

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-11585-RS
ADDRESS: 2010 ELM AVENUE

JUNE 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

Michael K. Tucker
M. TUCKER
DOE PROJECT ENGINEER

DATE

June 13, 1985

REA11585:REA-606

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-11585-RS, is a single-family residence located at 2010 Elm 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, 10 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$1,471. Remedial action on this property will take approximately 7 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 2010 Elm Avenue, Grand Junction, Colorado 81501

Zoning: Residential (RSF-8)

Lot Size: Approximately 7,488 sf (0.2 acre)

Legal Description: Lot 2, Block 2 Del Mar Park Refile, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 miles north 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: Elm Avenue
 East: Alley (dirt)
 West: Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type: Single-story residence
 Size: Approximately 1,431 sf
 Construction Date: 1951
 Construction: Wood-frame
 Foundation: Concrete stemwall on spread footing
 Footing Depth: Approximately 25" to bottom of footing from grade
 Basement: None
 Crawl Space: Yes
 Condition: Good

Other Structures:

Type:	Garage
Size:	Approximately 350 sf
Construction:	Wood-frame
Foundation:	Concrete slab-on-grade
Condition:	Good

Type:	Shed I
Size:	Approximately 73 sf
Construction:	Pre-fabricated metal
Foundation:	None
Condition:	Good

Type:	Shed II
Size:	Approximately 29 sf
Construction:	Pre-fabricated metal
Foundation:	None
Condition:	Good

General Remarks:

The front yard is well landscaped. 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-11585-RS on April 30, 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, or under, the city sidewalk along Elm Avenue, and isolated elevated readings in the backyard north of the garage.

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: 13 to 15 uR/h
Highest Outside Gamma Reading (HOG): 38 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): 18 uR/h

Interior gamma exposure-rate measurements are summarized in Appendix Table 3.2. Appendix Figures 3.3a, 3.3b and 3.3c 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 Figure 3.4. 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 3.5 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 underlying the city sidewalk is contaminated. The total depth of the contamination is 12 inches (approximately 213 sf).

(AREA B) A small deposit is located north of the garage. The depth of contamination is 18 inches (approximately 42 sf).

(AREAS REQUIRING FURTHER INVESTIGATION DURING REMEDIAL ACTION)

The interior of Shed 2 should be surveyed during remedial action to confirm the absence of contamination.

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-11585-RS, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.5) 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 \$1,471.

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	Exterior Gamma Scan
Figure 3.3a	Interior Gamma Exposure Rates - Crawl Space
Figure 3.3b	Interior Gamma Exposure Rates - Ground Floor
Figure 3.3c	Interior Gamma Exposure Rates - Garage
Figure 3.4	Exterior Sample Locations
Figure 3.5	Estimated Extent of Contamination

Official Survey Report

Memo of Understanding

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Radium Concentrations at Exterior Locations

DOE ID #GJ-11585-RS

2010 Elm Avenue

Page 1 of 3

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1	150240	00	DS	<1.0		*	Background
		06	DS	<1.0		*	
		00-06	SS			1.4	DC = 0 inches
		03	TC	2.8		*	
		06	BH	3.1	1.1	*	
		09	TC	3.5		*	
		12	BH	3.6	1.2	*	
		15	TC	3.7		*	
		18	BH	3.8	1.1	*	
		21	TC	3.8		*	
		24	BH	3.9	1.6	*	
		27	TC	4.0		*	
		30	BH	4.0	<1.0	*	
		33	TC	4.0		*	
		36	TC	4.0		*	
2	154279	00	DS	2.2		*	North of garage
		06	DS	4.5		*	
		12	DS	3.4		*	DC = 18 inches
		18	DS	<1.0		*	
		00-06	SS			6.9	
		06-12	SS			12.5	
3	154283	00	DS	3.6		*	North of garage
		06	DS	8.3		*	
		12	DS	1.3		*	
		00-06	SS			5.8	
		06-12	SS			27.0	
4	193286	03	TC	3.4		*	East side of east fence line
		06	TC	3.4		*	
		09	TC	3.4		*	
		12	TC	3.5		*	Sewer line
		15	TC	3.6		*	
		18	TC	3.6		*	DC = 0 inches
		21	TC	3.7		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	TC	3.7		*	
		33	TC	3.7		*	
		36	TC	3.7		*	
		39	TC	3.5		*	
		42	TC	3.6		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-11585-RS

2010 Elm Avenue

Page 2 of 3

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
4	193286	45	TC	3.6		*	
		48	TC	3.5		*	
		51	TC	3.6		*	
		54	TC	3.6		*	
5	205286	00	DS	<1.0		*	Gas line
		24	DS	<1.0		*	
6	221240	03	TC	3.4		*	Foundation
		06	TC	3.6		*	
		09	TC	3.6		*	DC = 0 inches
		12	TC	3.5		*	
		15	TC	3.5		*	
		18	TC	3.6		*	
		21	TC	3.6		*	
		24	TC	3.6		*	
		27	TC	3.6		*	
		30	TC	3.6		*	
		33	TC	3.7		*	
		36	TC	3.7		*	
		39	TC	3.7		*	
		42	TC	3.8		*	
		45	TC	3.7		*	
		48	TC	3.8		*	
		51	TC	3.7		*	
		54	TC	3.7		*	
		57	TC	3.7		*	
		60	TC	3.7		*	
		63	TC	3.7		*	
		66	TC	3.6		*	
7	228257	00	DS	1.5		*	In front of porch
8	250249	03	TC	2.8		*	Water line
		06	TC	3.1		*	
		09	TC	3.4		*	DC = 0 inches
		12	TC	3.4		*	
		15	TC	3.5		*	
		18	TC	3.6		*	
		21	TC	3.6		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
		30	TC	3.9		*	
		33	TC	3.9		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-11585-RS

2010 Elm Avenue

Page 3 of 3

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
8	250249	36	TC	3.9		*	
		39	TC	3.9		*	
		42	TC	3.7		*	
		45	TC	3.7		*	
9	258230	00	DS	2.1		*	Adjacent to sidewalk
		06	DS	<1.0		*	
10	258260	00	DS	1.8		*	South yard adjacent to sidewalk Sandy silt
		06	DS	1.3		*	
		00-06	SS			2.6	
11	258280	00	DS	<1.0		*	South end of driveway
12	260250	00-04	SS			2.6	Core (city sidewalk) Sand under sidewalk
		04-10	SS			51.0	
		03	TC	28.5		*	
		06	BH	32.1	13.4	*	
		09	TC	19.1		*	
		12	BH	11.4	4.8	*	DC = 12 inches Based on all available data
		15	TC	7.9		*	
		18	BH	6.3	2.8	*	
		21	TC	5.3		*	
		24	BH	4.9	2.4	*	
		27	TC	4.6		*	
		30	BH	4.6	1.7	*	
		33	TC	4.6		*	
		36	TC	4.6		*	
		39	TC	4.5		*	
		42	TC	4.0		*	
		45	TC	3.9		*	
		48	TC	3.7		*	
		51	TC	3.7		*	
		54	TC	3.6		*	
		57	TC	3.6		*	

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 = 04-30-85
 Team Leader = JD

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)
ROOM A	03	14-15	15	03	15-16	15
ROOM B	05	14-15	15	05	15-16	15
ROOM C	00	-	-	18	16-17	16
ROOM D	00	-	-	08	16-18	17
GROUND FLOOR	*	*	*	*	13-16	*
GARAGE	05	13-13	13	05	14-15	14
SHED 1	01	12-12	12	01	14-14	14

