

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-10653-RS
ADDRESS: 631 OURAY 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
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APPROVED BY

Michael K. Tucker

M. TUCKER
DOE PROJECT ENGINEER

DATE

June 13, 1985

REA10653:REA-605

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-10653-RS, is a single-family residence located at 631 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, 7 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$1,226. Remedial action on this property will take approximately 7 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 631 Ouray Avenue, Grand Junction, Colorado 81501

Zoning: Residential (RMF-64)

Lot Size: Approximately 6,250 sf (0.1 acre)

Legal Description: Lots 9 and 10, Block 72, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 1 mile 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:	Ouray Avenue
South:	Alley (asphalt)
East:	Alley (asphalt)
West:	Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Two-story residence
Size:	Approximately 2,975 sf
Construction Date:	1920
Construction:	Wood-frame
Foundation:	Concrete stemwall on spread footing
Footing Depth:	Approximately from 8" to 60" to bottom of footing from grade
Basement:	Yes (partial)
Crawl Space:	Yes (partial)
Condition:	Good

Other Structures:

Type:	Garage
Size:	Approximately 248 sf
Construction:	Wood-frame
Foundation:	Concrete slab-on-grade
Condition:	Good

Type:	Shed
Size:	Approximately 48 sf
Construction:	Pre-fabricated metal
Foundation:	None
Condition:	Good

General Remarks:

The front and backyard are well landscaped. 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: Remodeled inside and outside

Architectural Significance: None

Historical Significance: None

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-10653-RS on April 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. These records indicate contamination in the south yard and in a rock collection by the southwest corner of the 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, 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: 14 to 15 uR/h
Highest Outside Gamma Reading (HOG): 342 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): 19 uR/h

The interior radium-concentration measurement is presented in Appendix Table 3.2. Interior gamma exposure-rate measurements are summarized in Appendix Table 3.3. 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 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 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) A small deposit east of the primary structure is contaminated to a depth of 6 inches (approximately 6 sf).
- (AREA B) There is 2 inches of contamination beneath the uncontaminated 4-inch-thick concrete fence footing. The deposit extends to a total depth of 6 inches (approximately 32 sf).
- (AREA C) A large deposit south of the south property line under the asphalt alley is contaminated to a depth of 6 inches (approximately 155 sf). This area shall not be removed because tailings are not removed when found under paved city streets and alleys.
- (AREA D) In the south yard, there is contamination to a depth of 6 inches (approximately 56 sf).
- (AREA E) A deposit in the center of the south yard is contaminated to a depth of 9 inches (approximately 154 sf).
- (AREA F) Contamination in the south yard extends to a depth of 6 inches (approximately 68 sf).

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-10653-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 \$1,226.

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	Exterior Gamma Scan
Figure 3.3a	Interior Gamma Exposure Rates and Sample Location
Figure 3.3b	Interior Gamma Exposure Rates
Figure 3.3c	Interior Gamma Exposure Rates
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-10653-RS

631 Ouray Avenue

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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	135265	00	DS	1.1		*	Background
		00-06	SS			1.9	North yard
		03	TC	2.7		*	DC = 0 inches
		06	TC	3.1		*	
		09	TC	3.4		*	
		12	TC	3.5		*	
		15	TC	3.6		*	
		18	TC	3.6		*	
		21	TC	3.7		*	
		24	TC	3.7		*	
		27	TC	3.6		*	
		30	TC	3.7		*	
		33	TC	3.7		*	
		36	TC	3.7		*	
3	160236	00	DS	2.8		*	Water line
		03	TC	3.3		*	North yard
		06	TC	3.5		*	DC = 0 inches
		09	TC	3.6		*	
		12	TC	3.6		*	
		15	TC	3.6		*	
		18	TC	3.7		*	
		21	TC	3.7		*	
		24	TC	3.7		*	
		27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.9		*	
4	165228	00	DS	1.9		*	West yard
		06	DS	1.7		*	
5	184265	03	TC	3.1		*	East yard
		06	TC	3.4		*	DC = 0 inches
		09	TC	3.6		*	
		12	TC	3.7		*	
		15	TC	3.8		*	
		18	TC	3.7		*	
		21	TC	3.6		*	
		24	TC	3.5		*	
		27	TC	3.5		*	
6	200221	00-06	SS			2.7	West yard
		03	TC	2.8		*	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.		
6	200221	06	TC	3.2		*	
		09	TC	3.4		*	
		12	TC	3.6		*	
		15	TC	3.6		*	
		18	TC	3.7		*	
		21	TC	3.7		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
7	208264	00	DS	1.2		*	Gas line
		22	DS	1.6		*	
8	212225	00	DS	1.2		*	Sewer line
		03	TC	2.9		*	DC = 0 inches
		06	TC	3.2		*	
		09	TC	3.5		*	
		12	TC	3.7		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.7		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	TC	3.6		*	
		33	TC	3.6		*	
		36	TC	3.7		*	
		39	TC	3.8		*	
		42	TC	3.7		*	
		45	TC	3.7		*	
		48	TC	3.7		*	
		51	TC	3.8		*	
		54	TC	3.9		*	
		57	TC	4.0		*	
9	220270	00	DS	3.3		*	Next to east alley
		06	DS	1.3		*	DC = 6 inches
10	225240	03	TC	2.9		*	South of primary
		06	TC	3.1		*	structure
		09	TC	3.4		*	DC = 0 inches
		12	TC	3.5		*	

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	225240	15	TC	3.5		*	
		18	TC	3.4		*	
		21	TC	3.5		*	
		24	TC	3.5		*	
		27	TC	3.4		*	
		30	TC	3.4		*	
		33	TC	3.4		*	
		36	TC	3.5		*	
		39	TC	3.5		*	
		42	TC	3.6		*	
		45	TC	3.6		*	
		48	TC	3.6		*	
		51	TC	3.6		*	
		54	TC	3.6		*	
		57	TC	3.6		*	
		60	TC	3.7		*	
		63	TC	3.7		*	
		66	TC	3.7		*	
		69	TC	3.8		*	
11	230250	00	DS	3.2		*	South yard
		06	DS	1.8		*	DC = 6 inches
12	240248	03	TC	15.2		*	South yard
		06	TC	10.1		*	DC = 9 inches
		09	TC	6.7		*	Based on the
		12	TC	5.1		*	deconvolution graph
		15	TC	4.4		*	
		18	TC	3.9		*	
		21	TC	3.7		*	
		24	TC	3.4		*	
		27	TC	3.2		*	
		30	TC	3.1		*	
13	240254	00-04	SS			1.2	Concrete core
		04-10	SS			1.0	Soil under core
		03	TC	2.8		*	
		06	TC	3.2		*	South yard
		09	TC	3.4		*	DC = 0 inches
		12	TC	3.4		*	
		15	TC	3.5		*	
		18	TC	3.4		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-10653-RS

631 Ouray Avenue

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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	240254	21	TC	3.4		*	
		24	TC	3.2		*	
		27	TC	3.1		*	
		30	TC	3.0		*	
		33	TC	3.1		*	
14	245245	00	DS	3.2		*	South yard
		06	DS	1.6		*	DC = 6 inches
15	248240	03	TC	2.9		*	South yard
		06	TC	3.0		*	DC = 0 inches
		09	TC	3.2		*	
		12	TC	3.2		*	
		15	TC	3.2		*	
		18	TC	3.3		*	
		21	TC	3.3		*	
		24	TC	3.4		*	
		27	TC	3.4		*	
		30	TC	3.5		*	
		33	TC	3.5		*	
		36	TC	3.4		*	
16	272225	00	DS	4.1		*	Concrete south yard
		08	DS	2.2		*	Horizontal
17	273246	00	DS	2.0		*	Concrete south yard
18	274220	00	DS	7.6		*	Alley south of fence
		06	DS	1.8		*	DC = 6 inches
19	273221	00-02	SS			1.6	Concrete chips
20	274230	00	DS	9.5		*	Alley south of fence
		06	DS	1.4		*	DC = 6 inches
21	274240	00	DS	16.0		*	Alley south of fence
		06	DS	1.4		*	DC = 6 inches

Measurement GB = GAD-6 Borehole
Types: DS = Delta Scintillometer
TC = Total Count Borehole
SS = Soil Sample

Notes: DC = Depth of Contamination
* = No Soil Sample Taken
Date of Survey = 04-17-85
Team Leader = MJH

Radium Concentrations at Interior Locations

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In Situ Ra-226							
Loc	Grid	Depth	Meas.	(pCi/g)		Chem Ra-226	Comments
#	Location	(in.)	Type	Tot. Ct	Spectr.	(pCi/g)	
-----	-----	-----	-----	-----	-----	-----	
1		00-06	SS			1.2	

=====

Measurement	GB = GAD-6 Borehole	Notes:	DC = Depth of Contamination
Types:	GS = GAD-6 Surface		* = No Soil Sample Taken
	DS = Delta Scintillometer		[n] = Reading Taken n-Inches
	TC = Total Count Borehole		Above Floor or Ground
	SS = Soil Sample		Date of Survey = 04-17-85
	BH = Combined GAD-6 and		Team Leader = MJH
	Total Count Borehole		

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	00	-	-	15	15-18	16
ROOM A	05	16-18	17	05	17-18	17
ROOM B	05	16-17	16	05	16-17	17
ROOM C	05	16-17	16	05	17-17	17
ROOM D	07	14-17	16	07	16-17	16
ROOM E	05	17-19	18	05	17-19	18
ROOM F	01	19-19	19	01	18-18	18
ROOM G	01	16-16	16	01	16-16	16
ROOM H	01	17-17	17	01	17-17	17
ROOM I	01	16-16	16	01	17-17	17
ROOM J	08	14-17	16	08	16-18	18
ROOM K	10	13-17	14	10	13-19	15
ROOM L	05	13-14	14	05	13-15	14
ROOM M	07	13-14	14	07	13-14	14
ROOM N	03	13-14	14	03	14-15	14
ROOM O	05	13-14	14	05	13-15	14
ROOM P	05	13-14	14	05	14-14	14
ROOM Q	01	13-13	13	01	14-14	14
ROOM R	01	13-13	13	01	14-14	14

