

NOTE:
SUPPLEMENTAL
STANDARDS

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

Radiological and Engineering Assessment

Vicinity Property No. DU-059S Rev. 1

Vicinity Property No. DU-059S Rev. 1

Remedial Actions
Contractor
for the
Uranium Mill Tailings
Remedial Actions
Project



MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

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9707090028 900209
PDR WASTE
WM-39 PDR

90-0315

ADDRESS: State Highway 160 and OWNER'S NAME: United Bank of Durango
Roosa Avenue
Durango, CO 81301 OWNER'S ADDRESS: (IF DIFFERENT)

1063 Main Avenue

TENANT'S NAME: _____ Durango CO, 81301

TELEPHONE NUMBER _____ TELEPHONE NUMBER _____
(if available) (if available)

PROPERTY DATA:

Structures and utilities are shown on Drawing DU-059-010.

Property Use: Single Residence _____; Commercial _____; School _____

Multiple Residence _____; Vacant Lot _____; Church _____; Open Land X

Age of structures: Less than 50 years old N/A;
Greater than 50 years old N/A (attach form _____)

Adjacent included/spillover vicinity properties:

North - V.P. # DU-053
South - V.P. # N/A
East - V.P. # N/A
West - V.P. # DU-095, DU-096

Interior Involvement: Yes N/A; No N/A

Major Structural N/A; Minor Structural N/A; Dislocation N/A

SUMMARY

Three separate phases of activity have occurred on this property. For simplicity the data from each phase has been divided into different sections.

The first phase was the initial Radiological and Engineering Assessment (Section I). In this phase the material on the flat portions of the property was characterized in depth and a preliminary characterization was performed on the steep slopes. From this preliminary characterization MK-Ferguson/CNSI believed that the steep slopes could be verified to be in compliance with EPA standards without remediation.

Phase II involved the remediation of all accessible flat and sloping portions of the property (Section II).

In Phase III verification of the steep slopes was undertaken (Section III). Results from this survey made it apparent that some portions of the slopes were contaminated in excess of EPA standards.

Due to the excessive cost involved relative to the long-term Health benefits, a recommendation to apply for Supplemental Standards on this portion of the property has been proposed. In discussions with the Department of Energy and the Colorado Department of Health, this recommendation has been proposed for their consideration.

All the text from this point forward refers to the data from Section III.

RADIOLOGICAL DATA:

Gamma Exposure Rate Survey

Survey Method

Outdoor gamma surveys were conducted in accordance with the RAC Procedure 011. These surveys were conducted over the steep slopes on the property.

Survey Results

Surface gamma readings on the slopes range from 14 to 38 micro R/hr (Tables 3.1 and 3.2). This may be compared with the background for the Durango site of 14 micro R/hr.

Borehole Survey

No boreholes were augered due to the steepness of the slopes.

Soil Samples

Soil samples on the east slopes of the property were collected at 50' x 100' grid points. Contamination in excess of EPA Standards was found in 10 of 33 surface sample (Table 3.3) On the south and west slopes 33' x 33' grids were laid out and verification type soil samples were collected. Contamination in excess of EPA standards was found in 48 of 223 of these samples (Table 3.4). Drawings DU-059-015 and DU-059-031 show the location of soil samples.

Estimated Extent of Contamination

Sporadic contamination exists on all slopes, see Drawing DU-059-035 for location of contamination on the slopes and proposed areas of Supplemental Standards. Depth of contamination is 6".

Recommended Remedial Action

MK-Ferguson recommends the application of Supplemental Standards to those areas where contamination is present in excess of EPA Standards. Please see Appendix C for DOE and STATE comments/concurrence.

Cost estimates for two options of remedial action for not applying Supplemental Standards (hand excavation and two dozer wench line) are provided in Section 3, Tables 4.1 and 4.2 respectfully.

JUSTIFICATION CHECKLIST FOR
APPLICATION OF SUPPLEMENTAL STANDARDS

Application of Supplemental Standards (SS) is in accordance with 40 CFR 192.22, Subpart (x) (check appropriate Subpart):

- ☐ a) Risk injury to worker/public
- ☐ b) Environmental harm
- ☒ c) High cost relative to long-term benefits
- ☐ d) High cost of cleaning up building relative to benefits
- ☐ e) No known remedial action
- ☐ f) Radionuclides other than Ra-226 exist

Brief Condition Description and Justification:

Wind blown contamination is present on portions of the steep slopes of this property. From conversations with the owners representative, the property is for sale and will most likely be developed for commercial use. All the flat areas and accessible portions of the slopes, where development could occur, have been remediated to meet EPA Standards. However, due to the steepness of the slopes where contamination in excess of EPA Standards remains development is not probable.

If the contamination is left in place relative health risks are minimal. If a person spent 8 hours a day 5 days a week for 50 weeks in the area of maximum gamma exposure rate (37 micro R/hr), he would receive about 75 millirem of gamma exposure in one year. This is about 15% of the amount allowed the general public (10 CFR 20.105).

JUSTIFICATION CHECKLIST FOR
APPLICATION OF SUPPLEMENTAL STANDARDS

Additional cost without application of Supplemental Standards = \$614,300.00 for Option I and \$618,000.00 for Option II (further breakdown provided in Section 3, Tables 4.1 and 4.2 of this REA).

Yes	No	If Supplemental Standards are Applied:
X		1. Open Land?
	N/A	2. Occupied Building?
	N/A	3. If yes to No. 2, is contaminated area beneath or within 10 feet of a building?
X		4. Anticipated change of land use within the next 5 years?
	X	5. If yes to No. 4, then will land use produce health risk? (See explanation under Brief Conditions Description and Justification).
	X	6. Is contamination in a habitable area?
X		7. Have owners comments been solicited? (Attach comments or record of teleconference). (See Appendix B).

Estimated volume of contaminated material to remain = 4,083 (cy).

Contaminated area to remain = 24,418 (sy).

Range for contaminated areas = 12 to 37 (micro r/hr) [at 3 feet above surface].

Range Ra-226 concentration in soil in contaminated area = 0.8 to 18.8 (pCi/g).

If tailings are below or within 10 feet of the structure, radon daughter concentration = N/A (WL).

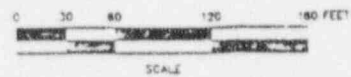
Engineering Assessment

Estimated quantities are shown in Section 3, Tables 4.1 and 4.2.

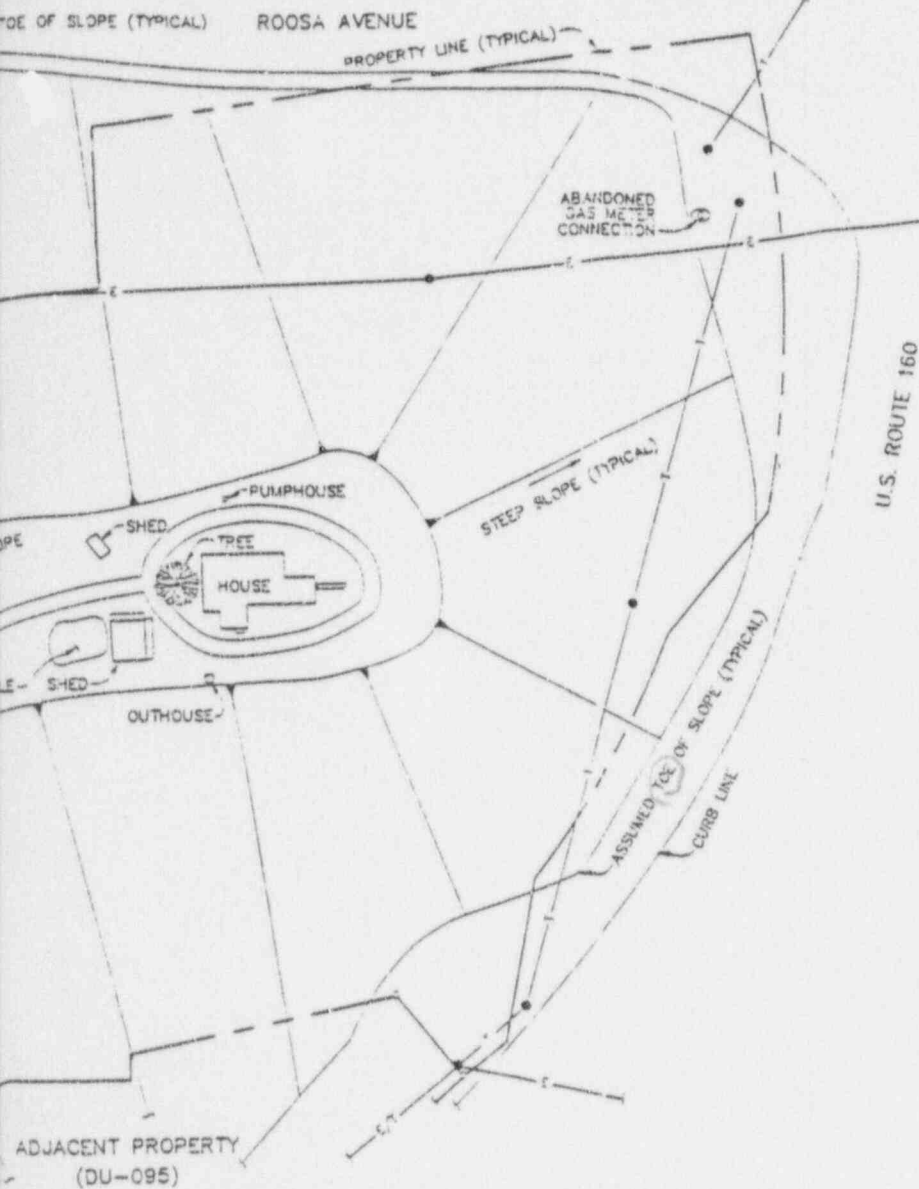
Occupant relocation: Required _____; Not Required X .

Remedial Action Options (Complex Properties Only)

N/A



10	45
100	100



LEGEND

— W —	WATER LINE
— G —	GAS LINE
— GM —	GAS MAIN
— S —	SEWER LINE
— SM —	SEWER MAIN
— STV —	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

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

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U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED/DRAWN	RT	RT
CHECKED		
REVIEWED		
RECOMMENDED		
APPROVED		

SITE PLAN
DU-059

DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DATE	DATE	DATE	DATE
NR	NR	NR	NR



PROJECT NO. DE-AC04-83AL18796
DRAWING NO. DU-059-010
REV. A

FINAL REA SUBMITTAL

REVISIONS

DATE APPROVED BY DATE

DU-059

Section I

Initial Radiological and

Engineering Assessment

Tables and Drawings

2800F

Section I Summary

The data in Section I is all the radiological data from the initial characterization. Table 3.1 is borehole data which was used to determine the aerial extent and depth of contamination. Table 3.2 is an interior survey on the house that was demolished. Table 3.3 is the soil sample data. There are also three drawings in Section I. Drawing DU-059-010 is the Site Plan, DU-059-015 shows the extent of contamination on the property from the radiological data in the tables and DU-059-020 shows proposed areas of excavation.

Section I of Appendix A is the field data.

Table 3.1
OUTDOOR GAMMA AND BOREHOLE SURVEY
Property DU-059

BOREHOLE	LOCATION	CONTAMINATION DEPTH	MICRO R/hr
1	N50800E50000	None	17
2	N50800E50050	0-6	17
3	N50800E50150	Surface	21
4	N50800E50250	Surface	21
5	N50800E50300	Surface	20
6	N50700E50300	None	19
7	N50700E50250	Surface	21
8	N50700E50150	Surface	22
9	N50700E50050	None	16
10	N50700E50000	None	18
11	N50600E50050	0-6"	23
12	N50600E50250	Surface	22
13	N50600E50300	0-6"	21
14	N50500E50300	None	16
15	N50500E50250	Surface	21
16	N50500E50150	0-6"	22
17	N50500E50100	None	18
18	N50400E50100	None	19

Table 3.1 Cont'd.
OUTDOOR GAMMA AND BOREHOLE SURVEY
Property DU-059

BOREHOLE	LOCATION	CONTAMINATION DEPTH	MICRO R/hr
19	N50400E50150	None	18
20	N50400E50250	0-12"	22
21	N50400E50300	0-6"	23
22	N50300E50300	0-6"	24
23	N50300E50250	None	19
24	N50300E50150	None	20
25	N50200E50200	Surface	21
26	N50200E50250	Surface	20
27	N50200E50300	0-6"	24
28	N50100E50350	0-6"	23
29	N50100E50300	0-15"	25
30	N50100E50250	0-6"	28
31	N50000E50250	0-6"	22
32	N50000E50300	0-6"	21
33	N50000E50350	0-12"	26
34	N49900E50350	0-6"	22
35	Not Drilled		
36	Not Drilled		

Table 3.1 Cont'd.
OUTDOOR GAMMA AND BOREHOLE SURVEY
Property DU-059

BOREHOLE	LOCATION	CONTAMINATION DEPTH	MICRO R/hr
37	N49840E50360	0-18"+	34
38	N49840E50338	0-15"	38
39	N49833E50300	0-9"	37
40	N49904E50325	0-12"	33
41	N49887E50325	0-6"	29
42	N49890E50310	0-6"	31
43	N49875E50310	0-6"	25
44	N49875E50285	0-6"	29
45	N49884E50280	0-6"	26
46	N49908E50280	0-6"	27
47	N49915E50280	0-9"	26
48	N49910E50270	0-12"	29
49	N49875E50260	0-9"	36
50	N49899E50260	0-9"	30
51	N49925E50255	0-9"	34
52	N49965E50255	0-6"	26
53	N49963E50294	None	20
54	N50850E50250	Surface	22

+Depth of contamination not reached.

Table 3.1 Cont'd.
OUTDOOR GAMMA AND BOREHOLE SURVEY
Property DU-059

BOREHOLE	LOCATION	CONTAMINATION DEPTH	MICRO R/hr
55	N50715E50150	Surface	22
56	N50720E50150	None	18
57	N50700E50155	0-6"	20
58	N50695E50150	None	19
59	N50700E50145	None	20
60	N50665E50065	0-6"	23
61	N50665E50060	0-6"	19
62	N50670E50065	0-6"	20
63	N50670E50000	None	18
64	N50600E50045	None	18
65	N50550E50055	0-6"	23
66	N50550E50045	None	18
67	N50500E50060	0-6"	22
68	N50450E50080	0-6"	23
69	N50450E50070	None	16
70	N50400E50110	0-6"	25
71	N50395E50150	0-6"	23
72	N50350E50120	None	19
73	N50350E50130	0-6"	21

Table 3.1 Cont'd.
OUTDOOR GAMMA AND BOREHOLE SURVEY
Property DU-059

BOREHOLE	LOCATION	CONTAMINATION DEPTH	MICRO R/hr
74	N50300E50160	0-6"	25
75	N50250E50180	0-6"	28
76	N50250E50170	None	20
77	N50200E50190	0-6"	20
78	N50250E50310	0-6"	24
79	N50350E50300	0-6"	24
80	N50600E50290	0-6"	22
81	N50855E50250	None	17
82	N50855E50175	0-6"	22
83	N50860E50175	None	17
84	N50850E50150	Surface	21
85	N50855E50150.	None	16
86	N50850E50145	None	19
87	N50800E50155	Surface	21
88	N50750E50140	None	19
89	N50750E50150	Surface	21
90	N50800E50305	0-6"	22
91	N50850E50300	Surface	23
92	N50855E50300	None	14

Table 3.2
INTERIOR GAMMA SURVEY
Property DU-059

LOCATION	RATE (Micro R/hr)
<u>Room 1</u>	
South Wall	21
West Wall	19
Floor	19
Ceiling	22
<u>Room 2</u>	
South Wall	19
East Wall	18
Floor	18
Ceiling	22
<u>Room 3</u>	
West Wall	19
North Wall	19
Floor	18
Ceiling	21
<u>Room 4</u>	
North Wall	20
East Wall	19
Floor	18
Ceiling	19
<u>Room 5</u>	
South Wall	19
West Wall	19
North Wall	17
Floor	19
Ceiling	19
<u>Room 6</u>	
South Wall	22
East Wall	24
Floor	18
Ceiling	22

Table 3.2 Cont'd.
INTERIOR GAMMA SURVEY
Property DU-059

LOCATION	RATE (Micro R/hr)
<u>Room 7</u>	
North Wall	18
East Wall	19
West Wall	17
Floor	18
Ceiling	22
<u>Room 8</u>	
South Wall	19
West Wall	19
Floor	18
Ceiling	20
<u>Room 9</u>	
South Wall	19
East Wall	17
Floor	18
Ceiling	20
<u>Room 10</u>	
North Wall	17
West Wall	19
Floor	18
Ceiling	19
<u>Room 11</u>	
North Wall	17
East Wall	18
Floor	18
Ceiling	19
<u>Room 12</u>	
North Wall	17
East Wall	21
West Wall	16
South Wall	19
Floor	17
Ceiling	20

Table 3.2 Cont'd.
INTERIOR GAMMA SURVEY
Property DU-059

LOCATION	RATE (Micro R/hr)
<u>Room 13</u>	
North Wall	14
East Wall	14
West Wall	16
Floor	14
Ceiling	17
<u>Room 14</u>	
South Wall	18
East Wall	20
Floor	16
Ceiling	20
<u>Room 15</u>	
North Wall	17
East Wall	21
West Wall	16
Floor	18
Ceiling	20
<u>Room 16</u>	
North Wall	19
West Wall	19
South Wall	19
Floor	16
Ceiling	19
<u>Room 17</u>	
North Wall	16
East Wall	15
West Wall	19
South Wall	17
Floor	15
Ceiling	19

Table 3.2 Cont'd.
INTERIOR GAMMA SURVEY
Property DU-059

LOCATION	RATE (Micro R/hr)
<u>Room 18</u>	
North Wall	14
East Wall	12
South Wall	15
Floor	14
Ceiling	15
<u>Room 19</u>	
East Wall	16
West Wall	16
South Wall	15
Floor	15
Ceiling	17
<u>Room 20</u>	
North Wall	17
East Wall	15
West Wall	19
Floor	18
Ceiling	17
<u>Room 21</u>	
North Wall	15
South Wall	12
Floor	15
Ceiling	14
<u>Room 22</u>	
North Wall	12
East Wall	16
South Wall	14
Floor	14
Ceiling	14

Table 3.2 Cont'd.
INTERIOR GAMMA SURVEY
Property DU-059

LOCATION	RATE (Micro R/hr)
<u>Room 23</u>	
North Wall	17
East Wall	16
West Wall	16
Floor	16
Ceiling	14
<u>Room 24</u>	
West Wall	16
South Wall	16
Floor	15
Ceiling	14
<u>Room 25 (Crawl Space)</u>	
North End	14
East End	13
West End	12
South End	16
Floor	12
Ceiling	12

Table 3.3
SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8894	N50200E50000	5.09	0-6"
DU-SS-8895	N50600E50450	3.51	0-6"
DU-SS-8896	N49700E50400	24.6	0-6"
DU-SS-8897	N50800E50400	1.77	0-6"
DU-SS-8898	N49900E50100	6.20	0-6"
DU-SS-8899	N49600E50400	3.51	0-6"
DU-SS-8900	N49700E50300	2.40	6-12"
DU-SS-8901	N50700E50350	1.37	0-6"
DU-SS-8902	N49600E50550	4.55	0-6"
DU-SS-8903	N50100E50200	7.51	0-6"
DU-SS-8904	N49600E50550	2.58	6-12"
DU-SS-8905	N49600E50450	3.05	6-12"
DU-SS-8906	N49900E50100	6.16	0-6"
DU-SS-8907	N49700E50250	2.31	0-6"
DU-SS-8908	N50000E50350	11.8	0-6"
DU-SS-8909	N49600E50400	3.79	6-12"
DU-SS-8910	N49600E50550	4.75	6-12"
DU-SS-8911	N49700E50400	2.80	6-12"
DU-SS-8876	N50300E50050	13.1	0-6"
DU-SS-8877	N49800E50350	2.41	6-12"

Table 3.3 Cont'd.
SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8878	N49900E50450	6.78	0-6"
DU-SS-8879	N50500E50350	5.04	6-12"
DU-SS-8880	N49800E50400	0.820	6-12"
DU-SS-8881	N50800E50350	1.43	6-12"
DU-SS-8882	N50400E50400	2.57	6-12"
DU-SS-8883	N49700E50300	1.72	0-6"
DU-SS-8884	N49800E50200	6.68	6-12"
DU-SS-8885	N50600E50400	2.72	0-6"
DU-SS-8886	N50600E50400	1.54	6-12"
DU-SS-8887	N49700E50500	1.50	6-12"
DU-SS-8888	N49700E50450	1.54	6-12"
DU-SS-8889	N50800E50450	1.68	6-12"
DU-SS-8890	N49600E50550	1.91	6-12"
DU-SS-8891	N50700E50400	5.56	6-12"
DU-SS-8892	N49800E50100	1.22	0-6"
DU-SS-8893	N50000E50200	30.2	6-12"
DU-SS-8858	N50500E50400	5.67	0-6"
DU-SS-8859	N50500E50350	6.95	0-6"
DU-SS-8860	N50600E50350	1.15	6-12"
DU-SS-8861	N49900E50100	2.38	6-12"

Table 3.3 Cont'd.
SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8862	N50000E50500	7.72	0-6"
DU-SS-8863	N50400E50450	2.44	6-12"
DU-SS-8864	N49800E50450	1.46	0-6"
DU-SS-8865	N49700E50350	2.54	0-6"
DU-SS-8866	N50400E50450	4.27	0-6"
DU-SS-8867	N50100E50150	0.880	0-6"
DU-SS-8868	N50200E50450	1.58	6-12"
DU-SS-8869	N50200E50350	2.14	0-6"
DU-SS-8870	N49600E50450	2.20	0-6"
DU-SS-8871	N50000E50400	3.46	0-6"
DU-SS-8872	N50400E50400	6.56	0-6"
DU-SS-8873	N50400E50350	2.45	6-12"
DU-SS-8874	N50300E50400	2.05	6-12"
DU-SS-8875	N50300E50350	3.37	6-12"
DU-SS-8767	N49900E50250	4.64	6-12"
DU-SS-8768	N50000E50100	4.73	0-6"
DU-SS-8769	N50100E50200	3.67	6-12"
DU-SS-8770	N50800E50450	3.57	0-6"
DU-SS-8771	N49900E50100	2.26	6-12"
DU-SS-8772	N50100E50100	1.79	6-12"

Table 3.3 Cont'd.
SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8773	N49900E50500	1.44	6-12"
DU-SS-8774	N50400E50050	2.11	0-6"
DU-SS-8775	N50300E49950	1.26	0-6"
DU-SS-8776	N50400E50C50	2.93	6-12"
DU-SS-8777	N49900E50050	1.13	6-12"
DU-SS-8778	N49800E50150	6.15	0-6"
DU-SS-8779	N50800E50400	1.92	6-12"
DU-SS-8780	N49800E50500	4.24	6-12"
DU-SS-8781	N49800E50050	8.27	0-6"
DU-SS-8782	N50200E50450	1.35	0-6"
DU-SS-8783	N50200E50100	3.65	0-6"
DU-SS-8784	N50200E50000	2.09	6-12"
DU-SS-8785	N49800E50450	1.71	6-12"
DU-SS-8786	N49800E50200	3.01	0-6"
DU-SS-8787	N50800E50350	4.47	0-6"
DU-SS-8788	N50700E50400	4.42	0-6"
DU-SS-8789	N49700E50450	1.03	0-6"
DU-SS-8790	N50400E50080	11.4	6-12"
DU-SS-8791	N49900E50050	1.84	6-12"
DU-SS-8792	N50100E50000	2.19	6-12"

Table 3.3 Cont'd.
SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8793	N50300E5000	2.17	6-12"
DU-SS-8794	N50000E50200	15.1	0-6"
DU-SS-8795	N49800E50150	1.62	6-12"
DU-SS-8796	N50700E50450	4.94	0-6"
DU-SS-8797	N50300E49950	3.55	6-12"
DU-SS-8798	N50000E50450	1.45	6-12"
DU-SS-8799	N50200E50150	9.07	0-6"
DU-SS-8800	N50000E50150	1.42	6-12"
DU-SS-8801	N49800E50250	4.41	6-12"
DU-SS-8802	N50000E50000	2.87	0-6"
DU-SS-8803	N50200E50050	1.73	6-12"
DU-SS-8804	N50100E50050	2.07	0-6"
DU-SS-8805	N49900E50250	5.73	0-6"
DU-SS-8806	N49800E50250	4.40	6-12"
DU-SS-8807	N50700E50450	2.42	6-12"
DU-SS-8808	N50300E50000	4.78	0-6"
DU-SS-8809	N50000E50350	5.82	6-12"
DU-SS-8810	N50200E50050	3.99	0-6"
DU-SS-8811	N50100E50150	1.14	6-12"
DU-SS-8812	N50100E50050	1.91	6-12"

Table 3.3 Cont'd.
SOIL SAMPLE SURVEY
Property DU-059

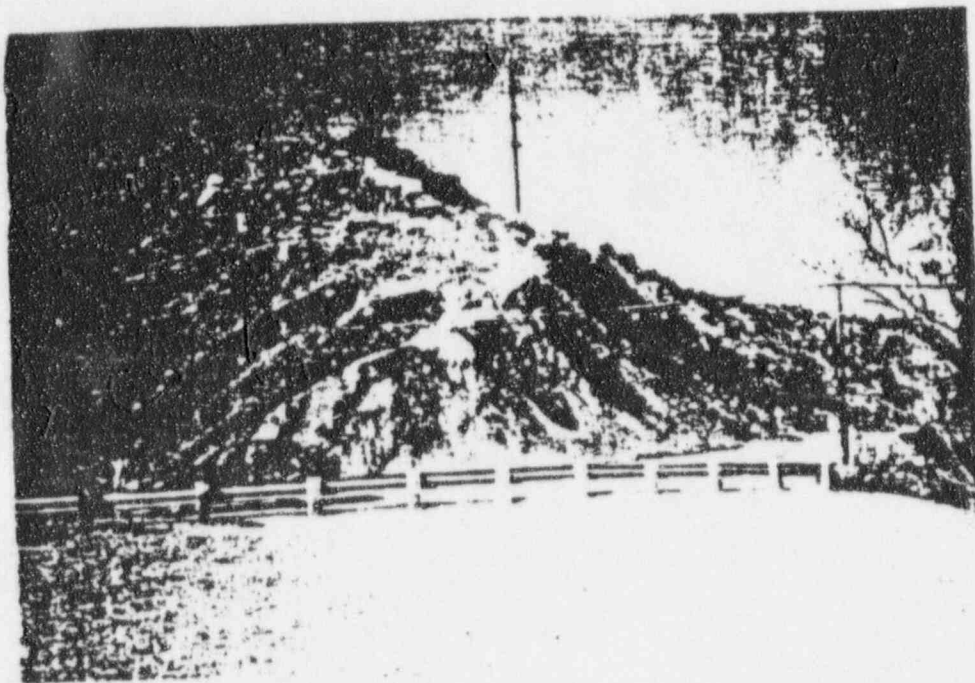
SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8813	N50400E50350	7.84	0-6"
DU-SS-8814	N50100E50400	4.22	0-6"
DU-SS-8815	N50000E50150	1.72	0-6"
DU-SS-8816	N50200E50400	7.47	0-6"
DU-SS-8817	N49800E50100	.608	6-12"
DU-SS-8818	N50300E50050	4.35	6-12"
DU-SS-8819	N44900E50400	4.42	6-12"
DU-SS-8820	N50100E50450	1.06	6-12"
DU-SS-8821	N49800E50300	3.24	0-6"
DU-SS-8822	N49700E50500	0.973	0-6"
DU-SS-8823	N49800E50350	4.37	0-6"
DU-SS-8824	N50400E50000	9.55	0-6"
DU-SS-8825	N49900E50150	1.23	6-12"
DU-SS-8826	N50200E50350	1.27	6-12"
DU-SS-8827	N50000E50100	1.20	6-12"
DU-SS-8828	N50600E50350	1.93	0-6"
DU-SS-8829	N50300E50400	7.32	0-6"
DU-SS-8830	N49900E50150	2.96	0-6"
DU-SS-8831	N50100E50450	5.16	0-6"
DU-SS-8832	N49900E50200	1.71	6-12"

Table 3.3 Cont'd.
SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8833	N50000E50000	2.05	6-12"
DU-SS-8834	N50000E50400	1.37	6-12"
DU-SS-8835	N50100E50000	2.46	0-6"
DU-SS-8836	N50200E50100	2.13	6-12"
DU-SS-8837	N49900E50200	2.56	0-6"
DU-SS-8838	N50000E50050	4.37	0-6"
DU-SS-8839	N49800E50050	7.58	6-12"
DU-SS-8840	N49100E50250	1.20	6-12"
DU-SS-8841	N50700E50350	0.869	6-12"
DU-SS-8842	N49700E50350	2.13	6-12"
DU-SS-8843	N49800E50500	6.99	0-6"
DU-SS-8844	N50300E50450	3.26	6-12"
DU-SS-8845	N49800E50300	1.28	6-12"
DU-SS-8846	N50200E50400	4.45	6-12"
DU-SS-8847	N50300E50450	6.71	0-6"
DU-SS-8848	N49800E50400	2.13	0-6"
DU-SS-8849	N50300E50100	2.01	0-6"
DU-SS-8850	N50300E50350	3.28	0-6"
DU-SS-8851	N50100E50100	2.81	0-6"
DU-SS-8852	N50000E50450	1.72	0-6"

Table 3.3 Cont'd.
SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION	FINAL pCi/g	DEPTH
DU-SS-8853	N49900E50450	3.63	6-12"
DU-SS-8854	N49700E50550	.946	6-12"
DU-SS-8855	N49900E50400	9.36	0-6"
DU-SS-8856	N50500E50400	2.37	6-12"
DU-SS-8912	N49900E50500	5.36	0-6"
DU-SS-8913	N50300E50100	2.39	6-12"
DU-SS-8914	N50600E50450	3.55	6-12"
DU-SS-8915	N50000E50500	3.90	6-12"
DU-SS-8916	N49700E50550	2.57	0-6"
DU-SS-8917	N50000E50050	2.61	6-12"
DU-SS-8918	N50200E50150	5.59	6-12"
DU-SS-8613	Crawl Space Under the House	1.28	Room 23
DU-SS-8618	Crawl Space Under the House	0.582	Room 23
DU-SS-8614	N50325E50300	19.0	0-6"
DU-SS-8615	N50400E50325	22.2	0-6"
DU-SS-8616	N50300E50275	20.5	0-6"
DU-SS-8617	N50225E50275	11.2	0-6"
DU-SS-8619	N50550E50225	9.23	0-6"

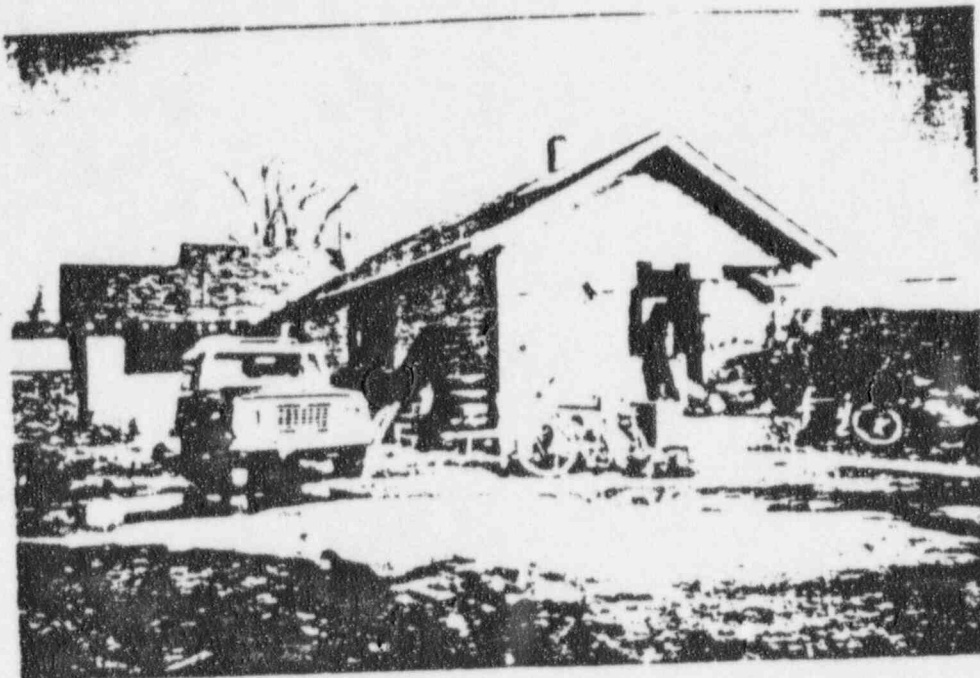


Looking West at Face of Steep Slope Across Roosa Avenue



Looking West Along North Property Line

Figure 1 Property Photos

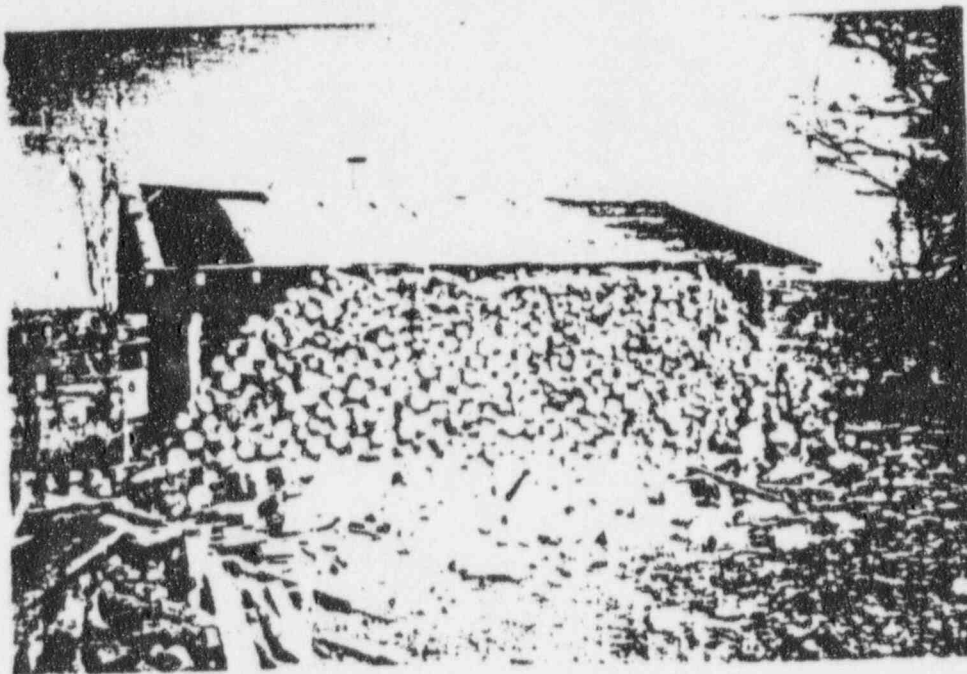


House, Looking Northeast

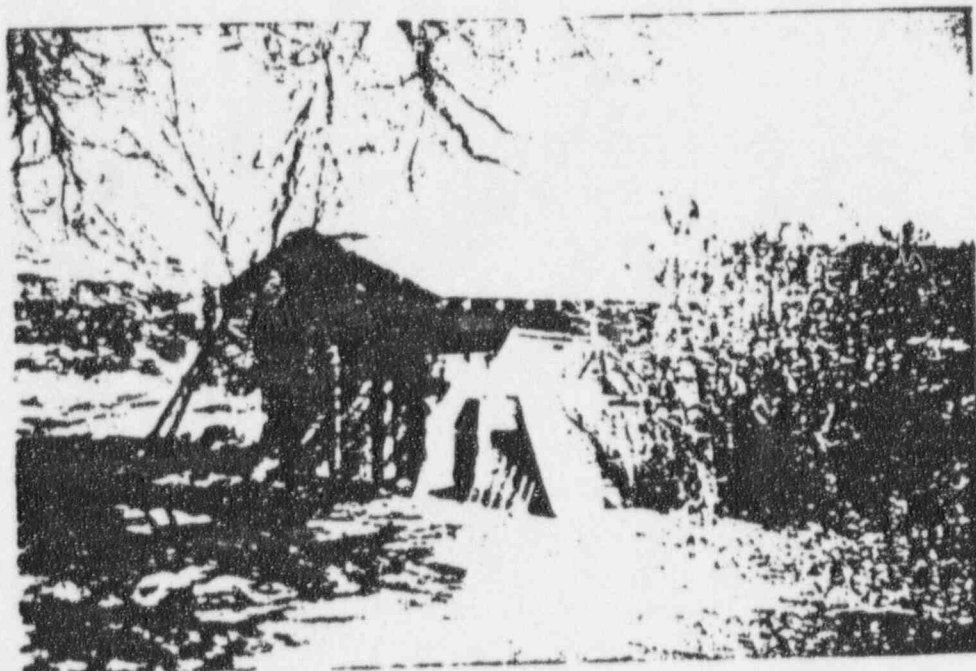


Shed and Wood Pile, Looking Southwest

Figure 2 Property Photos



Shed and Wood Pile, Looking North



Small Shed, Looking North

Figure 3 Property Photos



EDGE OF PAVEMENT

SHEEP SLOPE (TYPICAL)

TRANSFORMER ON
FIBERGLASS PAD
WIRE FENCE (TYPICAL)

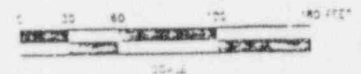
ADJACENT PROPERTY
(DU-053)

