

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-10759-RS
ADDRESS: 545 HILL 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 H. Tucker
M. TUCKER
DOE PROJECT ENGINEER

DATE

June 29, 1985

REA10759:REA-510

8507150434 850625
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-10759-RS, is a single-family residence located at 545 Hill 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, 9 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$1,498. Remedial action on this property will take approximately 5 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 545 Hill Avenue, Grand Junction, Colorado

Zoning: Residential (RMF-32)

Lot Size: Approximately 6,438 sf (0.1 acre)

Legal Description: East half of Lot 11, all of Lot 12, and north 70 feet of Lot 13, Block 38, 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:	Hill Avenue
South:	Alley
East:	Single-family residence
West:	Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence
Size:	Approximately 1,375 sf
Construction Date:	1904
Construction:	Wood-frame
Foundation:	Concrete stemwall on spread footing
Footing Depth:	Approximately 80" to bottom of footing from grade
Basement:	Yes (under entire living area)
Crawl Space:	Yes (under porch)
Condition:	Good

Other Structures:

Type:	Garage
Size:	Approximately 274 sf
Construction:	Wood-frame
Foundation:	Concrete slab-on-grade
Condition:	Good

General Remarks:

The front and back yards 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: New roof

Architectural Significance: None

Historical Significance: None

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-10759-RS on May 28, 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 city sidewalk which is north 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: 15 to 16 uR/h
Highest Outside Gamma Reading (HOG): 42 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: 15 to 17 uR/h
Highest Inside Gamma Reading (HIG): 17 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 the identified areas and estimated depths of contamination on this property, based on assessments of all measurements taken. As noted in this figure, the areas recommended for remedial action that contain identified residual radioactive materials are:

(AREA A) A deposit under the 5-inch-thick uncontaminated concrete city sidewalk extends to a depth of 7 inches. The total depth of contamination is 12 inches (approximately 225 sf).

(AREA B) A small deposit near the driveway is contaminated to a depth of 6 inches (approximately 12 sf).

(AREAS REQUIRING FURTHER INVESTIGATION DURING REMEDIAL ACTION)

The areas on both sides of the city sidewalk should be monitored during remedial action for possible spillover.

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-10759-RS, 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 \$1,498.

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

Exterior Gamma Scan Field Map

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Radium Concentrations at Exterior Locations

DOE ID #GJ-10759-RS

545 Hill Avenue

Page 1 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1	148238	00	DS	1.5		*	
		06	DS	1.5		*	
2	148273	00	DS	3.4		*	Northeast of
		06	DS	2.5		*	primary structure
		12	DS	2.2		*	
		12	DS	2.2		*	Horizontal
3	149257	00	DS	8.2		*	North of primary
		06	DS	3.8		*	structure next to
		12	DS	2.0		*	sidewalk
		12	DS	14.0		*	Horizontal
4	152230	03	TC	26.3		*	Front sidewalk
		06	BH	38.3	38.1	*	Through 5-inch core
		09	TC	29.0		*	DC = 12 inches
		12	TC	18.3		*	Based on all
		15	TC	12.4		*	available data
		18	BH	9.0	3.4	*	
		21	TC	7.2		*	
		24	TC	6.3		*	
		27	TC	5.7		*	
		30	BH	5.3	2.2	*	
		33	TC	5.0		*	
		36	TC	4.8		*	
		39	TC	4.6		*	
		42	TC	4.4		*	
		45	TC	4.3		*	
		48	TC	4.2		*	
		51	TC	4.0		*	
5	154275	00	DS	1.8		*	
		06	DS	1.2		*	
6	155246	03	TC	3.6		*	North of primary
		06	TC	4.4		*	structure
		09	TC	5.3		*	DC = 0 inches
		12	TC	6.2		*	
		15	TC	6.3		*	The elevated TC
		18	TC	6.1		*	readings are
		21	TC	5.8		*	shine from the
		24	TC	5.4		*	deposit under the
		27	TC	5.2		*	sidewalk
		30	TC	5.0		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-10759-RS

545 Hill Avenue

Page 2 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
6	155246	33	TC	5.0		*	
		36	TC	4.9		*	
		39	TC	4.9		*	
		42	TC	4.7		*	
7	155256	03	TC	3.6		*	By front sidewalk DC = 0 inches
		06	TC	4.3		*	
		09	TC	4.9		*	
		12	TC	5.2		*	
		15	TC	5.2		*	
		18	TC	5.1		*	
		21	TC	5.0		*	
		24	TC	4.8		*	
		27	TC	4.7		*	
		30	TC	4.5		*	
		33	TC	4.5		*	
8	155264	00	DS	7.2		*	North of primary structure DC = 12 inches
		06	DS	8.6		*	
		12	DS	3.8		*	
		03	TC	9.5		*	
		06	TC	12.0		*	
		09	TC	11.2		*	
		12	BH	8.8	9.5	*	
		15	TC	6.5		*	
		18	TC	5.6		*	
		21	TC	5.1		*	
		24	BH	4.8	3.6	*	
		27	TC	4.7		*	
		30	TC	4.6		*	
		33	TC	4.5		*	
		36	TC	4.4		*	
		39	TC	4.4		*	
		42	BH	4.3	2.2	*	
		45	TC	4.2		*	
		48	TC	4.0		*	
		51	TC	3.9		*	
		54	TC	3.7		*	
		57	TC	3.5		*	
		60	BH	3.5	1.6	*	
		63	TC	3.5		*	
9	155270	03	TC	8.2		*	Northeast property DC = 0 inches
		06	TC	7.1		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-10759-RS

545 Hill Avenue

Page 3 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
9	155270	09	TC	5.6		*	
		12	TC	4.8		*	
		15	TC	4.5		*	
		18	TC	4.2		*	
		21	TC	4.1		*	
		24	TC	4.0		*	
		27	TC	4.1		*	
		30	TC	4.2		*	
		33	TC	4.3		*	
		36	TC	4.4		*	
		39	TC	4.5		*	
10	156268	00	DS	3.3		*	
		06	DS	1.5		*	
11	185236	03	TC	3.1		*	Water line DC = 0 inches
		06	TC	3.4		*	
		09	TC	3.5		*	
		12	TC	3.5		*	
		15	TC	3.7		*	
		18	TC	3.7		*	
		21	TC	3.8		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
		30	TC	3.9		*	
		33	TC	3.8		*	
		36	TC	3.9		*	
		39	TC	3.9		*	
		42	TC	3.9		*	
12	230240	03	TC	2.7		*	Sewer line DC = 0 inches
		06	TC	3.3		*	
		09	TC	3.7		*	
		12	TC	3.9		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.7		*	
		24	TC	3.6		*	
		27	TC	3.7		*	
		30	TC	3.7		*	
		33	TC	3.6		*	
		36	TC	3.7		*	
		39	TC	3.9		*	
		42	TC	4.0		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-10759-RS

