DEPARTMENT OF ENERGY
ALBUQUERQUE OPERATIONS OFFICE
CONTRACT NO. DE-AC04-83AL18796

Draft
Radiological and Engineering Assessment

Vicinity Property No. SLC 070

Remedial Actions
Contractor
for the
Uranium Mill Tailings
Remedial Actions
Project

MORRISON
KNUDSEN

DRAFT

THE RADIOLOGICAL AND ENGINEERING ASSESSMENT AND FINAL DESIGN FOR SALT LAKE CITY PROPERTY

SL-070

March 20, 1985

PREPARED FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

UNITED STATES DEPARTMENT OF ENERGY

PREPARED BY

MORRISON-KNUDSEN COMPANY, INC.

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

Property SL-070 is an open land property located at 3265 S. 900 West Street, Salt Lake City, UT.

1.2 Evaluation and Recommendation

1.2.1 Residual Radioactive Material Involvement

There are three areas of contamination on this property.

1.2.2 Recommended Remedial Action Option

The recommended option is to remove the contaminated material.

1.2.3 Estimated Costs

The estimated cost for removal of the contaminated material and restoration of the property is $31,300.00.

1.2.4 Schedule

The estimated duration of the remedial action effort is 15 to 20 days.

2.0 ENGINEERING FIELD SURVEY

2.1 Property Description

2.1.1 Property Use and Occupancy

Property SL-070 is an open land property located at 3265 South 900 West Street and owned by Sarah B. Paulsen and David F. Paulsen, trustees of the Sarah V. Paulsen trust. The map in Figure 2.1 illustrates the property's vicinity location.

2.1.2 Legal Description

The legal description as recorded with the Salt Lake County Recorder's Office in Deed Book No. 5293, Page 1402 follows:

An undivided one-half interest in and to the following described property: Beginning on a point on the East line of 800 West Street, said point being North 74.65 feet; thence South 89°50 East 73.0 feet and North 0°03'14" East 506.24 feet to a County Road Stone in the Southwest corner of the Intersection of 3300 South and 800 West Street, said feet from a County Monument at the intersection of said Streets, and said County Monument is located East 898.0 feet, more or less, and North 998.0 feet; more or less, from the South quarter corner of Section 26, Township 1 South, Range 1 West, Salt Lake Base and Meridian, and running thence North 0°03'14" East along the East line of 800 West 200.0 feet; thence South 89°50' East 193.26 feet; thence South 1°57' East 200.14 feet; thence North 89°50' West 200.26 feet to the point of Beginning.

2.1.3 Bordering Properties

The lot is zoned Business-A, for business, office, and retail establishments. It is located in an industrial area adjacent to the old Vitro mill tailings site. The property is bounded on the north by business property; on the east by the Vitro site; on the south by business property; and on the west by 900 West Street.

2.2 Existing Facilities and Structures

2.2.1 Structures

The property is a vacant lot enclosed on three sides by a chain link fence and enclosed on the fourth side by a masonry building wall. The lot is surfaced with crushed stone and is used as a storage yard for construction materials and equipment.

2.2.2 Utilities

Utilities are serviced to the property as follows:

Electric power - At northwest corner of lot.

Telephone - None.

Water - None.

Gas - None.

Sewer - Storm sewer along 900 West Street.

2.2.3 Site Plan and Survey Data

See Figure 2.2 for a site plan of the property. Property survey data and photos are presented in Table 2.1 and Figures 2.3, 2.4, and 2.5.

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATA

GENERAL:

Facility Name: Paulsen Construction Storage Lot

Address: 3265 South 900 West Street

Owner: Sarah V. and David F. Paulsen trustees of the Sarah B. Paulsen trust

Occupancy: Employees/Occupants (Full Time): N/A

Employees/Occupants (Part Time): N/A

Remarks: Construction equipment storage yard

PROPERTY DESCRIPTION:

Structure: (Identify) Temporary construction office

: SQ FT _____ Levels _____

: Construction Type Wood frame

: Foundation None

Remarks: Miscellaneous items of construction equipment and construction materials are stored on the property.

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATE

Facility Name: Paulsen Construction Storage Lot

PROPERTY DESCRIPTION:

Driveway/Access: Concrete: _____ Asphalt: _____ Gravel: X

Remarks: _____

Sidewalks: Concrete: _____ Asphalt: _____

Remarks: None

Fences: Chain link X Mesh _____ Wood _____

Remarks: _____

Grounds: Lawn None

Trees Clump of elms 3" to 8" diameter

Shrubs None

Grading Level

Soil Type Sandy gravel

Remarks _____

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATA

Facility Name: Paulsen Construction Storage Lot

UTILITIES: Heating: Gas _____ Electric _____ Oil _____

Hot Water _____ Other _____

Remarks: _____

_____

Air Conditioning: Elec. Heating Pump _____ Gas _____

Evap. Cooler _____ Other _____

Remarks: _____

_____

Electric Line Location: Northwest corner of lot

_____

Gas Line Location: None

_____

Water Line Location: None

_____

Sewer Line Location: None

_____

Telephone Line Location: Underground from 900 West Street

_____

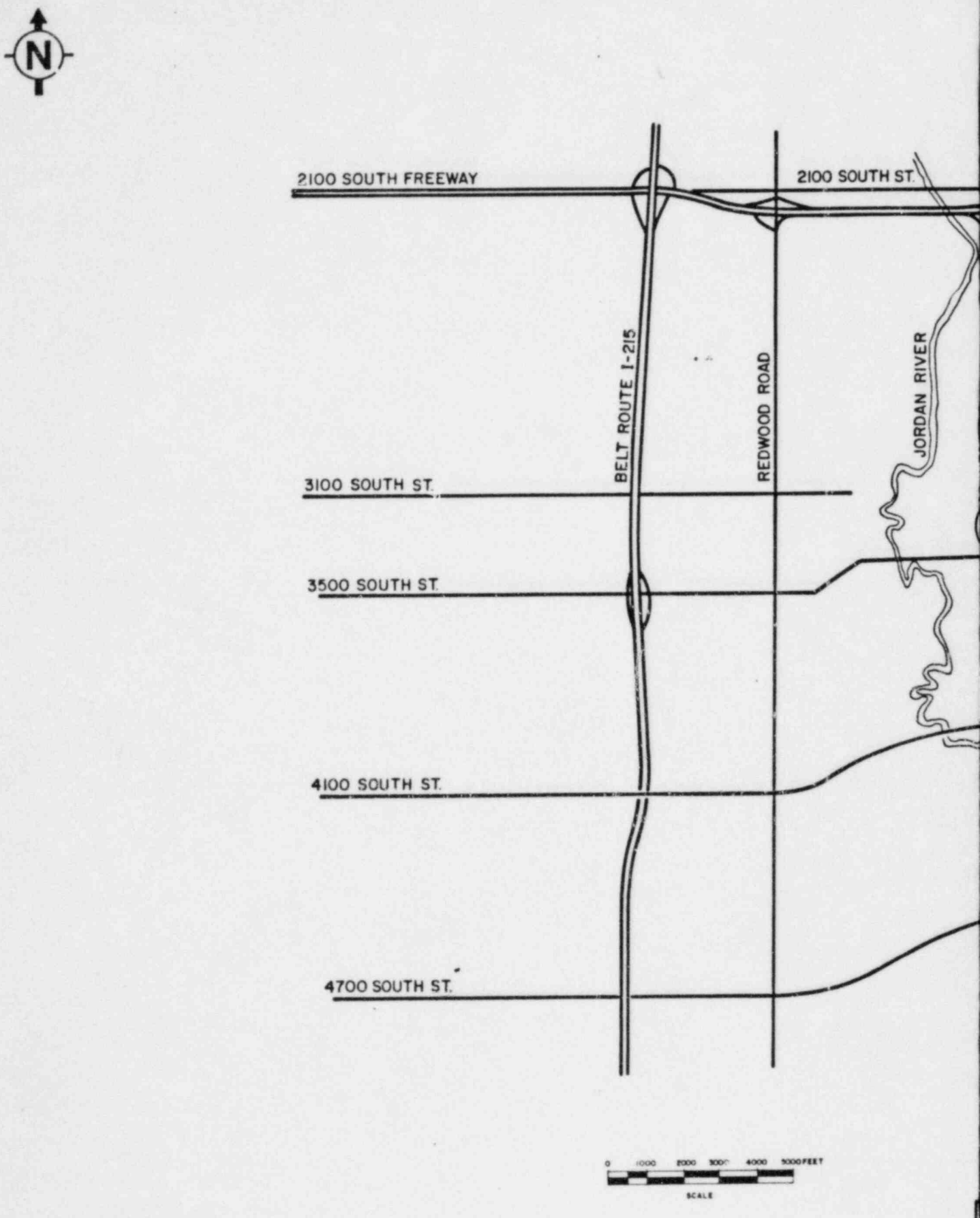
BUILDING CODES AND ZONING:

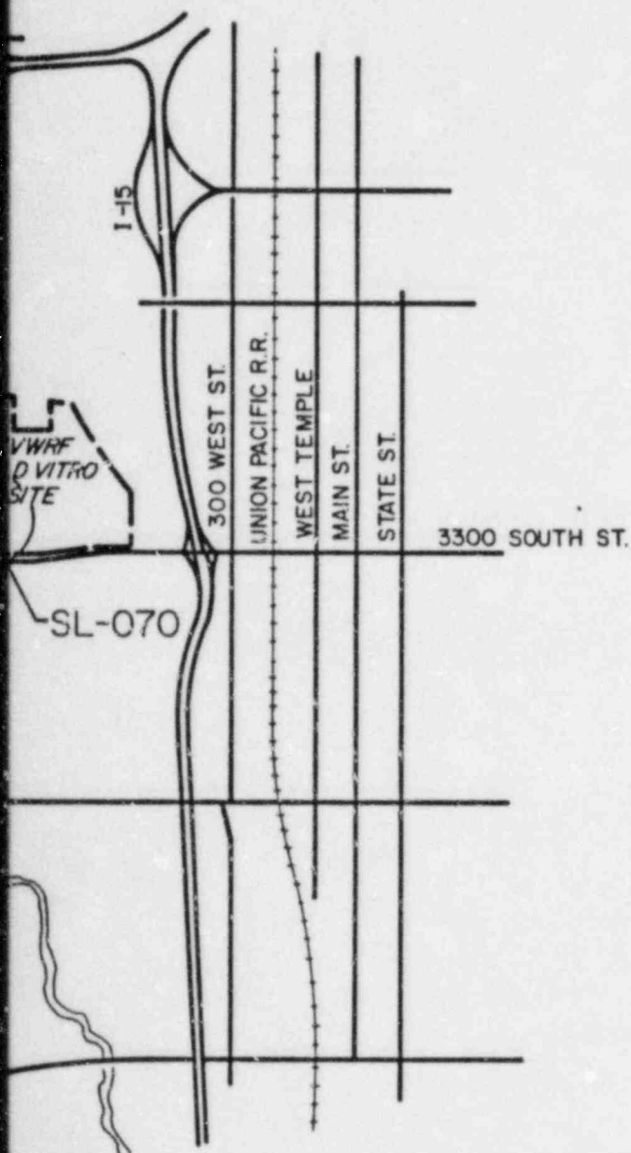
Building Code: UBC X BOCA _____

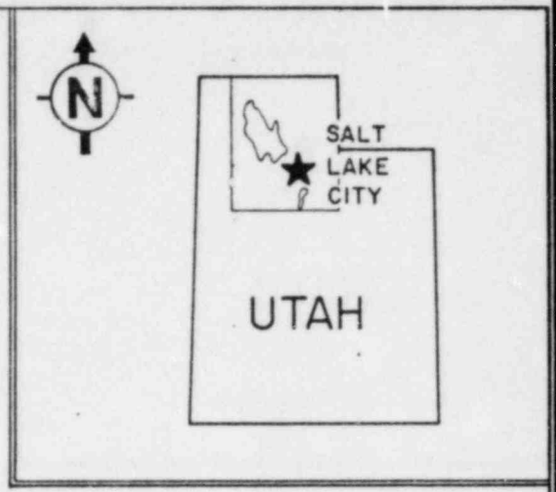
Remarks: _____

Zoning Jurisdiction: South Salt Lake City

Present Facility Zoning: Business-A


N
2100 SOUTH FREEWAY
2100 SOUTH ST.
BELT ROUTE I-215
REDWOOD ROAD
JORDAN RIVER
3100 SOUTH ST.
3500 SOUTH ST.
4100 SOUTH ST.
4700 SOUTH ST.
0 1000 2000 3000 4000 5000 FEET
SCALE





NOTE:
PROPERTY LOCATED IN SOUTH SALT LAKE

8507090006-01

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED	DRAWN TLE
CHECKED	
REVIEWED	
RECOMMENDED	

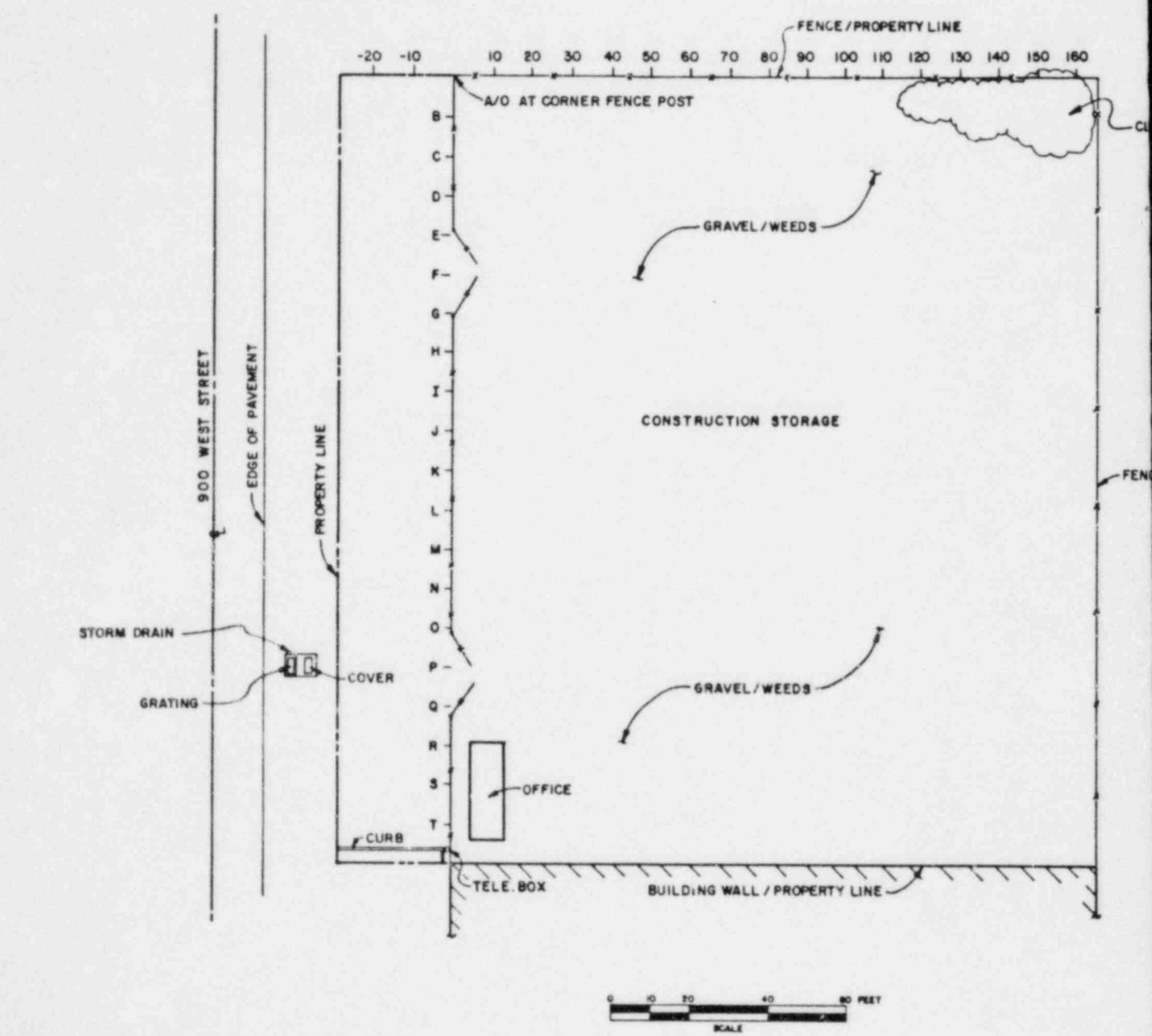
FIGURE 2.1
VICINITY MAP SL-070
SALT LAKE COUNTY, UTAH
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796
DRAWING NO. SL-070-005 REV. A

DATE	REVISIONS	DRAWN BY	CHECKED BY	APPROVAL QA	APPROVAL DH	PROJ ENG	APPROVAL DOE
9-85	FINAL REA SUBMITTAL	GJW		VAD		VAD	-


N
FENCE / PROPERTY LINE
-20 -10 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
A/O AT CORNER FENCE POST
B C D E F G H I J K L M N O P Q R S T
GRAVEL / WEEDS
CONSTRUCTION STORAGE
900 WEST STREET
EDGE OF PAVEMENT
PROPERTY LINE
STORM DRAIN
COVER
GRATING
GRAVEL / WEEDS
OFFICE
CURB
TELE. BOX
BUILDING WALL / PROPERTY LINE
0 10 20 40 80 FEET
SCALE

LEGEND

——W——	WATER LINE
——G——	GAS LINE
——GM——	GAS MAIN
——S——	SEWER LINE
——SM——	SEWER MAIN
——STM——	STORM SEWER
——E——	ELECTRICAL LINE
——T——	TELEPHONE LINE
——TV——	CABLE TV
—— – – ——	PROPERTY LINE
—x—x—x—	FENCE LINE
(G)	G, W or E METER
(X)	G or W VALVE
	PROPERTY PIN
●	POWER POLE

UMP OF TREES

NOTE: OVERHEAD SERVICE DENOTED BY SOLID LINE.
UNDERGROUND SERVICE DENOTED BY DASHED LINE.

E/PROPERTY LINE

8507090006-02

NO.	DATE	REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LOE	APPROVAL DOE	PROJ ENG	APPROVAL DOE
A	3/85	FINAL REA SUBMITTAL	GJW					

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED	DRAWN
	GJW

CHECKED

REVIEWED

RECOMMENDED

FIGURE 2.2
SITE PLAN SL-070

SALT LAKE COUNTY, UTAH
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MORRISON KNUDSEN