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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)
ROOM S	01	13-13	13	01	14-14	14
ROOM T	07	13-14	14	07	14-14	14
FIRST FLOOR	*	*	*	*	14-16	*
GARAGE	*	*	*	*	14-15	*
SHED	*	*	*	*	14-16	*

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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. These areas and the ranges of gamma measurements are shown in Appendix Figures 3.3b and 3.3c. Exposure rates in the crawl space, basement, and ground floor are shown in Appendix Figures 3.3a and 3.3b.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-10653-RS

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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					
	Concrete				
B	32 x 0.6 =	19	x 0.3 =	6	
	Volume of Concrete =				6 = 6/27 = 0.2
	Contaminated Fill				
A	3 x 2 =	6	x 0.5 =	3	
B	32 x 1 =	32	x 0.2 =	6	
*C	Not to be Removed				
D	4 x 14 =	56	x 0.5 =	28	
E	14 x 11 =	154	x 0.8 =	123	
F	4 x 17 =	68	x 0.5 =	34	
	Volume of Fill =				194 = 194/27 = 7
TOTAL VOLUME - EXTERIOR				=	7

*Note: Area C is outside the property line in the asphalt alley. Tailings are not removed when found under paved city streets and alleys.

See Appendix Figure 3.5 For Areas

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Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-10653-RS

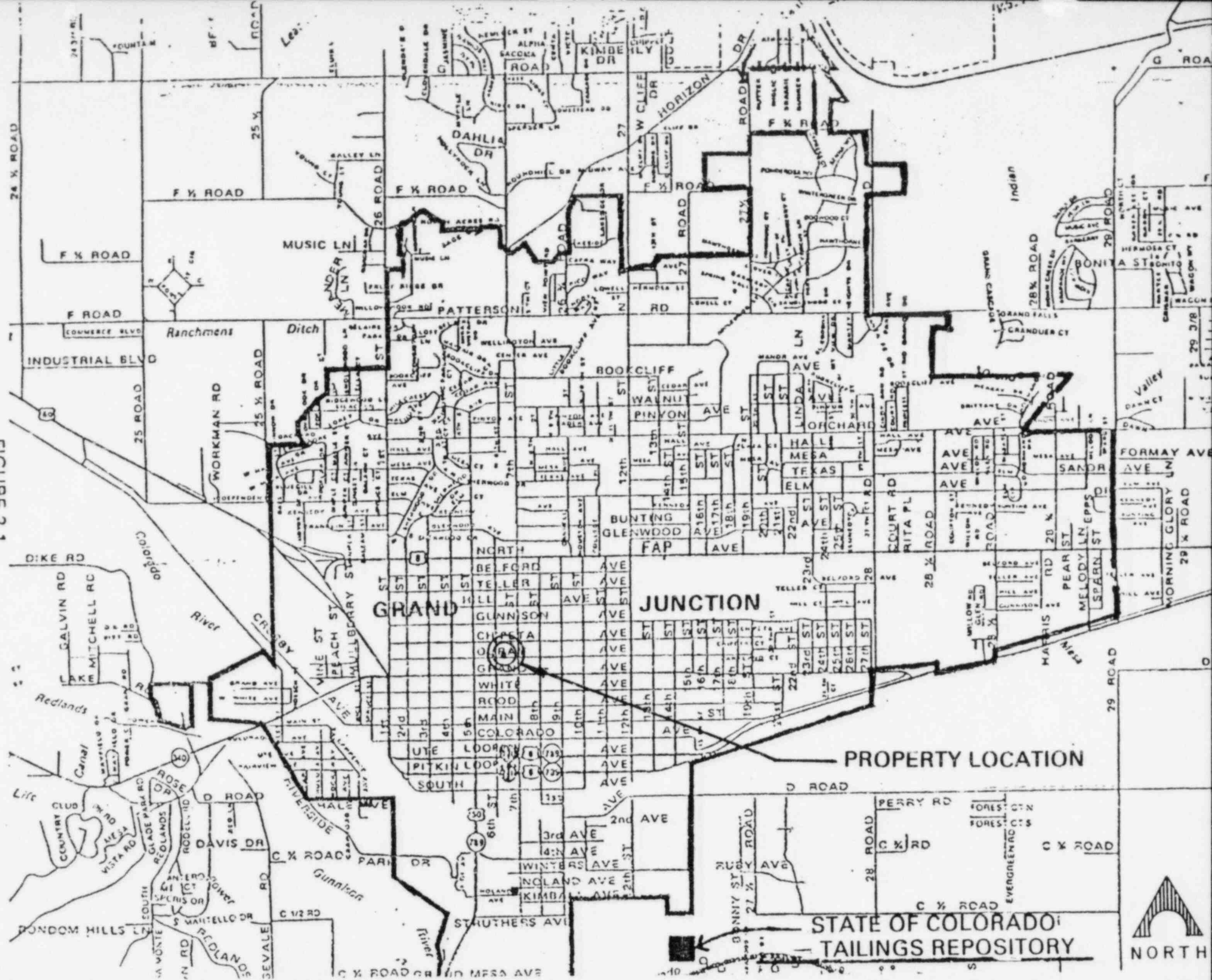
Page 1 of 1

Remove identified residual radioactive material		
6 cy @ \$14.50/cy (machine-open)	\$	87
1 cy @ \$44/cy (manual-open)		44
Remove/replace concrete fence footing		
32 sf @ \$3/sf		96
Replace topsoil		
6 cy @ \$9.50/cy		57
Replace sod		
278 sf @ \$.30/sf		83
Remove/replace fence		
32 lf @ \$2/lf		64
		<hr/>
TOTAL EXTERIOR	\$	431
TOTAL INTERIOR		0
ACCESS CONTROL		250
		<hr/>
SUBTOTAL	\$	681
CONTINGENCY @ 20%		136
		<hr/>
SUBTOTAL	\$	817
CONTRACTOR OVERHEAD & PROFIT @ 50%		409
		<hr/>
GRAND TOTAL	\$	1,226

=====

LR060685
REA10653/REA-605/LMR

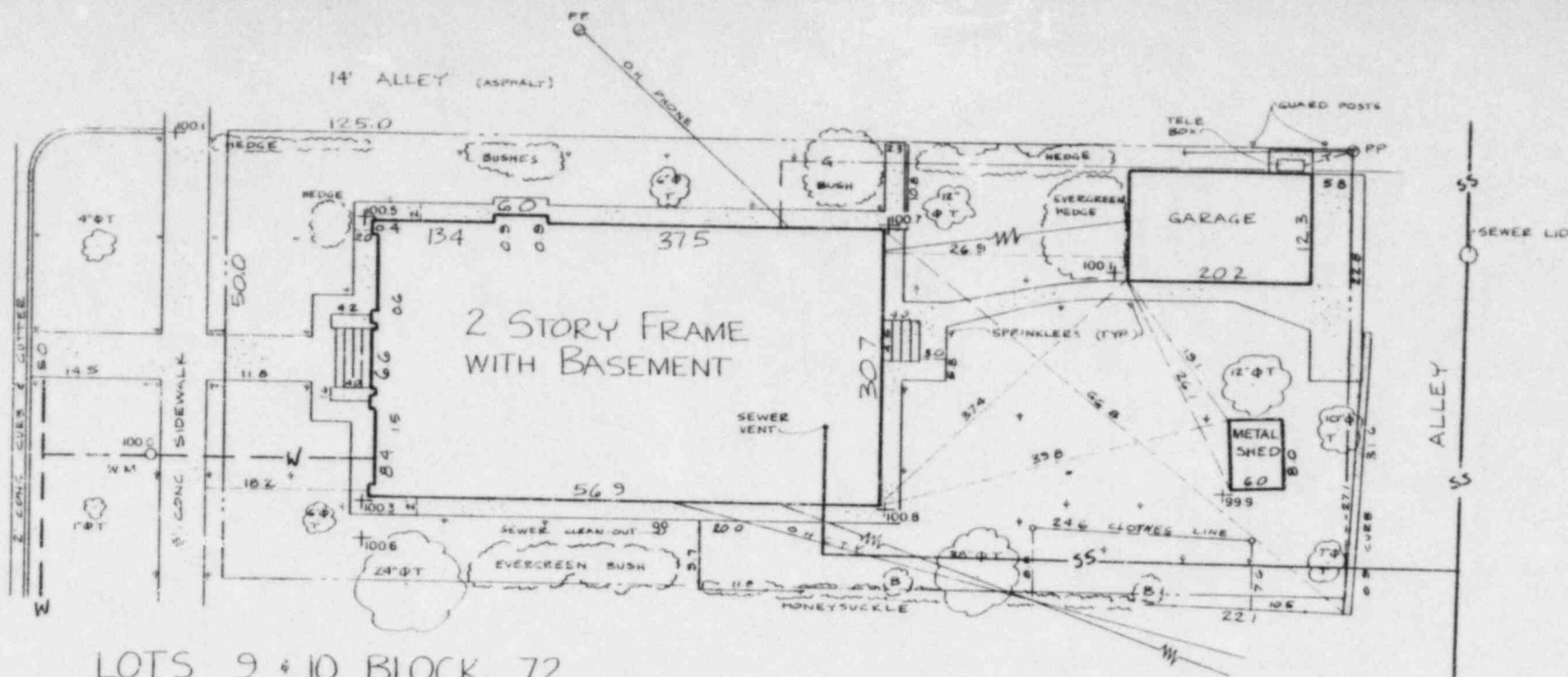
FIGURE 2.1
VICINITY MAP



STATE OF COLORADO
TAILINGS REPOSITORY

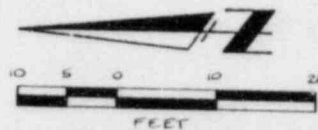


OURAY AVE
(33' ASPHALT)