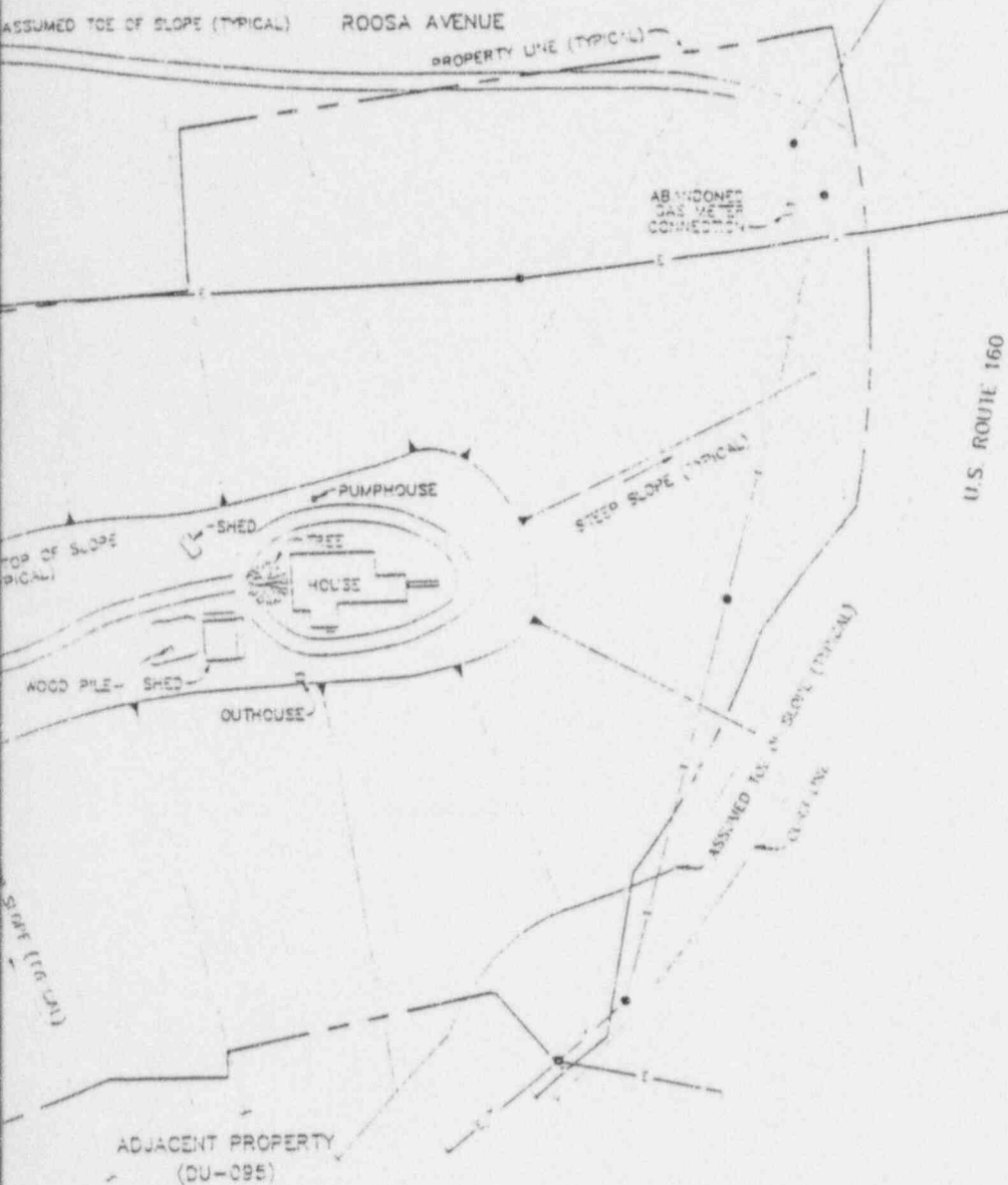
DIRT DRIVE

DIRT DRIVE

NATIVE GROWTH
(TYPICAL)

ADJACENT PROPERTY
(DU-096)





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
⊙	METER
⊙	VALVE
⊙	PROPERTY PIN
⊙	POWER POLE

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

**ANSTEC
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CARD**

Also Available on
Aperture Card

9707090028-02

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

SITE PLAN
DU-059

DURANGO, COLORADO

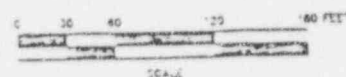
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

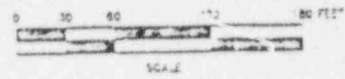
PROJECT MANAGER DATE EEE PROJECT ENGINEER

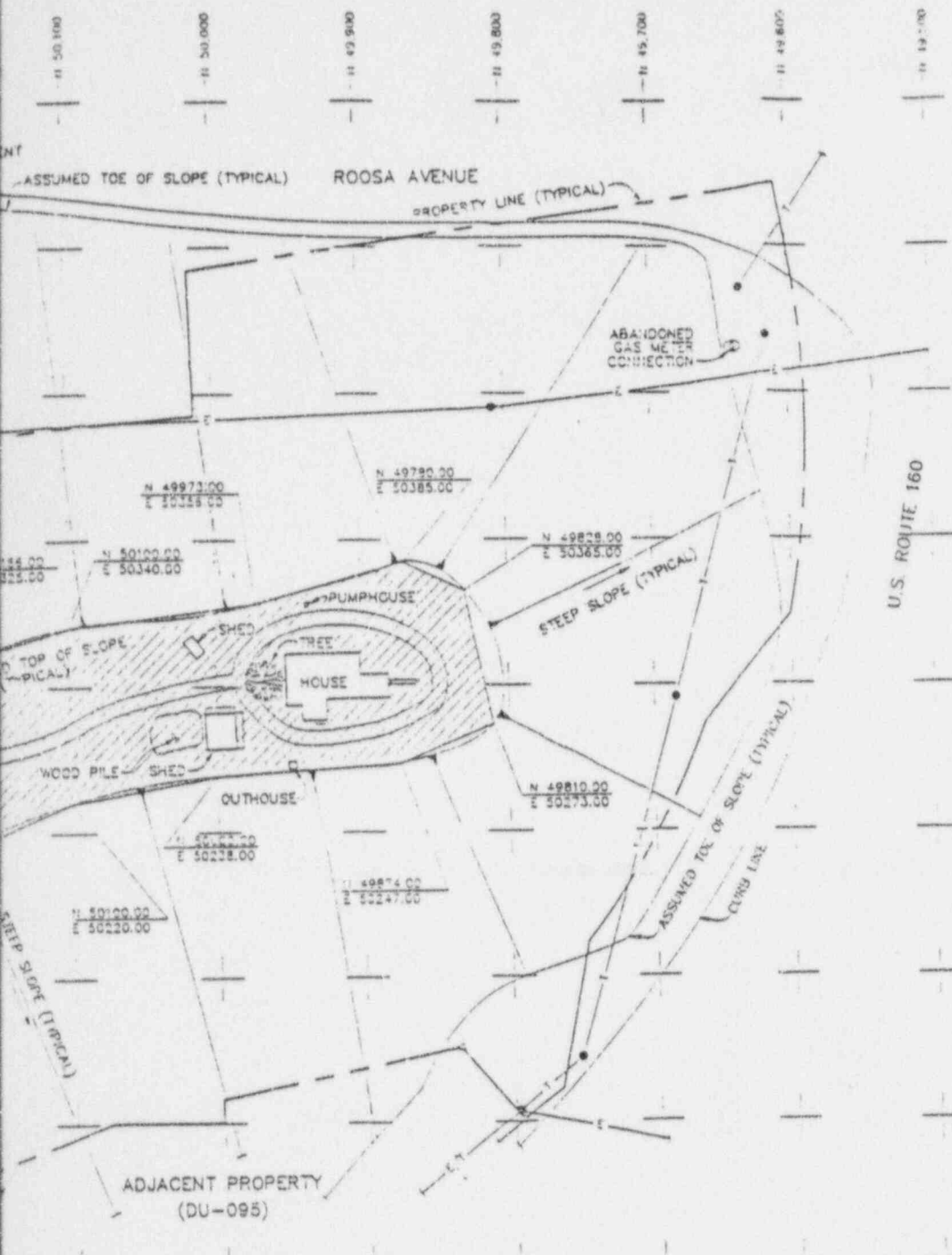
MK-FERGUSON
A McWILLIAM-KRUEGER COMPANY

DE-AC04-80-PL-1879

DRAWING NO. 100-189-101







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. = E	METER
⊙ G.W. =	VALVE
○	PROPERTY PIN
●	POWER POLE

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. DU-059.
 - SECTION 02110
CLEARING AND GRUBBING
 - SECTION 02130
CONTAMINATED MATERIAL REMOVAL
 - SECTION 02200
EXCAVATION AND BACKFILL
- UTILITY LOCATIONS ARE FOR REFERENCE ONLY. SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACTUAL LOCATION OF UTILITIES 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 CONTRACTOR'S REPRESENTATIVE.
- REMOVE WIRE FENCE AND WOOD PILE FROM AREA 'D' AS REQUIRED FOR EXCAVATION. REPLACE IN ORIGINAL LOCATION UPON COMPLETION OF OTHER WORK.
- EXCAVATE AREAS 'A' AND 'D' TO THE LIMITS INDICATED ON THIS DRAWING, TO A DEPTH OF 6 INCHES. CONTRACTOR'S REPRESENTATIVE WILL RESURVEY TO DETERMINE WHETHER ADDITIONAL EXCAVATION WILL BE REQUIRED.
- DURING EXECUTION OF OTHER WORK ON THIS PROPERTY, THE CONTRACTOR'S REPRESENTATIVE WILL IDENTIFY THE LIMITS OF SMALL AREAS OF CONTAMINATED MATERIAL ON THE STEEP SLOPES. THE SUBCONTRACTOR SHALL EXCAVATE AND REMOVE THIS MATERIAL AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE.
- BACKFILL ALL AREAS WITH COMMON FILL AND REGRADE AS REQUIRED TO MATCH ORIGINAL CONTOURS AND AS DIRECTED BY CONTRACTOR'S REPRESENTATIVE. ACCESS DRIVES SHALL BE RESTORED TO PRE-WORK CONDITION.

**ANSTEC
APERTURE
CARD**

Also Available on
Aperture Card

9707090028-04

NOTE: NORTHEAST CORNER OF HOUSE IS
LOCATED AT N 49952.2, E 50321.95.
SOUTHEAST CORNER OF HOUSE IS
LOCATED AT N 49901.3, E 50322.75

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

EXCAVATION AND RESTORATION PLAN
DU-059

DURANGO, COLORADO
URANIUM MILL TAILING REMEDIAL ACTION PROJECT

DESIGNED BY	DATE	APPROVED BY	DATE
CHECKED BY	DATE	APPROVED BY	DATE
REVIEWED BY	DATE	APPROVED BY	DATE
RECOMMENDED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
NR	NR	NR	NR
PROJECT NO. DE-AC04-83A-876			
DRAWING NO. DU-059-000			

MARK-FERGUSON
A MORRISON-KNIGHT COMPANY

DU-059

Section II

Remedial Action

Verification Data and As Built Drawings

Section II Summary

This section contains three drawings. DU-059-020 is the As-built drawing and it shows the actual area that was excavated. DU-059-030 shows the locations of all the verification grids and DU-059-032 shows which soil sample came from each of those grids.

Appendix A, Section II contains the analysis results for all the verification soil samples.

ADJACENT PROPERTY
(DU-053)

AREA "D"

ADJACENT PROPERTY
(DU-096)

0 30 60 120 180 FEET
SCALE

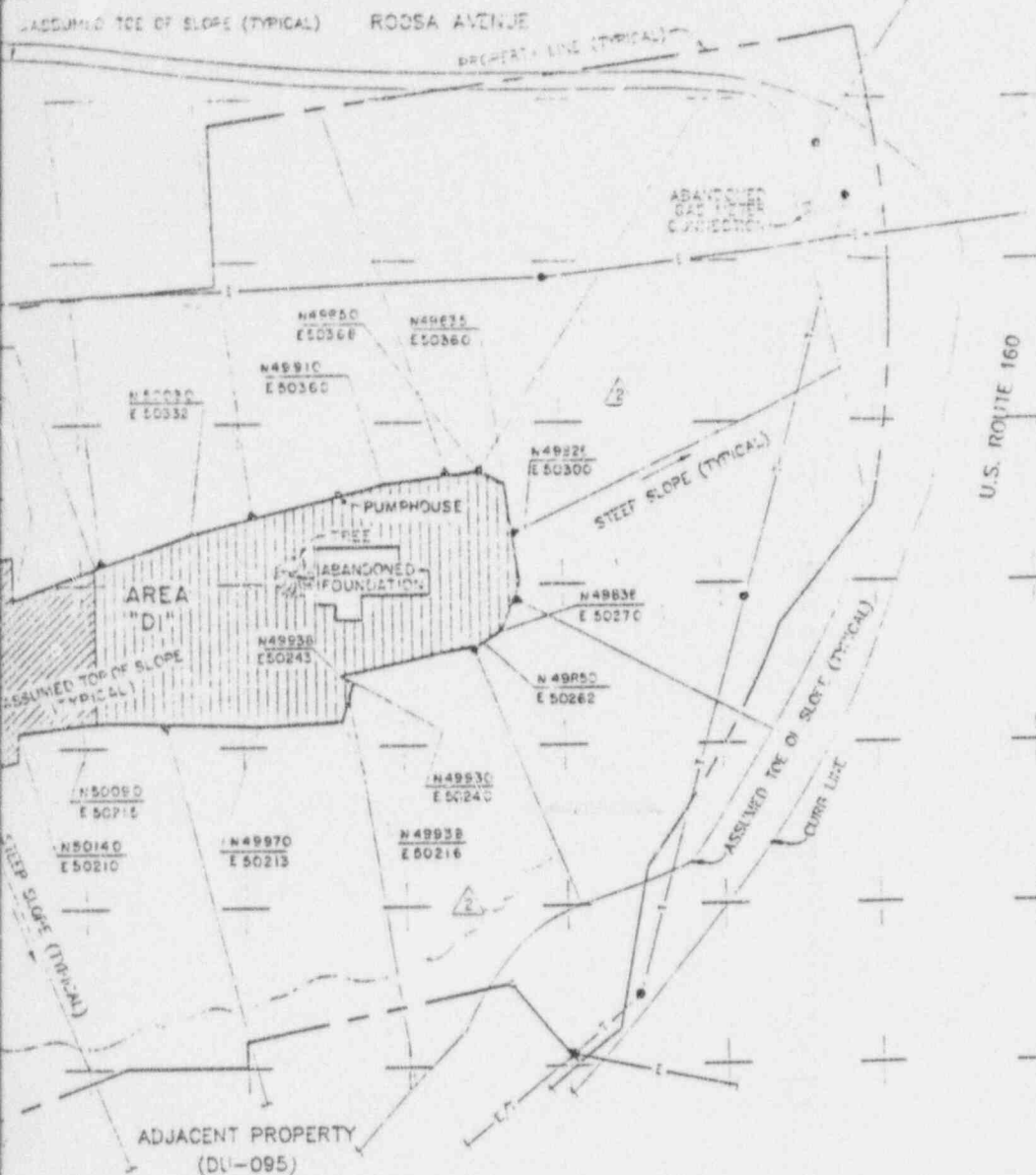
LEGEND

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
	FENCE LINE
○	METER
○	VALVE
○	PROPERTY PIN
○	POWER POLE

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. DU-059.
 - SECTION 02110
CLEARING AND GRUBBING
 - SECTION 02130
CONTAMINATED MATERIAL REMOVAL
 - SECTION 02200
EXCAVATION AND BACKFILL
- UTILITY LOCATIONS ARE FOR REFERENCE ONLY. SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACTUAL LOCATION OF UTILITIES 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 REVEAL 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 CONTRACTOR'S REPRESENTATIVE.
- REMOVE WIRE FENCE AND WOOD PILE FROM AREA 'D' AS REQUIRED FOR EXCAVATION. REPLACE IN ORIGINAL LOCATION UPON COMPLETION OF OTHER WORK.
- OWNER REMOVED ALL THE EXISTING BUILDINGS EXCEPT THE PUMPHOUSE PRIOR TO START OF REMEDIAL ACTION.
- EXCAVATED AREA "D" TO THE LIMITS INDICATED ON THIS DRAWING TO AN AVERAGE DEPTH OF 6 INCHES.
- EXCAVATED AREA "D1" TO THE LIMITS INDICATED ON THIS DRAWING TO AN AVERAGE DEPTH OF 12 INCHES.
- BACKFILL ALL AREAS WITH COMMON FILL AND GRADE TO MATCH ORIGINAL CONTOURS AS DIRECTED BY CONTRACTOR'S REPRESENTATIVE. TOP WITH NATIVE SEED, MULCH AND FERTILIZER. RESTORE ACCESS DRIVES TO PRE-WORK CONDITION.



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Aperture Card

AS-BUILT DRAWING

NOTE: NORTHEAST CORNER OF ABANDONED FOUNDATION IS
LOCATED AT N49952.12, E50321.95.
SOUTHEAST CORNER OF ABANDONED FOUNDATION IS
LOCATED AT N49901.13, E50322.75.

9707090028-05

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

EXCAVATION AND RESTORATION PLAN
DU-059

DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

APPROVAL	DATE	DOI PROJECT MANAGER	DATE	DOI PROJECT ENGINEER	DATE
NR		NR		NR	
PROJECT NO. DE-AC04-B3ALIE796					
DRAWING NO. DU-059-020					
REV 2					

MK-FERGUSON
A MORRISON-KNUDSEN COMPANY

NO.	DATE	REVISIONS
2	10/10/81	AS-BUILT DRAWING
1	1/15/81	REVISED NOTES
0	1/15/81	ISSUED FOR CONSTRUCTION



EDGE OF PAVEMENT

STEEL SLOPE (TYPICAL)

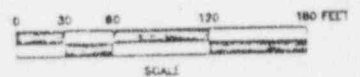
TRANSFORMER ON
FIBERGLASS PAD

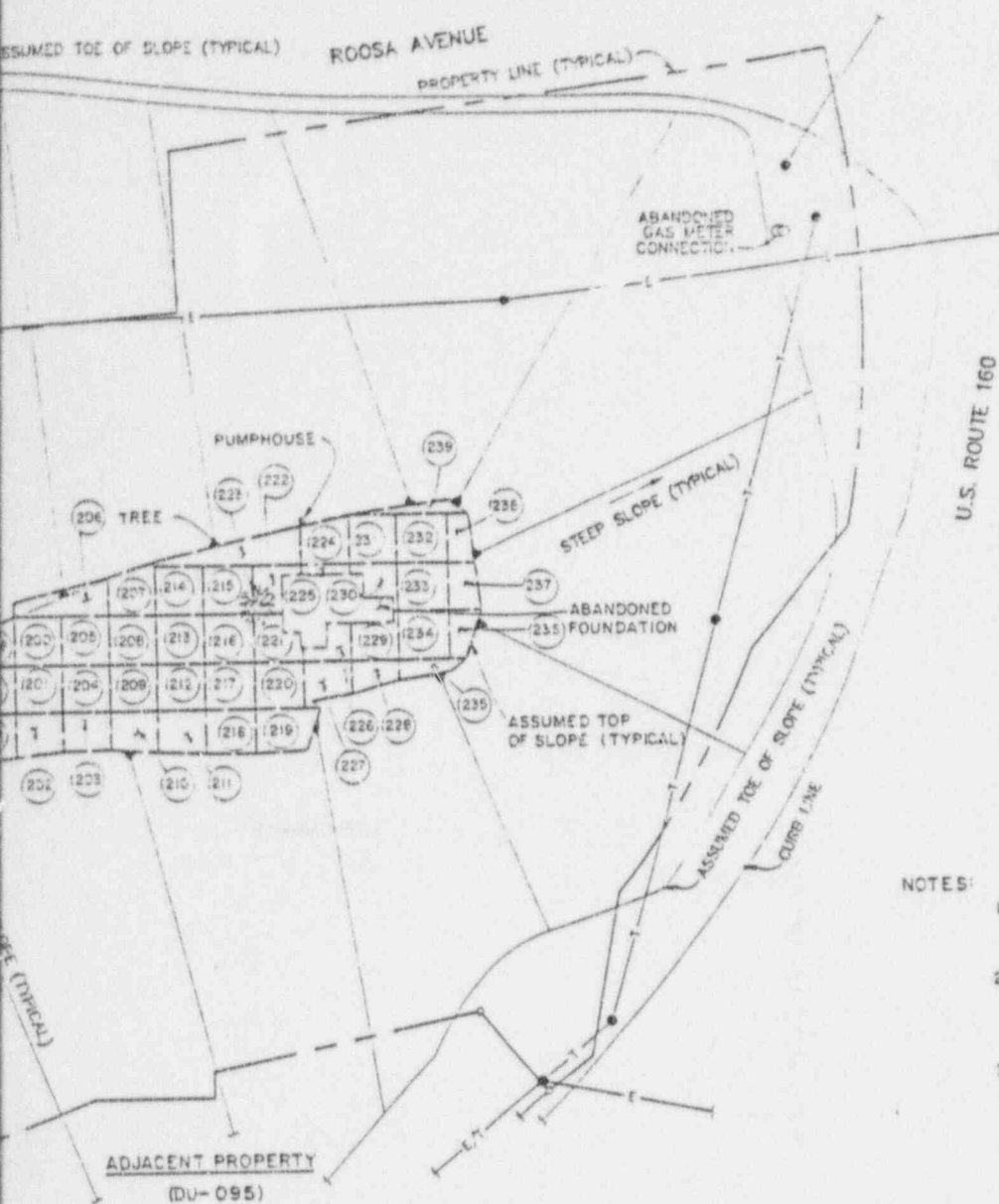
DIRT DRIVE

ADJACENT PROPERTY
(DU-053)

ADJACENT PROPERTY
(DU-096)

NATIVE GROWTH
(TYPICAL)





ANSTEC APERTURE CARD

Also Available on
Aperture Card

NOTES:

1. SEE DRAWING DU-059-031 FOR REMAINING CERTIFICATION RADIOLOGICAL PLAN.
2. SEE DRAWING DU-059-032 FOR VERIFICATION SOIL SAMPLE NUMBERS PERTAINING TO THIS DRAWING.
3. SEE DRAWING DU-059-034 FOR SUPPLEMENTAL STANDARDS PERTAINING TO DU-059.

9707090028-06

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED/DRAWN

CHECKED

REVIEWED

RECOMMENDED

APPROVED

NR

DATE

DOI PROJECT MANAGER

NR

DATE

DOI PROJECT ENGINEER

NR

DATE

CERTIFICATION RADIOLOGICAL PLAN
DU-059

DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

PROJECT NO.

DE-AC04-B3AL18796

DRAWING NO.

DU-059-030



M. K. FERGUSON

A PORCUPINE KNUDSEN COMPANY

ISSUED FOR CERTIFICATION SURVEY

CRW

NO. DATE

REVISIONS

GRAPH. DATE CHECKED APPROV. DATE PREP. DATE

VERIFICATION SO

LOCATION	SOIL SAMPLE NUMBER	LOCATION	SOIL SAMPLE NUMBER	LOCATION	SOIL SAMPLE NUMBER
1.	D-SV-10439	44.	D-SV-10489	81.	D-SV-10544
2.	D-SV-10440	45.	D-SV-10490	85.	D-SV-10545
3.	D-SV-10441	46.	D-SV-10491	90.	D-SV-10546
4.	D-SV-10442	47.	D-SV-10492	91.	D-SV-10547
5.	D-SV-10443	48.	D-SV-10493	92.	D-SV-10551
6.	D-SV-10444	49.	D-SV-10494	93.	D-SV-10556
7.	D-SV-10445	50.	D-SV-10495	94.	D-SV-10557
8.	D-SV-10446	51.	D-SV-10496	95.	D-SV-10558
9.	D-SV-10447	52.	D-SV-10497	96.	D-SV-10559
10.	D-SV-10448	53.	D-SV-10498	97.	D-SV-10560
11.	D-SV-10449	54.	D-SV-10499	98.	D-SV-10561
12.	D-SV-10450	55.	D-SV-10500	99.	D-SV-10562
13.	D-SV-10451	56.	D-SV-10501	100.	D-SV-10571
14.	D-SV-10452	57.	D-SV-10502		D-SV-10572
15.	D-SV-10453	58.	D-SV-10503	101.	D-SV-10573
16.	D-SV-10454	59.	D-SV-10504	102.	D-SV-10574
17.	D-SV-10455	60.	D-SV-10505	103.	D-SV-10575
18.	D-SV-10456		D-SV-10506	104.	D-SV-10576
19.	D-SV-10457	61.	D-SV-10507	105.	D-SV-10577
20.	D-SV-10458	62.	D-SV-10508	106.	D-SV-10578
	D-SV-10459	63.	D-SV-10509	107.	D-SV-10587
21.	D-SV-10460	64.	D-SV-10510	108.	D-SV-10590
22.	D-SV-10461	65.	D-SV-10511	109.	D-SV-10594
23.	D-SV-10462	66.	D-SV-10512	110.	D-SV-10595
24.	D-SV-10463	67.	D-SV-10513	111.	D-SV-10596
25.	D-SV-10464	68.	D-SV-10514	112.	D-SV-10597
26.	D-SV-10465	69.	D-SV-10515	113.	D-SV-10598
27.	D-SV-10466	70.	D-SV-10516	114.	D-SV-10599
28.	D-SV-10467	71.	D-SV-10517	115.	D-SV-10603
29.	D-SV-10468	72.	D-SV-10518	116.	D-SV-10564
30.	D-SV-10469	73.	D-SV-10519	117.	D-SV-10565
31.	D-SV-10470	74.	D-SV-10520	118.	D-SV-10566
32.	D-SV-10471	75.	D-SV-10521	119.	D-SV-10567
33.	D-SV-10472	76.	D-SV-10522	120.	D-SV-10568
34.	D-SV-10473	77.	D-SV-10523		D-SV-10568
35.	D-SV-10474	78.	D-SV-10524	121.	D-SV-10570
36.	D-SV-10475	79.	D-SV-10525	122.	D-SV-10579
37.	D-SV-10476	80.	D-SV-10526	123.	D-SV-10580
38.	D-SV-10477		D-SV-10527	124.	D-SV-10581
39.	D-SV-10480	81.	D-SV-10528	125.	D-SV-10582
40.	D-SV-10484	82.	D-SV-10529	126.	D-SV-10583
	D-SV-10485	83.	D-SV-10539	127.	D-SV-10584
41.	D-SV-10486	84.	D-SV-10540	128.	D-SV-10585
42.	D-SV-10487	85.	D-SV-10541	129.	D-SV-10586
43.	D-SV-10488	86.	D-SV-10542	130.	D-SV-10600
		87.	D-SV-10543	131.	D-SV-10601

L SAMPLE

LOCATION	SOIL SAMPLE NUMBER	LOCATION	SOIL SAMPLE NUMBER	LOCATION	SOIL SAMPLE NUMBER
132.	D-SV-10602	174.	D-SV-10750	215.	D-SV-10775
133.	D-SV-10603	175.	D-SV-10650	216.	D-SV-10777
134.	D-SV-10604	176.	D-SV-10657	217.	D-SV-10778
135.	D-SV-10605	177.	D-SV-10658	218.	D-SV-10779
136.	D-SV-10606	178.	D-SV-10714	219.	D-SV-10780
137.	D-SV-10607	179.	D-SV-10715	220.	D-SV-10781
138.	D-SV-10608	180.	D-SV-10716		D-SV-10782
139.	D-SV-10619		D-SV-10717	221.	D-SV-10783
140.	D-SV-10620	181.	D-SV-10718	222.	D-SV-10784
	D-SV-10621	182.	D-SV-10719	223.	D-SV-10785
141.	D-SV-10622	183.	D-SV-10720	224.	D-SV-10786
142.	D-SV-10623	184.	D-SV-10721	225.	D-SV-10787
143.	D-SV-10624	185.	D-SV-10722	226.	D-SV-10788
144.	D-SV-10625	186.	D-SV-10723	227.	D-SV-10789
145.	D-SV-10626	187.	D-SV-10724	228.	D-SV-10790
146.	D-SV-10627	188.	D-SV-10725	229.	D-SV-10791
147.	D-SV-10628	189.	D-SV-10726	230.	D-SV-10792
148.	D-SV-10629	190.	D-SV-10727	231.	D-SV-10793
149.	D-SV-10630	191.	D-SV-10728	232.	D-SV-10794
150.	D-SV-10631	192.	D-SV-10729	233.	D-SV-10795
151.	D-SV-10632	193.	D-SV-10730	234.	D-SV-10796
152.	D-SV-10633	194.	D-SV-10731	235.	D-SV-10797
153.	D-SV-10634	195.	D-SV-10732	236.	D-SV-10798
154.	D-SV-10635	196.	D-SV-10733	237.	D-SV-10799
155.	D-SV-10636	197.	D-SV-10757	238.	D-SV-10800
156.	D-SV-10637	198.	D-SV-10758	239.	D-SV-10801
157.	D-SV-10638	199.	D-SV-10759	240.	D-SV-14982
158.	D-SV-10639	200.	D-SV-10760	241.	D-SV-14983
159.	D-SV-10640		D-SV-10761	242.	D-SV-14984
160.	D-SV-10750	201.	D-SV-10762	243.	D-SV-14985
	D-SV-10754	202.	D-SV-10763	244.	D-SV-14986
161.	D-SV-10644	203.	D-SV-10764	245.	D-SV-14987
162.	D-SV-10645	204.	D-SV-10765	246.	D-SV-14988
163.	D-SV-10646	205.	D-SV-10766	247.	D-SV-14989
164.	D-SV-10647	206.	D-SV-10767	248.	D-SV-14990
165.	D-SV-10648	207.	D-SV-10768	249.	D-SV-14991
166.	D-SV-10649	208.	D-SV-10769	250.	D-SV-14992
167.	D-SV-10650	209.	D-SV-10770	251.	D-SV-14993
168.	D-SV-10651	210.	D-SV-10771	252.	D-SV-14994
169.	D-SV-10652	211.	D-SV-10772	253.	D-SV-14995
170.	D-SV-10653	212.	D-SV-10773	254.	D-SV-14996
171.	D-SV-10755	213.	D-SV-10774	255.	D-SV-14997
172.	D-SV-10654	214.	D-SV-10775		D-SV-14998
173.	D-SV-10655				

**ANSTEC
APERTURE
CARD**

Also Available on
Aperture Card

9707090028-07

NOTE:

SEE DRAWING DU-059-030 FOR
VERIFICATION GRID LOCATION.

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DIS. UNCLASSIFIED		VERIFICATION SOIL SAMPLE NUMBERS	
CHECKED	CRW	DU-059	
REVIEWED		DURANGO, COLORADO	
RECOMMENDED		URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT	
APPROVED	NR	DATE	SOIL PROJECT ENGINEER
		DATE	NR
PROJECT NO.		DE-AC04-83AL18796	
DRAWING NO.		DU-059-032	



MK-FERGUSON
A MORRISON KNUDSEN COMPANY

ISSUED FOR CERTIFICATION SURVEY	CRW
DATE	REVISIONS

DU-059

Section III

Secondary Radiological and
Engineering Assessment Data
From Slopes

2800F

Section III Summary

Section three contains the radiological data that was compiled from the steep slopes of the property. This data was used to determine the extent of contamination that will remain in place. Tables 3.1 and 3.2. show the exposure rates encountered on the slopes of the property. Table 3.3 is the soil sample data from the east slope and Table 3.4 is the soil sample data from the south and west slopes.

Three drawings are included in this section. DU-059-015 shows the location of the soil samples in Table 3.3. DU-059-031 shows the locations of the soil samples in Table 3.4. DU-059-035 shows the areas where contamination in excess of EPA standards will remain. These areas are where supplemental standards will apply.

Section III of Appendix A contains the field data for this section.

Table 3.1
POINT OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
1	17	15
5	18	18
7	15	13
9	18	16
11	15	17
13	16	17
15	18	17
17	16	17
19	17	16
21	17	17
23	21	19
35	22	21
37	23	23
47	24	23
55	26	26
59	35	36
61	31	33
65	38	37

Table 3.2
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
1	18	18
2	19	18
3	19	19
4	19	20
5	17	17
6	16	17
7	19	18
8	18	18
9	18	18
10	19	18
11	18	18
12	18	18
13	18	18
14	18	19
15	19	19
16	20	19
17	19	19
18	21	20
19	20	19
20	20	19

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT 'micro R/hr)	1 METER (micro R/hr)
21	20	18
22	23	19
23	24	20
24	23	20
25	20	18
26	20	19
27	17	17
28	18	18
29	23	20
30	24	22
31	21	20
32	19	19
33	19	19
34	22	21
35	21	20
36	19	19
37	22	20
38	19	19
39	19	19
40	19	19
41	18	19

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
42	16	19
43	13	13
44	15	12
45	17	15
46	15	15
47	16	16
48	20	18
49	17	17
50	14	15
51	15	16
52	15	16
53	18	17
54	17	17
55	15	16
56	21	19
57	17	17
58	19	18
59	19	19
60	20	19
61	17	17

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
62	16	17
63	17	16
64	17	16
65	20	18
66	18	18
67	22	19
68	18	18
69	18	18
70	18	17
71	19	18
72	17	17
73	17	17
74	16	16
75	17	17
76	16	13
77	18	17
78	17	18
79	19	17
80	15	16
81	16	16
82	18	17

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 MEETER (micro R/hr)
83	19	17
84	17	16
85	17	16
86	16	15
87	14	15
88	19	18
89	18	18
90	19	18
91	18	17
92	20	17
93	19	17
94	20	18
95	21	18
96	22	18
97	21	17
98	19	16
99	20	18
100	20	18
101	18	18
102	25	20
103	21	18

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
104	20	18
105	18	16
106	17	16
107	18	17
108	23	23
109	21	19
110	18	21
111	18	17
112	18	19
113	20	18
114	20	17
115	18	17
116	20	17
117	19	18
118	22	18
119	22	18
120	20	18
121	21	18
122	16	15
123	14	14
124	16	17

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
125	15	16
126	15	15
127	18	19
128	21	19
129	21	20
130	20	20
131	23	21
132	21	21
133	16	16
134	23	17
135	22	19
136	19	20
137	23	19
138	19	18
139	20	18
140	19	18
141	22	18
142	16	18
143	22	18
144	17	16

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
145	17	18
146	18	17
147	26	19
148	16	17
149	17	17
150	18	18
151	19	19
152	22	21
153	29	22
154	21	23
155	18	18
156	21	20
157	22	21
158	19	19
159	24	21
160	18	18
161	20	19
162	20	19
163	22	23
164	19	19

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
165	21	20
166	19	19
167	19	19
168	17	18
169	27	22
170	29	22
171	18	18
172	19	19
173	21	20
174	19	18
175	17	19
176	27	24
177	26	24
178	19	19
179	18	18
180	19	19
181	19	18
182	24	22
183	27	24
184	25	23
185	19	18

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
186	19	19
187	19	18
188	20	19
189	20	18
190	19	20
191	20	19
192	19	19
193	20	19
194	24	22
195	20	20
196	20	19
197	19	19
198	21	21
199	20	20
200	20	20
201	20	20
202	19	19
203	22	20
228	20	20
229	20	20
230	21	20

Table 3.2 Cont'd.
GRID OUTDOOR GAMMA SCREENING
Property DU-059

LOCATION	CONTACT (micro R/hr)	1 METER (micro R/hr)
231	20	21
232	20	21
233	21	21
234	21	20
235	22	21
236	20	20
237	19	20
238	22	21
239	23	21
240	21	21
241	23	21
242	20	21
243	22	20
244	20	20
245	20	19
246	20	20
247	20	22

Table 3.3
POINT SURFACE SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Point)	DEPTH (Inches)	Ra-226 CONCENTRATION (pCi/g)
DU-SS-8787	1	0 - 6	4.5
DU-SS-8881	2	6 - 12	1.4
DU-SS-8897	3	0 - 6	1.8
DU-SS-8779	4	6 - 12	1.9
DU-SS-8770	5	0 - 6	3.6
DU-SS-8889	6	6 - 12	1.7
DU-SS-8901	7	0 - 6	1.4
DU-SS-8841	8	6 - 12	0.9
DU-SS-8788	9	0 - 6	4.4
DU-SS-8891	10	6 - 12	5.6
DU-SS-8796	11	0 - 6	4.9
DU-SS-8807	12	6 - 12	2.4
DU-SS-8828	13	0 - 6	1.9
DU-SS-8860	14	6 - 12	1.2
DU-SS-8885	15	0 - 6	2.7
DU-SS-8886	16	6 - 12	1.5
DU-SS-8895	17	0 - 6	3.5
DU-SS-8914	18	6 - 12	3.6
DU-SS-8859	19	0 - 6	7.0
DU-SS-8879	20	6 - 12	5.0

Table 3.3 Cont'd.
POINT SURFACE SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Point)	DEPTH (Inches)	Ra-226 CONCENTRATION (pCi/g)
DU-SS-8856	21	6 - 12	2.4
DU-SS-8858	22	0 - 6	5.7
DU-SS-8813	23	0 - 6	7.8
DU-SS-8873	24	6 - 12	2.5
DU-SS-8872	25	0 - 6	6.6
DU-SS-8882	26	6 - 12	2.6
DU-SS-8863	27	6 - 12	2.4
DU-SS-8866	28	0 - 6	4.3
DU-SS-8850	29	0 - 6	3.3
DU-SS-8875	30	6 - 12	3.4
DU-SS-8829	31	0 - 6	7.3
DU-SS-8874	32	6 - 12	2.1
DU-SS-8847	33	0 - 6	6.7
DU-SS-8844	34	6 - 12	3.3
DU-SS-8826	35	6 - 12	1.3
DU-SS-8869	36	0 - 6	2.1
DU-SS-8816	37	0 - 6	7.5
DU-SS-8846	38	6 - 12	4.5
DU-SS-8782	39	0 - 6	1.4
DU-SS-8868	40	6 - 12	1.6
DU-SS-8814	41	0 - 6	4.2