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* The CDH and ORNL data indicate the absence of interior contamination at this property. This information was investigated by performing a walking gamma scan of the ground floor. This area and the range of gamma measurements are shown in Appendix Figure 3.3b. Exposure rates in the crawl space, garage, and Shed 1 are shown in Appendix Figures 3.3a and 3.3c.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-11585-RS

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				
A	3 x 71 =	213	x 0.3 =	64 =	64/27 = 2
	Volume of Concrete				
					= 2
	Contaminated Fill				
A	3 x 71 =	213	x 0.7 =	149	
B	7 x 6 =	42	x 1.5 =	63	
	Volume of Fill				
				212 =	212/27 = 8
	TOTAL VOLUME - EXTERIOR				
					= 10

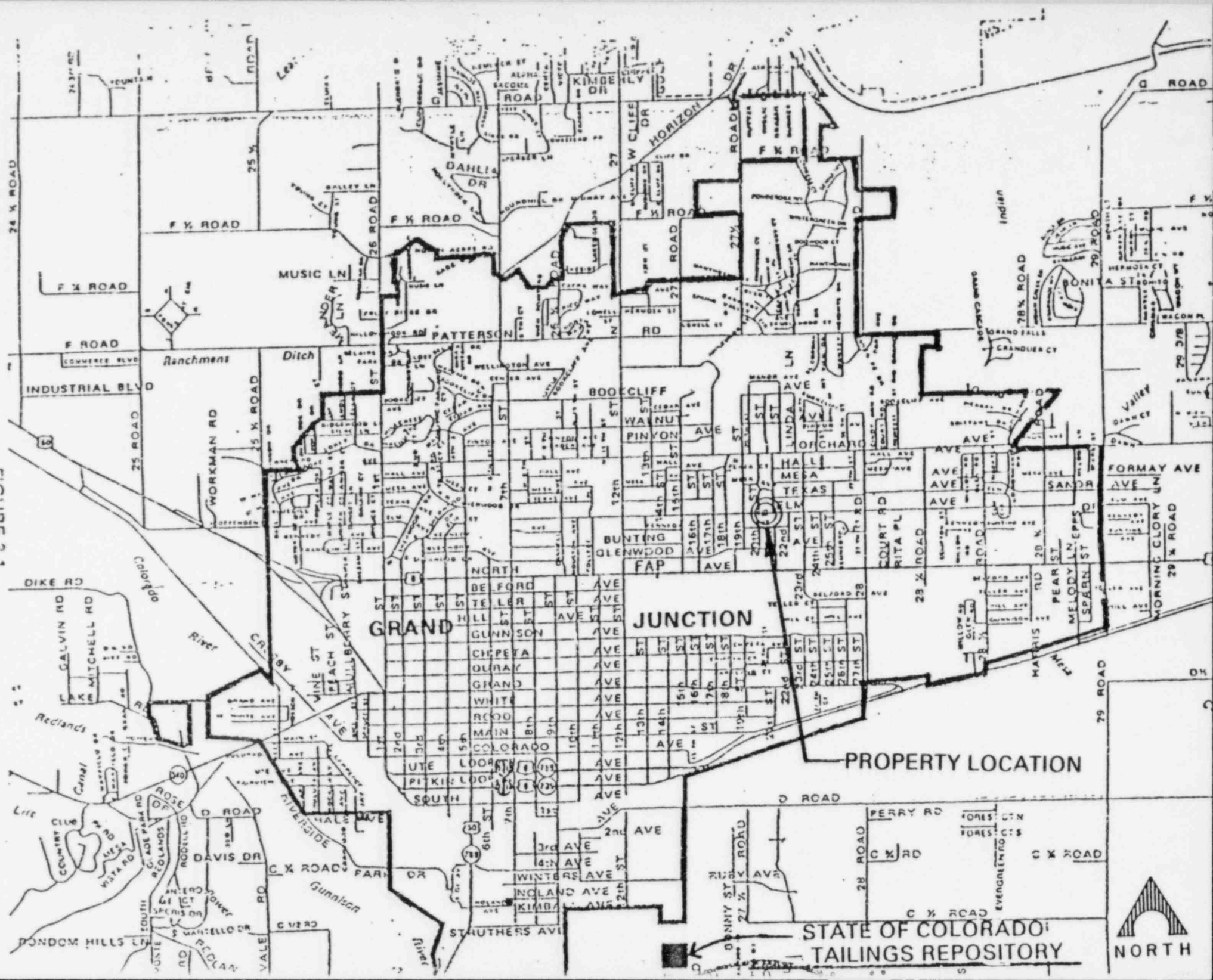
See Appendix Figure 3.5 For Areas

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-11585-RS Page 1 of 1

Remove identified residual radioactive material		
7 cy @ \$14.50/cy (machine-open)	\$	102
1 cy @ \$44/cy (manual-open)		44
Remove/replace concrete		
213 sf @ \$3/sf		639
Replace compacted roadbase		
6 cy @ \$11.50/cy		69
Replace topsoil		
2 cy @ \$9.50/cy		19
		<hr/>
TOTAL EXTERIOR	\$	873
TOTAL INTERIOR		0
ACCESS CONTROL		100
		<hr/>
SUBTOTAL	\$	973
CONTINGENCY @ 8%		78
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SUBTOTAL	\$	1,051
CONTRACTOR OVERHEAD & PROFIT @ 40%		420
		<hr/>
GRAND TOTAL	\$	1,471