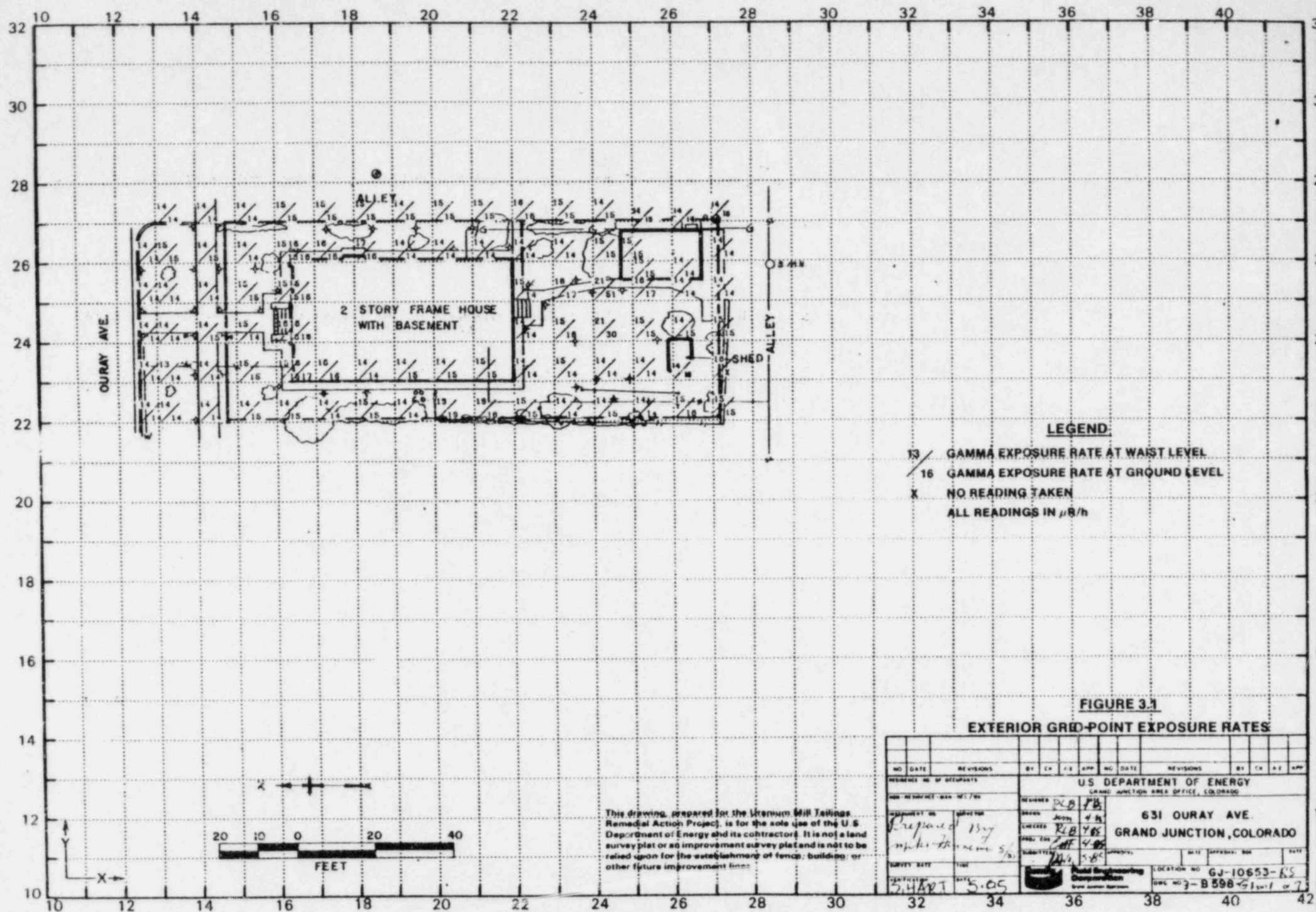
LOTS 9 & 10 BLOCK 72
GRAND JUNCTION
MESA COUNTY COLORADO

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		DOE ID NO
GRAND JUNCTION PROJECT OFFICE, COLORADO		GJ 10653R9
ADDRESS 631 OURAY AVENUE		
GRAND JUNCTION, COLO		
SURV RLB/4185	DRAFT TJ/4285	CK JAP 4-3-85
DRAWING NO 3 C 558	F1	SHEET 1 OF 1



This drawing, prepared for the Western Air 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.

WALTON AND YORK, ENGINEERS													
NO	DATE	REVISIONS	BY	CH	12	APP	NO	DATE	REVISIONS	BY	CH	12	APP
RESIDENCE NO. OF DEPARTMENTS				U.S. DEPARTMENT OF ENERGY									
ADD. ADDRESS - MAILING				L-1000 JUNCTION AREA OFFICE, COLORADO									
REMARKS				631 OURAY AVE. GRAND JUNCTION, COLORADO									
SURVEY DATE				DATE									
LOCATION NO.				GJ-10653-KS									
DATE				GJS-3-B598-1st of 2									