545 Hill Avenue

Page 4 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
12	230240	45	TC	4.0		*	
		48	TC	4.1		*	
		51	TC	4.1		*	
		54	TC	4.0		*	
		57	TC	4.0		*	
		60	TC	3.7		*	
		63	TC	3.6		*	
13	234252	00	DS	<1.0		*	Gas line
		20	DS	<1.0		*	
14	265245	00	DS	1.1		*	Background
		03	TC	3.1		*	DC = 0 inches
		06	BH	3.4	<1.0	*	
		09	TC	3.5		*	
		12	TC	3.5		*	
		15	TC	3.6		*	
		18	BH	3.6	<1.0	*	
		21	TC	3.5		*	
		24	TC	3.6		*	
		27	TC	3.8		*	
		30	BH	3.8	1.2	*	
		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 = 05-28-85
Team Leader = PT

Location	Number of Readings Taken at * Waist Level	Range at Waist Level (uR/h)	Mean at Waist Level (uR/h)	Number of Readings Taken at Surface	Range at Surface (uR/h)	Mean Surface (uR/h)
-----	-----	-----	-----	-----	-----	-----
BASEMENT	*	*	*	*	16-17	*
GARAGE	*	*	*	*	15-16	*
=====	=====	=====	=====	=====	=====	=====

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

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-10759-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 and Brick Pavers					
A	5 x 45 =	225	x 0.3 =	68	
B	4 x 3 =	12	x 0.3 =	4	
Volume of Concrete and Brick				= <u>72</u> =	72/27 = 3
Contaminated Fill					
A	5 x 45 =	225	x 0.7 =	158	
B	4 x 3 =	12	x 0.2 =	2	
Volume of Fill				= <u>160</u> =	160/27 = 6
TOTAL VOLUME - EXTERIOR					= <u>9</u>

See Appendix Figure 3.3 For Areas

=====

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-10759-RS

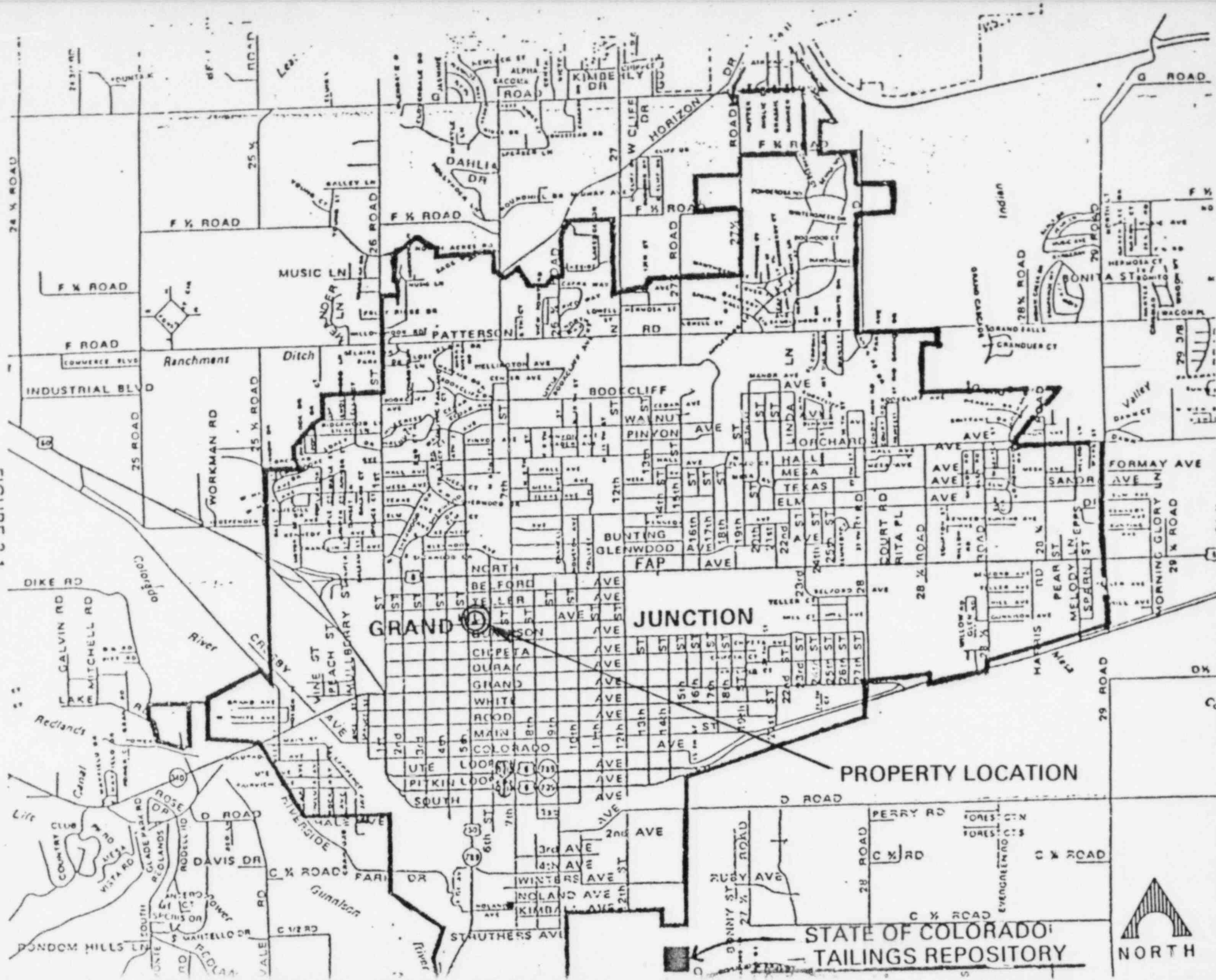
Page 1 of 1

Remove identified residual radioactive material		
5 cy @ \$14.50/cy	\$	73
1 cy @ \$44/cy		44
Remove/replace concrete		
229 sf @ \$3/sf		687
Replace areas with compacted roadbase		
6 cy @ \$11.50/cy		69
		<hr/>
TOTAL EXTERIOR	\$	873
TOTAL INTERIOR		0
ACCESS CONTROL		100
CONTINGENCY @ 10%		97
		<hr/>
SUBTOTAL	\$	1,070
CONTRACTOR OVERHEAD & PROFIT @ 40%		428
		<hr/>
GRAND TOTAL	\$	1,498

