

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-33973-RS
ADDRESS: 2885 ORCHARD 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

Michael K. Tucker

M. TUCKER

DOE PROJECT ENGINEER

DATE

August 19, 1985

REA33973:REA-616

8508290402 850819
PDR WASTE
WM-54 PDR

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 | 7 |
| 4.1 Decontamination and Restoration | 7 |
| 4.2 Evaluation of Recommended Remedial Action | 7 |
| 5.0 REFERENCES | 8 |
| 6.0 APPENDIX | 9 |

1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-33973-RS, is a single-family residence located at 2885 Orchard 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, 72 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$3,275. Remedial action on this property will take approximately 10 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 2885 Orchard Avenue, Grand Junction, Colorado

Zoning: Residential (RSF-8)

Lot Size: Approximately 11,840 sf (0.27 acres)

Legal Description: Lot 18, block 2, Parkerson Subdivision, section 7, 1S 1E, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 mile(s) northeast 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: | Underground |
| Gas: | Underground |
| Telephone: | Underground |
| Sewer: | Underground |
| Water: | Underground |
| Cable TV: | None |

Bordering Properties:

| | |
|--------|-------------------------|
| North: | Orchard Avenue |
| South: | Single-family residence |
| East: | Single-family residence |
| West: | Melody Lane |

2.2 Existing Facilities and Structures

Primary Structure:

| | |
|--------------------|--|
| Type: | Single-story residence with attached two-car garage |
| Size: | Approximately 2,065 sf, including garage |
| Construction Date: | 1983 |
| Construction: | Wood-frame with brick veneer on front and concrete floor |
| Foundation: | Monolithic concrete slab-on-grade |
| Footing Depth: | Approximately 7" to bottom of footing from grade |
| Basement: | None |
| Crawl Space: | None |
| Condition: | Good |

Other Structures:

| | |
|---------------|---------------------|
| Type: | Shed |
| Size: | Approximately 90 sf |
| Construction: | Prefabricated metal |
| Foundation: | None |
| 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 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-33973-RS on July 8, 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 along the west and east property lines. No interior contamination was indicated in the CDH data.

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, 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 18 uR/h
Highest Outside Gamma Reading (HOG): 94 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: 13 to 16 uR/h
Highest Inside Gamma Reading (HIG): 16 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) Surface Material: Soil
 Direction From Primary Structure: Northwest
 Other Directions: Along west property line
 Total Depth of Contamination: 12 inches
 Comments: The main water line is located beneath this area.
 Approximate Square Footage: 280
- (Area B) Surface Material: Soil
 Direction From Primary Structure: West
 Other Directions: Along west property line.
 Total Depth of Contamination: 15 inches
 Comments: This area is located over the buried gas line.
 Approximate Square Footage: 430
- (Area C) Surface Material: Soil
 Direction From Primary Structure: West
 Other Directions: Adjacent to Area B
 Total Depth of Contamination: 27 inches
 Approximate Square Footage: 40
- (Area D) Surface Material: Soil
 Direction From Primary Structure: Southwest
 Other Directions: Adjacent to Areas B and C
 Total Depth of Contamination: 21 inches
 Approximate Square Footage: 60
- (Area E) Surface Material: Gravel
 Direction From Primary Structure: Southwest
 Other Directions: Adjacent to south and west property lines.
 Total Depth of Contamination: 15 inches
 Comments: This area spills over to the adjacent property.
 Other (height or thickness): 1/2-inch-thick gravel
 Approximate Square Footage: 120
- (Area F) Surface Material: Sod
 Direction From Primary Structure: Northeast
 Other Directions: Along east property line
 Total Depth of Contamination: 18 inches
 Approximate Square Footage: 98

- (Area G) Surface Material: Sod
Direction From Primary Structure: East
Other Directions: Along east property line
Total Depth of Contamination: 6 inches
Approximate Square Footage: 112
- (Area H) Surface Material: Sod
Direction From Primary Structure: East
Other Directions: Along east property line
Total Depth of Contamination: 12 inches
Approximate Square Footage: 135
- (Area I) Surface Material: Sod
Direction From Primary Structure: East
Other Directions: Around power pole
Total Depth of Contamination: 30 inches
Comments: Buried electrical and telephone lines are
located in this area.
Approximate Square Footage: 16
- (Area J) Surface Material: Sod
Direction From Primary Structure: Southeast
Other Directions: Along east property line
Total Depth of Contamination: 18 inches
Comments: The main sewer line is located beneath this area.
Approximate Square Footage: 245

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-33973-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 \$3,275.

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 Sample Locations |
| Figure 3.3 | Exterior Estimated Extent of Contamination |

Official Survey Report

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Exterior Gamma Scan Map

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 1 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|---|
| | | | | Tot. Ct | Spectr. | | |
| 1 | 131193 | 03 | TC | 16.8 | | * | By west sidewalk |
| | | 06 | TC | 21.2 | | * | |
| | | 09 | TC | 20.1 | | * | |
| | | 12 | TC | 14.0 | | * | DC = 15 inches Based on the deconvolution graph |
| | | 15 | TC | 9.6 | | * | |
| | | 18 | TC | 6.8 | | * | |
| | | 21 | TC | 5.6 | | * | |
| | | 24 | TC | 5.0 | | * | |
| | | 27 | TC | 4.9 | | * | |
| | | 30 | TC | 4.6 | | * | |
| | | 33 | TC | 4.6 | | * | |
| | | 36 | TC | 4.5 | | * | |
| | | 39 | TC | 4.4 | | * | |
| | | 42 | TC | 4.1 | | * | |
| | | 45 | TC | 4.0 | | * | |
| 2 | 131205 | 03 | TC | 25.2 | | * | By west sidewalk |
| | | 06 | TC | 34.1 | | * | |
| | | 09 | TC | 32.2 | | * | |
| | | 12 | TC | 20.7 | | * | DC = 15 inches Based on the deconvolution graph |
| | | 15 | TC | 13.1 | | * | |
| | | 18 | TC | 9.5 | | * | |
| | | 21 | TC | 7.8 | | * | |
| | | 24 | TC | 7.2 | | * | |
| | | 27 | TC | 6.8 | | * | |
| | | 30 | TC | 6.5 | | * | |
| | | 33 | TC | 6.5 | | * | |
| | | 36 | TC | 6.3 | | * | |
| | | 39 | TC | 5.7 | | * | |
| | | 42 | TC | 4.8 | | * | |
| | | 45 | TC | 4.2 | | * | |
| | | 48 | TC | 4.0 | | * | |
| | | 51 | TC | 3.9 | | * | |
| | | 54 | TC | 3.9 | | * | |
| 3 | 131240 | 03 | TC | 3.9 | | * | West of fence by sidewalk |
| | | 06 | TC | 4.4 | | * | |
| | | 09 | TC | 4.3 | | * | |
| | | 12 | TC | 4.0 | | * | DC = 0 inches |
| | | 15 | TC | 4.1 | | * | |
| | | 18 | TC | 3.8 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 2 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|---|
| | | | | Tot. Ct | Spectr. | | |
| 3 | 131240 | 21 | TC | 3.8 | | * | |
| | | 24 | TC | 3.7 | | * | |
| | | 27 | TC | 3.7 | | * | |
| | | 30 | TC | 3.8 | | * | |
| | | 33 | TC | 3.8 | | * | |
| | | 36 | TC | 3.8 | | * | |
| 4 | 131275 | 03 | TC | 5.0 | | * | Northwest of fence by sidewalk |
| | | 06 | TC | 4.1 | | * | |
| | | 09 | TC | 25.0 | | * | |
| | | 12 | TC | 14.9 | | * | DC = 12 inches Based on the deconvolution graph |
| | | 15 | TC | 10.3 | | * | |
| | | 18 | TC | 7.7 | | * | |
| | | 21 | TC | 6.5 | | * | |
| | | 24 | TC | 5.8 | | * | |
| | | 27 | TC | 5.1 | | * | |
| | | 30 | TC | 4.4 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 3.8 | | * | |
| | | 39 | TC | 3.9 | | * | |
| 5 | 135195 | 00 | DS | 6.3 | | * | Gravel driveway |
| | | 06 | DS | 38.8 | | * | |
| | | 12 | DS | 11.0 | | * | |
| | | 18 | DS | 3.3 | | * | |
| 6 | 135205 | 00 | DS | 7.3 | | * | Southwest of primary structure |
| | | 06 | DS | 23.4 | | * | |
| | | 12 | DS | 30.0 | | * | |
| 7 | 135240 | 00 | DS | 1.2 | | * | West of primary structure |
| | | 03 | TC | 4.8 | | * | |
| | | 06 | TC | 5.8 | | * | |
| | | 09 | TC | 5.8 | | * | |
| | | 12 | TC | 5.3 | | * | |
| | | 15 | TC | 4.9 | | * | DC = 15 inches Based on the deconvolution graph |
| | | 18 | TC | 4.8 | | * | |
| | | 21 | TC | 4.5 | | * | |
| | | 24 | TC | 4.3 | | * | |
| | | 27 | TC | 4.1 | | * | |
| | | 30 | TC | 4.1 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.1 | | * | |
| | | 39 | TC | 4.0 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 3 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|--|
| | | | | Tot. Ct | Spectr. | | |
| 8 | 135272 | 00 | DS | 14.9 | | * | By west fence |
| | | 06 | DS | 3.5 | | * | |
| | | 12 | DS | 2.6 | | * | |
| 9 | 140210 | 03 | TC | 5.7 | | * | Southwest of primary structure |
| | | 06 | TC | 8.1 | | * | |
| | | 09 | TC | 12.4 | | * | |
| | | 12 | TC | 19.8 | | * | |
| | | 15 | TC | 24.9 | | * | |
| | | 18 | TC | 17.4 | | * | DC = 21 inches Based on the deconvolution graph |
| | | 21 | TC | 11.3 | | * | |
| | | 24 | TC | 8.3 | | * | |
| | | 27 | TC | 7.0 | | * | |
| | | 30 | TC | 6.2 | | * | |
| | | 33 | TC | 5.9 | | * | |
| | | 36 | TC | 5.6 | | * | |
| | | 39 | TC | 5.4 | | * | |
| | | 42 | TC | 5.0 | | * | |
| | | 45 | TC | 4.6 | | * | |
| | | 48 | TC | 4.4 | | * | |
| 10 | 140220 | 03 | TC | 3.8 | | * | By west fence |
| | | 06 | TC | 4.4 | | * | |
| | | 09 | TC | 5.5 | | * | |
| | | 12 | TC | 7.3 | | * | |
| | | 15 | TC | 9.8 | | * | |
| | | 18 | TC | 12.6 | | * | DC = 27 inches Based on the deconvolution graph |
| | | 21 | TC | 13.8 | | * | |
| | | 24 | TC | 10.0 | | * | |
| | | 27 | TC | 7.6 | | * | |
| | | 30 | TC | 6.3 | | * | |
| | | 33 | TC | 5.6 | | * | |
| | | 36 | TC | 5.2 | | * | |
| | | 39 | TC | 4.9 | | * | |
| | | 42 | TC | 4.8 | | * | |
| 11 | 140240 | 00 | DS | 1.7 | | * | West of primary structure |
| | | 06 | DS | 2.3 | | * | |
| | | 12 | DS | 5.0 | | * | |
| | | 18 | DS | 3.5 | | * | |
| 12 | 140260 | 00 | DS | 1.7 | | * | Northwest of primary structure |
| | | 06 | DS | 2.2 | | * | |
| | | 12 | DS | 2.6 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 4 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|--|
| | | | | Tot. Ct | Spectr. | | |
| 13 | 140270 | 03 | TC | 5.0 | | * | Northwest corner of yard |
| | | 06 | TC | 6.0 | | * | |
| | | 09 | TC | 5.3 | | * | |
| | | 12 | TC | 4.7 | | * | DC = 12 inches Based on the deconvolution graph |
| | | 15 | TC | 4.4 | | * | |
| | | 18 | TC | 4.4 | | * | |
| | | 21 | TC | 4.5 | | * | |
| | | 24 | TC | 4.4 | | * | |
| | | 27 | TC | 4.2 | | * | |
| | | 30 | TC | 4.1 | | * | |
| | | 33 | TC | 4.0 | | * | |
| 14 | 145210 | 03 | TC | 3.4 | | * | West of primary structure |
| | | 06 | TC | 3.7 | | * | |
| | | 09 | TC | 4.0 | | * | DC = 0 inches |
| | | 12 | TC | 4.3 | | * | |
| | | 15 | TC | 5.0 | | * | |
| | | 18 | TC | 5.3 | | * | |
| | | 21 | TC | 4.9 | | * | |
| | | 24 | TC | 4.6 | | * | |
| | | 27 | TC | 4.4 | | * | |
| | | 30 | TC | 4.4 | | * | |
| | | 33 | TC | 4.4 | | * | |
| | | 36 | TC | 4.4 | | * | |
| | | 39 | TC | 4.4 | | * | |
| 15 | 145270 | 03 | TC | 3.1 | | * | Northwest corner of yard |
| | | 06 | TC | 3.5 | | * | |
| | | 09 | TC | 3.8 | | * | DC = 0 inches |
| | | 12 | TC | 3.9 | | * | |
| | | 15 | TC | 4.1 | | * | |
| | | 18 | TC | 4.3 | | * | |
| | | 21 | TC | 4.6 | | * | |
| | | 24 | TC | 4.5 | | * | |
| | | 27 | TC | 4.4 | | * | |
| | | 30 | TC | 4.3 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.1 | | * | |
| | | 39 | TC | 4.0 | | * | |
| 16 | 150195 | 03 | TC | 3.7 | | * | Southwest of primary structure |
| | | 06 | TC | 4.0 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 5 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|--|
| | | | | Tot. Ct | Spectr. | | |
| 16 | 150195 | 09 | TC | 4.2 | | * | DC = 0 inches |
| | | 12 | TC | 4.5 | | * | |
| | | 15 | TC | 4.5 | | * | |
| | | 18 | TC | 4.3 | | * | |
| | | 21 | TC | 4.1 | | * | |
| | | 24 | TC | 4.1 | | * | |
| | | 27 | TC | 4.1 | | * | |
| | | 30 | TC | 4.1 | | * | |
| | | 33 | TC | 4.0 | | * | |
| | | 36 | TC | 3.9 | | * | |
| | | 39 | TC | 3.8 | | * | |
| 17 | 150220 | 03 | TC | 3.2 | | * | West of primary structure DC = 0 inches |
| | | 06 | TC | 3.4 | | * | |
| | | 09 | TC | 3.5 | | * | |
| | | 12 | TC | 3.6 | | * | |
| | | 15 | TC | 3.7 | | * | |
| | | 18 | TC | 3.8 | | * | |
| | | 21 | TC | 4.1 | | * | |
| | | 24 | TC | 4.4 | | * | |
| | | 27 | TC | 4.6 | | * | |
| | | 30 | TC | 4.6 | | * | |
| | | 33 | TC | 4.6 | | * | |
| 18 | 160233 | 00 | DS | <1.0 | | * | Gas line |
| | | 24 | DS | 1.6 | | * | On gas line |
| | | | | | | | |
| 19 | 165241 | 03 | TC | 3.2 | | * | Northwest corner of primary structure DC = 0 inches |
| | | 06 | TC | 3.4 | | * | |
| | | 09 | TC | 3.6 | | * | |
| | | 12 | TC | 3.6 | | * | |
| | | 15 | TC | 3.7 | | * | |
| | | 18 | TC | 3.7 | | * | |
| | | 21 | TC | 4.0 | | * | |
| | | 24 | TC | 4.5 | | * | |
| | | 27 | TC | 4.7 | | * | |
| | | 30 | TC | 5.4 | | * | |
| | | 33 | TC | 6.0 | | * | |
| | | 36 | TC | 5.5 | | * | |
| | | 39 | TC | 5.0 | | * | |
| | | 42 | TC | 4.5 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 6 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|----------------------------|
| | | | | Tot. Ct | Spectr. | | |
| 19 | 165241 | 45 | TC | 4.3 | | * | |
| | | 48 | TC | 4.2 | | * | |
| | | 51 | TC | 4.1 | | * | |
| | | 54 | TC | 4.0 | | * | |
| | | 57 | TC | 3.9 | | * | |
| | | 60 | TC | 3.9 | | * | |
| 20 | 165247 | 03 | TC | 3.3 | | * | North of primary structure |
| | | 06 | TC | 3.6 | | * | |
| | | 09 | TC | 3.8 | | * | |
| | | 12 | TC | 3.8 | | * | DC = 0 inches |
| | | 15 | TC | 3.9 | | * | |
| | | 18 | TC | 4.0 | | * | |
| | | 21 | TC | 4.2 | | * | |
| | | 24 | TC | 4.2 | | * | |
| | | 27 | TC | 4.4 | | * | |
| | | 30 | TC | 4.7 | | * | |
| | | 33 | TC | 5.1 | | * | |
| | | 36 | TC | 4.9 | | * | |
| | | 39 | TC | 4.6 | | * | |
| | | 42 | TC | 4.5 | | * | |
| | | 45 | TC | 4.4 | | * | |
| | | 48 | TC | 4.2 | | * | |
| | | 51 | TC | 4.2 | | * | |
| | | 54 | TC | 4.1 | | * | |
| | | 57 | TC | 4.0 | | * | |
| | | 60 | TC | 4.0 | | * | |
| 21 | 172241 | 03 | TC | 3.2 | | * | North foundation |
| | | 06 | TC | 3.4 | | * | |
| | | 09 | TC | 3.4 | | * | DC = 0 inches |
| | | 12 | TC | 3.5 | | * | |
| | | 15 | TC | 3.6 | | * | |
| | | 18 | TC | 4.1 | | * | |
| | | 21 | TC | 4.1 | | * | |
| | | 24 | TC | 4.5 | | * | |
| | | 27 | TC | 4.8 | | * | |
| | | 30 | TC | 5.2 | | * | |
| | | 33 | TC | 4.9 | | * | |
| | | 36 | TC | 4.6 | | * | |
| 22 | 172254 | 03 | TC | 3.3 | | * | North of primary structure |
| | | 06 | TC | 3.5 | | * | |
| | | 09 | TC | 3.7 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 7 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|---|
| | | | | Tot. Ct | Spectr. | | |
| 22 | 172254 | 12 | TC | 3.7 | | * | |
| | | 15 | TC | 3.9 | | * | |
| | | 18 | TC | 4.2 | | * | |
| | | 21 | TC | 4.1 | | * | |
| | | 24 | TC | 3.9 | | * | |
| | | 27 | TC | 4.0 | | * | |
| | | 30 | TC | 4.2 | | * | |
| 23 | 178241 | 03 | TC | 3.3 | | * | North of primary structure |
| | | 06 | TC | 3.3 | | * | |
| | | 09 | TC | 3.5 | | * | |
| | | 12 | TC | 3.5 | | * | DC = 0 inches |
| | | 15 | TC | 3.7 | | * | |
| | | 18 | TC | 3.8 | | * | |
| | | 21 | TC | 4.1 | | * | |
| | | 24 | TC | 4.3 | | * | |
| | | 27 | TC | 4.3 | | * | |
| | | 30 | TC | 4.2 | | * | |
| | | 33 | TC | 4.3 | | * | |
| | | 36 | TC | 4.4 | | * | |
| 24 | 196269 | 00 | DS | <1.0 | | * | Background |
| | | 03 | TC | 2.9 | | * | North of primary structure by water meter |
| | | 06 | TC | 3.2 | | * | |
| | | 09 | TC | 3.4 | | * | |
| | | 12 | TC | 3.6 | | * | DC = 0 inches |
| | | 15 | TC | 3.8 | | * | |
| | | 18 | TC | 4.0 | | * | |
| | | 21 | TC | 4.1 | | * | |
| | | 24 | TC | 4.1 | | * | |
| | | 27 | TC | 4.2 | | * | |
| | | 30 | TC | 4.1 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.2 | | * | |
| | | 39 | TC | 4.1 | | * | |
| | | 42 | TC | 4.2 | | * | |
| | | 45 | TC | 4.1 | | * | |
| | | 48 | TC | 4.1 | | * | |
| | | 51 | TC | 4.1 | | * | |
| | | 54 | TC | 4.1 | | * | |
| | | 57 | TC | 4.2 | | * | |
| | | 60 | TC | 4.2 | | * | |
| | | 63 | TC | 4.1 | | * | |
| | | 66 | TC | 3.9 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 8 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|--|
| | | | | Tot. Ct | Spectr. | | |
| 24 | 196269 | 69 | TC | 3.9 | | * | |
| 25 | 245216 | 03 | TC | 2.8 | | * | East of primary structure on asphalt |
| | | 06 | TC | 3.1 | | * | |
| | | 09 | TC | 3.2 | | * | |
| | | 12 | TC | 3.4 | | * | |
| | | 15 | TC | 3.4 | | * | DC = 0 inches |
| | | 18 | TC | 3.5 | | * | |
| | | 21 | TC | 3.5 | | * | |
| | | 24 | TC | 3.7 | | * | |
| | | 27 | TC | 3.8 | | * | |
| | | 30 | TC | 3.9 | | * | |
| | | 33 | TC | 3.9 | | * | |
| | | 36 | TC | 3.9 | | * | |
| | | 39 | TC | 3.8 | | * | |
| | | 42 | TC | 3.8 | | * | |
| 26 | 260215 | 03 | TC | 3.9 | | * | East of primary structure by telephone pole |
| | | 06 | TC | 4.5 | | * | |
| | | 09 | TC | 5.4 | | * | |
| | | 12 | TC | 7.3 | | * | |
| | | 15 | TC | 9.1 | | * | DC = 30 inches Based on the deconvolution graph |
| | | 18 | TC | 10.9 | | * | |
| | | 21 | TC | 10.8 | | * | |
| | | 24 | TC | 9.4 | | * | |
| | | 27 | TC | 7.8 | | * | |
| | | 30 | TC | 6.2 | | * | |
| | | 33 | TC | 5.2 | | * | |
| | | 36 | TC | 4.7 | | * | |
| | | 39 | TC | 4.3 | | * | |
| | | 42 | TC | 4.1 | | * | |
| | | 45 | TC | 4.1 | | * | |
| | | 48 | TC | 4.1 | | * | |
| | | 51 | TC | 4.1 | | * | |
| | | 54 | TC | 4.1 | | * | |
| | | 57 | TC | 4.0 | | * | |
| | | 60 | TC | 3.9 | | * | |
| | | 63 | TC | 3.8 | | * | |
| | | 66 | TC | 3.8 | | * | |
| | | 69 | TC | 3.7 | | * | |
| 27 | 263230 | 00 | DS | 6.1 | | * | East of primary structure |
| | | 06 | DS | 4.2 | | * | |
| | | 12 | DS | 1.6 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 9 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|---|
| | | | | Tot. Ct | Spectr. | | |
| 28 | 264192 | 03 | TC | 14.6 | | * | Southeast corner of property |
| | | 06 | TC | 19.5 | | * | |
| | | 09 | TC | 19.7 | | * | |
| | | 12 | TC | 13.5 | | * | |
| | | 15 | TC | 9.2 | | * | |
| | | 18 | TC | 6.6 | | * | DC = 18 inches Based on the deconvolution graph |
| | | 21 | TC | 5.3 | | * | |
| | | 24 | TC | 4.6 | | * | |
| | | 27 | TC | 4.3 | | * | |
| | | 30 | TC | 4.2 | | * | |
| | | 33 | TC | 4.2 | | * | |
| | | 36 | TC | 4.1 | | * | |
| 29 | 264220 | 03 | TC | 7.1 | | * | East of driveway |
| | | 06 | TC | 9.3 | | * | |
| | | 09 | TC | 10.8 | | * | |
| | | 12 | TC | 9.9 | | * | |
| | | 15 | TC | 7.9 | | * | |
| | | 18 | TC | 6.1 | | * | DC = 18 inches Based on the deconvolution graph |
| | | 21 | TC | 5.2 | | * | |
| | | 24 | TC | 4.5 | | * | |
| | | 27 | TC | 4.3 | | * | |
| | | 30 | TC | 4.2 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.1 | | * | |
| | | 39 | TC | 4.0 | | * | |
| | | 42 | TC | 4.0 | | * | |
| | | 45 | TC | 4.0 | | * | |
| | | 48 | TC | 4.0 | | * | |
| | | 51 | TC | 4.2 | | * | |
| | | 54 | TC | 4.3 | | * | |
| | | 57 | TC | 4.0 | | * | |
| | | 60 | TC | 3.7 | | * | |
| | | 63 | TC | 3.6 | | * | |
| | | 66 | TC | 3.6 | | * | |
| | | 69 | TC | 3.4 | | * | |
| | | 72 | TC | 3.5 | | * | |
| | | 75 | TC | 3.5 | | * | |
| | | 78 | TC | 3.5 | | * | |
| | | 81 | TC | 3.7 | | * | |
| | | 84 | TC | 3.7 | | * | |
| | | 87 | TC | 3.6 | | * | |
| | | 90 | TC | 3.6 | | * | |
| | | 93 | TC | 3.6 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-33973-RS