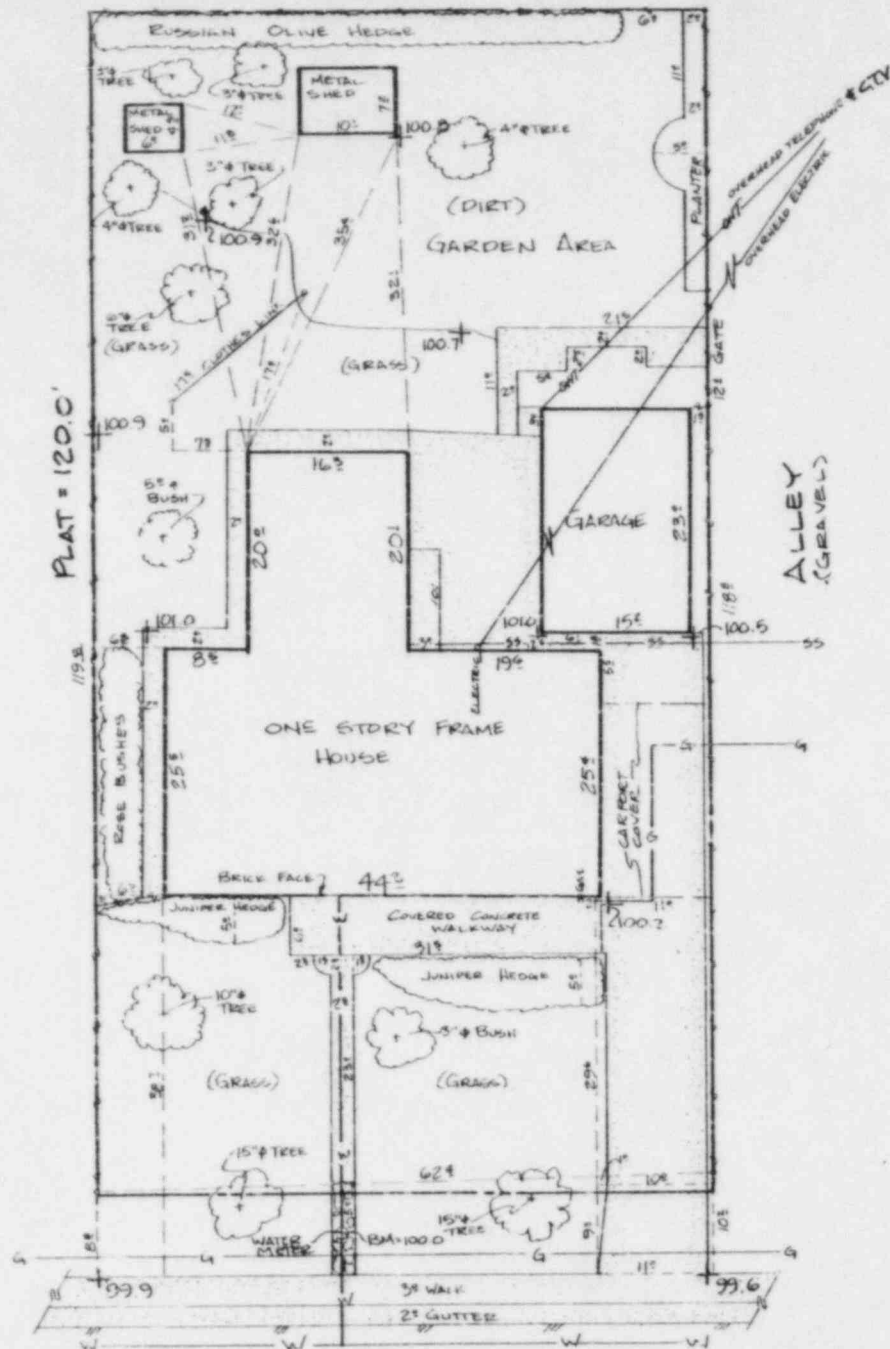
LR061185
REA11585/REA-606/LMR

FIGURE 2.1
VICINITY MAP



PLAT = 62.5'

LOT 2 BLOCK 2 DEL MAR PARK REFILE
GRAND JUNCTION, COLORADO.