LR061885

REA10759/REA-510/LAJ


FIGURE 2.1
VICINITY MAP

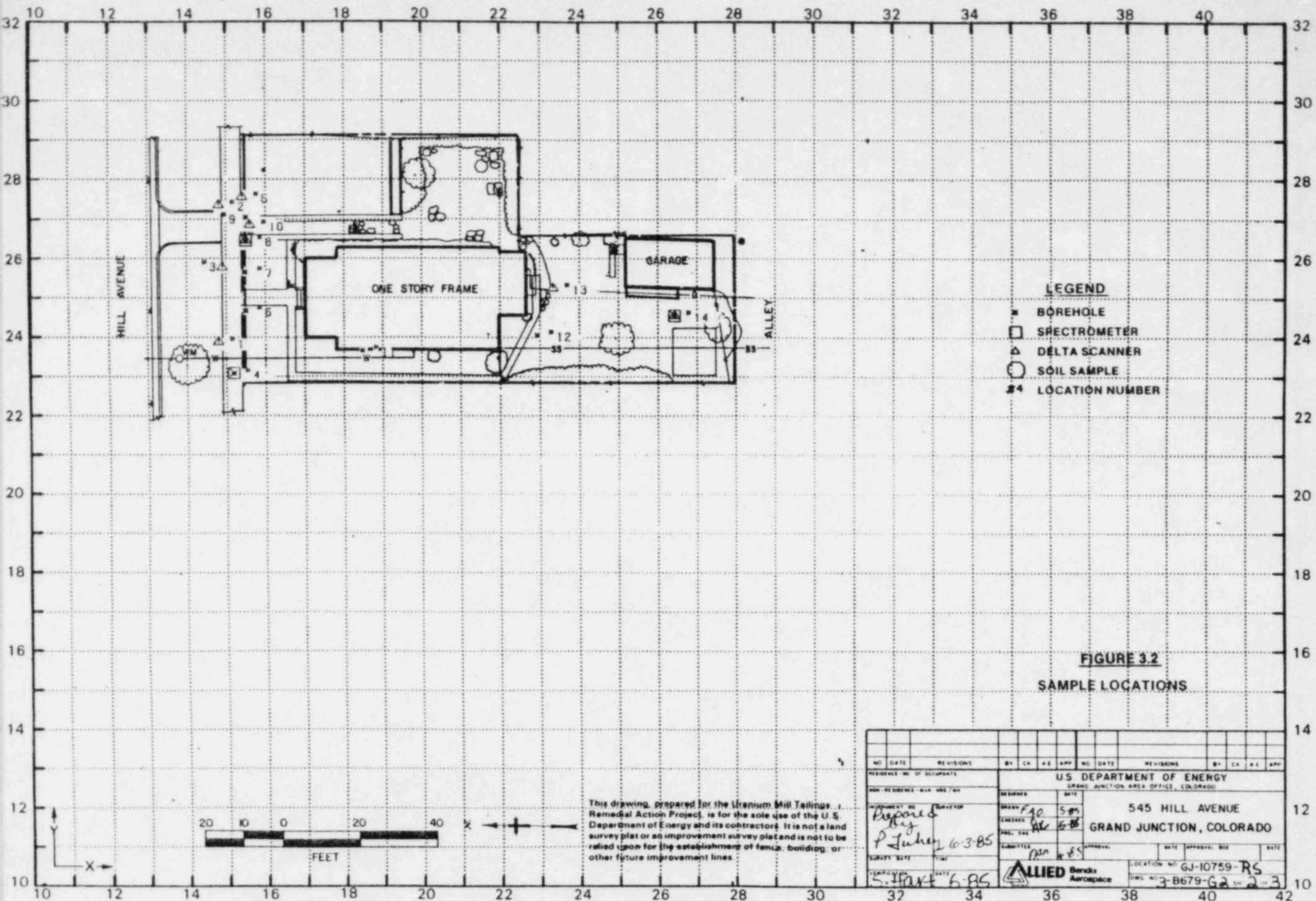


Hand-drawn site plan of a residential property. The plan shows a "ONE STORY FRAME HOUSE" with a "FLAGSTONE PATIO" and a "FRAME GARAGE". Dimensions include "PLAT = 70.0'", "PLAT = 62.5'", "PLAT = 55.0'", and "PLAT = 125.0'". Other features include "GRASS", "TREES", "LILAC BUSHES", and "ALLEY". A "WATER TOWER" is located near the bottom right corner.