2885 Orchard Avenue

Page 10 of 10

| Loc # | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|-------|---------------|-------------|------------|------------------------|---------|---------------------|--|
| | | | | Tot. Ct | Spectr. | | |
| 29 | 264220 | 96 | TC | 3.7 | | * | |
| 30 | 265245 | 00 | DS | 3.6 | | * | East of primary structure |
| | | 06 | DS | 2.5 | | * | |
| 31 | 265265 | 00 | DS | 2.7 | | * | Northeast corner of property |
| | | 03 | TC | 4.7 | | * | |
| | | 06 | TC | 5.2 | | * | |
| | | 09 | TC | 5.2 | | * | |
| | | 12 | TC | 5.2 | | * | |
| | | 15 | TC | 5.0 | | * | |
| | | 18 | TC | 4.7 | | * | DC = 18 inches Based on the deconvolution graph |
| | | 21 | TC | 4.5 | | * | |
| | | 24 | TC | 4.2 | | * | |
| | | 27 | TC | 4.2 | | * | |
| | | 30 | TC | 4.0 | | * | |
| | | 33 | TC | 3.8 | | * | |
| | | 36 | TC | 3.7 | | * | |
| | | 39 | TC | 3.7 | | * | |
| | | 42 | TC | 3.6 | | * | |
| | | 45 | TC | 3.5 | | * | |

Measurement Types:

CB = GAD-6 Borehole

CS = 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 = 07-08-85

Team Leader = KAC

Table 3.2

Summary of Interior Gamma Exposure Rates

DOE ID No. GJ-33973-RS

2885 Orchard Avenue

Page 1 of 1

| 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) |
|----------------------|---|--------------------------------------|-------------------------------------|--|-------------------------------|---------------------------|
| Primary structure | * | * | * | * | 13-16 | * |
| Shed | * | * | * | * | 15-16 | * |

* A walking gamma scan was performed to confirm the absence of interior contamination at this location.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-33973-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 | | | | | |
| | Contaminated Fill | | | | |
| A | 10 x 28 = | 280 | x 1.0 = | 280 | |
| B | 10 x 43 = | 430 | x 1.3 = | 559 | |
| C | 4 x 10 = | 40 | x 2.3 = | 92 | |
| D | 4 x 15 = | 60 | x 1.8 = | 108 | |
| E | 10 x 12 = | 120 | x 1.3 = | 156 | |
| F | 7 x 14 = | 98 | x 1.5 = | 147 | |
| G | 7 x 16 = | 112 | x 0.5 = | 56 | |
| H | 9 x 15 = | 135 | x 1.0 = | 135 | |
| I | 4 x 4 = | 16 | x 2.5 = | 40 | |
| J | 7 x 35 = | 245 | x 1.5 = | 368 | |
| TOTAL VOLUME - EXTERIOR | | | | = 1,941 | = 1,941/27 = 72 |

See Appendix Figure 3.3 For Areas

EXTERIOR

| | |
|---|----------|
| Remove identified residual radioactive material | |
| 70 cy @ \$14.50/cy (machine-open) | \$ 1,015 |
| 2 cy @ \$44/cy (manual-open) | 88 |

| | |
|----------------------------|-----|
| Replace areas with topsoil | |
| 57 cy @ \$9.50/cy | 542 |

| | |
|-----------------------------|-----|
| Replace areas with roadbase | |
| 15 cy @ \$11.50/cy | 173 |

| | |
|------------------------|-----|
| Replace areas with sod | |
| 600 sf @ \$.35/sf | 210 |

| | |
|----------------|----------|
| TOTAL EXTERIOR | \$ 2,028 |
|----------------|----------|

| | |
|----------------|---|
| TOTAL INTERIOR | 0 |
|----------------|---|

| | |
|----------------|-----|
| ACCESS CONTROL | 200 |
|----------------|-----|

| | |
|----------|----------|
| SUBTOTAL | \$ 2,228 |
|----------|----------|

| | |
|------------------|-----|
| CONTINGENCY @ 5% | 111 |
|------------------|-----|

| | |
|----------|----------|
| SUBTOTAL | \$ 2,339 |
|----------|----------|

| | |
|------------------------------------|-----|
| CONTRACTOR OVERHEAD & PROFIT @ 40% | 936 |
|------------------------------------|-----|

| | |
|-------------|----------|
| GRAND TOTAL | \$ 3,275 |
|-------------|----------|

=====

RR080885
REA33973/REA-616/LMR

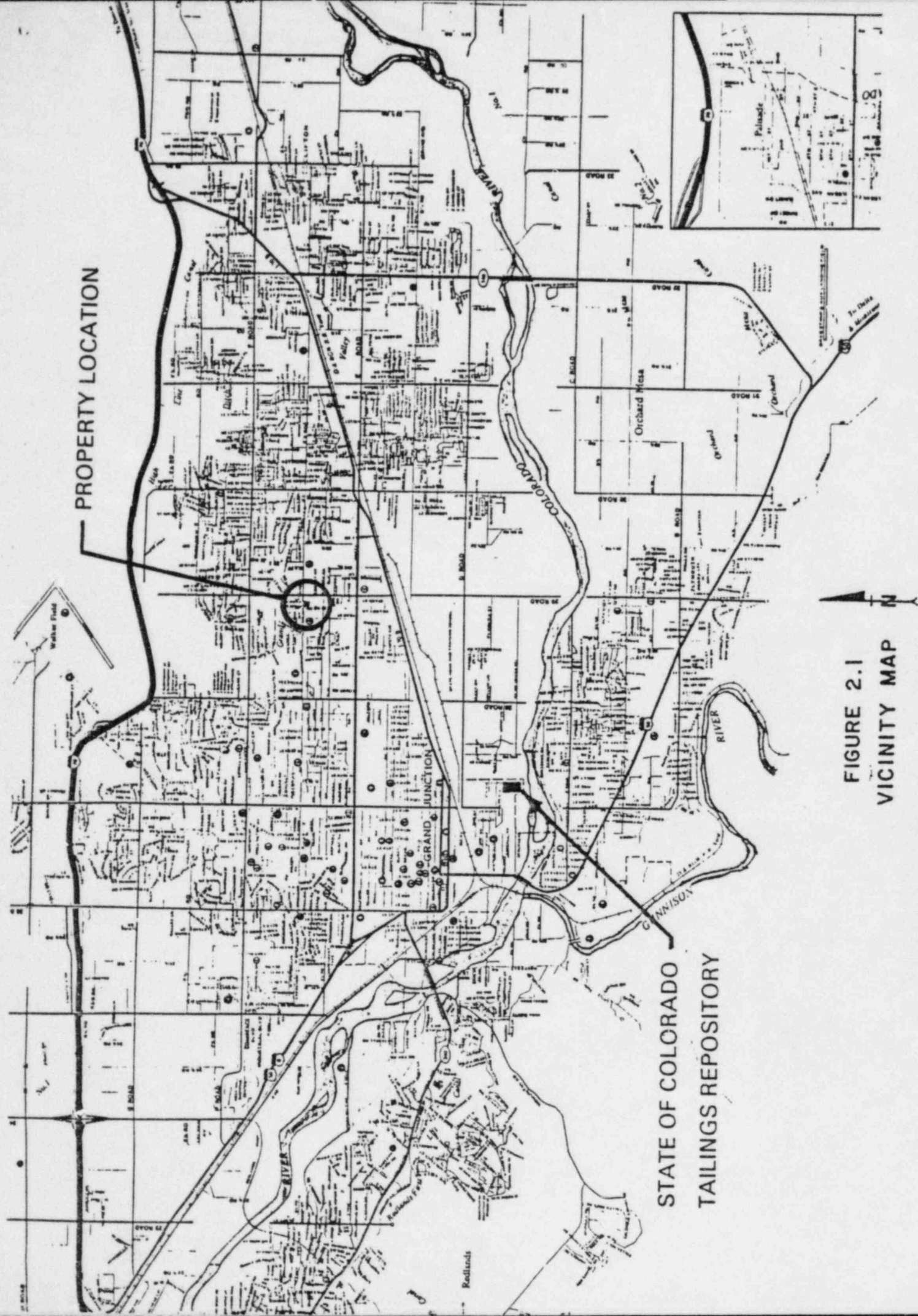


FIGURE 2.1
VICINITY MAP

(ORCHARD AVENUE)
(ASPHALT)

