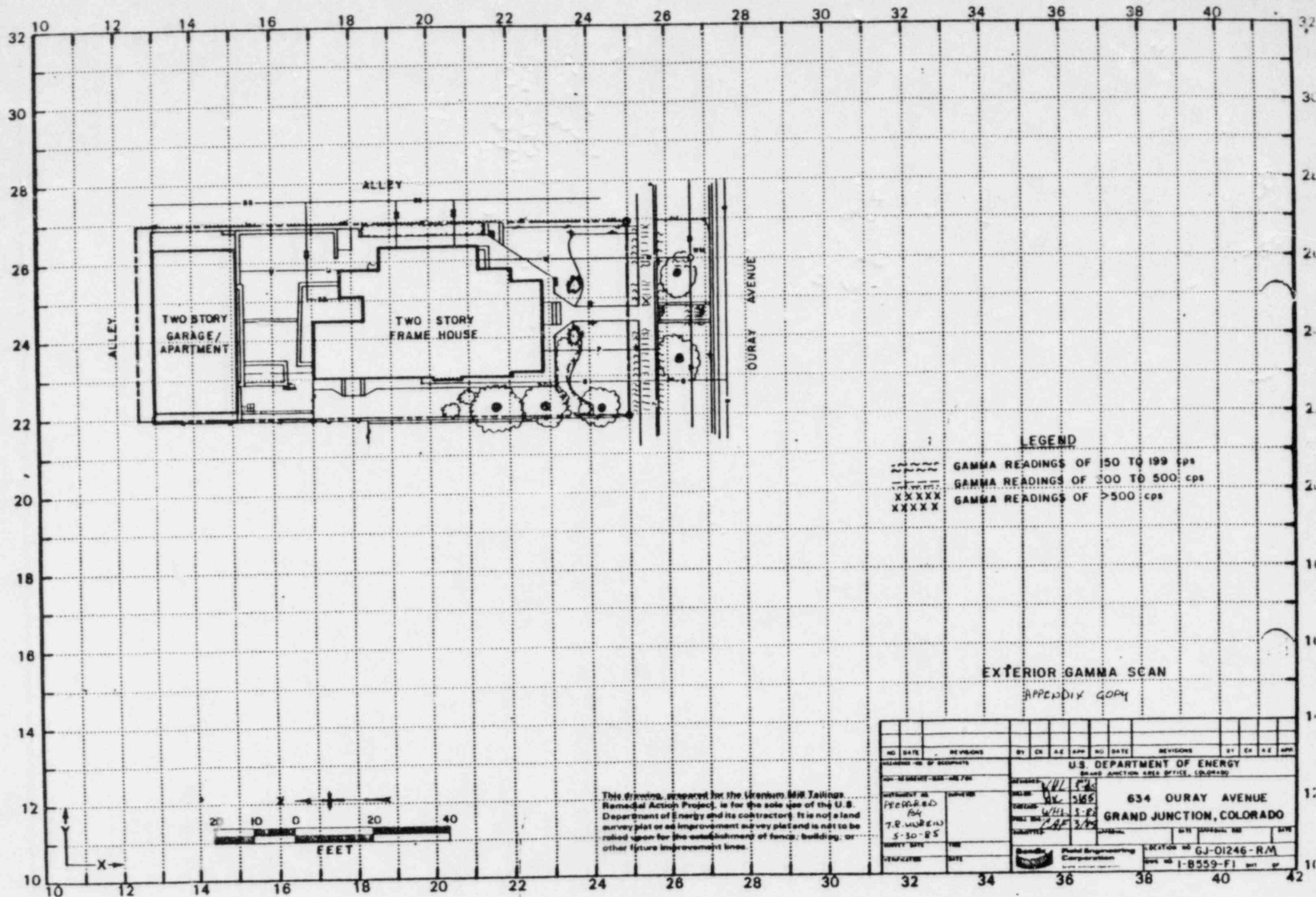
PROPERTY NUMBER: GJ-01246-RM

HOLE NUMBER: 23

LOCATION: 270220



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.4	3.2
9	3.7	4.1
12	3.8	4.0
15	3.8	3.6
18	3.9	4.1
21	3.9	4.1
24	3.8	3.6
27	3.8	3.8
30	3.8	3.6
33	3.9	3.9



This drawing, prepared for the Northern Pike Trailways National 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.

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