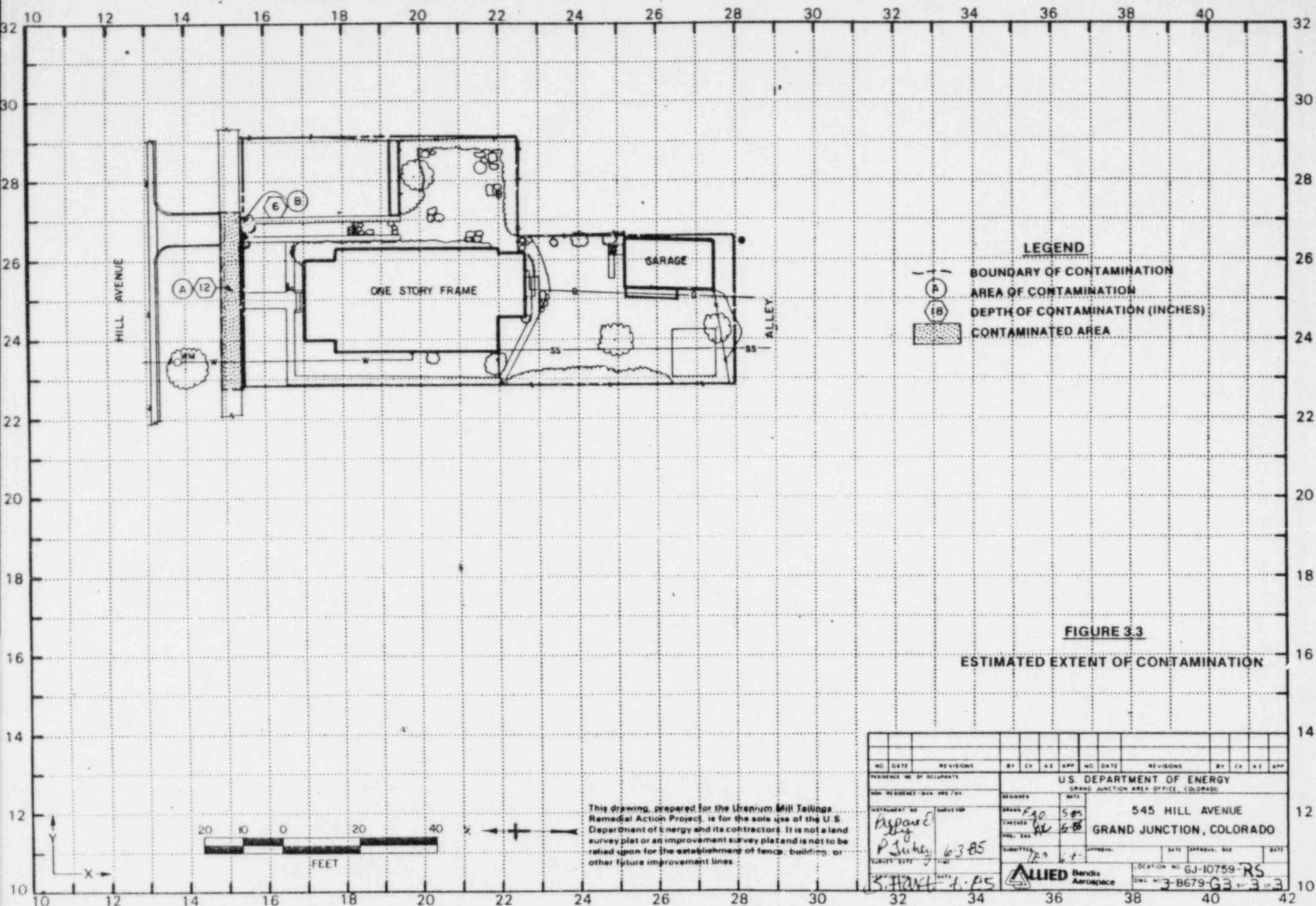
FIGURE 2.2 SITE PLAN

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 ID NO GJ10759 RS
ADDRESS 545 HILL AVENUE GRAND JUNCTION, COLORADO	 Allied Building Systems Mobile Field Engineering Corporation Grand Junction, Colorado
SURV WHL 515 BS DRAFT PSK 516 BS	DATE 5/1/82
DRAWING NO 2-C679-F1	SHEET 1 OF 1



NO.	DATE	REVISIONS	BY	CHK	A.E.	APP.	NO.	DATE	REVISIONS	BY	CHK	A.E.	APP.
RESIDENCE NO. OF OCCUPANTS							U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO						
NON-RESIDENCE MAX. HRS. / Wk.							545 HILL AVENUE GRAND JUNCTION, COLORADO						
DESIGNED BY P. J. J. 6-3-85							DATE 5-85						
CHECKED BY P. J. J. 6-3-85							DATE 5-85						
DRAWN BY P. J. J. 6-3-85							DATE 5-85						
TOLERANCES AS SHOWN							APPROVAL DATE APPROVAL DATE						
SURVEY DATE 5-85							LOCATION NO. GJ-10759-RS DWC NO. 3-8679-GA-2-3						
ALLIED Bands Aerospace													



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.

3/85

DOE ID NO. GJ-10759

Date May 31, 1985

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

Official Survey Report

Property Address 545 Hill Avenue

Property Owner Charles Hardy

Address of Owner (if different from above)

Report Prepared By Penny Tuhey

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. City sidewalk

☐ 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.

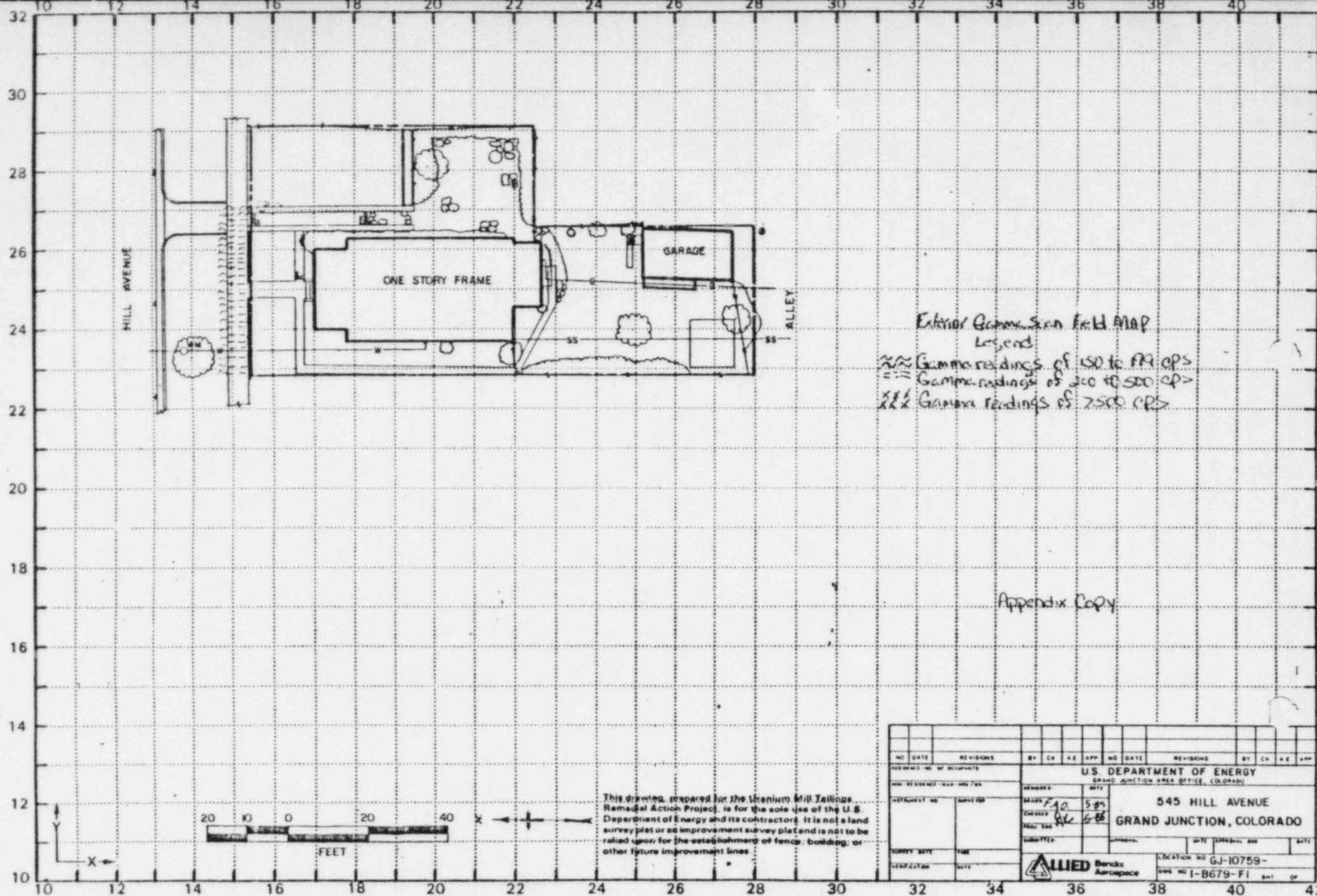
☒ Levels of radiation from residual radioactive materials exceed EPA Standards such that Remedial Action is recommended and will be accomplished, with your consent, as soon as budget and schedule permit.

