

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

Radiological and Engineering Assessment

Vicinity Property No. SLC 071

Remedial Actions
Contractor
for the
Uranium Mill Tailings
Remedial Actions
Project



MORRISON
KNUDSEN

Vicinity Property No. SLC 071

9707100004 850626
PDR WASTE
WM-39 PDR

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FINAL
THE RADIOLOGICAL AND ENGINEERING ASSESSMENT
AND FINAL DESIGN
FOR
SALT LAKE CITY PROPERTY
SL-071

June 26, 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-071 is an open land property located at 900 West 300 South Street, Salt Lake City, UT.

1.2 Evaluation and Recommendation

1.2.1 Residual Radioactive Material Involvement

A major portion of the property is contaminated.

1.2.2 Recommended Remedial Action Option

The recommended option is to remove the contaminated material except in the area of the natural gas substation. It is recommended that Supplemental Standards in accordance with 40 CFR 192.21 be applied to the substation area.

1.2.3 Estimated Costs

The estimated cost for removal of the contaminated material and restoration of the property is \$65,820.00.

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-071 is an open land property located at 900 West 300 South Street and owned by Steven G. and Helen A. Pappas. 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. 4793, Page 1463 follows:

Beginning at a point on the West line of Lot 7, Block 13, Ten Acre Plat "A", Big Field Survey, at a point South 437.5 feet and West 165.0 feet from the Northwest corner of Section 36, Township 1 South, Range 1 West, Salt Lake Base and Meridian and running thence North 89° 52' East 729.12 feet; thence South 0° 05' East 239.71 feet to the Southeast corner of Lot 7, Block 3, Section 36, Township 1 South, Range 1 West, Salt Lake Meridian; thence North 89° 25' West along the South line of said Lot 7 29.16 rods; thence North 6.0 rods North 89° 25' West 15.0 rods to the West line of Lot 7, Block 13, Ten Acre Plat "A", Big Field Survey, thence North along the West line of said Lot 7, 125.2 feet to the point the beginning.

BEGINNING at a point on the North line of 33rd South Street, said point being North 74.65 feet and South 89° 50' East 123.00 feet from a County Road stone on the Southwest corner of the intersection of 33rd South and 8th West Streets, said road stone is North 89° 44' 40" West 33.0 feet and South 33.0 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 991.0 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 South 89° 50' East along the North line of 33rd South Street 168.00 feet; thence North 1° 57' West 706.72 feet; thence North 89° 50' West 193.26 feet to the East line of 8th West Street; thence South 0° 13' 14' West along said East line 678.00 feet to the North line of Mountain Fuel Supply Company property; thence South 89° 44' 40" East along said North line 49.93 feet to the Northeast corner of said property; thence South along the East line of said property 28.16 feet to the point beginning.

2.1.3 Bordering Properties

The lot is zoned Business 'A', for business, office, and retail establishments. It is located in a commercial 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 3300 South Street; and on the west by 900 West Street. The southeast corner bordering the property is a separately fenced public utility gas pumping station containing a steel pump house structure. This corner is not included as part of property SL-071 and requires separate consideration and documentation for decontamination.

2.2 Existing Facilities and Structures

2.2.1 Structures (No permanent structures)

The property is a vacant lot enclosed on three sides by a six foot high chain link fence. A mobile trailer set on concrete blocks has been established as a temporary office. The lot is surfaced with crushed stone and is used as a storage area for commercial truck trailers.

2.2.2 Utilities

Utilities are serviced to the property as follows:

Electric power - From 900 West and 3300 South Streets.

Telephone - From 900 West Street.

Water - From 900 West Street.

Gas - From 3300 South Street.

Sewer - From 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 Figure 2.3, 2.4, and 2.5.

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATA

GENERAL:

Facility Name: Gateway Trailers and Equipment

Address: 3291 South 900 West

Owner: Steve and Helen Pappas

Occupancy: Employees/Occupants (Full Time): 2

Employees/Occupants (Part Time): 0

Remarks: Property used as storage yard for semi-trailer vans

PROPERTY DESCRIPTION:

Structure: (Identify) Office

: SQ FT 500 Levels 1

: Construction Type Mobile trailer office

: Foundation Precast concrete blocks

Remarks:

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATE

Facility Name: Gateway Trailers and Equipment

PROPERTY DESCRIPTION:

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

Remarks: 80% to 90% of property is surfaced with crushed stone,
balance is weeds

Sidewalks: Concrete: _____ Asphalt: _____

Remarks: N/A

Fences: Chain link X Mesh _____ Wood _____

Remarks: 6 foot fence on three sides, east side is open to adjacent property

Grounds: Lawn None

Trees None

Shrubs None

Grading Level

Soil Type Sandy gravel

Remarks _____

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATA

Facility Name: Gateway Trailers and Equipment

UTILITIES: Heating: Gas _____ Electric X _____ Oil _____
Hot Water _____ Other _____

Remarks: _____

Air Conditioning: Elec. _____ X _____ Gas _____
Evap. Cooler _____ Other _____

Remarks: _____

Electric Line Location: From 900 West and 3300 South Streets

Gas Line Location: From 3300 South Street

Water Line Location: From 900 West Street

Sewer Line Location: From 900 West Street

Telephone Line Location: From 900 West Street

BUILDING CODES AND ZONING:

Building Code: UBC X _____ BOCA _____

Remarks: _____

Zoning Jurisdiction: City of South Salt Lake

Present Facility Zoning: Business 'A'



2100 SOUTH FREEWAY

2100 SOUTH ST

BELT ROUTE I-215

REDWOOD ROAD

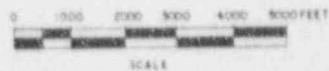
JORDAN RIVER

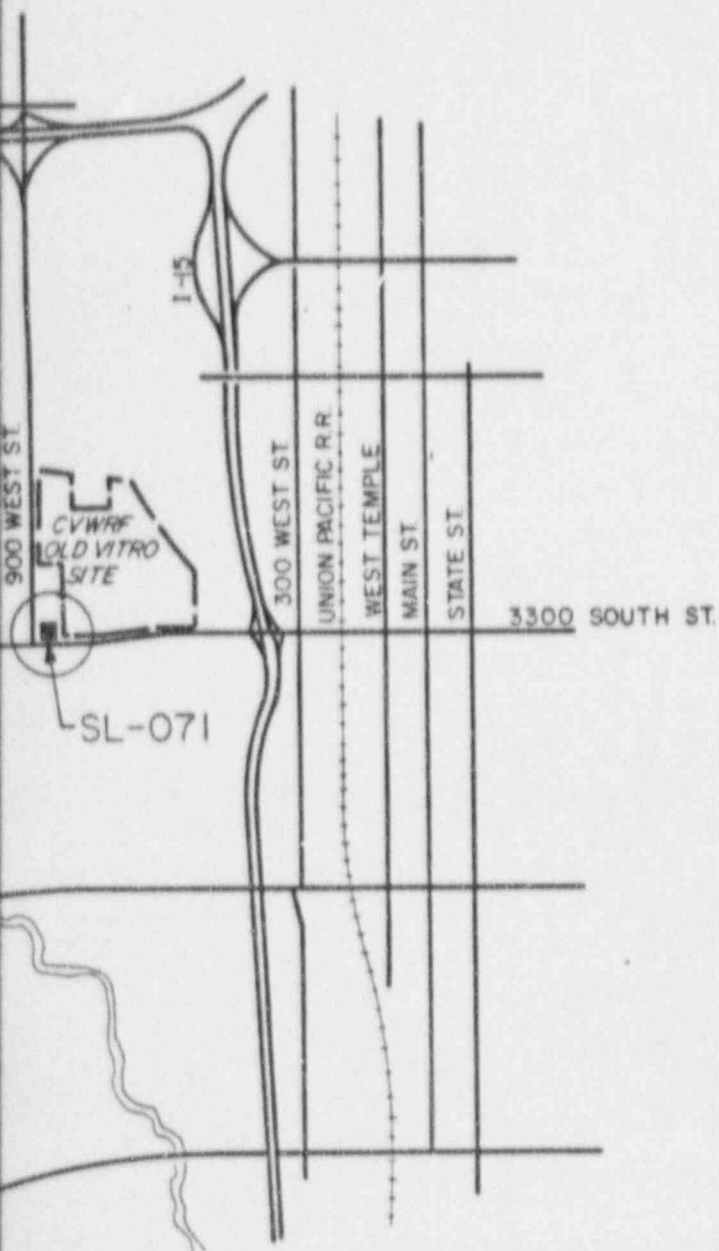
3100 SOUTH ST

3500 SOUTH ST

4100 SOUTH ST

4700 SOUTH ST





ANSTEC APERTURE CARD

Also Available on
Aperture Card

NOTE:

PROPERTY LOCATED IN SOUTH SALT LAKE

9707100004-01

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED BY	TLE
CHECKED	<i>[Signature]</i>
REVIEWED	<i>[Signature]</i>
RECOMMENDED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>