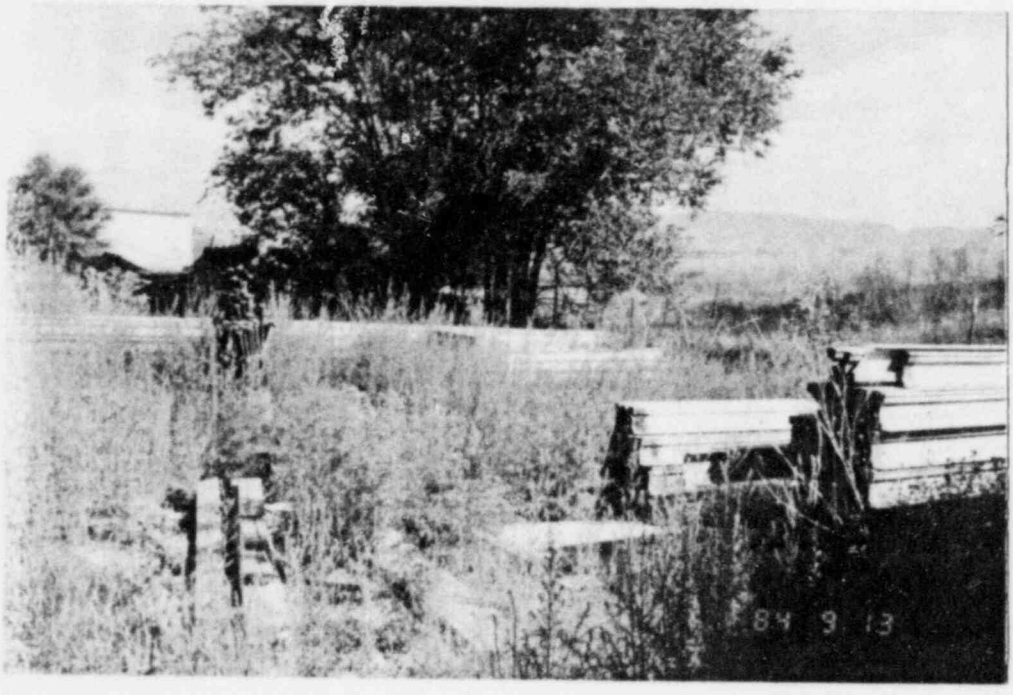
PROJECT NO. DE-AC04-83AL18796

DRAWING NO. SL-070-010 REV. A

Southwest Corner of Property Looking North

Front of Property Looking Northeast

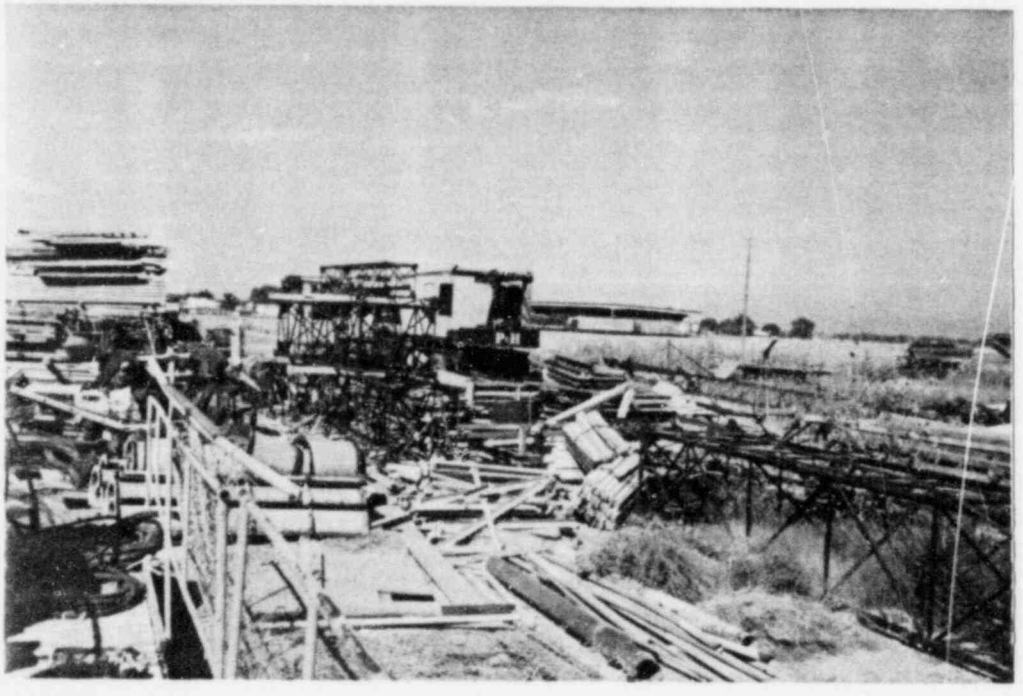
Figure 2.3 Property Photos



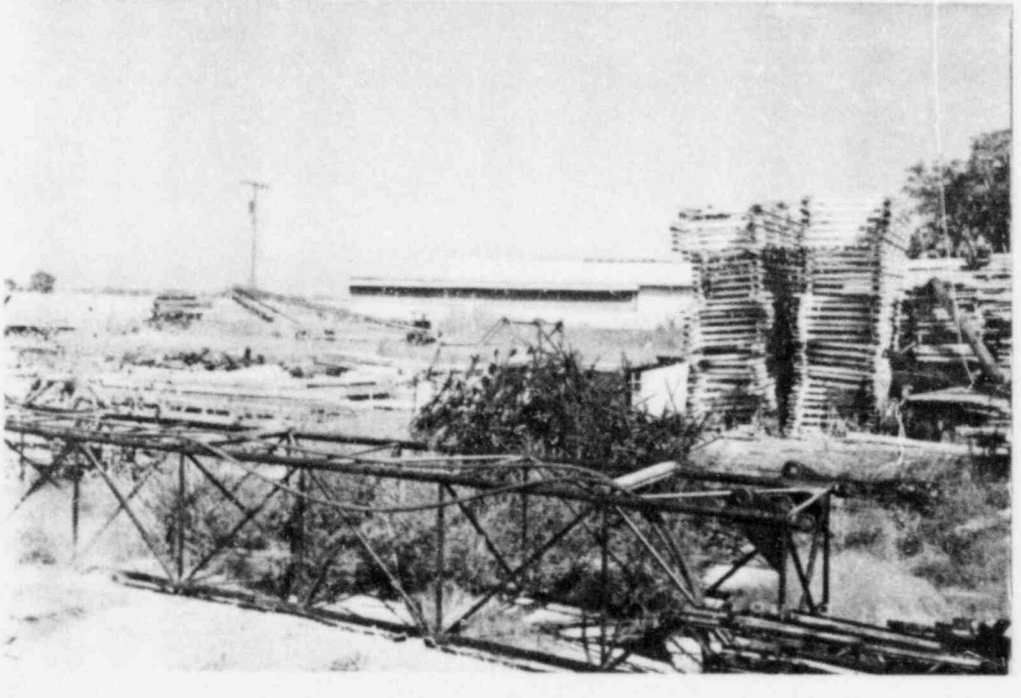
South Side of Property Looking North

East Side of Property Looking Southwest

Figure 2.4 Property Photos



Southeast Corner of Property Looking West



Southeast Corner of Property Looking Northwest

Figure 2.5 Property Photos

3.0 RADIOLOGICAL SURVEY AND ASSESSMENT

3.1 Gamma Exposure Rate Survey

3.1.1 Survey Method

A gamma survey in accordance with the RAC Procedure 019 was impractical due to the proximity of SL-070 to the site. High background readings indicated the need for a shielded probe ("delta") survey. A delta survey was conducted in accordance with Section 4.1.2 Appendix C of the Health Physics Monitoring Plan. This survey was conducted in areas identified in the inclusion survey (Results of the Radiological Survey at SL-070, ORNL, April 1983), and other areas as described in this document.

3.1.2 Survey Results

Contamination concentration readings on the property range from 1 to 179 pCi/g, as described in Table 3.1 and shown in Figure 3.1.

3.2 Borehole Survey

3.2.1 Survey Method

A gasoline-powered hand auger was used to drill 4-inch diameter holes in and around the regions identified as contaminated during the gamma survey. The holes were surveyed in compliance with the RAC UNTRA Procedure 018.

3.2.2 Survey Results

Contamination was found in 9 of the 16 outdoor holes augered. The location and depth of the contamination is described in Table 3.2 and is shown in Figure 3.1.

3.3 Radon/Radon Daughter Survey

No radon/radon daughter surveys were performed inside buildings at the property, since the inclusion survey reported working levels of .007 and .013. The slightly elevated working level of .013 is attributed to the proximity to the pile.

3.4 Estimated Extent of Contamination

There are three areas of contamination on SL-070.

Areas A and A1 cover the three areas identified in the inclusion survey. Contamination in Area A is approximately 6 inches deep. In Area A1 contamination extends from 24 to 42 inches deep. This area should be excavated to 24 inches in depth, resurveyed, and excavation continued as required.

Areas B and C were not identified during the ORNL survey. Contamination exists only in the first 6 inches of soil in these areas.

Table 3.1
OUTDOOR GAMMA SCREENING SURVEY
Property SL-070

POINT	pCi/g
B-30	8
B-20	6
B-10	5
B+00	9
E-10	6
F-20	5
F-10	8
G+00	6
H+00	7
I+00	5
I-10	5
L-20	5
N-10	12
A+10	6
A+20	7
A+30	13
A+40	13
A+50	21
A+60	12
A+70	10
A+80	15
A+90	20
A+100	45
A+110	23
A+120	30
A+130	27
A+140	17
A+150	17
A+160	28
A+170	62
B+170	28
B+160	23
B+140	15
B+130	26
B+120	15
B+110	8
B+100	8
B+90	6
B+80	8
B+70	10
B+60	6
B+50	6
B+40	10

Table 3.1 - Cont'd.
OUTDOOR GAMMA SCREENING SURVEY
Property SL-070

POINT	pCi/g
C+30	5
C+50	8
C+60	7
C+70	13
C+100	9
C+110	11
C+120	9
C+130	10
C+140	13
C+150	13
C+160	17
C+170	113
D+170	89
D+160	10
D+150	9
D+140	9
D+100	8
D+70	10
E+30	5
E+60	5
E+120	5
E+130	7
E+150	11
E+160	23
E+170	179
F+170	96
F+160	14
F+150	19
F+140	16
F+130	18
F+120	6
F+80	6
G+20	5
G+60	7
G+120	9
G+130	7
G+140	11
G+160	8
G+170	39
H+170	70
H+160	6

Table 3.1 - Cont'd.
OUTDOOR GAMMA SCREENING SURVEY
Property SL-070

POINT	pCi/g
H+140	6
H+130	7
H+100	10
H+90	6
H+80	7
H+70	9
I+20	5
I+40	5
I+50	5
I+60	7
I+80	6
I+90	8
I+100	6
I+120	6
I+170	21
J+170	14
J+120	9
J+110	6
J+100	6
J+90	8
J+80	5
J+60	7
J+40	6
K+60	9
K+70	9
K+80	6
K+90	6
K+100	[illegible]
L+110	11
L+170	14
L+160	26
L+150	21
L+140	5
L+130	6
L+120	6
L+100	9
L+90	5
L+70	7
L+60	6
M+10	7
M+20	5

Table 3.1 - Cont'd.
OUTDOOR GAMMA SCREENING SURVEY
Property SL-070

POINT	pCi/g
M+60	7
M+70	12
M+80	9
M+90	9
M+100	11
M+120	7
M+150	11
M+160	17
M+170	27
N+170	10
N+140	8
N+130	5
N+110	7
N+100	10
N+90	19
N+80	11
N+70	6
N+60	12
N+40	5
N+30	6
O+10	5
O+60	7
O+70	11
O+90	7
O+100	5
O+110	5
O+120	10
O+140	6
O+150	6
O+160	8
O+170	13
P+120	8
P+110	10
P+80	7
P+50	7
P+20	5
Q+10	5
Q+100	6
Q+120	5
Q+140	5