cc:

G. A. Franz, III, GJ/CDH

J. Themelis, Mgr. UMTRA Proj. Off.

HOG = 42 uR/h



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		REVISIONS		BY	CH	AE	APP	NO. DATE	REVISIONS		BY	CH	AE	APP	
RESERVED NO. OF OCCUPANTS								U.S. DEPARTMENT OF ENERGY							
NO. RESIDENTS - MAX. NO. 700								GRAND JUNCTION AREA OFFICE, COLORADO							
PROJECT NO.				SUBJECT				ADDRESS				545 HILL AVENUE			
PROPERTY NO.				OWNER				OWNER				GRAND JUNCTION, COLORADO			
PROPERTY DATE				TIME				SUBMITTER				DATE			
VERIFICATION				DATE				APPROVED				DATE			
								LOCATION NO. GJ-10759- DWS NO. 1-B679-F1							

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: May 29, 1985

To: Files

From: Penny Tuhey

Subject: Team Leader Notes - GJ-10759-RS

Address: 545 Hill Avenue

Owner: Charles Hardy

Team Members

P. Tuhey (Team Leader)
D. Dow
S. Larsen
M. Duran

D. Bell
L. Kula
R. Wilkins

Instruments

C-1207, C-1206, C-1149, C-1196, C-1185, C-1247, C-3936, C-3940,
C-3957, C-3573, C-3361, C-3431, C-1147, C-3943

Contamination was located in the city sidewalk, after a survey was conducted.

All utilities were investigated for possible tailings.

All team members were frisked before break and before leaving the property at 11:35 AM.

APPARENT RADIUM-226 CONCENTRATION 4 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10739-RS
HOLE NUMBER: 4
LOCATION: 152230



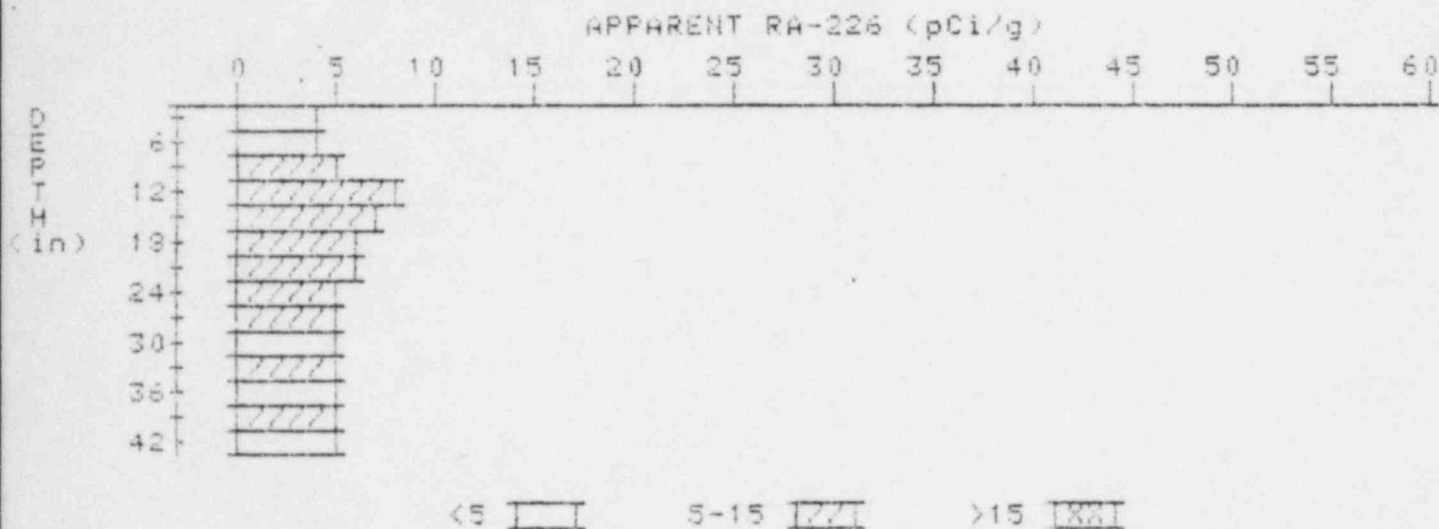
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	26.8	26.8
6	38.3	75.3
9	29.0	31.5
12	18.3	9.8
15	12.4	6.0
18	9.0	6.2
21	7.2	5.6
24	6.3	5.8
27	5.7	5.3
30	5.3	5.1
33	5.0	4.8
36	4.8	4.6
39	4.6	4.6
42	4.4	4.6
45	4.3	4.6
48	4.2	4.4
51	4.0	4.0