FIGURE 2.1
VICINITY MAP SL-071

SALT LAKE COUNTY, UTAH
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

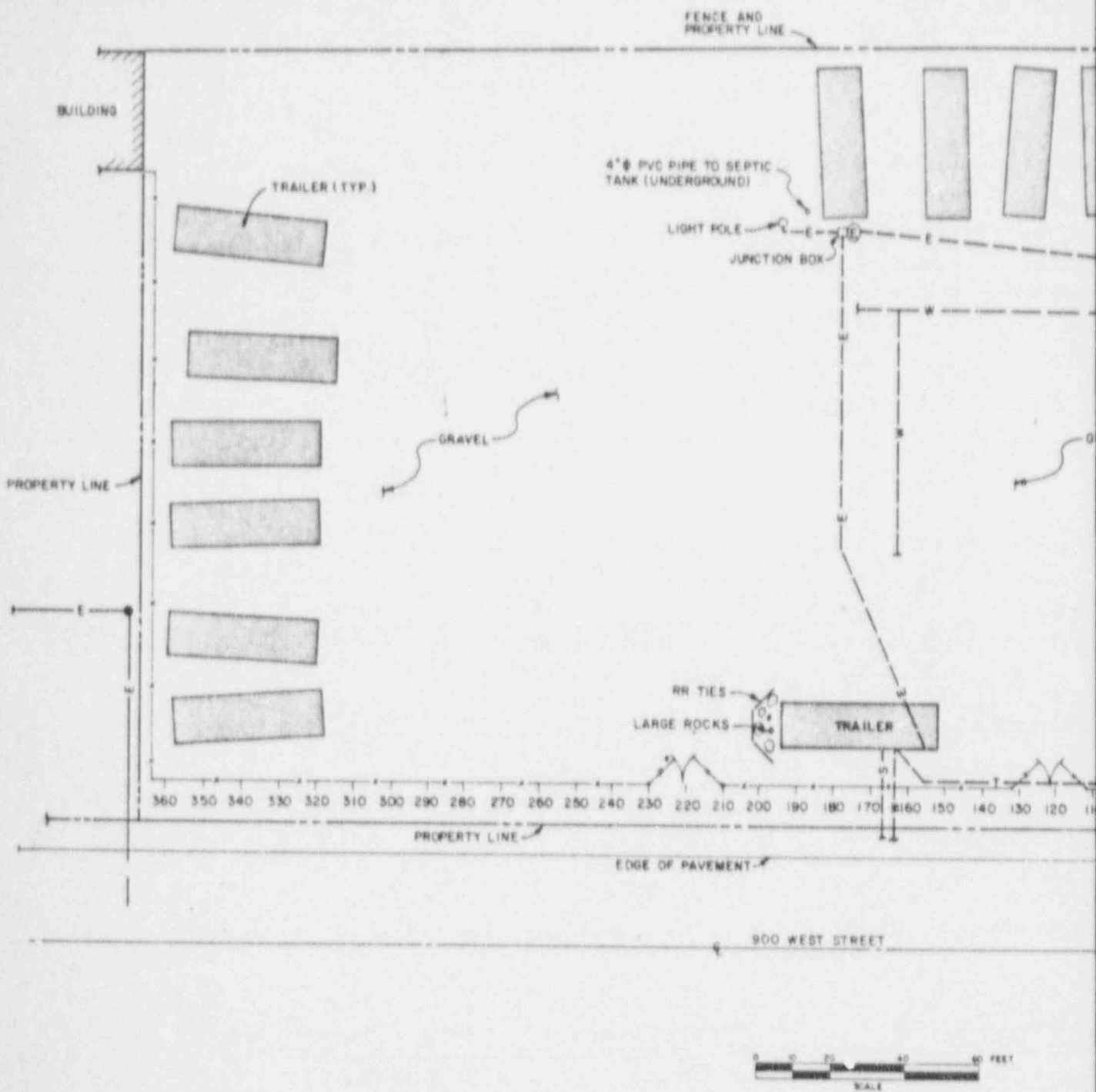
DATE	FOR PROJECT MANAGER	DATE	FOR PROJECT ENGINEER	DATE
NR	NR	NR	NR	



PROJECT NO.
DE-AC04-83AL18796
DRAWING NO.
SL-071-005

REV.
8

NO.	DATE	REVISIONS	DRAWN	CHECKED	APPROVED	DATE	BY	DATE	BY	DATE	BY
B	6/7/85	REVISED REA SUBMITTAL	CAM	<i>[Signature]</i>	<i>[Signature]</i>						
A	3/8/85	FINAL REA SUBMITTAL	DHN	<i>[Signature]</i>	<i>[Signature]</i>						

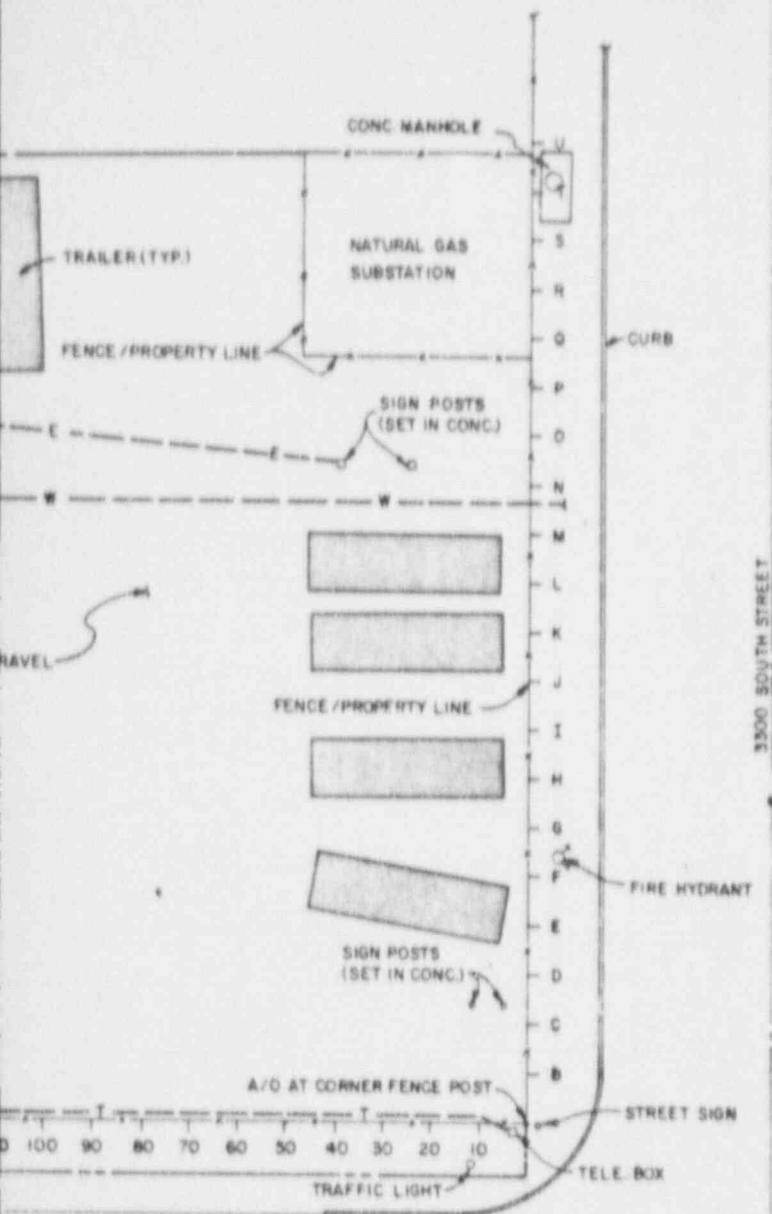


LEGEND

—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
—X—X—	PROPERTY LINE
—X—X—	FENCE LINE
⊙ G.W. E	METER
⊙ G.W.	VALVE
●	PROPERTY PIN
●	POWER POLE

NOTE:

OVERHEAD SERVICE DENOTED BY SOLID LINE
UNDERGROUND SERVICE DENOTED BY DASHED LINE



ANSTEC APERTURE CARD

Also Available on
Aperture Card

9707100004-02

U. S. DEPARTMENT OF ENERGY ALBUQUERQUE, NEW MEXICO

FIGURE 2.2 SITE PLAN SL-071

SALT LAKE COUNTY, UTAH
UNARMED MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED	DRN
CHECKED	
REVIEWED	
RECOMMENDED	
APPROVED	

NR

NR

NR



MORRISON
KNUDSEN

PROJECT NO.

DE-AC04-83AL18796

DRAWING NO.

SL-071-010

NO.	DATE	REVISIONS	DESIGNED	CHECKED	REVIEWED	RECOMMENDED	APPROVED
1	10/17/88	REVISED REA SUBMITTAL	CAN	V/D	V/D	V/D	—
2	10/17/88	FINAL REA SUBMITTAL	DRN	V/D	V/D	V/D	—



West Property Line Looking North



Southwest Corner of Property Looking South

Figure 2.3 Property Photos

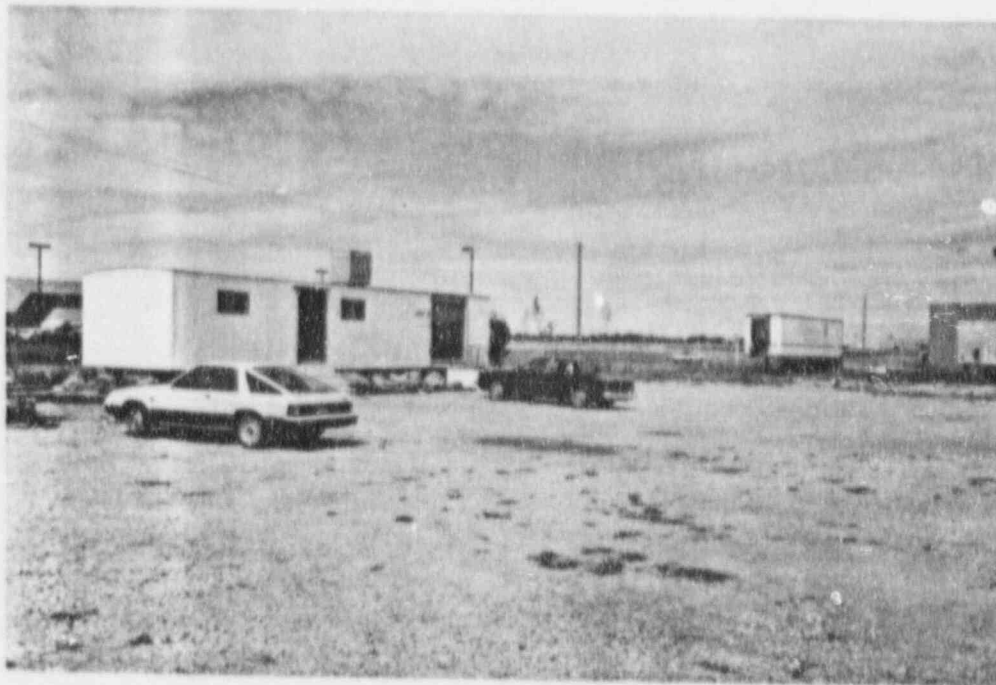


Southeast Corner of Property Looking Southeast



South End of Property Looking East

Figure 2.4 Property Photos



West Side of Property Looking Northwest



Electric Meter and Power Pole Looking North

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-071 to the site. High background readings indicated a 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-071, 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 290 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 UMTRA Procedure 018.

3.2.2 Survey Results

Contamination was found in 31 of the 33 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 only buildings on this property were trailers set above the ground.

3.4 Estimated Extent of Contamination

The entire property, with the exception of one area, Area D, is contaminated. The location and approximate depth of contamination is shown on Figure 3.1.

Radiological and Engineering Assessment: Property SL-071

The natural gas substation in the southeast corner is contaminated. Borehole surveys taken at the perimeter of the substation indicate contamination to depths of 60 inches, 36 inches, and 18 inches. The contamination concentration readings on all four sides of the substation are some of the highest encountered on this property at 290, 144, 254 and 200 pCi/g.

3.5 Recommendation for Application of Supplemental Standards

Supplemental Standards, as specified in 40 CFR 192.21, apply in the area of the gas substation.

The contaminated material in this area definitely falls into the criteria set forth in 40 CFR 192.21(c). The material is semi-permanent in its location and it would be costly and dangerous to remove the material, as three high-pressure gas lines pass through this area. There is no building erected over the area that would allow radon daughters to build up in a closed environment.