- PLAT DISTANCE=1377'



LOT 18 BLK.2, PARKERSON SUB. SEC.7, 1S 1E

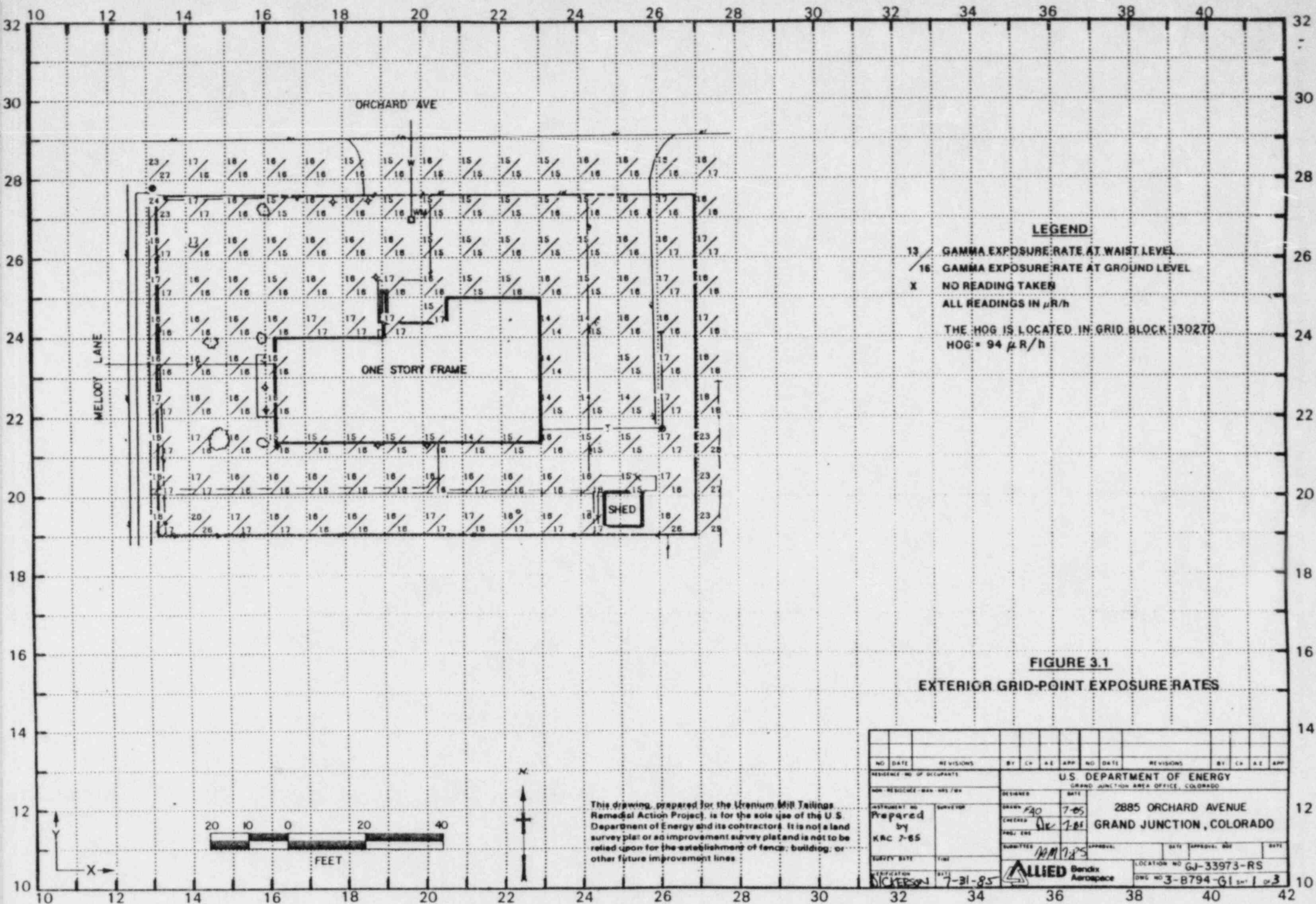


10' 5' 0 10' 20'

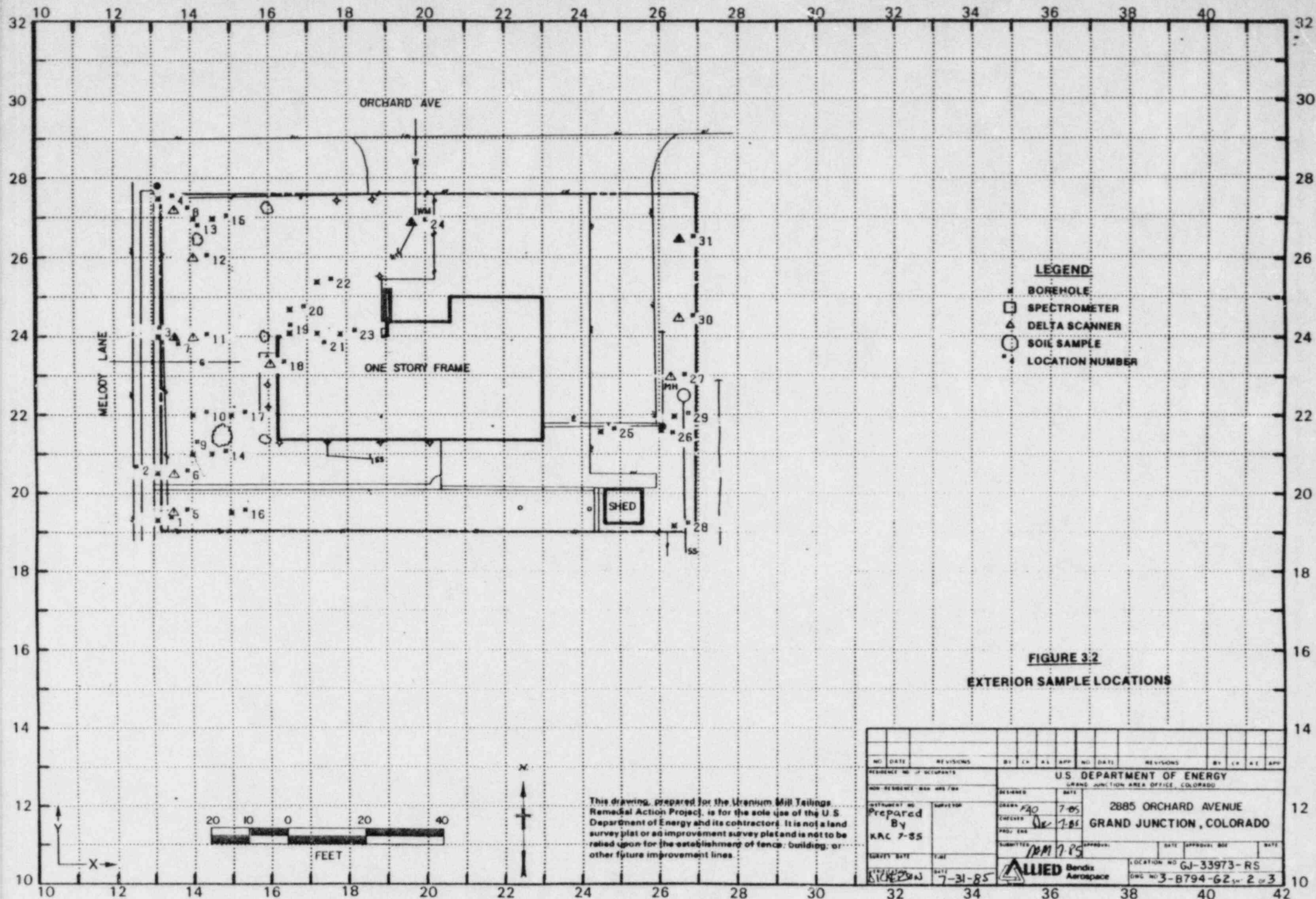
SCALE IN FEET

FIGURE 2.2 SITE PLAN

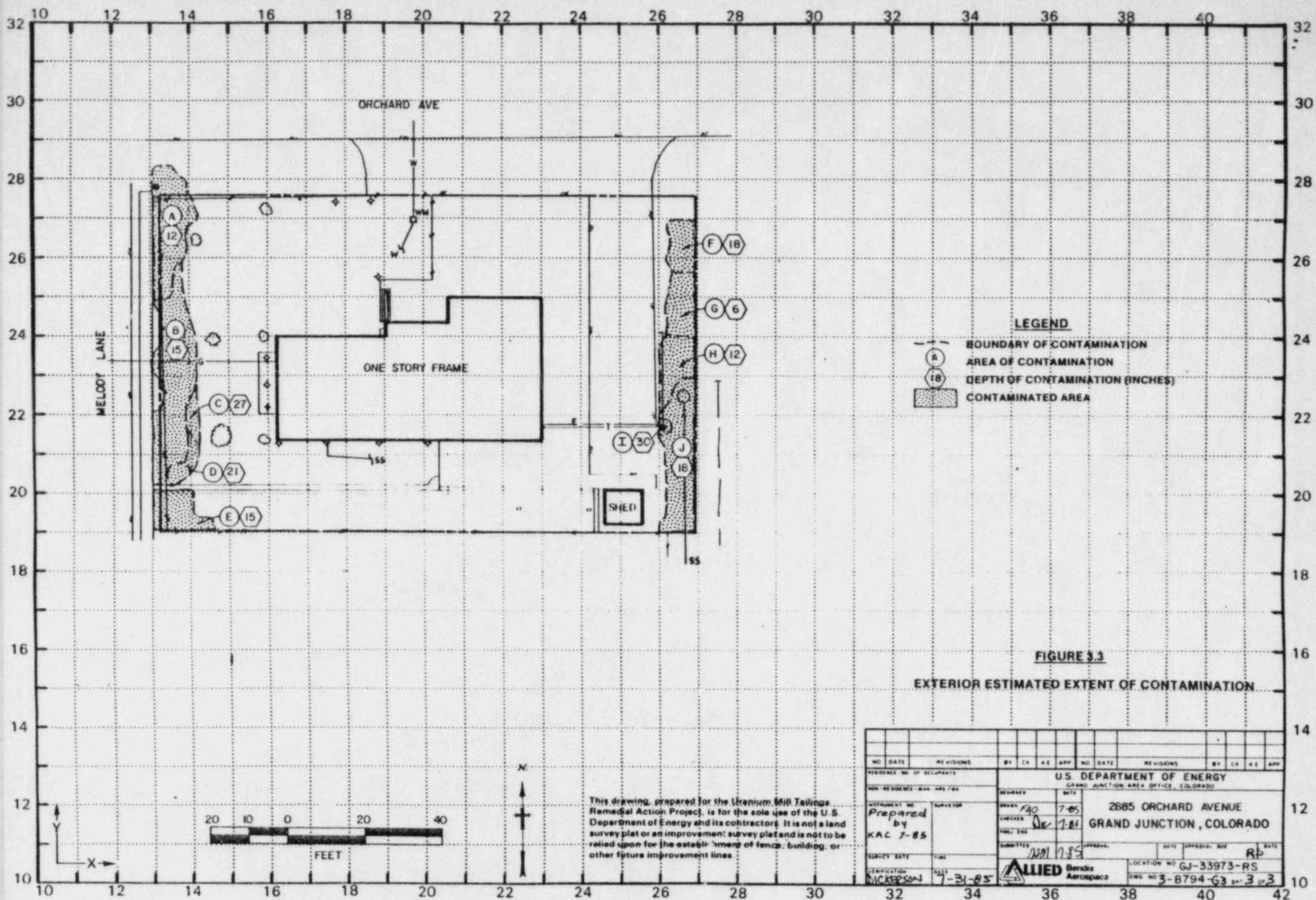
| | | |
|---|--------------------|---|
| U.S. DEPARTMENT OF ENERGY GRAND JUNCTION PROJECT OFFICE, COLORADO | | DOE ID NO GJ-33973-RS |
| ADDRESS 2885 ORCHARD AVENUE GRAND JUNCTION, COLORADO | | ALLIED Bonds <small>Insurance</small> |
| Bonds Field Engineering Corporation Grand Junction Operations | | |
| SURV W.H.L/6-28-85 | DRAFT J.R.G/7-3-85 | CR L.P. 7-3-85 |
| DRAWING NO 3-C-794-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 | | | | | | | | | | | | | | | |
| NON-RESIDENCE MAN HRS / WK | | | | | | | | | | | | | | | |
| INSTRUMENT NO. | | SURVEYOR | | DESIGNED | | DATE | | U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO | | | | | | | |
| Prepared by | | KAC 7-85 | | DRAWN | | 7-85 | | 2885 ORCHARD AVENUE GRAND JUNCTION, COLORADO | | | | | | | |
| SURVEY DATE | | TIME | | CHECKED | | 7-85 | | PLOT. ENG. | | SUBMITTER | | DATE | | APPROVAL | |
| 7-31-85 | | 7-31-85 | | 7-31-85 | | 7-31-85 | | 7-31-85 | | 7-31-85 | | 7-31-85 | | 7-31-85 | |
| ALLIED | | Bendix Aerospace | | LOCATION NO. | | GJ-33973-RS | | DWS NO. 3-8794-61 sheet 1 of 3 | | | | | | | |



| | | | | | | | | | | | | | | |
|----------------------------|--|-----------|--|--|-----|----|-----|----------|-----------|--|----|-----|----|-----|
| NO. DATE | | REVISIONS | | BY | CHK | AL | APP | NO. DATE | REVISIONS | | BY | CHK | AL | APP |
| RESIDENT NO. OF OCCUPANTS | | | | | | | | | | | | | | |
| NON-RESIDENT - SEX AND AGE | | | | | | | | | | | | | | |
| DRAWN | | DATE | | U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO 2885 ORCHARD AVENUE GRAND JUNCTION, COLORADO | | | | | | | | | | |
| CHECKED | | DATE | | SUBMITTER DATE APPROVAL DATE APPROVAL DATE | | | | | | | | | | |
| PAID | | DATE | | LOCATION NO. GJ-33973-RS GJC NO. 3-B794-62-2 of 3 | | | | | | | | | | |
| SURVEY DATE | | TIME | | ALLIED Bendix Aerospace | | | | | | | | | | |
| DRAWN BY | | DATE | | 7-31-85 | | | | | | | | | | |



3/85

DOE ID NO. GJ-33973-RS

Date July 19, 1985

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

Official Survey Report

Property Address 2885 Orchard Ave.

Property Owner Robert R. Paustian

Address of Owner (if different from above) Same

Report Prepared By Kent Cary

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 XX 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 = 16 uR/h
HOG = 94 uR/h

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: July 8, 1985

To: Files

From: Kent A. Cary

Subject: Team Leader Notes - GJ-33973-RS

Address: 2885 Orchard Avenue

Owner: Robert R. Paustian

Weather: Hot and dry

Team Members

K. Cary (Team Leader)
P. Hardy
A. Raabe

H. Lucero
M. Dexter

Instruments

See Operational Summary sheet.

Oak Ridge National Laboratory (ORNL) data indicated contamination along the west fence line. No interior contamination was indicated. Colorado Department of Health (CDH) data was not available for the property at the time of the survey.

Team members pulled and marked baselines from the northeast corner of the primary structure. The entire property was gamma scanned and grid pointed.

A walking scan was performed in the house, garage, and shed. No elevated readings were found.

Team Leader Notes

K. Cary

GJ-33973-RS

July 8, 1985

Page 2

The area of elevated readings along the west fence line was investigated with boreholes and delta measurements. The results of these measurements were more extensive than that indicated by the gamma scan. The contamination appeared to be located in a layer approximately 15 inches below the clean soil over much of the area.

In a conversation with the owner, Mr. Paustain stated that the lot had been vacant for many years prior to the construction of the structure. He indicated that the house had been built in 1984. When or how the tailings were brought on to the property was unknown to him or the contractor who built the house. The owner stated that several loads of clean soil had been spread over the area for landscaping purposes.

The sewer and water lines were not indicated on the maps. Mr. Paustain was not sure of their exact location. The water line was investigated at the water meter with a total count instrument. The sewer line was investigated with a downhole scintillometer at a location where Mr. Paustain thought it was most likely located (Grid Location 177212). The house was built on a slab-on-grade so that it was not possible to visually locate the lines from a crawl space. The buried electrical and telephone lines were investigated with a total count instrument at Grid Location 245216. The gas line was investigated with a delta scintillometer at Grid Location 160233. No elevated readings were found at any of the utility locations.

Downhole scintillometers were used to investigate the foundation and buried utility lines at the following locations: 177212 (sewer and foundation), 161215 (foundation), 172241 (foundation).

An area of elevated readings was discovered along the east property line adjacent to the utility easement. The main sewer line was located along this easement and was investigated with total count instruments. Results indicated that the elevated readings were due to surface contamination. The contamination did not extend to the depth of the line itself.