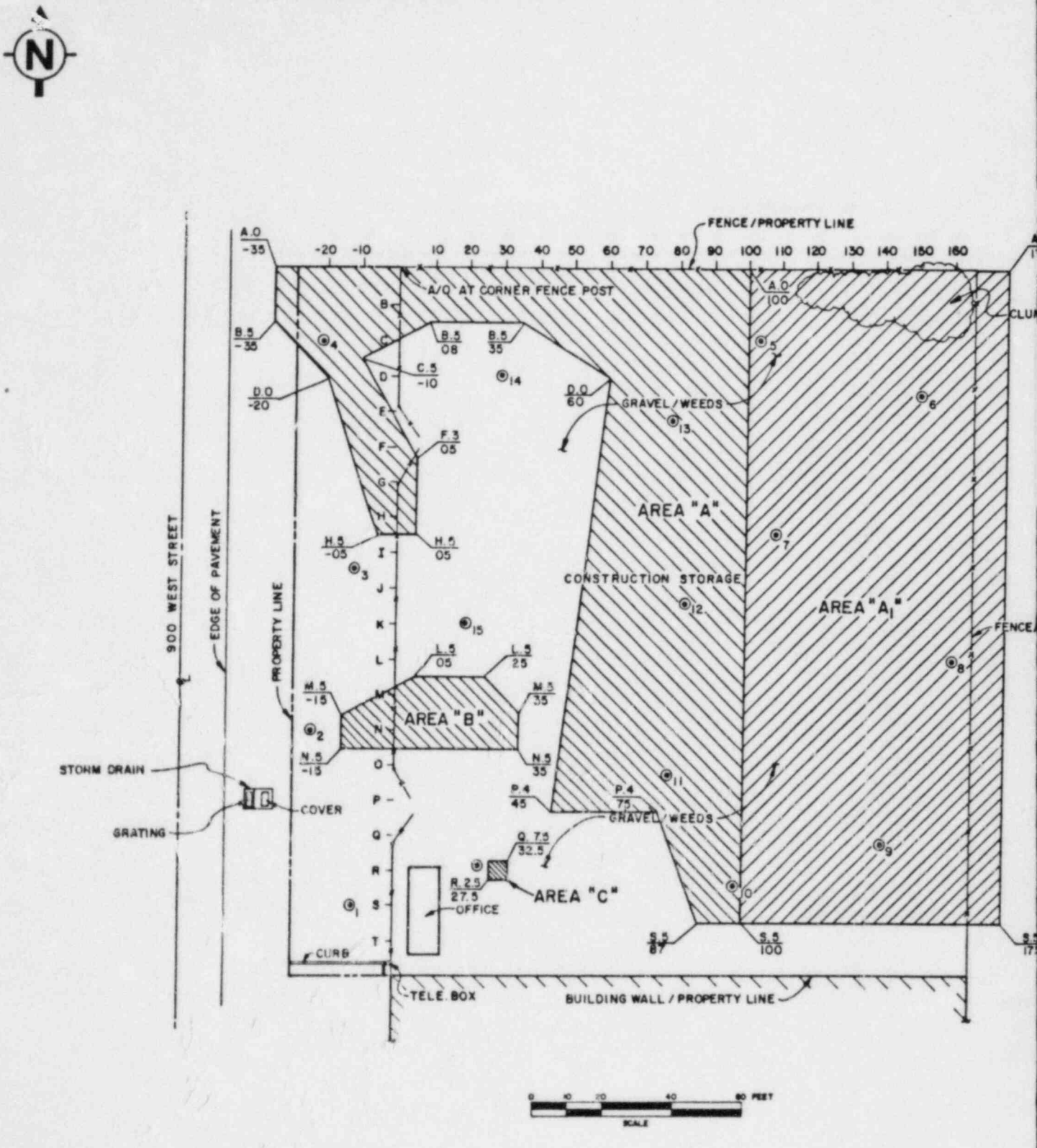
Table 3.1 - Cont'd.
OUTDOOR GAMMA SCREENING SURVEY
Property SL-070

POINT	pCi/g
Q+150	11
R+100	6
R+90	5
R+30	9
S+130	9
S+150	9
S+160	7
T+60	5

Table 3.2
BOREHOLE SURVEY
Property SL-070

HOLE	LOCATION	CONTAMINATION DEPTH
1	S+0,-12	--
2	N+0,-24	--
3	I+5,-12	--
4	C+0,-22	0-24"
5	C+0,+103	0-30"
6	D+5,+150	0-42"
7	H+5,+108	0-24"
8	L+0,+160	0-36"
9	Q+2,+140	0-36"
10	R+4,+97.5	0-36"
11	O+2.5,+88	0-30"
12	J+5,+82	--
13	E+2,+78	0-12"
14	D+0,+29	--
15	K+0,+20	--
16	Q+9,+24	--

NOTE: Because of the high contribution of radiation from the site to the surface reading, these readings are not considered accurate and have been disregarded.


N
FENCE / PROPERTY LINE
A/Q AT CORNER FENCE POST
AREA "A"
AREA "A1"
AREA "B"
AREA "C"
CONSTRUCTION STORAGE
GRAVEL / WEEDS
900 WEST STREET
EDGE OF PAVEMENT
PROPERTY LINE
STORM DRAIN
COVER
GRATING
OFFICE
CURB
TELE. BOX
BUILDING WALL / PROPERTY LINE
SCALE

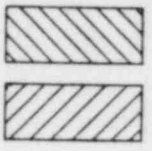
LEGEND

——W——	WATER LINE
——G——	GAS LINE
——GM——	GAS MAIN
——S——	SEWER LINE
——SM——	SEWER MAIN
——STM——	STORM SEWER
——E——	ELECTRICAL LINE
——T——	TELEPHONE LINE
——TV——	CABLE TV
—— – – ——	PROPERTY LINE
—x—x—x—	FENCE LINE
(G) G, W or E	METER
(X) G or W	VALVE
	PROPERTY PIN
	POWER POLE

NOTE: OVERHEAD SERVICE DENOTED BY SOLID LINE.
UNDERGROUND SERVICE DENOTED BY DASHED LINE.

$\odot_2$ AUGER HOLE DESIGNATION

ESTIMATED DEPTH OF CONTAMINATION



IP OF TREES

PROPERTY LINE

8507090006-03

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED	DRAWN GJW	FIGURE 3.1					
CHECKED		RADIOLOGICAL SURVEY DATA SL-070					
REVIEWED		SALT LAKE COUNTY, UTAH					
RECOMMENDED		URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT					
APPROVED NR	DATE	DOE PROJECT MANAGER NR	DATE	DOE PROJECT ENGINEER NR	DATE		

MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. SL-070-015 REV. A

NO.	REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LOE	APPROVAL DH	PROJ ENG	APPROVAL DOE
3885	FINAL REA SUBMITTAL	GJW					
DATE							

4.0 ENGINEERING ASSESSMENT

Engineering options were formulated and evaluated based on the radiological and engineering assessment for this property. Factors forming the basis of the evaluation were: the extent and location of the contamination, construction costs, and required demolition and constructibility for the various options. Results of the evaluation are detailed below.

4.1 Evaluation of Options

4.1.1 Options

Due to the open nature of this property only two options were evaluated for property SL-070:

Option 1: No action should be taken.

Option 2: Complete decontamination of the property including retrieval of the contaminated material and restoration of the property. See Figure 4.1. for the scope of work.

The decontamination of the property will proceed in the following manner:

- Relocate the construction materials and equipment to the south half of the property
- Remove approximately 260 lineal feet of chainlink fence, install 165 lineal feet of chainlink fence at midpoint of the property to serve as temporary security fence for the regrouped inventory.
- Excavate the north half of the property to the depths noted on Figure 4.1
- Preserve and protect north fence line.
- Backfill with clean common fill material.
- Surface restored area fill with gravel.
- Move materials and equipment to the north half of the property.
- Remove approximately 100 linear feet of chainlink fence, reinstall 260 linear feet of chainlink fence to reestablish the perimeter security fence.
- Excavate the south half of the property to the depths noted on Figure 4.1.

- Backfill with clean common fill material.
- Surface restored area with gravel.
- Relocate materials and equipment to their original locations.
- Remove temporary fencing, re-install permanent perimeter fencing.

Existing utilities should pose no safety problems to the subcontractor. However, special care should be exercised during excavation and backfill operations to protect existing underground utilities during the remedial work.

The property occupants will not require relocation during the remedial action on this property.