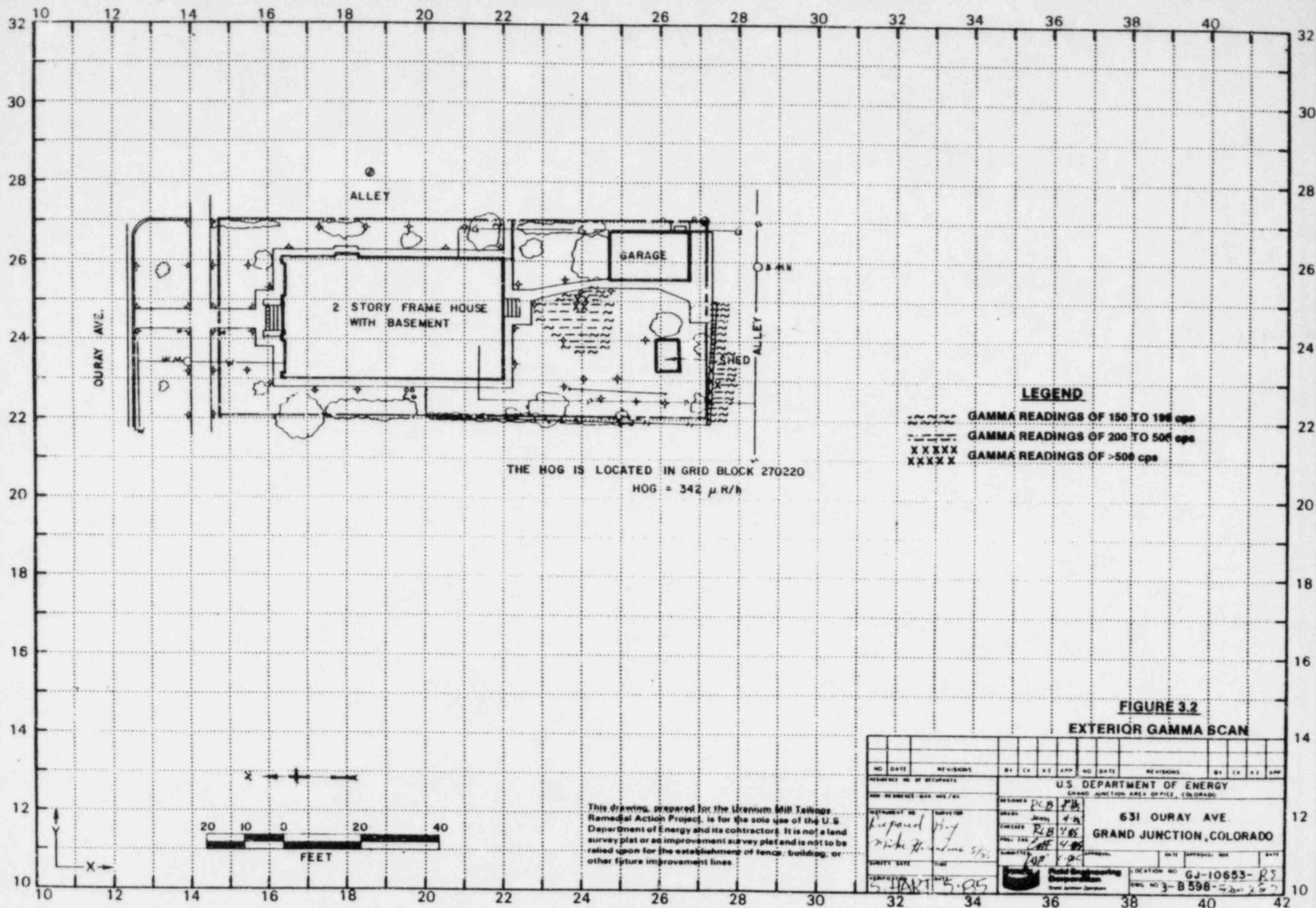
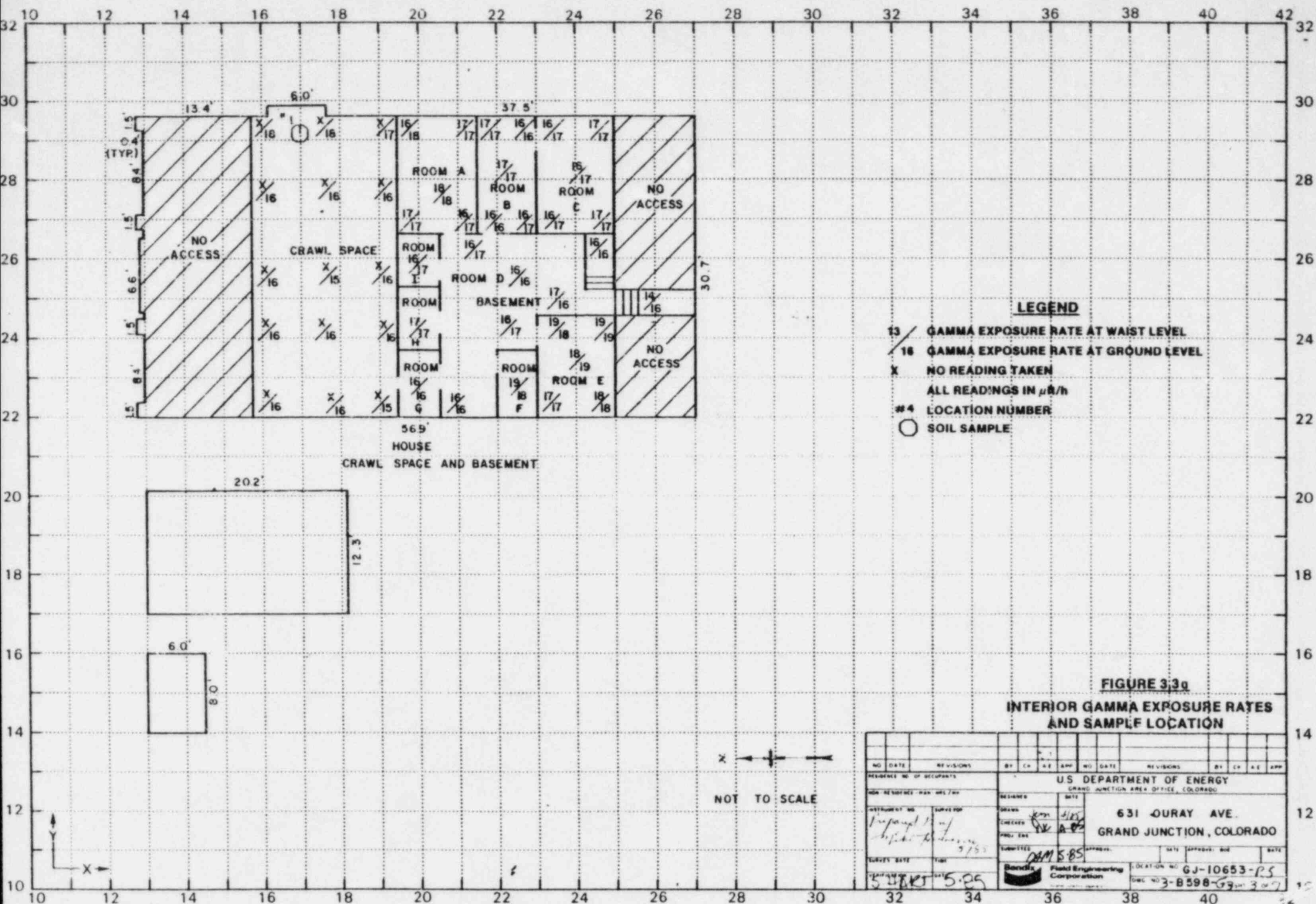
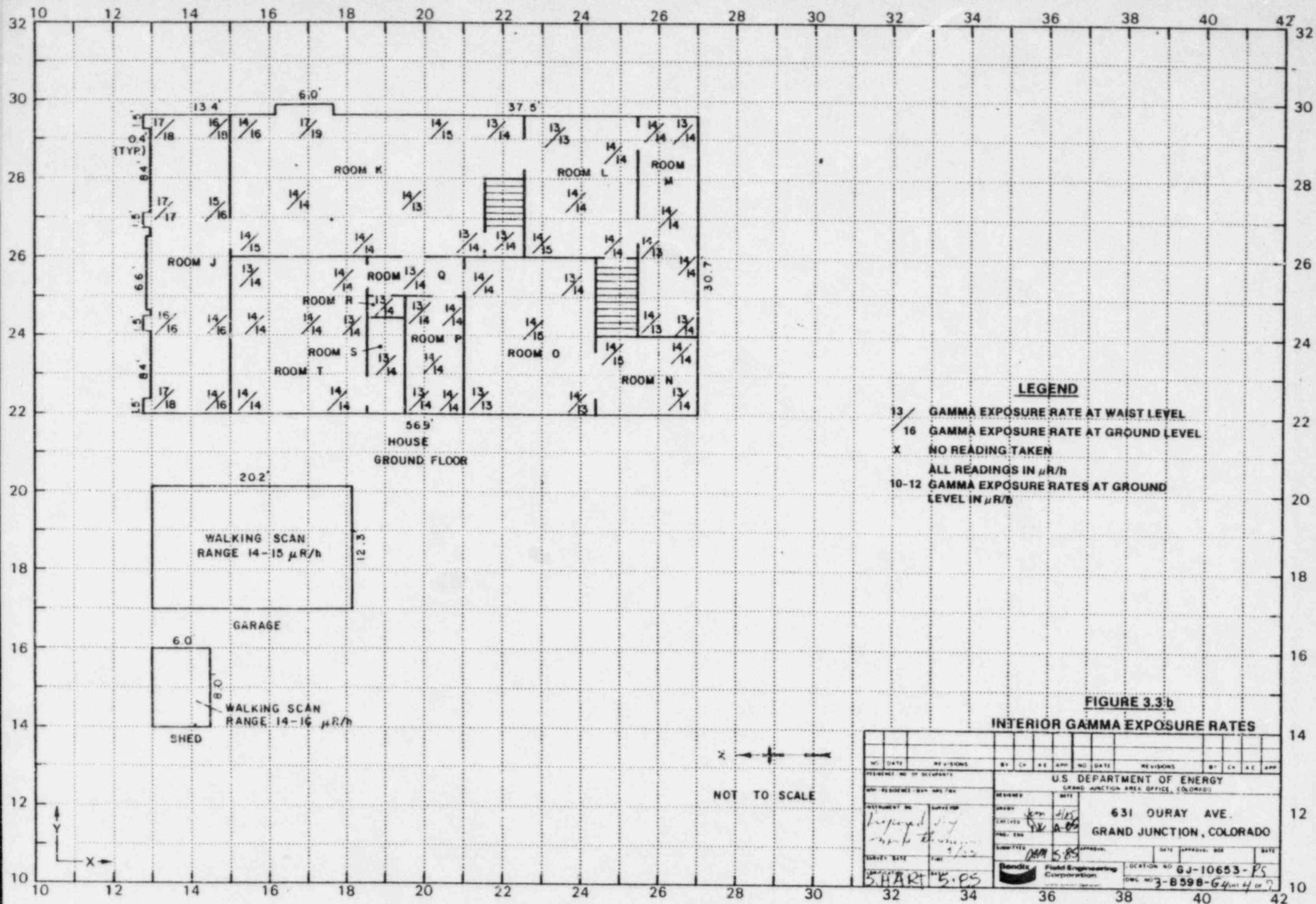