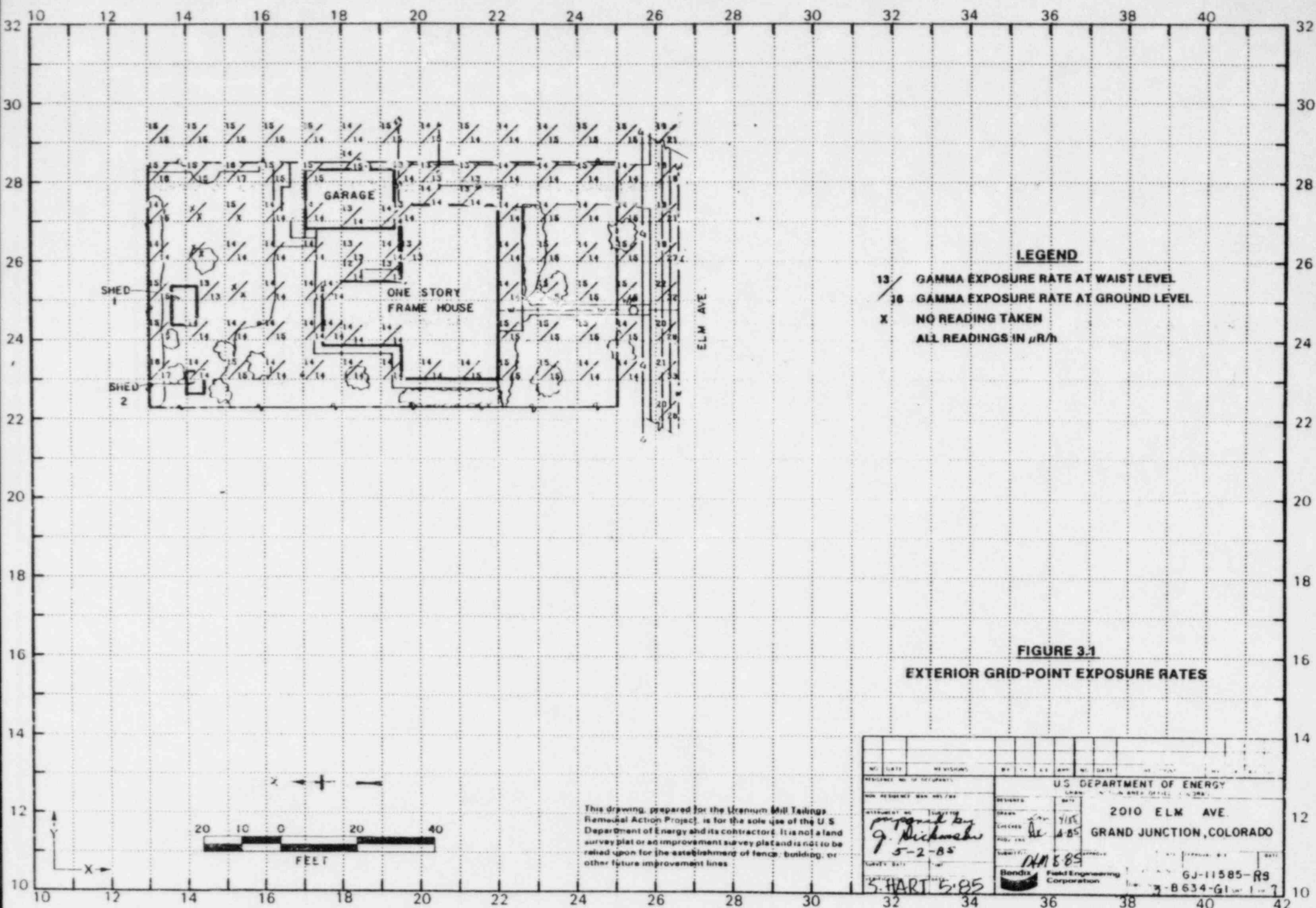


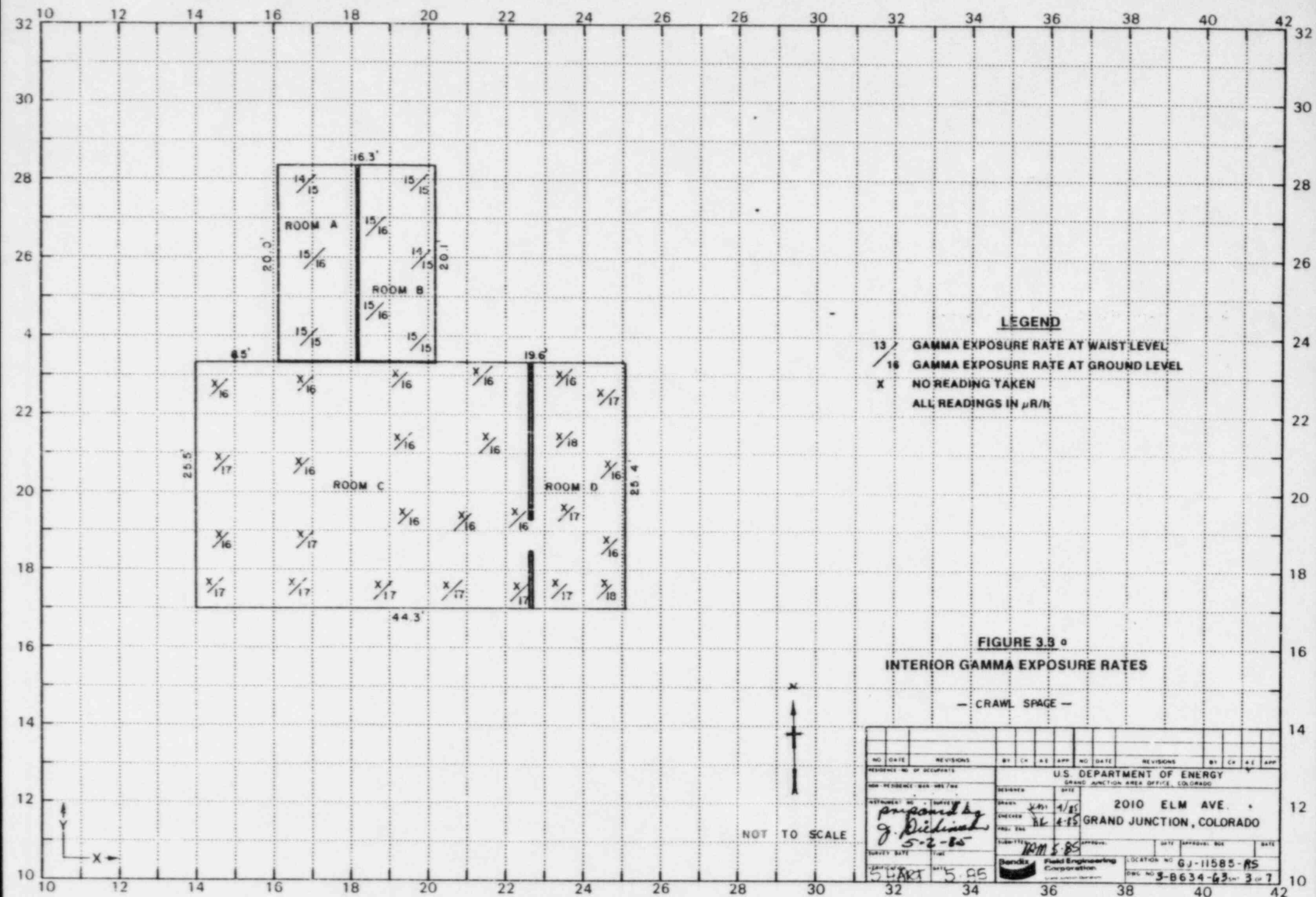
ELM AVENUE
(ASPHALT)

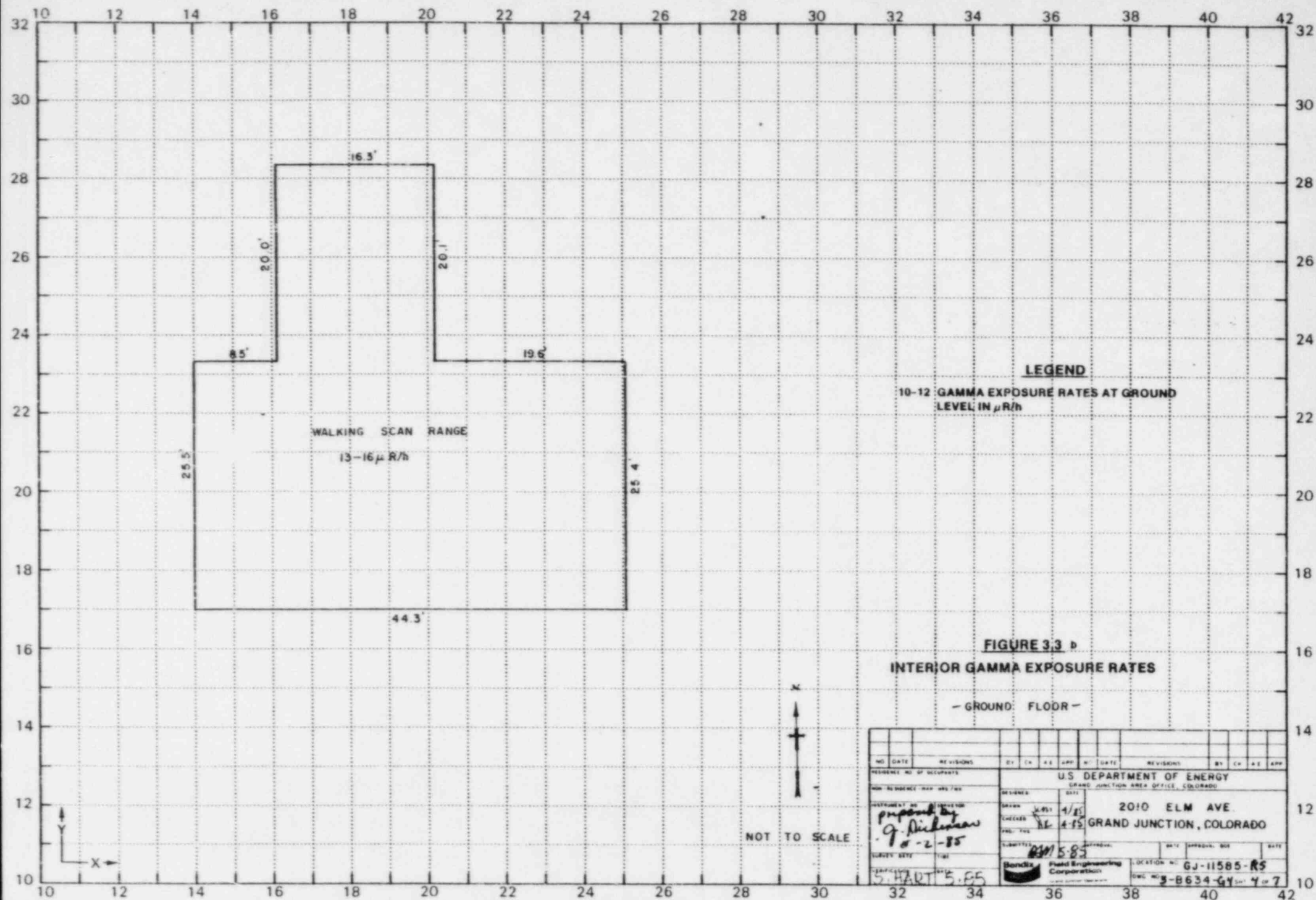
FIGURE 2.2 SITE PLAN

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.