4.1.2 Costs

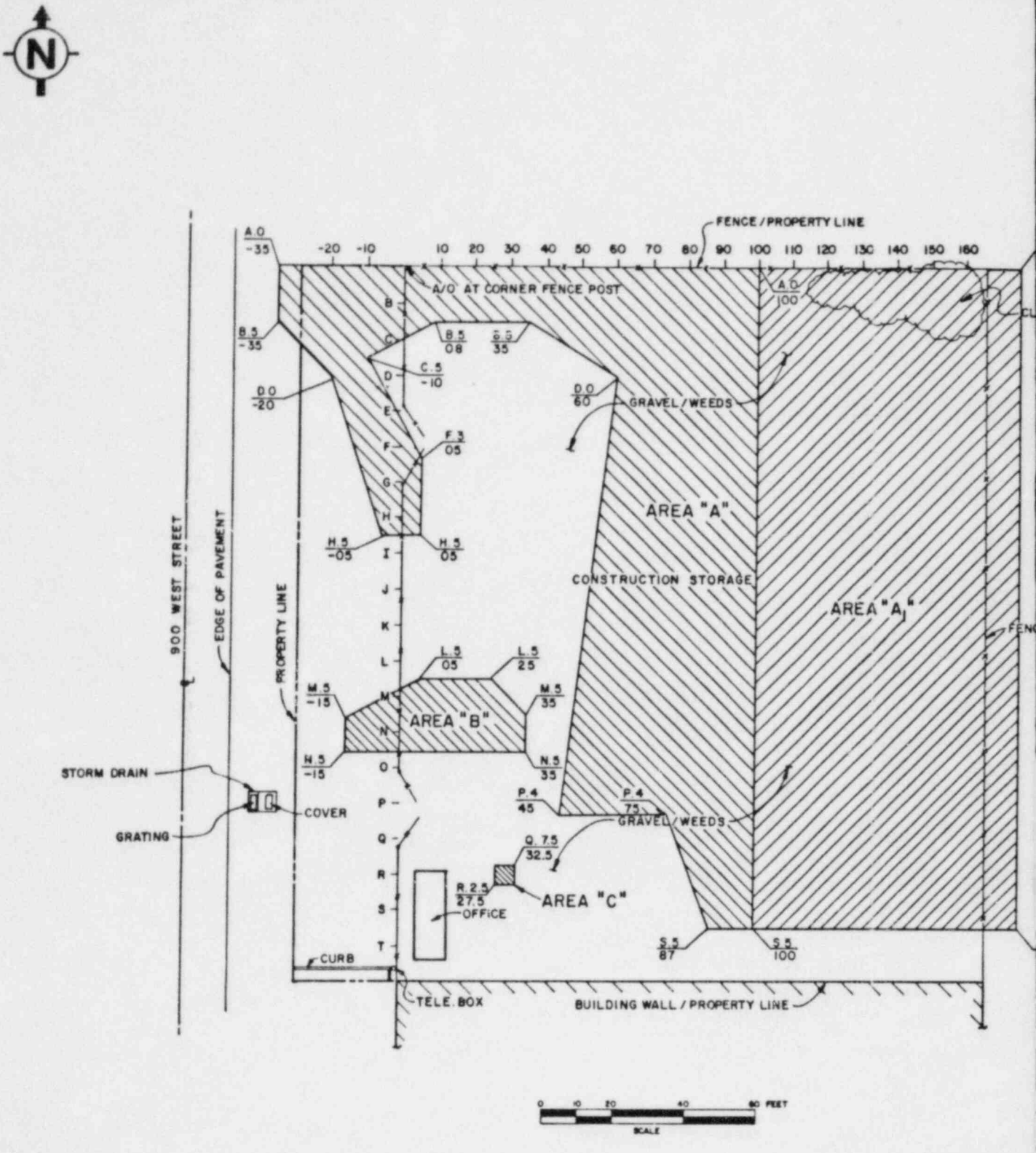
Estimated costs for the activities associated with Option 2 are detailed in Table 4.1. Costs include labor, insurance, material, equipment, supplies, overhead, profit, and contingency. All costs are listed in 1985 dollars. It is anticipated that the time required for the subcontractor to complete the work will be 15 to 20 days, based on fair weather conditions.

4.2 Recommendation

The limited cost and amount of remedial action work precluded evaluating any more than these two options. The results of the radiological assessment concluded that contamination levels on the property exceeded EPA guidelines. Therefore, based on these guidelines, it is recommended that Option 2, decontamination of the property, be pursued. The total estimated cost for Option 2 is $31,300.00.

Table 4.1
OPTION 2 COSTS

Activity	Unit Price	Quantity	Estimated Cost
Remove & Salvage Fencing	3.00	260 lf	780.00
Install Temporary Fence	8.20	165 lf	1,353.00
Excavation (Machine)	3.40	1,230 cy	4,182.00
Backfill (Machine)	7.50	1,075 cy	8,062.00
Gravel Surfacing	8.00	155 cy	1,240.00
Reinstall Perimeter Fence	8.20	260 lf	2,132.00
Moving Costs:			
Move On-site Materials and Equipment (3 moves)	LS	1	5,000.00
Subtotal			22,750.00
5% Contractor's Contingency			1,137.00
20% Overhead & Profit			4,550.00
Subtotal			28,437.00
10% Engineer's Contingency			2,843.00
Total (Rounded)			31,300.00


N
FENCE / PROPERTY LINE
A.0 -35
-20 -10 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
A/O AT CORNER FENCE POST
A.0 100
B.5 -35
B.5 08
C.5 35
C.5 -10
D.0 -20
D.0 60
GRAVEL / WEEDS
F.3 05
AREA "A"
H.5 -05
H.5 05
CONSTRUCTION STORAGE
AREA "A1"
900 WEST STREET
EDGE OF PAVEMENT
PROPERTY LINE
L.5 05
L.5 25
M.5 -15
M.5 35
AREA "B"
N.5 -15
N.5 35
STORM DRAIN
COVER
GRATING
P.4 45
P.4 75
GRAVEL / WEEDS
Q.7.5 32.5
R.2.5 27.5
AREA "C"
OFFICE
S.5 87
S.5 100
CURB
TELE. BOX
BUILDING WALL / PROPERTY LINE
0 10 20 40 80 FEET
SCALE

LEGEND

——W——	WATER LINE
——G——	GAS LINE
——GM——	GAS MAIN
——S——	SEWER LINE
——SM——	SEWER MAIN
——STM——	STORM SEWER
——E——	ELECTRICAL LINE
——T——	TELEPHONE LINE
——TV——	CABLE TV
—— — — ——	PROPERTY LINE
—x— x— x—	FENCE LINE
G G, W or E	METER
G or W	VALVE
	PROPERTY PIN
	POWER POLE

NOTE: OVERHEAD SERVICE DENOTED BY SOLID LINE. UNDERGROUND SERVICE DENOTED BY DASHED LINE.

A.O
175

UMP OF TREES

E/PROPERTY LINE

NOTES:

1. THE LATEST REVISION OF THE FOLLOWING TECHNICAL SPECIFICATIONS APPLY TO THE REMEDIAL ACTION WORK REQUIRED FOR PROPERTY NO. SL-070.

   SECTION 02050
   DEMOLITION

   SECTION 02110
   CLEARING AND GRUBBING

   SECTION 02130
   CONTAMINATED MATERIAL REMOVAL

   SECTION 02200
   EXCAVATION AND BACKFILL

   SECTION 02500
   PAVING AND SURFACING

2. UTILITY LOCATIONS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS SHALL BE DETERMINED BY THE SUBCONTRACTOR PRIOR TO START OF CONSTRUCTION.

3. THE EXCAVATION LIMITS AND DEPTHS ARE BASED ON A LIMITED NUMBER OF BORINGS TAKEN DURING THE RADIOLOGICAL SURVEYS OF THIS PROPERTY. ADDITIONAL RADIOLOGICAL SURVEYS PERFORMED DURING REMEDIAL ACTION MAY REQUIRE MORE OR LESS EXCAVATION TO BE TAKEN FROM THE DESIGNATED AREAS. ALL CHANGES TO THE LIMITS AND DEPTHS OF EXCAVATION AS SHOWN ON THE DESIGN DRAWINGS SHALL BE AS DIRECTED BY THE CONTRACTORS REPRESENTATIVE.

SCOPE OF WORK:

NORTH HALF OF PROPERTY

- RELOCATE CONSTRUCTION MATERIALS AND EQUIPMENT TO SOUTH HALF OF PROPERTY
- PROTECT PERIMETER FENCING LOCATED ON NORTH PROPERTY LINE
- REMOVE AND SALVAGE PERIMETER FENCING ON THE EAST AND WEST SIDE OF PROPERTY.
- CONSTRUCT TEMPORARY FENCE AT MIDPOINT OF PROPERTY
- EXCAVATE AREA "A" TO A DEPTH OF 6 INCHES
- EXCAVATE AREA "A_1" TO A DEPTH OF 24 INCHES
- REMOVE TREES
- PLACE AND COMPACT COMMON FILL
- SURFACE AREAS WITH 2 INCHES OF GRAVEL
- REPLACE PERIMETER FENCING

SOUTH HALF OF PROPERTY

- REMOVE TEMPORARY FENCING
- RELOCATE CONSTRUCTION MATERIALS AND EQUIPMENT TO NORTH HALF OF PROPERTY
- REPLACE TEMPORARY FENCING
- REMOVE AND SALVAGE PERIMETER FENCING ON EAST AND WEST SIDE OF PROPERTY
- EXCAVATE AREAS "A", "B" AND "C" TO A DEPTH OF 6 INCHES.
- EXCAVATE AREA "A_1" TO A DEPTH OF 24 INCHES.
- PLACE AND COMPACT COMMON FILL
- SURFACE AREAS WITH 2 INCHES OF GRAVEL
- REPLACE PERIMETER FENCING
- REMOVE TEMPORARY FENCING
- RELOCATE CONSTRUCTION MATERIALS AND EQUIPMENT TO THEIR ORIGINAL LOCATIONS.

8507090006-04

NO.	DATE	REVISIONS	DRAWN BY	CHECKED BY	APPROV. LOE	APPROV. DH	PROJ ENG	APPROV. DOE
A	08-85	FINAL REA SUBMITTAL	GJW		VCD		VCD	–

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED	DRAWN
	GJW
CHECKED	
REVIEWED	
RECOMMENDED	

FIGURE 4.1
EXCAVATION & RESTORATION PLAN SL-070

SALT LAKE COUNTY, UTAH
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MORRISON KNUDSEN

PROJECT NO.
DE-AC04-83AL18796

DRAWING NO.
SL-070-020

REV.
A

5.0 TECHNICAL SPECIFICATIONS

Technical specifications applicable to this property are indexed in Table 5.1 . Specifications previously approved by the Department of Energy (DOE) are noted in the table. Also listed are specifications not previously submitted to the DOE which require approval. The text for these additional specifications follow the table.

Table 5.1
INDEX OF TECHNICAL SPECIFICATIONS

Description		Specifications Previously Approved	Specifications Requiring DOE Approval
Division 2 - Site Work			
SECTION 02050	DEMOLITION	X	
SECTION 02110	CLEARING AND GRUBBING	X	
SECTION 02130	CONTAMINATED MATERIAL REMOVAL	X	
SECTION 02200	EXCAVATION AND BACKFILL	X	
SECTION 02500	PAVING AND SURFACING	X	

6.0 CONSTRUCTION DRAWINGS

Listed below is an index of the construction drawings required for remedial action on this property.