Table 3.3 Cont'd.
POINT SURFACE SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Point)	DEPTH (Inches)	Ra-226 CONCENTRATION (pCi/g)
DU-SS-8820	42	6 - 12	1.1
DU-SS-8831	43	0 - 6	5.2
DU-SS-8809	44	6 - 12	5.8
DU-SS-8908	45	0 - 6	11.8
DU-SS-8834	46	6 - 12	1.4
DU-SS-8871	47	0 - 6	3.5
DU-SS-8798	48	6 - 12	1.5
DU-SS-8852	49	0 - 6	1.7
DU-SS-8862	50	0 - 6	7.8
DU-SS-8915	51	-	3.9
DU-SS-8819	52	6 - 12	4.4
DU-SS-8855	53	0 - 6	9.4
DU-SS-8853	54	6 - 12	3.6
DU-SS-8878	55	0 - 6	6.8
DU-SS-8773	56	6 - 12	1.4
DU-SS-8912	57	0 - 6	5.4
DU-SS-8848	58	0 - 6	2.1
DU-SS-8880	59	6 - 12	0.8
DU-SS-8785	60	6 - 12	1.7
DU-SS-8864	61	0 - 6	1.5
DU-SS-8780	62	6 - 12	4.2

Table 3.3 Cont'd.
POINT SURFACE SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Point)	DEPTH (Inches)	Ra-226 CONCENTRATION (pCi/g)
DU-SS-8843	63	0 - 6	7.0
DU-SS-8854	64	6 - 12	0.9
DU-SS-8916	65	0 - 6	2.6

Table 3.4
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12405	059-1	0-6	2.79
DU-SS-12406	059-2	0-6	6.19
DU-SS-12407	059-3	0-6	4.72
DU-SS-12408	059-4	0-6	3.64
DU-SS-12409	059-5	0-6	5.23
DU-SS-12410	059-6	0-6	4.99
DU-SS-12418	059-7	0-6	3.50
DU-SS-12419	059-8	0-6	2.30
DU-SS-12420	059-9	0-6	3.04
DU-SS-12421	059-10	0-6	3.48
DU-SS-12422	059-11	0-6	2.61
DU-SS-12423	059-12	0-6	2.17
DU-SS-12424	059-13	0-6	2.13
DU-SS-12425	059-14	0-6	2.89
DU-SS-12426	059-15	0-6	2.99
DU-SS-12427	059-16	0-6	2.13
DU-SS-12428	059-17	0-6	2.84
DU-SS-12445	059-18	0-6	3.03
DU-SS-12446	059-19	0-6	2.81
DU-SS-12447	059-20	0-6	2.77
DU-SS-12448	059-21	0-6	4.26

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12449	059-22	0-6	6.59
DU-SS-12450	059-23	0-6	6.35
DU-SS-12451	059-24	0-6	4.64
DU-SS-12452	059-25	0-6	3.22
DU-SS-12453	059-26	0-6	2.81
DU-SS-12454	059-27	0-6	2.65
DU-SS-12455	059-28	0-6	2.44
DU-SS-12456	059-29	0-6	3.73
DU-SS-12457	059-30	0-6	5.85
DU-SS-12458	059-31	0-6	5.30
DU-SS-12459	059-32	0-6	3.04
DU-SS-12460	059-33	0-6	2.49
DU-SS-12461	059-34	0-6	4.28
DU-SS-12462	059-35	0-6	3.76
DU-SS-12463	059-36	0-6	2.75
DU-SS-12464	059-37	0-6	4.27
DU-SS-12465	059-38	0-6	2.99
DU-SS-12466	059-39	0-6	3.53
DU-SS-12466	059-40	0-6	3.73
DU-SS-12468	059-41	0-6	5.45

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12469	059-42	0-6	2.19
DU-SS-12524	059-43	0-6	5.74
DU-SS-12525	059-44	0-6	3.80
DU-SS-12526	059-45	0-6	6.88
DU-SS-12527	059-46	6	9.01
DU-SS-12528	059-47	0-6	9.15
DU-SS-12529	059-48	0-6	5.37
DU-SS-12530	059-49	0-6	3.34
DU-SS-12531	059-50	0-6	4.2
DU-SS-12532	059-51	0-6	2.13
DU-SS-12533	059-52	0-6	3.34
DU-SS-12534	059-53	0-6	2.13
DU-SS-12535	059-54	0-6	10.08
DU-SS-12536	059-55	0-6	6.04
DU-SS-12537	059-56	0-6	3.95
DU-SS-12538	059-57	0-6	5.91
DU-SS-12539	059-58	0-6	6.5
DU-SS-12540	059-59	0-6	10.68
DU-SS-12541	059-60	0-6	9.15
DU-SS-12542	059-61	0-6	6.31
DU-SS-12543	059-62	0-6	5.03
DU-SS-12544	059-63	0-6	7.00

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12545	059-64	0-6	3.08
DU-SS-12546	059-65	0-6	3.72
DU-SS-12547	059-66	0-6	4.69
DU-SS-12548	059-67	0-6	2.95
DU-SS-12549	059-68	0-6	6.49
DU-SS-12550	059-69	0-6	8.78
DU-SS-12551	059-70	0-6	6.61
DU-SS-12552	059-71	0-6	5.30
DU-SS-12553	059-72	0-6	5.20
DU-SS-12554	059-73	0-6	5.80
DU-SS-12555	059-74	0-6	4.46
DU-SS-12556	059-75	0-6	2.31
DU-SS-12557	059-76	0-6	3.06
DU-SS-12558	059-77	0-6	6.30
DU-SS-12559	059-78	0-6	9.07
DU-SS-12560	059-79	0-6	3.43
DU-SS-12561	059-80	0-6	2.57
DU-SS-12562	059-81	0-6	9.25
DU-SS-12563	059-82	0-6	5.47
DU-SS-12564	059-83	0-6	6.39
DU-SS-12565	059-84	0-6	3.06

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12566	059-85	0-6	6.24
DU-SS-12567	059-86	0-6	6.70
DU-SS-12568	059-87	0-6	6.65
DU-SS-12569	059-88	0-6	5.07
DU-SS-12570	059-89	0-6	2.53
DU-SS-12571	059-90	0-6	7.00
DU-SS-12572	059-91	0-6	9.13
DU-SS-12573	059-92	0-6	5.73
DU-SS-12574	059-93	0-6	2.91
DU-SS-12575	059-94	0-6	9.91
DU-SS-12576	059-95	0-6	13.85
DU-SS-12577	059-96	0-6	15.11
DU-22-12578	059-97	0-6	6.85
DU-SS-12579	059-98	0-6	13.93
DU-SS-12580	059-99	0-6	13.73
DU-SS-12581	059-100	0-6	10.60
DU-SS-12582	059-101	0-6	4.61
DU-SS-12583	059-102	0-6	12.88
DU-SS-12584	059-103	0-6	2.72
DU-SS-12585	059-104	0-6	6.27

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12586	059-105	0-6	3.26
DU-SS-12587	059-106	0-6	5.78
DU-SS-12588	059-107	0-6	5.47
DU-SS-12589	059-108	0-6	8.72
DU-SS-12590	059-109	0-6	9.13
DU-SS-12591	059-110	0-6	2.58
DU-SS-12623	059-111	0-6	3.26
DU-SS-12592	059-112	0-6	4.87
DU-SS-12593	059-113	0-6	2.04
DU-SS-12594	059-114	0-6	9.91
DU-SS-12595	059-115	0-6	5.10
DU-SS-12596	059-116	0-6	9.35
DU-SS-12597	059-117	0-6	4.85
DU-SS-12598	059-118	0-6	6.32
DU-SS-12599	059-119	0-6	12.14
DU-SS-12600	059-120	0-6	2.46
DU-SS-12601	059-121	0-6	5.03
DU-SS-12624	059-122	0-6	3.62
DU-SS-12625	059-123	0-6	2.13
DU-SS-12626	059-124	0-6	2.37
DU-SS-12627	059-125	0-6	2.68

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12628	059-126	0-6	4.02
DU-SS-12631	059-127	0-6	3.60
DU-SS-12632	059-128	0-6	12.16
DU-SS-12633	059-129	0-6	4.65
DU-SS-12634	059-130	0-6	9.83
DU-SS-12635	059-131	0-6	13.45
DU-SS-12630	059-132	0-6	4.92
DU-SS-12636	059-133	0-6	2.13
DU-SS-12629	059-134	0-6	13.25
DU-SS-12637	059-135	0-6	7.03
DU-SS-12638	059-136	0-6	4.73
DU-SS-12639	059-137	0-6	10.08
DU-SS-12640	059-138	0-6	9.23
DU-SS-12641	059-139	0-6	12.32
DU-SS-12642	059-140	0-6	5.28
DU-SS-12643	059-141	0-6	3.76
DU-SS-12644	059-142	0-6	5.34
DU-SS-12645	059-143	0-6	3.58
DU-SS-12646	059-144	0-6	2.27
DU-SS-12647	059-145	0-6	2.92

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12665	059-146	0-6	3.89
DU-SS-12666	059-147	0-6	2.54
DU-SS-12667	059-148	0-6	4.45
DU-SS-12668	059-149	0-6	2.07
DU-SS-12669	059-150	0-6	5.82
DU-SS-12670	059-151	0-6	5.03
DU-SS-12671	059-152	0-6	10.70
DU-SS-12672	059-153	0-6	10.12
DU-SS-12673	059-154	0-6	18.80
DU-SS-12674	059-155	0-6	3.60
DU-SS-12675	059-156	0-6	5.86
DU-SS-12676	059-157	0-6	9.17
DU-SS-12677	059-158	0-6	6.96
DU-SS-12678	059-159	0-6	5.45
DU-SS-12679	059-160	0-6	2.44
DU-SS-12680	059-161	0-6	5.66
DU-SS-12681	059-162	0-6	7.20
DU-SS-12682	059-163	0-6	15.61
DU-SS-12683	059-164	0-6	3.69
DU-SS-12684	059-165	0-6	4.64
DU-SS-12685	059-166	0-6	4.66

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12710	059-167	0-6	3.21
DU-SS-12711	059-168	0-6	4.42
DU-SS-12712	059-169	0-6	6.70
DU-SS-12713	059-170	0-6	10.78
DU-SS-12714	059-171	0-6	6.16
DU-SS-12715	059-172	0-6	3.21
DU-SS-12716	059-173	0-6	3.87
DU-SS-12717	059-174	0-6	5.76
DU-SS-12718	059-175	0-6	2.91
DU-SS-12719	059-176	0-6	6.73
DU-SS-12720	059-177	0-6	9.37
DU-SS-12721	059-178	0-6	9.37
DU-SS-12722	059-179	0-6	3.23
DU-SS-12723	059-180	0-6	3.30
DU-SS-12724	059-181	0-6	3.22
DU-SS-12728	059-182	0-6	3.61
DU-SS-12729	059-183	0-6	6.15
DU-SS-12730	059-184	0-6	6.20
DU-SS-12731	059-185	0-6	3.96
DU-SS-12732	059-186	0-6	3.79
DU-SS-12733	059-187	0-6	2.37

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12734	059-188	0-6	2.71
DU-SS-12735	059-189	0-6	2.13
DU-SS-12736	059-190	0-6	2.13
DU-SS-12737	059-191	0-6	2.56
DU-SS-12738	059-192	0-6	3.02
DU-SS-12739	059-193	0-6	3.50
DU-SS-12740	059-194	0-6	3.81
DU-SS-12741	059-195	0-6	2.62
DU-SS-12742	059-196	0-6	3.35
DU-SS-12743	059-197	0-6	2.13
DU-SS-12744	059-198	0-6	4.03
DU-SS-12745	059-199	0-6	4.20
DU-SS-12746	059-200	0-6	2.99
DU-SS-12747	059-201	0-6	2.14
DU-SS-12748	059-202	0-6	2.31
DU-SS-12749	059-203	0-6	3.58
DU-SS-12785	059-229	0-6	3.18
DU-SS-12786	059-230	0-6	2.11
DU-SS-12787	059-231	0-6	3.93
DU-SS-12788	059-232	0-6	2.23
DU-SS-12789	059-233	0-6	2.11

Table 3.4 Cont'd.
GRID SOIL SAMPLE SURVEY
Property DU-059

SAMPLE ID	LOCATION (Property Grid)	DEPTH (Inches)	ESTIMATED FINAL Ra-226 CONCENTRATION (pCi/g)
DU-SS-12790	059-234	0-6	2.33
DU-SS-12791	059-235	0-6	2.46
DU-SS-12792	059-236	0-6	2.18
DU-SS-12793	059-237	0-6	2.14
DU-SS-12794	059-238	0-6	4.31
DU-SS-12795	059-239	0-6	2.41
DU-SS-12796	059-240	0-6	2.26
DU-CS-12797	059-241	0-6	2.23
DU-SS-12798	059-242	0-6	2.75
DU-SS-12799	059-243	0-6	2.34
DU-SS-12800	059-244	0-6	3.46
DU-SS-12802	059-245	0-6	2.40
DU-SS-12803	059-246	0-6	2.44
DU-SS-12804	059-247	0-6	3.84

Table 4.1
Option II Cost Estimate

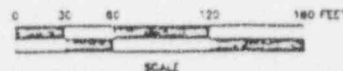
MACHINE EXCAVATION

Activity No.	Activity	Unit Price	Quantity	Estimated Cost
1.0	Slope Excavation	5.82	12,429 cy	\$ 72,337.00
2.0	Construction of Berm	28,252.00	1LS	28,252.00
3.0	Removal of Berm	22,267.00	1LS	22,267.00
4.0	Construction of Access Road	2,670.00	1LS	2,670.00
5.0	Road Repair	170,363.00	1LS	170,363.00
6.0	Backfill of Slopes	12.86	12,429 cy	159,837.00
7.0	Erosion Control	118,119.00	1LS	118,236.00
8.0	Seeding	11,119.00	1LS	11,119.00
Subtotal (Includes 19% Mark Up)				585,081.00
5% Subcontractor's Contingency				<u>29,254.00</u>
Total (Rounded)				614,300.00

Table 4.2
Remedial Action Option I Cost Estimates

HAND EXCAVATION

Activity No.	Activity	Unit Price	Quantity	Estimated Cost
1.0	Hand Excavation	83.62	4083cy	\$ 341,420.00
2.0	Common Backfill	15.96	4083cy	65,165.00
3.0	Bulk Removal	5.80	4083cy	23,681.00
4.0	Traffic Control	7,200.00	1LS	7,200.00
5.0	Safety Fence	5.00	1500LF	7,500.00
6.0	Erosion Control	14,057.00	1LS	14,057.00
7.0	Native Seed	1.44	24,418sy	<u>35,162.00</u>
			Total	<u>\$494,185.00</u>
			5% Subcontractor's Contingency	24,709.00
			20% Overhead & Profit	<u>98,837.00</u>
			Total (Rounded)	\$ 618,000.00



TOE OF SLOPE (TYPICAL)

ROOSA AVENUE

PROPERTY LINE (TYPICAL)

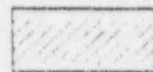
LEGEND

BOREHOLE DESIGNATION

SOIL SAMPLE DESIGNATION

BOREHOLE/SOIL SAMPLE DESIGNATION

ESTIMATED DEPTH OF CONTAMINATION



6"

NOTE: NORTHEAST CORNER OF HOUSE IS
LOCATED AT N 49952.12, E 50321.95
SOUTHEAST CORNER OF HOUSE IS
LOCATED AT N 49901.13, E 50322.75

**ANSTEC
APERTURE
CARD**

Also Available on
Aperture Card

9707090028-08

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNATION

CHECKED

REVIEWED

RECOMMENDED

RADIOLOGICAL SURVEY DATA
DU-059

DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

APPROVED

NR

DATE

DOE PROJECT MANAGER

NR

DATE

DOE PROJECT ENGINEER

NR

DATE

PROJECT NO.

DE-AC04-B3AL18796

DRAWING NO.

DU-059-015

REV.

FINAL REA SUBMITTAL

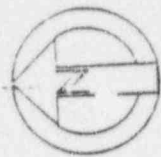
REVISIONS

DRAWN FOR/FILED APPROVAL/REVISION/DATE/INITIALS



MK-FERGUSON

A MORRISON ANDUSIN COMPANY



EDGE OF PAVEMENT

STEEP SLOPE (TYPICAL)

DIRT DRIVE

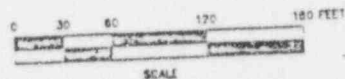
TRANSFORMER ON
FIBERGLASS PAD

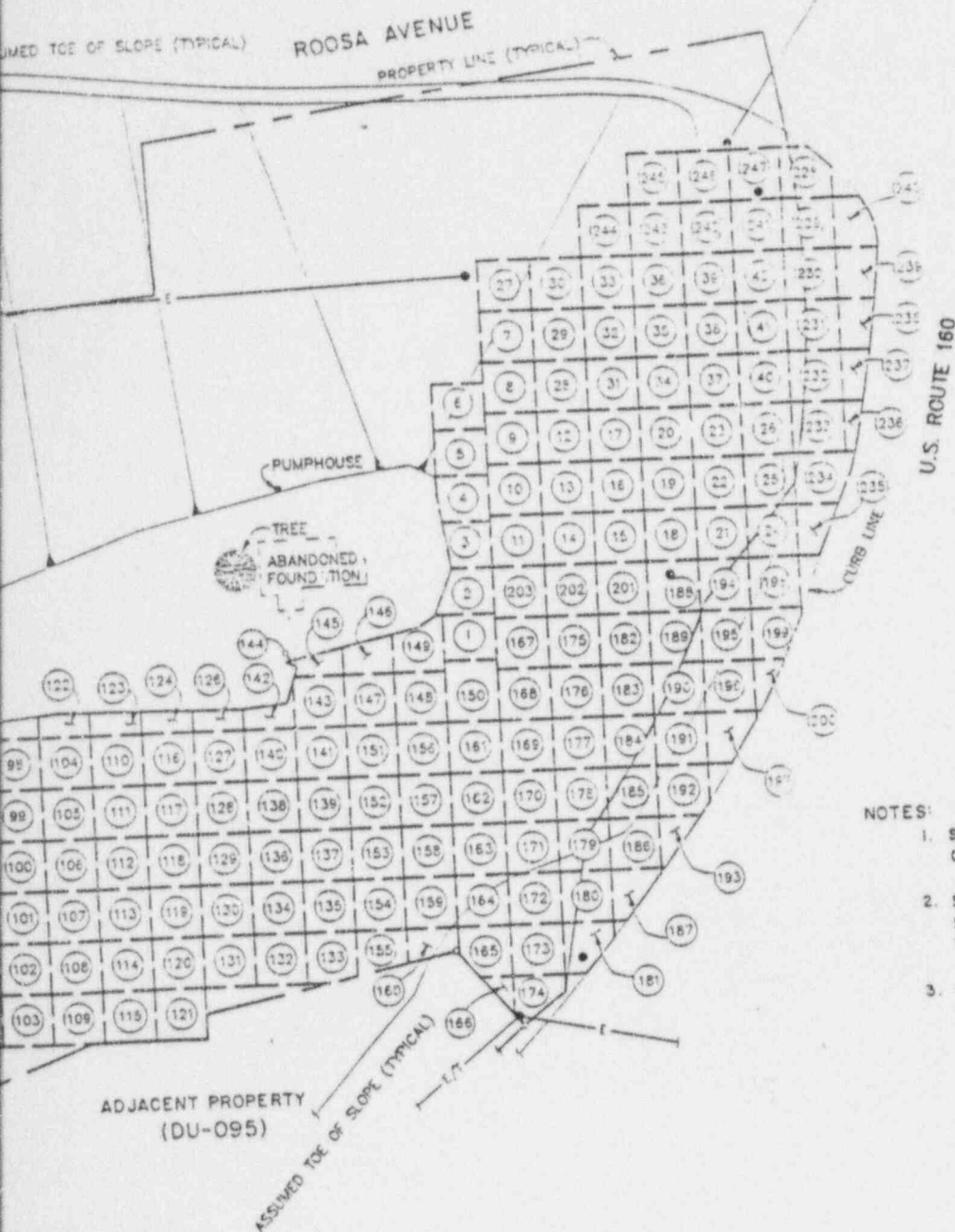
(ASSUMED TOP OF SLOPE
(TYPICAL))

ADJACENT PROPERTY
(DU-053)

NATIVE GROWTH
(TYPICAL)

ADJACENT PROPERTY
(DU-096)





ANSTEC APERTURE CARD

Also Available on
Aperture Card

NOTES:

1. SEE DRAWING DU-059-030 FOR REMAINING CERTIFICATION RADIOLOGICAL PLAN.
2. SEE DRAWING DU-059-033 FOR VERIFICATION SOIL SAMPLE NUMBERS PERTAINING TO THIS DRAWING.
3. SEE DRAWING DU-059-034 FOR SUPPLEMENTAL STANDARDS PERTAINING TO DU-059.

9707090028-09

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

CERTIFICATION RADIOLOGICAL PLAN

DU-059

DURANGO, COLORADO
URANIUM MILL TAILING REMEDIAL ACTION PROJECT

DESIGNED BY	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
CHECKED		NR		NR	
REVIEWED					
RECOMMENDED					
APPROVED					

MK-FERGUSON
A MORRISON-KNUDSEN COMPANY

PROJECT NO.
DE-AC04-83AL18796
DRAWING NO. DU-059-031

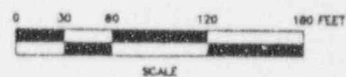
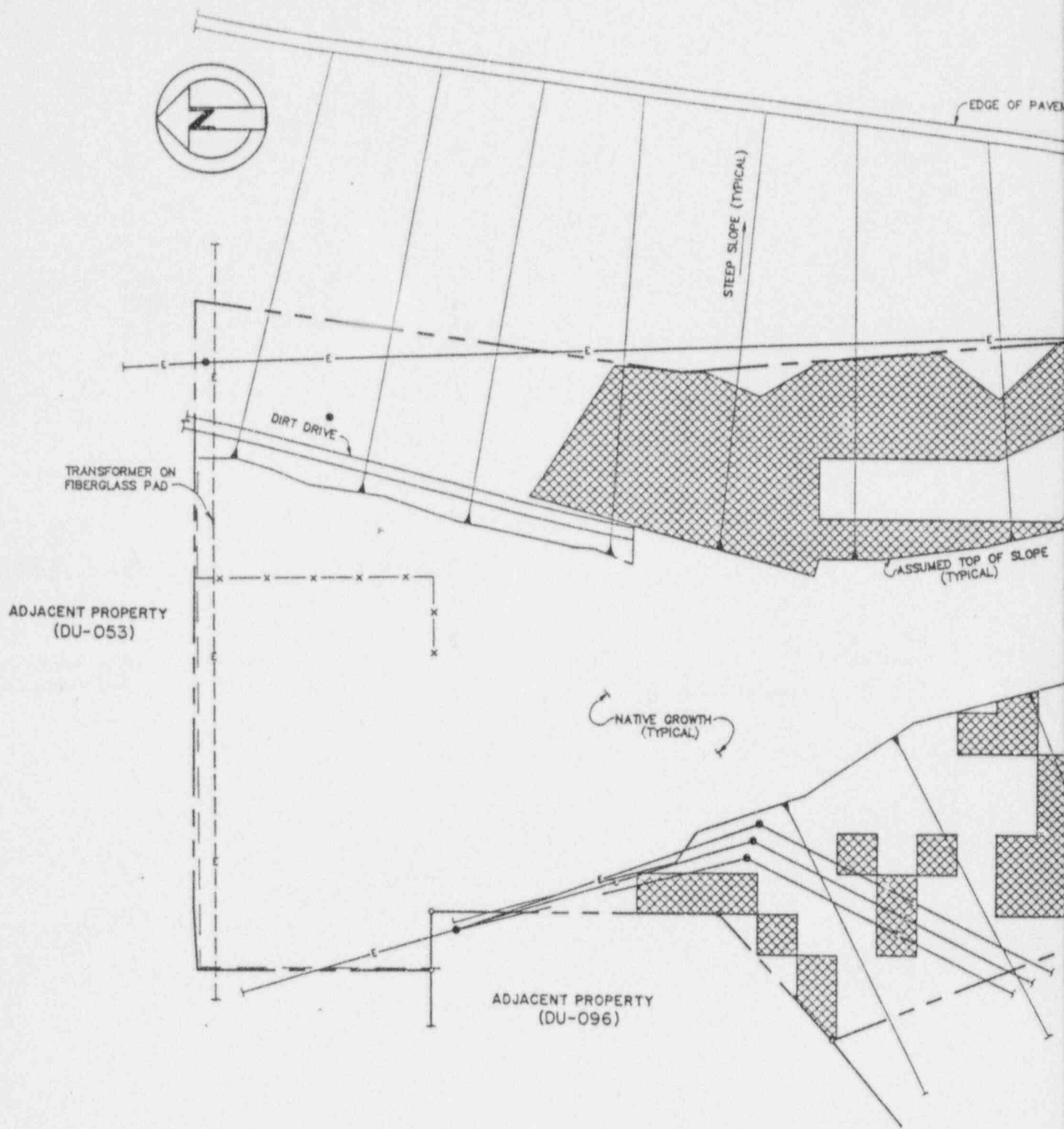
ISSUED FOR CERTIFICATION SURVEY

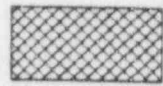
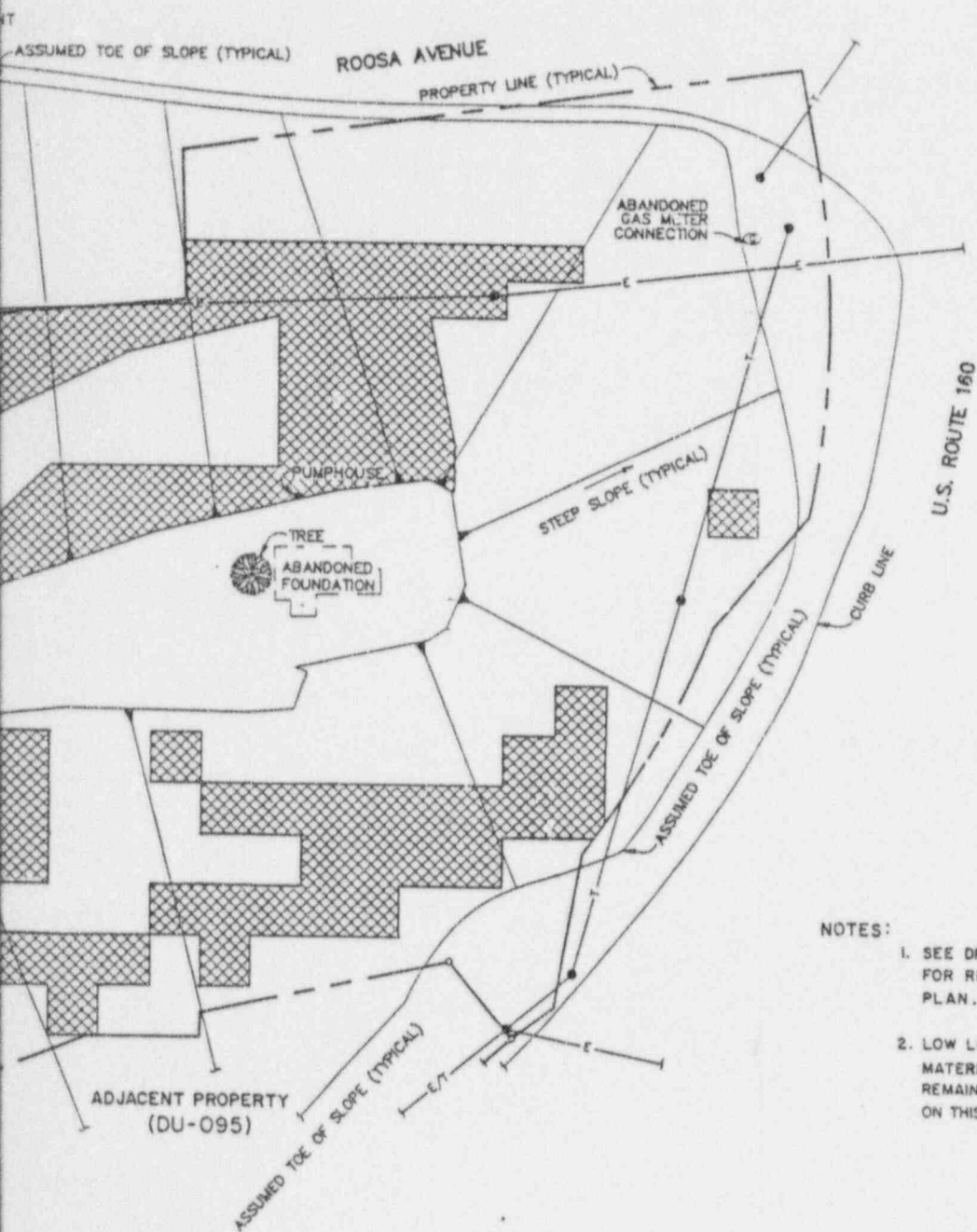
PGC

URANIUM CHECKED APPROVED BY LOR D- PROJ ENG APPROV SOE

REVISIONS

NO. DATE





CONTAMINATED MATERIAL
(SEE NOTE 2)

ANSTEC APERTURE CARD

Also Available on
Aperture Card

NOTES:

1. SEE DRAWING DU-059-030 AND DU-059-031 FOR REMAINING CERTIFICATION RADIOLOGICAL PLAN.
2. LOW LEVEL RADIOACTIVELY CONTAMINATED MATERIAL IN EXCESS OF E.P.A. STANDARDS REMAINS IN PLACE IN THE LOCATIONS INDICATED ON THIS DRAWING.

9707090028-10

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

CERTIFICATION RADIOLOGICAL PLAN SUPPLEMENTAL STANDARDS DU-059

DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED	DRAWN
CHECKED	
REVIEWED	
RECOMMENDED	
APPROVED	

NR

NR

NR



MK-FERGUSON
A MORRISON-KNUDSEN COMPANY

PROJECT NO.	DE-AC04-83AL18796
DRAWING NO.	DU-059-035
REV.	B

DATE	REVISIONS	BY	CHECKED	BY	APPROVED	BY	DATE	APPROVED	BY	DATE
7/20/80	1. RE-USED CONTAMINATED MATERIAL	KH								
10/30/80	ISSUED FOR CERTIFICATION SURVEY	PGC								

APPENDIX A
RADIOLOGICAL SURVEY DATA

2800F

A-1

DU-059

APPENDIX A

RADIOLOGICAL SURVEY DATA

Section I

Initial Survey Data

SURVEY NOTES DU-059

SOIL SAMPLING

Surface and Subsurface

151 soil samples were taken from the areas of the property where the slope precluded borehole exploration. The sampling was done according to a grid system, with a surface sample and a sample from 6"-12" in depth taken at each location. DCS counts of the samples after ingrowth show surficial contamination throughout most of the area, characteristic of windblown type properties. Only one sample, at N50000 E50200, shows contamination 210 pCi/g at 6"-12" depth. No further depth exploration was done here due to the inability to get borehole equipment to this location.

Two samples were taken in the limited crawlspace area that was accessible. Both results were <2.5 pCi/g, indicating that the contamination does not run under the house, which was built prior to the uranium milling operations in Durango.

Five surface soil samples were obtained from an area where boreholes were drilled with surface readings of 2290 to 2774 cpm. The DCS counts after ingrowth ranged from 9.23 to 22.2 pCi/g. Although no surface soil samples were obtained from the central area of the North end of the property, readings up to 2553 cpm are found there. Since this is the area of the property furthest from the tailings piles, this area is also assumed to have windblown contamination.

GAMMA SURVEYS

Exterior

A gamma scan of the property was conducted in the area where boreholes were drilled and logged. Background readings were elevated due to the proximity to the tailings pile. Surface borehole readings of 2200 cpm + indicate windblown contamination of 5 pCi/g or more throughout the boreholed area, generally to 6" in depth. The area around the house had borehole readings 3300 cpm, but not exceeding 12" in depth.

Interior

Gamma scans conducted throughout the interior of the house revealed background +30% readings in most of the ground floor rooms. Readings in the four rooms of the basement were <1700 cpm, and in conjunction with the two clean soil samples taken from the crawlspace, shows no contamination under the house. As the area of deepest contamination appears to be around the house, further gamma scans and working levels in the interior will be conducted once remedial action is completed, and the tailings pile is removed.

BOREHOLE LOG

LOGGING CREW: C. Fieble,
L. Montoya

SHEET 1 OF 4.3 PAGE 1

DATE: 11-2-87

PROPERTY ID: Du-059

INSTRUMENT ID NO. Du-098, Ludlum 2200 w/44-10
35623 w/2 19559

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: _____		HOLE ID: _____		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	1835	SURFACE	1818	SURFACE	2206	SURFACE	2317
0"	1915	0"	2371	0"	2034	0"	1995
6"	2042	6"	28.3	6"	2196	6"	2277
12"	2032	12"	2501	12"	2132	12"	2236
18"	2080	18"	2413	18"	2193	18"	2331
24"	2077	24"	OBST	24"	2161	24"	2429
30"		30"		30"		30"	OBST
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: #1 N 50800 E 50000
#2 N 50800 E 50050
#3 N 50800 E 50150
#4 N 50800 E 50250

BOREHOLE LOG

LOGGING CREW: C. F. 116
L. Montoya

SHEET 2 OF 43 PAGE 2

DATE: 11-2-87

PROPERTY ID: D11-059

INSTRUMENT ID NO. Dur C48 Ludlum 2221 w/44-10
36-23 w/ # 19584

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.

#5		#6		#7		#8	
HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____
TIME LOGGED: _____	SOIL TYPE: _____	TIME LOGGED: _____	SOIL TYPE: _____	TIME LOGGED: _____	SOIL TYPE: _____	TIME LOGGED: _____	SOIL TYPE: _____
DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN
SURFACE	2206	SURFACE	2083	SURFACE	2302	SURFACE	2421
0"	2084	0"	2073	0"	2134	0"	1934
6"	2080	6"	1990	6"	2167	6"	2073
12"	2073	12"	1995	12"	2096	12"	2224
18"	2153	18"	2031	18"	1862	18"	2033
24" 22"	1957	24"	0835	24"	0835	24"	0835
30"		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: #5 N 50800 E 300

#6 N 50700 E 300

#7 N 50700 E 300

#8 N 50700 E 300

BOREHOLE LOG

 LOGGING CREW: C. Fields

 SHEET 3 OF 4.3 PAGE 3
L. Montoya

 DATE: 11-2-87

 PROPERTY ID: D4-051

 INSTRUMENT ID NO. DUR 695 11-2-87 AREA: # 35623 w/ # 19509

- 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

#9		#10		#11		#12	
HOLE ID: _____	HOLE ID: _____	HOLE ID: _____	HOLE ID: _____	HOLE ID: _____	HOLE ID: _____	HOLE ID: _____	HOLE ID: _____
TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____
DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN
SURFACE	1701	SURFACE	1943	SURFACE	2626	SURFACE	2518
0"	2149	0"	2029	0"	2458	0"	2118
6"	2321	6"	2057	6"	2351	6"	2276
12"	2296	12"	2059	12"	2177	12"	2217
18"	2282	18"	2129	18"	1962	18"	2266
24"	2185	24"	2036	24"	1844	24"	2191
30"		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: #9 N 50700 E 50000
#10 N 50700 E 50000
#11 N 50600 E 50050
#12 N 50600 E 50250

BOREHOLE LOG

LOGGING CREW: C. Fields
L. Montoya

SHEET 4 OF 43 PAGE 4

DATE: 11-2-87

PROPERTY ID: DA-059

INSTRUMENT ID NO. DUP 148 Ludlum 2220 6499-11 AREA: _____
#35623 4/19509

- 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.

#13		#14		#15		#16	
HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____
DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN
SURFACE	2590	SURFACE	1621	SURFACE	2378	SURFACE	2412
0"	2328	0"	1763	0"	1911	0"	2328
6"	2300	6"	1688	6"	1995	6"	2285
12"	2046	12"	1930	12"	2023	12"	2200
18"	1791	18"	2067	18"	1924	18"	2199
24"		24" 20"	1848	24"		24" 20"	2191
30"		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: #13 N 50500 C 11 300

#14 N 50500 E 11 300

#15 N 50500 E 11 300

#16 N 50500 E 11 300



BOREHOLE LOG

LOGGING CREW: C. FieldsSHEET 5 OF 7 PAGE 5L. MontoyaDATE: 11-2-87PROPERTY ID: DU-059INSTRUMENT ID NO. Durco 45 Ludlum 2220 w/4440

AREA: _____

#35023 w/#K9559

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.

#17

#18

#19

#20

HOLE ID: _____		HOLE ID: _____		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	1864	SURFACE	2013	SURFACE	1961	SURFACE	2343
0"	2023	0"	2055	0"	1927	0"	2485
6"	2087	6"	2062	6"	2217	6"	3565
12"	2211	12"	2171	12"	2429	12"	3183
18"	2237	18"	2315	18"	2487	18"	2290
24"	2209	24"22"	2184	24"20"	2423	24"20"	2238
30"		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: #17 N 50500 E 50000#18 N 50400 E 50000#19 N 50400 E 50150#20 N 50400 E 50200

BOREHOLE LOG

 LOGGING CREW: C Fields

 SHEET 6 OF 43 PAGE 6
L. Montoya

 DATE: 11-5-87

 PROPERTY ID: D44-659

 INSTRUMENT ID NO. DUR 04B Ludlum 220144416 AREA: _____

35623 WPR #14544

- 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.

#21

#22

#23

#24

HOLE ID: _____	HOLE ID: _____	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	2229	SURFACE	2692	SURFACE	2029	SURFACE	2151
0"	2421	0"	2396	0"	2113	0"	2111
6"	2233	6"	2376	6"	2179	6"	1981
12"	2029	12"	2065	12"	2067	12"	1973
18"	2112	18"	1989	18"	2163	18"	CRST
24"		24"		24"	2390	24"	
30"		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: #21 N 50° 30' E 5000 N 50° 40' E
#22 N 50° 30' E 5000
#23 N 50° 30' E 5000
#24 N 50° 30' E 5000

BOREHOLE LOG

LOGGING CREW: C Fields
L. Montoya

SHEET 7 OF 43 PAGE 7

DATE: 11-2-87

PROPERTY ID: DU-059

INSTRUMENT ID NO. DUR 486 Ludlum 222 w/44-10
3562 / R# 19589

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.