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 6

PROPERTY NUMBER: GJ-10759-RS

HOLE NUMBER: 6

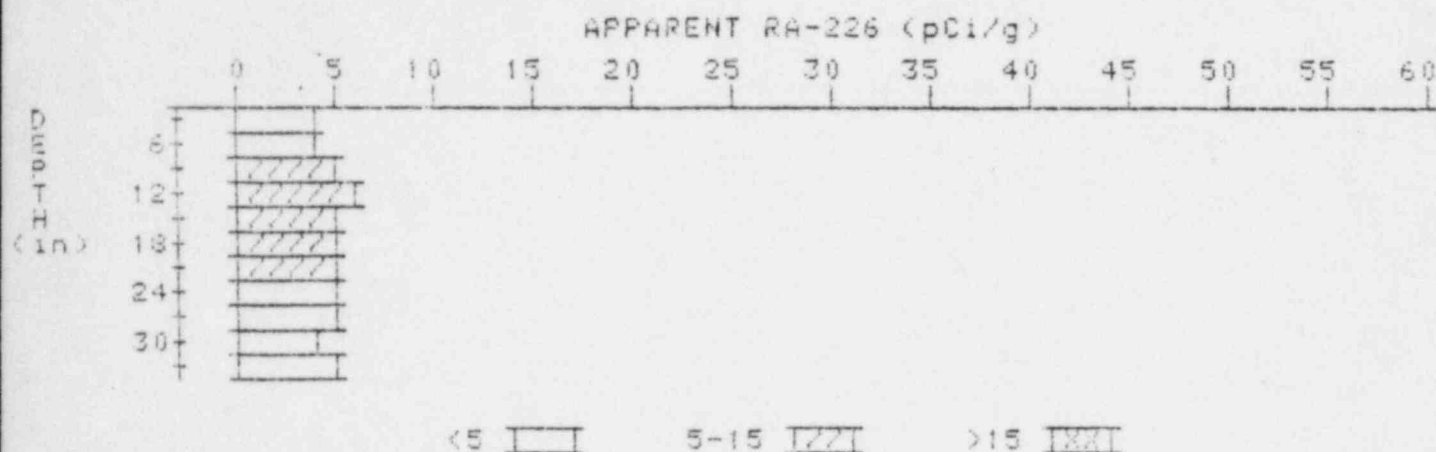
LOCATION: 155246



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
=====		
3	3.6	3.6
6	4.4	4.2
9	5.3	5.3
12	6.2	7.6
15	6.3	6.8
18	6.1	6.3
21	5.8	6.0
24	5.4	5.0
27	5.2	5.2
30	5.0	4.6
33	5.0	5.2
36	4.9	4.7
39	4.9	5.3
42	4.7	4.7

APPARENT RADIUM-226 CONCENTRATION 7 DECONVOLUTION GRAPH

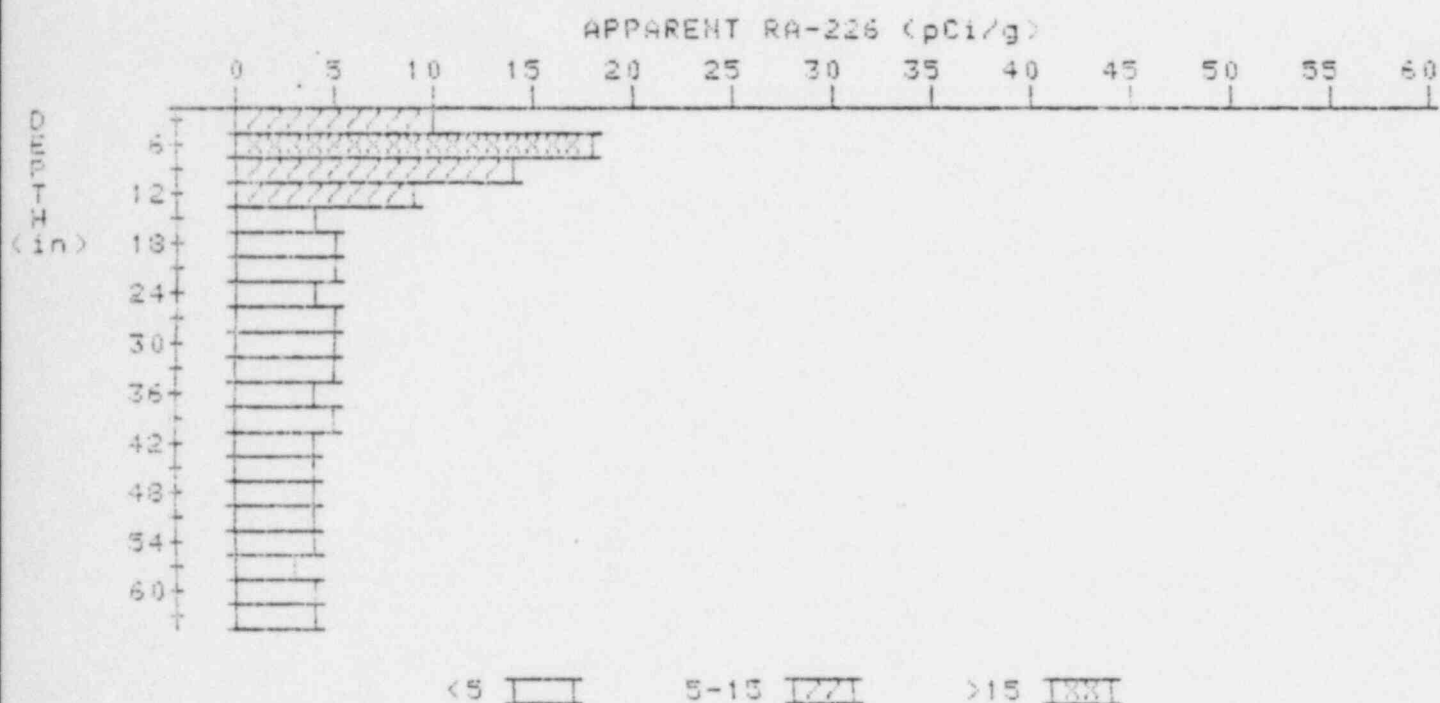
PROPERTY NUMBER: GJ-10759-RS
HOLE NUMBER: 7
LOCATION: 155256



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.6	3.6
6	4.3	4.5
9	4.9	5.4
12	5.2	5.7
15	5.2	5.4
18	5.1	5.1
21	5.0	5.2
24	4.8	4.6
27	4.7	4.9
30	4.5	4.1
33	4.5	4.5

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 8

PROPERTY NUMBER: GJ-10759-RS
HOLE NUMBER: 8
LOCATION: 155264



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	9.5	9.5
6	12.0	17.9
9	11.2	14.0
12	8.8	8.6
15	6.5	4.0
18	5.6	4.9
21	5.1	4.7
24	4.8	4.4
27	4.7	4.7
30	4.6	4.6
33	4.5	4.5
36	4.4	4.2
39	4.4	4.6
42	4.3	4.3
45	4.2	4.4
48	4.0	3.8
51	3.9	4.1