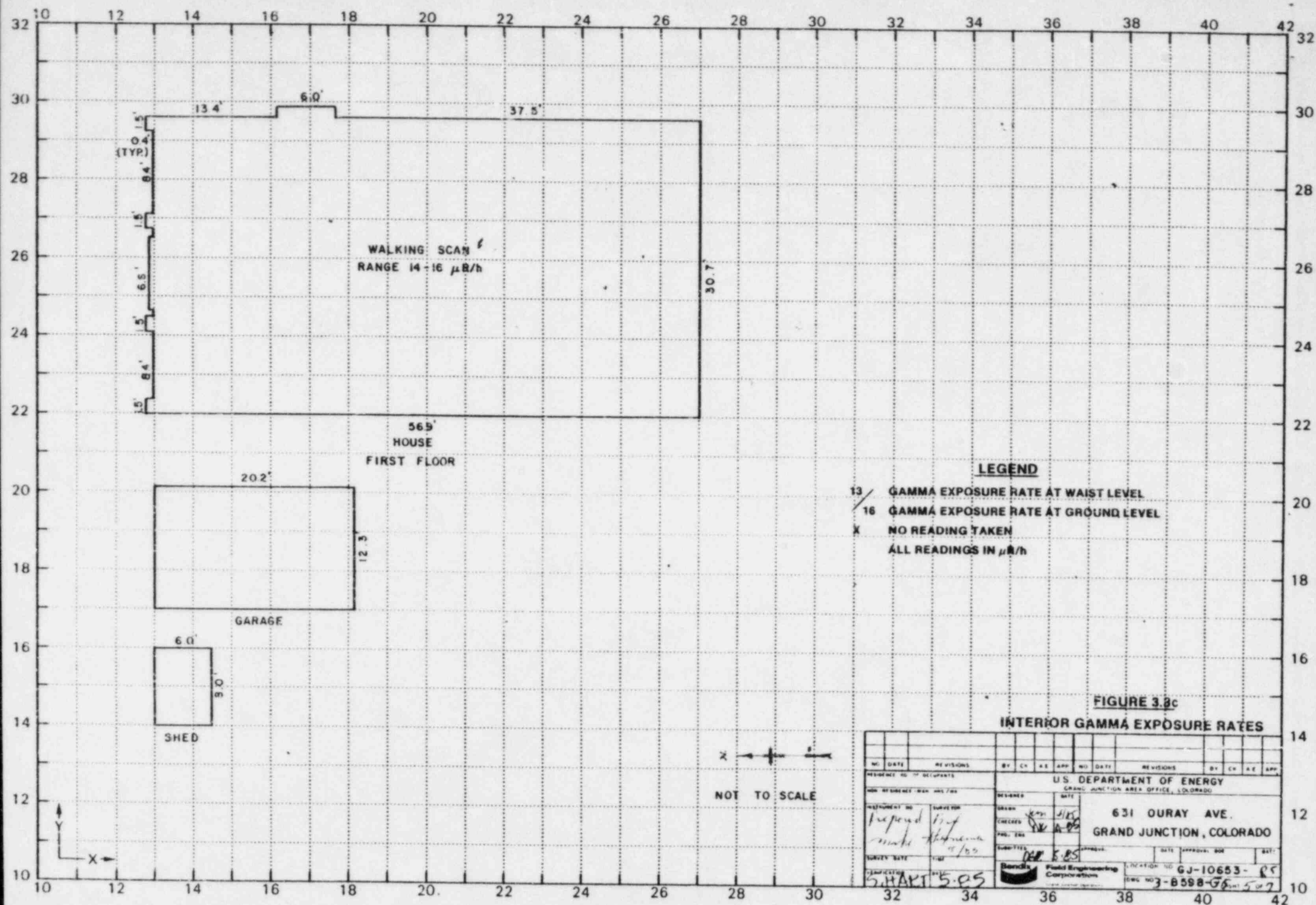
FIGURE 3.2
EXTERIOR GAMMA SCAN

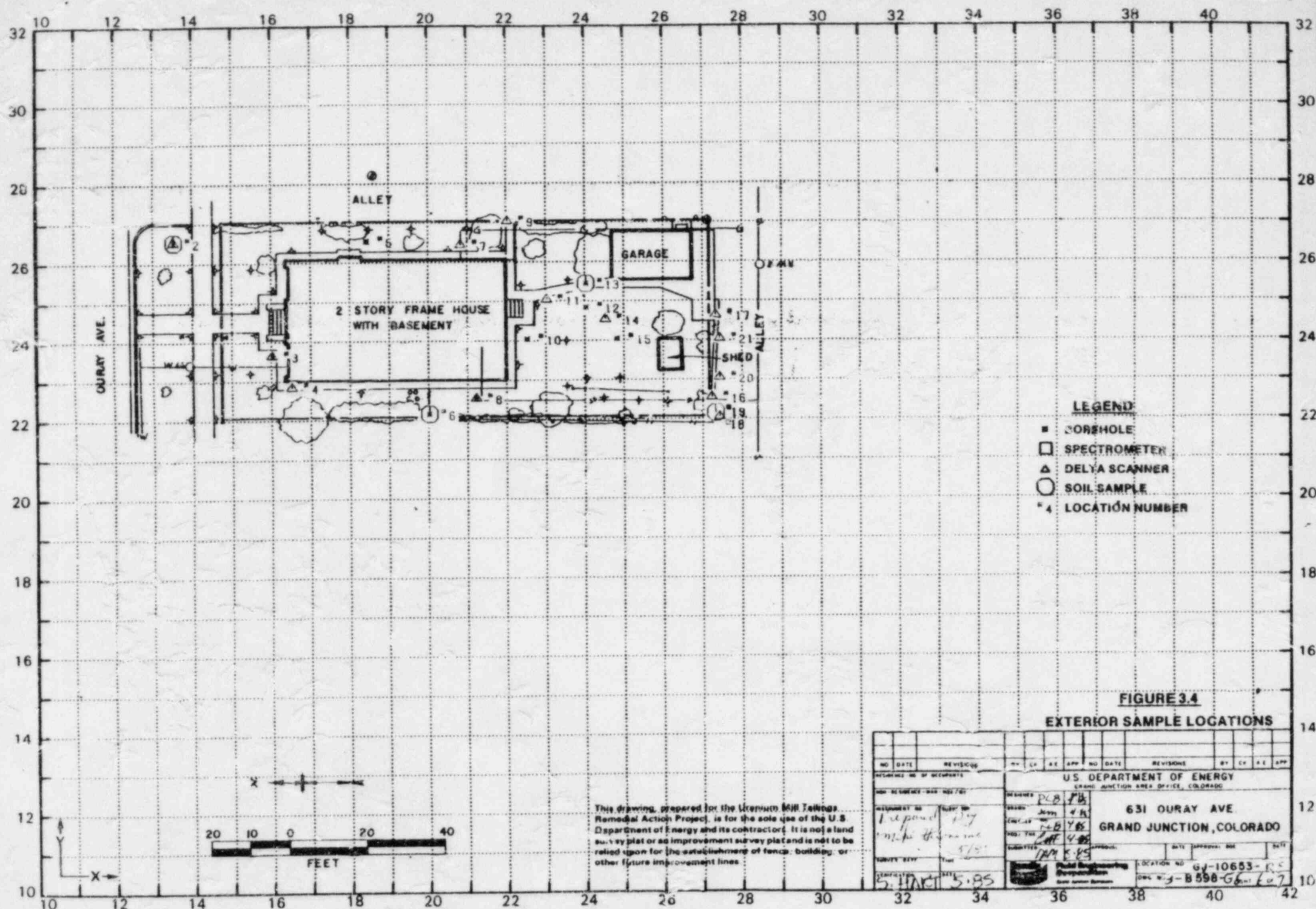
EXTENSION GAMMA SCAR																					
NO		DATE		REVISIONS				BY		CR		DATE		REVISIONS		BY		CR		DATE	
REQUESTOR NO. OF DEPARTMENTS U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO 631 OURAY AVE. GRAND JUNCTION, COLORADO																					
NAME		RESIDENCE		WORK		DATE		BY		CR		DATE		REVISIONS		BY		CR		DATE	
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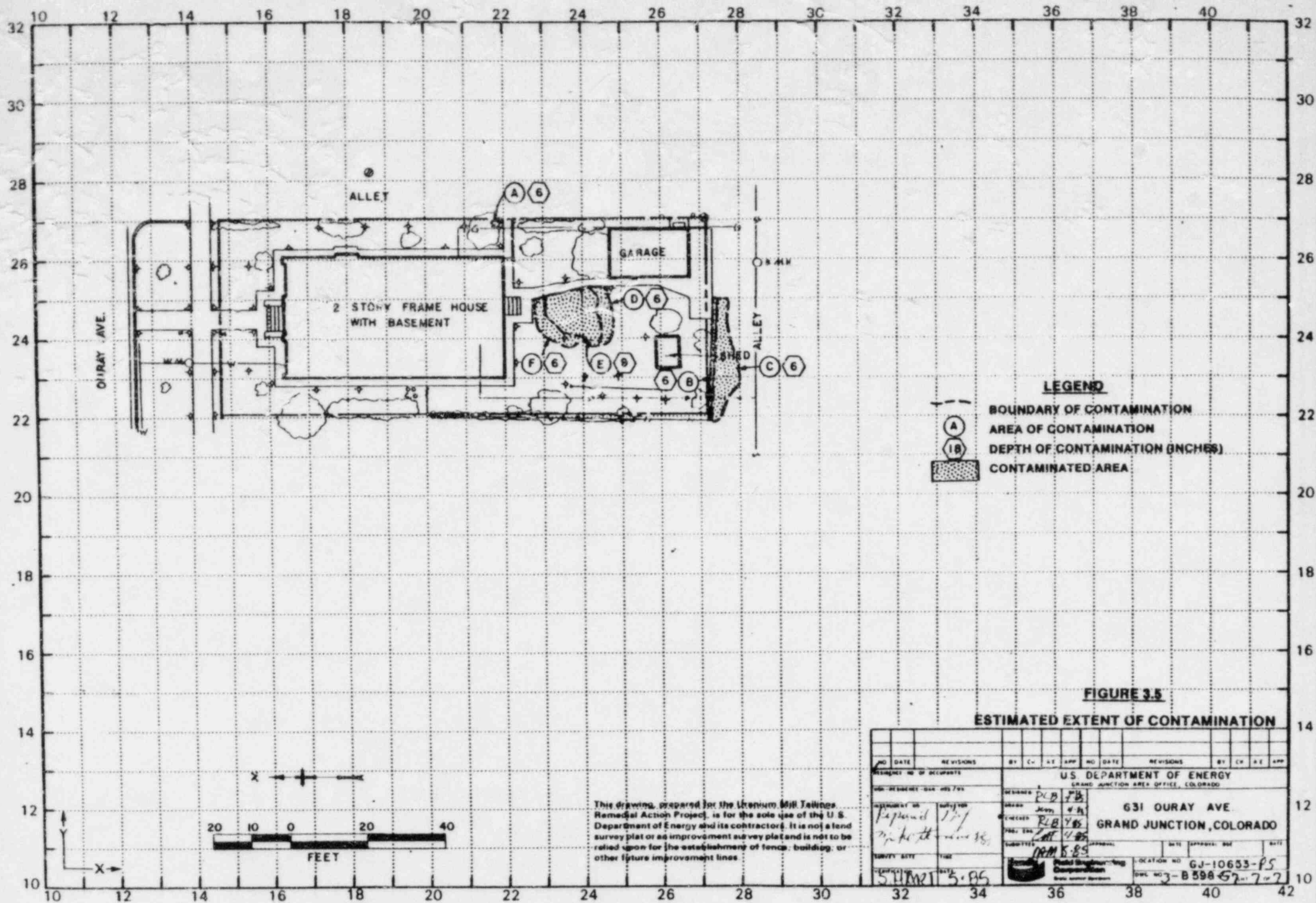




NO. DATE		REVISIONS		BY CH		DATE		REVISIONS		BY CH		DATE	
RESIDENT NO. OF OCCUPANTS				U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO									
APP. RESIDENT SIGN AND DATE				DESIGNED DATE				631 OURAY AVE. GRAND JUNCTION, COLORADO					
SURVEY NO.				DRAWN DATE				631 OURAY AVE. GRAND JUNCTION, COLORADO					
SURVEY DATE				CHECKED DATE				631 OURAY AVE. GRAND JUNCTION, COLORADO					
SURVEY TIME				SUBMITTED DATE				631 OURAY AVE. GRAND JUNCTION, COLORADO					
SHART 5.85				FIELD ENGINEERING CORPORATION				631 OURAY AVE. GRAND JUNCTION, COLORADO					
32 34				36 38				40 42					







3/85

DOE ID NO. GJ-10653-RS

Date 5/15/85

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

Official Survey Report

Property Address 631 Ouray Avenue

Property Owner Nathin M. and M. L. Liff

Address of Owner (if different from above) NA

Report Prepared By Mike Heronema

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

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

☒ 1 Residual radioactive materials found at the following locations:

☒ 1 In open areas.