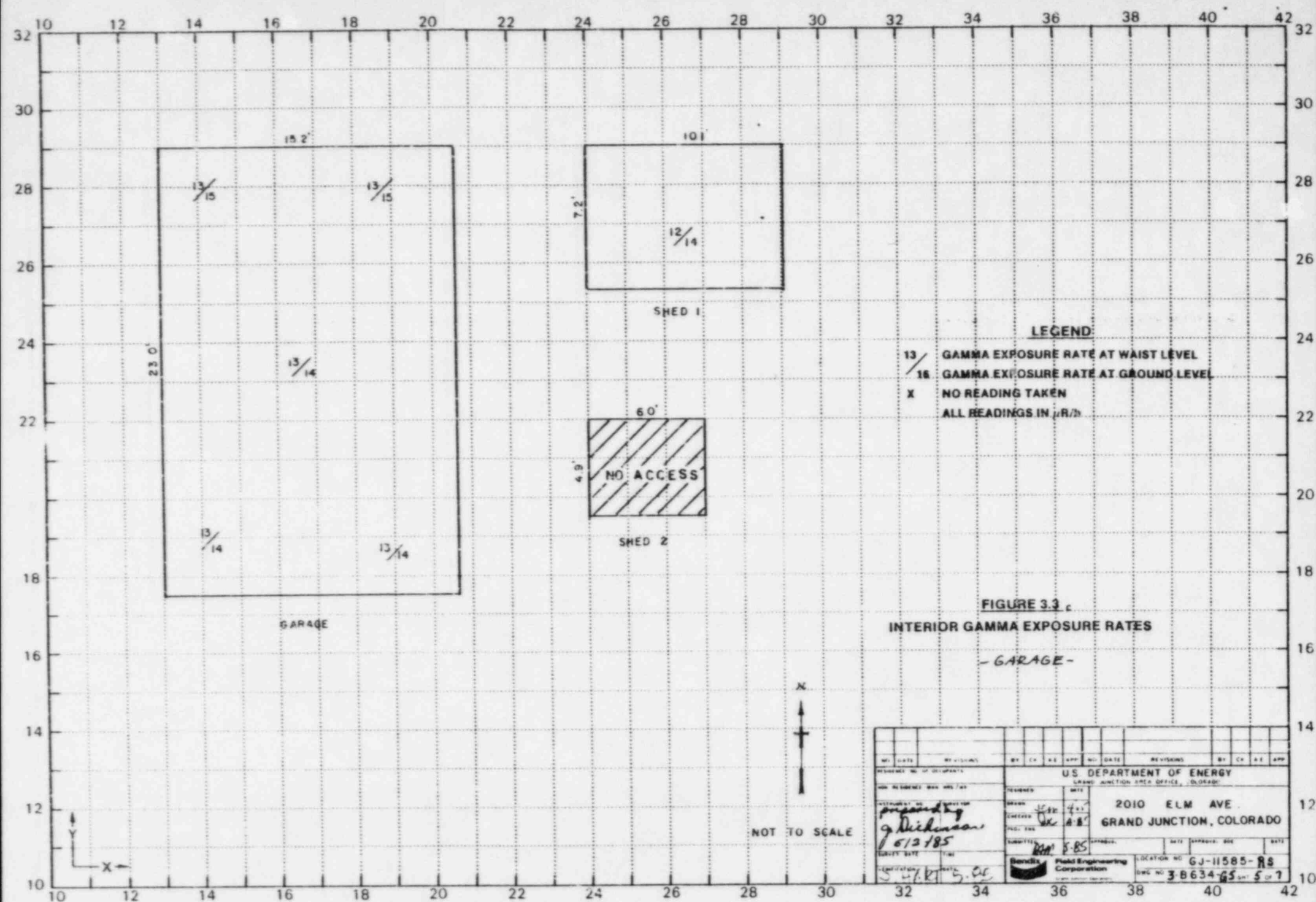
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION PROJECT OFFICE COLORADO				DOE IO NO. GJ 11985 RS
ADDRESS 2010 ELM AVENUE GRAND JUNCTION, COLORADO				ALLIED ENGINEERING CORPORATION Grand Junction Operations
SURV	WHL 424 85	DRAFT	ROK 425 85	CK 01E 4-2-1
DRAWING NO	3 C634 F1			SHEET 1 OF 1



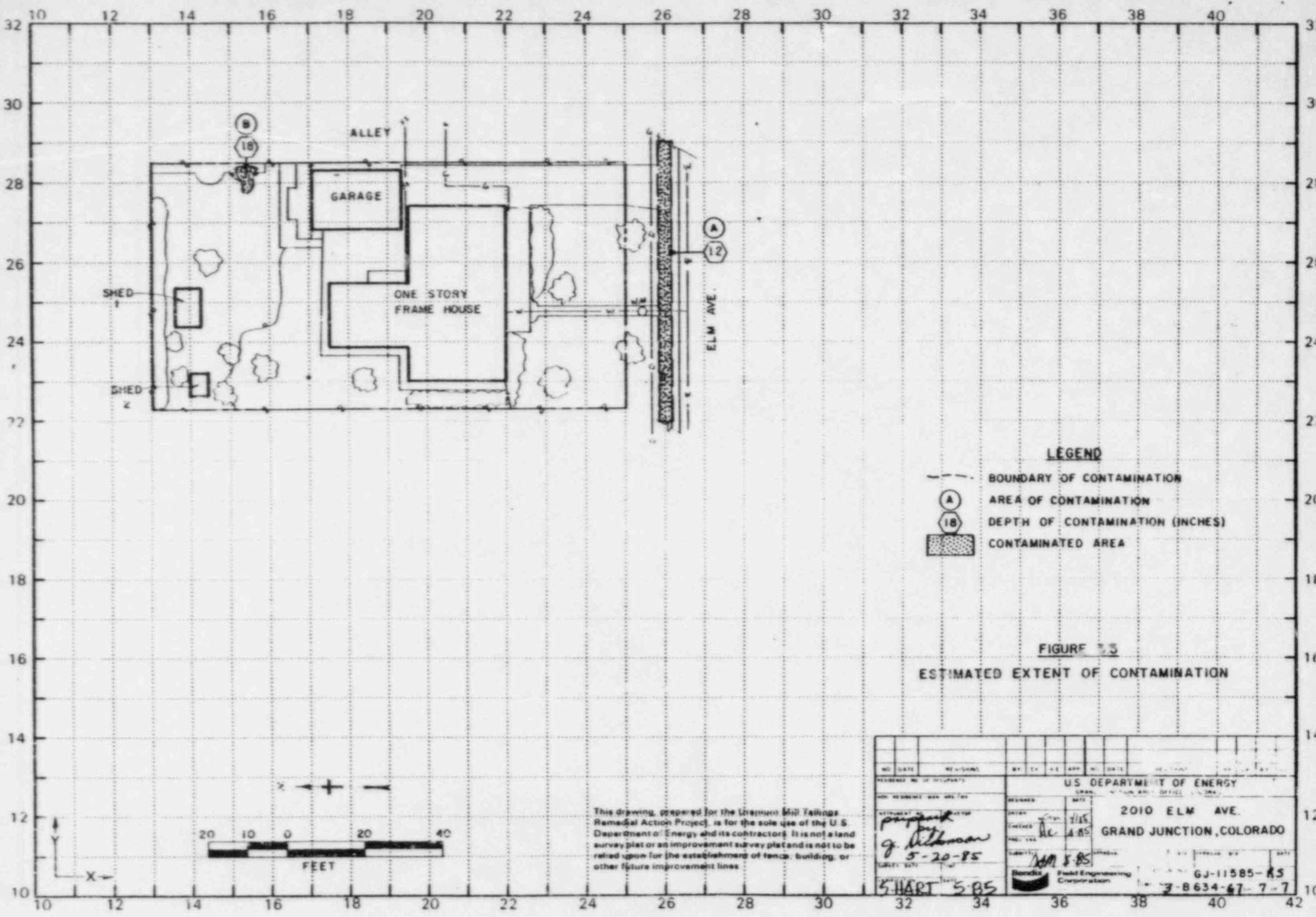




NO.	DATE	REVISIONS	BY	CHK	APP	DATE	REVISIONS	BY	CHK	APP	DATE	
RESIDENCE NO. OF OCCUPANTS			U.S. DEPARTMENT OF ENERGY									
MIN. RESIDENCE PERIOD (YRS)			GRAND JUNCTION AREA OFFICE, COLORADO									
INSTRUMENT NO.			DESIGNED			DATE			2010 ELM AVE.			
proposed by G. Dickman			DRAWN			4/85			GRAND JUNCTION, COLORADO			
4-2-85			CHECKED			4/85						
LARGE SITE			SUBMITTED			DATE			APPROVAL			
5.85			Bondix			Field Engineering Corporation			LOCATION NO. GJ-11585-R5			
									DWC NO. 5-8634-GY 4 of 7			