Radiological and Engineering Assessment: Property SL-071

Table 3.1
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
A+200	5
A+190	11
A+170	5
A+140	10
A+110	7
A+70	11
A+60	6
A+30	7
A+20	6
A+10	6
B+00	7
B+10	6
B+20	15
B+40	6
B+50	8
B+70	5
B+80	7
B+240	5
B+250	7
B+270	6
B+280	8
C+270	7
C+260	6
C+240	5
C+110	6
C+100	5
C+90	5
C+80	7
C+70	6
C+60	7
C+50	8
C+40	6
C+10	6
A-8	4
B-8	11
C-8	9
D-8	12
E-8	10
F-8	38
G-8	20
H-8	20
I-8	25

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
J-8	29
K-8	32
L-8	37
M-8	68
N-8	74
O-8	88
P-8	55
Q-8	86
R-8	14
S-8	14
T-8	98
U-8	41
V-8	70
V+0	152
U+0	31
T+0	33
S+0	141
R+0	144
Q+0	40
P+0	92
O+0	70
N+0	64
M+0	16
L+0	19
K+0	19
J+0	21
I+0	15
H+0	18
G+0	43
F+0	8
E+0	11
D+0	6
C+0	11
B+0	8
AA+210	6
AA+220	6
AA+230	5
AA+270	6
AA+300	5
AA+310	7
AA+340	5
AA+350	6
AA+360	5

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
A+360	7
A+350	7
A+330	5
A+320	6
A+310	7
A+300	9
A+290	7
A+280	9
A+270	7
A+260	6
A+250	8
A+240	8
D+00	6
D+10	6
D+30	9
D+40	7
D+50	8
D+60	7
D+70	12
D+80	9
D+90	5
D+110	5
D+260	7
D+270	7
D+320	5
E+365	5
E+340	6
E+330	5
E+270	6
E+260	8
E+250	7
E+240	5
E+230	5
E+210	5
E+200	5
E+90	6
E+70	8
E+60	23
E+50	12
E+40	7
E+30	8
E+20	5

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
E+10	6
E+00	5
F+00	5
F+10	8
F+20	10
F+30	6
F+40	8
F+50	16
F+60	19
F+70	9
F+80	8
F+90	8
F+110	5
F+120	5
F+130	5
F+140	5
F+170	6
F+180	6
F+190	10
F+200	6
F+210	--
F+220	5
F+230	6
F+240	5
F+250	6
F+260	8
F+270	6
F+280	6
F+320	7
F+365	5
G+365	5
G+290	5
G+280	5
G+270	9
G+260	7
G+250	7
G+240	5
G+200	7
G+190	5
G+180	6
G+160	6

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
G+150	10
G+140	16
G+130	7
G+110	6
G+100	7
G+80	8
G+70	12
G+60	14
G+50	28
G+40	12
G+30	12
G+20	7
G+10	7
G+00	5
H+00	16
H+10	7
H+20	43
H+30	20
H+40	25
H+50	34
H+60	29
H+70	16
H+80	8
H+90	7
H+100	5
H+110	5
H+120	5
H+130	7
H+140	5
H+150	5
H+160	8
H+170	7
H+180	5
H+190	7
H+200	6
H+210	6
H+240	7
H+250	7
H+260	10
H+270	5

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
H+280	5
I+290	5
I+280	6
I+260	8
I+250	6
I+240	5
I+210	6
I+200	6
I+190	6
I+170	5
I+150	6
I+140	5
I+120	5
I+110	10
I+100	9
I+90	12
I+80	7
I+70	11
I+60	32
I+50	67
I+40	19
I+30	63
I+20	50
I+10	7
I+00	11
J+00	11
J+10	31
J+20	41
J+30	117
J+40	54
J+50	37
J+60	7
J+70	14
J+80	7
J+90	8
J+100	13
J+110	10
J+120	18
J+130	10
J+140	5

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
J+150	6
J+160	7
J+170	5
J+180	6
J+190	9
J+210	5
J+220	7
J+230	7
J+240	8
J+250	7
J+260	10
J+290	6
J+300	7
J+310	6
J+340	6
K+310	5
K+300	5
K+290	5
K+280	8
K+260	8
K+250	5
K+240	8
K+230	9
K+220	8
K+210	9
K+200	10
K+190	8
K+180	9
K+170	5
K+160	7
K+150	9
K+120	5
K+100	12
K+80	13
K+70	5
K+60	26
K+50	32
K+40	70
K+30	90
K+20	37

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
K+10	28
K+00	20
L+00	18
L+10	44
L+20	80
L+30	85
L+40	54
L+50	67
L+60	53
L+70	8
L+80	6
L+90	7
L+100	12
L+130	6
L+150	8
L+160	8
L+170	5
L+180	7
L+190	8
L+200	8
L+210	12
L+220	10
L+230	11
L+240	11
L+250	7
L+260	12
L+270	8
L+280	8
L+290	10
L+300	9
L+310	7
L+340	5
M+360	5
M+330	9
M+320	6
M+310	6
M+300	8
M+290	9
M+280	6
M+270	5

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
M+260	6
M+250	13
M+240	9
M+230	11
M+220	12
M+210	11
M+200	10
M+190	6
M+180	15
M+170	15
M+160	8
M+150	6
M+140	7
M+130	12
M+120	9
M+110	7
M+100	11
M+90	15
M+80	9
M+70	8
M+60	9
M+50	16
M+40	11
M+30	80
M+20	200
M+10	31
M+00	50
N+00	63
N+10	43
N+20	60
N+30	115
N+40	149
N+50	72
N+60	82
N+70	41
N+80	12
N+90	10
N+100	13
N+110	10

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
N+120	14
N+130	10
N+140	12
N+150	9
N+160	13
N+170	12
N+180	15
N+190	17
N+200	13
N+210	10
N+220	12
N+230	8
N+240	7
N+250	11
N+260	9
N+270	7
N+280	10
N+290	14
N+300	8
N+310	6
N+330	7
O+340	8
O+330	15
O+320	7
O+310	10
O+300	6
O+290	18
O+270	8
O+260	10
O+250	14
O+240	7
O+230	14
O+220	17
O+210	12
O+200	12
O+190	13
O+180	12
O+170	14
O+160	16
O+150	15

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
O+140	14
O+130	11
O+120	6
O+110	8
O+100	18
O+90	13
O+80	56
O+70	143
O+60	110
O+50	131
O+40	237
O+30	108
O+20	116
O+10	28
O+00	99
P+00	55
P+10	15
P+20	57
P+30	86
P+40	274
P+50	136
P+60	81
P+70	151
P+80	24
P+90	16
P+100	10
P+110	7
P+120	10
P+130	7
P+140	16
P+150	16
P+160	9
P+170	19
P+180	8
P+190	9
P+200	11
P+210	5
P+220	5
P+230	8
P+240	11

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
P+250	11
P+260	11
P+270	11
P+280	11
P+290	5
P+300	15
P+310	10
P+320	8
P+330	8
P+340	5
P+350	11
P+365	5
Q+360	8
Q+350	10
Q+340	76
Q+330	39
Q+320	21
Q+310	29
Q+300	32
Q+290	15
Q+280	9
Q+270	20
Q+260	16
Q+250	15
Q+240	11
Q+230	11
Q+220	15
Q+210	16
Q+200	14
Q+190	13
Q+180	11
Q+170	21
Q+160	17
Q+150	8
Q+140	14
Q+130	15
Q+120	17
Q+110	17
Q+100	10
Q+90	16

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
Q+80	65
Q+70	37
Q+60	48
Q+50	120
Q+40	290
Q+30	162
Q+20	101
Q+10	16
Q+00	25
R+50	254
R+60	81
R+70	151
R+80	65
R+90	22
R+100	23
R+110	25
R+120	8
R+130	31
R+140	30
R+150	21
R+160	12
R+170	19
R+180	14
R+190	11
R+200	17
R+210	13
R+220	9
R+230	10
R+240	8
R+250	11
R+260	8
R+270	11
R+280	13
R+300	23
R+310	24
R+320	18
R+330	37
R+340	41
R+350	16
R+360	14

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
S+365	6
S+360	9
S+350	65
S+340	14
S+330	30
S+320	24
S+310	26
S+300	24
S+290	12
S+270	14
S+260	10
S+250	7
S+240	13
S+230	13
S+220	14
S+210	16
S+200	22
S+190	15
S+180	7
S+170	11
S+160	14
S+150	13
S+140	26
S+130	31
S+120	31
S+110	24
S+100	20
S+90	72
S+80	81
S+70	121
S+60	126
S+50	200
T+50	164
T+60	75
T+70	21
T+80	125
T+90	34
T+100	30
T+110	27
T+120	30

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
T+130	23
T+140	28
T+150	28
T+160	19
T+170	30
T+180	26
T+190	22
T+200	26
T+210	25
T+220	11
T+230	11
T+240	22
T+250	23
T+260	14
T+270	16
T+280	20
T+290	14
T+300	11
T+310	26
T+320	31
T+330	25
T+340	49
T+350	24
T+360	12
T+365	9
U+365	28
U+360	14
U+350	19
U+340	18
U+330	22
U+320	15
U+310	14
U+300	11
U+290	15
U+280	14
U+270	22
U+260	43
U+250	36
U+240	36
U+230	91

Radiological and Engineering Assessment: Property SL-071

Table 3.1 - Cont'd.
EXTERIOR GAMMA SURVEY
Property SL-071

POINT	pCi/g
U+220	20
U+210	29
U+200	16
U+190	10
U+180	23
U+170	28
U+160	24
U+150	31
U+140	46
U+130	41
U+120	63
U+110	64
U+100	61
U+90	100
U+80	132
U+70	61
U+60	46
U+50	114
U+40	157
U+30	190
U+20	94
U+10	107