#25		#26		#27		#28	
HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____
DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN
SURFACE	<u>5020</u>	SURFACE	<u>2230</u>	SURFACE	<u>2745</u>	SURFACE	<u>2650</u>
0"	<u>2174</u>	0"	<u>2185</u>	0"	<u>2622</u>	0"	<u>2640</u>
6"	<u>2195</u>	6"	<u>2460</u>	6"	<u>2885</u>	6"	<u>2776</u>
12"	<u>2112</u>	12"	<u>2472</u>	12"	<u>2542</u>	12"	<u>2568</u>
18"	<u>1996</u>	18"	<u>2418</u>	18"	<u>2413</u>	18"	<u>2620</u>
24"	<u>CRST</u>	24"		24"	<u>2372</u>	24"	<u>1899</u>
30"		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: #25 N 5020 E 50300
#26 N 5020 E 50300
#27 N 5020 E 50300
#28 N 5020 E 50300

BOREHOLE LOG

 LOGGING CREW: C. Fields

 SHEET 8 OF 43 PAGE 8
L. McIntyre

 DATE: 11-2-87

 PROPERTY ID: DL-059

 INSTRUMENT ID NO. DUC 648 Ludlum 2220 w/4440 AREA:
#55023 w/19589

- 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.

#29		#30		#31		#32	
HOLE ID: _____	_____	HOLE ID: _____	_____	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	2873	SURFACE	3254	SURFACE	2481	SURFACE	2267
0"	3032	0"	2971	0"	2494	0"	2425
6"	3887	6"	2771	6"	2572	6"	7616
12"	4113	12"	2497	12"	2629	12"	2529
18"	2911	18"	2955	18"	2635	18"	0855
24" 20"	2693	24"	0855	24" 20"	2528	24"	
30"	0855	30"		30"	0855	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: #29 N 5000 E 20300
#30 N 5000 E 50200
#31 N 5000 E 50300
#32 N 5000 E 50300

BOREHOLE LOG

 LOGGING CREW: C Fields

 SHEET 9 OF 43 PAGE 9
L. M. Knudsen

 DATE: 11-7-87

 PROPERTY ID: DU-059

 INSTRUMENT ID NO. DUE 048 Leutrum 2220 w/4400 AREA: _____

#35623 4 #14389

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.

#33
#34
#35
#36

HOLE ID: _____		HOLE ID: _____		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	3036	SURFACE	2419	SURFACE		SURFACE	
0"	2760	0"	2398	0"		0"	
6"	3275	6"	2426	6"		6"	
12"	3491	12"	2522	12"		12"	
18"	2684	18"	2970	18"		18"	
24"	2338	24"	2857	24"		24"	
30"		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: #33 N 5000 E 40300
#34 N 49500 E 50350
#35
#36

BOREHOLE LOG

 LOGGING CREW: C Fields

 SHEET 10 OF 43 PAGE 10
L. Montague

 DATE: 11-5-87

 PROPERTY ID: DU-059

 INSTRUMENT ID NO. DUE 348 35623 WPR# 19589

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.

#37

#38

#39

#40

HOLE ID: _____		HOLE ID: _____		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	4112	SURFACE	4194	SURFACE	4544	SURFACE	4020
0"	4186	0"	4344	0"	4529	0"	3982
6"	3534	6"	3978	6"	3621	6"	4156
12"	3269	12"	3713	12"	2873	12"	3300
18"	2887	18"	2645	18"	2255	18"	2913
24"		24"	2529	24"	2209	24"	2557
30"		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: #37 N 49840 E 50 30'
#38 N 49840 E 50 30'
#39 N 49833 E 50 30'
#40 N 49840 E 50 30'

BOREHOLE LOG

 LOGGING CREW: C. Gelle

 SHEET 11 OF 13 PAGE 11
L. Montoya

 DATE: 11-2-83

 PROPERTY ID: D41-059

 INSTRUMENT ID NO. Dur 48 Ludlum 2230 w/440

AREA: _____

#35625 w/PR #19589

- 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.

#41		#42		#43		#44	
HOLE ID: _____	_____	HOLE ID: _____	_____	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	3461	SURFACE	3755	SURFACE	2840	SURFACE	3439
0"	2964	0"	3437	0"	2669	0"	2804
6"	2518	6"	2891	6"	2417	6"	2386
12"	2360	12"	2407	12"	2469	12"	2179
18"	2012	18"	2459	18"	2293	18"	2152
24"		24" 30"	2461	24"		24"	
30"		30"	CBST	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: #41 N 47887 E 50325
#42 N 44470 E 50310
#43 N 49875 E 50310
#44 N 41875 E 50285

BOREHOLE LOG

LOGGING CREW: C. Fields
L. Montague

SHEET 12 OF 43 PAGE 12

DATE: 11-2-87

PROPERTY ID: DL-659

INSTRUMENT ID NO. Durco Lithium 2220 w/44-10
#35623 WPK#119529

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.

#45		#46		#47		#48	
HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____
DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN
SURFACE	2462	SURFACE	3172	SURFACE	3056	SURFACE	3459
0"	2727	0"	3184	0"	3129	0"	3429
6"	2612	6"	3179	6"	3390	6"	4227
12"	2426	12"	2716	12"	2866	12"	3107
18"	2300	18"	2402	18"	2245	18"	2978
24"20"	2223	24"20"	2234	24"20"	2129	24"	2385
30"		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: #45 N 4969.4 E 50270
#46 N 4969.2 E 50270
#47 N 4969.5 E 50280
#48 N 4969.1 E 50270

BOREHOLE LOG

 LOGGING CREW: C Fields

 SHEET 12 OF 12 PAGE 12
L. M. H. J.

 DATE: 11-2-87

 PROPERTY ID: D11-159

 INSTRUMENT ID NO. D11-159

AREA: _____

#35623 w/ #19589

- 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.

#49
#50
#51
#52

HOLE ID: _____	HOLE ID: _____	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	4324	SURFACE	3491	SURFACE	4133	SURFACE	3644
0"	3818	0"	3493	0"	3969	0"	3584
6"	3914	6"	3363	6"	3616	6"	2637
12"	3003	12"	2861	12"	2762	12"	2573
18"	2674	18"	2153	18"	2097	18"	2556
24"	2447	24"		24"		24"	2373
30"		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: #49 11-9-87 15 C 5000
#50 11-9-87 15 C 5000
#51 11-9-87 15 C 5000
#52 11-9-87 15 C 5000

BOREHOLE LOG

 LOGGING CREW: C. Felt

 SHEET 14 OF 43 PAGE 14
L. Montoya

 DATE: 11-2-87

 PROPERTY ID: DL-059

 INSTRUMENT ID NO. DUR 045 Ludlum 2220 w/444 AREA: _____

#35623 w/FR# 19569

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.

#53		#54		#55		#56	
HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____
DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN
SURFACE	2138	SURFACE	2497	SURFACE	2392	SURFACE	1922
0"	1922	0"	2091	0"	2127	0"	1973
6"	2126	6"	2295	6"	2376	6"	2166
12"	2194	12"	2336	12"	2274	12"	2124
18"	2331	18"	2331	18"	2054	18"	2224
24"		24"		24"		24"	2099
30"		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: #53 N 49913 E 50.94
#54 N 11550 E 50.00
#55 N 56715 E 50.10
#56 N 56720 E 50.150

BOREHOLE LOG

LOGGING CREW: C. Field

SHEET 15 OF 43 PAGE 15
L. Montoya

DATE: 11-2-87

PROPERTY ID: DU-059

INSTRUMENT ID NO. TRK (44) Aulium 2220 60/49-10 AREA: _____

#35623 w/ # 19549

- 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.

#57
#58
#59
#60

HOLE ID: _____		HOLE ID: _____		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	2123	SURFACE	2002	SURFACE	2138	SURFACE	2643
0"	2276	0"	2069	0"	2150	0"	2416
6"	2673	6"	2171	6"	2286	6"	2656
12"	2578	12"	2256	12"	2329	12"	2443
18"	2420	18"	2746	18"	2235	18"	2239
24" 20"	2313	24"	2149	24"		24"	2239
30"		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 #57 N 14-700 L-S-100'S
#58 N 14-700 L-S-100'S
#59 N 14-700 L-S-100'S
#60 N 14-700 L-S-100'S

BOREHOLE LOG

 LOGGING CREW: C. Fields

 SHEET 16 OF 43 PAGE 16
L. Montague

 DATE: 11-2-82

 PROPERTY ID: DU-059

 INSTRUMENT ID NO. DUR 644 Lithium 2206 W/44-10

AREA: _____

35623 w/ # 19584

- 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.

#1		#2		#3		#4	
HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____	HOLE ID: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____
DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN	DEPTH	COUNTS/1MIN
SURFACE	2100	SURFACE	2216	SURFACE	1894	SURFACE	1470
0"	2309	0"	2367	0"	1888	0"	2052
6"	2135	6"	2379	6"	1891	6"	2079
12"	2012	12"	2235	12"	2029	12"	2153
18"	2172	18"	2169	18"	2010	18"	2126
24"	2190	24"20"	2169	24"20"	2101	24"20"	2065
30"		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: #1 N 201.5 E 2000
#2 N 50.7 E 5000
#3 N 204.7 E 5000
#4 Y 200 E 5000

BOREHOLE LOG

 LOGGING CREW: C. F. Ellis

 SHEET 17 OF 47 PAGE 17
L. Monahan

 DATE: 11-2-87

 PROPERTY ID: D11-659

 INSTRUMENT ID NO. D112 048 Lullum 2220 W/44-10
#55623 W/IR#19589

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: _____	HOLE ID: _____	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	2638	SURFACE	1929	SURFACE	2447	SURFACE	2551
0"	2430	0"	2109	0"	2309	0"	2369
6"	2128	6"	2225	6"	2320	6"	2512
12"	2130	12"	2415	12"	2178	12"	2268
18"	2125	18"	2523	18"	2180	18"	
24"20"	2089	24"20"	2016	24"20"	2156	24"	
30"		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: #65 N 5000' 0" 0000
#66 N 5000' 0" 0000
#67 N 5000' 0" 0000
#68 N 5000' 0" 0000

BOREHOLE LOG

LOGGING CREW: C. Ellis

SHEET 18 OF 43 PAGE 18
L. Montoya

DATE: 11-2-87

PROPERTY ID: DLI-059

INSTRUMENT ID NO. Dup 2048, Lindholm 2220 1/44-10 AREA: _____

#356234/PR #19509

- 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.

#69
#70
#71
#72

HOLE ID: _____		HOLE ID: _____		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	1141	SURFACE	2813	SURFACE	2654	SURFACE	2677
0"	1761	0"	2488	0"	2346	0"	1459
6"	1852	6"	2695	6"	2519	6"	1772
12"	1991	12"	2279	12"	2376	12"	1730
18"	1978	18"	2291	18"	2285	18"	1660
24"=20"	1997	24"=20"	2273	24"	2473	24"	
30"		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"		90"		96"	

REMARKS: #69 N 50950 E 50070
#71 N 50950 E 50070
#72 N 50950 E 50070
#72 N 50950 E 50070

BOREHOLE LOG

LOGGING CREW: C. Field
L. J. Montoya

SHEET 17 OF 43 PAGE 17

DATE: 11-2-87

PROPERTY ID: DL-059

INSTRUMENT ID NO. DNR 644 Scintum 2220499-1 AREA: _____

30623 WAB # K1589

- 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.

#73

#74

#75

#76

HOLE ID: _____		HOLE ID: _____		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	2380	SURFACE	2863	SURFACE	3224	SURFACE	2162
0"	2302	0"	2579	0"	2886	0"	2118
6"	2620	6"	2857	6"	2533	6"	1936
12"	2351	12"	2863	12"	2149	12"	1845
18"	2116	18"	2311	18"	2075	18"	1778
24"	2193	24"	2209	24" 20"	2052	24" 20"	1798
30"		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 #73 N 5' 0" E 130

#74 N 5' 0" E 130

#75 N 5' 2" E 130

#76 N 5' 2" E 170

BOREHOLE LOG

 LOGGING CREW: C Fields

 SHEET 20 OF 43 PAGE 20
L. Montoya

 DATE: 11-2-87

 PROPERTY ID: DU-057

 INSTRUMENT ID NO. DUR 095. Hydram 5550 #49-16 AREA: _____
35623 WIR #19584

- 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 - USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

#77

#78

#79

#80

HOLE ID: _____		HOLE ID: _____		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	2141	SURFACE	2766	SURFACE	2774	SURFACE	2404
0"	2206	0"	2961	0"	2207	0"	2237
6"	2063	6"	2563	6"	2416	6"	1403
12"	2097	12"	2262	12"	2363	12"	2053
18"	2112	18"	2060	18"	2096	18"	2075
24"		24"		24" 30"	2046	24"	
30"		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: #77 N 50° 20' E 120' 11"
#78 N 50° 20' E 120' 11"
#79 N 50° 20' E 120' 11"
#80 N 50° 20' E 120' 11"
N 50° 20' E

BOREHOLE LOG

 LOGGING CREW: C Fields

 SHEET 2 OF 2 PAGE 2
L. Montoya

 DATE: 11-2-87

 PROPERTY ID: DL-009

 INSTRUMENT ID NO. DIG 098 Ludlum 3550 12/44-0

AREA: _____

30623 WTR# 14584

- 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.

#41
#42
#43
#44

HOLE ID: _____	HOLE ID: _____	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
SURFACE	1762	SURFACE	2379
0"	1770	0"	2264
6"	2308	6"	2450
12"	2410	12"	2370
18"	2407	18"	2210
24"	2400	24"	2305
30"		30"	2192
36"		36"	
42"		42"	
48"		48"	
54"		54"	
60"		60"	
66"		66"	
72"		72"	
78"		78"	
84"		84"	
90"		90"	
96"		96"	

 REMARKS: #41 V 50850 E 50150
#42 V 50850 E 50175
#43 V 50850 E 50150
#44 V 50850 E 50150

BOREHOLE LOG

LOGGING CREW: C Fields
L. Montoya

SHEET 2.2 OF 4.2 PAGE 2.2

DATE: 11-2-87

PROPERTY ID: DU-659

INSTRUMENT ID NO. DUP 048 Ludlum 2270 w/4-10 AREA:
35623 WPR # 14924

- 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: _____		HOLE ID: _____		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	1584	SURFACE	2018	SURFACE	2277	SURFACE	2092
0"	1661	0"	2094	0"	2169	0"	2049
6"	1954	6"	2279	6"	2492	6"	2437
12"	2078	12"	2197	12"	2472	12"	2450
18"	2243	18"	2137	18"	2219	18"	2372
24"	2139	24"	1997	24"	2353	24"	2317
30"		30"		30"	2393	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: #85 N 50855 E 50150
#86 N 50850 E 50145
#87 N 50800 E 50155
#88 N 50750 E 50170



BOREHOLE LOG

LOGGING CREW: C. Fields

SHEET 23 OF 2 PAGE 23

L. Montoya

DATE: 11-2-87

PROPERTY ID: 04-059

INSTRUMENT ID NO. Duiz 44 hudson 2226 6/44/10 AREA: _____

35623 w/PR# 19589

- 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.

#89

#90

#91

#92

HOLE ID: _____		HOLE ID: _____		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	2259	SURFACE	2448	SURFACE	2553	SURFACE	1957
0"	2129	0"	2250	0"	2172	0"	1751
6"	2469	6"	2492	6"	2451	6"	1748
12"	2430	12"	2250	12"	2341	12"	1935
18"	2365	18"	2690	18"	2251	18"	1992
24"	2216	24"	2094	24"	2129	24"	1933
30"		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: #89 1 50750 E 50750

#90 N 50800 E 50800

#91 N 50800 E 50800

#92 N 50800 E 50800

SOIL SAMPLE ANALYSIS PROPERTY ID.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day * Final Count	COM.
DU-SS-8894	059	N 50200 E 50000	< 15cm	5.09	
DU-SS-8895	"	N 50600 E 50450	< 15cm	3.51	
DU-SS-8896	"	N 49700 E 50400	< 15cm	24.6	
DU-SS-8897	"	N 50800 E 50400	< 15cm	1.77	
DU-SS-8898	"	N 49900 E 50100	< 15cm	6.20	
DU-SS-8899	"	N 49600 E 50400	< 15cm	3.51	
DU-SS-8900	"	N 49700 E 50300	> 15cm	2.40	6" to 12"
DU-SS-8901	"	N 50700 E 50350	< 15cm	1.37	
DU-SS-8902	"	N 49600 E 50550	< 15cm	4.55	
DU-SS-8903	"	N 50100 E 50200	< 15cm	7.51	
DU-SS-8904	"	N 49600 E 50550	> 15cm	2.58	6" to 12"
DU-SS-8905	"	N 49600 E 50450	> 15cm	3.05	6" to 12"
DU-SS-8906	"	N 49900 E 50100	< 15cm	6.16	
DU-SS-8907	"	N 49700 E 50250	< 15cm	2.31	
DU-SS-8908	"	N 50000 E 50350	< 15cm	11.8	
DU-SS-8909	"	N 49600 E 50400	> 15cm	3.79	6" to 12"
DU-SS-8910	"	N 49600 E 50550	> 15cm	4.75	6" to 12"
DU-SS-8911	"	N 49700 E 50400	> 15cm	2.80	6" to 12"

SOIL SAMPLE ANALYSIS PROPERTY ID.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day* Final Count	COMM.
DU-SS-8876	059	N 50300 E 50050	<15cm	13.1	
DU-SS-8877	"	N 49800 E 50350	>15cm	2.41	6" to 12"
DU-SS-8878	"	N 49700 E 50450	<15cm	6.78	
DU-SS-8879	"	N 50500 E 50350	>15cm	5.04	6" to 12"
DU-SS-8880	"	N 49800 E 50400	>15cm	0.820	6" to 12"
DU-SS-8881	"	N 50800 E 50350	>15cm	1.43	6" to 12"
DU-SS-8882	"	N 50400 E 50400	>15cm	2.57	6" to 12"
DU-SS-8883	"	N 49700 E 50300	<15cm	1.72	
DU-SS-8884	"	N 49800 E 50200	>15cm	6.68	6" to 12"
DU-SS-8885	++	N 50600 E 50400	<15cm	2.72	
DU-SS-8886	"	N 50600 E 50400	>15cm	1.54	6" to 12"
DU-SS-8887	"	N 49700 E 50500	>15cm	1.50	6" to 12"
DU-SS-8888	"	N 49700 E 50450	>15cm	1.54	6" to 12"
DU-SS-8889	"	N 50800 E 50450	>15cm	1.68	6" to 12"
DU-SS-8890	"	N 49600 E 50550	>15cm	1.91	6" to 12"
DU-SS-8891	"	N 50700 E 50900	>15cm	5.56	6" to 12"
DU-SS-8892	"	N 49800 E 50100	<15cm	1.22	
DU-SS-8893	"	N 50000 E 50200	>15cm	30.2	6" to 12"

SOIL SAMPLE ANALYSIS PROPERTY II.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day * Final Count	COMPL.
DU-SS-8858	059	N 50500 E 50400	<15cm	5.67	
DU-SS-8859	"	N 50500 E 50350	<15cm	6.95	
DU-SS-8860	"	N 50600 E 50350	>15cm	1.15	6" to 12"
DU-SS-8861	"	N 49900 E 50100	>15cm	2.38	6" to 12"
DU-SS-8862	"	N 50000 E 50500	<15cm	7.72	
DU-SS-8863	"	N 50400 E 50450	>15cm	2.44	6" to 12"
DU-SS-8864	"	N 49800 E 50450	<15cm	1.46	
DU-SS-8865	"	N 49700 E 50350	<15cm	2.54	
DU-SS-8866	"	N 50400 E 50450	<15cm	4.27	
DU-SS-8867	"	N 50100 E 50150	<15cm	0.880	
DU-SS-8868	"	N 50200 E 50450	>15cm	1.58	6" to 12"
DU-SS-8869	"	N 50200 E 50350	<15cm	2.14	
DU-SS-8870	"	N 49600 E 50450	<15cm	2.20	
DU-SS-8871	"	N 50000 E 50400	<15cm	3.46	
DU-SS-8872	"	N 50400 E 50400	<15cm	6.56	
DU-SS-8873	"	N 50400 E 50350	>15cm	2.45	6" to 12"
DU-SS-8874	"	N 50300 E 50400	>15cm	2.05	6" to 12"
DU-SS-8875	"	N 50300 E 50350	>15cm	3.37	6" to 12"

SOIL SAMPLE ANALYSIS PROPERTY ID.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day * Final Count	COMM.
DU-SS-8767	-059	N 49900 E 50250	>15cm	4.64	6" to 12"
DU-SS-8768	"	N 50000 E 50100	<15cm	4.73	
DU-SS-8769	"	N 50100 E 50200	>15cm	3.67	6" to 12"
DU-SS-8770	"	N 50800 E 50450	<15cm	3.57	
DU-SS-8771	"	N 49900 E 50100	>15cm	2.26	6" to 12"
DU-SS-8772	"	N 50100 E 50100	>15cm	1.79	6" to 12"
DU-SS-8773	"	N 49900 E 50500	>15cm	1.44	6" to 12"
DU-SS-8774	"	N 50900 E 50050	<15cm	2.11	
DU-SS-8775	"	N 50300 E 49950	<15cm	1.26	
DU-SS-8776	"	N 50400 E 50050	>15cm	2.93	6" to 12"
DU-SS-8777	"	N 49900 E 50050	>15cm	1.13	6" to 12"
DU-SS-8778	"	N 49800 E 50150	<15cm	6.15	
DU-SS-8779	"	N 50800 E 50400	>15cm	1.92	6" to 12"
DU-SS-8780	"	N 49800 E 50500	>15cm	4.24	6" to 12"
DU-SS-8781	"	N 49800 E 50050	<15cm	8.27	
DU-SS-8782	"	N 50200 E 50450	<15cm	1.35	
DU-SS-8783	"	N 50200 E 50100	<15cm	3.65	
DU-SS-8784	"	N 50200 E 50000	>15cm	2.09	6" to 12"

SOIL SAMPLE ANALYSIS PROPERTY ID.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day Final Count *	COMMENTS
DU-SS-8785	-059	N 49800 E 50450	>15cm	1.71	6" to 12"
DU-SS-8786	"	N 49800 E 50200	<15cm	3.01	
DU-SS-8787	"	N 50800 E 50350	<15cm	4.47	
DU-SS-8788	"	N 50700 E 50400	<15cm	4.42	
DU-SS-8789	"	N 49700 E 50450	<15cm	1.03	
DU-SS-8790	"	N 50400 E 50080	>15cm	11.4	6" to 12"
DU-SS-8791	"	N 49900 E 50050	>15cm	1.84	6" to 12"
DU-SS-8792	"	N 50100 E 50000	>15cm	2.19	6" to 12"
DU-SS-8793	"	N 50300 E 50000	>15cm	2.17	6" to 12"
DU-SS-8794	"	N 50000 E 50200	<15cm	15.1	
DU-SS-8795	"	N 49800 E 50150	>15cm	1.62	6" to 12"
DU-SS-8796	"	N 50700 E 50450	<15cm	4.94	
DU-SS-8797	"	N 50300 E 49950	>15cm	3.55	6" to 12"
DU-SS-8798	"	N 50000 E 50450	>15cm	1.45	6" to 12"
DU-SS-8799	"	N 50200 E 50150	<15cm	9.07	
DU-SS-8800	"	N 50000 E 50150	>15cm	1.42	6" to 12"
DU-SS-8801	"	N 49800 E 50250	>15cm	4.71	6" to 12"
DU-SS-8802		N 50000 E 50000	<15cm	2.87	

SOIL SAMPLE ANALYSIS PROPERTY ID.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day * Final Count	COM.
DV-SS-8803	059	N 50200 E 50050	> 15cm	1.73	6" to 12"
DV-SS-8804	"	N 50100 E 50050	< 15cm	2.07	
DV-SS-8805	"	N 49900 E 50250	< 15cm	5.73	
DV-SS-8806	"	N 49800 E 50250	> 15cm	4.40	6" to 12"
DV-SS-8807	"	N 50700 E 50450	> 15cm	2.42	6" to 12"
DV-SS-8808	"	N 50300 E 50000	< 15cm	4.78	
DV-SS-8809	"	N 50000 E 50350	> 15cm	5.92	6" to 12"
DV-SS-8810	"	N 50200 E 50050	< 15cm	3.99	
DV-SS-8811	"	N 50100 E 50150	> 15cm	1.14	6" to 12"
DV-SS-8812	"	N 50100 E 50050	> 15cm	1.91	6" to 12"
DV-SS-8813	"	N 50400 E 50350	< 15cm	7.84	
DV-SS-8814	"	N 50100 E 50400	< 15cm	1.22	
DV-SS-8815	"	N 50000 E 50150	< 15cm	1.72	
DV-SS-8816	"	N 50200 E 50400	< 15cm	7.47	
DV-SS-8817	"	N 49800 E 50100	> 15cm	1.608	6" to 12"
DV-SS-8818	"	N 50300 E 50050	> 15cm	4.35	6" to 12"
DV-SS-8819	"	N 49900 E 50400	> 15cm	4.92	6" to 12"
DV-SS-8820	"	N 50100 E 50450	> 15cm	1.06	6" to 12"

SOIL SAMPLE ANALYSIS PROPERTY ID.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day* Final Count	COMM.
Du-SS-8821	059	N 49800 E 50300	<15cm	3.24	
Du-SS-8822	"	N 49700 E 50500	<15cm	0.973	
Du-SS-8823	"	N 49800 E 50350	<15cm	4.37	
Du-SS-8824	"	N 50400 E 50000	<15cm	9.55	
Du-SS-8825	"	N 49900 E 50150	>15cm	1.23	6" to 12"
Du-SS-8826	"	N 50200 E 50350	>15cm	1.27	6" to 12"
Du-SS-8827	"	N 50000 E 50100	>15cm	1.20	6" to 12"
Du-SS-8828	"	N 50600 E 50350	<15cm	1.93	
Du-SS-8829	"	N 50300 E 50400	<15cm	7.32	
Du-SS-8830	"	N 49900 E 50150	<15cm	2.96	
Du-SS-8831	"	N 50100 E 50450	<15cm	5.16	
Du-SS-8832	"	N 49900 E 50200	>15cm	1.71	6" to 12"
Du-SS-8833	"	N 50000 E 50000	>15cm	2.05	6" to 12"
Du-SS-8834	"	N 50000 E 50400	>15cm	1.37	6" to 12"
Du-SS-8835	"	N 50100 E 50000	<15cm	2.46	
Du-SS-8836	"	N 50200 E 50100	>15cm	2.13	6" to 12"
Du-SS-8837	"	N 49900 E 50200	<15cm	2.56	
Du-SS-8838	"	N 50000 E 50050	<15cm	4.37	

SOIL SAMPLE ANALYSIS PROPERTY II.: DU-059

PURPOSE: RSA

SAMPLE ID. #	AREA	COORDINATES	DEPTH	20-Day* Final Count	COM.
Du-SS-8839	059	N 49800 E 50050	>15cm	7.58	6" to 12"
Du-SS-8840	"	N 49100 E 50250	>15cm	1.20	6" to 12"
Du-SS-8841	"	N 50700 E 50350	>15cm	0.869	6" to 12"
Du-SS-8842	"	N 49700 E 50350	>15cm	2.13	6" to 12"
Du-SS-8843	"	N 49800 E 50500	<15cm	6.99	
Du-SS-8844	"	N 50300 E 50450	>15cm	3.26	6" to 12"
Du-SS-8845	"	N 49800 E 50300	>15cm	1.28	6" to 12"
Du-SS-8846	"	N 50200 E 50400	>15cm	4.45	6" to 12"
Du-SS-8847	"	N 50300 E 50450	<15cm	6.71	
Du-SS-8848	"	N 49800 E 50400	<15cm	2.13	
Du-SS-8849	"	N 50300 E 50100	<15cm	2.01	
Du-SS-8850	"	N 50300 E 50350	<15cm	3.28	
Du-SS-8851	"	N 50100 E 50100	<15cm	2.81	
Du-SS-8852	"	N 50000 E 50450	<15cm	1.72	
Du-SS-8853	"	N 49900 E 50450	>15cm	3.63	6" to 12"
Du-SS-8854	"	N 49700 E 50550	>15cm	0.946	6" to 12"
Du-SS-8855	"	N 49900 E 50400	<15cm	9.36	
Du-SS-8856	"	N 50500 E 50400	>15cm	2.37	6" to 12"

SOIL SAMPLE ANALYSIS PROPERTY ID: DU-059

PURPOSE: RSA

SAMPLE ID	AREA	COORDINATES	DEPTH	INITIAL COUNT (PCL/g)	20-Day FINAL (PCL/g)	COM.
DU-SS-8912	-059	N 49900 E 50500	<15cm	*	5.36	
DU-SS-8913	-059	N 50300 E 50100	>15cm	*	2.39	6" to 12"
DU-SS-8914	-059	N 50600 E 50450	>15cm	*	3.55	6" to 12"
DU-SS-8915	-059	N 50000 E 50500	>15cm	*	3.90	6" to 12"
DU-SS-8916	-059	N 49700 E 50550	<15cm	*	2.57	
DU-SS-8917	-059	N 50000 E 50050	>15cm	*	2.61	6" to 12"
DU-SS-8918	-059	N 50200 E 50150	>15cm	*	5.59	6" to 12"
DU-SS-8613	-059	Crawlspace under the house	<15cm	1.40	1.28	Rm. 23
DU-SS-8618	-059	Crawl space under the house	<15cm	1.21	0.582	Rm. 23
DU-SS-8614	-059	N 50325 E 50300	<15cm	9.48	19.0	
DU-SS-8615	-059	N 50400 E 50325	<15cm	10.7	22.2	
DU-SS-8616	-059	N 50300 E 50275	<15cm	8.94	20.5	
DU-SS-8617	-059	N 50225 E 50275	<15cm	5.66	11.2	
DU-SS- 8618 8619	-059	N 50550 E 50225	<15cm	4.84	9.23	

* initial count

INTERIOR SURVEY DATA LOG/EXPOSURE

SURVEY CREW CRAIG FIELDS

SHEET 37 OF 417 PAGE 3.1

LOUIS MONTOYA

DATE _____

PROPERTY ID # DU-059

PROJECT UMTRA

ESP-1

EXPOSURE DATA

SURVEY METHOD: ☐ 2220

INST. ID # 1665 W/ PR 42

☐ PIC

INST. ID# _____ CALIBRATION DATE _____

ROOM: #1		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
S. WALL	2300	
W. WALL	2000	
FLOOR	2000	
CEILING	2400	

ROOM: #2		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
S. WALL	2000	
E. WALL	1900	
FLOOR	1900	
CEILING	2500	

ROOM: #3		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
W. WALL	2000	
N. WALL	2100	
FLOOR	1900	
CEILING	2300	

ROOM: #4		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	2150	
E. WALL	2000	
FLOOR	1900	
CEILING	2100	

ROOM: #5		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
S. WALL	2100	
W. WALL	2000	
N. WALL	1800	
FLOOR	2000	
CEILING	2100	

ROOM: #6		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
S. WALL	2500	
E. WALL	2700	
FLOOR	1900	
CEILING	2500	

COMMENTS: _____

INTERIOR SURVEY DATA LOG/EXPOSURE

SURVEY CREW CRAIG FIELDS

SHEET 11 OF 43 PAGE 51
LOUIS MONTEYA

DATE _____

PROPERTY ID # DU-059

PROJECT UMTRA

ESP-1

EXPOSURE DATA

SURVEY METHOD: ☐ 2220

INST. ID # 1665 W/ PR 42
☐ PIC

INST. ID# _____

CALIBRATION DATE _____

ROOM: # 7		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1900	
E. WALL	2100	
W. WALL	1800	
FLOOR	1900	
CEILING	2400	

ROOM: # 8		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
S. WALL	2000	
W. WALL	2100	
FLOOR	1900	
CEILING	2200	

ROOM: # 9		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
S. WALL	2000	
E. WALL	1800	
FLOOR	1900	
CEILING	2200	

ROOM: # 10		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1700	
W. WALL	2000	
FLOOR	1900	
CEILING	2100	

ROOM: # 11		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1700	
E. WALL	1900	
FLOOR	1900	
CEILING	2100	

ROOM: # 12		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1700	
E. WALL	2300	
W. WALL	1600	
S. WALL	2000	
FLOOR	1800	
CEILING	2200	

COMMENTS: _____

INTERIOR SURVEY DATA LOG/EXPOSURE

SURVEY CREW CRAIG FIELDS

SHEET 25 OF 43 PAGE 1

LOUIS MONTOYA

DATE _____

PROPERTY ID # DU-059

PROJECT UMTRA

ESP-1

EXPOSURE DATA

SURVEY METHOD: C 2220

INST. ID # 1665 W/ PR 42

☐ PIC

INST. ID# _____

CALIBRATION DATE _____

ROOM: #13		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1300	
E. WALL	1400	
W. WALL	1600	
FLOOR	1300	
CEILING	1700	

ROOM: #14		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
S. WALL	1900	
E. WALL	2200	
FLOOR	1600	
CEILING	2200	

ROOM: #15		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1800	
E. WALL	2300	
W. WALL	1600	
FLOOR	1900	
CEILING	2200	

ROOM: #16		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	2000	
W. WALL	2000	
S. WALL	2000	
FLOOR	1600	
CEILING	2100	

ROOM: #17		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1650	
E. WALL	1500	
W. WALL	2000	
S. WALL	1700	
FLOOR	1400	
CEILING	2100	

ROOM: #18		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1300	
E. WALL	1100	
S. WALL	1500	
FLOOR	1300	
CEILING	1500	

COMMENTS: _____

INTERIOR SURVEY DATA LOG/EXPOSURE

SURVEY CREW CRAIG FIELDS

SHEET 76 OF 43 PAGE 16

LOUIS MONTOYA

DATE _____

PROPERTY ID # DU-059

PROJECT UMTRA

ESP-1
SURVEY METHOD: ☐ 2220

EXPOSURE DATA
INST. ID # 1665 W/ F. 12

☐ PIC INST. ID# _____ CALIBRATION DATE _____

ROOM: #19		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
E. WALL	1600	
W. WALL	1600	
S. WALL	1500	
FLOOR	1500	
CEILING	1800	

ROOM: #20		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1800	
E. WALL	1500	
W. WALL	2000	
FLOOR	1900	
CEILING	1700	

ROOM: #21		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1500	
S. WALL	1100	
FLOOR	1500	
CEILING	1400	

ROOM: RM. 22		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1100	
E. WALL	1600	
S. WALL	1300	
FLOOR	1300	
CEILING	1400	

ROOM: #23		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. WALL	1700	
E. WALL	1600	
W. WALL	1100	
FLOOR	1600	
CEILING	1400	

ROOM: #24		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
W. WALL	1600	
S. WALL	1600	
FLOOR	1550	
CEILING	1300	

COMMENTS: _____

INTERIOR SURVEY DATA LOG-EXPOSURE

SURVEY CREW CRAIG FIELDS

SHEET 27 OF 42 PAGE 27

LOUIS MONTOYA

DATE _____

PROPERTY ID # DU-059

PROJECT UMTRA

ESP-1

EXPOSURE DATA

SURVEY METHOD: C 2220

INST. ID # 1665 W/ PR 42

☐ FIC

INST. ID# _____

CALIBRATION DATE _____

ROOM: #23 (TRANSPACED)		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N. END	1400	
E. END	1250	
W. END	1100	
S. END	1600	
FLOOR	1100	
CEILING	1200	

ROOM:		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h

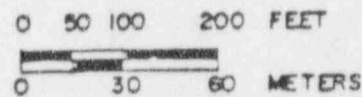
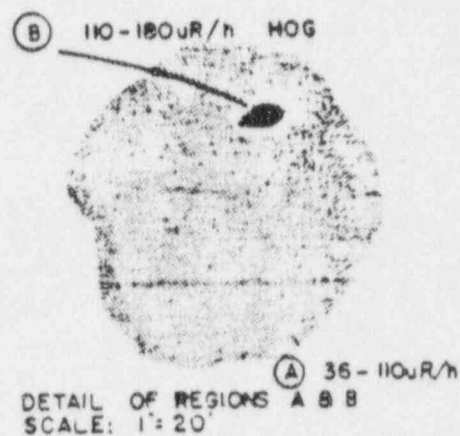
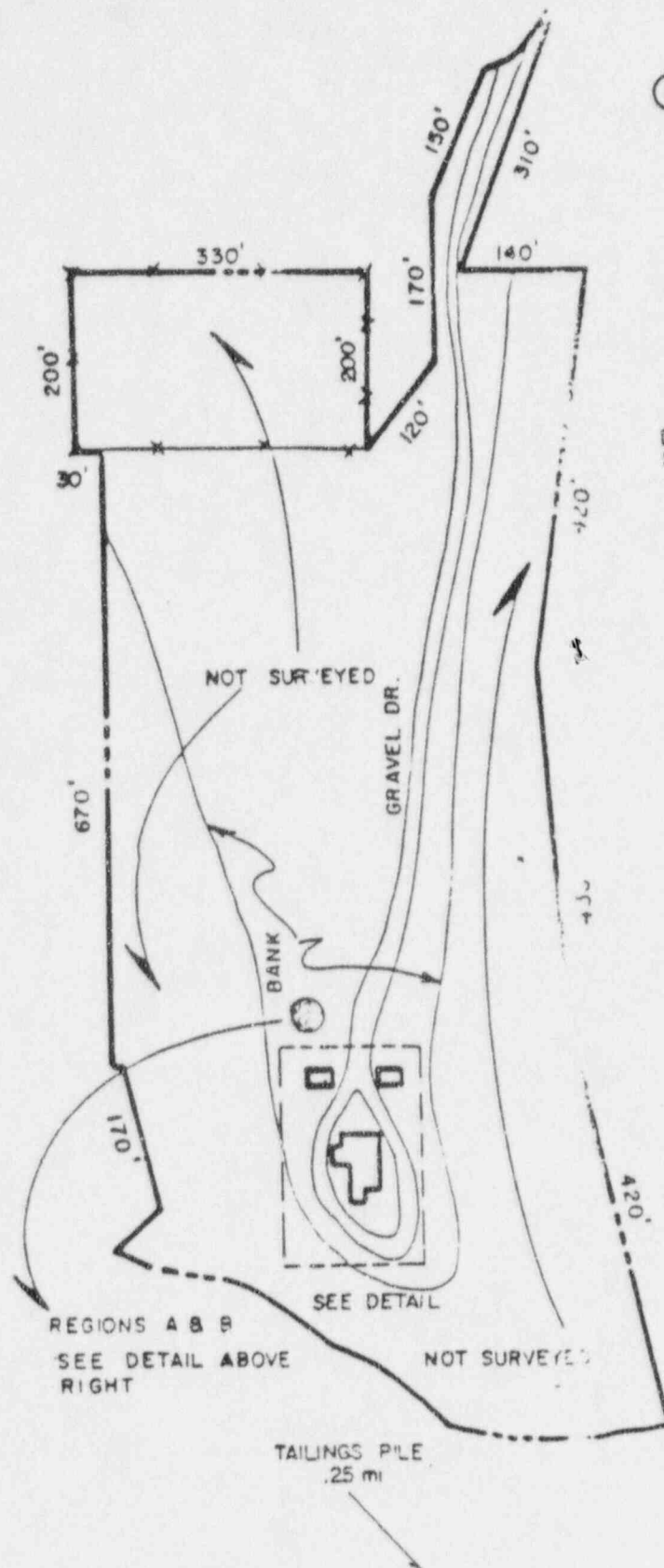
ROOM:		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h