REV. DATE		REV. BY		REV. DATE		REV. BY	
DESIGNED		DATE		DESIGNED		DATE	
CHECKED		DATE		CHECKED		DATE	
PLotted		DATE		PLotted		DATE	
QUANTITY		DATE		QUANTITY		DATE	
DATE		DATE		DATE		DATE	
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO				2010 ELM AVE. GRAND JUNCTION, COLORADO			
DRAWN BY: <i>proposed by g. Dickerson</i> DATE: <i>5/13/85</i>				LOCATION NO: <i>GJ-11585-RS</i> Dwg NO: <i>3-8634-65</i>			
FIELD ENGINEERING CORPORATION 1000 1/2 AVENUE GRAND JUNCTION, COLORADO				SHEET 5 OF 7			



LEGEND

- BOUNDARY OF CONTAMINATION
- ⊙ A AREA OF CONTAMINATION
- ⊙ 18 DEPTH OF CONTAMINATION (INCHES)
- CONTAMINATED AREA

FIGURE 3.5

ESTIMATED EXTENT OF CONTAMINATION

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.

NO. DATE		REVISION		BY		DATE		DATE	
RESIDENT NO. OF OCCUPANTS				U.S. DEPARTMENT OF ENERGY					
NO. RESIDENTS DAY AND NIGHT				2010 ELM AVE.					
ATTACHED TO				GRAND JUNCTION, COLORADO					
DESIGNED				DATE		GJ-11585-RS			
CHECKED				DATE		7-8634-47-7-7			
DATE				DATE		8-85			
5-20-85				5-85		Field Engineering Corporation			
5-85				5-85		5-85			

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

Official Survey Report

Property Address 2010 Elm Avenue, Grand Junction, Co.

Property Owner Arthur Bridgett

Address of Owner (if different from above)

Report Prepared By J. Dickerson

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

☐ No evidence of residual radioactive material on surveyed property.

☒ Residual radioactive materials found at the following locations:

☐ In open areas.

☒ Under or around exterior improvements.

☐ Under or around a typically nonoccupied structure.

☐ Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

☐ 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.

☒ 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.

HIC = 18 uR/h
HOG = 38 uR/h

May 16, 1985

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

ATTN: Coleen Campbell

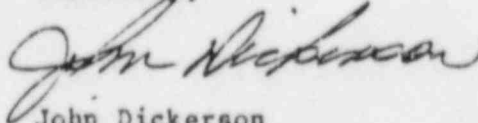
Dear Coleen:

The following is in response to your questions and comments during the Technical Review concerning Department of Energy (DOE) Identification (ID) number GJ-11585-RS (2010 Elm Avenue), conducted 15 May 1985.

The small shed (Shed 2) was locked at the time of the survey. I have noted that an interior scan be conducted during remedial action to assure the absence of contamination under Shed 2.

Thank you for your time and cooperation. If you should have additional questions or comments you may contact me at 242-8621, extension 506.

Sincerely,



John Dickerson
RSD Survey Team Leader

JD:pr

MEMORANDUM

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado 81501

DATE: May 3, 1985

TO: Files

FROM: John Dickerson

SUBJECT: GJ-11585-RS

Address: 2010 Elm Avenue

Owner: Arthur D. Bridgett

Team Members

J. Dickerson (Team Leader)
P. Tuhey
V. Young
S. Larsen

S. Southern
D. Dow
L. Kula

Instruments

Crutch Scintillometer - C-1127, C-1185, C-1163
Delta Scintillometer - C-3942
Total Count - C-3573
Downhole Spectrometer - C-3361

Date: April 30, 1985

The house is surrounded by concrete on three sides. The foundation investigation borehole located on the south side.

Three small anomalous spots were located by gamma scans, these will be investigated by delta scintillometer readings.

Team Leader Notes
John Dickerson
GJ-11585-RS
May 15, 1985
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The gas and sewer line will be checked for tailings involvement by shovel and boreholes, respectively, located in the alley along the east property line. The water line will be investigated by a borehole in the front (east) yard stone walk. No tailings involvement was found.

Date: April 30, 1985

The footing/foundation data will be obtained during the survey of the crawl space, if possible (W-N-E).

D. Mackler and H. Langner visited the site, they were frisked before leaving the property (as did Dave from Health and Safety).

Elevated readings adjacent to the city sidewalk - delta scanned.

Anomaly north of garage 18-inches deep.

Along the north edge of the sidewalk, sand (tailings) were visible under the sidewalk.

In front of the porch, anomaly due to brick wall immediately adjacent to and corresponding to the elevated area.

Property was picked up, restored.

All team members were frisked, negative results.

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Date: May 3, 1985

The pre-use operational check for instrument C-3361 (spectrometer) was incorrect. The instrument post-checked satisfactorily and an Incident Report (IR) has been filed.

The elevated area adjacent to the city sidewalk was due to "shine".

The elevated area immediately south of the front porch was due to the influence of the brick siding of the porch foundation.

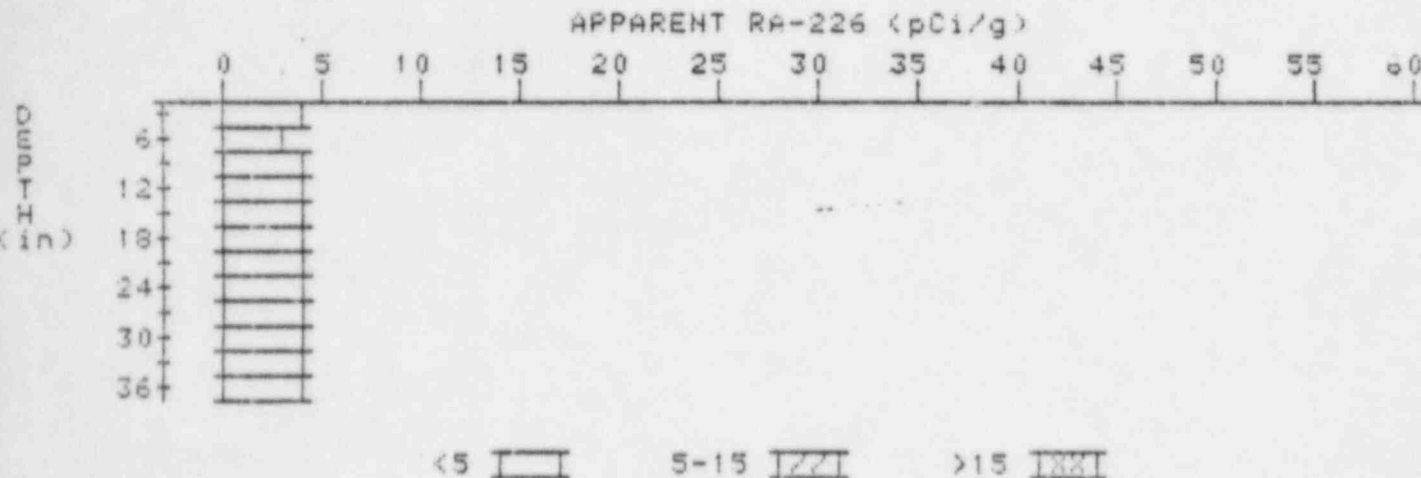
Contaminated area:

- A. The city sidewalk.
- B. A spot north of the garage.