☒ 1 Under or around exterior improvements.

☐ 1 Under or around a typically nonoccupied structure.

☐ 1 Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

☐ 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 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 = 19 uR/h
HOG = 342 uR/h

May 8, 1985

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

ATTN: Jon Luellen

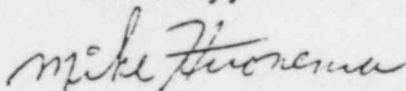
Dear Jon:

The following is in response to your questions and comments during the Technical Review concerning Department of Energy (DOE) Identification (ID) number GJ-10653-RS.

1. The sewer clean-out is part of the existing system. No elevated gamma readings were encountered in this area.
2. Table 3.1 will be changed to read Depth of Contamination equals 9 inches (DC = 9").
3. These samples are not available. A copy will be sent to CDH at completion.

Thank you for your time and cooperation. If you should have additional questions or comments you may contact me at 242-8621, extension 433.

Sincerely,



Mike Heronema
RSD Survey Team

MH:pr

ALLIED Bendix
Aerospace

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

DATE: April 17, 1985
TO: Files
FROM: Mike Heronema
SUBJECT: GJ-10653-RS

Address: 631 Ouray Avenue

Owner(s): AB & B Company
Nathan M. Liff

Team Members

M. Heronema (Team Leader)	R. Schouten
V. Rothman	A. Quintana
S. Larsen	L. Kula
R. Herman	H. Mattison

Utilities were investigated with no apparent contamination.

Elevated gamma readings south of the back fence were investigated.

Shine from a rock and ore collection is suspected. The collection is mixed with wood and miscellaneous materials on the south side of the fence.

A large mineral collection is the suspected cause of elevated gamma readings throughout the house.

The basement floor is original with no apparent improvement.

Natural radiation in the brick is the suspected cause of elevated gamma readings on the north porch.

The house is over 65 years old, per Mr. Liff (owner).

Team Leader Notes
Mike Heronema
GJ-10653-RS
April 17, 1985
Page 2

Shine from a contaminated concrete pad on the adjacent property is the cause of elevated gamma readings on grid-points 200220 and 210220.

A wood pile is shielding the shine from these grid blocks.

The occupants of the adjacent property were not available to sign the appropriate spillover form. Future contact will be attempted at a later date.

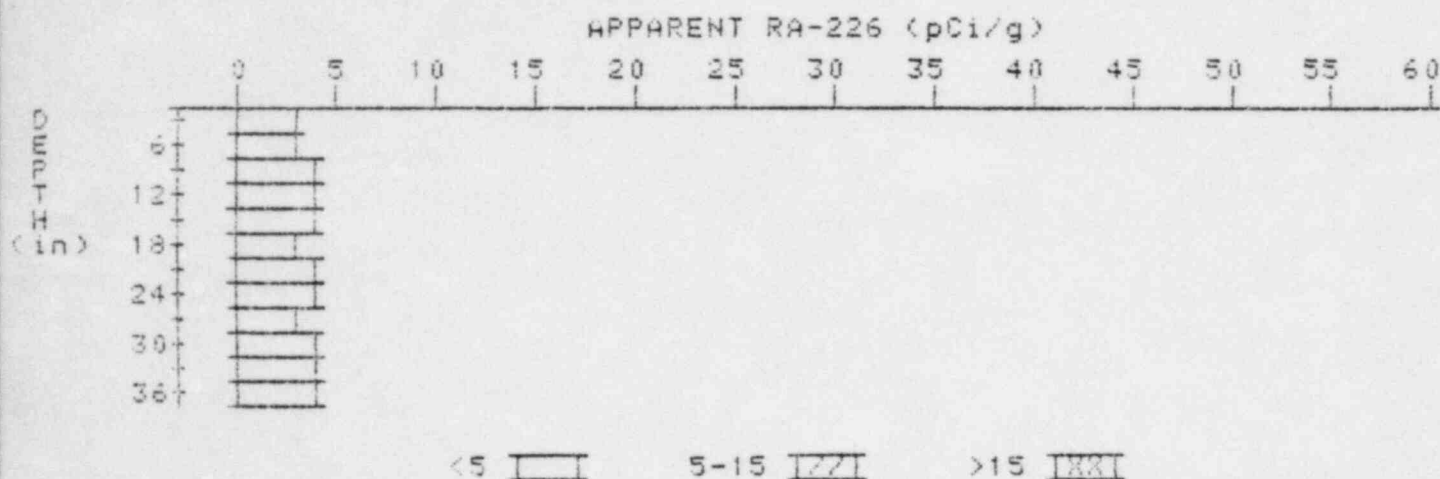
Spillover address: 629 Ouray Avenue

Owner: E.D. Clements
2528 North 12th

Telephone: 242-5965

APPARENT RADIUM-226 CONCENTRATION 2 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10653-RS
 HOLE NUMBER: 2
 LOCATION: 135265



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.7	2.7
6	3.1	3.3
9	3.4	3.8
12	3.5	3.5
15	3.6	3.8
18	3.6	3.4
21	3.7	3.9
24	3.7	3.9
27	3.6	3.2
30	3.7	3.9
33	3.7	3.7
36	3.7	3.7

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

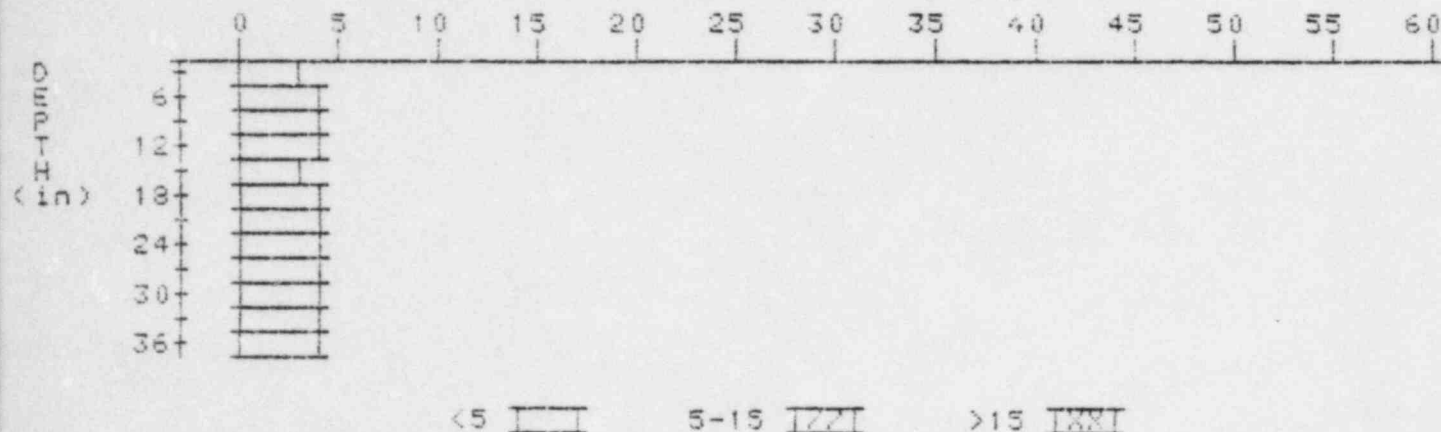
3

PROPERTY NUMBER: GJ-10653-RS

HOLE NUMBER: 3

LOCATION: 160236

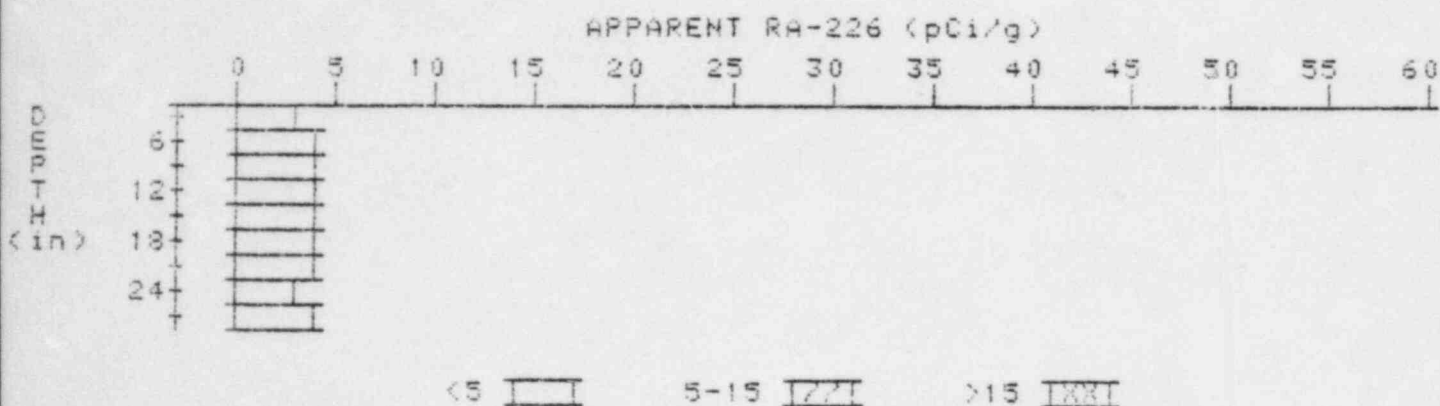
APPARENT RA-226 (pCi/g)