The contamination along the east easement spilled over onto the adjacent property, located at 2887 Orchard Avenue. A spillover consent form was signed by the owner George Blanka. Contamination along the west fence spilled over onto the adjacent property, located on Melody Lane (DOE ID GJ-05733). The owner refused to sign the spillover consent form.

Team Leader Notes

K. Cary

GJ-33973-RS

July 8, 1985

Page 3

An area of elevated readings was discovered with the total count instruments in the north lawn adjacent to the primary structure. The contamination was located at a depth of approximately 30-inches below the surface.

The Bendix crew left the property and returned to the compound at 3:00 PM. All personnel were alpha scanned.

Revisit

Date: July 9, 1985

Team Members

K. Cary (Team Leader)

D. Martz

Instruments

See Operational Summary sheet.

The area of elevated readings in the north lawn were further investigated with total count instruments, to further characterize the deposit.

We completed our investigation at 10:30 AM and left the property. D. Martz and myself (K. Cary) were alpha scanned before leaving the site.

Note

After consulting with Billie Foust and Dave Mackler, the deposit in the north yard adjacent to the structure will be assessed as not contaminated. This is based on the depth (30 inches or more) and the low-level nature of the deposit (below Environmental Protection Agency [EPA] standards.

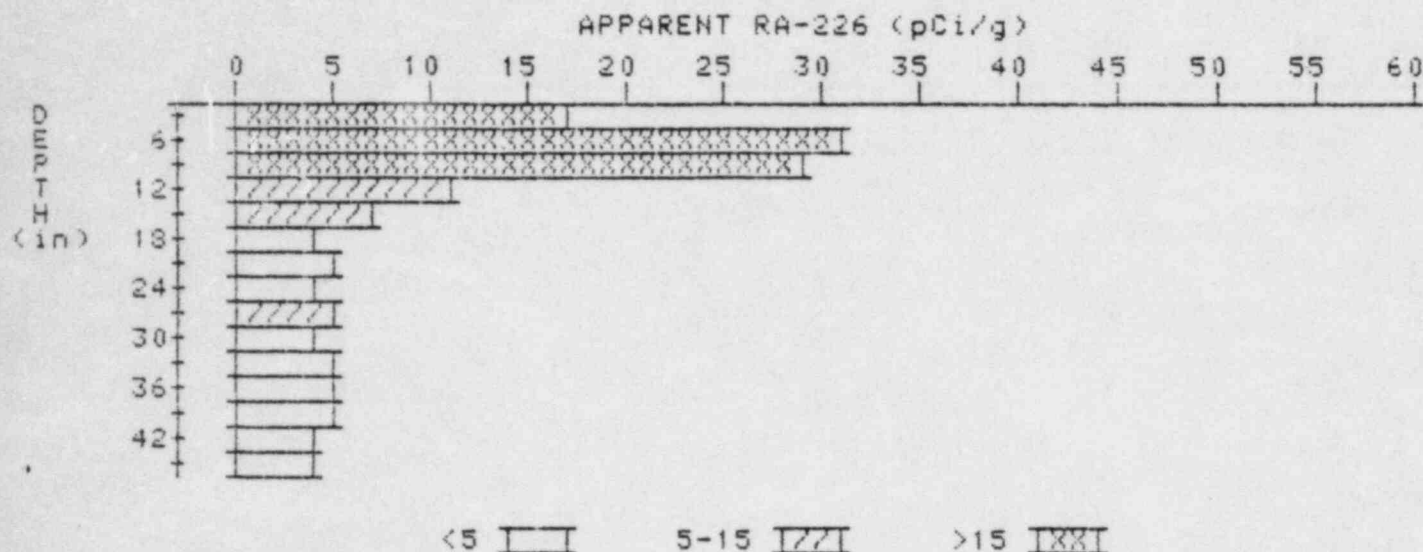
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

1

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 1

LOCATION: 131193



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 16.8 | 16.8 |
| 6 | 21.2 | 31.0 |
| 9 | 20.1 | 29.0 |
| 12 | 14.0 | 11.0 |
| 15 | 9.6 | 6.8 |
| 18 | 6.8 | 4.0 |
| 21 | 5.6 | 4.5 |
| 24 | 5.0 | 4.1 |
| 27 | 4.9 | 5.3 |
| 30 | 4.6 | 4.1 |
| 33 | 4.6 | 4.8 |
| 36 | 4.5 | 4.5 |
| 39 | 4.4 | 4.8 |
| 42 | 4.1 | 3.7 |
| 45 | 4.0 | 4.0 |

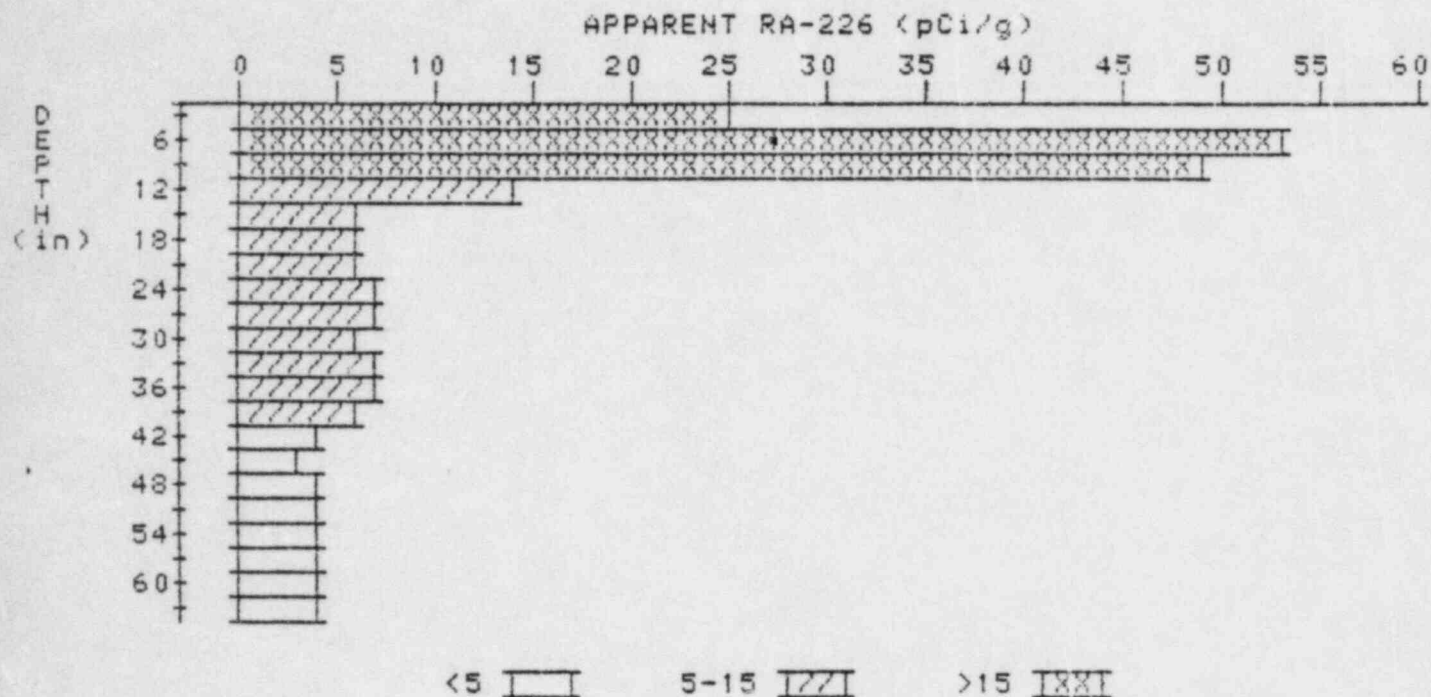
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

2

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 2

LOCATION: 131205



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 25.2 | 25.2 |
| 6 | 34.1 | 53.3 |
| 9 | 32.2 | 49.3 |
| 12 | 20.7 | 13.8 |
| 15 | 13.1 | 6.0 |
| 18 | 9.5 | 6.1 |
| 21 | 7.8 | 5.8 |
| 24 | 7.2 | 6.8 |
| 27 | 6.8 | 6.6 |
| 30 | 6.5 | 6.0 |
| 33 | 6.5 | 6.9 |
| 36 | 6.3 | 7.0 |
| 39 | 5.7 | 6.2 |
| 42 | 4.8 | 4.3 |
| 45 | 4.2 | 3.5 |
| 48 | 4.0 | 3.8 |
| 51 | 3.9 | 3.7 |

54
57
60
63

3.9
3.9
4.0
3.9

3.9
3.7
4.4
3.9

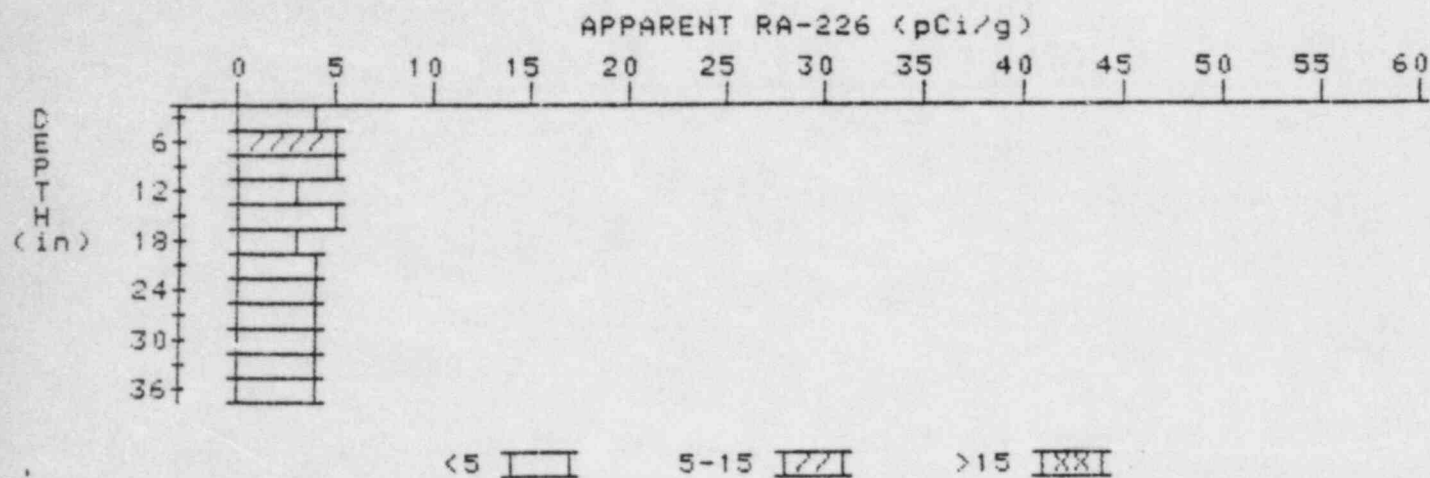
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

3

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 3

LOCATION: 131240



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.9 | 3.9 |
| 6 | 4.4 | 5.5 |
| 9 | 4.3 | 4.7 |
| 12 | 4.0 | 3.3 |
| 15 | 4.1 | 4.8 |
| 18 | 3.8 | 3.3 |
| 21 | 3.8 | 4.0 |
| 24 | 3.7 | 3.5 |
| 27 | 3.7 | 3.5 |
| 30 | 3.8 | 4.0 |
| 33 | 3.8 | 3.8 |
| 36 | 3.8 | 3.8 |

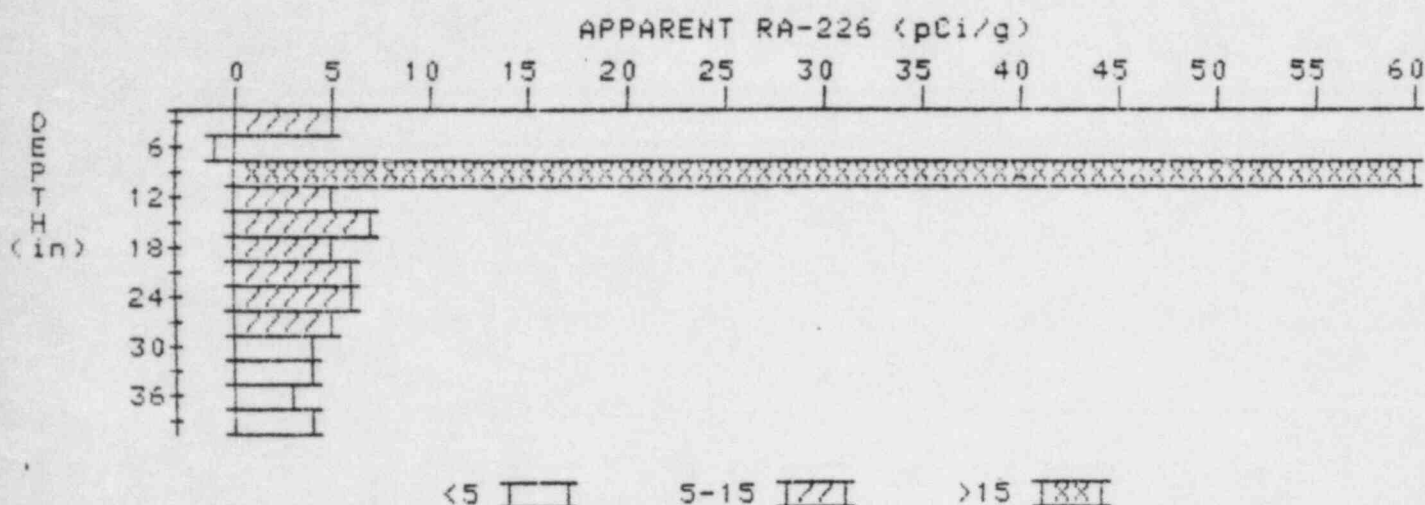
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

4

PROPERTY NUMBER: GJ-33973-R3

HOLE NUMBER: 4

LOCATION: 131275



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 5.0 | 5.0 |
| 6 | 4.1 | -34.7 |
| 9 | 25.0 | 80.1 |
| 12 | 14.9 | 5.1 |
| 15 | 10.3 | 6.7 |
| 18 | 7.7 | 5.2 |
| 21 | 6.5 | 5.6 |
| 24 | 5.8 | 5.8 |
| 27 | 5.1 | 5.1 |
| 30 | 4.4 | 3.7 |
| 33 | 4.1 | 4.1 |
| 36 | 3.8 | 3.1 |
| 39 | 3.9 | 3.9 |

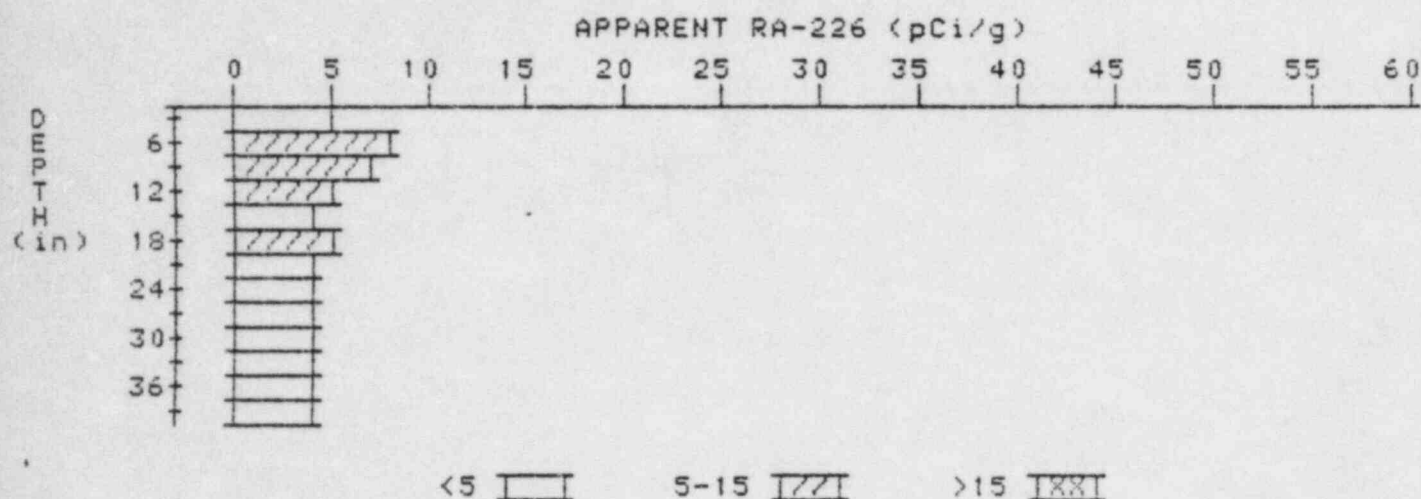
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