Radiological and Engineering Assessment: Property SL-071

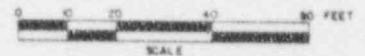
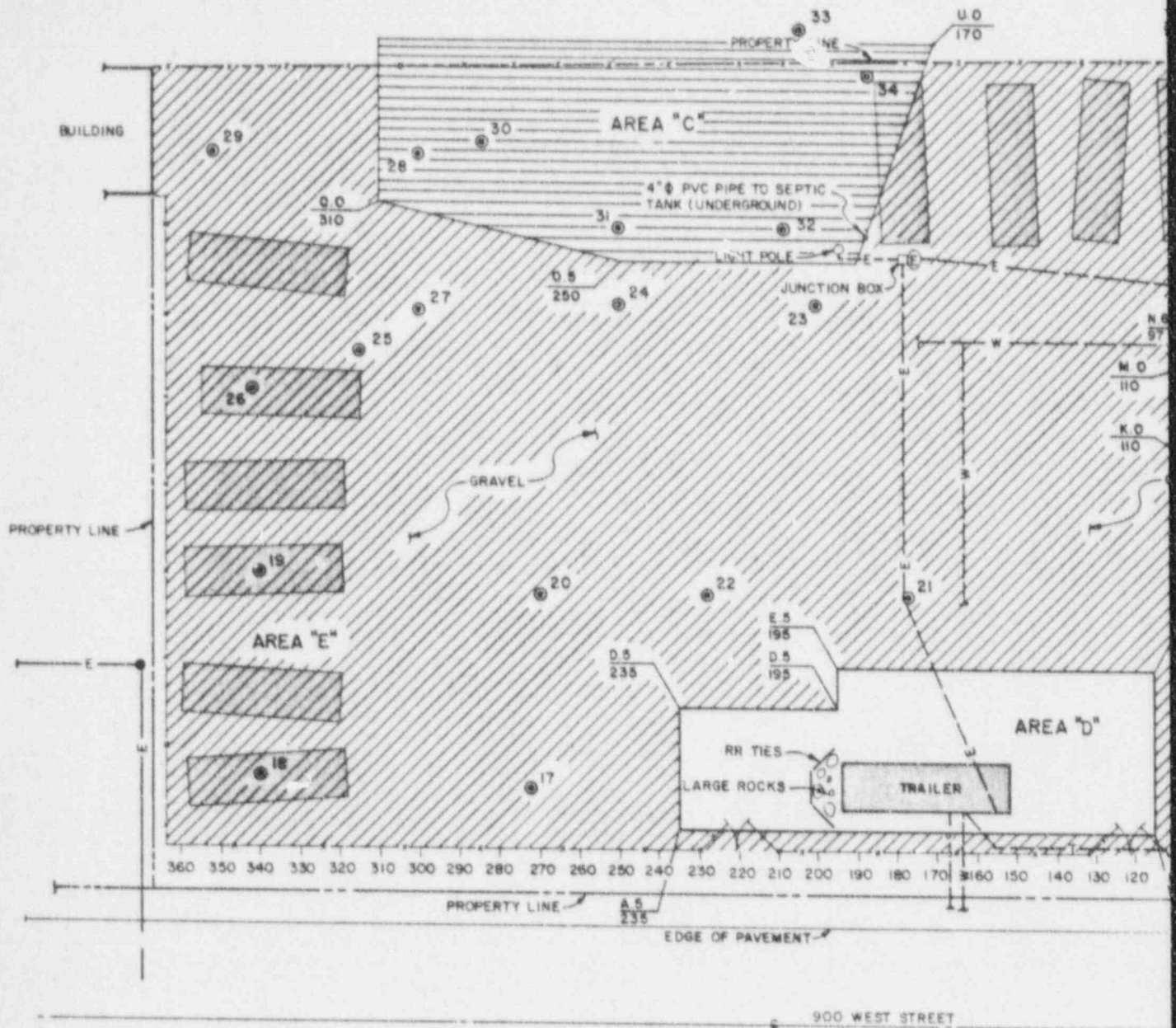
Table 3.2
BOREHOLE SAMPLE SURVEY
Property SL-071

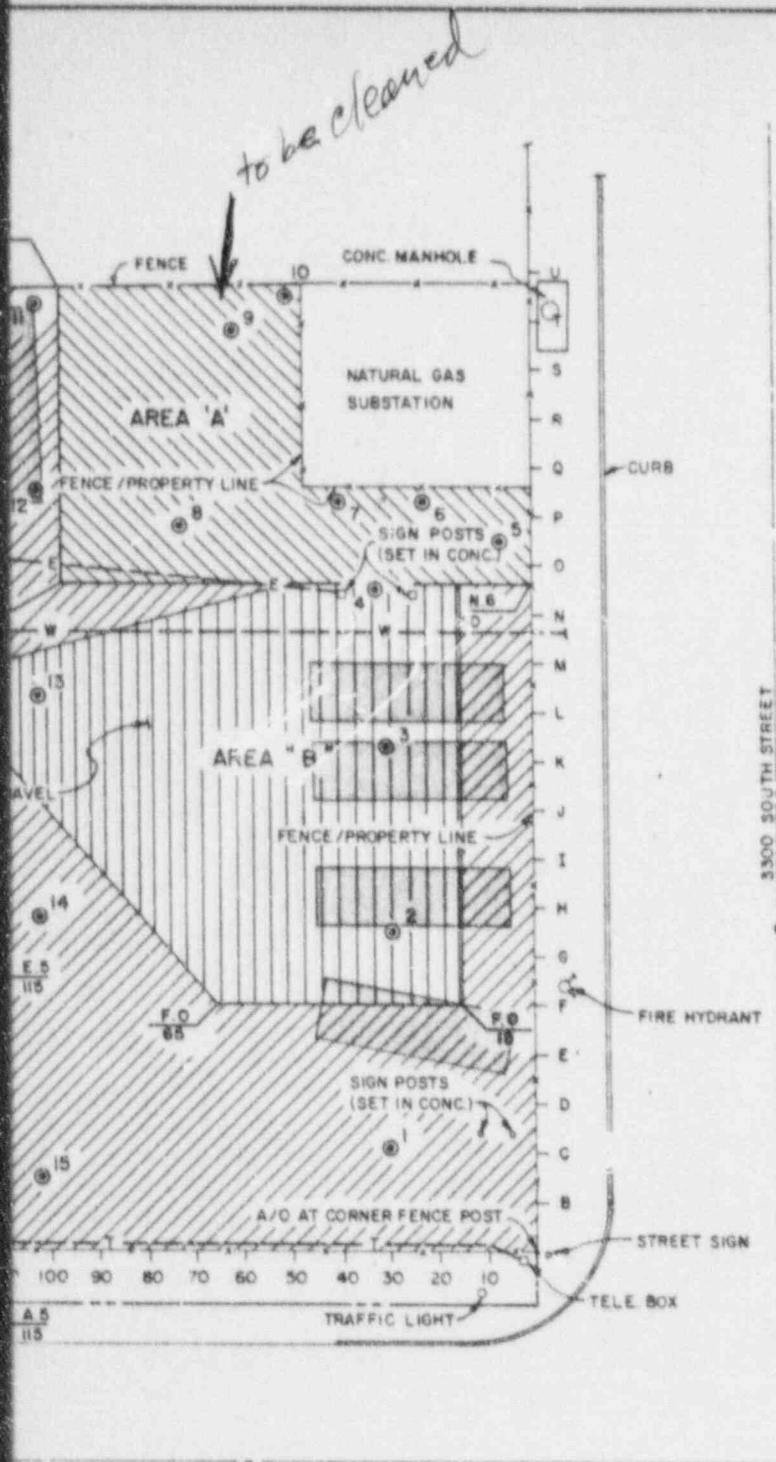
HOLE	LOCATION	CONTAMINATION DEPTH
1	(C+01,0+30)	--
2	(G+05,0+29)	0-18"
3	(K+03,0+30)	0-18"
4	(N+05,0+32)	0-18"
5	(O+05,0+06)	0-24"
6	(P+03,0+22)	0-18"
7	(P+03,0+40)	0-36"
8	(O+08,0+72)	0-36"
9	(S+07,0+61)	0-42"
10	(T+05,0+50)	0-60"
11	(T+03,0+102)	0-42"
12	(P+05,0+102)	0-24"
13	(L+03,0+102)	0-18"
14	(G+08,0+102)	Surface
15	(B+05,0+102)	0-12"
16	(No hole augered)	
17	(B+05,0+272)	0-6"
18	(B+08,0+340)	--
19	(G+08,0+340)	0-18"
20	(G+03,0+270)	0-6"

Radiological and Engineering Assessment: Property SL-071

Table 3.2 - Cont'd.
BOREHOLE SAMPLE SURVEY
Property SL-071

HOLE	LOCATION	CONTAMINATION DEPTH
21	(G+03,O+177)	0-6"
22	(G+03,O+228)	0-6"
23	(N+05,O+200)	0-12"
24	(N+05,O+250)	0-6"
25	(M+03,O+315)	0-6"
26	(L+03,O+342)	0-6"
27	(N+03,O+300)	0-6"
28	(R+02,O+300)	0-24"+
29	(R+02,O+352)	0-12"
30	(R+05,O+284)	0-36"
31	(P+04,O+250)	0-6"
32	(P+04,O+208)	0-30"
33	(U+03,O+204)	0-30"+
34	(T+02,O+187)	0-24"+





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
---	FENCE LINE
⊙ 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

⊙ 2 AUGER HOLE DESIGNATION

ESTIMATED DEPTH OF CONTAMINATION

	6"
	60"
	18"
	36"

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U. S. DEPARTMENT OF ENERGY ALBUQUERQUE, NEW MEXICO

FIGURE 3.1

RADIOLOGICAL SURVEY DATA SL-071

SALT LAKE COUNTY, UTAH

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED	DRAWN	CHECKED	REVIEWED	RECOMMENDED	APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
					NR				NR	
PROJECT NO.						DE-AC04-83AL18796				
DRAWING NO.						SL-071-015				



NO.	DATE	REVISIONS	DESIGNED	CHECKED	APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
B	6/7/85	REVISED REA SUBMITTAL	CAM							
A	3-6-80	FINAL REA SUBMITTAL	CHN							

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

Two options were evaluated for property SL-071:

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 to a clean condition. See Figure 4.1 for the scope of work.

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

- o The semi-trailer vans will be moved by the property owner as required to facilitate remedial action work.
- o Install temporary fence at midpoint of property.
- o Remove and salvage portion of fence on east side to allow direct access to vitro site.
- o Remove fencing and gate on west side of property.
- o Excavate property, with the exception of Area "D" and the gas substation.
- o Excavate Areas as shown in Figure 3.1.
- o The site will be resurveyed for residual contamination and supplemental excavation performed as required.
- o Place and compact common fill.
- o Place and compact aggregate base course as described in scope of work on Figure 4.1.
- o Place 2 inches of traffic surface gravel.

- o Reinstall fencing and gates as indicated on Figure 4.1.
- o Remove section of temporary fence.
- o Move semi-trailer vans and office to clean side of property.
- o Reinstall temporary fence at midpoint of property.
- o Remove and salvage portion of fence on east side to allow direct access to vitro site.
- o Remove fencing and gate on west side as property.
- o Excavate remainder of property as shown in Figure 3.1.
- o The site will be resurveyed for residual contamination and supplemental excavation performed as required.
- o Place and compact common fill.
- o Place and compact aggregate base course as described in scope of work on Figure 4.1.
- o Place 2 inches of traffic surface gravel.
- o The existing bill board sign will be preserved and protected.
- o Preserve and protect existing fence on south side.
- o Preserve and protect existing underground utilities.
- o Reinstall fencing and gates as indicated on Figure 4.1.