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.3	3.3
6	3.5	3.7
9	3.6	3.8
12	3.6	3.6
15	3.6	3.4
18	3.7	3.9
21	3.7	3.7
24	3.7	3.5
27	3.8	4.0
30	3.8	3.8
33	3.8	3.6
36	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION 5 DECONVOLUTION GRAPH

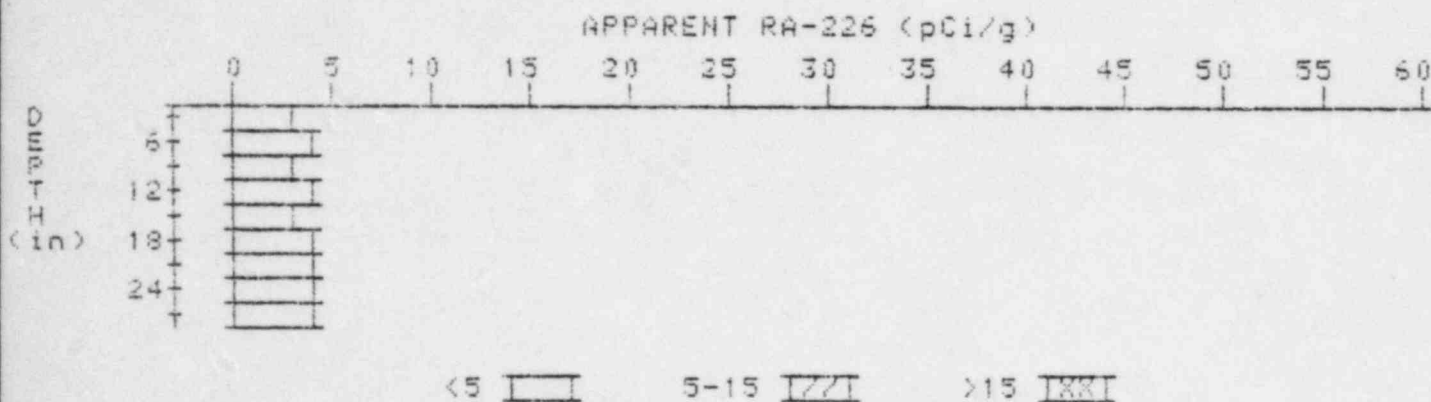
PROPERTY NUMBER: GJ-10653-RS
HOLE NUMBER: 5
LOCATION: 184265



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.4	3.6
9	3.6	3.8
12	3.7	3.7
15	3.8	4.2
18	3.7	3.7
21	3.6	3.6
24	3.5	3.3
27	3.5	3.5

APPARENT RADIUM-226 CONCENTRATION 6 DECONVOLUTION GRAPH

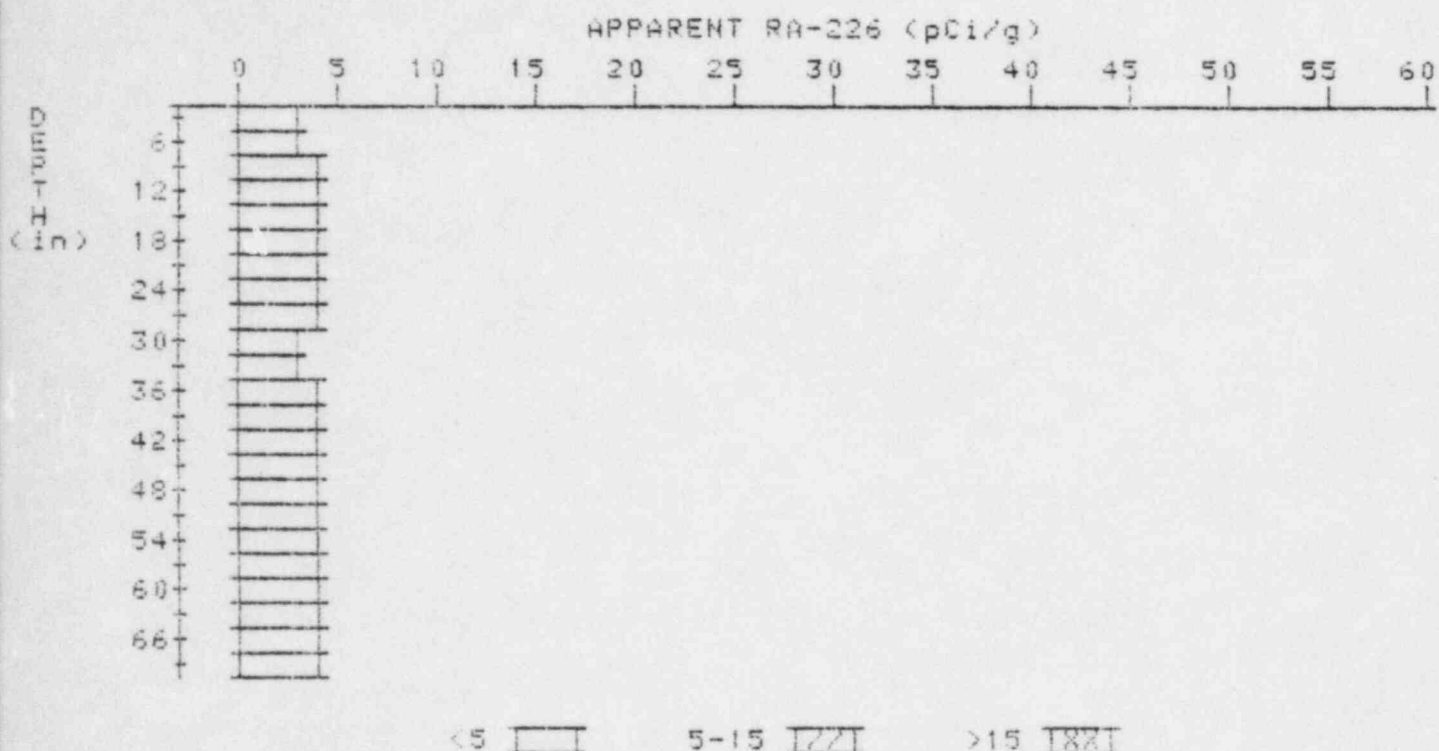
PROPERTY NUMBER: GJ-10653-RS
HOLE NUMBER: 6
LOCATION: 200221



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.8	2.8
6	3.2	3.6
9	3.4	3.4
12	3.6	4.0
15	3.6	3.4
18	3.7	3.9
21	3.7	3.5
24	3.8	4.0
27	3.8	3.8

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 8

PROPERTY NUMBER: GJ-10653-RS
HOLE NUMBER: 8
LOCATION: 212225



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.2	3.2
9	3.5	3.7
12	3.7	3.9
15	3.8	4.0
18	3.8	4.0
21	3.7	3.6
24	3.7	3.7
27	3.7	3.9
30	3.6	3.4
33	3.6	3.4
36	3.7	3.7
39	3.8	4.2
42	3.7	3.5
45	3.7	3.7

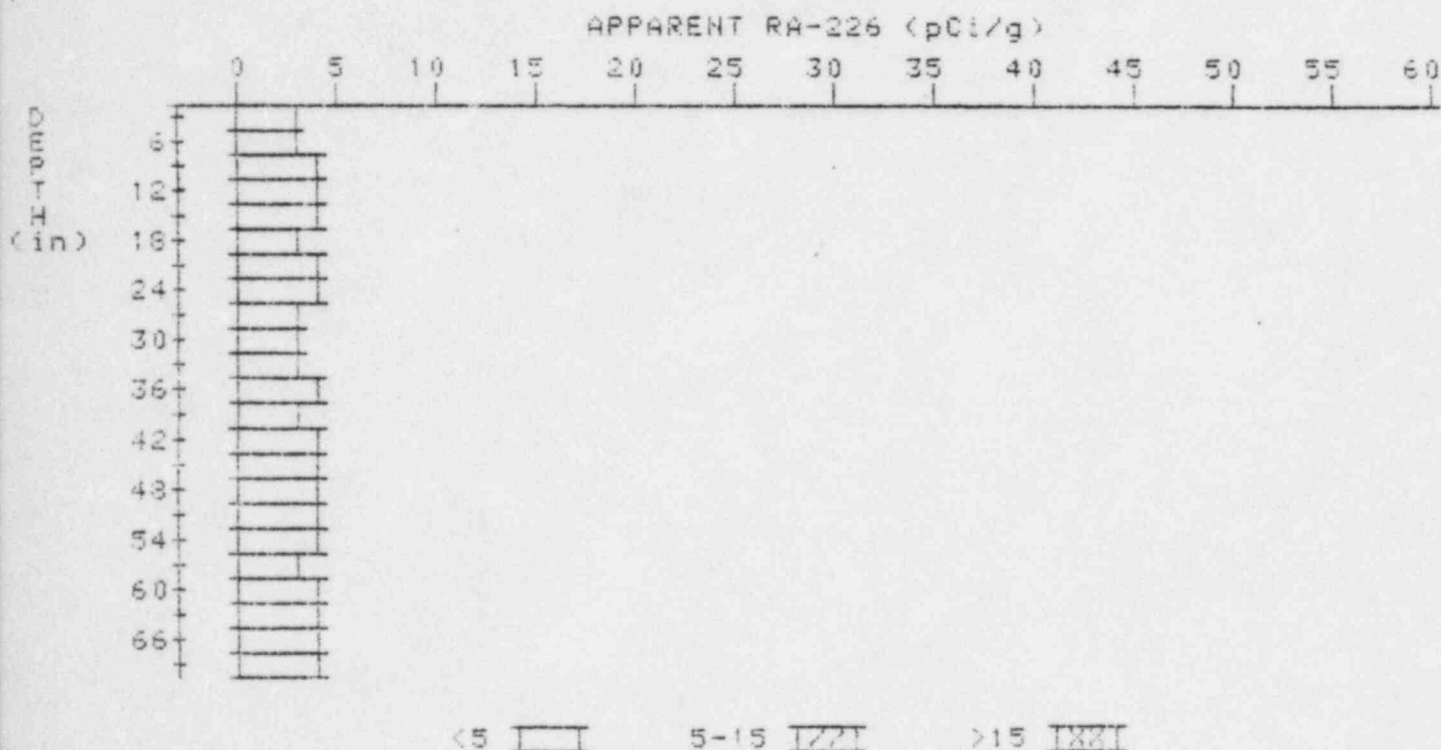
48
51
54
57
60
63
66
69

3.7
3.8
3.9
4.0
4.0
4.0
4.0
4.1

3.5
3.8
3.9
4.2
4.0
4.0
3.8
4.1

APPARENT RADIUM-226 CONCENTRATION 10 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10653-RS
HOLE NUMBER: 10
LOCATION: 225240