7

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 7

LOCATION: 135240



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 4.8 | 4.8 |
| 6 | 5.8 | 7.6 |
| 9 | 5.8 | 6.7 |
| 12 | 5.3 | 5.1 |
| 15 | 4.9 | 4.4 |
| 18 | 4.8 | 5.2 |
| 21 | 4.5 | 4.3 |
| 24 | 4.3 | 4.3 |
| 27 | 4.1 | 3.7 |
| 30 | 4.1 | 4.1 |
| 33 | 4.1 | 4.1 |
| 36 | 4.1 | 4.3 |
| 39 | 4.0 | 4.0 |

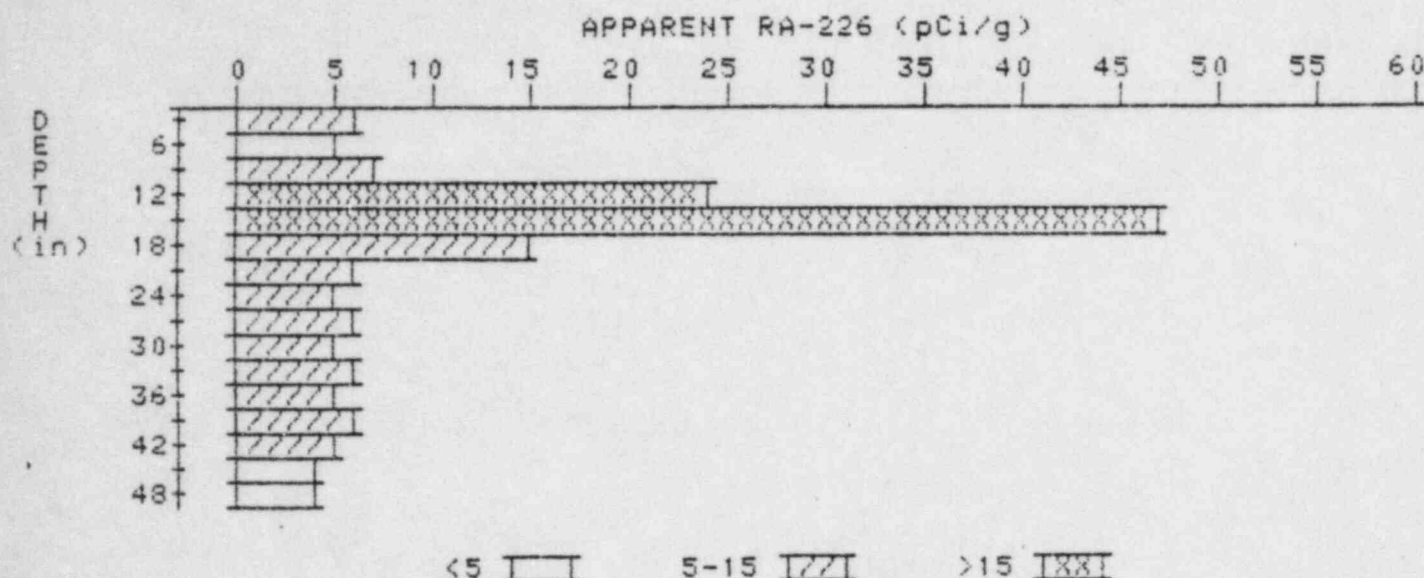
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

9

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 9

LOCATION: 140210



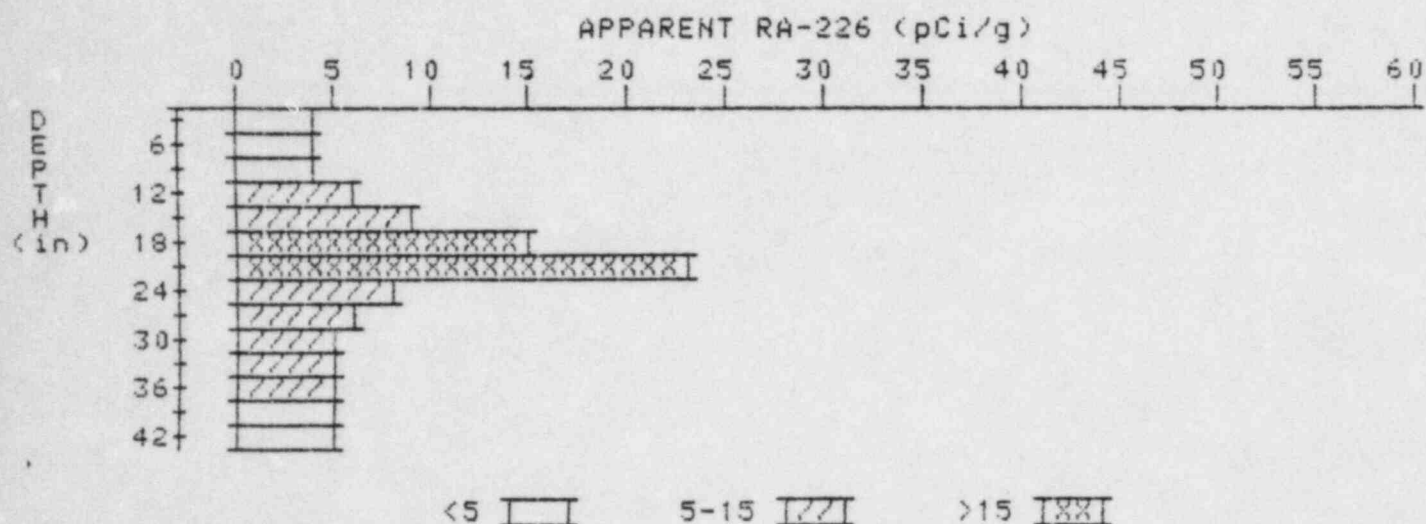
| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 5.7 | 5.7 |
| 6 | 8.1 | 4.7 |
| 9 | 12.4 | 6.9 |
| 12 | 19.8 | 23.9 |
| 15 | 24.9 | 47.3 |
| 18 | 17.4 | 14.9 |
| 21 | 11.3 | 5.8 |
| 24 | 8.3 | 5.3 |
| 27 | 7.0 | 6.1 |
| 30 | 6.2 | 5.3 |
| 33 | 5.9 | 5.9 |
| 36 | 5.6 | 5.4 |
| 39 | 5.4 | 5.8 |
| 42 | 5.0 | 5.0 |
| 45 | 4.6 | 4.2 |
| 48 | 4.4 | 4.4 |

APPARENT RADIUM-226 CONCENTRATION 10 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 10

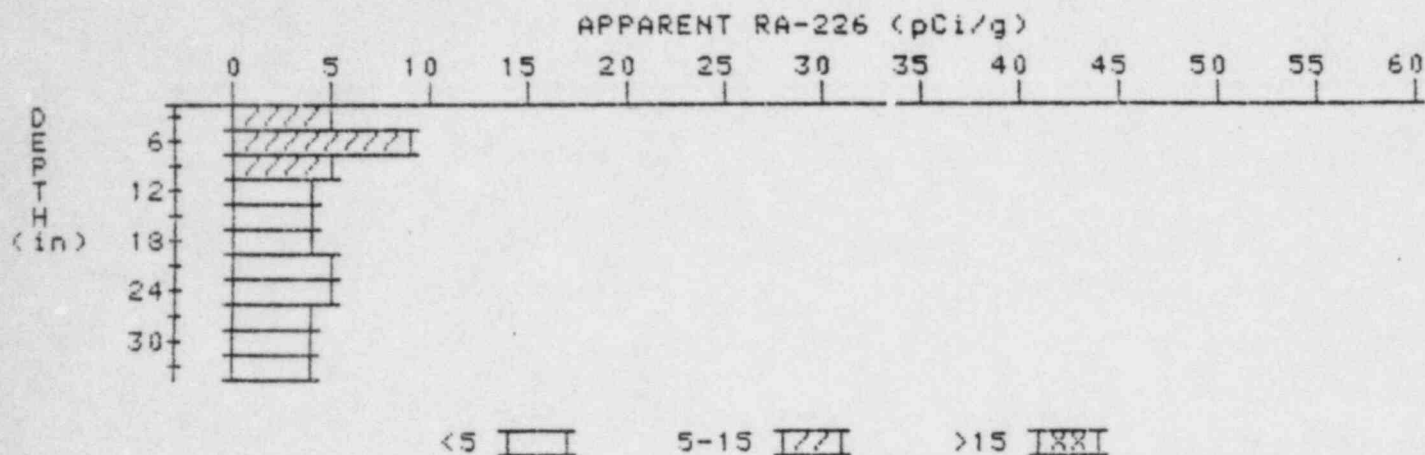
LOCATION: 140220



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.8 | 3.8 |
| 6 | 4.4 | 3.5 |
| 9 | 5.5 | 4.3 |
| 12 | 7.3 | 6.1 |
| 15 | 9.8 | 9.3 |
| 18 | 12.6 | 15.4 |
| 21 | 13.8 | 22.7 |
| 24 | 10.0 | 7.5 |
| 27 | 7.6 | 5.6 |
| 30 | 6.3 | 5.2 |
| 33 | 5.6 | 5.1 |
| 36 | 5.2 | 5.0 |
| 39 | 4.9 | 4.5 |
| 42 | 4.8 | 4.8 |

APPARENT RADIUM-226 CONCENTRATION 13 DECONVOLUTION GRAPH

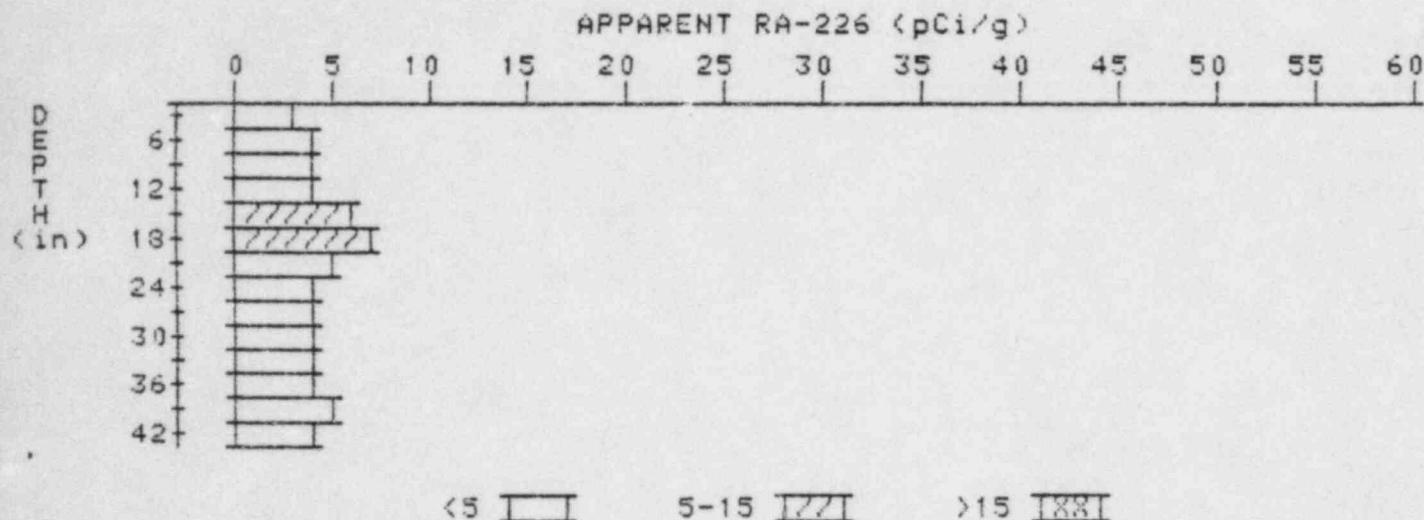
PROPERTY NUMBER: GJ-33973-RS
HOLE NUMBER: 13
LOCATION: 140270



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 5.0 | 5.0 |
| 6 | 6.0 | 9.0 |
| 9 | 5.3 | 5.1 |
| 12 | 4.7 | 4.2 |
| 15 | 4.4 | 3.9 |
| 18 | 4.4 | 4.2 |
| 21 | 4.5 | 4.9 |
| 24 | 4.4 | 4.6 |
| 27 | 4.2 | 4.0 |
| 30 | 4.1 | 4.1 |
| 33 | 4.0 | 4.0 |

APPARENT RADIUM-226 CONCENTRATION 14 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS
HOLE NUMBER: 14
LOCATION: 145210



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.4 | 3.4 |
| 6 | 3.7 | 3.7 |
| 9 | 4.0 | 4.0 |
| 12 | 4.3 | 3.6 |
| 15 | 5.0 | 5.7 |
| 18 | 5.3 | 6.5 |
| 21 | 4.9 | 4.7 |
| 24 | 4.6 | 4.4 |
| 27 | 4.4 | 4.0 |
| 30 | 4.4 | 4.4 |
| 33 | 4.4 | 4.4 |
| 36 | 4.4 | 4.4 |
| 39 | 4.4 | 4.6 |
| 42 | 4.3 | 4.3 |

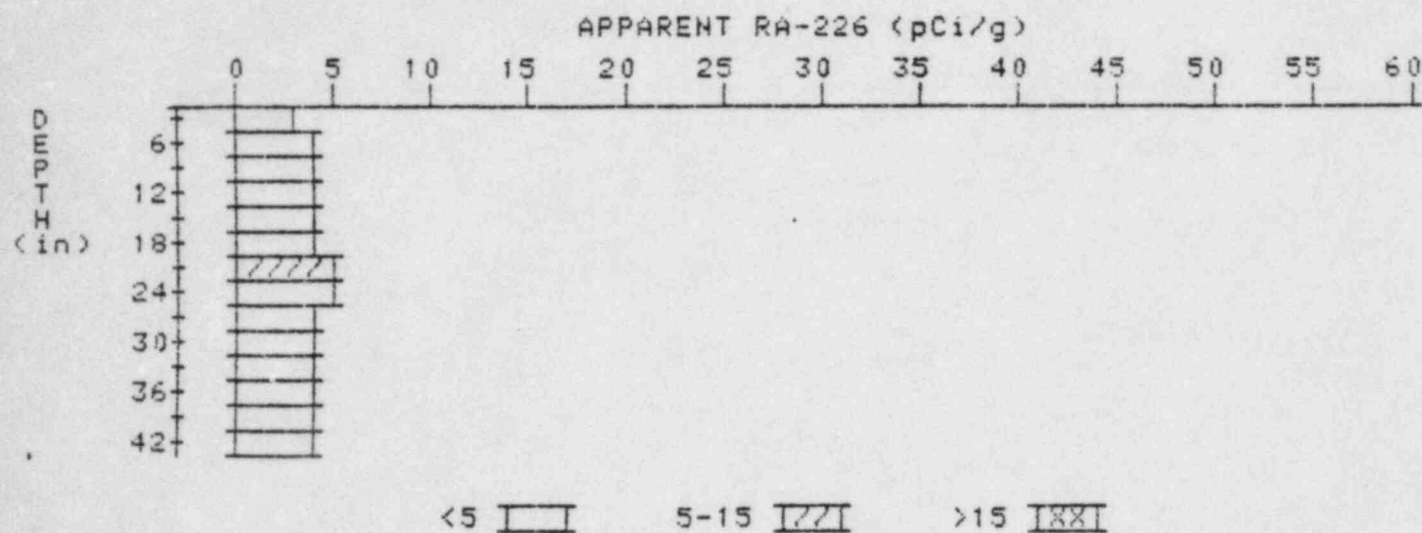
APPARENT RADIUM-226 CONCENTRATION 15

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 15

LOCATION: 145270



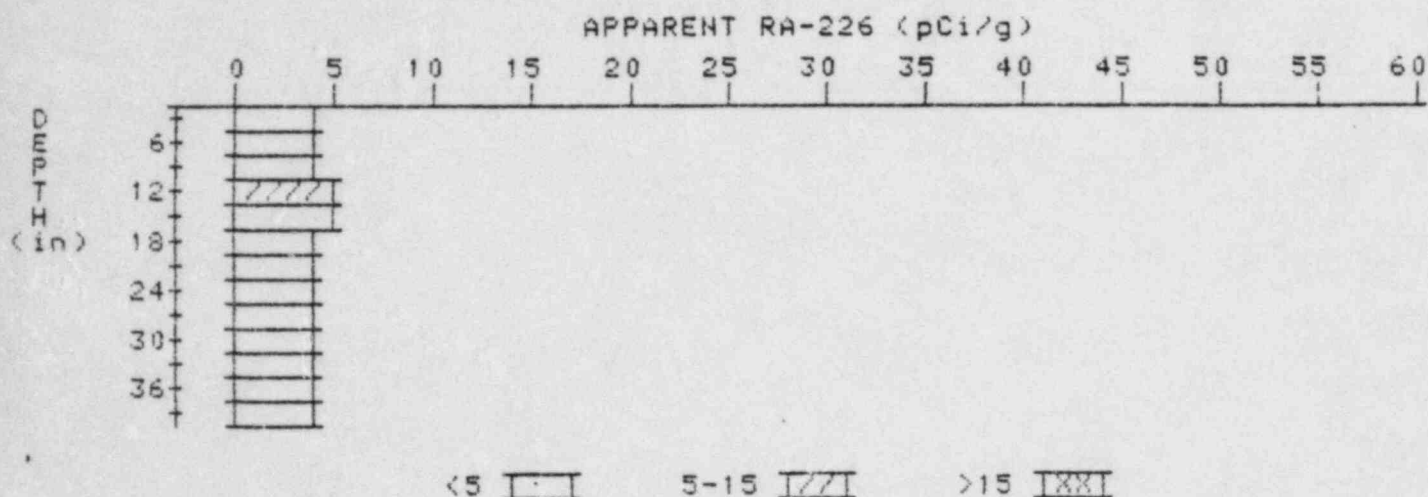
| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.1 | 3.1 |
| 6 | 3.5 | 3.7 |
| 9 | 3.8 | 4.2 |
| 12 | 3.9 | 3.7 |
| 15 | 4.1 | 4.1 |
| 18 | 4.3 | 4.1 |
| 21 | 4.6 | 5.3 |
| 24 | 4.5 | 4.5 |
| 27 | 4.4 | 4.4 |
| 30 | 4.3 | 4.5 |
| 33 | 4.1 | 3.7 |
| 36 | 4.1 | 4.3 |
| 39 | 4.0 | 4.4 |
| 42 | 3.7 | 3.7 |