ROOM:		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h

ROOM:		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h

ROOM:		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h

COMMENTS: _____



DU00059

NW CORNER W. ROOSA
& US HIGHWAY 160

SHEET 1 OF 2

Figure 1a. Location DU00059 - Northwest Corner of West Roosa and Hwy 160, Durango, Colorado (outdoors - sheet 1 of 2)

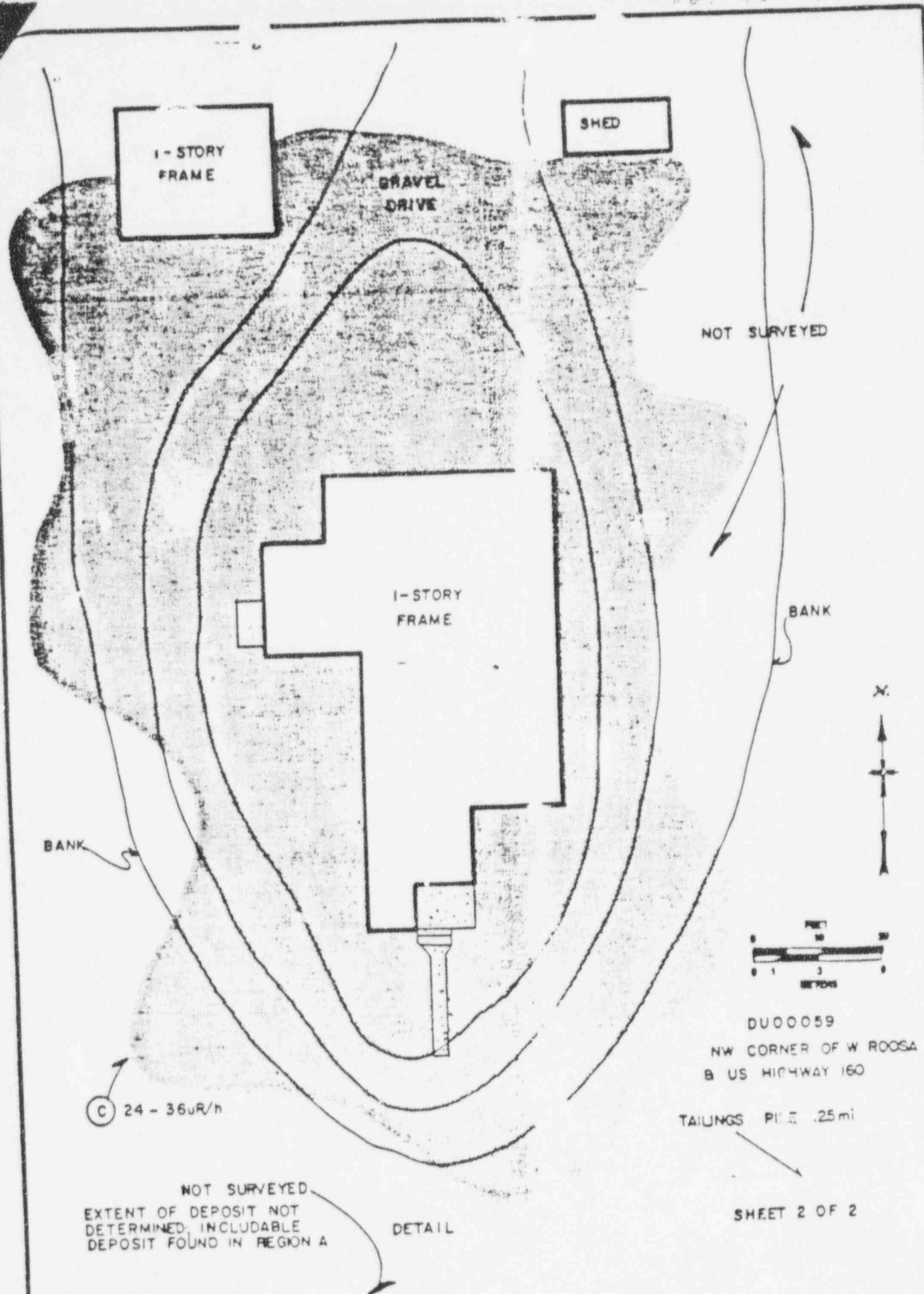
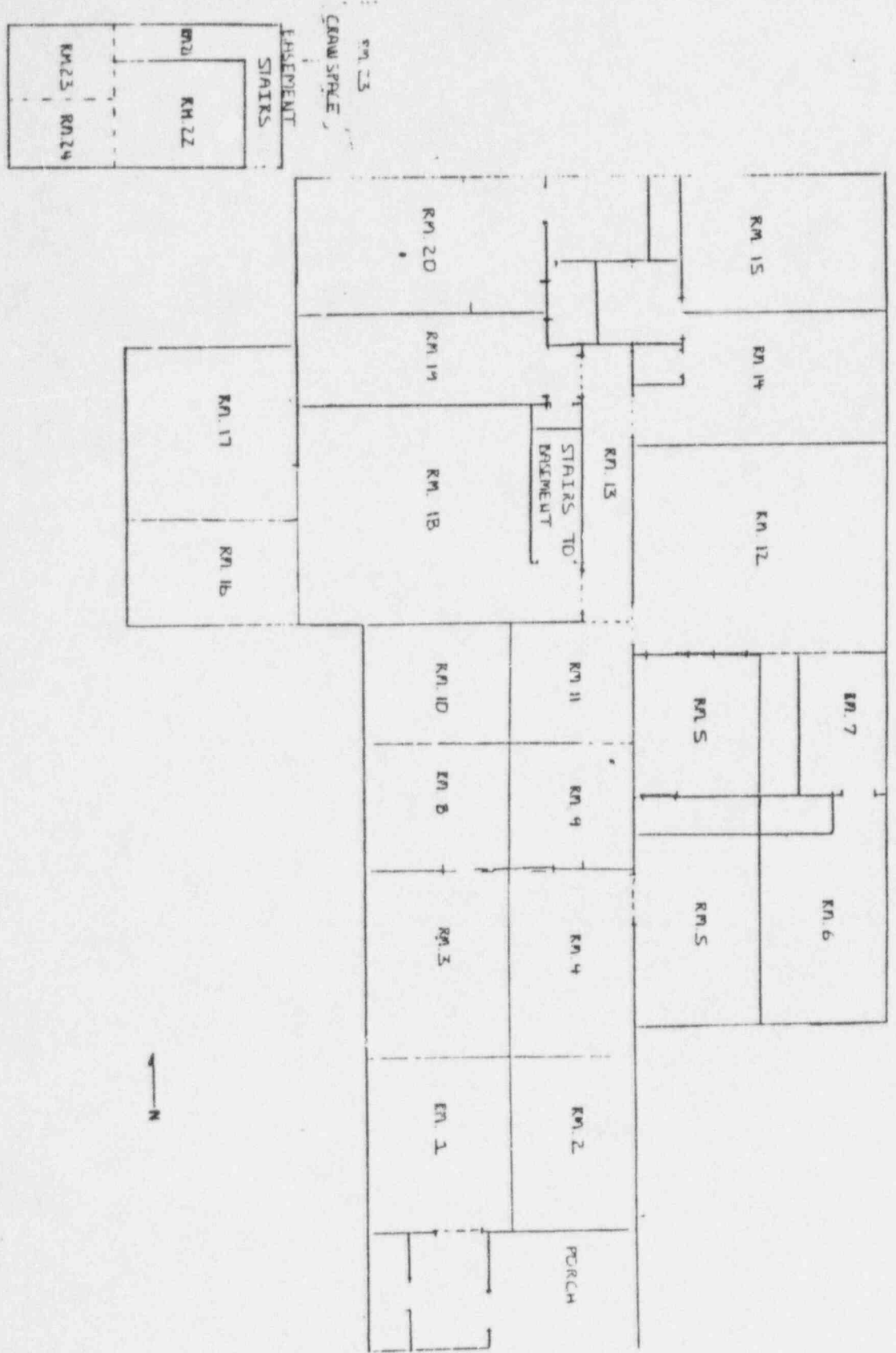


Figure 1a. Location DU00059 - Northwest
Durango, Colorado (outdoors - sheet 2 of 2)

Corner of West Roosa and Hwy 160,

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DU-059
HOUSE



DU-059

APPENDIX A

RADIOLOGICAL SURVEY DATA

Section II

Field Verification Data

SOIL VERIFICATION DATA

	Coordinates	Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
				Initial	Final	
1	N 50860 N 50860 E 49950 N 49970 N 50840 N 50840 N 49970 N 49950	D-SV-10439	6"	2.45	3.97	
2	N 50860 N 50860 E 49970 E 50000 N 50840 N 50840 E 50000 E 49970	D-SV-10440	6"	¹ < MDA	2.04	
3	N 50860 N 50860 E 50000 E 50030 N 50840 N 50840 E 50030 E 50000	D-SV-10441	6"	¹ < MDA	1.58	
4	N 50860 N 50860 E 50030 E 50060 N 50840 N 50840 E 50060 E 50030	D-SV-10442	6"	¹ < MDA	3.07	QC RESULTS Ra-226 Th-230 3.6±0.9 2.6±0.7
5	N 50860 N 50860 E 50060 E 50090 N 50840 N 50840 E 50090 E 50060	D-SV-10443	6"	1.65	3.75	
6	N 50860 N 50860 E 50090 E 50120 N 50840 N 50840 E 50120 E 50090	D-SV-10444	6"	1.37	2.46	
7	N 50860 N 50860 E 50120 E 50150 N 50840 N 50840 E 50150 E 50120	D-SV-10445	6"	1.22	1.56	
8	N 50860 N 50860 E 50150 E 50180 N 50840 N 50840 E 50180 E 50150	D-SV-10446	6"	¹ < MDA	1.55	
9	N 50860 N 50860 E 50180 E 50210 N 50840 N 50840 E 50210 E 50180	D-SV-10447	6"	¹ < MDA	1.71	
10	N 50860 N 50860 E 50210 E 50240 N 50840 N 50840 E 50240 E 50210	D-SV-10448	6"	¹ < MDA	2.47	FOR ALL SAMPLES: 1-MDA 1.20 OCS 2-MDA 1.15 OCS

SOIL VERIFICATION DATA

	Coordinates	Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration Initial - Final		Comments
11	N 50860 N 50860 E 50240 E 50270 N 50840 N 50840 E 50270 E 50240	D-SV-10449	6"	2.28	3.36	
12	N 50860 N 50860 E 50270 E 50300 N 50840 N 50840 E 50300 E 50220	D-SV-10450	6"	1.45	2.82	
13	N 50860 N 50859 E 50300 E 50311 N 50810 N 50810 E 50312 E 50300	D-SV-10451	6"	2.56	4.59	
14	N 50825 ** E 50285	D-SV-10452	6"	1 < MDA	1.58	
15	N 50825 ** E 50255	D-SV-10453	6"	1.66	3.05	
16	N 50825 ** E 50225	D-SV-10454	6"	2.40	2.59	
17	N 50825 ** E 50195	D-SV-10455	6"	1.49	2.64	
18	N 50825 ** E 50165	D-SV-10456	6"	1.29	1.96	
19	N 50825 ** E 50135	D-SV-10457	6"	1.55	2.39	
20	N 50840 N 50840 E 50090 E 50120 N 50810 N 50810 E 50120 E 50104 N 50822 N 50822 E 50096 E 50090	D-SV-10458 D-SV-10459	6" 6"	1.71 1.44	3.13 3.35	duplicate
21	N 50840 N 50840 E 50060 E 50090 N 50822 N 50822 E 50090 E 50066 N 50810 N 50810 E 50066 E 50060	D-SV-10460	6"	1.72	3.02	
Single coordinate indicates the center of a 30' x 30' grid.						

SOIL VERIFICATION DATA

	Coordinates	Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
				Initial	Final	
22	N 50825 ** E 50045	D-SV-10461	6"	1.20	1.59	
23	N 50825 ** E 50015	D-SV-10462	6"	¹ <MDA	1.53	Q.C. RESULTS Ra-226 Th-230 1.1±0.5 1.5±0.6
24	N 50825 ** E 49985	D-SV-10463	6"	¹ <MDA	1.94	
25	N 50840 N 50840 E 49950 E 49970 N 50810 N 50810 E 49970 E 49951	D-SV-10464	6"	1.17	2.24	
26	N 50810 N 50810 E 49951 E 49970 N 50778 N 50778 E 49970 E 49953	D-SV-10465	6"	3.44	6.25	
27	N 50810 N 50810 E 49970 E 50000 N 50787 N 50793 E 50000 E 49982 N 50778 N 50778 E 49980 E 49970	D-SV-10466	6"	1.30	3.81	
28	N 50810 N 50810 E 50000 E 50030 N 50777 N 50787 E 50030 E 50000	D-SV-10467	6"	² <MDA	1.91	
29	N 50810 N 50810 E 50030 E 50060 N 50785 N 50785 E 50060 E 50033 N 50777 E 50030	D-SV-10468	6"	2.57	4.78	
30	N 50810 N 50810 E 50060 E 50066 N 50785 N 50785 E 50066 E 50060 N 50810 N 50810 E 50104 E 50120 N 50781 E 50120	D-SV-10469	6"	1.76	3.22	
		D-SV-10470	6"	1.36	3.33	

SOIL VERIFICATION DATA

id	Coordinates	Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
				Initial	- Final	
32	N 50810 N 50810 E 50120 E 50150 N 50780 N 50780 E 50150 E 50122 N 50781 E 50120	D-SV-10471	6"	1 < MDA	1.86	
33	N 50795 ** E 50165	D-SV-10472	6"	1 < MDA	2.42	
34	N 50795 ** E 50195	D-SV-10473	6"	1 < MDA	2.63	
35	N 50795 ** E 50225	D-SV-10474	6"	1.87	3.50	
36	N 50795 ** E 50255	D-SV-10475	6"	1.66	1.93	
37	N 50795 ** E 50285	D-SV-10476	6"	1.72	2.08	
38	N 50810 N 50810 E 50300 E 50313 N 50780 N 50780 E 50313 E 50300	D-SV-10477	6"	2.02	3.90	
39	N 50780 N 50780 E 50300 E 50313 N 50750 N 50750 E 50314 E 50300	D-SV-10483	6"	1.34	3.26	
40	N 50765 ** E 50285	D-SV-10484 D-SV-10485	6" 6"	1 < MDA 1 < MDA	1.44 1.96	Duplicate
41	N 50765 ** E 50255	D-SV-10486	6"	1 < MDA	1.47	
42	N 50765 ** E 50225	D-SV-10487	6"	1 < MDA	1.41	Q.C. RESULTS Ra-226 Th-230 1.6±0.6 1.8±0.6
43	N 50765 ** E 50195	D-SV-10488	6"	1 < MDA	1.82	
44	N 50765 ** E 50165	D-SV-10489	6"	1 < MDA	1.87	
45	N 50780 N 50780 E 50122 E 50150 N 50750 N 50750 E 50150 E 50124	D-SV-10490	6"	2.00	5.46	

DU-059

SOIL VERIFICATION DATA

id	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
46	N 50750 E 50124	N 50750 E 50150	D-SV-10491	6"	1 < MDA	2.80	
	N 50720 E 50150	N 50720 E 50127					
47	N 50735 E 50165	**	D-SV-10492	6"	2.03	2.48	
48	N 50735 E 50195	**	D-SV-10493	6"	1 < MDA	1.65	
49	N 50735 E 50225	**	D-SV-10494	6"	1 < MDA	1 < MDA	
50	N 50735 E 50255	**	D-SV-10495	6"	1 < MDA	1 < MDA	
51	N 50735 E 50285	**	D-SV-10496	6"	1 < MDA	1.15	
52	N 50750 E 50300	N 50750 E 50314	D-SV-10497	6"	2.82	5.29	
	N 50660 E 50302	N 50660 E 50300					
53	N 50705 E 50285	**	D-SV-10498	6"	1.53	2.90	
54	N 50705 E 50255	**	D-SV-10499	6"	1 < MDA	1.75	
55	N 50705 E 50225	**	D-SV-10500	6"	1.98	3.05	
56	N 50705 E 50195	**	D-SV-10501	6"	2.64	4.83	
57	N 50705 E 50165	**	D-SV-10502	6"	1 < MDA	2.57	
58	N 50720 E 50127	N 50720 E 50150	D-SV-10503	6"	1 < MDA	3.37	
	N 50690 E 50150	N 50690 E 50120					
	N 50696 E 50120	N 50696 E 50129					
59	N 50698 E 50030	N 50695 E 50060	D-SV-10504	6"	2.16	3.15	
	N 50696 E 50120	N 50690 E 50120	N 50690 E 50030				

SOIL VERIFICATION DATA

i	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
60	N50701	N50698	D-SV-10505	6"	1.75	2.70	Duplicate
	E50000	E50030	D-SV-10506	6"	2.29	2.12	
	N50690	N50690					
	E50030	E50000					
61	N50710	N50701	D-SV-10507	6"	2.26	3.49	QC-forwarded when available
	E49951	E50000					
	N50690	N50690					
	E50000	E49970					
62	N50696						
	E49957						
	N50690	N50690	D-SV-10508	6"	¹ <MDA	1.88	
	E49970	E50030					
63	N50667	N50679					
	E50030	E50000					
	N50690	N50690	D-SV-10509	6"	1.16	1.47	
	E50030	E50060					
64	N50660	N50660					
	E50060	E50041					
	N50663	N50667					
	E50040	E50030					
64	N50675	**	D-SV-10510	6"	¹ <MDA	1.49	
	E50075						
65	N50675	**	D-SV-10511	6"	1.43	1.82	
	E50105						
66	N50675	**	D-SV-10512	6"	¹ <MDA	¹ <MDA	
	E50135						
67	N50675	**	D-SV-10513	6"	1.27	2.92	
	E50165						
68	N50675	**	D-SV-10514	6"	3.34	4.45	
	E50195						
69	N50675	**	D-SV-10515	6"	2.72	3.18	
	E50225						
70	N50675	**	D-SV-10516	6"	1.61	1.38	
	E50255						
71	N50675	**	D-SV-10517	6"	¹ <MDA	2.15	
	E50285						
72	N50660	N50660	D-SV-10518	6"	¹ <MDA	2.42	
	E50270	E50302					
	N50630	N50630					
	E50296	E50270					

SOIL VERIFICATION DATA

	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
73	N50645 E50255	**	D-SV-10519	6"	1 < MDA	1.28	
74	N50645 E50225	**	D-SV-10520	6"	1 < MDA	1.51	
75	N50645 E50195	**	D-SV-10521	6"	1.29	5.46	
76	N50645 E50165	**	D-SV-10522	6"	1 < MDA	1.93	
77	N50645 E50135	**	D-SV-10523	6"	2 < MDA	2.19	
78	N50645 E50105	**	D-SV-10524	6"	2 < MDA	2.31	
79	N50645 E50075	**	D-SV-10525	6"	1.38	1.31	
B0	N50660	N50660	D-SV-10526	6"	1.78	2.82	QC Duplicate QC RESULTS Ra-226 Th-230 2.0±0.7 2.3±0.7
	E50041	E50060	D-SV-10527	6"	2 < MDA	1.42	
	N50630	N50630					
	E50060	E50030					
	N50647	N50647					
E1	E50030	E50017					
	N50647	N50647	D-SV-10528	6"	2 < MDA	2.10	
	E50017	E50030					
E2	N50630	N50630					
	E50030	E50016					
	N50600	N50600	D-SV-10529	6"	2 < MDA	1.22	
E3	E50030	E50015					
	N50615	N50615	D-SV-10539	6"	2 < MDA	1.17	
E4	E50045	E50045					
	N50615	N50615	D-SV-10540	6"	2 < MDA	2 < MDA	
E5	E50075	E50075					
	N50615	N50615	D-SV-10541	6"	2 < MDA	1.36	
E6	E50105	E50105					
	N50615	N50615	D-SV-10542	6"	1.40	2.64	
E7	E50135	E50135					
	N50615	N50615	D-SV-10543	6"	1.40	1.31	
E8	E50165	E50165					
	N50615	N50615					

SOIL VERIFICATION DATA

i	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
88	N50615 E50195	**	D-SV-10544	6"	2 < MDA	1.47	
89	N50615 E50225	**	D-SV-10545	6"	1 < MDA	1.72	
90	N50615 E50255	**	D-SV-10546	6"	1.34	2.73	
91	N50630 E50270 N50600 E50289	N50630 E50296 N50600 E50270	D-SV-10547	6"	1.63	2.68	
92	N50600 E50270 N50570 E50282 N50540 E50270	N50600 E50289 N50540 E50284	D-SV-10555	6"	1.35	2.43	
93	N50588 E50255	**	D-SV-10556	6"	2 < MDA	1.69	
94	N50585 E50225	**	D-SV-10557	6"	1 < MDA	2.12	
95	N50585 E50195	**	D-SV-10558	6"	1 < MDA	2.14	
96	N50585 E50165	**	D-SV-10559	6"	1 < MDA	2.28	
97	N50585 E50135	**	D-SV-10560	6"	1 < MDA	1.99	
98	N50585 E50105	**	D-SV-10561	6"	1 < MDA	1.33	
99	N50585 E50075	**	D-SV-10562	6"	1 < MDA	1.83	QC RESULTS Ra-226 Th-230 1.3±0.5 1.0±0.
100	N50585 E50045	**	D-SV-10571 D-SV-10572	6" 6"	1 < MDA 1 < MDA	1 < MDA 1.25	Duplicate
101	N50600 E50015 N50570 E50030	N50600 E50030 N50570 E50016	D-SV-10573	6"	1.73	2.25	
102	N50555 E50045	**	D-SV-10574	6"	1 < MDA	1 < MDA	

SOIL VERIFICATION DATA

ID	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
103	N50555 E50075	**	D-SV-10575	6"	¹ < MDA	1.56	
104	N50555 E50105	**	D-SV-10576	6"	¹ < MDA	¹ < MDA	
105	N50555 E50135	**	D-SV-10577	6"	¹ < MDA	1.90	
106	N50555 E50165	**	D-SV-10578	6"	² < MDA	1.64	
107	N50555 E50195	**	D-SV-10587	6"	2.15	1.70	
108	N50555 E50225	**	D-SV-10593	6"	¹ < MDA	1.53	
109	N50555 E50255	**	D-SV-10594	6"	1.78	1.70	
110	N50540 E50270 N50510 E50586	N50540 E50284 N50510 E50270	D-SV-10595	6"	1.80	3.03	
111	N50525 E50255	**	D-SV-10596	6"	1.22	2.00	
112	N50525 E50225	**	D-SV-10597	6"	¹ < MDA	1.69	
113	N50525 E50195	**	D-SV-10598	6"	¹ < MDA	¹ < MDA	
114	N50525 E50165	**	D-SV-10599	6"	1.24	1.39	
115	N50525 E50135	**	D-SV-10563	6"	1.63	2.34	
116	N50525 E50105	**	D-SV-10564	6"	¹ < MDA	1.63	
117	N50525 E50075	**	D-SV-10565	6"	¹ < MDA	1.43	
118	N50540 E50030 N50510 E50060 N50520 E50030	N50540 E50060 N50510 E50031	D-SV-10566	6"	1.21	1.64	

SOIL VERIFICATION DATA

No.	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
119	N50570 E50016	N50570 E50030	D-SV-10567	6"	1.35	2.09	
	N50520 E50030						
120	N50510 E50031	N50510 E50060	D-SV-10569	6"	1.18	3.27	Duplicate
	N50480 E50060	N50480 E50039	D-SV-10568	6"	1.54	1.89	
121	N50495 E50075	**	D-SV-10570	6"	² < MDA	1.77	
122	N50495 E50105	**	D-SV-10579	6"	1.28	2.57	
123	N50495 E50135	**	D-SV-10580	6"	² < MDA	2.77	
124	N50495 E50165	**	D-SV-10581	6"	1.30	2.33	
- -	N50495 E50195	**	D-SV-10582	6"	² < MDA	2.51	QC RESULTS Ra-226 Th-230 1.4±0.6 2.3±0.7
126	N50495 E50225	**	D-SV-10583	6"	² < MDA	2.06	
127	N50495 E50255	*8	D-SV-10584	6"	1.16	2.70	
128	N50510 E50270	N50510 E50286	D-SV-10585	6"	1.27	1.54	
	N50504 E50286	N50504 E50300					
	N50480 E50300	N50480 E50270					
129	N50504 E50300	N50504 E50318	D-SV-10586	6"	² < MDA	1.49	
	N50437 E50300						
130	N50465 E50285	**	D-SV-10600	6"	1.43	2.45	
	N50465 E50255	**	D-SV-10601	6"	² < MDA	1.58	
132	N50465 E50225	**	D-SV-10602	6"	² < MDA	1.89	

SOIL VERIFICATION DATA

ID	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
133	N50465 E50195	**	D-SV-10603	6"	1.61	1.33	
134	N50465 E50165	**	D-SV-10604	6"	1.94	2.50	
135	N50465 E50135	**	D-SV-10605	6"	² < MDA	2.37	
136	N50465 E50105	**	D-SV-10606	6"	² < MDA	1.88	
137	N50480 E50090 N50450 E50090 N50455 E50060	N50480 E50090 N50450 E50067	D-SV-10607	6"	² < MDA	¹ < MDA	QC results forwarded when available
138	N50480 E50039 N50455 E50060	N50480 E50060 N50466 E50043	D-SV-10608	6"	1.64	1.93	
139	N50450 E50067 N50383 E50090	N50450 E50090	D-SV-10619	6"	¹ < MDA	¹ < MDA	
140	N50435 E50105	**	D-SV-10620 D-SV-10621	6" 6"	1.54 ¹ < MDA	2.29 ¹ < MDA	Duplicate
141	N50435 E50135	**	D-SV-10622	6"	¹ < MDA	¹ < MDA	
142	N50435 E50165	**	D-SV-10623	6"	¹ < MDA	1.87	
143	N50435 E50195	**	D-SV-10624	6"	¹ < MDA	1.27	
144	N50435 E50225 N50435 E50255	** **	D-SV-10625 D-SV-10625	6" 6"	¹ < MDA ¹ < MDA	1.95 2.25	
146	N50450 E50270	N50450 E50300	D-SV-10627	6"	² < MDA	2.31	

SOIL VERIFICATION DATA

id	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
146 cont	N50436 E50300	N50420 E50296					
	N50420 E50270						
147	N50420 E50270	N50420 E50296	D-SV-10628	6"	¹ < MDA	2.18	
	N50390 E50288	N50390 N50270					
148	N50405 E50255	**	D-SV-10629	6"	¹ < MDA	2.50	
149	N50405 E50225	**	D-SV-10630	6"	¹ < MDA	1.16	
150	N50405 E50195	**	D-SV-10631	6"	¹ < MDA	² < MDA	
151	N50405 E50165	**	D-SV-10632	6"	¹ < MDA	1.57	
152	N50405 E50135	**	D-SV-10633	6"	¹ < MDA	1.39	
153	N50405 E50105	**	D-SV-10634	6"	¹ < MDA	2.26	
154	N50390 E50090	N50390 E50120	D-SV-10635	6"	1.90	1.85	
	N50327 E50120	N50360 E50098					
	N50383 E50090						
155	N50375 E50135	**	D-SV-10636	6"	1.47	1.80	
156	N50375 E50165	**	D-SV-10637	6"	¹ < MDA	1.69	QC results forwarded when available
157	N50375 E50195	**	D-SV-10638	6"	1.44	1.74	
158	N50375 E50255	**	D-SV-10639	6"	1.67	2.36	
159	N50375 E50255	**	D-SV-10643	6"	3.11	5.32	

SOIL VERIFICATION DATA

id	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
160	N50390 E50270	N50390 E50288	D-SV-10753 D-SV-10754	6" 6"	1.50 1.76	3.23 3.13	Duplicate
	N50360 E50279	N50360 E50270					
161	N50360 E50270	N50360 E50279	D-SV-10644	6"	2.09	3.69	
	N50354 E50278	N50350 E50292					
	N50330 E50292	N50330 E50270					
162	N50345 E50255	**	D-SV-10645	6"	1.40	2.00	
163	N50345 E50225	**	D-SV-10646	6"	1.34	2.06	
164	N50345 E50195	**	D-SV-10647	6"	1.75	2.56	
165	N50345 E50165	**	D-SV-10648	6"	² < MDA	2.01	
166	N50345 E50135	**	D-SV-10649	6"	1.25	² < MDA	
167	N50330 E50120	N50330 E50150	D-SV-10650	6"	² < MDA	1.89	
	N50282 E50150	N50237 E50120					
168	N50315 E50165	**	D-SV-10651	6"	1.54	1.62	
169	N50315 E50195	**	D-SV-10652	6"	1.42	1.55	
170	N50315 E50225	**	D-SV-10653	6"	² < MDA	2.50	
171	N50315 E50255	**	D-SV-10755	6"	1.24	3.22	
	N50330 E50270	N50330 E50292	D-SV-10654	6"	1.64	3.57	
	N50300 E50292	N50300 E50270					

SOIL VERIFICATION DATA

id	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
173	N50300 E50270	N50300 E50292	D-SV-10655	6"	1.36	1.67	
	N50270 E50299	N50270 E50270					
174	N50285 E50255	**	D-SV-10756	6"	3.50	4.13	
175	N50285 E50225	**	D-SV-10656	6"	1.33	2.49	
176	N50285 E50195	**	D-SV-10657	6"	1.40	2.47	
177	N50300 E50150	N50300 E50180	D-SV-10658	6"	1.50	2.53	QC RESULTS Ra-226 Th-230 1.7±0.6 1.2±0.5
	N50270 E50180	N50270 E50158					
	N50282 E50150						
178	N50270 E50158	N50270 E50180	D-SV-10714	6"	1.95	2.38	QC results forwarded when available
	N50188 E50180						
179	N50255 E50195	**	D-SV-10715	6"	1.50	3.15	
180	N50255 E50225	**	D-SV-10716 D-SV-10717	6" 6"	1.28 1.60	2.36 2.15	Duplicate
181	N50255 E50255	**	D-SV-10718	6"	1.63	2.99	
182	N50270 E50270	N50270 E50299	D-SV-10719	6"	¹ < MDA	2.81	
	N50244 E50300	N50240 E50300					
	N50240 E50270						
183	N50225 E50285	**	D-SV-10720	6"	1.32	2.50	
184	N50225 E50255	**	D-SV-10721	6"	2.02	3.82	
185	N50225 E50225	**	D-SV-10722	6"	1.20	2.01	

SOIL VERIFICATION DATA

ID	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
186	N50225 E50195	**	D-SV-10723	6"	1.18	1.80	
187	N50210 E50180 N50180 E50210 N50188 E50180	N50210 E50210 N50180 E50182	D-SV-10724	6"	1.66	2.09	
188	N50195 E50225	**	D-SV-10725	6"	1.80	1.97	
189	N50195 E50255	**	D-SV-10726	6"	1.27	1.86	
190	N50195 E50285	**	D-SV-10727	6"	1.70	3.64	
191	N50264 E50300 N50209 E50304 N50180 E50300	N50209 E50312 N50180 E50311	D-SV-10728	6"	3.06	4.04	
192	N50180 E50300 N50142 E50320	N50180 E50311 N50142 E50300	D-SV-10729	6"	1.32	2.46	
193	N50165 E50285	**	D-SV-10731	6"	1.25	2.62	
194	N50165 E50255	**	D-SV-10730	6"	1.71	1.79	
195	N50165 E50225	**	D-SV-10732	6"	1.78	3.54	
196	N50180 E50182 N50140 E50210	N50180 E50210 N50140 E50193	D-SV-10733	6"	1.47	2.86	

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SOIL VERIFICATION DATA

id	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
197	N50150 E50210 N50120 E50240 N50140 E50210	N50150 E50240 N50120 E50212	D-SV-10757	6"	1.26	3.91	
198	N50135 E50255	**	D-SV-10758	6"	1.34	1.78	
199	N50150 E50270 N50142 E50300 N50120 E50300 N50120 E50270	N50150 E50300 N50142 E50292 N50120 E50300	D-SV-10759	6"	1.63	2.15	
	N50105 E50285	**	D-SV-10760 D-SV-10761	6" 6"	1.42 1 < MDA	2.14 2.11	Duplicate
201	N50105 E50255	**	D-SV-10762	6"	1.47	2.81	QC results forwarded when available
202	N50120 E50212 N50090 E50240	N50120 E50240 N50090 E50215	D-SV-10763	6"	1.71	3.60	
203	N50090 E50215 N50060 E50240	N50090 E50240 N50060 E50215	D-SV-10764	12"	1.56	2.99	
204	N50075 E50225	**	D-SV-10765	12"	1 < MDA	2.46	
205	N50075 E50285	**	D-SV-10766	12"	1.58	2.73	
206	N50120 E50300 N50060 E50321	N50120 E50310 N50060 E50300	D-SV-10767	12"	2.12	4.62	

SOIL VERIFICATION DATA

	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
207	N50060 E50300	N50600 E50321	D-SV-10768	12"	1.59	3.39	
	N50030 E50332	N50030 E50300					
208	N50045 E50285	**	D-SV-10769	12"	1.65	3.13	
209	N50045 E50255	**	D-SV-10770	12"	1.48	3.39	
210	N50060 E50215	N50060 E50240	D-SV-10771	12"	2.90	4.40	
	N50030 E50240	N50030 E50214					
211	N50030 E50214	N50030 E50240	D-SV-10772	12"	4.00	6.93	
	N50000 E50240	N50000 E50214					
212	N50015 E50255	**	D-SV-10773	12"	¹ < MDA	3.03	
213	N50015 E50285	*8	D-SV-10774	12"	² < MDA	2.99	
214	N50015 E50315	*8	D-SV-10775	12"	1.94	3.12	
215	N49985 E50315	**	D-SV-10776	12"	² < MDA	3.03	
216	N49985 E50285	**	D-SV-10777	12"	1.30	2.15	
217	N49985 E50255	**	D-SV-10778	12"	1.84	3.03	
218	N50000 E50214	N50000 E50240	D-SV-10779	12"	2.04	4.64	
	N49970 E50240	N49970 E50213					
219	N49970 E50213	N49970 E50240	D-SV-10780	12"	2.85	5.46	
	N49930 E50240	N49938 E50216					

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SOIL VERIFICATION DATA

ID	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
20	N49955 E50255	**	D-SV-10781 D-SV-10782	12" 12"	² <MDA 1.34	2.03 2.44	QC Duplicate
21	N49955 E50285	**	D-SV-10783	12"	² <MDA	2.04	QC results forwarded when available
22	N49955 E50315	**	D-SV-10784	12"	2.06	2.25	
223	N50030 E50330 N49940 E50353	N50030 E50332 N49940 E50330	D-SV-10785	12"	2.57	4.85	
224	N49940 E50330 N49910 E50360	N49940 E50353 N49910 E50330	D-SV-10786	12"	2.86	3.72	
225	N49925 E50315	**	D-SV-10787	12"	2.35	3.79	
226	N49925 E50285	**	D-SV-10788	12"	1.28	1.68	
227	N49940 E50240 N49910 E50270 N49938 E50243	N49940 E50270 N49910 E50249 N49930 E50240	D-SV-10789	12"	1.25	1.98	
228	N49910 E50249 N49880 E50270	N49910 E50270 N49880 E50256	D-SV-10790	12"	1.25	1.83	
229	N49895 E50285	**	D-SV-10791	12"	² <MDA	1.83	
230	N49895 E50315	**	D-SV-10792	12"	1.54	2.03	
231	N49895 E50345	**	D-SV-10793	12"	3.18	5.28	
232	N49865 E50345	**	D-SV-10794	12"	2.02	3.64	
233	N49865 E50315	**	D-SV-10795	12"	1.37	2.04	

SOIL VERIFICATION DATA

	Coordinates		Sample #	Approx. Depth	Ra-226 (pCi/g) Concentration		Comments
					Initial	Final	
234	N49865 E50285	**	D-SV-10796	12"	1.20	2.95	
235	N49880 E50256	N49880 E50270	D-SV-10797	12"	3.01	3.68	
	N49838 E50270	N49850 E50262					
236	N49850 E50270	N49850 E50300	D-SV-10798	12"	² < MDA	1.95	
	N49826 E50300	N45838 E50270					
237	N49850 E50300	N49850 E50330	D-SV-10799	12"	2.04	4.33	
	N49830 E50330	N49826 E50300					
238	N49850 E50330	N49850 E50360	D-SV-10800	12"	3.47	4.45	
	N49835 E50360	N49830 E50330					
239	N49910 E50360	N49850 E50368	D-SV-10801	12"	5.36	8.41	
	N49835 E50360						

MS-FERCUSO/CHEN-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

OCS #3: 984369
OCS #4: 285411
OCS #5: 285403

SITE NAME DURANGO
SITE AREA 0.037

OCS SERIAL NO. _____

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	OCS#	FRACTION NO.	MASS	Mo 236	OC	LABORATORY RESULT	DECTN	TECH	REMARKS
INITIAL	20 DAY				INITIAL	INITIAL	WET	INITIAL	200712	Mo 236	TR 230	15 CP	20 DAY
6-27-89	Du-SV	059-240	6-27-89	6-27-89	3	6.23E2	5319	1.55					N-50600
7-19-89	14942				4	1.86E3	5197	3.58					E-50320
6-27-89	Du-SV				4	6.92E2	5217	4.15					N-50800
7-19-89	14983	059-241	6-27-89	6-29-89	5	1.11E3	5330	2.08					E-50340
6-27-89	Du-SV				5	5.29E2	5315	1.52					N-50710
7-19-89	14984	059-242	6-27-89	6-29-89	3	1.55E3	5205	2.58					E-50340
6-27-89	Du-SV				3	1.11E3	4985	2.23					N-50710
7-19-89	14985	059-243	6-27-89	6-29-89	3	1.78E3	4918	3.69					E-50340
6-27-89	Du-SV				5	7.65E2	5215	4.15					N-50830
7-19-89	14986	059-244	6-27-89	6-29-89	1	2.36E3	5719	7.13					E-50312
6-27-89	Du-SV				3	1.11E3	5515	2.11					N-50800
7-19-89	14987	059-245	6-27-89	6-29-89	5	1.47E3	5413	4.72					E-50313
6-27-89	Du-SV				5	5.11E2	5246	4.15					N-50770
7-19-89	14988	059-246	6-27-89	6-29-89	3	1.28E3	4945	2.57					E-50313
6-27-89	Du-SV				3	6.59E2	5248	5.15					N-50710
7-19-89	14989	059-247	6-27-89	6-29-89	4	1.35E3	5460	2.62					E-50313
6-27-89	Du-SV				5	1.70E3	4753	4.15					N-50710
7-19-89	14990	059-248	6-27-89	6-29-89	5	1.70E3	4803	3.78					E-50308
6-27-89	Du-SV				3	1.13E3	5301	3.07					N-50680
7-19-89	14991	059-249	6-27-89	6-29-89	3	3.12E3	5100	6.12					E-50303
6-27-89	Du-SV				5	7.19E2	5276	4.15					N-50650
7-19-89	14992	059-250	6-27-89	6-29-89	4	1.57E3	4930	3.18					E-50298
6-27-89	Du-SV				3	9.24E2	5253	1.85					N-50610
7-19-89	14993	059-251	6-27-89	6-29-89	5	1.63E3	4930	3.37					E-50293

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = $\frac{1.43}{(X)} = 1.391$ (05-10-89)
Count Time = 500 sec, unless noted otherwise.