All team members were frisked, negative results.

APPARENT RADIUM-226 CONCENTRATION 1 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-11585-RS
 HOLE NUMBER: 1
 LOCATION: 150240



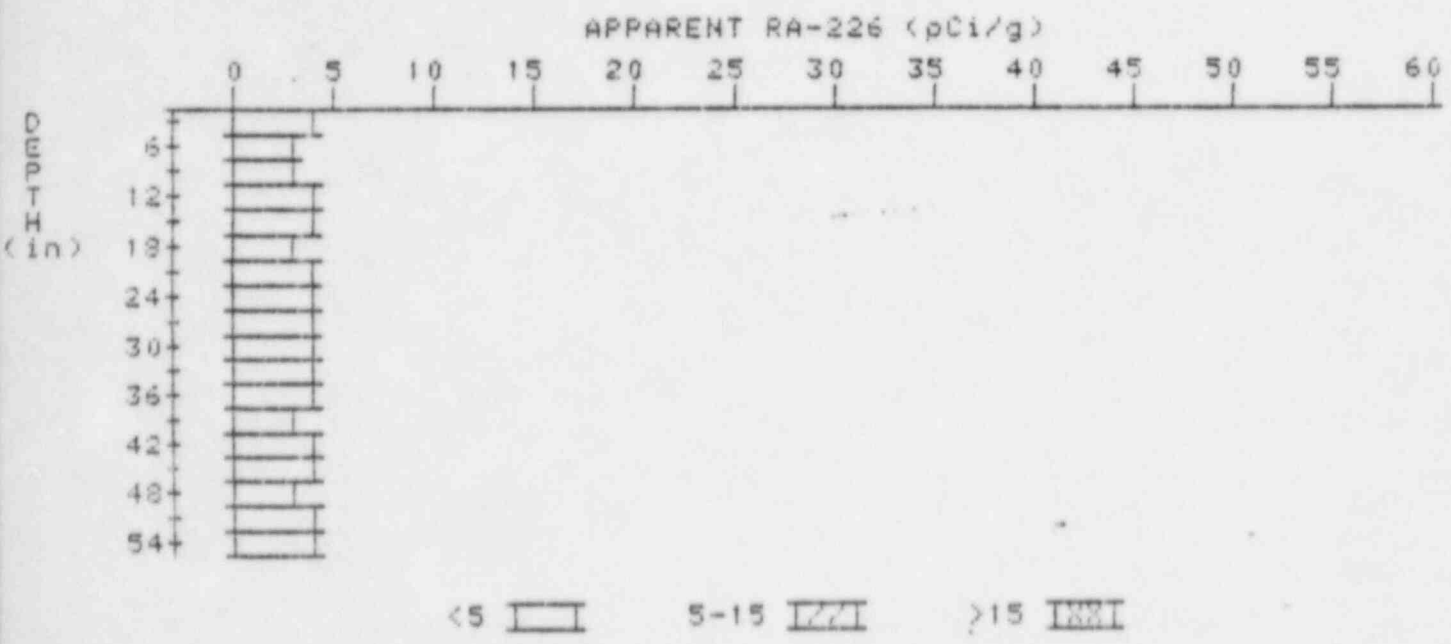
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.8	2.8
6	3.1	2.9
9	3.5	4.0
12	3.6	3.6
15	3.7	3.7
18	3.8	4.0
21	3.8	3.6
24	3.9	3.9
27	4.0	4.2
30	4.0	4.0
33	4.0	4.0
36	4.0	4.0

APPARENT RADIUM-226 CONCENTRATION

DECONVOLUTION GRAPH

4

PROPERTY NUMBER: GJ-11585-RS
HOLE NUMBER: 4
LOCATION: 193286



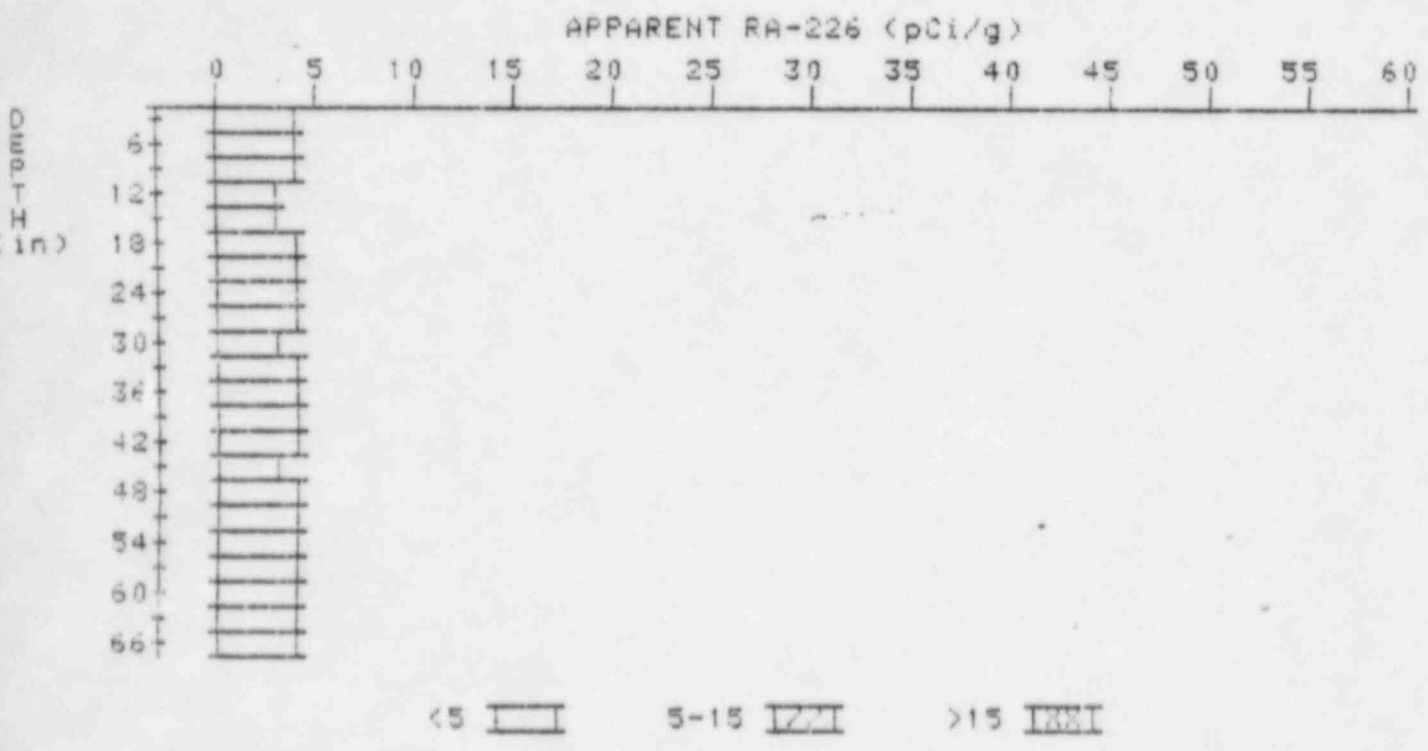
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.4	3.4
6	3.4	3.4
9	3.4	3.2
12	3.5	3.5
15	3.6	3.6
18	3.6	3.4
21	3.7	3.9
24	3.7	3.7
27	3.7	3.7
30	3.7	3.7
33	3.7	3.7
36	3.7	4.1
39	3.8	3.0
42	3.6	3.6
45	3.6	3.6
48	3.8	3.1
51	3.6	3.6
54	3.6	3.8