APPARENT RADIUM-226 CONCENTRATION 16 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 16

LOCATION: 150195



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.7 | 3.7 |
| 6 | 4.0 | 4.2 |
| 9 | 4.2 | 4.0 |
| 12 | 4.5 | 5.0 |
| 15 | 4.5 | 4.9 |
| 18 | 4.3 | 4.3 |
| 21 | 4.1 | 3.7 |
| 24 | 4.1 | 4.1 |
| 27 | 4.1 | 4.1 |
| 30 | 4.1 | 4.3 |
| 33 | 4.0 | 4.0 |
| 36 | 3.9 | 3.9 |
| 39 | 3.8 | 3.8 |

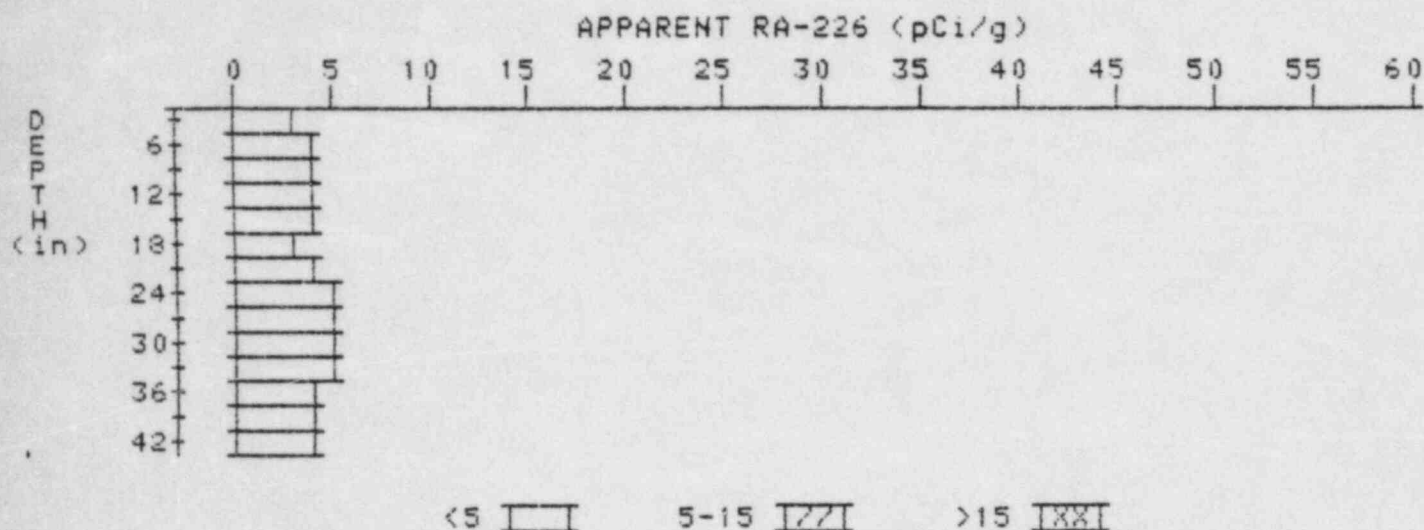
APPARENT RADIUM-226 CONCENTRATION 17

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 17

LOCATION: 150220



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.2 | 3.2 |
| 6 | 3.4 | 3.6 |
| 9 | 3.5 | 3.5 |
| 12 | 3.6 | 3.6 |
| 15 | 3.7 | 3.7 |
| 18 | 3.8 | 3.4 |
| 21 | 4.1 | 4.1 |
| 24 | 4.4 | 4.6 |
| 27 | 4.6 | 5.0 |
| 30 | 4.6 | 4.6 |
| 33 | 4.6 | 5.0 |
| 36 | 4.4 | 4.2 |
| 39 | 4.3 | 4.1 |
| 42 | 4.3 | 4.3 |

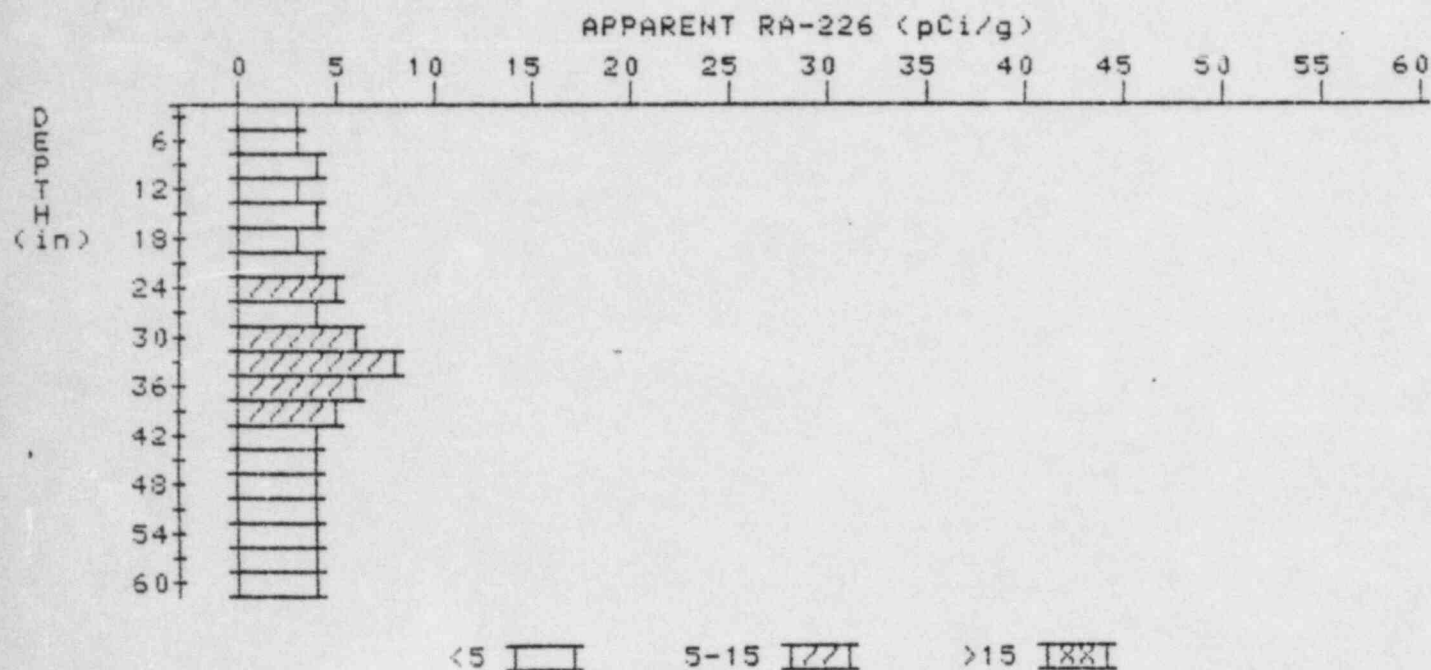
APPARENT RADIUM-226 CONCENTRATION 19

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-R3

HOLE NUMBER: 19

LOCATION: 165241



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.2 | 3.2 |
| 6 | 3.4 | 3.4 |
| 9 | 3.6 | 4.0 |
| 12 | 3.6 | 3.4 |
| 15 | 3.7 | 3.9 |
| 18 | 3.7 | 3.2 |
| 21 | 4.0 | 3.6 |
| 24 | 4.5 | 5.0 |
| 27 | 4.7 | 3.8 |
| 30 | 5.4 | 5.6 |
| 33 | 6.0 | 8.0 |
| 36 | 5.5 | 5.5 |
| 39 | 5.0 | 5.0 |
| 42 | 4.5 | 4.0 |
| 45 | 4.3 | 4.1 |
| 48 | 4.2 | 4.2 |
| 51 | 4.1 | 4.1 |
| 54 | 4.0 | 4.0 |

57
60

3.9
3.9

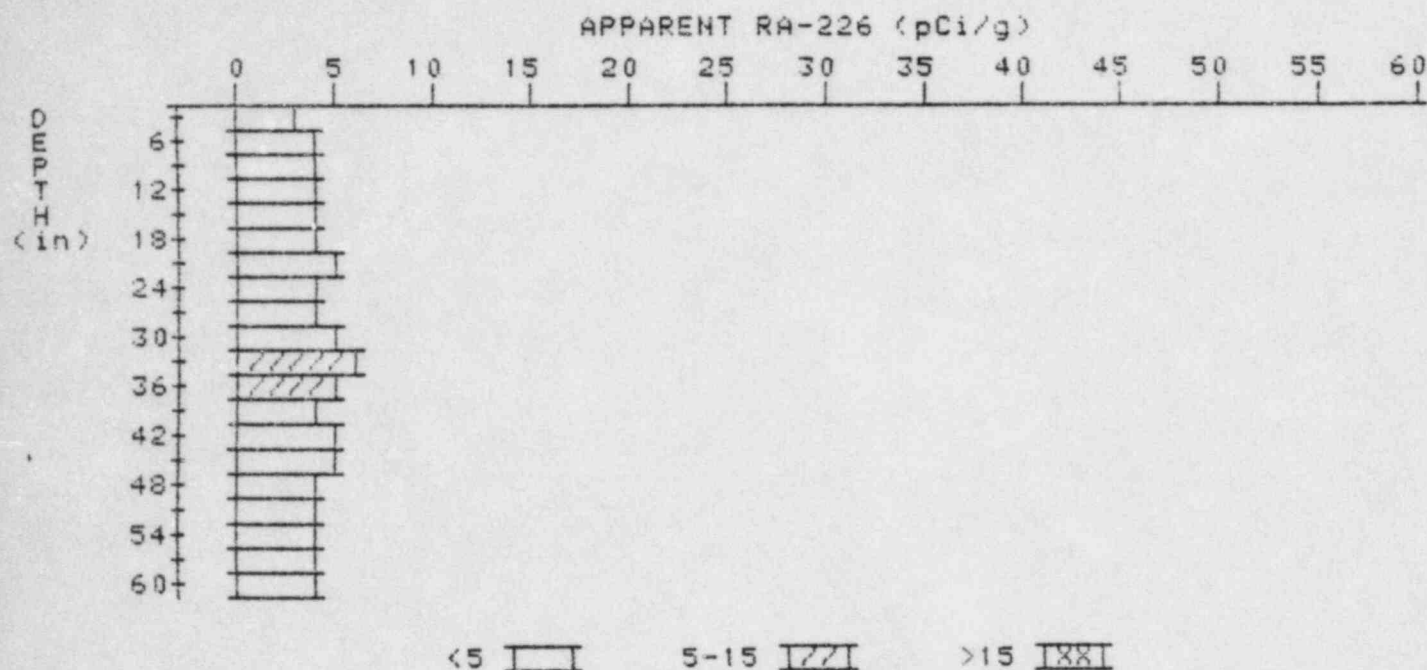
3.7
3.9

APPARENT RADIUM-226 CONCENTRATION 20 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 20

LOCATION: 165247



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.3 | 3.3 |
| 6 | 3.6 | 3.8 |
| 9 | 3.8 | 4.2 |
| 12 | 3.8 | 3.6 |
| 15 | 3.9 | 3.9 |
| 18 | 4.0 | 3.8 |
| 21 | 4.2 | 4.6 |
| 24 | 4.2 | 3.8 |
| 27 | 4.4 | 4.2 |
| 30 | 4.7 | 4.5 |
| 33 | 5.1 | 6.2 |
| 36 | 4.9 | 5.1 |
| 39 | 4.6 | 4.2 |
| 42 | 4.5 | 4.5 |
| 45 | 4.4 | 4.6 |
| 48 | 4.2 | 3.8 |
| 51 | 4.2 | 4.4 |
| 54 | 4.1 | 4.1 |

57
60

4.0
4.0

3.3
4.0

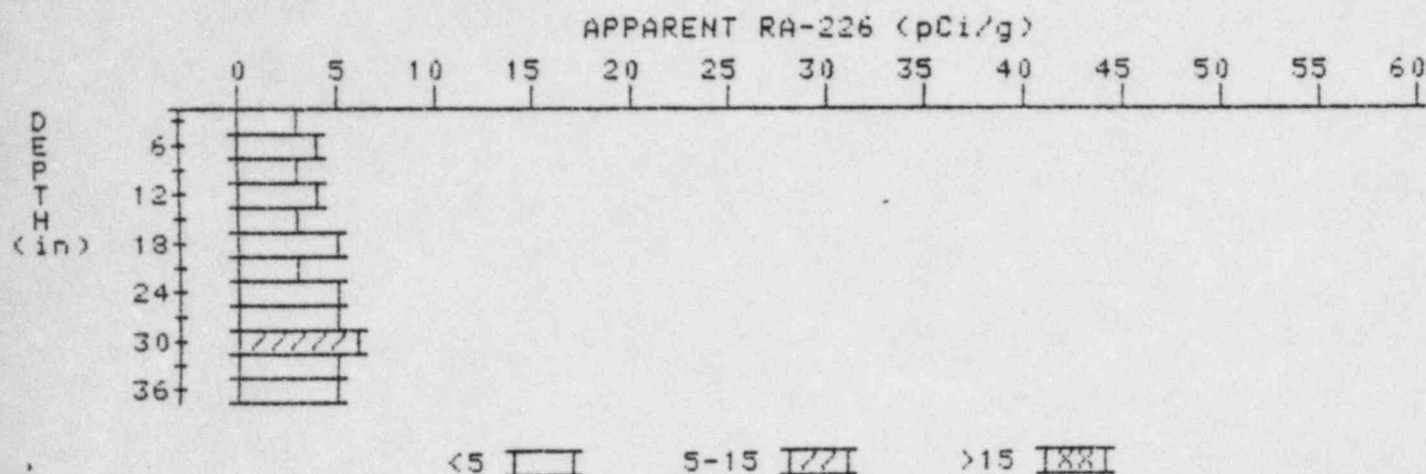
APPARENT RADIUM-226 CONCENTRATION 21

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 21

LOCATION: 172241



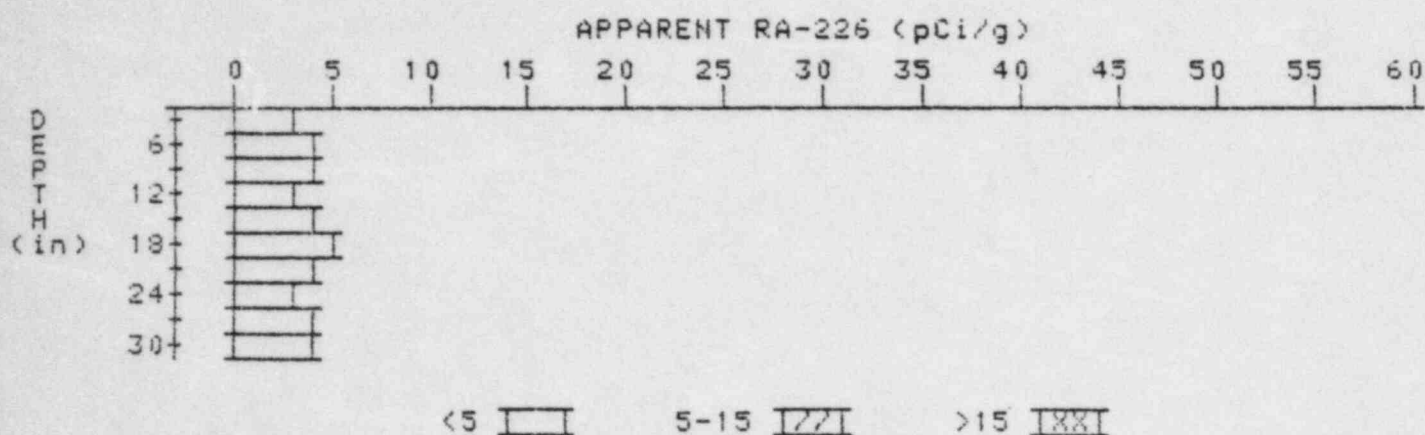
| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.2 | 3.2 |
| 6 | 3.4 | 3.8 |
| 9 | 3.4 | 3.2 |
| 12 | 3.5 | 3.5 |
| 15 | 3.6 | 2.9 |
| 18 | 4.1 | 5.0 |
| 21 | 4.1 | 3.4 |
| 24 | 4.5 | 4.7 |
| 27 | 4.8 | 4.6 |
| 30 | 5.2 | 6.4 |
| 33 | 4.9 | 4.9 |
| 36 | 4.6 | 4.6 |