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 working conditions.

4.2 Recommendation

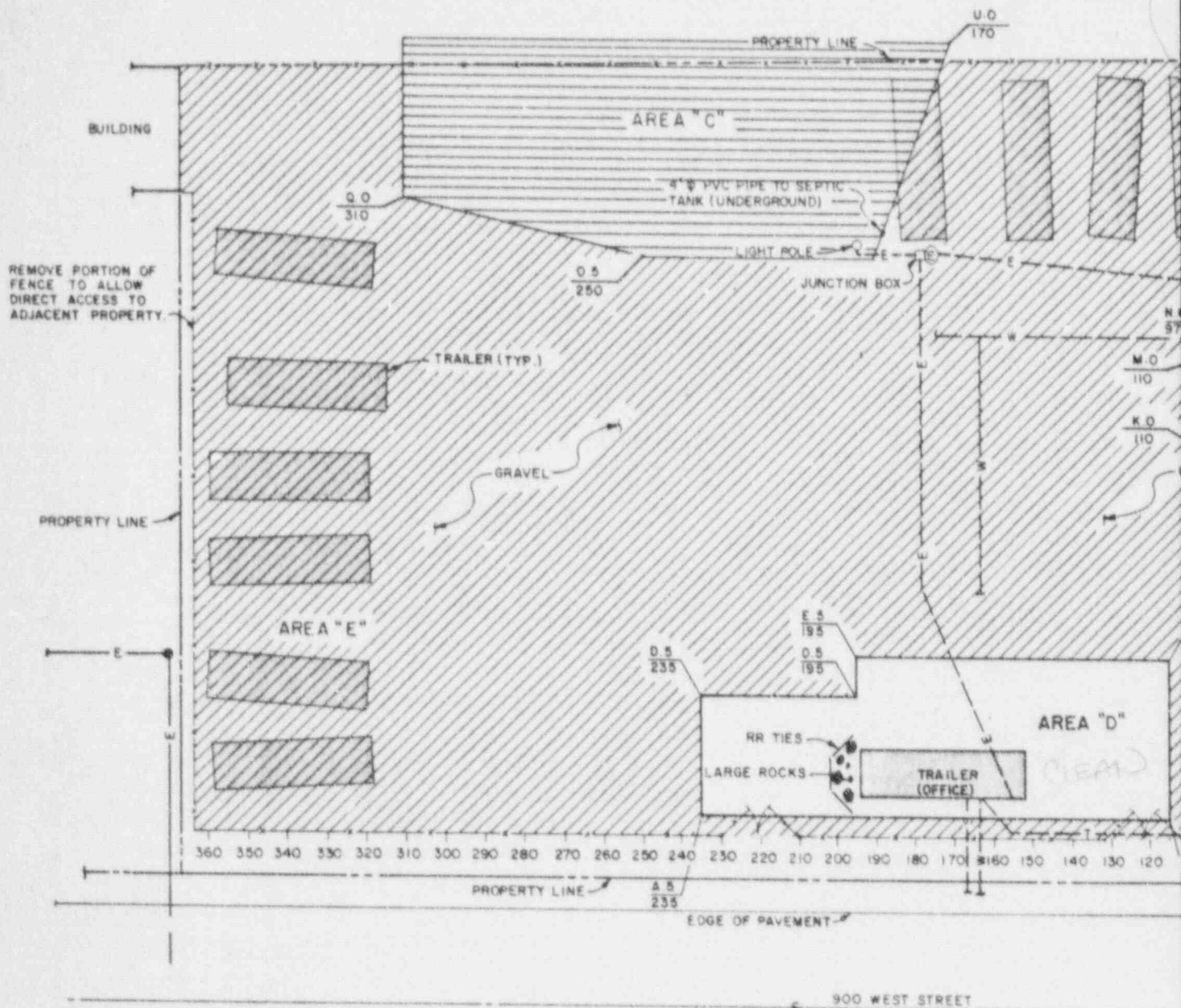
The limited cost and amount of remedial action work precluded evaluating any more than these two options. The results of the radiological assessment concluded that contamination levels on the property exceeded EPA guidelines. Therefore, based on these guidelines, it is recommended that Option 2, decontamination of the property, be pursued. The total estimated cost for Option 2 is \$65,820.00.

Radiological and Engineering Assessment: Property SL-071

Table 4.1
OPTION 2 COSTS

<u>Activity</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Estimated Cost</u>
Relocate trailers, Vans, and Office	LS	1	2,000.00
Remove Gates and Chain Link Fencing	3.00	415 lf	1,245.00
Install Temporary Fencing	8.20	195 lf	1,600.00
Excavation	3.40	2,753 cy	9,360.00
Backfill	7.50	1,522 cy	11,415.00
Aggregate Base	13.05	821 cy	10,714.00
Gravel Surfacing	8.00	410 cy	3,280.00
Install Original Chain Link Fencing	8.20	48 lf	394.00
Install New Gates and Chain Link Fencing	9.80	363 lf	3,557.00
Protect Fencing	LS	1	800.00
Protect Billboard Sign	LS	1	1,000.00
Protect Utilities	LS	1	2,500.00

Subtotal	47,865.00
5% Contractor's Contingency	2,393.00
20% Overhead & Profit	<u>9,573.00</u>
Subtotal	59,831.00
10% Engineer's Contingency	<u>5,983.00</u>
Total (Rounded)	65,820.00



SCOPE OF WORK:

- LOCATE ALL TRAILERS AND MISCELLANEOUS ITEMS TO SOUTH SIDE OF PROPERTY.
- CONSTRUCT TEMPORARY FENCE AT MIDPOINT OF PROPERTY.
- REMOVE AND SALVAGE FENCING ON EAST SIDE OF PROPERTY.
- REMOVE FENCING AND GATE ON WEST SIDE OF PROPERTY.
- PROTECT FENCING ON NORTH SIDE OF PROPERTY.
- EXCAVATE AREA "E" TO A DEPTH OF 6 INCHES.
- EXCAVATE AREA "C" TO A DEPTH OF 36 INCHES.
- NO EXCAVATION NEEDED IN AREA "D".
- PLACE AND COMPACT COMMON FILL.
- PLACE AND COMPACT 4 INCHES OF AGGREGATE BASE COURSE.
- PLACE 2 INCHES OF TRAFFIC SURFACE GRAVEL.
- REMOVE TEMPORARY FENCING.
- RELOCATE ALL TRAILERS, OFFICE, AND MISCELLANEOUS ITEMS TO NORTH SIDE OF PROPERTY.
- RECONSTRUCT TEMPORARY FENCE AT MIDPOINT OF PROPERTY.
- REMOVE AND SALVAGE FENCING ON EAST SIDE OF PROPERTY.
- REMOVE FENCING AND GATE ON WEST SIDE OF PROPERTY.
- PRESERVE AND PROTECT BILLBOARD SIGN.
- PRESERVE AND PROTECT EXISTING UNDERGROUND UTILITIES.
- EXCAVATE AREA "A" TO A DEPTH OF 40 INCHES.
- EXCAVATE AREA "B" TO A DEPTH OF 18 INCHES.
- EXCAVATE AREA "C" TO A DEPTH OF 36 INCHES.
- EXCAVATE AREA "E" TO A DEPTH OF 6 INCHES.
- NO EXCAVATION NEEDED IN AREA "D" AND SUBSTATION.
- PLACE AND COMPACT COMMON FILL.
- PLACE AND COMPACT 4 INCHES OF AGGREGATE BASE COURSE.
- PLACE 2 INCHES OF TRAFFIC SURFACE GRAVEL.
- REMOVE TEMPORARY FENCING.
- RELOCATE ALL TRAILERS, OFFICE, AND MISCELLANEOUS ITEMS TO ORIGINAL LOCATION.

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
---	FENCE LINE
⊙ 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

NOTES:
THE LATEST REVISION OF THE FOLLOWING
TECHNICAL SPECIFICATIONS APPLY TO THE
REMEDIAL ACTION WORK REQUIRED FOR
PROPERTY NO. SL-071

- SECTION 02050
DEMOLITION
- SECTION 02110
CLEARING AND GRUBBING
- SECTION 02130
CONTAMINATED MATERIAL REMOVAL
- SECTION 02200
EXCAVATION AND BACKFILL
- SECTION 02500
PAVING AND SURFACING

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

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FIGURE 4.1

EXCAVATION & RESTORATION PLAN SL-071

SALT LAKE COUNTY, UTAH

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED/DRAWN
DHN
CHECKED
REVIEWED
RECOMMENDED
APPROVED

NR

NR

NR

MORRISON
KNUDSEN

PROJECT NO
DE-AC04-83AL18796

DRAWING NO
SL-071-020

REV
8

0 10 20 30 40 50 60 70 80 90 FEET
SCALE

AGGREGATE

BACK

AND
SL

NO.	DATE	REVISIONS	DRAWN BY	CHECKED BY	APPROVED BY	DATE	APPROVED BY	DATE	APPROVED BY
B	6-78	REVISED REA SUBMITTAL	CAM	HL	HL	1/60	HL	1/60	HL
A	5-80	FINAL REA SUBMITTAL	DHN	HL	HL	1/60	HL	1/60	HL

NO. DATE

REVISIONS

DRAWN BY

CHECKED BY

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

NO. DATE

REVISIONS

DRAWN BY

CHECKED BY

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

DATE

APPROVED BY

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	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.