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

48
51
54
57
60
63
66
69

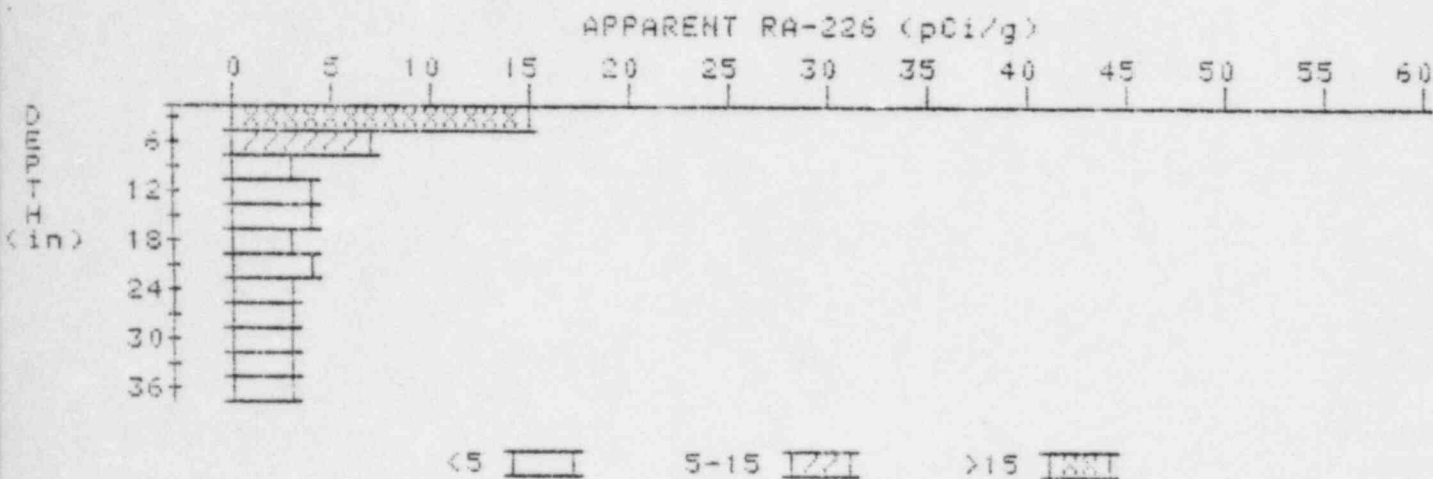
3.6
3.6
3.6
3.6
3.7
3.7
3.7
3.8

3.6
3.6
3.6
3.4
3.9
3.7
3.5
3.8

APPARENT RADIUM-226 CONCENTRATION 12

DECONVOLUTION GRAPH

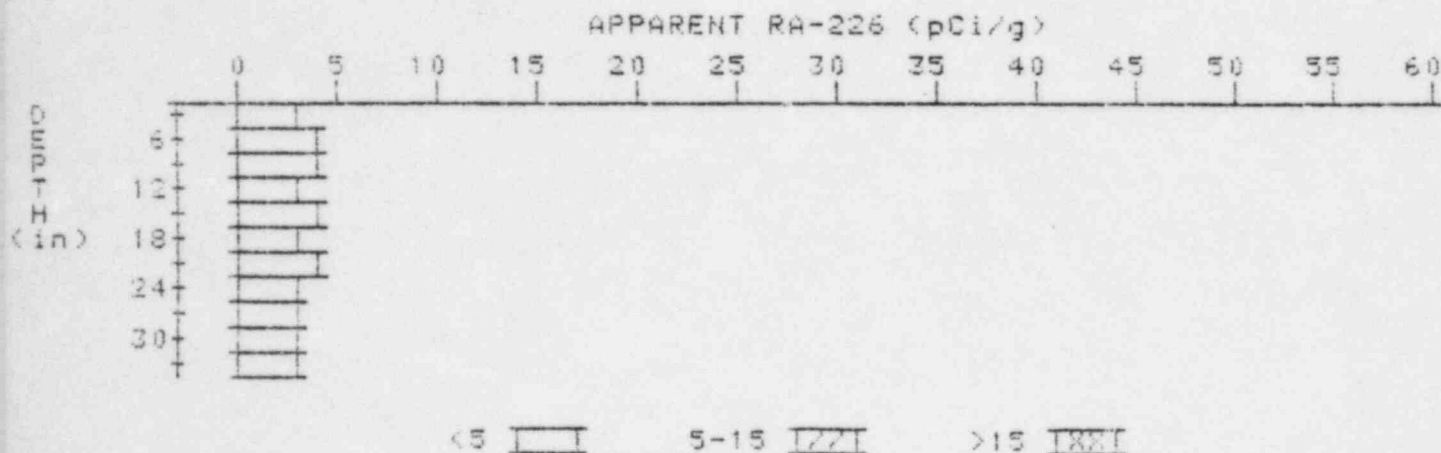
PROPERTY NUMBER: GJ-10553-R3
HOLE NUMBER: 12
LOCATION: 240248



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	15.2	15.2
6	10.1	7.1
9	6.7	3.5
12	3.1	3.5
15	4.4	4.0
18	3.9	3.4
21	3.7	3.9
24	3.4	3.2
27	3.2	3.0
30	3.1	3.1
33	3.0	3.0
36	2.9	2.9

APPARENT RADIUM-226 CONCENTRATION 13 DECONVOLUTION GRAPH

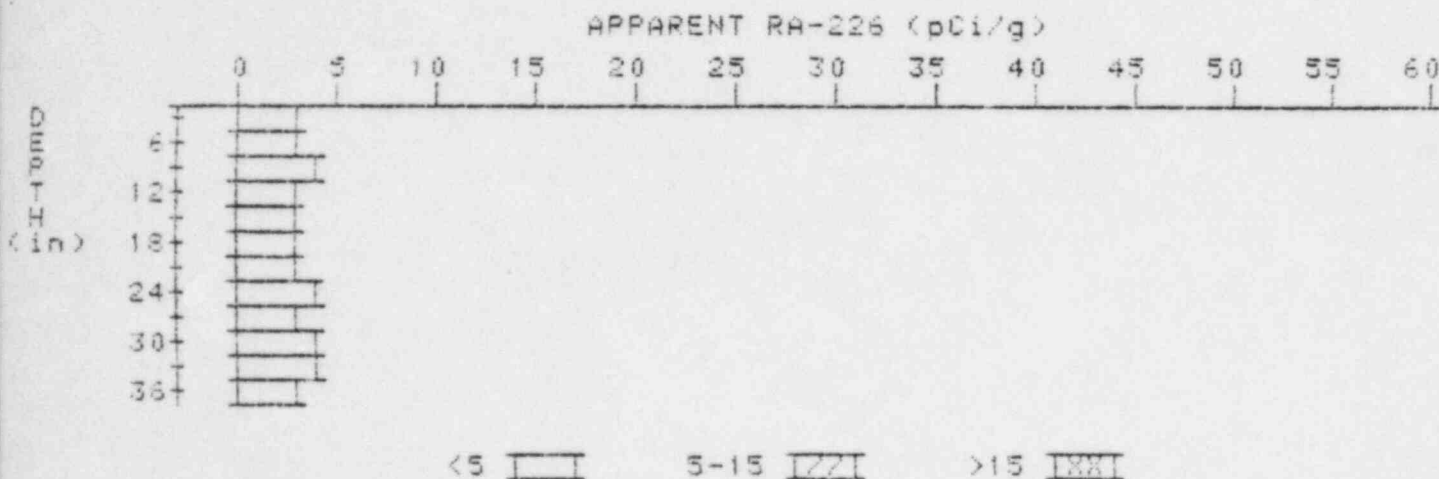
PROPERTY NUMBER: GJ-10653-RS
HOLE NUMBER: 13
LOCATION: 240254



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
=====	=====	=====
3	2.8	2.8
6	3.2	3.6
9	3.4	3.8
12	3.4	3.2
15	3.5	3.9
18	3.4	3.2
21	3.4	3.8
24	3.2	3.0
27	3.1	3.1
30	3.0	2.6
33	3.1	3.1

APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10653-R3
HOLE NUMBER: 15
LOCATION: 248240



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.0	2.8
9	3.2	3.6
12	3.2	3.2
15	3.2	3.0
18	3.3	3.5
21	3.3	3.1
24	3.4	3.6
27	3.4	3.2
30	3.5	3.7
33	3.5	3.7
36	3.4	3.4