Drawing Number	Drawing Title
SL-070-020	Excavation & Restoration Plan SL-070

APPENDIX A

SURVEY DATA LOGS

PROPERTY SURVEY SKETCH

Sheet _____ of _____

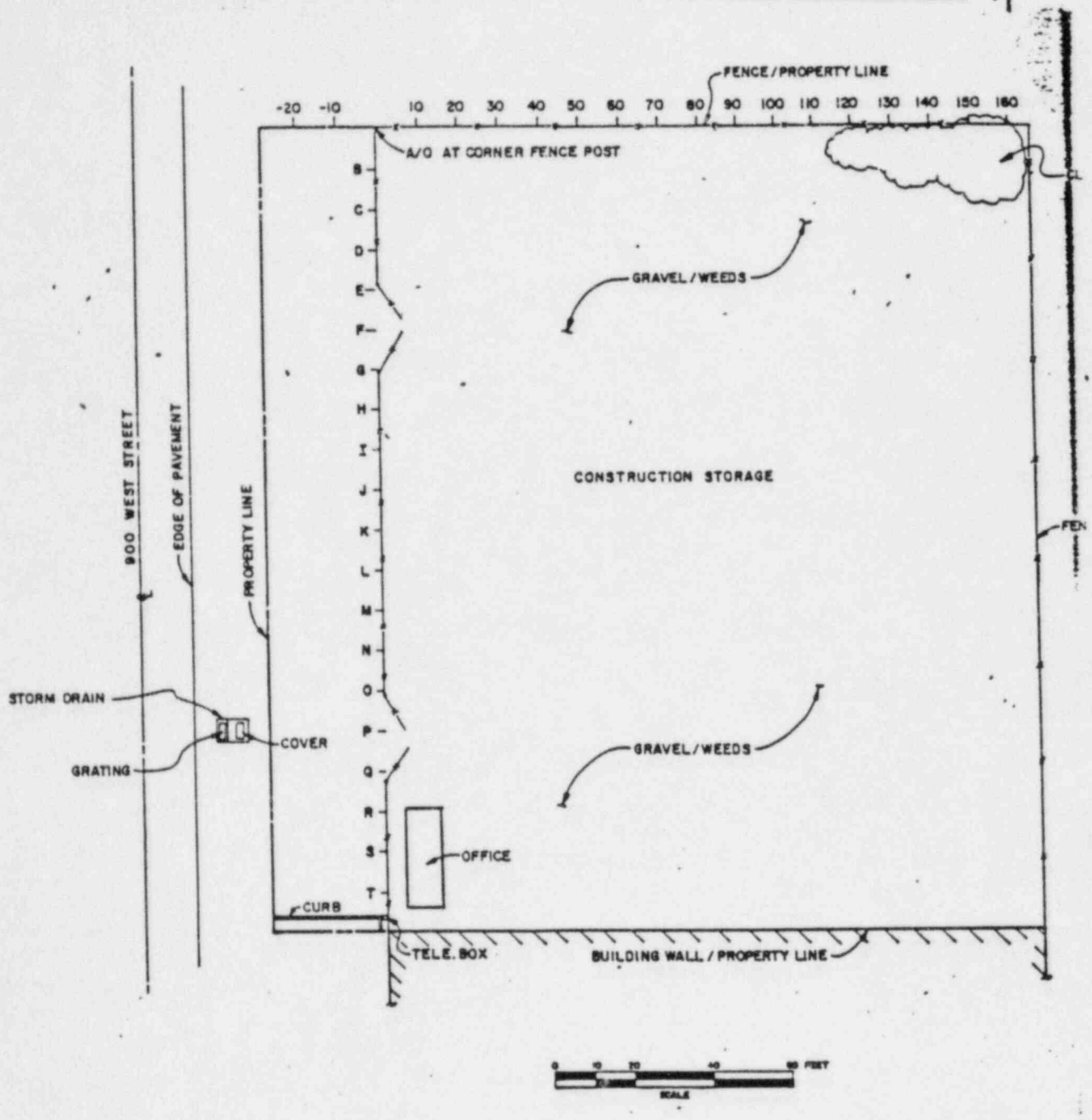
SITE LOCATION SL-070

ADDRESS 3275 S. 900 W.

PROPERTY TYPE COMMERCIAL LOT NO. _____

OWNER BLAINE H. BARDET

SKETCH COMPLETED BY _____ DATE _____



MORRISON KNUDSEN

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: M. GRIFFIN, V. BLACK
P. HEARLD, D. FITZGERALD

SHEET 1 OF ____ PAGE 1

DATE: 11-1-84

PROPERTY ID: SL-070

INSTRUMENT ID NO.: ~~34778/PR.019584~~ #26279 probe#

BACKGROUND CALCULATION:

#1 8169 + #2 854 + #3 840 = 2563 ÷3 = 854.3 COUNTS/.1MIN *

AREA:				AREA:				AREA:			
Point ID	1meter reading	surface reading	delta reading	Point ID	1meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
A+00	8433	1120	777	G+00	9069	1159	698	M+00	8965	962	736
A-10	8483	1150	742	G+10	9289	1077	836	M-10	7993	982	694
A-20	7509	860	677	G-20	8878	1061	744	M-20	4382	723	615
A-30	9233	1078	750	G-30	9613	1277	877	M-30	5853	930	567
B-30	8479	1309	783	H-30	8795	1142	876	N-30	7493	981	670
B-20	9556	1385	926	H-20	7881	900	801	N-20	6666	1037	673
B-10	9253	1194	760	H-10	7554	958	769	N-10	6978	1403	742
B+00	10021	1352	780	H+00	9665	1250	757	N+00	8836	821	752
C+00	10160	1258	874	I+00	9427	1158	728	O+00	7898	971	770
C-10	10056	1241	855	I-10	9211	1201	789	O-10	7772	867	701
C-20	10254	1260	943	I-20	9364	1036	741	O-20	8330	856	702
C-30	10020	1211	798	I-30	7545	1089	769	O-30	7502	936	671
D-30	8433	1135	786	J-30	7514	1046	803	P-30	7904	905	696
D-20	8951	1130	728	J-20	8886	1095	790	P+20	8530	983	692
D-10	10430	1188	912	J-10	7406	1007	766	P-10	7938	1009	680
D+00	10125	1290	797	J+00	9194	1051	729	P+00	8262	1036	634
E+00	9123	1043	876	K+00	7057	969	787	Q+00	5992	836	614
E-10	10176	1306	859	K-10	9213	1016	733	Q-10	7609	896	655
E-20	9768	1285	887	K-20	7908	1125	929	Q-20	8212	930	668
E-30	9859	1212	912	K-30	8020	1160	764	Q-30	6637	911	681
F-30	8504	1246	912	L-30	6011	1116	685	R-30	5721	923	578
F-20	8488	1317	894	L-20	6391	1017	612	R-20	5789	898	651
F-10	8504	1402	860	L-10	8282	927	672	R-10	6310	930	639
F+00	8924	1163	827	L+00	8984	989	739	R+00	6921	881	619

REMARKS: * ALL READINGS ARE IN COUNTS/ 0.1 MIN.

Surface readings made with a one-half inch lead collimator

Delta readings made with a one-half inch 10" X 10" lead plate on the surface below the collimated detector

VP-04A

MORRISON KNUDSEN

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: M. GRIFFIN, V. BLACK
P. HEARLD, D. FITZGERALD

SHEET 2 OF ____ PAGE 2

DATE: 11-1-84

PROPERTY ID: SL-070

INSTRUMENT ID NO.: 26279

BACKGROUND CALCULATION:

#1 869 + #2 854 + #3 840 = 2563 ÷3 = 854.3 COUNTS/.1MIN *

AREA:				AREA:				AREA:			
Point ID	lmeter reading	surface reading	delta reading	Point ID	lmeter reading	surface reading	delta reading	Point ID	lmeter reading	surface reading	delta reading
S+00	4897	618	515	A+130	15456	2763	1557	C+30	10069	1275	862
S-10	6155	815	584	A+140	15168	2305	1457	C+40	9808	1477	1032
S-20	7570	852	598	A+150	17690	2529	1677	C+50	9732	1473	936
S-30	6911	1008	646	A+160	24006	3383	2140	C+60	11761	1447	961
T-30	6455	1006	609	A+170	33272	5187	2723	C+70	12127	1838	1138
T-20	6944	954	615	B+170	35513	4091	2832	C+80	12872	1574	1264
T-10	6353	807	602	B+160	22190	3109	2041	C+90	13298	1675	1184
T+00	4718	804	485	B+150	21216	2146	1811	C+100	12890	2058	1492
U+00	4284	704	454	B+140	20042	2181	1386	C+110	12131	1939	1295
U-10	4983	799	559	B+130	18608	2657	1498	C+120	12630	1949	1380
U-20	6529	897	574	B+120	17563	2110	1335	C+130	12851	1729	1138
U-30	7242	947	586	B+110	13563	1938	1392	C+140	14755	2021	1321
A+10	8404	1408	948	B+100	16178	1871	1345	C+150	18681	2197	1493
A+20	8718	1499	1009	B+90	14102	1861	1396	C+160	23578	2693	1851
A+30	10810	1722	1006	B+80	14880	1837	1306	C+170	37449	6807	2523
A+40	11547	1753	1028	B+70	14424	1846	1254	D+170	39888	6829	3402
A+50	12906	2240	1246	B+60	13861	1608	1155	D+160	24978	2906	2298
A+60	14305	2187	1507	B+50	10181	1472	1016	D+150	19678	2117	1547
A+70	14156	1944	1332	B+40	12368	1516	908	D+140	14226	1814	1251
* A+80	15553	2123	1325	B+30	12127	1318	1069	D+130	17166	N/A	N/A
A+90	15978	2472	1500	B+20	11645	1153	793	D+120	7775	1004	627
A+100	15986	3233	1389	B+10	10336	1041	904	D+110	7234	1002	735
A+110	17494	2582	1514	C+10	8161	1027	884	D+100	13120	1528	1000
A+120	16885	3121	1812	C+20	9713	1325	935	D+90	14507	1510	1162

REMARKS: * ALL READINGS ARE IN COUNTS/ 0.1 MIN.

Surface readings made with a one-half inch lead collimator

Delta readings made with a one-half inch 10" X 10" lead plate on the surface below the collimated detector

VP-044 * NOT ACCESSABLE, OBSTICLE ON THE GROUND.