54
57
60
63

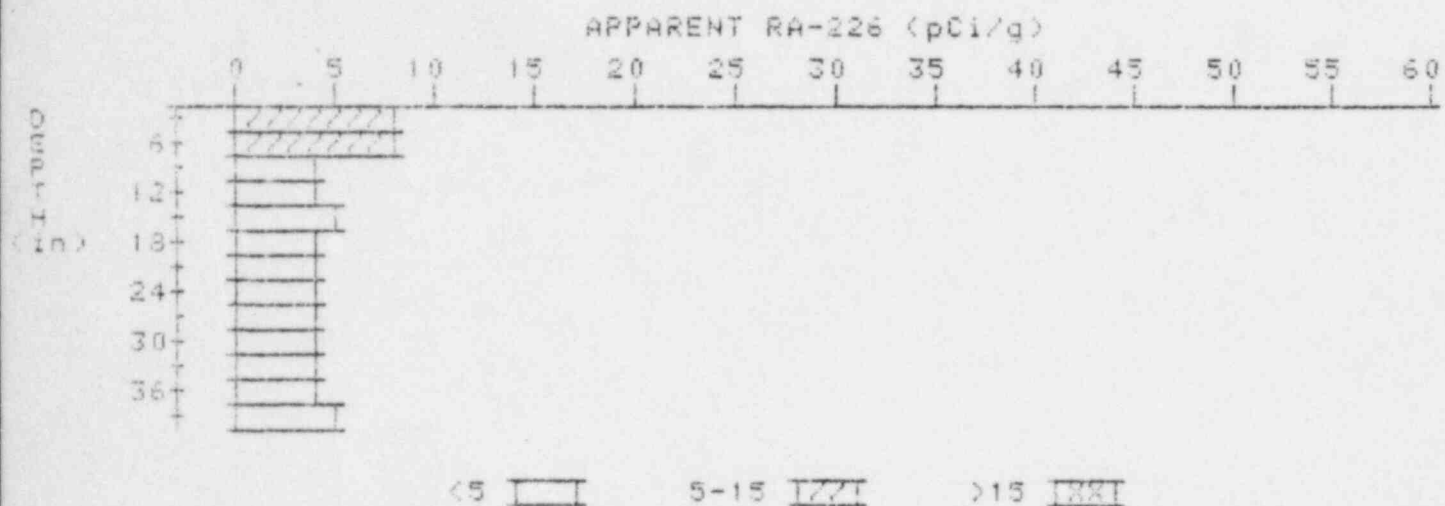
3.7
3.5
3.5
3.5

3.7
3.1
3.5
3.5

APPARENT RADIUM-226 CONCENTRATION 9

DECONVOLUTION GRAPH

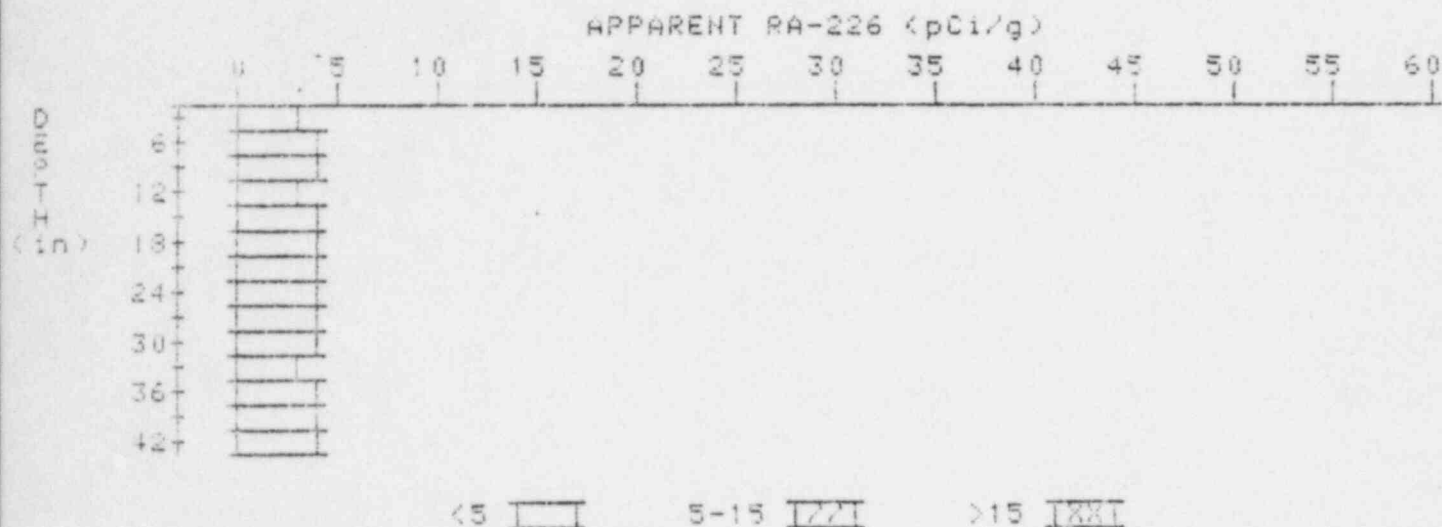
PROPERTY NUMBER: GJ-10759-RS
HOLE NUMBER: 9
LOCATION: 155270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.2	8.2
6	7.1	7.8
9	5.6	4.4
12	4.9	3.9
15	4.5	4.5
18	4.2	3.8
21	4.1	4.1
24	4.0	3.6
27	4.1	4.1
30	4.2	4.2
33	4.3	4.3
36	4.4	4.4
39	4.5	4.5