VP Correction Factor = $1.15 \times (X) + 505$ (02-03-88) = 1.98 (X) - 1.40 3-15pCi/g

DU-059

APPENDIX A

RADIOLOGICAL SURVEY DATA

Section III

Secondary Survey Data

DU-059,096
SLOPE SURVEY

INTRODUCTION:

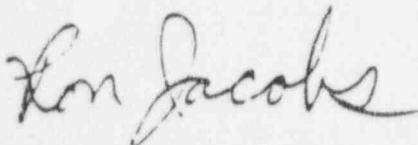
A comprehensive radiological characterization survey was performed on the steep slopes of DU-096 and the West and South slopes of DU-059. This data is necessary to determine whether remediation will be performed or supplemental standards will be applied.

GAMMA SURVEY:

A grid system was set up and each 33'x33' grid was scanned. One representative set of contact and one meter readings was recorded for each grid.

SOIL SAMPLES:

Soil samples were collected in each grid following standard verification sample collection techniques.



RON JACOBS
3-10-89

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: Dow Murphy
Chris Workman
Bob Gresser, Dennis Jones

SHEET 1 OF 6 PAGE 1

DATE: 3-9-89

PROPERTY ID: 059

INSTRUMENT ID NO.: ESP-1 - 1709

BACKGROUND CALCULATION:

#1 _____ + #2 _____ + #3 _____ = _____ + 3 = _____ COUNTS/.1MIN

AREA: <u>CONTACT</u>		AREA: <u>1 meter</u>		AREA: <u>CONTACT</u>		AREA: <u>1-meter</u>	
POINT ID	READING COUNTS/.1MIN	POINT ID	READING COUNTS/.1MIN	POINT ID	READING COUNTS/.1MIN	POINT ID	READING COUNTS/.1MIN
1	1900	1	1960	25	2200	25	2000
2	2010	2	1910	26	2300	26	2100
3	2100	3	2130	27	1700	27	1760
4	2130	4	2260	28	1940	28	1960
5	1780	5	1800	29	2770	29	2190
6	1540	6	1740	30	2930	30	2670
7	2070	7	1980	31	2400	31	2200
8	2000	8	1950	32	2090	32	2090
9	1960	9	1910	33	2170	33	2080
10	2030	10	1970	34	2620	34	2440
11	1950	11	1980	35	2520	35	2310
12	1990	12	1960	36	2030	36	2120
13	1960	13	1970	37	2560	37	2230
14	1990	14	2110	38	2090	38	2150
15	2060	15	2110	39	2090	39	2160
16	2220	16	2020	40	2080	40	2080
17	2130	17	2100	41	1970	41	2070
18	2500	18	2350	42	1570	42	2100
19	2300	19	2100	43	1080	43	1100
20	2300	20	2100	44	1440	44	934
21	2300	21	2000	45	1730	45	1460
22	2800	22	2100	46	1460	46	1490
23	3000	23	2200	47	1630	47	1650
24	2800	24	2200	48	2180	48	1980

REMARKS: _____

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

 LOGGING CREW: Dan Murphy, Dennis

 SHEET 2 OF 6 PAGE 2
Jones, Chris Workman,

 DATE: 3-9-99
Terry Herman, Bart Green

 PROPERTY ID: 059

 INSTRUMENT ID NO.: ESP 1 - #1709

BACKGROUND CALCULATION:

#1 _____ + #2 _____ + #3 _____ = _____ + 3 = _____ COUNTS/1MIN

AREA: <u>CONTACT</u>		AREA: <u>1 meter</u>		EA: <u>CONTACT</u>		AREA: <u>1-METER</u>	
POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN
49	1722	49	1690	73	1700	73	1730
50	1290	50	1480	74	1590	74	1540
51	1350	51	1520	75	1760	75	1740
52	1420	52	1550	76	1580	76	1020
53	1960	53	1670	77	1900	77	1790
54	1710	54	1700	78	1770	78	1960
55	1410	55	1580	79	2030	79	1730
56	2420	56	2130	80	1380	80	1500
57	1670	57	1750	81	1580	81	1620
58	2060	58	1950	82	1890	82	1760
59	2160	59	2010	83	2150	83	1820
60	2260	60	2080	84	1720	84	1600
61	1710	61	1750	85	1720	85	1620
62	1650	62	1690	86	1590	86	1480
63	1670	63	1630	87	1210	87	1340
64	1720	64	1650	88	2070	88	1900
65	2260	65	1880	89	1930	89	1860
66	2000	66	1900	90	2070	90	1890
67	2540	67	2050	91	1990	91	1790
68	1910 ²⁰⁰⁰	68	1920	92	2220 2200	92	1920
69	1930	69	1900	93	2160	93	1900
70	1990	70	1910	94	2330	94	1980
71	2170	71	1890	95	2510	95	1990
72	1820	72	1750	96	2650	96	1980

 REMARKS: _____

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

 LOGGING CREW: Don Murphy, Dennis

 SHEET 4 OF 6 PAGE 4
James Chris Workman

 DATE: 3-8-84
Terry Herman, Bob Greene

 PROPERTY ID: 059

 INSTRUMENT ID NO.: ESP-1 - #1709

BACKGROUND CALCULATION:

#1 _____ + #2 _____ + #3 _____ = _____ - 3 = _____ COUNTS/1MIN

AREA: <u>CONTACT</u>		AREA: <u>1 METER</u>		AREA: <u>CONTACT</u>		AREA: <u>1- METER</u>	
POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN
97	2460	97	1930	121	2520	121	1980
98	2160	98	1630	122	1620	122	1430
99	2250	99	1900	123	1290	123	1280
100	2250	100	1970	124	1660	124	1680
101	1970	101	1970	125	1470	125	1500
102	3060	102	2190	126	1450	126	1440
103	2380	103	1990	127	1980	127	2040
104	2380	104	1980	128	2410	128	2140
105	1950	105	1620	129	2370	129	2310
106	1740	106	1640	130	2190	130	2330
107	1930	107	1910	131	2830	131	2480
108	2840	108	2930	132	2500	132	2400
109	2520	109	2140	133	1500	133	1620
110	1990	110	2400	134	2850	134	1740
111	1840	111	1790	135	2630	135	2170
112	1920	112	2070	136	2020	136	2190
113	2290	113	1990	137	2710	137	2130
114	2250	114	1820	138	2020	138	1970
115	1980	115	1760	139	2220	139	1960
116	2380	116	1760	140	2020	140	1960
117	2160	117	1950	141	2580	141	1910
118	2590	118	1910	142	1620	142	1941
119	2584	119	1950	143	2590	143	1950
120	2300	120	1950	144	1790	144	1530

REMARKS:

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: Don Murphy, Dennis Jones,
Chris Workman, Terry Herman,
Bob Greene

SHEET 3 OF 6 PAGE 3

DATE: 3-8-89

PROPERTY ID: 059

INSTRUMENT ID NO.: ESP-1 - *1709

BACKGROUND CALCULATION:

#1 _____ + #2 _____ + #3 _____ = _____ - 3 = _____ COUNTS/1MIN

AREA: <u>Contact</u>		AREA: <u>1-meter</u>		AREA: <u>Contact</u>		AREA: <u>1-meter</u>	
POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN
145	1730	145	1980	169	3410	169	2650
146	1450	146	1750	170	3800	170	2690
147	3240	147	2080	171	1970	171	1940
148	1630	148	1670	172	2040	172	2040
149	1690	149	1740	173	2470	173	2290
150	1950	150	1910	174	2050	174	1920
151	2020	151	2010	175	1930	175	2010
152	2680	152	2400	176	3440	176	2960
153	3830	153	2680	177	3360	177	2980
154	2460	154	2730	178	2060	178	2080
155	1940	155	1940	179	1990	179	1990
156	2380	156	2260	180	2030	180	2120
157	2570	157	2500	181	2050	181	1970
158	2140	158	2130	182	3030	182	2560
159	2980	159	2430	183	3460	183	2970
160	1960	160	1970	184	3190	184	2830
161	2310	161	2120	185	2070	185	1940
162	2230	162	2100	186	2160	186	2070
163	2550	163	2720	187	2020	187	1980
164	2090	164	2040	188	2190	188	2179
165	2460	165	2350	189	2220	189	1990
166	2170	166	2100	190	2160	190	2220
167	2020	167	2120	191	2190	191	2160
168	1930	168	1930	192	2020	192	2020

REMARKS: _____

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: Dave Murphy, Dennis Jones
Chris Workman, Terry Harmon
Bob Greene

SHEET 5 OF 6 PAGE 5

DATE: 3-9-89

PROPERTY ID: 059

INSTRUMENT ID NO.: ESP-1 - #1709

BACKGROUND CALCULATION:

#1 _____ + #2 _____ + #3 _____ = _____ - 3 = _____ COUNTS/1MIN

AREA: <u>Contact</u>		AREA: <u>1-meter</u>		AREA: <u>Contact</u>		AREA: <u>1-meter</u>	
POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN	POINT ID	READING COUNTS/1MIN
193	2280	193	2070	217	2375	217	1792
194	2998	194	2633	218	2285	218	1743
195	2331	195	2284	219	2008	219	1660
196	2198	196	2148	220	1977	220	1692
197	2171	197	2075	221	1440	221	1380
198	2463	198	2490	222	2273	222	1850
199	2342	199	2311	223	1479	223	1479
200	2343	200	2229	224	2426	224	1940
201	2202	201	2236	225	1678	225	1488
202	2152	202	2027	226	2244	226	1727
203	2561	203	2238	227	1551	227	1487
204	2198 1983	204	2138 1738	228	2308	228	2250
205	1934	205	1926	229	2285	229	2342
206	1535	206	1515	230	2385	230	2349
207	2700	207	1959	231	2259	231	2394
208	2182	208	1872	232	2296	232	2461
209	1494	209	1371	233	2426	233	2387
210	2170	210	1858	234	2354	234	2288
211	1999	211	1728	235	2572	235	2439
212	1953	212	1790	236	2180	236	2286
213	1446	213	1469	237	2056	237	2207
214	1905	214	1797	238	2607	238	2395
215	1496	215	1464	239	2787	239	2475
216	2263	216	1727	240	2363	240	2426

REMARKS: _____



LOGGING CREW: Don Murphy, Dennis Suisse,
Chris Workman, Terry Herman
Jack Greene

SHEET 4 OF 6 PAGE 6

DATE: 3-9-99

PROPERTY ID: 059

INSTRUMENT ID NO.: ESP-1 - * 1761

BACKGROUND CALCULATION:

#1 _____ + #2 _____ + #3 _____ = _____ - 3 = _____ COUNTS/.1MIN

[illegible]REMARKS: _____

MR. FERGUSON/CHEN-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

SITE NAME Duerrgo
SITE AREA _____

OCS #1 Serial #984369
OCS #2 Serial #285411

COARSE DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SNIPLED	DATE SEALED	TAG NO	FUNCTION NO.	MASS	Ra 236	DC	LABORATORY RESULT	DEPTH	TECH	REMARKS
INITIAL					INITIAL	INITIAL	WET	INITIAL					
20 DAY					20 DAY	20 DAY	DRE	20 DAY	COUPL	Ra 236	TH 239	20 DAY	
1/4/89	DU-SS-12405	C59-01	1/4/89		1	7.44 E 2	440.4	1.69				SS	N 49800 1900 C E 50240 1960 1m
	DU-SV												
1/4/89	DU-SS-12406	C59-2	1/4/89		1	1.22 E 3	250	4.21				SS	N 49800 2010 C E 50270 1910 1m
	DU-SV												
1/4/89	DU-SS-12407	C59-3	1/4/89		1	1.22 E 3	390.3	3.12				SS	N 49800 2100 C E 50300 2130 1m
	DU-SV												
1/4/89	DU-SS-12409	C59-4	1/4/89		1	1.16 E 3	500.8	2.32				SS	N 49800 2130 C E 50330 2260 1m
	DU-SV												
1/4/89	DU-SS-12409	C59-5	1/4/89		2	1.40 E 3	980.4	3.50				SS	N 49800 1780 C E 50360 1900 1m
	DU-SV												
1/4/89	DU-SS-12410	C59-6	1/4/89		2	1.76 E 3	530.6	3.32				SS	N 49800 1540 C E 50390 1740 1m
	DU-SV												
1/11/89	DU-SS-12418	C59-7	1/10/89		1	1.82 E 3	817.7	2.22				JS	N 49766 2070 C E 50433 1980 1m
	DU-SV												
1/11/89	DU-SS-12419	C59-8	1/10/89		1	1.20 E 3	897.3	1.33				JS	N 49766 2000 C E 50400 1950 1m
	DU-SV												
1/11/89	DU-SS-12420	C59-9	1/10/89		1	1.13 E 3	601.4	1.88				JS	N 49766 1960 C E 50366 1910 1m
	DU-SV												
1/11/89	DU-SS-12421	C59-10	1/10/89		2	1.58 E 3	78.5	2.20				JS	N 49766 2030 C E 50333 1970 1m
	DU-SV												
1/11/89	DU-SS-12422	C59-11	1/10/89		2	1.06 E 3	677.7	1.56				JS	N 49766 1950 C E 50300 1980 1m
	DU-SV												
1/11/89	DU-SS-12423	C59-12	1/10/89		2	6.12 E 2	504.7	1.23				JS	N 49733 1990 C E 50366 1960 1m
	DU-SV												

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction factor = 1.31(x)1.749 (10/21/87) VP Correction Factor = 1.35(x)+.505 for MMA-5pCi/g (2/3/88)
1.98(x)-1.40 for 5-15pCi/g (2/3/88)

WM-PEGUSON/CHEM-NUCLEAR
OFFUSED CRISTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Ducanino
SITE AREA _____

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SHIPPED	DATE SEALED	TAG NO	FUNCTION NO.		MASS		No 226		QC	LABORATORY RESULT		DEPTH	TECH	REMARKS
						INITIAL	28 DAY	WET	DRY	INITIAL	28 DAY		No 226	28 DAY			
1-11-89	DU-SS-12424	Q59-13	1-10-89		1	4.65E2		553.0		KNDA					✓	J.S.	N-49733 1960 C E-50333 1970 IM
1-11-89	DU-SV																
1-11-89	DU-SS-12425	Q59-14	1-10-89		1	1.31E3		738.1		1.77					✓	J.S.	N-49733 1980 C E-50300 2110 IM
1-11-89	DU-SV																
1-11-89	DU-SS-12426	Q59-15	1-10-89		1	9.97E2		532.5		1.84					✓	J.S.	N-49700 2060 C E-50300 2110 IM
1-11-89	DU-SV																
1-11-89	DU-SS-12427	Q59-16	1-10-89		2	6.95E2		579.2		1.20					✓	J.S.	N-49700 2220 C E-50333 2023 IM
1-11-89	DU-SV																
1-11-89	DU-SS-12428	Q59-17	1-10-89		2	8.68E2		300.1		1.73					✓	J.S.	N-49700 2130 C E-50366 2100 IM
1-11-89	DU-SV																
1-16-89	DU-SS-12445	Q59-18	1-16-89		1	1.16E3		725.0		1.87					✓	J.S.	N-49666 AVECFM E-50300 2500 C
1-16-89	DU-SV																
1-16-89	DU-SS-12446	Q59-19	1-16-89		1	1.07E3		626.0		1.71					✓	J.S.	N-49666 AVECFM E-50300 2350 IM
1-16-89	DU-SV																
1-17-89	DU-SS-12447	Q59-20	1-17-89		1	1.05E3		625.5		1.68					✓	SS	N-49666 AVECFM E-50366 2100 C
1-17-89	DU-SV																
1-17-89	DU-SS-12448	Q59-21	1-17-89		1	1.47E3		589.0		2.78					✓	SS	N-49633 2200 C E-50300 2000 IM
1-17-89	DU-SV																
1-17-89	DU-SS-12449	Q59-22	1-16-89		1	2.55E3		955.5		4.51					✓	SS	N-49633 AVECFM E-50333 2800 C
1-17-89	DU-SV																
1-17-89	DU-SS-12450	Q59-23	1-16-89		1	2.47E3		571.0		4.33					✓	SS	N-49633 AVECFM E-50366 3000 C
1-17-89	DU-SV																
1-17-89	DU-SS-12451	Q59-24	1-16-89		2	1.92E3		628.0		3.06					✓	SS	N-49600 AVECFM E-50300 2800 C
1-17-89	DU-SV																

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

size Correction factor = 1.716 ± 0.176 (10/21/87) VP Correction Factor = 1.75(±)1.505 for 100A-5pCi/g (7/7/88)

IRK-FERGUSON/CHEN-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

SITE NAME Durango
SITE AREA _____

OCS #1 Serial #984369
OCS #2 Serial #285411

COARSE DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	HAZD	Pa 236	DC	LABORATORY RESULT		DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	SAMPLED	SEALED	INITIAL	INITIAL	WET	INITIAL	DC	Pa 236	Th 230	(15 cm)	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY	20 DAY			(15 cm)	20 DAY	
1-17-89	DU-SS-12452				2	1.59E3	790.5	2.71				✓	SS	N-50560 CPTM 1856 C. 1712 in.
	DU-SV	059-25	1-16-89											E-49833
1-17-89	DU-SS-12453				2	9.70E2	568.3	1.71				✓	SS	N-49600 AVE CPTM 2100 in E-50200 2300 C
	DU-SV	059-26	1-16-89											E-50200
1-17-89	DU-SS-12454				1	8.89E2	559.0	1.59				✓	SS	N-49766 AVE CPTM 1760 in E-50466 1770 C
	DU-SV	059-27	1-17-89											E-50466
1-17-89	DU-SS-12455				1	8.64E2	608.5	1.43				✓	SS	N-49733 AVE CPTM 1960 in E-50400 1940 C
	DU-SV	059-28	1-17-89											E-50400
1-17-89	DU-SS-12456				1	1.40E3	586.6	2.39				✓	SS	N-49733 AVE CPTM 2190 in E-50433 2770 C
	DU-SV	059-29	1-17-89											E-50433
1-17-89	DU-SS-12457				1	2.63E3	663.4	3.96				✓	SS	N-49733 AVE CPTM 2670 in E-50466 2930 C
	DU-SV	059-30	1-17-89											E-50466
1-17-89	DU-SS-12458				1	2.15E3	605.4	3.55				✓	SS	N-49700 AVE CPTM 2400 C E-50400 2200 in
	DU-SV	059-31	1-17-89											E-50400
1-17-89	DU-SS-12459				1	1.22E3	649.0	1.88				✓	SS	N-49700 AVE CPTM 2090 in E-50433 2090 C
	DU-SV	059-32	1-17-89											E-50433
1-17-89	DU-SS-12460				1	9.51E2	645.3	1.47				✓	SS	N-49700 AVE CPTM 2030 in E-50466 2170 C
	DU-SV	059-33	1-17-89											E-50466
1-17-89	DU-SS-12461				1	1.64E3	586.0	2.72				✓	SS	N-49666 AVE CPTM 2440 in E-50400 2020 C
	DU-SV	059-34	1-17-89											E-50400
1-17-89	DU-SS-12462				1	1.53E3	634.0	2.41				✓	SS	N-49666 AVE CPTM 2310 in E-50433 2520 C
	DU-SV	059-35	1-17-89											E-50433
1-17-89	DU-SS-12463				2	1.43E3	359.0	1.66				✓	SS	N-49666 AVE CPTM 2120 in E-50466 2030 C
	DU-SV	059-36	1-17-89											E-50466

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction factor = 1.31(x)1.749 (10/21/87) VP Correction Factor = 1.35(x)+.505 for HDA-5pCi/g (2/3/88)
1.98(x)-1.40 for 5-15pCi/g (2/3/88)

HR-FERGUSON/CHEN-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

SITE NAME Durango
SITE AREA _____

OCS #1 Serial #984369
OCS #2 Serial #285411

COMB DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	MASS	Pc 226	OC	LABORATORY		DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	ENVELO	SEALED	INITIAL	INITIAL	WET	INITIAL	SWR12	No 226	Yb 230	100 cm	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY				200 cm	20 DAY	
1-17-89	DU-SS-12467				2	1.88E3	679.0	2.79				✓	SS	N-49633 AVECPM 2230 1m
	DU-SV	059-37	1-17-89											E-50400 2500 c
1-17-89	DU-SS-12465				2	1.18E3	641.0	1.84				✓	SS	N-49633 2090 c
	DU-SV	059-38	1-17-89											E-50433 2150 1m
1-17-89	DU-SS-12466				2	1.56E3	696.6	2.24				✓	SS	N-49633 AVECPM 2160 1m
	DU-SV	059-39	1-17-89											E-50466 2090 c
1-17-89	DU-SS-12467				2	1.12E3	468.0	2.39				✓	SS	N-44000 AVECPM 2030 1m
	DU-SV	059-40	1-17-89											E-50400 2080 c
1-17-89	DU-SS-12468				2	1.18E3	350.0	3.66				✓	SS	N-49600 AVECPM 2070 1m
	DU-SV	059-41	1-17-89											E-50433 1970 c
1-17-89	DU-SS-12469				2	5.91E2	472.5	1.25				✓	SS	N-49600 AVECPM 2100 1m
	DU-SV	059-42	1-17-89											E-50466 1570 c
1-23-89	DU-SS-12524				1	2.96E3	761.8	3.88				✓	SS	N-50533 AVECPM 1100 1m
	DU-SV	059-43	1-20-89											E-50000 1080 c
1-23-89	DU-SS-12525				2	1.84E3	754.0	2.44				✓	J.S.	N-50500 AVECPM 1330 1m
	DU-SV	059-44	1-20-89											E-50000 1440 c
1-23-89	DU-SS-12526				1	3.62E3	766.5	4.72				✓	J.S.	N-50466 AVECPM 1730 c
	DU-SV	059-45	1-20-89											E-50000 1460 1m
1-23-89	DU-SS-12527				2	4.20E3	797.8	5.36				✓	J.S.	N-50433 AVECPM 1730 1m
	DU-SV	059-46	1-20-89											E-50000 = 1730 1m
1-23-89	DU-SS-12528				1	3.99E3	748.0	5.33				✓	J.S.	N-50400 AVECPM 1650 1m
	DU-SV	059-47	1-20-89											E-50000 1630 c
1-23-89	DU-SS-12529				1	1.72E3	472.6	3.60				✓	J.S.	N-50433 AVECPM
	DU-SV	059-48	1-23-89											E-50033 2180

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x)1.742 (10/21/87) VP Correction Factor = 1.35(x)1.505 for HDA SpCl/g (2/7/88)

MR. FERGUSON/CHEM-NUCLEAR
OFFUSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #283411

SITE NAME Durango
SITE AREA _____

COUNT DATE INITIAL 30 DAY	SAMPLE NUMBER	SAMPLE LOCATION	DATE SHIPPED	DATE SEALED	TAG NO CRYSTAL 30 DAY	FUNCTION NO.		MASS		QC		LABORATORY RESULT		DEPTH INITIAL 30 DAY	TECH INITIAL 30 DAY	REMARKS
						INITIAL 30 DAY	30 DAY	WET DRY	INITIAL 30 DAY	INITIAL 30 DAY	30 DAY	30 DAY	30 DAY			
1-23-89	DU-SS-12510 DU-SV	Q59-49	1-23-89		1	7.50E2		336.2	2.10					✓	JS	N 30400 AVECPM E 50033 710c
1-23-89	DU-SS-12511 DU-SV	Q59-50	1-23-89		1	1.13E3		411.6	2.74					✓	JS	N 50400 AVECPM E 50066 1190c
1-23-89	DU-SS-12512 DU-SV	Q59-51	1-23-89		1	3.04E2		328.1	4.00A					✓	JS	N 50366 AVECPM E 50066 1350c
1-23-89	DU-SS-12513 DU-SV	Q59-52	1-23-89		1	6.89E2		328.4	2.10					✓	JS	N 50366 AVECPM E 50033 1430c
1-23-89	DU-SS-12514 DU-SV	Q59-53	1-23-89		1	3.67E2		395.5	4.00A					✓	JS	N 50366 AVECPM E 50000 1860c
1-23-89	DU-SS-12515 DU-SV	Q59-54	1-23-89		1	2.60E3		449.3	5.50					✓	JS	N 50366 AVECPM E 49966 710c
1-23-89	DU-SS-12516 DU-SV	Q59-55	1-23-89		1	1.33E3		324.8	4.10					✓	JS	N 50333 AVECPM E 50066 1410c
1-23-89	DU-SS-12517 DU-SV	Q59-56	1-23-89		1	9.75E2		382.3	2.55					✓	JS	N 50333 AVECPM E 50033 2420c
1-23-89	DU-SS-12518 DU-SV	Q59-57	1-23-89		1	2.05E3		514.1	4.00					✓	JS	N 50333 AVECPM E 50000 1670c
1-23-89	DU-SS-12519 DU-SV	Q59-58	1-23-89		2	1.39E3		313.1	4.44					✓	JS	N 50333 AVECPM E 49966 2060c
1-23-89	DU-SS-12520 DU-SV	Q59-59	1-23-89		2	1.82E3		298.6	6.10					✓	JS	N 50333 AVECPM E 49933 2160c
1-23-89	DU-SS-12521 DU-SV	Q59-60	1-23-89		2	1.78E3		333.9	5.33					✓	JS	N 50333 AVECPM E 49900 2260c

NOTE: All soil sample results are in pcf/gm

REVIEWED BY _____

VP Correction Factor = 1.35(-)1.50% for MVA-SpCl/c (2/3/89)

MR. PERCIBSON/CHEM-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COUNE DATE INITIAL 28 DAY	SAMPLE NUMBER	SAMPLE LOCATION	DATE EMPIED	DATE RECEIVED	TAG NO INITIAL 28 DAY	FUNCTION NO. INITIAL 28 DAY	MASS WEP DAY	QC SUBTIP	LABORATORY RESULT No 224 No 226	TECH INITIAL 28 DAY	REMARKS
1-23-89	DU-SS-12542 DU-SV	Q59-61	1-23-89		2	1.82E3	424.0			JS	N-50300 AVEGPM E-50100 1710C
1-21-89	DU-SS-12543 DU-SV	Q59-62	1-23-89		2	1.36E3	405.8			JS	N-50300 AVEGPM E-50066 1650C
1-23-89	DU-SS-12544 DU-SV	Q59-63	1-23-89		2	2.00E3	446.0			JS	N-50300 AVEGPM E-50033 1670C
1-23-89	DU-SS-12545 DU-SV	Q59-64	1-23-89		2	1.17E3	446.3			JS	N-50300 AVEGPM E-50000 1710C
1-23-89	DU-SS-12546 DU-SV	Q59-65	1-23-89		2	1.01E3	424.4			JS	N-50300 AVEGPM E-49966 2260C
1-23-89	DU-SS-12547 DU-SV	Q59-66	1-23-89		2	9.64E2	310.0			JS	N-50300 AVEGPM E-49933 2000C
1-23-89	DU-SS-12548 DU-SV	Q59-67	1-23-89		2	1.15E3	635.0			JS	N-50300 AVEGPM E-49900 2540C
1-23-89	DU-SS-12549 DU-SV	Q59-68	1-23-89		1	1.01E3	228.0			JS	N-50166 2000C E-49900 1710C
1-23-89	DU-SS-12550 DU-SV	Q59-69	1-23-89		1	2.47E3	480.6			JS	N-50160 1900C E-49966 1900C
1-24-89	DU-SS-12551 DU-SV	Q59-70	1-23-89		1	2.83E3	426.4			JS	N-50166 1890C E-50000 1810C
1-24-89	DU-SS-12552 DU-SV	Q59-71	1-23-89		1	2.84E3	799.0			JS	N-50166 2170C E-50033 1870C
1-24-89	DU-SS-12553 DU-SV	Q59-72	1-23-89		1	1.69E3	485.5			JS	N-50166 1810C E-50066 1750C

NOTE: All cell sample results are in pCi/gm

REVIEWED BY _____

Site Correction factor = 1.31(x)+.749 (10/21/87) VP Correction Factor = 1.35(x)+.505 for HMA-5pCi/g (2/3/88)
1.90(x)-1.60 for 5-15pCi/g (2/3/88)

MR-FERGUSON/CHEM-NUCLEAR
OPPOSED CRISTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COUNT DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	MASS	Re 226	OC	LABORATORY		DEPTH	TECH	REMARKS	
INITIAL	NUMBER	LOCATION	ENRICHED	SEALED	INITIAL	INITIAL	NET	INITIAL	SNOUT	Re 226	Th 232	(15 cm)	INITIAL		
20 DAY					20 DAY	20 DAY	DAY	20 DAY				(15 cm)	20 DAY		
1-24-89	DU-SS-12554	059-73	1-23-89		1	2.52E3	642.6	3.92				✓	SS	N-50266	CPTM
	DU-SV													E-50100	1700C.
1-24-89	DU-SS-12555	059-74	1-23-89		1	1.87E3	639.0	2.93				✓	SS	N-50266	CPTM
	DU-SV													E-50133	1580C.
1-24-89	DU-SS-12556	059-75	1-23-89		1	1.08E3	807.0	1.34				✓	SS	N-50233	CPTM
	DU-SV													E-50133	1700C.
1-24-89	DU-SS-12557	059-76	1-23-89		1	1.08E3	572.4	1.89				✓	SS	N-50233	CPTM
	DU-SV													E-50100	1580C.
1-24-89	DU-SS-12558	059-77	1-23-89		1	3.21E3	748.8	4.29				✓	SS	N-50233	CPTM
	DU-SV													E-50066	1700C.
1-24-89	DU-SS-12559	059-78	1-23-89		1	3.71E3	701.6	5.29				✓	SS	N-50233	CPTM
	DU-SV													E-50033	1700C.
1-24-89	DU-SS-12560	059-79	1-23-89		1	1.64E3	735.6	2.17				✓	SS	N-50233	CPTM
	DU-SV													E-50000	1700C.
1-24-89	DU-SS-12561	059-80	1-23-89		2	1.13E3	740.0	1.53				✓	SS	N-50200	CPTM
	DU-SV													E-50166	1580C.
1-24-89	DU-SS-12562	059-81	1-23-89		2	3.09E3	574.6	5.38				✓	SS	N-50200	CPTM
	DU-SV													E-50133	1580C.
1-24-89	DU-SS-12563	059-82	1-23-89		2	2.52E3	684.0	3.68				✓	SS	N-50200	CPTM
	DU-SV													E-50100	1580C.
1-24-89	DU-SS-12564	059-83	1-23-89		2	2.46E3	563.5	4.36				✓	SS	N-50200	CPTM
	DU-SV													E-50066	1580C.
1-24-89	DU-SS-12565	059-84	1-23-89		2	1.01E3	533.3	1.89				✓	SS	N-50200	CPTM
	DU-SV													E-50033	1700C.