APPARENT RADIUM-226 CONCENTRATION 22 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 22

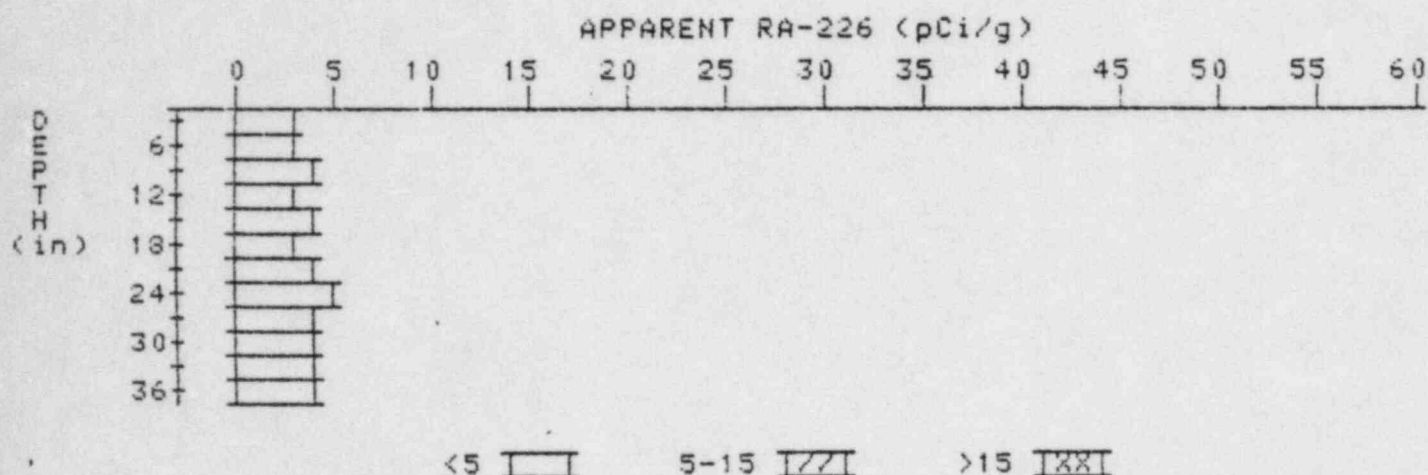
LOCATION: 172254



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.3 | 3.3 |
| 6 | 3.5 | 3.5 |
| 9 | 3.7 | 4.1 |
| 12 | 3.7 | 3.3 |
| 15 | 3.9 | 3.7 |
| 18 | 4.2 | 4.9 |
| 21 | 4.1 | 4.3 |
| 24 | 3.9 | 3.4 |
| 27 | 4.0 | 3.8 |
| 30 | 4.2 | 4.2 |

APPARENT RADIUM-226 CONCENTRATION 23 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS
HOLE NUMBER: 23
LOCATION: 178241



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.3 | 3.3 |
| 6 | 3.3 | 2.9 |
| 9 | 3.5 | 3.9 |
| 12 | 3.5 | 3.1 |
| 15 | 3.7 | 3.9 |
| 18 | 3.8 | 3.4 |
| 21 | 4.1 | 4.3 |
| 24 | 4.3 | 4.7 |
| 27 | 4.3 | 4.5 |
| 30 | 4.2 | 3.8 |
| 33 | 4.3 | 4.3 |
| 36 | 4.4 | 4.4 |

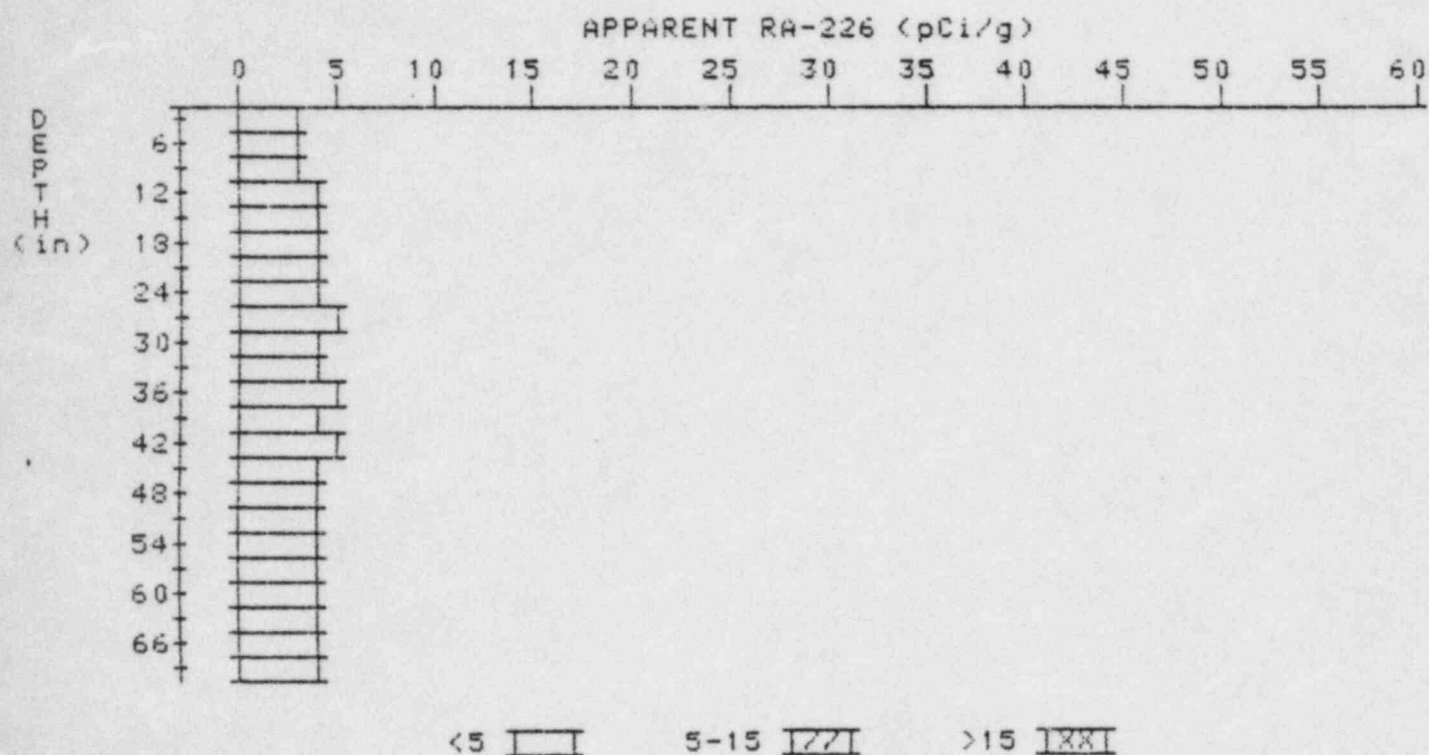
APPARENT RADIUM-226 CONCENTRATION 24

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 24

LOCATION: 196269



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 2.9 | 2.9 |
| 6 | 3.2 | 3.4 |
| 9 | 3.4 | 3.4 |
| 12 | 3.6 | 3.6 |
| 15 | 3.8 | 3.8 |
| 18 | 4.0 | 4.2 |
| 21 | 4.1 | 4.3 |
| 24 | 4.1 | 3.9 |
| 27 | 4.2 | 4.6 |
| 30 | 4.1 | 3.9 |
| 33 | 4.1 | 3.9 |
| 36 | 4.2 | 4.6 |
| 39 | 4.1 | 3.7 |
| 42 | 4.2 | 4.6 |
| 45 | 4.1 | 3.9 |

| | | |
|----|-----|-----|
| 48 | 4.1 | 4.1 |
| 51 | 4.1 | 4.1 |
| 54 | 4.1 | 3.9 |
| 57 | 4.2 | 4.4 |
| 60 | 4.2 | 4.4 |
| 63 | 4.1 | 4.3 |
| 66 | 3.9 | 3.5 |
| 69 | 3.9 | 3.9 |

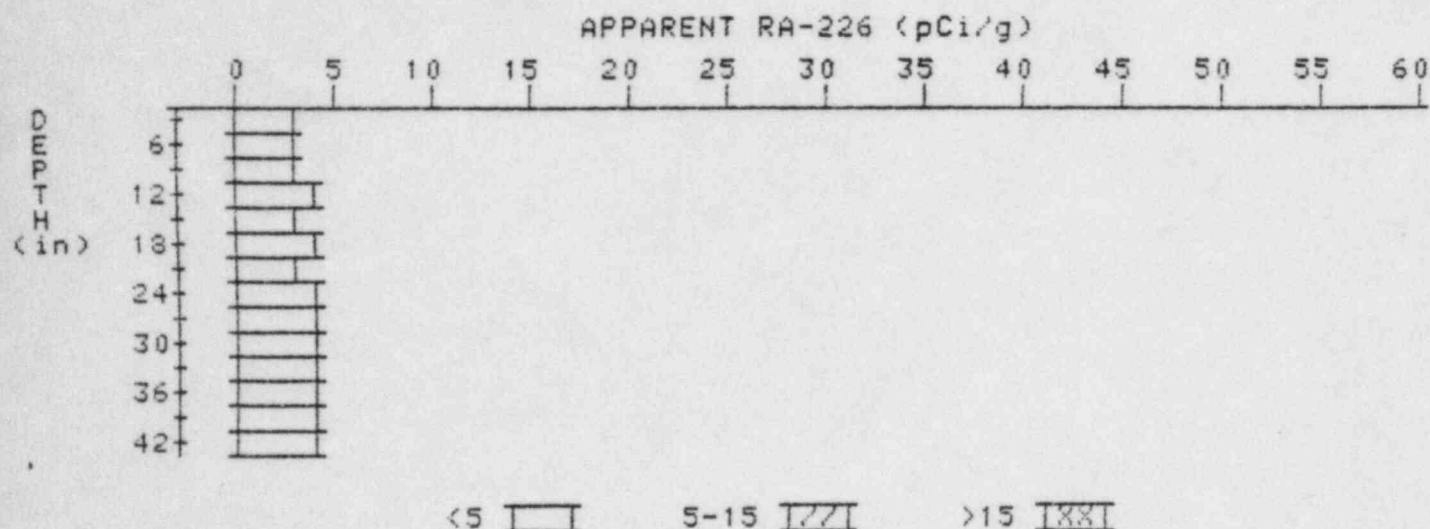
APPARENT RADIUM-226 CONCENTRATION 25

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 25

LOCATION: 245216



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 2.8 | 2.8 |
| 6 | 3.1 | 3.5 |
| 9 | 3.2 | 3.0 |
| 12 | 3.4 | 3.8 |
| 15 | 3.4 | 3.2 |
| 18 | 3.5 | 3.7 |
| 21 | 3.5 | 3.1 |
| 24 | 3.7 | 3.9 |
| 27 | 3.8 | 3.8 |
| 30 | 3.9 | 4.1 |
| 33 | 3.9 | 3.9 |
| 36 | 3.9 | 4.1 |
| 39 | 3.8 | 3.6 |
| 42 | 3.8 | 3.8 |

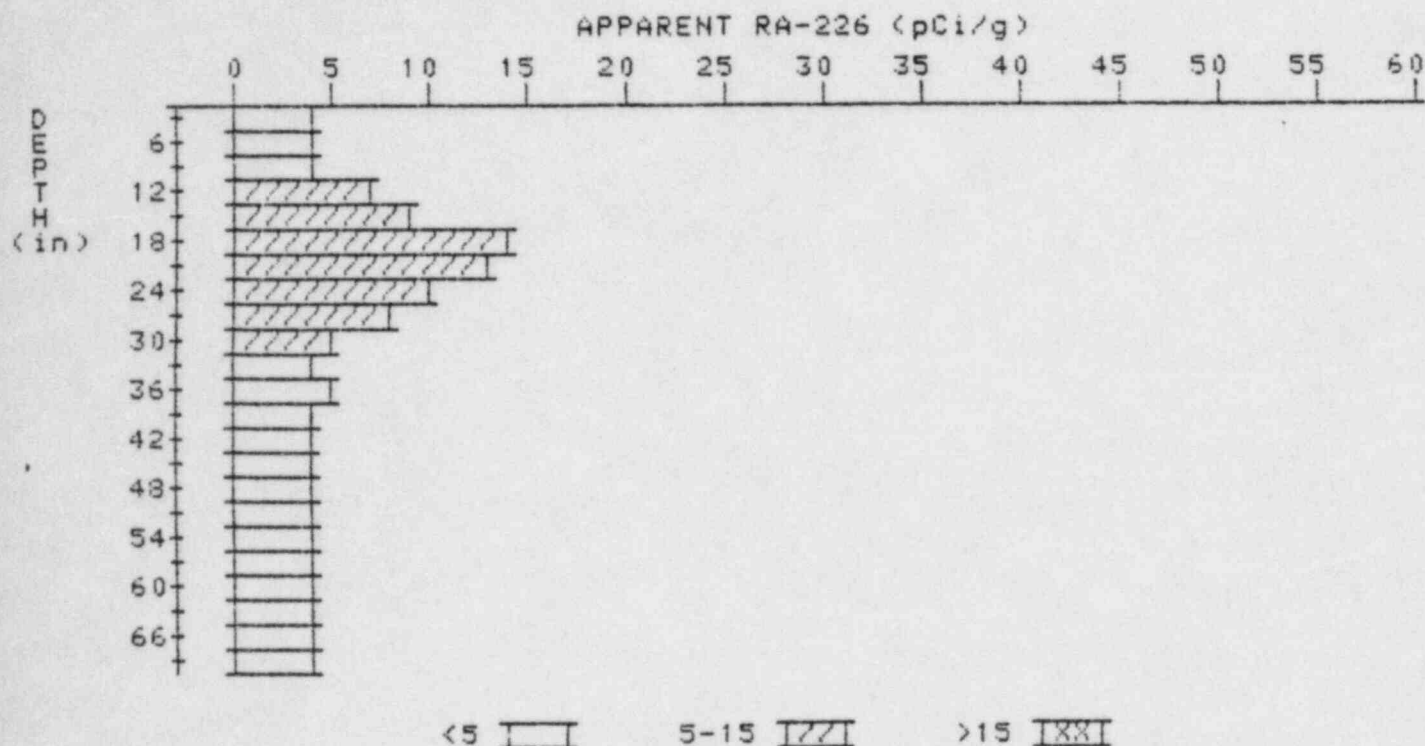
APPARENT RADIUM-226 CONCENTRATION 26

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 26

LOCATION: 260215



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.9 | 3.9 |
| 6 | 4.5 | 4.0 |
| 9 | 5.4 | 3.6 |
| 12 | 7.3 | 7.5 |
| 15 | 9.1 | 9.1 |
| 18 | 10.9 | 14.3 |
| 21 | 10.8 | 13.1 |
| 24 | 9.4 | 9.8 |
| 27 | 7.8 | 7.8 |
| 30 | 6.2 | 5.1 |
| 33 | 5.2 | 4.3 |
| 36 | 4.7 | 4.5 |
| 39 | 4.3 | 3.9 |
| 42 | 4.1 | 3.7 |
| 45 | 4.1 | 4.1 |