<u>Drawing Number</u>	<u>Drawing Title</u>
SL-071-020	Excavation & Restoration Plan SL-071

APPENDIX A
SURVEY DATA LOGS

BOREHOLE LOG

 LOGGING CREW: J. MANSHIP

 SHEET 2 OF PAGE 2
J. WORTHEN

 DATE: 10/26/84

 PROPERTY ID: SL-071

 INSTRUMENT ID NO. 26511, Pender 015812

 AREA:

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: <u>5#</u>	HOLE ID: <u>6#</u>	HOLE ID: <u>7#</u>	HOLE ID: <u>8#</u>
TIME DRILLED: <u> </u>	TIME DRILLED: <u> </u>	TIME DRILLED: <u> </u>	TIME DRILLED: <u> </u>
TIME LOGGED: <u> </u>	TIME LOGGED: <u> </u>	TIME LOGGED: <u> </u>	TIME LOGGED: <u> </u>
SOIL TYPE: <u> </u>	SOIL TYPE: <u> </u>	SOIL TYPE: <u> </u>	SOIL TYPE: <u> </u>

DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	7411	0"	16330	0"	35158	0"	17348
6"	6430	6"	12469	6"	34614	6"	17398
12"	10104	12"	5976	12"	116950	12"	9190
18"	4601	18"	3498	18"	7265	18"	11696
24"	3013	24"	2770	24"	4538	24"	7195
30"	2829	30"		30"	4274	30"	5987
36"		36"		36"	3165	36"	3718
42"		42"		42"	2695	42"	3000
48"		48"		48"	2270	48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		76"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

 REMARKS:

BOREHOLE LOG

LOGGING CREW: J. Manship

SHEET 3 OF PAGE 3

J. Wexthorn

DATE: 10/26/84

INSTRUMENT ID NO. 216511, Perke C15812

PROPERTY ID: SL-071

AREA:

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: <u>9#</u>	HOLE ID: <u>10#</u>	HOLE ID: <u>11#</u>	HOLE ID: <u>12#</u>
TIME DRILLED: <u> </u>	TIME DRILLED: <u> </u>	TIME DRILLED: <u> </u>	TIME DRILLED: <u> </u>
TIME LOGGED: <u> </u>	TIME LOGGED: <u> </u>	TIME LOGGED: <u> </u>	TIME LOGGED: <u> </u>
SOIL TYPE: <u> </u>	SOIL TYPE: <u> </u>	SOIL TYPE: <u> </u>	SOIL TYPE: <u> </u>

DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	41160	0"	19788	0"	17439	0"	6263
6"	79911	6"	55941	6"	23655	6"	4745
12"	37103	12"	78988	12"	13830	12"	5226
18"	30276	18"	75449	18"	7362	18"	5180
24"	13358	24"	44154	24"	6068	24"	3339
30"	9102	30"	21516	30"	5073	30"	3126
36"	5444	36"	12771	36"	4007	36"	
42"	3982	42"	8888	42"	2845	42"	
48"	3068	48"	6391	48"	2251	48"	
54"		54"	4652	54"	2157	54"	
60"		60"	3356	60"		60"	
66"		66"	2803	66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:



BOREHOLE LCG

LOGGING CREW: J. Worthen

S. MANSHIP

SHEET 4 OF PAGE 4

DATE: 10/26/84

PROPERTY ID: SL-071

INSTRUMENT ID NO. 26511, Perbs 015812

AREA: _____

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: 13#		HOLE ID: 14#		HOLE ID: 15#		HOLE ID: 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"	7954	0"	4957	0"	46216	0"	3922
6"	3127	6"	3252	6"	52160	6"	2423
12"	4796	12"	4110	12"	2911	12"	2862
18"	3559	18"	2840	18"	2437	18"	2291
24"	2768	24"	2540	24"	2143	24"	2116
30"	21653	30"	2328	30"		30"	
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:



BOREHOLE LOG

LOGGING CREW: J. MANSHIP

SHEET 9 OF PAGE 9

DATE: 10/26/84

PROPERTY ID: SL-071

INSTRUMENT ID NO. 216511, Pados 015812

AREA: _____

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: 33 #		HOLE ID: 34 #		HOLE ID: _____		HOLE ID: _____	
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"	15244	0"	11179	0"		0"	
6"	15867	6"	81674	6"		6"	
12"	32243	12"	17258	12"		12"	
18"	44079	18"	11169	18"		18"	
24"	35863	24"	5735	24"		24"	
30"	14528	30"		30"		30"	
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: _____

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW:

V. BLACK / D. HEALD
M. GUFFIN / D. FITZGERALD

SHEET 1 OF PAGE 1

DATE: 10-24-84

PROPERTY ID: SL-071

INSTRUMENT ID NO: 26504 PROBE 015810 - 1 METER
34778 PROBE 019584 - SURFACE Δ

BACKGROUND CALCULATION:

#1 666 + #2 579 + #3 588 = 1783 - 3 = 594.3 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
A-8	3634	794	405	T+0	10809	2451	1015	AA+40	4607	785	372
B-8	4589	1022	390	S+0	12709	7672	2389	AA+50	4718	664	346
C-8	4807	1021	447	R+0	11221	6785	1374	AA+60	5073	735	362
D-8	5301	1129	466	Q+0	10118	2675	997	AA+70	4982	758	386
E-8	5407	1098	486	P+0	10988	4923	1471	AA+80	4675	776	410
F-8	6852	2348	746	O+0	12010	4132	1368	AA+90	4954	715	354
G-8	6454	1467	507	M+0	11598	3829	1278	AA+100	4961	703	373
H-8	7824	1510	558	N+0	9111	1522	713	AA+110	5116	658	340
I-8	8172	1615	466	L+0	7469	1644	727	AA+120	5240	673	324
J-8	9155	1871	604	K+0	7543	1587	648	AA+130	4978	628	399
K-8	8787	2148	748	J+0	7231	1579	587	AA+140	5100	775	383
L-8	10671	2501	928	I+0	6071	1356	570	AA+150	5096	712	387
M-8	10167	3854	1173	H+0	6009	1489	599	AA+160	4704	667	358
N-8	12886	4279	1396	G+0	5851	2812	1034	AA+170	5034	703	320
O-8	12705	4875	1468	F+0	5046	1042	502	AA+180	5193	717	367
P-8	12907	3808	1607	E+0	4897	1068	430	AA+190	5363	720	403
Q-8	12499	4796	1467	D+0	4434	862	408	AA+200	5725	803	420
R-8	12656	1407	649	C+0	4498	1026	376	AA+210	5915	854	395
S-8	14068	1439	677	B+0	3886	906	383	AA+220	5585	849	400
T-8	12489	5461	1697	A+0	3248	701	383	AA+230	6038	834	417
U-8	12855	2742	1044	AA+0	3646	676	301	AA+240	6230	707	373
V-8	15831	4036	1271	AA+10	3606	630	311	AA+250	6457	736	387
V+0	14589	7498	1821	AA+20	4402	739	345	AA+260	6270	816	432
U+0	10935	2237	891	AA+30	4175	663	348	AA+270	6319	897	449

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: VON BLACK / MIKE GRIFFIN SHEET 2 OF PAGE 2
PAUL HEARLD / DEELEY FITZGERALD DATE: 10-24-84 TO 10-26-84
96504 / 015810 - 1 METER PROPERTY ID: SL-071
INSTRUMENT ID NO.: 34778 / 019584 - SURFACE
BACKGROUND CALCULATION:
#1 6116 + #2 579 + #3 588 = 1783 + 3 = 594.3 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading
AA+280	6391	857	484	A+230	4623	770	384	B+0	4043	867	359
AA+290	6139	793	471	A+220	4385	758	403	B+10	4516	845	374
AA+300	5871	853	425	A+210	4374	753	427	B+20	4491	719	423
AA+310	5763	945	453	A+200	3894	905	485	B+30	4659	813	411
AA+320	5256	791	445	A+190	3679	968	334	B+40	4775	956	484
AA+330	5455	927	393	A+180	3872	786	379	B+50	4888	934	385
AA+340	5571	872	460	A+170	3467	771	345	B+60	4752	776	391
AA+350	5572	738	484	A+160	3399	782	389	B+70	5301	814	391
AA+360	5661	822	393	A+150	4004	642	379	B+80	5395	921	422
AA+365	6000	753	412	A+140	4252	977	379	B+90	5327	770	441
A+365	5000	700	464	A+130	4474	737	395	B+100	5596	839	438
A+360	5106	883	386	A+120	4199	688	372	B+110	5780	698	404
A+350	4613	944	448	A+110	3993	889	394	B+120	5084	714	397
A+340	4377	778	393	A+100	4151	641	299	B+130	5021	676	410
A+330	4329	803	364	A+90	4079	799	418	B+140	4558	620	265
A+320	4151	867	411	A+80	4219	767	383	B+150	3139	396	231
A+310	4459	915	420	A+70	4103	1120	458	B+160	2927	356	233
A+300	4887	998	438	A+60	3985	848	388	B+170	3311	407	209
A+290	5025	964	452	A+50	3970	698	361	B+180	3621	415	262
A+280	5334	1005	435	A+40	3784	753	365	B+190	4634	447	277
A+270	5002	921	426	A+30	4304	877	376	B+200	5600	662	396
A+260	5022	960	485	A+20	3839	866	397	B+210	5849	740	446
A+250	5171	993	441	A+10	4041	822	360	B+220	5996	702	428
A+240	4571	940	405	A+00	3590	759	363	B+230	6107	752	453

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: Van Black / PAUL HEARD
MIKE GRIFFIN / DEKEL FITZGERALD

SHEET 3 OF 3 PAGE 3

DATE: 10-24-84 TO 10-26-84

PROPERTY ID: SL-071

INSTRUMENT ID NO: 26504 1 METER / 34778 SURFACE
015810 / 019584 E.A.

BACKGROUND CALCULATION:

#1 6116 + #2 579 + #3 588 = 1783 - 3 = 5943 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
B+240	5835	899	469	C+270	5656	993	486	D+00	4654	918	448
B+250	5875	892	403	C+260	5667	948	487	D+10	4227	912	441
B+260	6069	839	449	C+250	5433	878	477	D+20	3699	804	408
B+270	6366	950	480	C+240	5152	853	413	D+30	3269	1007	419
B+280	6037	1044	517	C+230	5336	827	448	D+40	3691	937	442
B+290	6164	856	463	C+220	5123	763	483	D+50	4482	885	364
B+300	5577	769	440	C+210	5169	789	490	D+60	4183	910	425
B+310	3569	611	330	C+200	4501	699	415	D+70	5245	1180	493
B+320	3622	653	350	C+150	2947	404	286	D+80	5434	972	405
B+330	4076	749	358	C+140	3818	505	362	D+90	4985	805	383
B+340	2678	658	337	C+130	4190	715	348	D+100	4826	858	489
B+350	4418	624	360	C+120	4541	716	404	D+110	4144	819	394
B+360	5167	783	419	C+110	4246	884	419	D+120	5465	730	424
B+365	5519	667	472	C+100	4580	857	440	D+130	5665	669	373
C+365	5540	703	440	C+90	4612	898	452	D+140	5572	610	395
C+360	5660	794	465	C+80	4670	908	404	D+150	4940	699	389
C+350	5364	860	459	C+70	4507	888	429	D+160	4815	613	360
C+340	5607	775	468	C+60	4510	875	388	D+170	4020	675	397
C+330	5586	845	457	C+50	4301	982	462	D+180	5091	1035	456
C+320	5501	865	478	C+40	4118	858	392	D+190	6080	591	397
C+310	5399	849	436	C+30	3836	714	385	D+200	5721	480	367
C+300	5836	837	439	C+20	4227	599	383	D+210	6150	740	442
C+290	5812	779	432	C+10	3983	857	401	D+220	6179	726	484
C+280	5974	805	463	C+00	4128	902	507	D+230	6463	815	437