APPARENT RADIUM-226 CONCENTRATION 11 DECONVOLUTION GRAPH

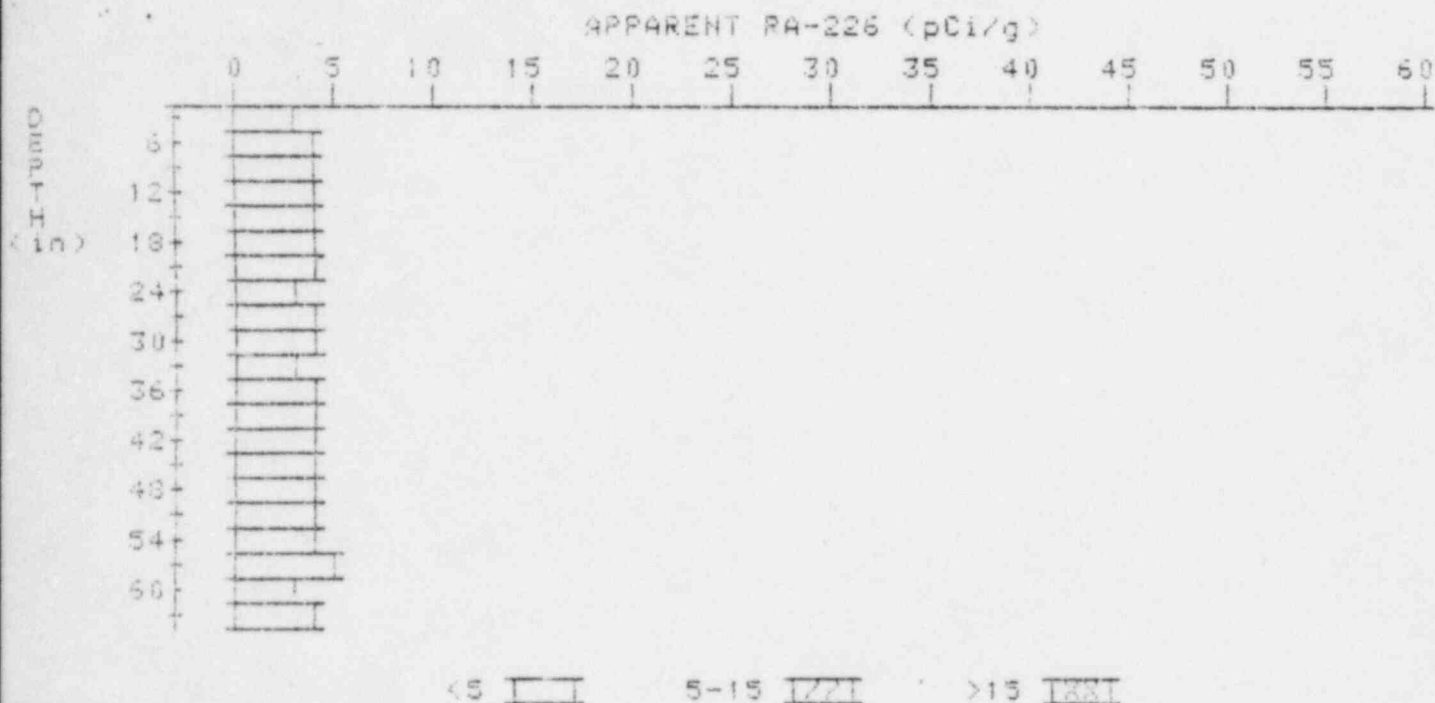
PROPERTY NUMBER: GJ-10759-R8
HOLE NUMBER: 11
LOCATION: 185236



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.4	3.8
9	3.5	3.7
12	3.5	3.1
15	3.7	4.1
18	3.7	3.5
21	3.8	4.0
24	3.8	3.8
27	3.8	3.6
30	3.9	4.3
33	3.8	3.4
36	3.9	4.1
39	3.9	3.9
42	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION 12 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10759-RS
HOLE NUMBER: 12
LOCATION: 230240



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.7	2.7
6	3.3	3.7
9	3.7	4.1
12	3.9	4.4
15	3.9	3.6
18	3.9	4.0
21	3.7	3.7
24	3.6	3.2
27	3.7	3.6
30	3.7	3.9
33	3.6	3.2
36	3.7	3.6
39	3.9	4.1
42	4.0	4.2
45	4.0	3.0
48	4.1	4.6
51	4.1	4.3

34
57
60
63

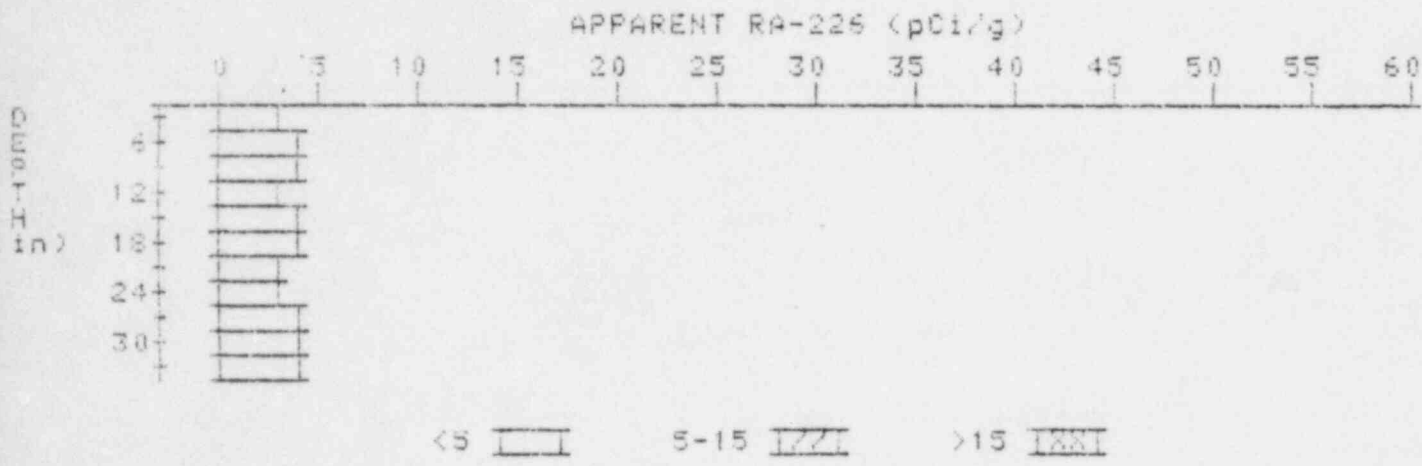
4.0
4.0
3.7
3.6

3.0
4.5
3.3
3.6

APPARENT RADIUM-226 CONCENTRATION 14

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10759-RS
HOLE NUMBER: 14
LOCATION: 265245



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.4	3.3
9	3.5	3.7
12	3.5	3.3
15	3.6	3.3
18	3.6	3.3
21	3.5	3.1
24	3.6	3.4
27	3.8	4.2
30	3.8	3.6
33	3.9	3.9