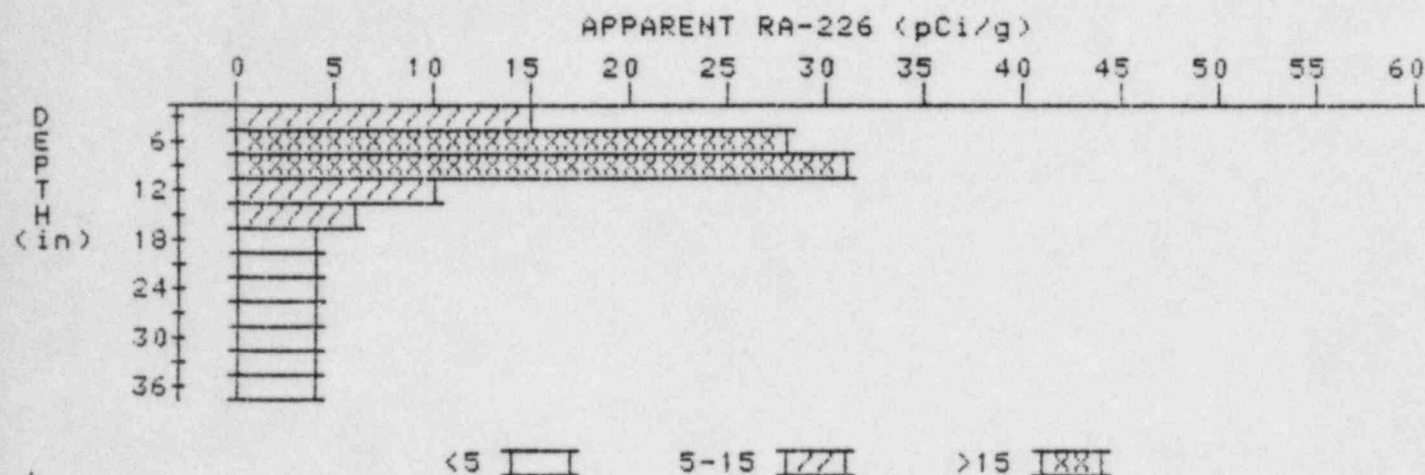
| | | |
|----|-----|-----|
| 48 | 4.1 | 4.1 |
| 51 | 4.1 | 4.1 |
| 54 | 4.1 | 4.3 |
| 57 | 4.0 | 4.0 |
| 60 | 3.9 | 3.9 |
| 63 | 3.8 | 3.6 |
| 66 | 3.8 | 4.0 |
| 69 | 3.7 | 3.7 |

APPARENT RADIUM-226 CONCENTRATION 28 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 28

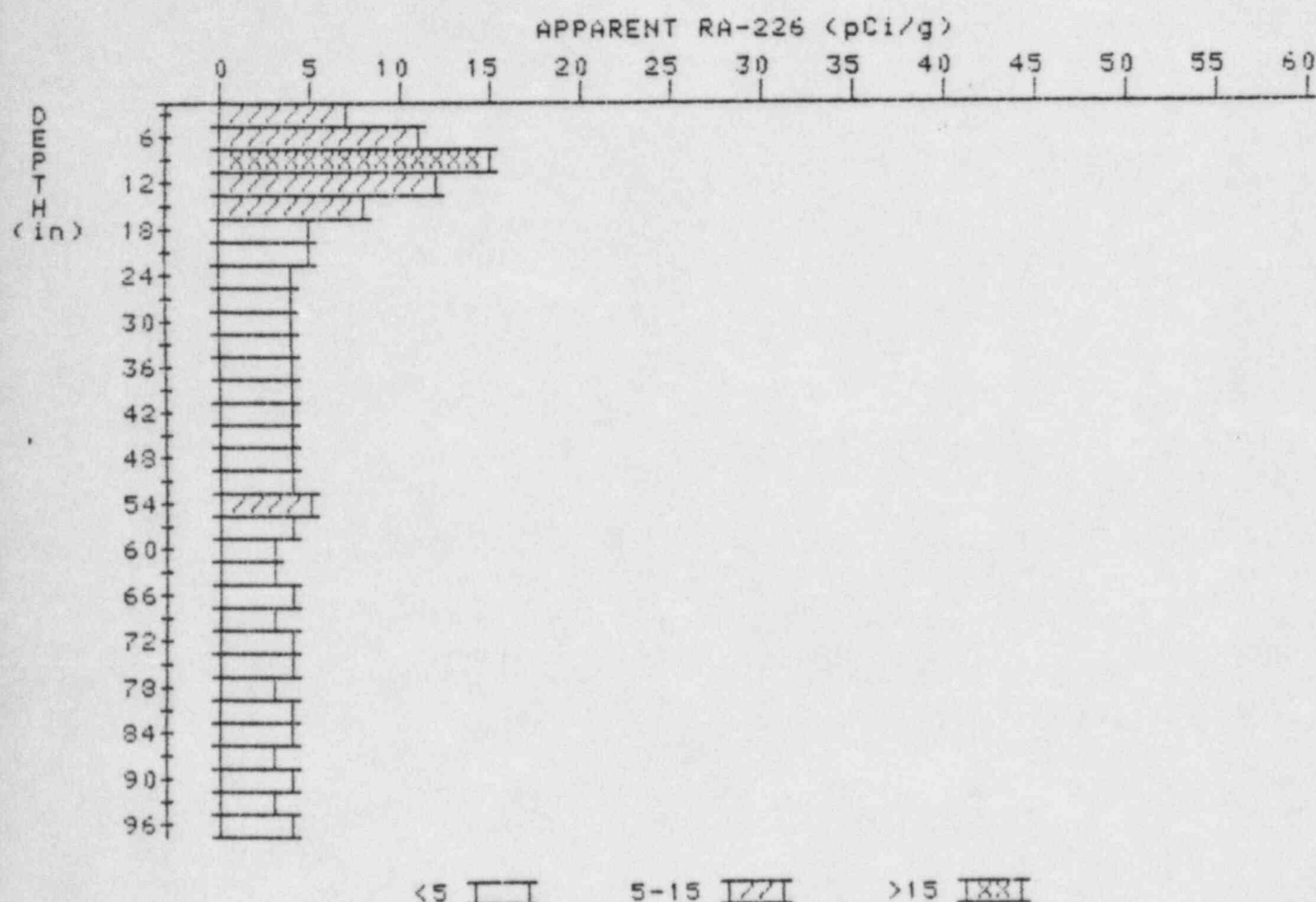
LOCATION: 264192



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 14.6 | 14.6 |
| 6 | 19.5 | 27.9 |
| 9 | 19.7 | 31.1 |
| 12 | 13.5 | 10.1 |
| 15 | 9.2 | 6.2 |
| 18 | 6.6 | 4.3 |
| 21 | 5.3 | 4.2 |
| 24 | 4.6 | 3.9 |
| 27 | 4.3 | 3.9 |
| 30 | 4.2 | 4.0 |
| 33 | 4.2 | 4.4 |
| 36 | 4.1 | 4.1 |

APPARENT RADIUM-226 CONCENTRATION 29 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-33973-RS
HOLE NUMBER: 29
LOCATION: 264220



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 7.1 | 7.1 |
| 6 | 9.3 | 10.5 |
| 9 | 10.8 | 15.1 |
| 12 | 9.9 | 11.9 |
| 15 | 7.9 | 7.5 |
| 18 | 6.1 | 4.5 |
| 21 | 5.2 | 4.8 |
| 24 | 4.5 | 3.6 |
| 27 | 4.3 | 4.1 |

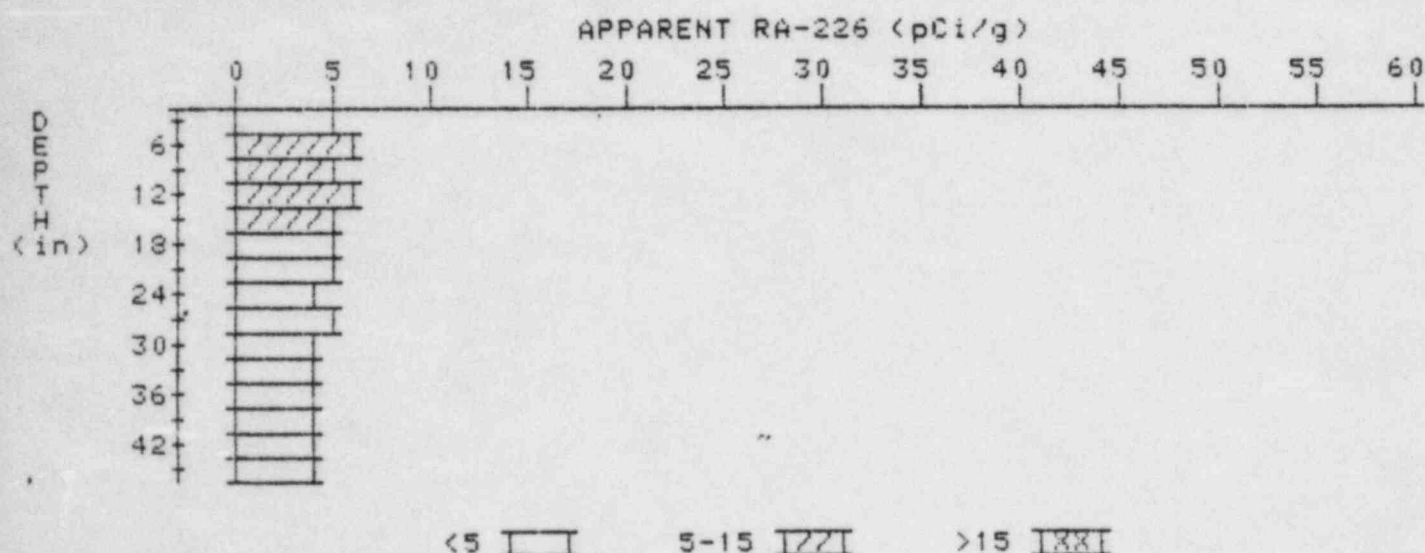
| | | |
|----|-----|-----|
| 30 | 4.2 | 4.2 |
| 33 | 4.1 | 3.9 |
| 36 | 4.1 | 4.3 |
| 39 | 4.0 | 3.8 |
| 42 | 4.0 | 4.0 |
| 45 | 4.0 | 4.0 |
| 48 | 4.0 | 3.6 |
| 51 | 4.2 | 4.4 |
| 54 | 4.3 | 5.0 |
| 57 | 4.0 | 4.0 |
| 60 | 3.7 | 3.3 |
| 63 | 3.6 | 3.4 |
| 66 | 3.6 | 4.0 |
| 69 | 3.4 | 2.9 |
| 72 | 3.5 | 3.7 |
| 75 | 3.5 | 3.5 |
| 78 | 3.5 | 3.1 |
| 81 | 3.7 | 4.1 |
| 84 | 3.7 | 3.9 |
| 87 | 3.6 | 3.4 |
| 90 | 3.6 | 3.6 |
| 93 | 3.6 | 3.4 |
| 96 | 3.7 | 3.7 |

APPARENT RADIUM-226 CONCENTRATION 31 DECONVOLUTION GRAPH

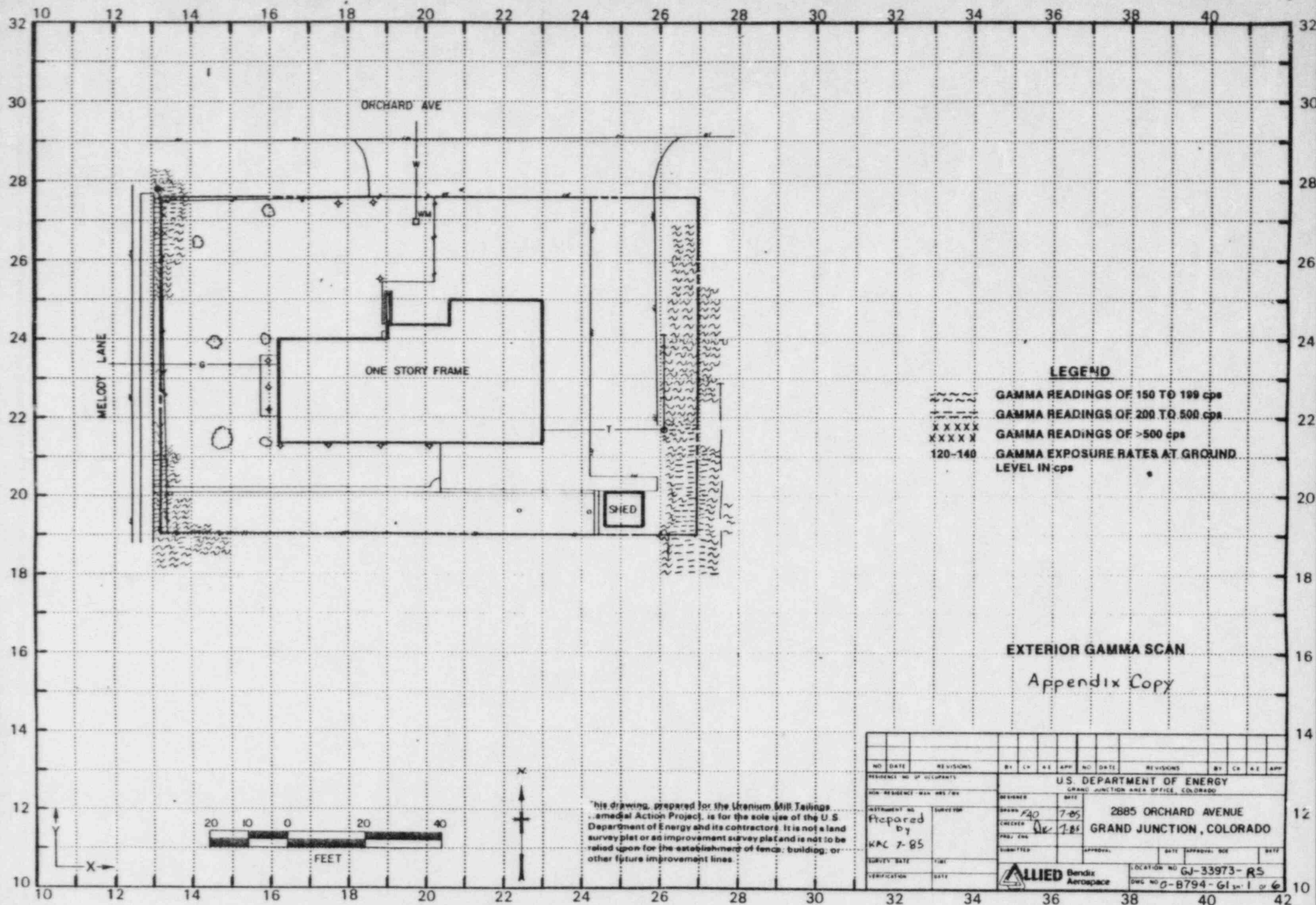
PROPERTY NUMBER: GJ-33973-RS

HOLE NUMBER: 31

LOCATION: 265265



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 4.7 | 4.7 |
| 6 | 5.2 | 6.1 |
| 9 | 5.2 | 5.2 |
| 12 | 5.2 | 5.6 |
| 15 | 5.0 | 5.2 |
| 18 | 4.7 | 4.5 |
| 21 | 4.5 | 4.7 |
| 24 | 4.2 | 3.7 |
| 27 | 4.2 | 4.6 |
| 30 | 4.0 | 4.0 |
| 33 | 3.8 | 3.6 |
| 36 | 3.7 | 3.5 |
| 39 | 3.7 | 3.9 |
| 42 | 3.6 | 3.6 |
| 45 | 3.5 | 3.5 |



| | | | | | | | | | | | | | | |
|--------------------------------|--|-----------|--|-------------------------|----|--------------|-----|--------------------------------------|-----------|------------------|----|------|----|-----|
| NO. DATE | | REVISIONS | | BY | CH | RE | APP | NO. DATE | REVISIONS | | BY | CH | RE | APP |
| RESIDENCE NO. OF OCCUPANTS | | | | | | | | U.S. DEPARTMENT OF ENERGY | | | | | | |
| HOM. RESIDENCE MAX. WBS. / WS. | | | | | | | | GRAND JUNCTION AREA OFFICE, COLORADO | | | | | | |
| INSTRUMENT NO. | | SURVEYOR | | DESIGNED | | DATE | | 2885 ORCHARD AVENUE | | | | | | |
| Prepared by | | KAC 7-85 | | CHECKED | | 7-85 | | GRAND JUNCTION, COLORADO | | | | | | |
| SURVEY DATE | | TIME | | SUBMITTED | | APPROVAL | | DATE | | APPROVAL | | DATE | | |
| VERIFICATION | | DATE | | ALLIED Bendix Aerospace | | LOCATION NO. | | GJ-33973-R5 | | | | | | |
| | | | | | | | | DWG NO. | | G-8794-G1 1 of 6 | | | | |