MORRISON KNUDSEN

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: M. GRIFFIN, V. BLACK
P. HEARLD, D. FITZGERALD

SHEET 3 OF ____ PAGE 3

DATE: 11-1-84

PROPERTY ID: SL-070

INSTRUMENT ID NO.: 26279

BACKGROUND CALCULATION:

#1 869 + #2 854 + #3 840 = 2563 ÷3 = 854.3 COUNTS/.1MIN *

AREA:				AREA:				AREA:			
Point ID	1meter reading	surface reading	delta reading	Point ID	1meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
D+80	14454	1642	1344	E+170	40311	11358	4701	G+70	11994	1205	882
D+70	13560	1650	1035	F+170	41594	7723	4040	G+80	11611	11168	878
D+60	13089	1248	967	F+160	17159	2704	1961	G+90	11337	1113	901
D+50	12452	12916	986	F+150	16631	2274	1343	G+100	12330	1272	1062
D+40	12384	1322	1066	F+140	17509	2223	1413	G+110	13723	1309	1016
D+30	9232	1254	943	F+130	15756	2023	1141	G+120	13112	11686	1130
D+20	9610	1189	860	F+120	14438	1659	1202	G+130	12474	11615	1128
D+10	9843	1177	883	F+110	12377	1307	1057	G+140	11497	1713	1070
E+00	11147	953	717	F+100	8601	1103	1018	G+150	15332	733	658
E+20	8720	1070	878	F+90	8257	910	551	G+160	16521	1368	852
E+30	8906	1296	878	F+80	11102	1312	861	G+170	32767	5735	4101
E+40	8141	1168	889	F+70	9822	1163	770	H+170	37545	4919	2178
E+50	8916	1174	1019	F+60	10848	1203	900	H+160	10790	1498	1047
E+60	9017	1446	1006	F+50	10927	1186	940	H+150	7515	763	697
E+70	9246	1328	1055	F+40	9228	1218	896	H+140	10100	11666	1699
E+80	11441	1361	1101	F+30	9590	1095	797	H+130	13054	1487	1006
E+90	11214	1126	867	F+20	8882	1015	733	H+120	13707	1370	1191
E+100	9266	983	785	F+10	8927	1006	758	H+110	11197	1414	1080
E+110	7893	1174	819	G+10	8349	1074	852	H+100	12179	1452	844
E+120	9484	1372	962	G+20	7802	1206 778	F. 778	H+90	11889	1377	903
E+130	10074	1414	918	G+30	8959	1116	876	H+80	10884	1366	873
E+140	13507	1636	1285	G+40	9743	1124	804	H+70	10023	1393	840
E+150	17994	2200	1565	G+50	11089	1072	867	H+60	9536	1204	906
E+160	20555	3174	2120	G+60	12000	1313	809	H+50	9594	1092	808

REMARKS: * ALL READINGS ARE IN COUNTS/ 0.1 MIN.

Surface readings made with a one-half inch lead collimator

Delta readings made with a one-half inch 10" X 10" lead plate on the surface below the collimated detector

VP-04A

MORRISON KNUDSEN

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: M. Griffin, P. Heard
D. Fitzgerald

SHEET 4 OF ____ PAGE 4

DATE: 11/2/84

PROPERTY ID: SL-070

INSTRUMENT ID NO.: 1st 216504 2nd 34778

BACKGROUND CALCULATION:

1st 898 1st 971 1st 867 1st 2733 911
#1 900 + #2 839 + #3 853 = 2592 ÷3 = 864 COUNTS/.1MIN *

AREA:				AREA:				AREA:			
Point ID	1meter reading	surface reading	delta reading	Point ID	1meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
H+40	9330	1111	764	I+110	13284	1391	924	K+150	10692	1370	1099
H+30	9850	1133	848	I+100	12791	1264	811	K+160	13795	1578	1190
H+20	10208	1047	826	I+90	12371	13108	832	K+170	26284	3110	2980
H+10	10176	892	711	J+80	12356	1303	889	L+170	21759	2916	2169
I+10	9271	995	1085	J+70	11382	1068	773	L+160	13804	2650	1455
I+20	8255	1015	6016	J+60	11355	1340	788	L+150	11555	2241	1239
I+30	11478	1092	790	J+5	10628	1152	817	L+140	7896	1184	773
I+40	11776	1232	810	J+40	8710	1176	701	L+130	10377	1325	8666
I+50	11682	1253	817	J+30	8948	1063	788	L+120	11561	1367	897
I+60	11101	1342	844	J+20	10059	921	799	L+110	11456	1365	1031
I+70	11258	1215	8161	J+10	8444	968	720	L+100	10977	1585	1035
I+80	12120	1422	961	K+10	9539	1001	697	L+90	9383	1484	1043
I+90	12197	1481	955	K+20	7532	1045	706	L+80	8968	1361	1002
I+100	12240	1532	1075	K+30	7916	976	744	L+70	9122	1335	839
I+110	10785	1373	10167	K+40	7035	944	697	L+60	9313	1344	900
I+120	12095	1412	958	K+50	9160	1037	639	L+50	9176	1083	769
I+130	5567	1068	63316	K+60	9119	1348	772	L+40	8623	998	731
I+150	3789	740	439	K+70	9247	1478	926	L+30	9094	915	705
I+170	29623	3441	2437	K+80	9299	1343	890	L+20	9201	973	602
I+170	22025	21160	1407	K+90	11886	1230	773	L+10	7985	990	678
I+160	8580	1203	893	K+100	10516	1432	892	M+10	9149	1151	1050
J+150	7356	1101	810	K+110	11162	1572	925	M+20	7679	970	5164
J+130	5426	867	563	K+120	11197	1261	862	M+40	9455	885	810
J+120	10967	1474	900	K+130	7279	1116	722	M+50	8906	1360	?

REMARKS: * ALL READINGS ARE IN COUNTS/ 0.1 MIN.

Surface readings made with a one-half inch lead collimator

Delta readings made with a one-half inch 10" X 10" lead plate on the surface below the collimated detector

VP-04A

MORRISON KNUDSEN

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: Mike Griffin
Paul Heald
Derek Fitzgerald

SHEET 5 OF ____ PAGE 5

DATE: 11/2/84

PROPERTY ID: SL-OTD

INSTRUMENT ID NO.: 1st 216504 2nd 34778

BACKGROUND CALCULATION:
1st 398 2nd 902 + #2 976 839 + #3 867 853 = 1st 2733 2592 ÷3 = 911 864 COUNTS/.1MIN *

AREA:				AREA:				AREA:			
Point ID	1meter reading	surface reading	delta reading	Point ID	1meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
M+60	10504	1386	900	N+20	9873	9416	1028	P+80	8121	1123	617
M+70	10273	1525	854	N+10	9995	937	596	P+70	7683	991	631
M+80	12516	1380	814	0+10	8590	1007	602	P+60	9623	979	635
M+90	11676	11607	1034	0+20	9176	8916	726	P+50	10635	1238	719
M+100	11125	1487	835	0+30	9009	1045	6416	P+40	10396	1000	816
M+110	10687	1311	965	0+40	9543	1069	740	P+30	9881	1021	936
M+120	9958	1330	822	0+50	9524	1132	958	P+20	9583	1021	642
M+130	8056	1104	827	0+60	11427	1270	771	P+10	9443	902	632
M+140	8407	1170	826	0+70	8770	1391	752	Q+10	8389	1022	626
M+150	13207	1783	1142	0+80	9071	11516	772	Q+20	8138	967	658
M+160	11788	2195	1342	0+90	8576	1300	798	Q+30	9672	923	626
M+170	28139	3145	1934	0+100	9027	1197	786	Q+40	10120	1057	674
N+170	25111	19168	1374	0+110	11427	1416	991	Q+50	7776	982	642
N+140	13275	1500	967	0+120	12541	1534	939	Q+60	7802	889	559
N+30	9791	1432	1000	0+130	12951	1323	959	Q+70	7158	656	475
N+110	11209	1317	813	0+140	10384	1391	937	Q+80	8076	1056	762
N+100	11452	1381	794	0+150	14736	1431	975	Q+90	9497	1019	676
N+90	11442	1838	928	0+160	17422	16416	1100	Q+100	7329	1105	646
N+80	11964	1424	781	0+170	33344	21160	14161	Q+110	9385	1284	791
N+70	11872	1374	904	P+150	12444	1344	967	Q+120	10853	1250	828
N+60	12065	1545	868	P+130	10683	933	744	Q+130	12273	1213	937
N+50	11004	1243	866	P+120	11608	1262	718	Q+140	12022	1252	844
N+40	10362	1173	771	P+110	11768	1397	808	Q+150	14250	1560	915
N+30	9860	1232	763	P+90	7846	1088	740	Q+160	11353	1441	1089

REMARKS: * ALL READINGS ARE IN COUNTS/ 0.1 MIN.

Surface readings made with a one-half inch lead collimator

Delta readings made with a one-half inch 10" X 10" lead plate on the surface below the collimated detector

VP-044

MORRISON KNUDSEN

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: Mike Griffin
Paul Hearld
Derek Fitzgerald

SHEET 6 OF ____ PAGE 6

DATE: 11/7/84

PROPERTY ID: SL-070

INSTRUMENT ID NO.: 1-26504 2-34778

BACKGROUND CALCULATION:
1-898 1-971 1-867 1-2733 1-911
#1 2-900 + #2 2-839 + #3 2-853 = 2-2597 ÷ 3 = 2-864 COUNTS/.1MIN *