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x) + .749 (10/21/87) VP Correction Factor = 1.35(x) + .505 for IMA-SpCl/r (2/3/88)
1.00(x) - 1.40 for S-150Cl/r (2/3/88)

MR. FERGUSON/CHEN-NUCLEAR
OFFSHORE CRISTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #283411

Duyango

SITE NAME
SITE AREA

COUNT DATE INITIAL 20 DAY	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	TAG NO. INITIAL 20 DAY	FUNCTION NO. INITIAL 20 DAY	MASS MEZ DRY	Ra 236 INITIAL 20 DAY	OC SWAY	LABORATORY RESULT		DEPTH CIS CP 15 CP	TECH INITIAL 20 DAY	REMARKS
										Ra 236	Ra 230			
1-24-89	DU-SS-12566 DU-SV	Q59-85	1-23-89		2	3.02E3	709.5	4.15				✓	SS	N 50100 E 50066 CPTM 1710C 1201m
1-24-89	DU-SS-12567 DU-SV	Q59-86	1-23-89		2	3.47E3	735.5	4.59				✓	SS	N 50166 E 50166 CPTM 1590C 1480m
1-24-89	DU-SS-12568 DU-SV	Q59-87	1-23-89		2	3.08E3	677.3	4.55				✓	SS	N 50166 E 50133 CPTM 1210C 1390m
1-24-89	DU-SS-12569 DU-SV	Q59-88	1-23-89		1	1.97E3	582.6	3.38				✓	SS	N 50166 E 50100 CPTM 2070 1300m
1-24-89	DU-SS-12570 DU-SV	Q59-89	1-23-89		1	4.47E3	630.0	1.50				✓	SS	N 50166 E 50066 CPTM 1930C 1260m
1-24-89	DU-SS-12571 DU-SV	Q59-90	1-23-89		1	2.97E3	617.6	4.81				✓	SS	N 50166 E 50033 CPTM 2070C 1890m
1-24-89	DU-SS-12572 DU-SV	Q59-91	1-23-89		1	3.51E3	660.4	5.32				✓	SS	N 50166 E 50000 CPTM 1890C 1790m
1-25-89	DU-SS-12573 DU-SV	Q59-92	1-24-89		1	2.03E3	525.0	3.87				✓	SS	N 50133 E 50166 CPTM 220C 1820m
1-25-89	DU-SS-12574 DU-SV	Q59-93	1-24-89		1	9.14E2	515.0	1.28				✓	SS	N 50133 E 50133 CPTM 2160C 1800m
1-25-89	DU-SS-12575 DU-SV	Q59-94	1-24-89		1	2.10E3	368.0	5.71				✓	SS	N 50033 E 50100 CPTM 2330C 1480m
1-25-89	DU-SS-12576 DU-SV	Q59-95	1-24-89		1	4.16E3	540.4	7.70				✓	SS	N 50133 E 50066 CPTM 2510C 1800m
1-25-89	DU-SS-12577 DU-SV	Q59-96	1-24-89		1	3.67E3	440.0	8.34				✓	SS	N 50133 E 50033 CPTM 1650C 1910m

NOTE: All cell sample results are in pCi/gm

REVIEWED BY

Site Correction factor = 1.31(x) + 7.69 (10/21/87) VP Correction Factor = 1.75(x) + 5.05 for MMA-5pCi/g (2/3/88)
5-15mCi/g (2/3/88)

MR. FERGUSON/CHEM-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

SITE NAME Durango
SITE ARI

OCS #1 Serial #984369
OCS #2 Serial #285411

SPLITTING DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SPLITTED	DATE SEALED	TAG NO.	FUNCTION NO.	MASS	Mo 236	LABORATORY RESULT	DEPTH	TECH	REMARKS
					INITIAL	INITIAL	WET	INITIAL		INCHES	INITIAL	
					20 DAY	20 DAY	DRY	20 DAY		20 DAY	20 DAY	
1-25-89	DU-SS-12572				1	1.67E3	358.0	4.70			✓ SS	N 50133 S 50000 S 2460 CPM IM=1820 "
	DU-SV	059-97	1-24-89									
1-25-89	DU-SS-12579				1	3.25E3	420.0	7.74			✓ SS	N 50100 E 50100 S 2460 CPM IM=1820 "
	DU-SV	059-98	1-24-89									
1-25-89	DU-SS-12580				1	4.91E3	643.0	7.64			✓ SS	N 50100 E 50133 S 2280 CPM IM=1900 "
	DU-SV	059-99	1-24-89									
1-25-89	DU-SS-12581				1	3.92E3	647.3	6.06			✓ SS	N 50100 E 50100 S 2280 CPM IM=1970 "
	DU-SV	059-100	1-24-89									
1-25-89	DU-SS-12582				1	1.34E3	441.3	3.04			✓ SS	N 50100 E 50066 S 1910 CPM IM=1870 "
	DU-SV	059-101	1-24-89									
1-25-89	DU-SS-12583				1	2.69E3	373.3	7.21			✓ SS	N 50100 E 50066 S 3066 CPM IM=2190 "
	DU-SV	059-102	1-24-89									
1-25-89	DU-SS-12584				1	6.70E2	408.4	1.64			✓ SS	N 50100 E 50000 S 2380 CPM IM=1890 "
	DU-SV	059-103	1-24-89									
1-25-89	DU-SS-12585				1	1.8E3	436.0	4.27			✓ SS	N 50066 E 50100 S 2280 CPM IM=1890 "
	DU-SV	059-104	1-24-89									
1-25-89	DU-SS-12586				1	9.89E2	484.0	2.04			✓ SS	N 50066 E 50133 S 1850 CPM IM=1820 "
	DU-SV	059-105	1-24-89									
1-25-89	DU-SS-12587				1	2.04E3	522.0	3.91			✓ SS	N 50066 E 50100 S 1740 CPM IM=1690 "
	DU-SV	059-106	1-24-89									
1-25-89	DU-SS-12588				2	1.68E3	456.0	3.68			✓ SS	N 50066 E 50066 S 1930 CPM IM=1810 "
	DU-SV	059-107	1-24-89									
1-25-89	DU-SS-12589				2	2.12E3	415.0	5.11			✓ SS	N 50066 E 50033 S 2840 CPM IM=2830 "
	DU-SV	059-108	1-24-89									

NOTE: All soil sample results are in pCi/gm

REVIEWED BY

Site Correction factor = 1.31(x)+.749 (10/21/87)

VP Correction Factor = 1.35(x)+.505 for BDA-5pCi/g (2/3/88)
1.98(x)-1.40 for S-15pCi/g (2/3/88)

IR-FERGUSON/CHFN-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

SITE NAME DURANGO
SITE AREA _____

OCS #1 Serial #984369
OCS #2 Serial #285411

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	TAG NO	FUNCTION NO.	MASS	Mo 236	SC	LABORATORY RESULT	DEPTH	TECH	REMARKS
INITIAL					INITIAL	INITIAL	WET	INITIAL	UNIT	Mo 236	Th 230	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY				20 DAY	
1/25/89	DU-SS-12590	C59-109	1/24/89		2	1.64E3	308.2	5.32				SS	N50066 E50000 S=2520 CPM IM=2140 CPM
	DU-SV												
1/25/89	DU-SS-12591	C59-110	1/24/89		2	4.84E2	314.0	1.54				SS	N50033 CPM E50166 S=1990 IM=2100
	DU-SV												
2/1/89	DU-SS-12623	C59-111	2/1/89		1	8.52E2	417.7	2.04				JS	N50033 CPM E50133 S=1840 IM=1790
	DU-SV												
1/25/89	DU-SS-12592	C59-112	1/24/89		2	1.12E3	347.0	3.23				SS	N50033 CPM E50100 S=1920 IM=2070
	DU-SV												
1/25/89	DU-SS-12593	C59-113	1/24/89		2	3.68E2	323.0	1.14				SS	N50033 CPM E50066 S=2240 IM=1970
	DU-SV												
1/25/89	DU-SS-12594	C59-114	1/24/89		2	2.90E3	507.5	3.71				SS	N50033 CPM E50033 S=2250 IM=1830
	DU-SV												
1/25/89	DU-SS-12595	C59-115	1/24/89		2	1.00E3	296.0	3.40				SS	N50033 CPM E50000 S=1980 IM=1760
	DU-SV												
1/25/89	DU-SS-12596	C59-116	1/24/89		2	1.58E3	291.0	5.43				SS	N50000 CPM E50166 S=2260 IM=1760
	DU-SV												
1/25/89	DU-SS-12597	C59-117	1/24/89		2	1.56E3	485.0	3.22				SS	N50000 CPM E50133 S=2160 IM=1950
	DU-SV												
1/25/89	DU-SS-12598	C59-118	1/24/89		2	1.37E3	318.0	4.31				SS	N50000 CPM E50100 S=2590 IM=1910
	DU-SV												
1/25/89	DU-SS-12599	C59-119	1/24/89		2	2.33E3	340.6	6.84				SS	N60000 CPM E50066 S=2580 IM=1750
	DU-SV												
1/25/89	DU-SS-12600	C59-120	1/24/89		2	4.68E2	322.0	1.45				SS	N50000 CPM E50033 S=2300 IM=1960
	DU-SV												

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x)1.749 (10/21/87)

VP Correction Factor = 1.35(x)+.505 for MMA-5pCi/g (2/3/88)
1.08(x)-1.40 for S-15pCi/g (2/3/88)

MR. FERUSON/CHEM-NUCLEAR

OPPOSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE RECALC	TAG NO	FUNCTION NO.	MASS	QC	LABORATORY RESULT	TECH	REMARKS
INITIAL	30 DAY	INITIAL	30 DAY	INITIAL	30 DAY	INITIAL	30 DAY	INITIAL	30 DAY	INITIAL	30 DAY
2/2/89	DU-SS-12601	059-121	1/24/89		2	1.15E 3	3436			SS	AJ 50000 51280 E 50000 1m 1980
2/2/89	DU-SV										
2/2/89	DU-SS-12624	059-122	2/1/89		1	9.14E 2	396.1			JS	AJ 50066 1620 S E 50200 1430 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12625	059-123	2/1/89		1	3.41E 2	433.5			JS	AJ 50033 1280 S E 50200 1280 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12626	059-124	2/1/89		1	6.02E 2	435.1			JS	AJ 50000 1660 S E 50200 1680 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12627	059-125	2/1/89		2	6.97E 2	433.6			JS	AJ 49966 1470 S E 50233 1500 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12628	059-126	2/1/89		2	1.11E 3	4270			JS	AJ 49966 1450 S E 50200 1440 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12631	059-127	2/1/89		1	9.46E 2	411.3			JS	AJ 49966 1860 S E 50166 2040 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12632	059-128	2/1/89		1	2.98E 3	434.8			JS	AJ 49966 2410 S E 50133 2140 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12633	059-129	2/1/89		1	1.26E 3	410.8			JS	AJ 49966 2370 S E 50100 2310 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12634	059-132	2/1/89		2	1.27E 3	389.8			JS	AJ 49933 2140 S E 50033 2330 1m
2/2/89	DU-SV										
2/2/89	DU-SS-12635	059-134	2/1/89		2	3.37E 3	455.7			JS	AJ 49933 2140 S E 50066 1740
2/2/89	DU-SV										
2/2/89	DU-SV										

NOTE: All soil sample results are in pct/gm

REVIEWED BY

Site Correction factor = 1.31(x) + 1.749 (10/21/87) VP Correction Factor = 1.15(x) + 1.50 for HMA-5pct/E (2/3/88)
1.08(x) - 1.46 for 5-15pct/E (2/3/88)

OCS #1: 984369
OCS #2: 285411

MR-FERGUSON/CHEM-HINCLAR
OPPOSED CRYSTAL SYSTEM RECORD

SITE NAME DJFARGO
SITE AREA

OCS SERIAL NO.

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	OCS#	FUNCTION NO.		MASS		OC		LABORATORY RESULT		TECH	REMARKS
						INITIAL	20 DAY	WET	DRY	INITIAL	20 DAY	Mo 226	IN 226		
2-2-89	DJ-SS-12634	059-130	2/1/89		1		2.03E3	358.2	56.7					DS	N49966 2190 C E50066 2330 M
2-2-89	DJ-SS-12635	059-131	2/1/89		1		2.31E3	384	7.50					DS	N49966 2130 S E50033 2480 M
2-2-89	DJ-SS-12636	059-133	2/1/89		1		1.54E2	390.0	2.88					DS	N49900 1500 S E50033 1620 M
2-2-89	DJ-SS-12637	059-135	2/1		2		1.12E3	231.9	4.83					DS	N49900 2630 S E50066 2170 M
2-2-89	DJ-SS-12638	059-136	2/1		2		8.23E2	263.1	3.13					DS	N49933 2020 S E50100 2100 M
2-2-89	DJ-SS-12639	059-137	2/1		2		2.22E3	385.6	5.80					DS	N49900 2100 S E50100 2130 M
2-2-89	DJ-SS-12640	059-138	2/1		2		2.37E3	441.1	5.37					DS	N49933 2020 S E50166 1970 M
2-2-89	DJ-SS-12641	059-139	2/1		2		2.46E3	355.0	6.03					DS	N49900 2220 S E50100 1860 M
2-2-89	DJ-SS-12642	059-140	2/1		2		1.00E3	22.5	3.54					DS	N49933 2020 S E50066 1960 M
2-2-89	DJ-SS-12643	059-141	2/1		2		8.75E2	363.0	2.41					DS	N49900 2580 S E50166 1910 M
2-2-89	DJ-SS-12644	059-142	2/1		2		1.23E3	409.4	3.58					DS	N49933 1820 S E50200 1941 M
2-2-89	DJ-SS-12645	059-143	2/1		2		8.62E2	377.5	2.28					DS	N49900 2580 S E50200 1850 M

NOTE: All soil sample results are in %Cl/gm

Site Correction Factor = 31(x) + .749 (10/21/88)

Count Time = 500 sec, unless noted otherwise.

VP Correction Factor = 1.35(x) + .505 MDA-5pCi/g
(2/3/88) = 1.98(x) - 1.40 5-15pCi/g

REVIEWED BY

285

MR-FERGUSON/CHEN-NUCLEAR
OFFGAS CRISTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COMMIT DATE	SAMPLE	SAMPLER	DATE	DATE	TAG NO	FUNCTION NO.	WASS	Re 226	GC	LABORATORY		DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	SAMPLED	SEALED	INITIAL	INITIAL	WET	INITIAL	DATE	RESULT		(15 cm)	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY	DATE	Re 226	Th 230	(15 cm)	20 DAY	
2/2/89	DU-SS-1264	C59-144	2/1/89		2	4.91 E2	375.2	1.31				✓	JS	N 49933 1740 S
	DU-SV													E 50233 16 301m
2/2/89	DU-SS-1264	C59-145	2/1/89		2	7.38 E2	411.7	1.79				✓	JS	N 49900 1730 S
	DU-SV													E 50233 1710 1m
	DU-													
	DU-SV													
	DU-													
	DU-SV													
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NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x) + 0.749 (10/21/87) VP Correction Factor = 1.35(x) + 0.505 for IMA-5pCi/g (2/3/88)
1.98(x) - 1.40 for 5-15pCi/g (2/3/88)

HK-FERGUSON/CHEM-NUCLEAR
OPPOSED CRYSTAL ETCHING RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COUNT DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	MASS	Ra 226	OC	LABORATORY	DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	ENRIED	SEALED	INITIAL	INITIAL	WET	INITIAL	UNIT	RESULT	(15 cm)	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY		Ra 226	Th 230	20 DAY	
2-27-89	DU-SS-12665	059-146	2-27-89		1	1.69E3	674.5	2.51			✓	RF	N-49866 CPTM E-50133 1950C. 17501m
	DU-SV												
2-27-89	DU-SS-12666	059-147	2-27-89		1	1.06E3	704.0	1.51			✓	RF	N-49866 CPTM E-50200 3240C. 20801m
	DU-SV												
2-27-89	DU-SS-12667	059-148	2-27-89		1	1.99E3	682.5	2.92			✓	RF	N-49833 CPTM E-50100 1630C. 16701m
	DU-SV												
2-27-89	DU-SS-12668	059-149	2-27-89		1	7.86E2	677.5	1.16			✓	RF	N-49833 CPTM E-50233 1690C. 17901m
	DU-SV												
2-27-89	DU-SS-12669	059-150	2-27-89		1	2.70E3	685.0	3.94			✓	RF	N-49800 CPTM E-50200 1850C. 19101m
	DU-SV												
2-27-89	DU-SS-12670	059-151	2-27-89		1	2.56E3	713.5	3.35			✓	RF	N-49866 CPTM E-50166 2020C. 20101m
	DU-SV												
2-27-89	DU-SS-12671	059-152	2-27-89		1	3.42E3	559.5	6.11			✓	RF	N-49866 CPTM E-50133 2640C. 24001m
	DU-SV												
2-27-89	DU-SS-12672	059-153	2-27-89		1	3.78E3	650.0	5.82			✓	RF	N-49866 CPTM E-50100 3830C. 26801m
	DU-SV												
2-27-89	DU-SS-12673	059-154	2-27-89		1	6.07E3	592.5	10.2			✓	RF	N-49866 CPTM E-50066 2460C. 27101m
	DU-SV												
2-27-89	DU-SS-12674	059-155	2-27-89		1	1.31E3	571.0	2.29			✓	RF	N-49866 CPTM E-50033 1840C. 18401m
	DU-SV												
2-27-89	DU-SS-12675	059-156	2-27-89		1	2.92E3	735.5	3.97			✓	RF	N-49833 CPTM E-50166 2380C. 22601m
	DU-SV												
2-3-89	DU-SS-12676	059-157	2-27-89		1	3.65E3	682.5	5.34			✓	RF	N-49833 CPTM E-50133 2570C. 25001m
	DU-SV												

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction factor = 1.31(x)1.749 (10/21/87)

VP Correction Factor = 1.35(x)+.505 for HMA-5pCi/g (2/3/88)
1.98(x)-1.40 for 5-15pCi/g (2/3/88)

MC-FERGUSON/CHEM-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SHIPED	DATE SEALED	TAG NO	FUNCTION NO.	MASS	Pa 226	DC	LABORATORY RESULT	DEPTH	TECH	REMARKS
INITIAL					INITIAL	INITIAL	WET	INITIAL			15 cm	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY	SWT	Pa 226 Th 230	15 cm	20 DAY	
3-1-89	DU-SS-12677				1	3.18 E 3	645.0	4.78			✓	RF	N-49833 CPTM E-50100 2190C. 2001m.
	DU-SV	059-158	2-27-89										
2-28-89	DU-SS-12678				2	2.08 E 3	568.1	3.66			✓	RF	N-49833 CPTM E-50066 1990C. 24301m.
	DU-SV	059-159	2-27-89										
2-28-89	DU-SS-12679				2	9.52 E 2	663.5	1.43			✓	RF	N-49833 CPTM E-50033 1960C. 18701m.
	DU-SV	059-160	2-27-89										
3-1-89	DU-SS-12680				2	2.68 E 3	701.0	3.82			✓	RF	N-49800 CPTM E-50166 2310C. 21201m.
	DU-SV	059-161	2-27-89										
3-1-89	DU-SS-12681				2	3.63 E 3	731.5	4.96			✓	RF	N-49800 CPTM E-50133 2230C. 21001m.
	DU-SV	059-162	2-27-89										
3-1-89	DU-SS-12682				2	4.21 E 3	589.9	8.57			✓	RF	N-49800 CPTM E-50100 2550C. 27201m.
	DU-SV	059-163	2-27-89										
3-1-89	DU-SS-12683				2	1.32 E 3	558.5	2.36			✓	RF	N-49800 CPTM E-50066 2090C. 20401m.
	DU-SV	059-164	2-27-89										
3-1-89	DU-SS-12684				2	1.88 E 3	614.5	3.06			✓	RF	N-49800 CPTM E-50033 2460C. 23501m.
	DU-SV	059-165	2-27-89										
3-1-89	DU-SS-12685				2	1.99 E 3	646.0	3.08			✓	RF	N-49800 CPTM E-50000 2190C. 21001m.
	DU-SV	059-166	2-27-89										
3-3-89	DU-SS-12710				1	1.21 E 3	603.5	2.00			✓	RF	N-49766 CPTM E-50233 C 2020 1m 2120
	DU-SV	059-167	2-27-89										
3-3-89	DU-SS-12711				1	1.87 E 3	650.6	2.90			✓	RF	N-49766 CPTM E-50200 C 1830 1m 1930
	DU-SV	059-168	2-27-89										
3-3-89	DU-SS-12712				1	3.20 E 3	677.0	4.54			✓	RF	N-49766 CPTM E-50166 C 3410 1m 2500
	DU-SV	059-169	2-27-89										

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction factor = 1.31(x)1.749 (10/21/07) VP Correction Factor = 1.35(x)+.505 for HDA-5pCi/g (2/3/00)
1.98(x)-1.40 for 5-15pCi/g (2/3/00)

HK-FERGUSON/CHEN-NUCLEAR
OFFGASED CRISTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango

SITE AREA _____

COUNT DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	MASS	Na 226	OC	LABORATORY	DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	SMILED	SEALED	INITIAL	INITIAL	NET	INITIAL	DATE	Na 226	Th 230	INITIAL	
30 DAY					30 DAY	30 DAY	DAY	30 DAY	DATE			30 DAY	
3-3-89	DU-SS-12713	059-170	2/27/89		1	3.41E3	554.4	6.15				✓ RF	N 49766 CPM E 50133 C:3800 IM:2670
	DU-SV												
3-3-89	DU-SS-12714	059-171	2/27/89		1	2.51E3	598.5	4.19				✓ RF	N 49766 CPM E 50100 C:1970 IM:1940
	DU-SV												
3-3-89	DU-SS-12715	059-172	2/27/89		2	1.09E3	543.6	2.00				✓ RF	N 49766 CPM E 50066 C:2040 IM:2040
	DU-SV												
3-3-89	DU-SS-12716	059-173	2/27/89		2	1.57E3	630.5	2.49				✓ RF	N 49766 CPM E 50033 C:2470 IM:2290
	DU-SV												
3-3-89	DU-SS-12717	059-174	2/27/89		2	2.10E3	539.5	3.89				✓ RF	N 49766 CPM E 50000 C:2050 IM:1920
	DU-SV												
3-3-89	DU-SS-12718	059-175	2/27/89		2	1.06E3	596.6	1.78				✓ RF	N 49733 CPM E 50233 C:1830 IM:2010
	DU-SV												
3-6-89	DU-SS-12719	059-176	2/27/89		1	2.57E3	557.2	4.61				✓ DJW	N 49733 CPM E 50200 C:3440 IM:2960
	DU-SV												
3-6-89	DU-SS-12720	059-177	2/27/89		1	2.94E3	540.0	5.44				✓ DJW	N 49733 CPM E 50166 C:3360 IM:2880
	DU-SV												
3-6-89	DU-SS-12721	059-178	2/27/89		1	2.93E3	538.6	5.44				✓ DJW	N 49733 CPM E 50133 C:2060 IM:2080
	DU-SV												
3-6-89	DU-SS-12722	059-179	2/27/89		1	1.11E3	550.0	2.02				✓ DJW	N 49753 CPM E 50100 C:1890 IM:1970
	DU-SV												
3-6-89	DU-SS-12723	059-180	2/27/89		1	1.21E3	584.0	2.07				✓ DJW	N 49733 CPM E 50066 C:2030 IM:2120
	DU-SV												
3-6-89	DU-SS-12724	059-181	2/27/89		1	1.21E3	601.1	2.01				✓ DJW	N 49733 CPM E 50033 C:2050 IM:1970
	DU-SV												

NOTES: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x)1.749 (10/21/87) VP Correction Factor = 1.35(x)+.505 for IMA-5pCi/g (2/3/88)
1.98(x)-1.40 for 5-15pCi/g (2/3/88)

OPPOSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

Durango

第 1 页 共 1 页

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	TAG NO		FUNCTION NO.		MASS		Ra 226		QC	LABORATORY RESULT		DEPTH	TECH	REMARKS
					INITIAL	20 DAY	INITIAL	20 DAY	WEY	DAY	INITIAL	20 DAY		Ra 226	Th J38			
3-6-87	DU-SS-1228	059-182	2/27/89		1	1.36	E3	591.2	2.30							✓	JW	N 49700 CAPM E 50133 C-3030 IM-258U
3-6-87	DU-SS-1229	059-183	2/27/89		1	2.34	E3	560.2	4.18							✓	JW	N 49700 CAPM E 50133 C-3460 IM-2970
	DU-SV																	
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NOTE: All cell sample results are in pCi/gw

REVIEWED BY

Site Correction factor = 1.31(κ)1.749 (10/21/87) VP Correction Factor = 1.35(κ)1.505 for HMA-5pCl/E (2/3/88)
1.98(κ)1.60 for 5-15pCl/E (2/3/88)

MR-FERGUSON/CHEM-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORDSITE NAME Durango
SITE AREA _____OCS #1: 984369
OCS #2: 285411

OCS SERIAL NO. _____

OCS SERIAL NO. _____														
COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	OCS#	FUNCTION NO.	SS	Re 226	OC SAMPLE	LABORATORY RESULT		DEPT	TECH	REMARKS
INITIAL					INITIAL	WET	INITIAL	Re 226		Th 230	(15 cm)	INITIAL		
20 DAY					20 DAY	DRY	20 DAY						20 DAY	
3-6-89					1	2.47E3	585.3	4.22				✓	DTW	N 49700 CPTM 2190C E 50166 28201m
3-6-89	04-SS-12730	059-184	2-27-89		1	1.36E3	531.6	2.56				✓	DTW	N 49700 CPTM 2070C E-50133 19701m
3-6-89	04-SS-12731	059-185	2-27-89		1	1.44E3	593.5	2.42				✓	DTW	N. 49700 CPTM 2160C E-50600 19701m
3-6-89	04-SS-12732	059-186	2-27-89		1	8.43E2	612.6	1.38				✓	DTW	N-49700 CPTM 2070C E-50066 17801m
3-6-89	04-SS-12733	059-187	2-27-89		2	8.74E2	576.3	1.63				✓	DTW	N-49666 CPTM 2190C E-50266 21781m
3-6-89	04-SS-12734	059-188	2-27-89		2	4.78E2	564.3	MDA				✓	DTW	N 49666 CPTM 2120C E 50233 17901m
3-6-89	04-SS-12735	059-189	2-27-89		2	4.80E2	565.8	MDA				✓	DTW	N 49666 CPTM 2160C E 50200 12201m
3-6-89	04-SS-12736	059-190	2-27-89		1	8.48E2	557.7	1.52				✓	DTW	N-49666 CPTM 2190C E-50166 21601m
3-6-89	04-SS-12737	059-191	2-27-89		1	1.01E3	543.4	1.86				✓	DTW	N 49666 CPTM 2020C E-50133 20201m
3-6-89	04-SS-12738	059-192	2-27-89		1	1.20E3	540.0	2.22				✓	DTW	N 49666 CPTM 2280C E 51100 20701m
3-6-89	04-SS-12739	059-193	2-27-89		2	1.50E3	611.0	2.45				✓	DTW	N 49633 CPTM 2880C E-50266 26001m
3-6-89	04-SS-12740	059-194	2-27-89		2	9.00E2	572.7	1.57				✓	DTW	N-49633 CPTM 2370C E 50233 22001m
3-6-89	04-SS-12741	059-195	2-27-89											

NOTE: All soil sample results are in g/cm³

NOTE: All soil sample results are in pCi/g

Site Correction Factor = $1.31(x) + .749$ (10/21/88)
Count Time = 500 sec, unless noted otherwise.REVIEWED BY _____
VP Correction Factor = $1.35(x) + .505$ MDA-5pCi/g
(2/3/88) = $1.98(x) - 1.40$ 5-15pCi/g

RR-FERGUSON/CHEN-NUCLEAR
 OPPOSED CRYSTAL SYSTEM RECORD

 SITE NAME Durango
 SITE AREA _____

 OCS #1: 984364
 OCS #2: 285411

OCS SERIAL NO. _____

COUNT DATE	SAMPLE	SAMPLE	DATE	DATE	UCS#	FUNCTION NO.	MASS	Re 226	QC	LABORATORY		DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	SAMPLED	SEALED	INITIAL	INITIAL	WET	INITIAL	SAMPLER	RESULT		cm	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY		Re 226	Th 230	20 DAY		
3-6-89					2	1.27E3	606.4	2.11				✓	DJW	N-49633 CPTM 243C
	DU-SS-12742	059-196	2-27-89											E-50200 2171m
3-6-89					1	6.14E2	648.0	5.16				✓	DJW	N-49633 CPTM 2171C
	DU-SS-12743	059-197	2-27-89											E-50166 20751m
3-6-89					1	1.67E3	639.3	2.61				✓	DJW	N-49600 CPTM 2463C
	DU-SS-12744	059-198	2-27-89											E-50266 24901m
3-6-89					1	1.80E3	652.8	2.74				✓	DJW	N-49600 CPTM 2342C
	DU-SS-12745	059-199	2-27-89											E-50283 22111m
3-6-89					2	1.12E3	609.8	1.84				✓	DJW	N-49600 CPTM 2345C
	DU-SS-12746	059-200	2-27-89											E-50200 22191m
3-6-89					2	6.67E2	552.1	1.21				✓	DJW	N-49700 CPTM 2262C
	DU-SS-12747	059-201	2-27-89											E-50266 22361m
3-6-89					2	7.36E2	578.0	1.34				✓	DJW	N-49733 CPTM 2152C
	DU-SS-12748	059-202	2-27-89											E-50266 20271m
3-6-89					2	1.53E3	670.0	2.28				✓	DJW	N-49766 CPTM 2561C
	DU-SS-12749	059-203	2-27-89											E-50266 22381m
3-6-89					2	2.64E3	728.5	3.62				✓	DJW	N-50833 CPTM 1883C
	DU-SS-12750	059-204	2-28-89											E-50300 17351m
3-6-89					2	3.31E3	712.2	4.65				✓	DJW	N-50833 CPTM 1934C
	DU-SS-12751	059-205	2-28-89											E-50333 18241m
3-6-89					1	6.31E2	557.7	5.16				✓	DJW	N-50833 CPTM 1538C
	DU-SS-12752	059-206	2-28-89											E-50366 15151m
3-6-89					1	4.37E3	663.6	7.13				✓	DJW	N-50800 CPTM 2706C
	DU-SS-12753	059-207	2-28-89											E-50300 13591m

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

 Site Correction Factor = $1.31(x) + .749$ (10/21/88) VP Correction Factor = $1.35(x) + .505$ MDA-5pCi/g
 Count Time = 500 sec, unless noted otherwise. (2/3/89) = $1.98(x) - 1.40$ 5-15pCi/g

HK-FERGUSON/CHEN-NUCLEAR
OFFICE/20 CRYSTAL SYSTEM RECORD

SITE NAME Durango

SITE AREA _____

OCS #1 Serial #984369

OCS #2 Serial #285411

COUNT DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	MASS	Re 226	OC	LABORATORY	DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	SMILED	SEALED	INITIAL	INITIAL	NET	INITIAL	DATE	DATE	DATE	DATE	
20 DAY					20 DAY	20 DAY	DATE	20 DAY	DATE	DATE	DATE	DATE	
3-6-89	DU-SS-12759	059-208	2/28/89		1	4.12 E 3	687.1	6.0				✓ DJW	N-50800 CPTM E-50333 C-2182 1m-1872
	DU-SV												
3-6-89	DU-SS-12755	059-209	2/28/89		1	7.36 E 2	679.5	<MDA				✓ DJW	N-50800 CPTM E-50366 C-1994 1m-1371
	DU-SV												
3-6-89	DU-SS-12756	059-210	2/28/89		1	3.58 E 3	700.5	5.11				✓ DJW	N-50766 CPTM E-50300 C-2170 1m-1858
	DU-SV												
3-6-89	DU-SS-12757	059-211	2/28/89		1	1.29 E 3	599.5	2.15				✓ DJW	N-50766 CPTM E-50733 C-1948 1m-1728
	DU-SV												
3-7-89	DU-SS-12758	059-212	2/28/89		1	3.93 E 3	694.5	5.66				✓ DJW	N-50733 CPTM E-50300 C-1853 1m-1770
	DU-SV												
3-7-89	DU-SS-12764	059-213	2/28/89		1	1.49 E 3	643.0	2.32				✓ DJW	N-50733 CPTM E-50333 C-1946 1m-1969
	DU-SV												
3-7-89	DU-SS-12765	059-214	2/28/89		1	2.44 E 3	677.0	3.60				✓ DJW	N-50700 CPTM E-50300 C-1905 1m-1707
	DU-SV												
3-7-89	DU-SS-12766	059-215	2/28/89		2	6.97 E 2	697.5	<MDA				✓ DJW	N-50700 CPTM E-50333 C-1986 1m-1969
	DU-SV												
3-7-89	DU-SS-12767	059-216	2/28/89		2	3.36 E 3	604.0	5.56				✓ DJW	N-50666 CPTM E-50266 C-2263 1m-1727
	DU-SV												
3-7-89	DU-SS-12768	059-217	2/28/89		2	2.58 E 3	616.0	4.19				✓ DJW	N-50666 CPTM E-50300 C-2375 1m-1792
	DU-SV												
3-7-89	DU-SS-12773	059-218	2/28/89		2	3.55 E 3	640.5	5.54				✓ DJW	N-50633 CPTM E-50266 C-2285 1m-1743
	DU-SV												
3-7-89	DU-SS-12774	059-219	2/28/89		2	2.16 E 3	647.5	3.34				✓ DJW	N-50633 CPTM E-50300 C-2008 1m-1660
	DU-SV												

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x) + 1.749 (10/21/87)

VP Correction Factor = 1.15(x) + 1.505 for HMA-5pCi/g (2/3/88)
1.98(x) - 1.40 for 5-15pCi/g (2/3/88)

MR-FERGUSON/CHEN-NUCLEAR
OFFGAS CRISTAL SYSTEM RECORD

SITE NAME DURANGO
SITE AREA _____

OCS #1 Serial #984369
OCS #2 Serial #285411

COUNE DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	MASS	Pa 226	OC	LABORATORY	DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	SMILED	SEALED	INITIAL	INITIAL	WET	INITIAL	UNIT	RESULT	15 cm	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY		Pa 226	Th 230	20 DAY	
3-7-89	DU-SS-12725	059-220	2/28/89		2	3.89E3	676.5	5.75				✓	DUW N 50800 CPTM E 50266 C-1877 Im-1672
	DU-SV												
3-7-89	DU-SS-12776	059-221	2/28/89		1	1.20E3	618.0	1.94				✓	DUW N 50600 CPTM E 50300 C-1440 Im-1386
	DU-SV												
3-7-89	DU-SS-12777	059-222	2/28/89		1	2.72E3	623.5	4.36				✓	DUW N 50566 CPTM E 50266 C-2273 Im-1550
	DU-SV												
3-7-89	DU-SS-12778	059-223	2/28/89		1	2.58E3	588.5	4.38				✓	DUW N 50566 CPTM E 50300 C-1979 Im-1479
	DU-SV												
3-7-89	DU-SS-12780	059-224	2/28/89		1	2.62E3	650.0	4.03				✓	DUW N 50593 CPTM E 50266 C-2426 Im-1846
	DU-SV												
3-7-89	DU-SS-12781	059-225	2/28/89		1	1.02E3	631.0	1.62				✓	DUW N 50533 CPTM E 50300 C-1878 Im-1487
	DU-SV												
3-7-89	DU-SS-12782	059-226	2/28/89		1	3.44E3	646.5	5.32				✓	DUW N 50500 CPTM E 50266 C-3284 Im-1727
	DU-SV												
3-7-89	DU-SS-12783	059-227	2/28/89		1	9.41E2	722.0	1.30				✓	DUW N 50500 CPTM E 50300 C-1551 Im-1487
	DU-SV												
3-7-89	DU-SS-12784	059-228	2/28/89		1	9.72E2	647.0	1.50				✓	DUW N 49566 CPTM E 50533 C-2308 Im-2250
	DU-SV												
3-7-89	DU-SS-12785	059-229	2/28/89		1	1.28E3	646.5	1.98				✓	DUW N 49566 CPTM E 50500 C-2285 Im-2342
	DU-SV												
3-7-89	DU-SS-12786	059-230	2/28/89		1	7.32E2	614.0	1.19				✓	DUW N 49566 CPTM E 50466 C-2385 Im-2399
	DU-SV												
3-7-89	DU-SS-12787	059-231	2/28/89		1	1.64E3	645.8	2.54				✓	DUW N 49566 CPTM E 50933 C-2259 Im-2344
	DU-SV												

NOTE: All soil sample results are in pCi/

REVIEWED BY _____

Site Correction factor = 1.31(x)+.749 (10/21/87) VP Correction Factor = 1.35(x)+.505 for HDA-5pCi/g (2/3/88)
1.98(x)-1.40 for 5-15pCi/g (2/3/88)

HR-FERGUSON/CHEN-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COINCE DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE BRIDLED	DATE SEALED	TAG NO	FUNCTION NO.	MASS	Re 226	OC	LABORATORY RESULT	DEPTH	TECH	REMARKS
INITIAL					INITIAL	INITIAL	NET	INITIAL	OC		15 cm	INITIAL	
0 DAY					20 DAY	20 DAY	DAY	20 DAY	50C/12	Re 226	Th 232	20 DAY	
3-7-89	DU-55-12788	059-232	2/28/89		2	8.93 E 2	692.3	1.28				✓	OFW N 49586 CPTM E 50400 C=2286 Im=2461
	DU-SV												
3-7-89	DU-55-12789	059-233	2/28/89		2	8.32 E 2	697.8	1.19				✓	OFW N 49586 CPTM E 50366 C=2426 Im=2387
	DU-SV												
3-7-89	DU-55-12790	059-234	2/28/89		2	9.63 E 2	715.3	1.35				✓	OFW N 49586 CPTM E 50333 C=2359 Im=2288
	DU-SV												
3-7-89	DU-55-12791	059-235	2/28/89		2	1.01 E 3	696.0	1.45				✓	OFW N 49586 CPTM E 50300 C=2572 Im=2489
	DU-SV												
3-7-89	DU-55-12792	059-236	2/28/89		1	9.34 E 2	750.3	1.24				✓	OFW N 49586 CPTM E 50366 C=2180 Im=2286
	DU-SV												
3-7-89	DU-55-12793	059-237	2/28/89		1	9.24 E 2	768.6	1.21				✓	OFW N 49586 CPTM E 50400 C=2058 Im=2207
	DU-SV												
3-7-89	DU-55-12794	059-238	2/28/89		1	2.12 E 3	751.5	2.82				✓	OFW N 49586 CPTM E 50433 C=2601 Im=2395
	DU-SV												
3-7-89	DU-55-12795	059-239	2/28/89		1	1.09 E 3	770.5	1.41				✓	OFW N 49586 CPTM E 50466 C=2787 Im=2475
	DU-SV												
3-7-89	DU-55-12796	059-240	2/28/89		2	1.09 E 3	838.2	1.30				✓	OFW N 49586 CPTM E 50500 C=2363 Im=2426
	DU-SV												
3-7-89	DU-55-12797	059-241	2/28/89		2	8.22 E 2	634.7	1.28				✓	OFW N 49600 CPTM E 50500 C=2722 Im=2321
	DU-SV												
3-7-89	DU-55-12798	059-242	2/28/89		2	1.04 E 3	624.5	1.66				✓	OFW N 49633 CPTM E 50500 C=2761 Im=2370
	DU-SV												
3-7-89	DU-55-12799	059-243	2/28/89		2	8.36 E 2	613.0	1.36				✓	OFW N 49666 CPTM E 50500 C=2527 Im=2312
	DU-SV												

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction factor = 1.31(x)1.749 (10/21/87)

VP Correction Factor = 1.35(x)+.505 For HDA-SpCi/g (2/3/88)

DU-059
EAST SLOPES

A survey of the East slopes was performed in November of 1987. This survey consisted of pulling soil samples on 100'x50' centers. Two samples were pulled at each location, one 0-6" and one 6-12". In June of 1988 another survey was performed. At that time contact and one meter readings were taken at some of the 100'x50' grid points.