APPARENT RADIUM-226 CONCENTRATION

DECONVOLUTION GRAPH

6

PROPERTY NUMBER: GJ-11385-RS
HOLE NUMBER: 6
LOCATION: 221240



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

51
54
57
60
63
66

3.7
3.7
3.7
3.7
3.7
3.6

3.8
3.7
3.7
3.7
3.9
3.6

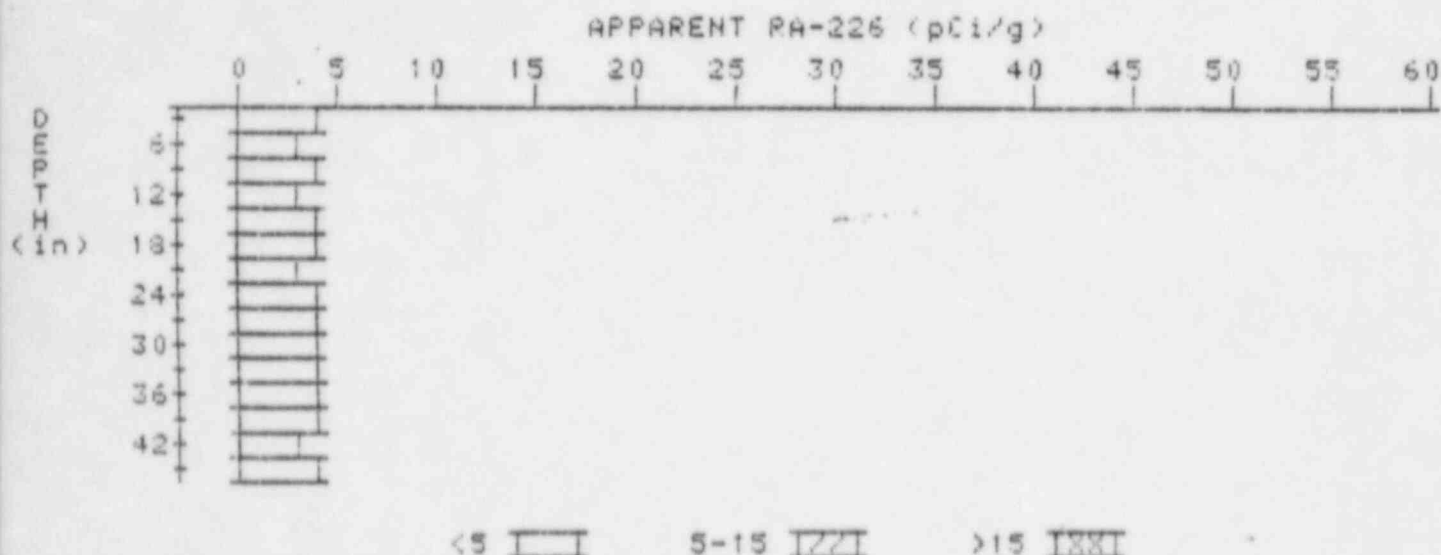
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

8

PROPERTY NUMBER: GJ-11585-RS

HOLE NUMBER: 8

LOCATION: 250249

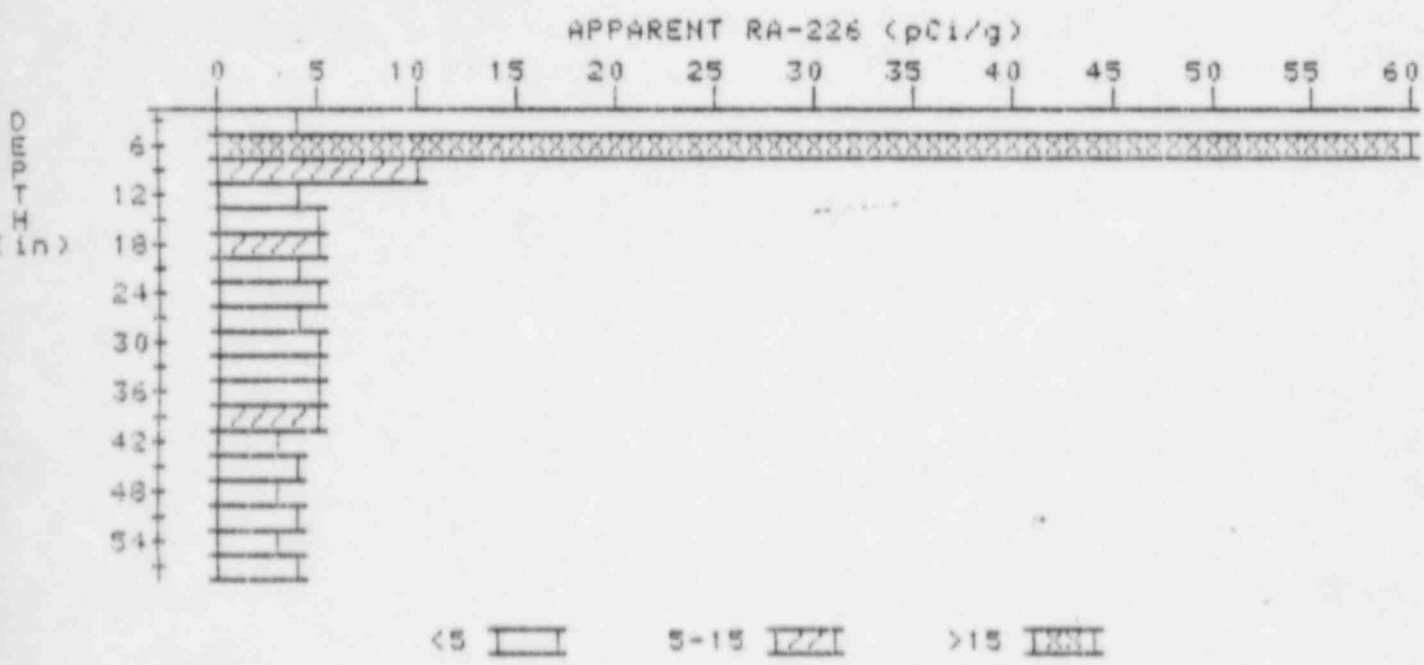


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.0	2.0
6	3.1	3.1
9	3.4	3.9
12	3.4	3.2
15	3.5	3.5
18	3.6	3.0
21	3.5	3.2
24	3.0	4.2
27	3.0	3.5
30	3.9	4.1
33	3.9	3.9
36	3.9	3.9
39	3.9	4.3
42	3.7	3.3
45	3.7	3.7

APPARENT RADIUM-226 CONCENTRATION 12

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-11585-RS
HOLE NUMBER: 12
LOCATION: 260250



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	28.5	28.5
6	32.1	61.6
9	19.1	9.7
12	11.4	3.9
15	7.9	4.5
18	6.3	5.2
21	5.3	4.2
24	4.9	4.7
27	4.6	4.1
30	4.6	4.6
33	4.6	4.6
36	4.6	4.6
39	4.5	5.2
42	4.0	3.5
45	3.9	4.1
48	3.7	3.3
51	3.7	3.9
54	3.6	3.4