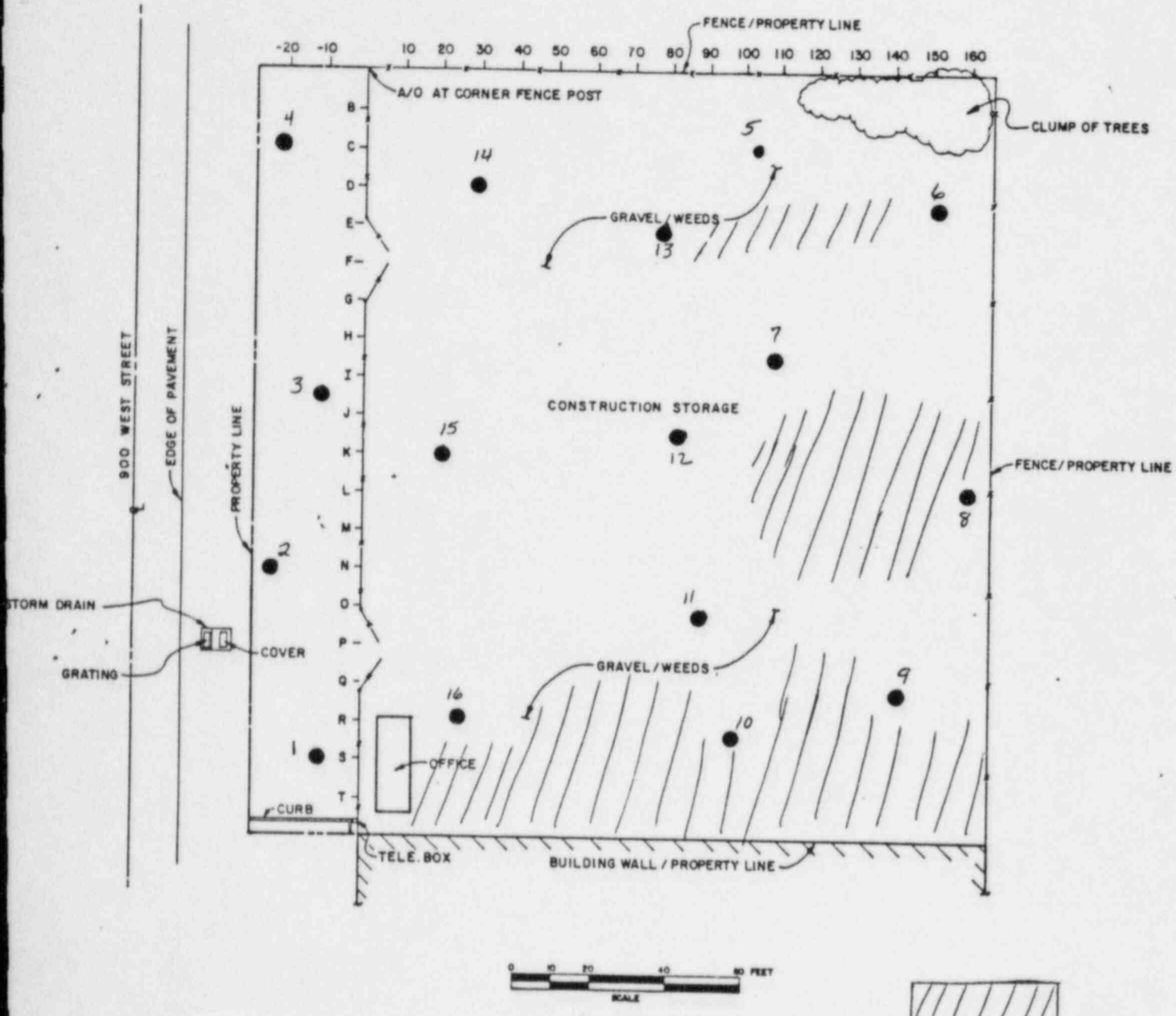
AREA:				AREA:				AREA:			
Point ID	1meter reading	surface reading	delta reading	Point ID	1meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
Q+170	23943	1788	1740	T+100	6084	183	509				
R+170	23166	2493	2292	T+80	5856	846	556				
R+160	11553	903	689	T+70	7548	976	575				
R+140	10601	1198	842	T+60	6489	882	442				
R+130	11574	1155	829	T+40	5779	878	486				
R+120	9076	953	637	U+40	5111	785	421				
R+110	10618	1194	799	U+50	5597	789	536				
R+100	10737	1221	771								
R+90	9723	1165	732								
R+80	10349	1058	834								
R+70	9539	1054	791								
R+60	6839	933	603								
R+50	6772	929	514								
R+30	5903	762	484								
R+20	5380	872	480								
S+50	5444	858	501								
S+60	7425	858	534								
S+70	8712	945	676								
S+80	7617	978	671								
S+90	8069	971	582								
S+110	8374	904	725								
S+130	8566	1298	719								
S+150	11496	1225	662								
S+160	5822	1144	653								

REMARKS: * ALL READINGS ARE IN COUNTS/ 0.1 MIN.
Surface readings made with a one-half inch lead collimator
Delta readings made with a one-half inch 10" X 10" lead plate on the surface below the collimated detector

VP-04A

Borehole Locations

SL-070



AREas where construction equipment is located

NO.	DATE	

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: Joe Worthen
Derek Fitzgerald

INSTRUMENT ID NO. 26511 probe# 015812

SHEET 2 OF 5 PAGE 2

DATE: Nov. 1, 1984

PROPERTY ID: SL-070 Paulsen Const.

AREA: Salt Lake

NOTES: 1. ALL HOLES ARE 4"DIA. UNLESS OTHERWISE NOTED.
2. RECORD UNUSUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND DEPTH, CASING TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

HOLE ID: SL-070-1 TIME DRILLED: TIME LOGGED: SOIL TYPE:		HOLE ID: SL-070-2 TIME DRILLED: TIME LOGGED: SOIL TYPE:		HOLE ID: SL-070-3 TIME DRILLED: TIME LOGGED: SOIL TYPE:		HOLE ID: SL-070-4 TIME DRILLED: TIME LOGGED: SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	5662	0"	6990	0"	8529	0"	9970
6"	2351	6"	2613	6"	1998	6"	5253
12"	2402	12"	2358	12"	1868	12"	6781
18"	2617	18"	2615	18"	2709	18"	4733
24"	3032	24"	2799	24"	3266	24"	2986
30"	2738	30"	2717	30"	3130	30"	3390
36"		36"		36"		36"	
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: Joe Worthen
Derek Fitzgerald

INSTRUMENT ID NO. 26511 probe# 015812

SHEET 3 OF 5 PAGE 3

DATE: Nov. 1, 1984

PROPERTY ID: SL-070 Paulsen Const.

AREA: SALT LAKE

NOTES: 1. ALL HOLES ARE 4"DIA. UNLESS OTHERWISE NOTED.
2. RECORD UNUSUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND DEPTH, CASING TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

HOLE ID: SL-070-5 TIME DRILLED: TIME LOGGED: SOIL TYPE:		HOLE ID: SL-070-6 TIME DRILLED: TIME LOGGED: SOIL TYPE:		HOLE ID: SL-070-7 TIME DRILLED: TIME LOGGED: SOIL TYPE:		HOLE ID: SL-070-8 TIME DRILLED: TIME LOGGED: SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	12186	0"	18195	0"	8385	0"	12790
6"	6240	6"	8119	6"	6763	6"	5158
12"	5029	12"	8700	12"	8787	12"	5838
18"	6999	18"	10767	18"	6308	18"	13983
24"	4679	24"	13288	24"	3801	24"	10313
30"	3391	30"	7285	30"	3076	30"	5687
36"	3113	36"	4296	36"		36"	2649
42"		42"		42"		42"	2234
48"		48"		48"		48"	2036
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

VP-048

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: Joe Worthen
Derek Fitzgerald

INSTRUMENT ID NO. 26511 probe# 015812

SHEET 4 OF 5 PAGE 4

DATE: Nov. 1, 1984

PROPERTY ID: SL-070 Paulsen Const

AREA: SALT LAKE

NOTES: 1. ALL HOLES ARE 4"DIA. UNLESS OTHERWISE NOTED.
2. RECORD UNUSUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND DEPTH, CASING TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

HOLE ID: SL-070-9		HOLE ID: SL-070-10		HOLE ID: SL-070-11		HOLE ID: SL-070-12	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE:		SOIL TYPE:		SOIL TYPE:		SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	11326	0"	7338	0"	8726	0"	10184
6"	9032	6"	4031	6"	4608	6"	2959
12"	3785	12"	2567	12"	2447	12"	1677
18"	3578	18"	3545	18"	3520	18"	2178
24"	4820	24"	5871	24"	4485	24"	3551
30"	4693	30"	4160	30"	3291	30"	3483
36"	3252	36"	3459	36"	2711	36"	
42"		42"	2915	42"		42"	
48"		48"	2717	48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: Joe Worthen
Derek Fitz GERALD

INSTRUMENT ID NO. 26511 probe# 015812

SHEET 5 OF 5 PAGE 5

DATE: NOV. 1, 1984

PROPERTY ID: SL-070 Paulsen Const.

AREA: SALT LAKE

NOTES: 1. ALL HOLES ARE 4"DIA. UNLESS OTHERWISE NOTED.
2. RECORD UNUSUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND DEPTH, CASING TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

HOLE ID: SL-070-13		HOLE ID: SL-070-14		HOLE ID: SL-070-15		HOLE ID: SL-070-16	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE:		SOIL TYPE:		SOIL TYPE:		SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	11416	0"	8528	0"	6907	0"	7886
6"	5005	6"	2438	6"	2177	6"	3476
12"	2590	12"	1554	12"	1512	12"	2837
18"	1951	18"	1538	18"	1897	18"	3280
24"	2783	24"	1991	24"	1740	24"	3329
30"	3513	30"	2092	30"		30"	2975
36"	3772	36"		36"		36"	
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

MORRISON KNUDSEN

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WM Project 41

Docket No.

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Contract No. 3080

PROJECT: UMTRA
CLIENT: U.S. DEPARTMENT OF ENERGY

Date March 22, 1985

TO: U.S. Nuclear Regulatory Commission
7915 Eastern Avenue
Silver Spring, MD 20910

ATT: ~~Mr. Claude Flory~~ - Bill Nixon

APPROVED FOR CONSTRUCTION/FABRICATION	A
INFORMATION ONLY	B
APPROVAL ACTION REQUESTED	C
DISAPPROVAL-RESUBMIT	D
APPROVAL WITH COMMENTS	E

REMARKS Attached is one copy of the Draft REA with Final Design for SL-070. Comments are requested to be forwarded to M. Matthews of the DOE with a copy to this office by 4/1/85.

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R. Sena				

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MORRISON-KNUDSEN

BY: J. Pepin

John Pepin

TITLE Vicinity Properties Manager

THE ABOVE LISTED DOCUMENTS HAVE BEEN RECEIVED BY:

COMPANY NAME

NAME & TITLE

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MORRISON-KNUDSEN COMPANY, INC.

UMTRA PROJECT OFFICE
P.O. BOX 9136
ALBUQUERQUE, NEW MEXICO 87119