Ron Jacobs

RON JACOBS
3-10-89

REMARKS: _____

HR-FERGUSON/CHEM-NUCLEAR

OPPOSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COUNT DATE INITIAL 30 DAY	SAMPLE NUMBER	SAMPLE LOCATION	DATE SHIPPED	DATE SERIALIZED	TAG NO INITIAL 30 DAY	FUNCTION NO. INITIAL 30 DAY	VIB NET DAY	R _h 236 INITIAL 30 DAY	QC COMPT	LABORATORY RESULT		DEPTH INITIAL 30 DAY	YPCR INITIAL 30 DAY	REMARKS
										R _h 236	TH 238			
12-16-87	DU-SS9797 DU-SV	059-1	11-9	11-23	2	3.10 E3	683.9	4.47				✓		N 50800 E 50350
12-22	DU-SS9801 DU-SV	059-2	11-9	11-23	1	1.02 E3	714.2	1.43				✓	TM	N 50800 E 50350
12-23	DU-SS9807 DU-SV	059-3	11-10	11-23	2	1.32 E3	744.7	1.77				✓	MD	N 50800 E 50400
12-16	DU-SS9779 DU-SV	059-4	11-10	11-23	1	1.31 E3	681.4	1.92				✓	CF	N 50800 E 50400
12-16	DU-SS9770 DU-SV	059-5	11-10	11-23	1	3.15 E3	992.4	3.57				✓	CF	N 50800 E 50450
12-22	DU-SS9809 DU-SV	059-6	11-10	11-23	1	1.32 E3	716.2	1.68				✓	MD	N 50800 E 50450
12-23	DU-SS9901 DU-SV	059-7	11-10	11-23	1	1.00 E3	711.8	1.37				✓	MD	N 50700 E 50350
12-16	DU-SS9941 DU-SV	059-8	11-9	11-23	1	1.50 E2	748	0.22				✓	SS/MD	N 50700 E 50400
12-16	DU-SS9799 DU-SV	059-9	11-9	11-23	2	2.72 E3	615.1	4.42				✓	TM	N 50700 E 50400
12-22	DU-SS9801 DU-SV	059-10	11-10	11-23	2	3.97 E3	713.9	5.56				✓	MD	N 50700 E 50450
12-16	DU-SS9796 DU-SV	059-11	11-10	11-23	2	3.94 E3	777.3	4.94				✓	TM	N 50700 E 50450
12-16	DU-SS9807 DU-SV	059-12	11-10	11-23	1	1.79 E3	738.4	2.42				✓	TM	N 50700 E 50450

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction factor = 1.31(x)+1.749 (10/31/87) VP Correction Factor = 1.35(x)+1.505 for MMA-5pCi/g (2/3/88)

PK-FERGUSON/CHEM-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

SITE NAME Durango
SITE AREA _____

OCS #1 Serial #984369
OCS #2 Serial #285411

COUNT DATE	SAMPLE	SAMPLE	DATE	DATE	TAG NO	FUNCTION NO.	MASS	Re 226	DC	LABORATORY		DEPTH	TECH	REMARKS
INITIAL	NUMBER	LOCATION	SAMPLED	SEALED	INITIAL	INITIAL	NET	INITIAL	UNIT	Re 226	Th 232	15 cm	INITIAL	
20 DAY					20 DAY	20 DAY	WT	20 DAY				15 cm	20 DAY	
12-16	DU-559928	059-13	11-10	11-23	1	1.48 E3	765.8	1.33				✓	SS/MD	N 50400 E 50350
	DU-SV													
12-21	DU-559960	059-14	11-10	11-23	1	8.12 E2	704.5	1.15				✓	MD	N 50600 E 50350
	DU-SV													
12-22	DU-559986	059-15	11-10	11-23	2	2.33 E3	757.4	2.72				✓	MD	N 50600 E 50400
	DU-SV													
12-22	DU-559986	059-16	11-10	11-23	2	1.09 E3	705.2	1.54				✓	MD	N 50600 E 50400
	DU-SV													
12-22	DU-559985	059-17	11-10	11-23	1	2.73 E3	777.8	3.51				✓	MD	N 50600 E 50450
	DU-SV													
12-23	DU-559914	059-19	11-10	11-23	1	2.79 E3	775.3	3.55				✓	MD	N 50600 E 50450
	DU-SV													
12-21	DU-559959	059-19	11-9	11-23	2	5.79 E3	932.5	6.95				✓	MD	N 50500 E 50350
	DU-SV													
12-22	DU-559979	059-20	11-9	11-23	1	4.05 E3	903.0	5.04				✓	MD	N 50500 E 50350
	DU-SV													
12-19	DU-559956	059-21	11-9	11-23	2	1.90 E3	902.2	2.37				✓	CF	N 50500 E 50400
	DU-SV													
12-21	DU-559959	059-22	11-9	11-23	1	4.66 E3	921.4	5.67				✓	MD	N 50500 E 50400
	DU-SV													
12-16	DU-559913	059-23	11-9	11-23	1	6.29 E3	902.3	7.84				✓	TM	N 50400 E 50350
	DU-SV													
12-21	DU-559873	059-24	11-9	11-23	2	2.07 E3	945.5	2.45				✓	MD	N 50400 E 50350
	DU-SV													

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x) + 1.742 (10/21/87)

VF Correction Factor = 1.75(x) + 1.505 for IMA-5pCi/g (2/3/88)

OCS #1 Serial #984369
OCS #2 Serial #285411

MR-TERGUSON/CHEM-MIX-EAR
OPPOSED CRYSTAL SYSTEM RECORD

Durango

SITE NAME

SITE AREA

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SHIPPED	DATE SEALED	TAG NO	FUNCTION NO.		MASS		TAG NO		OC	LABORATORY RESULT		DEPTH	TECH	REMARKS
						INITIAL	30 DAY	WET	DRY	INITIAL	30 DAY		NO 236	NO 236			
12-21	DU-SS 9812	059-25	11-9	11-23	2										✓		N 50400 E 50400
12-22	DU-SV															MD	
12-22	DU-SS 9892	059-26	11-9	11-23	1										✓		N 50400 E 50400
12-21	DU-SV															MD	
12-21	DU-SS 9843	059-27	11-9	11-23	2										✓		N 50400 E 50450
12-21	DU-SV															MD	
12-21	DU-SS 9846	059-28	11-9	11-23	1										✓		N 50400 E 50450
12-21	DU-SV															MD	
12-21	DU-SS 9850	059-29	11-9	11-23	1										✓		N 50300 E 50350
12-21	DU-SV															SS/MD	
12-22	DU-SS 9815	059-30	11-9	11-23	2										✓		N 50300 E 50350
12-22	DU-SV															MD	
12-16	DU-SS 9829	059-31	11-9	11-23	1										✓		N 50300 E 50400
12-16	DU-SV															SS/MD	
12-22	DU-SS 9874	059-32	11-9	11-23	2										✓		N 50300 E 50400
12-22	DU-SV															MD	
12-16	DU-SS 9847	059-33	11-9	11-23	1										✓		N 50300 E 50450
12-16	DU-SV															SS/MD	
12-16	DU-SS 9844	059-34	11-9	11-23	1										✓		N 50300 E 50450
12-16	DU-SV															SS/MD	
12-16	DU-SS 9826	059-35	11-9	11-23	1										✓		N 50200 E 50350
12-16	DU-SV															MD	
12-22	DU-SS 9849	059-36	11-9	11-23	2										✓		N 50200 E 50350
12-22	DU-SV															MD	

NOTE: All soil sample results are in g/cm³

REVIEWED BY

Site Correction Factor = 1.71(x) + 1.749 (10/21/87) VP Correction Factor = 1.75(x) + 1.505 for HMA-5pC1/E (2/1/88)

DK-FERGUSON/CHEN-NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango
SITE AREA _____

COUNT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE UNFILED	DATE SEALED	TAG NO.	FUNCTION NO.	MASS	Re 230	QC	LABORATORY RESULT	DEPTH	TECH	REMARKS
INITIAL					INITIAL	INITIAL	NET	INITIAL			15 cm	INITIAL	
20 DAY					20 DAY	20 DAY	DRY	20 DAY	SWP12	Re 230	Th 230	20 DAY	
12-16	DU-SS 881/6	059-37	11-9	11-23	1	574 E3	769.3	7.47			✓		N 50200 E 50400
	DU-SV											TM	
12-16	DU-SS 884/6	059-38	11-9	11-23	1	345 E3	774.9	4.45			✓	SS/MD	N 50200 E 50400
	DU-SV										✓		
12-16	DU-SS 8792	059-39	11-9	11-23	1	990 E2	140.1	1.35			✓	TM	N 50200 E 50450
	DU-SV												
12-21	DU-SS 8889	059-40	11-9	11-23	1	104 E3	157.0	1.59			✓	MD	N 50200 E 50450
	DU-SV										✓		
12-16	DU-SS 8914	059-41	11-9	11-23	1	344 E3	915.0	4.22				TM	N 50100 E 50400
	DU-SV												
12-16	DU-SS 8920	059-42	11-9	11-23	2	775 E2	729.5	1.06			✓	TM	N 50100 E 50450
	DU-SV										✓		
12-16	DU-SS 8931	059-43	11-9	11-23	1	354 E3	685.4	5.16				SS/MD	N 50100 E 50450
	DU-SV												
12-16	DU-SS 8909	059-44	11-9	11-23	1	454 E3	790.1	5.92			✓	TM	N 50000 E 50350
	DU-SV										✓		
12-23	DU-SS 89108	059-45	11-9	11-23	2	667 E3	546.0	11.9				MD	N 50000 E 50350
	DU-SV												
12-16	DU-SS 8934	059-46	11-9	11-23	1	819 E2	599	1.37			✓	SS/MD	N 50000 E 50400
	DU-SV										✓		
12-21	DU-SS 8911	059-47	11-9	11-23	2	179 E3	517.3	3.46				MD	N 50000 E 50400
	DU-SV												
12-16	DU-SS 8799	059-48	11-9	11-23	2	121 E3	934.7	1.45			✓	TM	N 50000 E 50450
	DU-SV												

NOTE: All soil sample results are in pCi/gm

REVIEWED BY _____

Site Correction Factor = 1.31(x)1.749 (10/21/87) VP Correction Factor = 1.35(x)+.505 for IDA-5pCi/g (2/3/88)

MR. PERCUSH/CHEN, NUCLEAR

OPPOSED CRISTAL SYSTEM RECORD

OCS #1 Serial #984369
OCS #2 Serial #285411

SITE NAME Durango

SITE AREA

COMPT DATE	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	PAG NO	FUNCTION NO.	MASS	INSTRAL	QC	LABORATORY RESULT	DEPTH	TECH	REMARKS
INITIAL					INITIAL	INITIAL	WET	20 DAY	CHUTE	Mo 234	113 cm	INITIAL	
30 DAY					30 DAY	30 DAY	DRE				113 cm	30 DAY	
12-21	DU-SS 8852	059-49	11-9	11-23	1	1.40 E3	914.9	1.72			✓	MD	N 50000 E 50450
	DU-SV												
12-21	DU-SS 8912	059-50	11-9	11-23	1	5.38 E3	496.9	7.72			✓	MD	N 50000 E 50500
	DU-SV												
12-23	DU-SS 8915	059-51	11-9	11-23	1	2.94 E3	754.3	3.90			✓	MD	N 50000 E 50500
	DU-SV												
12-16	DU-SS 8919	059-52	11-9	11-23	2	3.00 E3	678.5	4.42			✓	TM	N 49900 E 50400
	DU-SV												
12-19	DU-SS 8955	059-53	11-9	11-23	1	5.19 E3	554.6	9.36			✓	CF	N 49900 E 50400
	DU-SV												
12-19	DU-SS 8953	059-54	11-9	11-23	1	2.89 E3	796.0	3.63			✓	CF	N 49900 E 50450
	DU-SV												
12-22	DU-SS 8978	059-55	11-9	11-23	1	4.64 E3	634.7	6.78			✓	MD	N 49900 E 50450
	DU-SV												
12-16	DU-SS 8973	059-56	11-9	11-23	2	9.01 E2	424.8	1.44			✓	CF	N 49900 E 50500
	DU-SV												
12-23	DU-SS 8912	059-57	11-9	11-23	2	4.04 E3	753.7	5.36			✓	MD	N 49900 E 50500
	DU-SV												
12-16	DU-SS 8948	059-58	11-9	11-23	1	1.53 E3	717.2	2.13			✓	MD	N 49900 E 50400
	DU-SV												
12-22	DU-SS 8990	059-59	11-9	11-23	1	6.06 E2	739.0	0.820			✓	MD	N 49900 E 50400
	DU-SV												
12-16	DU-SS 8985	059-60	11-9	11-23	1	1.24 E3	738.7	1.71			✓	TM	N 49900 E 50450
	DU-SV												

NOTE: All soil sample results are in g/cm³

REVIEWED BY

1 15/01/05 FOR PMA-5001/P (7/7/00)

APPENDIX B
OWNER COMMENTS

ENGINEERS
AND
CONSTRUCTORS



MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

HEADQUARTERS OFFICE
ONE ERIEVIEW PLAZA
CLEVELAND, OHIO U.S.A. 44114
PHONE (216) 523-5100/TELEX 985542

REPLY TO MK-FERGUSON COMPANY
REMEDIAL ACTIONS
CONTRACTOR UMTRA PROJECT
PO BOX 9136
ALBUQUERQUE, NEW MEXICO U.S.A. 87119

June 2, 1989

Mr. Conrad Steller
United Bank of Denver
United Bank Center
1700 Broadway
Denver, CO 80274-0043

SUBJECT: Application of Supplemental Standards - DU-059

Dear Mr. Steller:

Per your conversation with Rob Pommerening of my staff, enclosed is a copy of the Department of Energy (DOE) certification letter issued to owners where supplemental standards have been applied.

Should you have any questions, please contact Mr. Pommerening at 1-800-443-4379.

Sincerely,

MK-Ferguson Company

J.G. Oldham
Project Director

JGO/RAP/ss
Enclosure

cc: w/enclosure:

P. Martin, United Bank of Durango
Document Control
w/o enclosure:
J. Garcia - DOE/UMTRA



Department of Energy
 Albuquerque Operations Office
 P. O. Box 5400
 Albuquerque, New Mexico 87115

FEB 22 1989

MK-FERGUSON CO.
 ALBUQUERQUE

Vicinity Property No.

FEB 23 1989

RECEIVED

Gentlemen:

Under the Uranium Mill Tailings Radiation Control Act of 1978 (Public Law 95-604), the U.S. Department of Energy (DOE), with ten percent funding provided by the state, has completed remedial action at the property referenced above. In addition, supplemental standards were applied to certain areas of the property. Review of the available data indicates your property has been cleared of residual radioactive contamination to the extent required by the Environmental Protection Agency (EPA) Standards (40 CFR Part 192). Therefore, the DOE certifies your property is in compliance with the EPA Standards.

The current status of your property will be recorded by the state on the appropriate property records, per requirements of Public Law 95-604. Records of Uranium Mill Tailings Remedial Action vicinity properties are archived with both the state and the DOE.

Should you have any questions regarding the project or your property, please write to me at the above address or contact Gaeton Falance of my staff at (505) 846-1206 or the Department of Environmental Resources at (412) 665-2900. Your cooperation in the successful accomplishment of this work has been greatly appreciated.

Sincerely,

Original Signed By CAC ic-

Mark L. Matthews
 Acting Project Manager
 Uranium Mill Tailings Project Office

cc:
 James G. Yusko, DER, PA

bcc:
 E. Hoyer, NRC
 J. Oldham, MK-F
 VPDMH :FC

ENGINEERS
AND
CONSTRUCTORS



MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

HEADQUARTERS OFFICE
ONE ERIEVIEW PLAZA
CLEVELAND, OHIO U.S.A. 44114
PHONE (216) 523-5600/TELEX 985542

REPLY TO MK-FERGUSON COMPANY
REMEDIAL ACTIONS
CONTRACTOR-UNITRA PROJECT
PO BOX 9136
ALBUQUERQUE, NEW MEXICO U.S.A. 87119

May 18, 1989

Mr. Conrad Steller
United Bank of Denver
United Bank Center
1700 Broadway
Denver, CO 80274-0043

SUBJECT: DU-059 - Supplemental Standards

Dear Mr. Steller:

As you know, remedial action on your property at State Highway 160 and Roosa Avenue was divided into two phases. Phase I, completed last construction season, consisted of the cleanup of all accessible areas on top of the hill. Phase II addresses the contamination found on the slopes of the property.

An additional radiological survey has been performed at the property on accessible portions of the slopes to more exactly define areas of contamination that exceed EPA standards for uranium mill tailings.

Soil samples were collected from every 100m² grid on the west and south slopes, and at every 100'x50' center on the east slope. Concentrations of Ra-226 in these soil samples ranged from 1.6 to 22.0 picocuries per gram (pCi/g). The EPA standard for Ra-226 concentrations in the top 15cm layer of soil averaged over 100m² is 5 pCi/g not including background. The background Ra-226 concentration in the Durango area is 1.6 pCi/g. Only 77 of 323 soil samples collected have Ra-226 concentration in excess of the EPA standards.

Gamma surveys show that the general area radiation levels range from 12 to 29 micro R/hr. Background for the Durango area is 14 micro R/hr. If a person spent 8 hours a day, 5 days a week, for 50 weeks in a 29 micro R/hr radiation field, he would receive about 58 millirem of gamma exposure in one year. This is less than one-fifth of the Nuclear Regulatory Commission's (NRC) limit of 500 millirem/year allowed the general public (10 CFR 20.105).

Mr. Conrad Steller
May 18, 1989
Page 2

Because of the risk of injury to contractor personnel compared to the very low public health hazard, we are recommending leaving the uranium mill tailings on the west and south slopes, and the east slope below the access road in place. This action is authorized under Title 40, Code of Federal Regulations, Sections 192.21 and 22. Basically, these sections of the EPA standards, which are established for cleanup of uranium mill tailings, allow residual radioactive materials to remain in place when certain conditions are met. The criterion defining when remedial action will not take place (called Supplemental Standards) is as follows:

Remedial action to satisfy Subparts A or B would pose a clear and present risk of injury to workers or to members of the public, notwithstanding reasonable measures to avoid or reduce risk.

MK-Ferguson believes that the criterion for the application of Supplemental Standards has been met due to the steepness and instability of the slopes of the property.

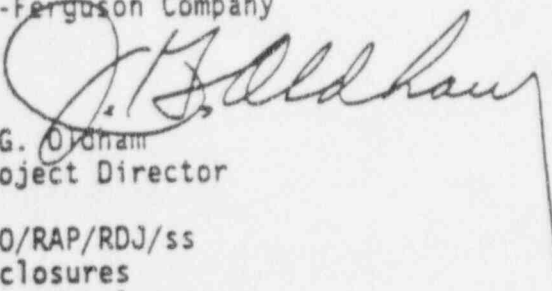
In compliance with the EPA regulations found in the Code of Federal Regulations, 40 CFR 192.21, we solicit your comments concerning this action. Excavation of radioactive materials on your property in other outdoor areas has been completed.

We are attaching a copy of the applicable sections of the Code of Federal Regulations as well as a property sketch and photographs for your convenience in responding to this proposed action. To comply with EPA regulations, we must receive a written response with your concurrence and/or comments. We request this response by June 7, 1989.

If you have any questions concerning this situation, please call Mr. Rob Pommerening or my staff at 1-800-443-4379.

Sincerely,

MK-Ferguson Company



J.G. O'Dham
Project Director

JGO/RAP/RDJ/ss
Enclosures

cc: w/enclosures:

P. Martin, United Bank of Durango
M. Thomson, DUR
J. Garcia - DOE/UMTRA
Document Control



Photo No. 1. View looking southeast. Highway 160 is visible on the right. (DU-059)

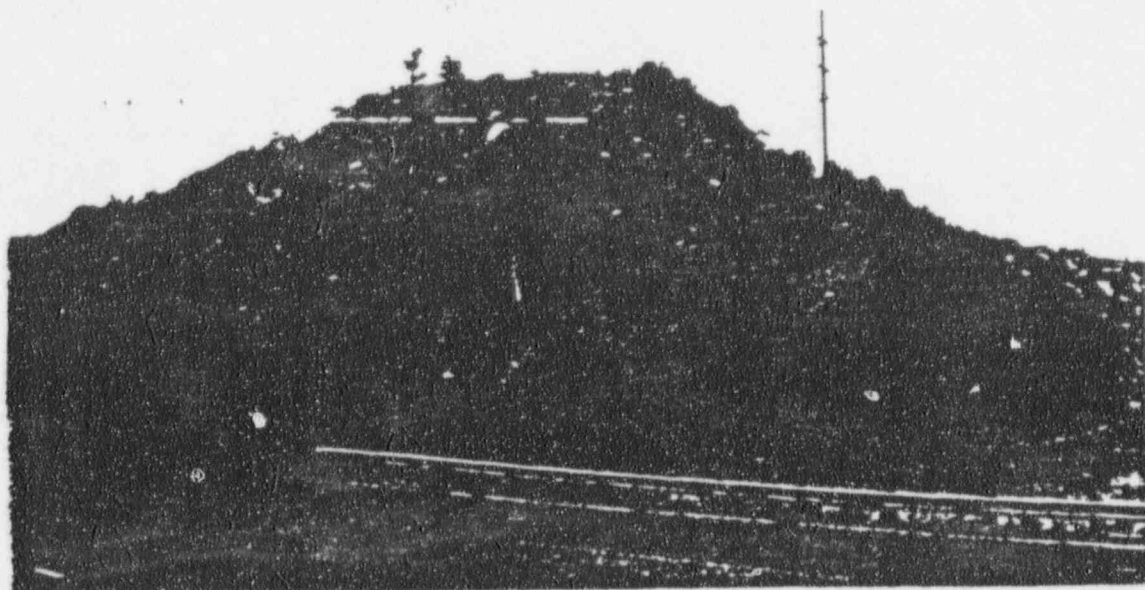


Photo No. 2. View looking north. Highway 160 is visible in the foreground. (DU-059)

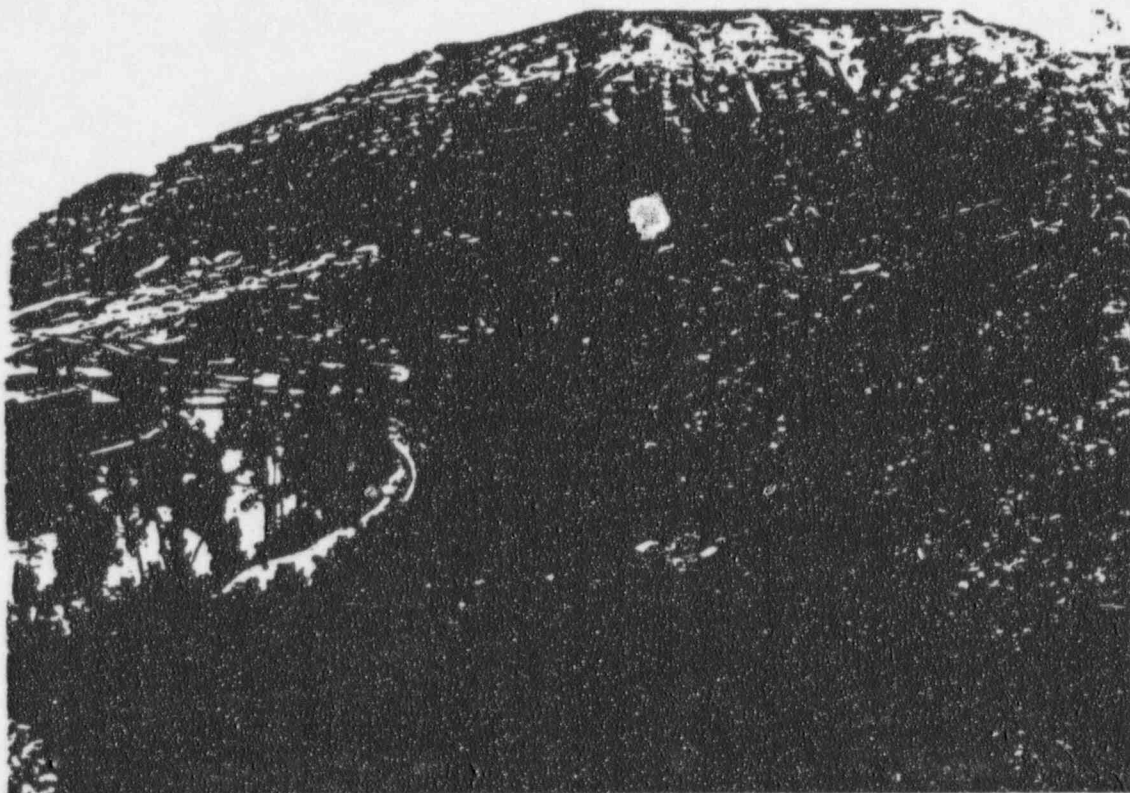


Photo No. 3. View looking south along the east slope. Red Lion Inn is visible at the left. (DU-059)



Photo No. 4. View looking north of DU-059 (property is in the background across the main site and Highway 160) same as photo #2. Red Lion Inn is visible on the right. (DU-059)

PG. 2 of 2.

Area of Phase I
Remedial Action.

Approximate
Property
Line

AERIAL PHOTOGRAPH
(Subject Outlined in Black)

- | | |
|----------------------|--------------------------|
| 1. U. S. Highway 160 | 4. Ninth Street Bridge |
| 2. Animas River | 5. Camino del Rio |
| 3. Roosa Avenue | 6. U. S. Highway 160/550 |

TAKEN
PICT



PHOTO POINT

spection and Enforcement Regional Office listed in Appendix D at least 30 days before the date that respiratory protective equipment is first used under the provisions of this section.

[41 FR 52301, Nov. 29, 1976, as amended at 43 FR 29270, July 7, 1978; 47 FR 16164, Apr. 15, 1982]

§ 20.104 Exposure of minors.

(a) No licensee shall possess, use, or transfer licensed material in such a manner as to cause any individual within a restricted area who is under 18 years of age, to receive in any period of one calendar quarter from radioactive material and other sources of radiation in the licensee's possession a dose in excess of 10 percent of the limits specified in the table in paragraph (a) of § 20.101.

(b) No licensee shall possess, use or transfer licensed material in such a manner as to cause any individual within a restricted area, who is under 18 years of age to be exposed to airborne radioactive material possessed by the licensee in an average concentration in excess of the limits specified in Appendix B, Table II of this part. For purposes of this paragraph, concentrations may be averaged over periods not greater than a week.

(c) The provisions of §§ 20.103(b)(2) and 20.103(c) shall apply to exposures subject to paragraph (b) of this section except that the references in §§ 20.103(b)(2) and 20.103(c) to Appendix B, Table I, Column 1 shall be deemed to be references to Appendix B, Table II, Column 1.

[25 FR 10914, Nov. 17, 1960, as amended at 41 FR 52302, Nov. 29, 1976]

§ 20.105 Permissible levels of radiation in unrestricted areas.

(a) There may be included in any application for a license or for amendment of a license proposed limits upon levels of radiation in unrestricted areas resulting from the applicant's possession or use of radioactive material and other sources of radiation. Such applications should include information as to anticipated average radiation levels and anticipated occupancy times for each unrestricted area involved. The Commission will approve

the proposed limits if the applicant demonstrates that the proposed limits are not likely to cause any individual to receive a dose to the whole body in any period of one calendar year in excess of 0.5 rem.

(b) Except as authorized by the Commission pursuant to paragraph (a) of this section, no licensee shall possess, use or transfer licensed material in such a manner as to create in any unrestricted area from radioactive material and other sources of radiation in his possession:

(1) Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of two millirems in any one hour, or

(2) Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of 100 millirems in any seven consecutive days.

(c) In addition to other requirements of this part, licensees engaged in uranium fuel cycle operations subject to the provisions of 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations," shall comply with that part.

[25 FR 10914, Nov. 17, 1960, and 46 FR 18526, Mar. 25, 1981]

§ 20.106 Radioactivity in effluents to unrestricted areas.

(a) A licensee shall not possess, use, or transfer licensed material so as to release to an unrestricted area radioactive material in concentrations which exceed the limits specified in Appendix B, Table II of this part, except as authorized pursuant to § 20.302 or paragraph (b) of this section. For purposes of this section concentrations may be averaged over a period not greater than one year.

(b) An application for a license or amendment may include proposed limits higher than those specified in paragraph (a) of this section. The Commission will approve the proposed limits if the applicant demonstrates:

(1) That the applicant has made a reasonable effort to minimize the radioactivity contained in effluents to unrestricted areas; and

for consideration of the various factors affecting the longevity of control and stabilization methods and their costs. These factors have different levels of predictability and may vary for the different sites.

(2) Protection of water should be considered in the analysis for reasonable assurance of compliance with the provisions of § 192.02. Protection of water should be considered on a case-specific basis, drawing on hydrological and geochemical surveys and all other relevant data. The hydrologic and geologic assessment to be conducted at each site should include a monitoring program sufficient to establish background ground water quality through one or more upgradient wells, and identify the presence and movement of plumes associated with the tailings piles.

(3) If contaminants have been released from a tailings pile, an assessment of the location of the contaminants and the rate and direction of movement of contaminated ground water, as well as its relative contamination, should be made. In addition, the assessment should identify the attenuative capacity of the unsaturated and saturated zone to determine the extent of plume movement. Judgments on the possible need for remedial or protective actions for groundwater aquifers should be guided by relevant considerations described in EPA's hazardous waste management system (47 FR 32274, July 26, 1982) and by relevant State and Federal Water Quality Criteria for anticipated or existing uses of water over the term of the stabilization. The decision on whether to institute remedial action, what specific action to take, and to what levels an aquifer should be protected or restored should be made on a case-by-case basis taking into account such factors as technical feasibility of improving the aquifer in its hydrogeologic setting, the cost of applicable restorative or protective programs, the present and future value of the aquifer as a water resource, the availability of alternative water supplies, and the degree to which human exposure is likely to occur.

(b)(1) Compliance with Subpart B, to the extent practical, should be dem-

onstrated through radiation surveys. Such surveys may, if appropriate, be restricted to locations likely to contain residual radioactive materials. These surveys should be designed to provide for compliance averaged over limited areas rather than point-by-point compliance with the standards. In most cases, measurement of gamma radiation exposure rates above and below the land surface can be used to show compliance with § 192.12(a). Protocols for making such measurements should be based on realistic radium distributions near the surface rather than extremes rarely encountered.

(2) In § 192.12(a), "background level" refers to the native radium concentration in soil. Since this may not be determinable in the presence of contamination by residual radioactive materials, a surrogate "background level" may be established by simple direct or indirect (e.g., gamma radiation) measurements performed nearby but outside of the contaminated location.

(3) Compliance with § 192.12(b) may be demonstrated by methods that the Department of Energy has approved for use under Pub. L. 92-314 (10 CFR 712), or by other methods that the implementing agencies determine are adequate. Residual radioactive materials should be removed from buildings exceeding 0.03 WL so that future replacement buildings will not pose a hazard (unless removal is not practical—see § 192.21(c)). However, sealants, filtration, and ventilation devices may provide reasonable assurance of reductions from 0.03 WL to below 0.02 WL. In unusual cases, indoor radiation may exceed the levels specified in § 192.12(b) due to sources other than residual radioactive materials. Remedial actions are not required in order to comply with the standard when there is reasonable assurance that residual radioactive materials are not the cause of such an excess.

§ 192.21 Criteria for applying supplemental standards.

The implementing agencies may (and in the case of Subsection (f) shall) apply standards under § 192.22 in lieu of the standards of Subparts A

or B if they determine that any of the following circumstances exists:

(a) Remedial actions required to satisfy Subparts A or B would pose a clear and present risk of injury to workers or to members of the public, notwithstanding reasonable measures to avoid or reduce risk.

(b) Remedial actions to satisfy the cleanup standards for land, § 192.12(a), or the acquisition of minimum materials required for control to satisfy § 192.02(b), would, notwithstanding reasonable measures to limit damage, directly produce environmental harm that is clearly excessive compared to the health benefits to persons living on or near the site, now or in the future. A clear excess of environmental harm is harm that is long-term, manifest, and grossly disproportionate to health benefits that may reasonably be anticipated.

(c) The estimated cost of remedial action to satisfy § 192.12(a) at a "vicinity" site (described under Sec. 101(6)(B) of the Act) is unreasonably high relative to the long-term benefits, and the residual radioactive materials do not pose a clear present or future hazard. The likelihood that buildings will be erected or that people will spend long periods of time at such a vicinity site should be considered in evaluating this hazard. Remedial action will generally not be necessary where residual radioactive materials have been placed semi-permanently in a location where site-specific factors limit their hazard and from which they are costly or difficult to remove, or where only minor quantities of residual radioactive materials are involved. Examples are residual radioactive materials under hard surface public roads and sidewalks, around public sewer lines, or in fence post foundations. Supplemental standards should not be applied at such sites, however, if individuals are likely to be exposed for long periods of time to radiation from such materials at levels above those that would prevail under § 192.12(a).

(d) The cost of a remedial action for cleanup of a building under § 192.12(b) is clearly unreasonably high relative to the benefits. Factors that should be included in this judgment are the anticipated period of occupancy, the incremental radiation level that would

be affected by the remedial action, the residual useful lifetime of the building, the potential for future construction at the site, and the applicability of less costly remedial methods than removal of residual radioactive materials.

(e) There is no known remedial action.

(f) Radionuclides other than radium-226 and its decay products are present in sufficient quantity and concentration to constitute a significant radiation hazard from residual radioactive materials.

§ 192.22 Supplemental standards.

Federal agencies implementing Subparts A and B may in lieu thereof proceed pursuant to this section with respect to generic or individual situations meeting the eligibility requirements of § 192.21.

(a) When one or more of the criteria of § 192.21(a) through (e) applies, the implementing agencies shall select and perform remedial actions that come as close to meeting the otherwise applicable standard as is reasonable under the circumstances.

(b) When § 192.21(f) applies, remedial actions shall, in addition to satisfying the standards of Subparts A and B, reduce other residual radioactivity to levels that are as low as is reasonably achievable.

(c) The implementing agencies may make general determinations concerning remedial actions under this Section that will apply to all locations with specified characteristics, or they may make a determination for a specific location. When remedial actions are proposed under this Section for a specific location, the Department of Energy shall inform any private owners and occupants of the affected location and solicit their comments. The Department of Energy shall provide any such comments to the other implementing agencies. The Department of Energy shall also periodically inform the Environmental Protection Agency of both general and individual determinations under the provisions of this section.

§ 192.23 Effective date.

Subparts A, B, and C shall be effective March 7, 1983.

P.O. Drawer K
1063 Main Avenue
Durango Colorado 81301
(303) 247-3242



**United Bank
of Durango**

June 9, 1989

**MK-FERGUSON CO.
ALBUQUERQUE**

JUN 12 1989

RECEIVED

ATTN: J. G. Oldham, Project Director
MK-Ferguson Company
Remedial Actions
Contractor - UMTRA Project
P. O. Box 9136
Albuquerque, New Mexico 87119

RE: DU-059 - Supplemental Standards

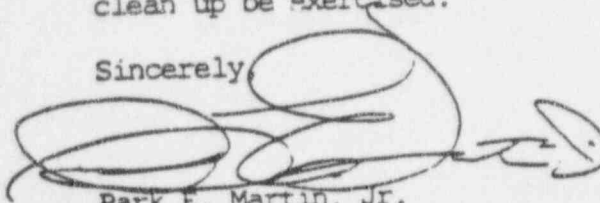
Dear Mr. Oldham,

In response to your letter of 5-18-89 and subsequent to my phone conversation with Rob Pommerening on 6-7-89, please be advised that the United Bank of Durango DOES NOT wish to apply "Supplemental Standards" to certain areas of this property. (State Highway 160 and Roosa Avenue DU-059)

At this point we have a contract in hand for purchase of this property. We have fully discussed and disclosed all information regarding the remedial action related to this property with the purchaser. The offer to purchase hinges on the total clean up of this project and therefore anything less will adversely effect the final sale of this property, therefore I am sure you will understand our position.

Additionally our review indicates that anything less than complete clean up of residual radioactive materials would negate our existing contract and/or could prove to be a "cloud" on the title to this property and be detrimental to any future attempts to market the property, therefore we have to disagree with your recommendation and further request that complete clean up be exercised.

Sincerely,


Park E. Martin, Jr.
Senior Vice President

PEM/mrs

cc: Conrad Steller, United Bank of Denver
Robert Wolff, Wessman Development Co. - (Contract Purchaser)

REP	INFO	DIST	REP	INFO	DIST
	<input checked="" type="checkbox"/>	JCO			PDC
	<input checked="" type="checkbox"/>	RFS			MMH
	<input checked="" type="checkbox"/>	REC		<input checked="" type="checkbox"/>	KAP
		JCH/GRJ			HRA
		CDW			ISL/AME
		JEM			COPO
		JD			JEL
	<input checked="" type="checkbox"/>	KNT			TBS
		JGP			ENG
		EPD			WVS
		ISJ/DC			MAZ
					ADW
ORIG. FILE			DURANGO		
WORK FILE			DU-59		

APPENDIX C
DOE/STATE COMMENTS



RADIOLOGICAL AND ENGINEERING ASSESSMENT (REA) Review Form

DOE Location No. DU-059 Rev. No. 1

PRIORITY: ☒ ROUTINE ☐ URGENT DATE 11-2-89
REQUESTED RESPONSE BY 11-16-89
COMMENTS: Recommended application of supplemental standards to slopes of mesa.
Robert A Pommerening 11-2-89 CONT. ON ATTACHED SHEET NO. _____
VP MANAGER DATE

DATE RECEIVED 11/16/89
☒ RECOMMEND APPROVAL ☐ RECOMMEND APPROVAL AS NOTED BELOW ☐ DO NOT RECOMMEND APPROVAL AS NOTED BELOW
COMMENTS: Based on the data provided, the application of supplemental standards to select portions of the east and west mesas as warranted. The actual area of the east mesa application
Robert A Pommerening 12/12/89 CONT. ON ATTACHED SHEET NO. Back
TAG DATE

DATE TRANSMITTED _____
☐ APPROVED ☐ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED
RESPONSE DATE _____ ATTACHED RESPONSE ON SHEET NO. _____

DATE TRANSMITTED _____
☐ APPROVED ☐ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED
RESPONSE DATE _____ ATTACHED RESPONSE ON SHEET NO. _____

DATE TRANSMITTED _____
☐ APPROVED ☐ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED
RESPONSE DATE _____ ATTACHED RESPONSE ON SHEET NO. _____

DATE RECEIVED 11-3-89
☒ APPROVED ☐ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED

COMMENTS:

MK-FERGUSON CO.
ALBUQUERQUE

DEC 19 1989

RECEIVED

SHEET NO. 1 OF 1

J. Marcia
DOE VP MANAGER

12/18/89
DATE

may be larger than necessary, however
the ~~impossibility~~ impracticality of obtaining
grid samples prohibits a more detailed
analysis.

REP	INFO	DIST	REP	INFO	DIST
		JGO			PDC
					ALWH
		PDC			<input checked="" type="checkbox"/> PAB
		PHICU			LCB
					PHICU
		JOM			CC/20
		JLD			JBI
		MDT			TDC
		JCP			DSW
		QIB			JWS
		SJS/DC			MAE
					DSW
ORIG FILE			10-1		
WORK FILE			DU059		

REP	INFO	DIET	REP	INFO	DIST
	✓	JGO			PDC
	✓	JPH			MWH
	✓	WAZ			RAP
	✓	REC			MFP
		CDW			FIF/AMKE
		JRH			GG/PD
		JJD			JEJ
	✓	MDT			TBS
		JGP			DEW
		DPB			JWS
		SIS/DC			TGS
					RSW

ORIG. FILE *STFC*
 WORK FILE *DWR 059*



MK-FERGUSON COMPANY

A MORRISON KNUDSEN COMPANY

UMTRA PROJECT OFFICE

P.O. BOX 9136

ALBUQUERQUE, NEW MEXICO 87119