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

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

SHEET 4 OF PAGE 4

DATE: 10-24-84 TO 10-26-84

PROPERTY ID: SL-071

INSTRUMENT ID NO: 26504 In. ETEL / 34778 SURFACE
015210 / 019584 EA

BACKGROUND CALCULATION:

#1 16116 + #2 579 + #3 588 = 1783 -3 = 594.3 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading
D+240	5597	895	490	E+270	5617	950	486	E+30	3571	976	434
D+250	6043	845	490	E+210	5163	1054	523	E+20	4178	914	478
D+260	6116	958	470	E+250	5733	1030	534	E+10	4384	893	440
D+270	6089	1000	514	E+240	5373	924	480	E+00	4574	816	437
D+280	5937	837	481	E+230	5497	870	449	F+00	5045	899	1185
D+290	6439	839	451	E+220	5353	840	477	F+10	5385	1021	482
D+300	5570	865	490	E+210	5315	899	462	F+20	5462	1110	497
D+310	5911	814	465	E+200	5497	927	485	F+30	5308	963	484
D+320	6379	917	485	E+190	5016	857	494	F+40	5536	999	477
D+330	5915	866	521	E+180	5006	832	493	F+50	5715	1312	553
D+340	6142	833	508	E+170	5642	722	422	F+60	6173	1523	613
D+350	6203	744	452	E+160	5225	597	363	F+70	5731	1080	514
D+360	5495	755	488	E+150	4475	565	285	F+80	6045	1000	475
D+365	5615	822	473	E+140	4551	599	325	F+90	5561	952	431
E+345	5291	834	413	E+130	4708	801	430	F+00	5461	845	454
E+360	4927	792	420	E+120	4410	761	432	F+10	5873	894	460
E+350	5274	787	472	E+110	4532	800	445	F+20	5798	847	430
E+340	5411	895	431	E+100	4934	816	422	F+30	5725	857	420
E+330	6112	940	517	E+90	4936	906	454	F+40	5890	869	436
E+320	5386	846	492	E+80	4100	791	474	F+50	5287	788	464
E+310	5373	842	466	E+70	4664	920	397	F+60	5480	852	480
E+300	5688	839	520	E+60	4477	1120	544	F+70	5556	954	486
E+290	5480	878	510	E+50	4249	1160	493	F+80	5522	980	513
E+280	5553	856	519	E+40	3728	908	414	F+90	6064	1128	513

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: Von Black
Paul Heard

SHEET 5 OF PAGE 5

DATE: 10/25/84

PROPERTY ID: SL-071

INSTRUMENT ID NO.: 34778/019584

BACKGROUND CALCULATION:

#1 657 + #2 650 + #3 642 = 1949 - 3 = 649.4 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
F+200	5630	1028	5416	G+310	6384	861	499	G+70	5166	1185	515
F+210	5913	881	532	G+300	6157	873	521	G+60	5965	1321	586
F+220	6201	906	485	G+290	5791	940	505	G+50	5902	1892	643
F+230	5731	1012	542	G+280	5815	924	497	G+40	5672	1287	601
F+240	6569	961	522	G+270	6259	1082	512	G+30	6433	1242	569
F+250	6628	1006	544	G+260	6518	1036	547	G+20	5870	1033	527
F+260	6550	1079	535	G+250	5945	1055	540	G+10	5449	1013	498
F+270	6540	1029	547	G+240	6085	902	485	G+00	5651	1028	607
F+280	6280	1029	469	G+230	5669	937	548	H+00	5484	1417	586
F+290	5916	873	478	G+220	5955	803	532	H+10	5793	1151	650
F+300	6536	842	507	G+210	5813	1041	943	H+20	7839	2936	1151
F+310	6503	891	547	G+200	6312	1042	531	H+30	7054	1795	847
F+320	6087	1049	555	G+190	6382	943	526	H+40	6675	1851	693
F+330	6057	886	519	G+180	6458	1075	613	H+50	7921	2264	805
F+340	5659	843	476	G+170	5968	823	479	H+60	7352	2050	750
F+350	5529	791	416	G+160	5511	946	478	H+70	6890	1385	510
F+360	5324	749	426	G+150	5835	1111	509	H+80	5902	969	427
F+365	5586	883	472	G+140	5729	1441	606	H+90	6287	1018	570
F+365	5598	855	437	G+130	5281	980	476	H+100	6168	1004	563
G+360	5660	776	480	G+120	5203	842	464	H+110	6410	1018	576
G+350	5908	811	444	G+110	5640	921	450	H+120	6173	912	495
G+340	5811	742	510	G+100	5227	947	461	H+130	6425	1011	567
G+330	5529	792	547	G+90	5445	774	418	H+140	6659	944	536
G+320	6302	838	504	G+80	5430	1045	504	H+150	6595	977	555

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: Von Black

SHEET 60 OF PAGE 60

Paul Heard

DATE: 10/25/84

Derek F. Mike Gritten

PROPERTY ID: SL-070

INSTRUMENT ID NO: 26504 Proton 015510 - meter
24778 Proton 019594 - surface TA

BACKGROUND CALCULATION:

#1 657 + #2 650 + #3 642 = 1949 + 3 = 649 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	imeter reading	surface delta reading	delta reading	Point ID	imeter reading	surface delta reading	delta reading	Point ID	imeter reading	surface delta reading	delta reading
H+160	5795	1053	521	I+350	2533	605	325	I+110	6299	1088	483
H+170	6601	1049	556	I+340	4184	696	439	I+100	6063	1101	540
H+180	6883	9166	553	I+330	5089	784	499	I+90	5955	1245	580
H+190	6368	1073	562	I+320	4529	748	390	I+80	5419	1088	573
H+200	6575	993	522	I+310	3951	715	453	I+70	5696	1177	542
H+210	6801	10160	595	I+300	7031	870	491	I+60	6588	2215	827
H+220	6800	789	522	I+290	5818	972	530	I+50	9709	3778	1130
H+230	6496	873	544	I+280	6454	945	494	I+40	6515	1593	677
H+240	6579	1038	550	I+270	6290	892	519	I+30	10598	3765	1274
H+250	6757	1076	580	I+260	6522	1183	638	I+20	8431	3040	995
H+260	6796	1202	576	I+250	6303	1030	570	I+10	6220	1069	563
H+270	7224	983	559	I+240	6150	992	579	I+00	5901	1149	507
H+280	7125	940	500	I+230	6235	852	464	J+00	6498	1286	652
H+290	6409	867	532	I+220	6076	899	535	J+10	7470	2209	841
H+300	6247	872	494	I+210	6313	975	514	J+20	9218	2650	948
H+310	6071	896	507	I+200	6491	1020	563	J+30	11757	6349	1893
H+320	5550	898	523	I+190	6130	982	524	J+40	8490	3218	1026
H+330	5545	804	470	I+180	6579	896	494	J+50	7972	2555	979
H+340	5424	800	4166	I+170	7063	946	515	J+60	5370	1100	583
H+350	5465	837	506	I+160	6802	903	523	J+70	5686	1308	557
H+360	5053	725	457	I+150	5953	1031	561	J+80	6996	1082	579
H+365	5120	723	4016	I+140	6372	939	528	J+90	7115	11216	587
I+365	4659	739	438	I+130	6067	1026	618	J+100	6963	1297	595
I+360	4055	719	385	I+120	6031	984	568	J+110	7029	1187	575

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: Von BLACK
Paul HEARLD

SHEET 8 OF PAGE 8

DATE: 10-24-84 to 10-26-84

PROPERTY ID: SL-071

INSTRUMENT ID NO: 24504 Probe 015816 1 meter
34778 Probe 19524 Surface ± A

BACKGROUND CALCULATION:

#1 596 + #2 621 + #3 594 = 1811 - 3 = 603 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
L+80	7198	1152	1679	L+320	2914	1034	1633	M+190	7294	1086	605
L+90	7837	1154	1657	L+330	4823	1026	1630	M+180	6650	1423	650
L+100	8088	1442	757	L+340	3985	1045	1608	M+170	6773	1206	723
L+110	7377	1103	1616	L+350	3672	935	1609	M+160	6623	1183	629
L+120	7518	1089	701	L+360	7049	849	520	M+150	6646	1086	624
L+130	7391	1129	1661	L+365	6347	863	517	M+140	6561	1187	682
L+140	7151	1034	1648	M+365	6018	789	548	M+130	6684	1321	691
L+150	7470	1170	1627	M+360	6524	947	525	M+120	6518	1256	694
L+160	7644	1166	1642	M+350	6582	846	614	M+110	6393	1170	652
L+170	7622	1087	1667	M+340	6885	978	592	M+100	6338	1285	641
L+180	8308	1142	1652	M+330	7250	1192	634	M+90	6704	1308	635
L+190	8382	1238	712	M+320	7701	1087	613	M+80	7412	1157	568
L+200	8285	1255	713	M+310	7691	1078	624	M+70	7854	1331	782
L+210	7871	1330	1640	M+300	7514	1155	626	M+60	12650	1201	628
L+220	8595	1330	706	M+290	7673	1236	659	M+50	16650	1615	788
L+230	8371	1412	770	M+280	7252	1180	701	M+40	16461	1392	735
L+240	8180	1362	710	M+270	7301	1108	673	M+30	21401	4936	1730
L+250	8075	1171	1653	M+260	7767	1214	767	M+20	12445	10742	3211
L+260	8360	1277	769	M+250	7739	1455	740	M+10	9428	2360	1017
L+270	8194	1241	1687	M+240	7914	1289	707	M+00	7847	3059	1040
L+280	8499	1123	1624	M+230	7800	1391	734	L+00	11230	3799	1296
L+290	7332	1241	1639	M+220	7695	1332	640	L+10	10369	2657	884
L+300	7086	1205	1634	M+210	7391	1295	658	L+20	11740	3751	1406
L+310	6229	1100	592	M+200	7576	1482	869	L+30	17920	6151	1825

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

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: V. Black / D. Heard

SHEET 9 OF PAGE 9

Mike Griffin

DATE: 10-24-84 10-26-84

Derek Fitzgerald

PROPERTY ID: SL-071

INSTRUMENT ID NO: 26504 Proton 2015810 1 meter
34772 Proton 2019924 Surface & A

BACKGROUND CALCULATION:

#1 596 + #2 621 + #3 594 = 1811 - 3 = 603 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading	Point ID	1 meter reading	surface reading	delta reading
CR- A1430	17787	DE		A11270	8902	1235	723	O+240	8242	1202	710
A1440	13667	8237	21656	A11280	8692	1333	719	O+230	8424	1503	768
A1450	11628	5126	2311	A11290	8707	1453	710	O+220	8237	1583	727
A1460	10245	4807	1613	A11300	8679	1290	751	O+210	8095	1435	744
A1470	8923	2689	971	A11310	8304	1108	635	O+200	7795	1402	729
A1480	7796	1430	753	A11320	7884	994	614	O+190	8251	1576	879
A1490	7653	1240	623	A11330	7687	11310	645	O+180	7442	1371	691
A14100	7786	1358	663	A11340	7176	954	660	O+170	8238	1534	782
A14110	7654	1251	644	A11350	6762	891	584	O+160	7519	1533	708
A14120	7979	1399	659	A11360	6409	939	583	O+150	8003	1458	679
A14130	7590	1343	732	A11365	5927	826	531	O+140	7284	1495	731
A14140	7629	1387	704	O+365	5054	825	528	O+130	7107	1342	682
A14150	8312	1315	727	O+360	5845	776	450	O+120	6932	1200	720
A14160	7545	1476	782	O+350	5875	709	482	O+110	7151	1179	631
A14170	8238	1529	842	O+340	6287	1041	502	O+100	7258	1578	699
A14180	8484	1558	771	O+330	6946	1356	587	O+90	7305	1418	701
A14190	8584	1527	658	O+320	7732	1115	620	O+80	8173	3301	1050
A14200	8650	484	754	O+310	8105	1389	788	O+70	10254	7422	2039
A14210	8562	1356	750	O+300	8093	1266	816	O+60	13742	5855	1688
A14220	8851	1375	1084	O+290	8177	1610	768	O+50	15844	6961	2014
A14230	8628	1275	722	O+280	7769	1151	799	O+40	16794	11387	2648
A14240	8791	1181	1068	O+270	8656	1279	741	O+30	14094	5899	1772
A14250	8826	1301	652	O+260	8086	1342	726	O+20	10302	6251	1815
A14260	8793	1288	717	O+250	8248	1433	697	O+10	9148	2240	999

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: N. Black

SHEET 10 OF PAGE 10

DATE: 10/25 '84

PROPERTY ID: SL-071

INSTRUMENT ID NO: 26504 Probe 015810 - 1 meter
34778 Probe 019584 - SURFACE

BACKGROUND CALCULATION:

#1 657 + #2 650 + #3 642 = 1949 ÷ 3 = 649 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading
Q+00	11164	49510	1158	Q+36	91642	1340	794	Q+250	71691	1407	818
P+00	10229	3320	1090	Q+40	9858	1477	830	Q+270	8372	1820	874
P+10	9097	1554	778	P+250	9850	1410	772	Q+260	71695	15310	724
P+20	12804	3869	1587	P+260	9849	1428	772	Q+250	7274	1471	1685
P+30	23444	5394	20108	P+270	9952	1441	813	Q+240	71629	1310	1682
P+40	25417	12983	2434	P+280	101010	1420	784	Q+230	8412	1237	599
P+50	17701	7172	2054	P+290	10407	1123	1693	Q+220	8593	1486	719
P+60	18470	5408	2261	P+300	10151	1418	1618	Q+210	8312	1575	745
P+70	12182	7940	2244	P+310	9780	1362	764	Q+200	7678	1353	1616
P+80	11509	2235	1135	P+320	7820	1194	1661	Q+190	8675	1521	798
P+90	8577	1687	883	P+330	56666	1300	761	Q+180	9250	1551	897
P+100	7080	1237	1633	P+340	5389	1195	769	Q+170	9038	1878	884
P+110	7719	11810	1676	P+350	48108	1434	794	Q+160	8897	1638	785
P+120	8314	1234	1619	P+360	4711	981	588	Q+150	91103	1336	793
P+130	8612	1193	1676	P+365	5373	1027	1611	Q+140	7283	1382	1633
P+140	8938	1669	846	Q+365	5573	826	513	Q+130	7482	1550	756
P+150	7607	1510	16916	Q+360	5990	1115	587	Q+120	6782	1450	1612
P+160	9581	1342	755	Q+350	5699	1334	737	Q+110	6481	1551	1697
P+170	10210	1759	833	Q+340	6297	4427	1474	Q+100	7058	1312	708
P+180	7826	1300	7710	Q+330	6477	2852	1216	Q+90	8361	1590	776
P+190	9239	1410	827	Q+320	7303	1897	915	Q+80	11128	3806	1219
P+200	9571	1381	730	Q+310	8309	2291	1023	Q+70	10978	2750	1184
P+210	9351	1060	1643	Q+300	8824	2529	1141	Q+60	15761	3351	1137
P+220	9628	1174	737	Q+290	9872	1594	814	Q+50	19922	6487	1941

REMARKS: * ALL READINGS ARE IN CORNERS

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

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: V. Black / P. Heard
M. Griffin / D. Fitzgerald

SHEET 11 OF PAGE 11

DATE: 10/21/84 to 10/21/84

PROPERTY ID: SL-071

INSTRUMENT ID NO: 01504 PROBE 015810 Imetack
34778 PRODS 019584 - SURFACE & Δ

BACKGROUND CALCULATION:

#1 657 + #2 650 + #3 642 = 1949 - 3 = 649 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading	Point ID	imeter reading	surface reading	delta reading
R+40	20954	14021	3405	R+240	10674	1210	1063	S+270	11164	11623	987
R+30	21445	8992	2944	R+250	7605	1319	1067	S+260	10907	1545	941
R+20	12722	5177	1303	R+260	11095	1355	807	S+250	10841	1395	846
R+10	8532	1552	724	R+270	12333	1490	848	S+240	10957	1485	767
R+00	9021	2131	984	R+280	11875	1496	775	S+230	7161	1416	1089
R+50	21051	12314	2992	R+290	11541	1271	864	S+220	9146	1541	794
R+60	18951	5057	1916	R+300	11954	1975	917	S+210	9775	1707	881
R+70	116560	8139	2477	R+310	13133	2013	923	S+200	7661	1920	875
R+80	12532	4014	1442	R+320	13126	1572	991	S+190	11014	1532	765
R+90	91615	2214	1175	R+330	13197	2651	1088	S+180	11323	1320	822
R+100	8198	1954	871	R+340	13052	2893	1175	S+170	10799	1592	942
R+110	10427	2136	982	R+350	10939	11663	836	S+160	11362	1702	965
R+120	72716	1464	928	R+360	9038	1242	1080	S+150	10445	1605	908
R+130	9775	2239	879	R+365	16069	733	508	S+140	10047	2100	939
R+140	7077	2191	8161	S+365	7279	1089	631	S+130	11832	2354	998
R+150	10575	1940	954	S+360	81620	1248	1088	S+120	9803	2447	1095
R+160	11293	1641	9166	S+350	10679	1148	729	S+110	8407	2144	1028
R+170	11332	1863	952	S+340	11871	1562	826	S+100	9858	1897	919
R+180	11111	11634	872	S+330	12259	2457	1124	S+90	11183	4266	1430
R+190	9550	1527	891	S+320	11902	2215	1096	S+80	15368	4604	1474
R+200	6562	1593	731	S+310	11400	2348	1160	S+70	19071	7095	2488
R+210	10462	1550	834	S+300	10656	1975	882	S+60	23291	7305	2534
R+220	7856	1253	695	S+290	10146	1536	873	S+50	19218	9907	2507
R+230	6424	1344	744	S+280	10744	1316	912				

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

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: V. Blad / P. H. S. A. R. I. d
M. Griffin / D. Fitzgerald

SHEET 12 OF PAGE 12

DATE: 10/24/84 to 10/26/84

PROPERTY ID:

INSTRUMENT ID NO: 24504 Probe - Imet + SE
34778 Probe - Surface EA

BACKGROUND CALCULATION:

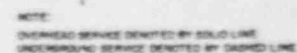
#1 596 + #2 621 + #3 594 = 1811 - 3 = 603 COUNTS/1MIN *

AREA:				AREA:				AREA:			
Point ID	Imeter reading	surface reading	delta reading	Point ID	Imeter reading	surface reading	delta reading	Point ID	Imeter reading	surface reading	delta reading
T+50	14994	9263	3130	T+290	12631	1791	1063	U+220	12939	1871	994
T+60	15752	4165	1232	T+300	12144	11641	981	U+210	15420	2470	1171
T+70	14522	2113	1147	T+310	12882	2231	1071	U+200	4799	1880	1067
T+80	17244	6598	1843	T+320	12640	2347	1021	U+190	14155	1583	960
T+90	15588	2727	1274	T+330	12471	2084	931	U+180	14642	2141	1067
T+100	14333	2597	1277	T+340	12746	3432	1431	U+170	15843	2439	1179
T+110	14379	2277	1072	T+350	11147	2120	1002	U+160	14815	2278	171
T+120	14718	2457	1134	T+360	10403	1492	822	U+150	14723	2600	1159
T+130	141670	2175	1097	T+365	6822	1262	707	U+140	15973	3208	1300
T+140	14639	2351	1106	U+365	13509	2348	1101	U+130	17716	2912	1209
T+150	14649	2388	1153	U+360	11786	1888	1136	U+120	16004	3967	1448
T+160	14757	2876	1939	U+350	12346	1791	888	U+110	17028	4050	1521
T+170	15058	2476	1111	U+340	13418	1940	1034	U+100	17029	4018	1601
T+180	14747	2336	1173	U+330	13161	1978	962	U+90	18413	5514	1699
T+190	14103	2206	1193	U+320	12958	1612	836	U+80	20762	7198	2718
T+200	13997	2261	1085	U+310	12228	1624	877	U+70	17978	4116	1690
T+210	13413	2281	1139	U+300	12578	1610	949	U+60	14981	3216	1326
T+220	10526	1592	961	U+290	13182	1839	1070	U+50	16492	6083	1757
T+230	7064	1386	747	U+280	13787	1809	1080	U+40	15512	8351	2465
T+240	6962	1842	804	U+270	13110	2110	1090	U+30	15931	9422	2371
T+250	8357	1940	841	U+260	1325	3018	1229	U+20	15252	5169	1543
T+260	13047	1784	1037	U+250	12320	2677	1161	U+10	13110	5908	1838
T+270	12686	1963	1148	U+240	13919	2654	1131				
T+280	12333	1990	1026	U+230	15893	5310	1822				

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



GAMMA GRID SURVEY MAP

U. S. DEPARTMENT OF ENERGY										
ALBUQUERQUE, NEW MEXICO										
REGISTRATION										
OWNER										
ENGINEER										
ARCHITECT										
CONTRACTOR										
SALT LAKE COUNTY, UTAH										
URBAN RAIL TRANSIT AUTHORITY PROJECT										
OWNER	DATE	REV	PROJECT NUMBER	DATE	REV	PROJECT NUMBER	DATE	REV	PROJECT NUMBER	DATE
 MORRISON KNUDSEN										
PROJECT NO.										
DE-A04-E3AL8796										
SHEET NO.										
31-0371-										



MORRISON-KNUDSEN COMPANY, INC.

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